Town of Londonderry Planning Board
268B Mammoth Road - Moose Hill Conference
Agenda
January 14, 2026
7:00 p.m.

I. **Call to Order**

II. **Administrative Board Work**

A. Approval of Minutes

B. Regional Impact Determinations

C. Discussions with Town Staff

III. **Old Business**

A. Public hearing on an application for formal review of a conditional use permit to permit multi-family use. The property is located at 2 Litchfield Road (Map 12, Lot 68) within the AR-1 Zoning District (formerly zoned Commercial III and Historic Overlay District). CC Properties, LLC (owner/applicant). Application was filed prior to the rezoning of the property and will be reviewed under the zoning regulations in effect at the time of submission.

IV. **New Plans/Conceptual Plans**

A. Conceptual, non-binding discussion regarding the renovation of an existing building to add a restaurant and associated parking in support of an agritourism operation at 230 Mammoth Road (Map 06, Lot 21), zoned Agricultural-Residential (AR-1). MHO Acquisition, LLC, (owner/applicant).

B. Public hearing on an application for formal review of a subdivision to permit an organic waste processing facility in the Gateway Business (GB) district at 162 Litchfield Road (Map 14 Lot 39-2). Zoned Gateway Business (GB), PurposeEnergy-Londonderry, LLC (applicant), Nicholas F Codner Trust 2012 (owner).

Documents:

18252-02 Londonderry PB Submittal_2025-12-23.pdf

C. Public hearing on an application for formal review of a site plan and conditional use permits to permit an organic waste processing facility in the Gateway

Business (GB) district at 162 Litchfield Road (Map 14 Lot 39-2). Zoned Gateway Business (GB), PurposeEnergy-Londonderry, LLC (applicant), Nicholas F Codner Trust 2012 (owner).

Documents:

18252-02 Londonderry PB Submittal_2025-12-23.pdf

V. Other Business

A. Work session - Rules of procedure (annual review)

VI. Adjournment

LETTER OF TRANSMITTAL

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects

48 Constitution Drive
Bedford, NH 03110
Phone: (603) 472-4488
Fax: (603) 472-9747

☐ Standard Mail ☒ Electronic ☒ Hand Carry ☐ To Be Picked Up

DATE	12/23/2025	JOB NO.	18252-00
ATTENTION	Kellie Caron, Asst. Town Manager, Dir. Eco. Dev.		
RE:	Southern New Hampshire Green Energy Campus		
	PurposeEnergy – Londonderry, LLC – Formal Submittal		
	162 Litchfield Road, Londonderry, NH 03053		
	Tax Map 14 Lot 39		

TO: Town of Londonderry
Planning Office
268B Mammoth Road
Londonderry, NH 03053

PHONE: (603) 432-1100 x193

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☒ Prints ☒ Plans ☐ Samples ☐ Specifications ☐ Copy of letter ☐ Change order

COPIES	DATE	NO.	DESCRIPTION
2	12/23/2025	-	Response Letters (DRC, 3rd Party Subdivision Review & Site Plan Review)
2	12/18/2025	-	Town Site Plan Application Form + Checklist
2	12/22/2025	-	Town Subdivision Application From + Checklist
2	12/22/2025	-	Town CUP Application & Narrative (Conservation Overlay District Buffer Reduction)
2	12/23/2025	-	Waiver Request(s) Site Plan & Subdivision
2	-	-	Deeds of Reference
4	12/23/2025	-	Completed Abutters List & Mailing Labels
2	-	-	Letter of Authorization
2	-	-	Utility Clearance Letters (Electric, Telecomm, & Gas) & MWW Memorandum
2	12/22/2025	-	FAA submittal confirmation (email)
2	12/17/2025	-	SWPPP Binder • EPA eNOI • SWPPP Plan • Site Plans (11" x 17") – 1 copy
4	12/22/2025	-	Revised Site Plans
4	12/22/2025	-	Revised Subdivision Plans
2	12/18/2025	-	Revised Stormwater Management Report
-	-	-	Electronic PDF Submittal (via email to kcaron@londonderrynh.gov)

THESE ARE TRANSMITTED as checked below:

☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐
☐ FOR BIDS DUE _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS:

Please see attached materials submitted for Formal Review. Should there be questions or comments please contact Nick Golon or Jonathan Devine at (603) 472-4488.

COPY: _____ SIGNED: Nicholas Golon, PE

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Town of Londonderry
Planning & Economic Development Department
268B Mammoth Road
Londonderry, NH 03053

December 23, 2025

Re: Southern New Hampshire Green Energy Campus – Subdivision, Site Plan Review and CUP – 162 Litchfield Road, Londonderry, NH – Map 14 Lot 39

Dear Kristan,

Please accept this response to the Town's Design Review Comments dated November 26, 2025 and relating to the proposed Southern New Hampshire Green Energy Campus at 162 Litchfield Road in Londonderry. Below, please see the Town's comments in regular font and our responses in **bold**:

Subdivision

1. Sheet 1-Cover Sheet: Add zoning designations of existing parcel at 162 Litchfield Road (AR-1) to Note 4 Current Zoning as well as existing use Undeveloped/Residential (Domicile), Clarify the proposed use to include organic waste processing and existing domicile (to remain)

   Suggested Notes or similar:
   4. Current Zoning is: Gateway Business (GB) for proposed lot 14-39-1 and Agricultural Residential (AR-1) for existing 162 Litchfield Road
   Existing use: Undeveloped for proposed lot, Developed Residential lot for existing 162 Litchfield Road
   Proposed use: Organic Waste Processing Facility for proposed lot and existing Developed Residential lot to remain unchanged.
   The notes have been revised consistent with the above comment, please see the revised note 4 on the cover and note 4 on sheet Sub-1 of 8.

2. Sheet 3-Sub-2 and Sheet 9-SUB 8: Indicate the location of the existing septic system on 162 Litchfield Road, overhead wire locations to the existing house and a drainage easement deed reference for the swale at the western side of existing lot 162 Litchfield Road.

   Please see the call out and depiction of the existing effluent disposal area (EDA) on the revised plans.

3. Sheet 4-SUB-3 and Sheet 7-SUB-6: Add setback lines to Gateway Business and Industrial-II boundary.

   Building setbacks have been added on sheets SUB-3 and SUB-6 per the above comment.

4. Sheet 5-SUB-4: Remove the Planning Board signature block.

   The Planning Board signature block has been removed from this sheet.

Site Plan

1. The minimum parking spaces required are 64 per SPR Section 3.09.d/Table B. The applicant proposes 23 parking spaces. A request for waiver has been provided to address this reduction request. The waiver letter for Section 3.09.d/Table B references a different incorrect section (Section 3.07.g.2) at the end of the letter. Please revise the waiver letter to the correct citation.

   A revised waiver letter has been included in this submission with the correct citation.

2. Lighting Plan: Add plan note regarding full cutoff fixtures per Checklist item VIII.1.

   Such a note has been added to the lighting plan, please see Note #2.

3. Landscape Plan: Add notes per Checklist items VII.1.k and VII.1.l regarding no plant conflicts with snow storage, light fixtures, utilities or sight distance.

   Such a note has been added to the landscaping plan, please see Note #11.

4. Building Renderings/Architectural Design:

   a. Add title block location or complete title block per SPR Section 4.02/Checklist item III.2 as well as a revision block per SPR Section 4.03.

      Please find the revised rendering with an updated title block the meets the above criteria.

   b. Details regarding signage were not included in this application per SPR Section 3.12.g and Checklist item IX.2.

      A location for the wayfinding sign has been provided at the beginning of the site proposed site driveway adjacent to North Wentworth Avenue. The design of the signage will be addressed by a turnkey vendor at a later date and is indicated as such.

Waivers Requested Include:

1. SPR Section 3.19.d to allow reduction in parking space requirement. The waiver letter for Section 3.09.d/Table B references a different incorrect section (Section 3.07.g.2) at the end of the letter. Please revise the waiver letter to the correct citation.

   The waiver letter has been corrected per the above comment.

2. SPR Section 3.10.g.1 to allow elimination of the internal parking landscape area requirement.

Please Note:
Please contact the appropriate Department or Commission individually when addressing comments that require a response. When revisions are submitted to the Planning Department, please include a response letter addressing how the DRC and engineering comments have been addressed in the revised plans.

Police Department Comments (9/22/25)

Areas of Concern:
- Access into the site
- Other Issues (explain below)

Comments:
Londonderry Police Department would be looking for collaboration in the appropriate response planning and training for officers accessing the site during an emergency. Given the high potential for environmental risk factors that may require expertise knowledge, officers should be aware of the Do's and Don't's within this environment.
The applicant has been in contact with the Londonderry PD and will organize a meeting with the PD to review training strategies for the site once all industrial process element are finalized and locations of items of interest are confirmed. A note formalizing such has been included on the Overall Site Layout Plan.

SEWER DESIGN COMMENTS

These comments have been addressed under separate cover to Londonderry Sewer Division addressed to Bob Kerry.

Assessing Department Comments (9/22/25)

None of the subject property is in Current Use.

Areas of Concern:
- Street Numbering

The Existing Map and Lot/Steet Address is 14-39/162 Litchfield Rd.
The Proposed Map and Lot/Street Address is 14-39-1, 25? North Wentworth Ave.

Comments:
1. Address will be on North Wentworth Ave., #25, subject to 911/Address Committee approval.

   The plans have been updated to reflect this comment. There is already an exisitng lot 14-39-1. We have noted the new lot to be 14-39-2.

2. How many board feet of logs, cords of wood, and tons of whole tree chips will be cut?

   These values will be provided by the project construction manager or their delegate.

3. Estimate cubic yards of earth to be excavated. If greater than 1000 cu yds/tax year, an excavation intent needs to be filed.

   These values will be provided by the project construction manager or their delegate.

Fire Department Comments (9/22/25)

- Per Londonderry Fire Regulation – There shall be a fire hydrant located within 100 feet of the fire department connection (FDC) on both buildings.
  A fire hydrant has been provided within 100' of the FDC at each building.

- Per Londonderry Fire Regulations – General purpose hydrants shall be spaces every 500 feet. **Additional hydrants have been added; one located along the access drive and the other located in the outer edge of the maintenance drive to meet the spacing requirements requested.**
- Per 2021 NFPA 1 Fire Code – The gravel drive shall be 20 feet wide and shall be designed and maintained to support the imposed loads of fire apparatus and shall be provided with an all-weather driving surface.
  The all-weather gravel drive has been extended to 20' wide per the above comment.

Tax Collector Comments (9/22/25)

- Taxes are Paid to Date.

  Comment noted.

Sincerely,
TFMoran, Inc.



Jonathan Devine, EIT

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Since 1968

NEW HAMPSHIRE 200

Ms. Kellie Caron & Ms. Kristan Farr
Town of Londonderry
Planning & Economic Development Department
268B Mammoth Road
Londonderry, NH 03053

December 23, 2025

Re: Proposed Subdivision
Map 14 Lot 39
162 Litchfield Road, Londonderry, NH

Dear Kristan,

Please accept this response to Stantec's Design Review Comments dated November 21, 2025 as relating to the proposed Subdivision of 162 Litchfield Road in Londonderry. Below, please see Stantec's comments in regular font and our responses in **bold**:

General Comments:

1. The submission information indicates the proposed lot to be created at the end of North Wentworth Avenue right of way but the lot does not have frontage on a class V or better roadway as required per section 4.5.2.B of the Zoning Ordinance. As presented, the lot does not have any frontage on a class V or better roadway since North Wentworth Drive is not constructed to the property line of the subject parcel. We note the class V portion of North Wentworth Drive is located more than 650 feet from the subject property and would require a wetlands permit to construct the public class v roadway to the property line. However, the subdivision application submission is absent of any off-site improvement work related to the extension of North Wentworth Drive (class V roadway) to the property line. It is our understanding that the proposed public roadway construction to extend North Wentworth Drive to the subject parcel shall meet the approval of the Department of Engineering and Environmental Services. We recommend the Applicant update the subdivision application and design to create and provide frontage located on a class v or better roadway for the proposed lot in compliance with the regulations. We recommend the Applicant arrange a meeting with Department of Engineering and Environmental Services and Planning Department to discuss the proposed off-site improvements design for the proposed substandard lot frontage.

   A meeting was held with the Department of Engineering and Environmental Services and Planning Department on December 17th with a follow-up meeting held with the Town Manager and Department of Public Works on December 22nd. In the follow-up meeting a conveyance of rights from the Town to the applicant was determined most appropriate to provide appropriate access to the applicant while also alleviating the need for the Town to maintain a right-of-way that does not provide a benefit to public. The form of the conveyance is to be determined and will be coordinated with the Town Manager and Town Council to the Town's satisfaction. The plans have been noted accordingly.

2. The submission information indicates the proposed lot to be created at the end of North Wentworth Avenue right of way which does not have the minimum linear frontage of 150 feet on a class V or better roadway as required per section 4.5.2.B of the Zoning Ordinance. As presented, the lot frontage

for the proposed new lot is indicated to be only the width of existing right-of-way along the property line totaling to 62.96 feet and less than one half of the minimum required by the Ordinance. The Applicant has submitted a conditional use permit document for the minimum frontage requirement. We recommend the Applicant update the design to provide minimum proper frontage located on a class v or better roadway in compliance with the regulations. We recommend the Applicant arrange a meeting with Planning Department and Zoning Officer to discuss the proposed conditional use for the proposed substandard lot frontage.

As noted in response to comment (1) above, meetings were held with the Town to review the access considerations for the subject lot and determine the most appropriate means of access. The project's location in the GB District allows the Planning Board to adjust any dimensional requirement of the district, including frontage, for projects that are truly supportive of the goals of the GB district. In tandem with our response to comment (1) the frontage requirements have been met if authorized by the Planning Board.

3. The Applicant has not provided a stormwater analysis/report per section 3.08 of the Subdivision Regulations and item X.3 of the Subdivision Application & Checklist for the off-site improvements necessary for the extension of North Wentworth Drive to the subject parcel and to demonstrate the proposed improvements comply with section 3.08.A of no increase in runoff. We recommend the Applicant indicate and label the proposed development extension of North Wentworth Drive in the project plan set and prepare and provide a stormwater analysis/report that addresses all of the proposed off-site development which demonstrates compliance with the Subdivision Regulations in accordance with section 3.08 and also demonstrates compliance with the Town's Stormwater Ordinance and Regulations under this application.

   A waiver of the above criteria has been requested based on the rational that the required elements have been provided with the site plan application, and providing duplicate information would be redundant and unnecessary. For appropriate coordination, the site driveway plan and profile and sight distance plan and profile have been included in the subdivision plans.

4. The Applicant's checklist does not address the need for a NHDES wetlands permit for off-site improvements for the extension of North Wentworth Drive to the subject parcel. In addition, the new lot at North Wentworth Drive will require a Town of Londonderry Sewer Permit. The Applicant has not indicated the permits have been submitted on the application form. The Applicant should submit for and obtain all project permits and indicate the permit approval numbers on the cover sheet and provide copies of all permits for the Planning Department files per sections 4.14 and 4.18.E of the Subdivision Regulations and Item XI of the Subdivision Application & Checklist.

   The wetlands dredge and fill permit, the Town Subdivision permit and Town Conditional Use permit (frontage) have been listed on the cover sheet. All other permits have been added to the Site Plans as these approvals are associated with the development of the site vs. its subdivision.

5. The Applicant has not provided proper utility clearance letters for communications (telephone/cable TV) electric, or water service for the new lot under this application per sections 3.05, and 3.06, and 4.18.B of the Subdivision Regulation and items X.7.a, b, c, and e, of the checklist. We recommend the Applicant provide utility clearance letters in accordance with the regulations.

   The utility clearance letters provided with the site plan application have also been provided with this resubmittal for the subdivision.

6. We recommend the Applicant obtain and address the DRC comments as applicable.

   We have addressed the DRC comments under separate transmittals with the respective departments.

7. The Applicant has not provided a driveway sight distance plan and profile for the existing driveway or proposed driveway for the new lot in accordance with Exhibit D2 of the Subdivision Regulations. The Applicant shall update the plan set to include a sight distance plan for the existing and proposed driveways with the associated clearing and grading to demonstrate compliance per Exhibit D-2 of the regulations as typically required by the Town.

The Site Distance Plan and Profile (sheet SD-1) from the site plans has been included in the subdivision plan set for coordination.

8. The Applicant has not indicated or provided proposed electric, telephone, cable TV or gas utilities to serve proposed new lot at the end of North Wentworth Drive per sections 3.05 and 4.16.B of the Subdivision Regulation and item VII.2 of the checklist. We recommend the Applicant indicate and label all utilities to serve the proposed new lot on the plans in accordance with the regulations. Please include construction details for these utilities in the plan set per section 4.16.D.13 of the regulations and item VIII.13 of the checklist.

   A waiver of the above criteria has been requested based on the rational that the required elements have been provided with the site plan application, and providing duplicate information would be redundant and unnecessary.

9. The existing conditions plan sheet SUB-1 indicates the existing sewer manhole is located more than 1,000 feet from the new lot at the end of North Wentworth Avenue with a sewer easement located along abutting lot 14-44-38 to serve the site, but the subdivision application submission does not include any information (design or details) relative to the proposed sewer service especially the impacts at the existing cul-de-sac to construct the sewer service per section 3.07.A and 4.16.B 1 and 2 of the regulations and items VII.2.a and b and VIII.14-18 of the checklist. We recommend the Applicant arrange a meeting with the Department of Environmental Services and Sewer Division to discuss the sewer service under this application. Please update as acceptable to the Department of Environmental Services and Sewer Division.

   A waiver of the above criteria has been requested based on the rational that the required elements have been provided with the site plan application, and providing duplicate information would be redundant and unnecessary.

   The right to construct the sewer service through the existing cul-de-sac has already been conveyed by the underlying landowner at the time of the easement's creation, see sheet D-26879 and book 3355 page 1877 as recorded in the Rockingham County Registry of Deeds. Appropriate coordination by the applicant is being conducted with Sewer Division to assure the adequacy of sewer services.

   Through consultation with the Town Manager and Office of the DPW, a private easement will be requested for the limited private utility to be located within North Wentworth Ave where the sewer forcemain crosses into the Stonyfield lot.

10. The existing conditions plan sheet SUB-8 indicates a 15" stormwater pipe outlet exists from the stormwater system of Litchfield Road to a swale near the westerly property line, but the plans do not indicate an existing drainage easement in this location. It is our understanding that the Town typically requests easements or flowage rights when existing roadway runoff is currently directed on site for maintenance. Please review the existing conditions with the Department of Engineering and Environmental Services and update as acceptable to the Department.

    Correct, no drainage easement exists in the above noted location, although we note there is no regulation requiring the landowner to convey such an easement. We have spoken with the underlying landowner, and Mr. Codner will review the request directly with the Department of Engineering and Environmental Services.

11. Portions of the indicated right of way along Litchfield Road are less than 25 feet from the centerline of the existing roadway pavement. We understand that the Department of Engineering & Environmental Services typically requests that a minimum of 25 feet from the existing roadway centerline be provided along existing roads for future widening. We recommend an easement be provided on Litchfield Road as acceptable to the Department.

    Correct, a minimum of 25 feet is not provided from the existing roadway centerline (variable width), although we note there is no regulation requiring the landowner to convey such an easement. We have spoken with the underlying landowner, and Mr. Codner will review the request directly with the Department of Engineering and Environmental Services.

12. The Applicant did not provide copies of any proposed easement deeds, protective covenants, or other legal documents as required by section 4.18. C & D of the regulations and item II.6 of the Checklist. We recommend the Applicant provide draft copies for review by the Town in the next project submission.

    Once the final mechanism for access to the site is determined with the Town Manager and Office of the DPW, copies of any proposed easement deeds or legal documents will be provided for the Town's review at that time.

13. The submission did not include lot size calculations per Section 3.10 of the Subdivision Regulations and Item X.1 of the checklist. We recommend the Applicant provide calculations in accordance with eh regulations.

    A waiver request has been provided to address the above as municipal sewer service is available to both the proposed lot (15.3+/- acres) and the existing lot (49.5+/- acres). Due to the size of the lots and the availability of municipal sewer, lot sizing calculations would provide no public value.

14. We recommend the Applicant address the following on the **Subdivision Plan and Existing Conditions (Topographic) Plan:**

    a. Please update the contact for the Fire Department on the cover sheet.

       Phil LeBlanc, acting fire chief, has been added to the cover.

    b. The plans do not provide the proper closure certification for the indicated survey per section 4.12.A of the regulations and item V.1 of the checklist. Please update the plans accordingly.

       A revised certification note has been added to the plan indicating the proper closure.

    c. A proposed driveway to serve the new lot was absent from the submission per sections 3.09.B and 3.09.F of the regulations and item VII.3.a.11 of the checklist. Please update the plans accordingly.

       Driveway Plan and Profile (Sheet C-13) has been added to the subdivision plan from the site plans for coordination.

    d. Please remove the Planning Board signature block from the topographic plans per section 4.03 of the regulations.

       The signature block has been removed from this plan.

    e. Please provide proper monuments along the property boundary that are missing per sections 3.02.A & B and 4.12.C.4.ii of the regulations and item V.4.b of the checklist. Please update all sheets accordingly.

       Monuments "to be set" have been indicated where missing consistent with the regulations.

    f. Please indicate the proposed monuments for the limits of the CO District and the associated buffers on the plans per sections 3.02.C and 4.12.c.14 of the regulations and item V.14 of the checklist.

       A partial waiver request has been submitted to sign only the proposed lot. The remainer lot is already under conservation and further signage would provide no public benefit. This is consistent with what was presented to and approved by the conservation commission.

    g. The plan notes the new lot number as 39-1, but there is an existing lot 39-1 that abuts the project. Please confirm the proposed lot number designations and addresses with the Assessor per section 4.12.C.10 of the regulations and item V.10 of the checklist. Please update all plans accordingly.

       The plans have been updated to reflect lot 14-39-2 per the assessor.

    h. Please update the notes on the subdivision plan to properly address and include the following notes per section 4.11 of the regulations and item IV of the checklist;

       1. Existing and proposed use of the entire existing parcel and proposed parcels;
       2. Sanitary sewer source of the entire existing parcel and proposed parcels;

3. Water supply source of the entire existing parcel and proposed parcels;
4. List of required permits;
5. Notes identifying # bedrooms in the existing dwelling;

The above notes have been added to SUB 1-8 Notes 13-17. Required permits are addressed on the cover sheet.

i. Please indicate and label the existing septic system serving the dwelling on the plans per section 4.12.c.19 of the regulations and item V.19.a of the checklist.

The existing septic system serving the dwelling on the plans has been added, see area labeled "E.D.A" next to the existing residential structure.

j. Please indicate the existing overhead wires serving the existing dwelling on the plans per section 4.12.c.22 of the regulations and item V.22 of the checklist.

Overhead electrical service has been shown on the plans for the existing dwelling.

k. Please clarify the separate Planning Board and owner signature blocks on sheet 3.

Only the Town approved planning board signature block has been provided.

Summary:

We recommend the Applicant arrange a meeting with the Department of Engineering & Environmental Services and Planning Department before addressing the issues noted above. After the meeting, we recommend the Applicant address the comments and issues noted above and resubmit revised drawings and supporting information. We recommend the Applicant provide a summary response letter with the revised drawings and supporting information addressing each comment noted above as required by the regulations. We understand that the project has not been scheduled for a Planning Board meeting at this time.

A meeting was held with the Department of Engineering and Environmental Services and Planning Department on December 17th with a follow-up meeting held with the Town Manager and Department of Public Works on December 22nd.

Sincerely,

TFMoran, Inc.



Jonathan Devine, EIT

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Town of Londonderry
Planning & Economic Development Department
268B Mammoth Road
Londonderry, NH 03053

December 23, 2025

Re: Southern New Hampshire Green Energy Campus – Site Plan Review
25 North Wentworth Avenue, Londonderry, NH
Map 14 Lot 39-2

Dear Kristan,

Please accept this response to the Stantec's Design Review Comments dated November 21, 2025 and relating to the proposed Southern New Hampshire Green Energy Campus to be located at the end of North Wentworrh at 162 Litchfield Road in Londonderry. Below, please see the Stantec's comments in regular font and our responses in **bold**:

General Comments

1. The Applicant indicates the NHDES Sewer Discharge Permit, NHDES Alteration of Terrain Permit, NHDES Wetlands Permit, NHDES Solid Waste Permits, Army Corps of Engineers Permit, Londonderry Sewer Discharge Permit, and Town of Londonderry Stormwater Permit are to be submitted on the checklist. With the project in close proximity to the Manchester Airport, FAA permits are applicable, but appear absent from the submission. The Applicant should submit for and obtain all project permits, indicate the permit approval numbers in the permit list on the cover sheet and provide copies of all permits for the Planning Department files per sections 4.13 and 4.18.e of the Site Plan Regulations and Item XII of the Site Plan Application & Checklist.

   Copies of approvals will be provided to the Planning Department and denoted on the Cover Sheet, C-01 upon receipt. Permits with the FAA have been filed by the applicant and are included in this submittal.

2. The Applicant has not provided proper utility clearance letters for communications (telephone/cable TV) electric, or water service for the new lot under this application per sections 3.04, and 3.05, and 4.18.B of the Subdivision Regulation and items X.7.a, b, c, and e, of the checklist. We recommend the Applicant provide utility clearance letters in accordance with the regulations.

   Utility clearance letters from MWW, Eversource, Liberty and Xfinity have been included as part of this submittal.

3. We recommend the Applicant obtain and address the DRC comments as applicable.

   DRC comments have been addressed under separate transmittal.

4. It is our understanding that the requirements of the Building Rendering, Landscape and Lighting plans will be reviewed by the Planning Department under this application. We recommend the Applicant

arrange a meeting with the Planning Department to confirm the landscape plan, lighting plan, and building rendering requirements and discuss site signage for the project.

This is our understanding as well and a meeting to review these elements took place on December 17, 2025.

5. The proposed project indicates impacts to the Conservation Overlay District (COD) will occur, and the project application submission includes a Conditional Use Permit (CUP) application. We recommend the Applicant obtain recommendations for the CUP from the Conservation Commission.

   The Conservation Commission has reviewed and unanimously recommended approval of this project at their June, 2025 meeting.

6. The Applicant has submitted a written waiver request for the internal parking landscaping area requirement per section 3.10.g of the Site Plan Regulations. The Applicant should discuss the proposed waiver request with the Planning Department under this application. Please update the design as necessary meeting the approval of the Town.

   We have reviewed the request, and that it follows appropriate industry standards, we believe it to be appropriate for this application.

7. The existing conditions plan indicates the existing sewer manhole is located more than 1,000 feet from the new lot at the end of North Wentworth Avenue with a sewer easement located along abutting lot 14-44-38 to serve the site. We note the submission did not include sewer calculations for the proposed flows as required by the Sewer Division. It is our understanding that the requirements of the Londonderry Sewer permit will be reviewed further by the Londonderry Sewer Division.

   Sewer flow calculations are being provided to the Londonderry Sewer Division in parallel with this submittal.

8. The submitted building renderings do not provide a proper title block location or complete title block information per section 4.02. of the regulations and item III.2 of the checklist. Please update the plans accordingly and include a revision block per section 4.03 of the regulations.

   The revised renderings provide a title block that adheres to the above regulations.

9. The submission information indicates the Applicant proposes to construct a private driveway within the Town's existing roadway right-of-way to the subject lot, but the proposed improvements do not appear to comply with section 3.09 of the Subdivision Regulations including the roadway width, proper cul-de-sac terminus, embankment slopes, underdrain, etc. to provide the necessary improvements for a class V or better roadway to serve the site as required per section 4.5.2.B of the Zoning Ordinance, section 3.09.A of the Subdivision Regulations and section 3.08.a of the Site Plan Regulations. We note the class V portion of North Wentworth Drive is located more than 650 feet from the subject property and requires a wetlands permit to construct the public class v roadway to the property line. It is our understanding that the proposed public roadway construction to extend North Wentworth Drive to the subject parcel shall meet the approval of the Department of Engineering and Environmental Services. We recommend the Applicant arrange a meeting with Department of Engineering and Environmental Services and Planning Department to discuss the proposed off-site improvements design under this application.

   A meeting was held with the Department of Engineering and Environmental Services and Planning Department on December 17th with a follow-up meeting held with the Town Manager and Department of Public Works on December 22nd. In the follow-up meeting a conveyance of rights from the Town to the applicant was determined most appropriate to provide appropriate access to the applicant while also alleviating the need for the Town to maintain a right-of-way

that does not provide a benefit to public. The form of the conveyance is to be determined and will be coordinated with the Town Manager and Town Council to the Town's satisfaction. The plans have been revised accordingly, noting the final form of conveyance is to be determined.

10. The submission information indicates the Applicant proposes to construct a separate and private sewer force main within the North Wentworth Avenue roadway that extends beyond the existing sewer manhole that will cross the roadway and extend to and within the Stonyfield Yogurt facility. It is our understanding private utilities are not allowed in the public roadways. In addition, there is no information in the application from Stonyfield Yogurt stating any agreement to work on their property or agreement to provide processing materials to the proposed facility as implied. Does this discharge from Stonyfield require a NHDES discharge permit and/ or Town of Londonderry Sewer Permit since it is noted as a waste product and is not discharged to a municipal sewer system when it leaves the site? It is our understanding that any work within the North Wentworth Avenue right-of-way shall meet the approval of the Department of Engineering and Environmental Services. In addition, it is our understanding that the separate wastewater design shall meet the approval of the Sewer Division. We recommend the Applicant arrange a meeting with Department of Engineering and Environmental Services and Sewer Division to discuss the proposed off-site improvements and interconnection of the proposed wastewater system under this application.

    Through consultation with the Town Manager and Office of the DPW, a private easement will be requested for the limited private utility to be located within North Wentworth Ave. Copies of the private agreement between the applicant and Stonyfield may be provided to the Town's satisfaction once formalized. Permitting of this offsite improvement is required, and the Sewer Division will address this in their review, noting the Sewer Division has already conveyed to the applicant that Stonyfield has their own existing sewer permit that can be modified to address the proposed work. The design of the process piping interconnecting the facilities is currently depicted on the TFM site plans for coordination purposes, but final plans will be provided by others consistent with the expectations of the Sewer Division and Department of Engineering and Environmental Services. We would request this work be addressed in a similar capacity to an offsite improvement, with plans to be provided to the Town for review and approval as condition subsequent to the extent necessary.

11. The Applicant has implied the project will create "biogas" as a result of the proposed industrial processing and the "biogas" will be injected into the local natural gas network, but the plans do not include any details or information relative to this process. This would appear to be a potentially hazardous/explosive process that is absent from the submission and appears to need critical review by the Fire Department and gas utility provider. In addition, it is unknown if the injection into the local gas network has been approved by the gas provider. Does such action require regulatory approval by the Public Utilities Commission? If the injection to the gas network is not allowed, what is to happen with the "biogas" that is produced?. We recommend the Applicant provide additional information relative to the proposed processes at the site and how this material will leave the site as implied including all agreements and any applicable regulatory approvals.

    These elements are expected to be finalized and reviewed during the building permit stage of the project in addition to being reviewed by the Authorities Having Jurisdiction over these elements; NHDES Hazardous Waste Bureau, Liberty Utilities, Town of Londonderry Fire Department, etc. The project Team is coordination appropriately with the above regulatory agencies/departments and will provide a thorough presentation to the Planning Board and Staff to address the processes involved to the Town's satisfaction. Approvals and necessary permits from governmental and municipal agencies are identified on the cover sheet in accordance with section 4.13 and final copies will be provided for the Town's records as required.

12. The project application does not address the separate subdivision that creates the subject lot that is not lot 39 and is not located at 162 Litchfield Road as stated on the plans and application. Please update the plans and application accordingly to properly represent the subject lot, subject lot number and address.

    The plans have been updated based on the feedback of the assessing office to identify the site at 25 North Wentworth Avenue, Tax Map 14, Lot 39-2.

13. The Applicant's design does not comply with or provide the minimum parking spaces of 64 spaces per section 3.09.d.9 and Table B of the Site Plan Regulations. The Applicant indicates 23 parking spaces are to be provided. We recommend the Applicant arrange a meeting with the Planning Department, Zoning Officer and Department of Engineering and Environmental Services relative to the required parking for the project. Please update the design in compliance with the regulations and as acceptable to the Town.

    A waiver to provide an alternate parking calculation meeting an appropriate industry standard (ITE parking generation) was submitted as noted on the plans. A meeting was held with the Department of Engineering and Environmental Services and Planning Department on December 17th.

14. The Applicant did not provide copies of any proposed easement deeds, protective covenants, agreements, or other legal documents as required by section 4.18. of the regulations and item II.5 of the Checklist. We recommend the Applicant provide copies for review by the Town in the next project submission.

    Through consultation with the Town Manager and Office of the DPW, a private easement will be requested for the limited private utility to be located within North Wentworth Ave where the sewer forcemain crosses into the Stonyfield lot. Conveyance of rights from the Town to the applicant will also be required to provide appropriate access to the applicant. The form of the conveyance is to be determined and will be coordinated with the Town Manager and Town Council to the Town's satisfaction. The plans have been noted accordingly.

15. We recommend the Applicant address the following on the **Cover Sheet and Notes:**

    a. Please revise Planning Board signature block on the cover sheet to comply with section 4.03 of the regulations. Please update the plan set accordingly.

       The new planning board signature block has replaced the prior one throughout the revised plans.

    b. Please update the Fire Department contact on the cover sheet.

       Phil Leblanc, the Acting Chief has been noted on the cover sheet.

    c. General note 17 appears to be incomplete in the second column. Please review and update.

       The indexing of note 17 has been corrected on the revised plan.

    d. Utility note 9 does not include the Town of Londonderry. Please review and update as acceptable to the Town.

       Utility note 9 has been updated to include the Town of Londonderry.

    e. Utility note 10 states the Town of Londonderry is a water supplier which is incorrect. Please review and update this note and utility note 17 accordingly.

       Waster service shall be in accordance with the Manchester Water Works details and standards and is noted as such.

f. The grading and drainage notes 1, 16 and 17 do not include the Town of Londonderry. Please review and update as acceptable to the Town.

The Town of Londonderry has been included in the above listed notes.

g. We recommend the site preparation notes include the standard notes required by the Fire Department for access.

Note 1 states that emergency services (Police/Fire Department) shall have access to the site for the duration of construction.

16. We recommend the Applicant address the following on the **Existing Conditions Plan:**

a. The plans do not provide the proper certification for the indicated survey per section 4.12.b of the regulations and item V.1 of the checklist. Please update the plans accordingly.

The certification statement has been updated to note and verify that the error of closure is 1:10,000 per the above cited regulation.

b. Please provide proper monuments along the property boundary that are missing per sections 3.02.a and 4.12.c.4 of the regulations and item V.3 of the checklist. Please update all sheets accordingly.

Monuments "to be set" have been indicated where missing consistent with the regulations.

c. Please indicate and label the existing septic system serving the dwelling on the plans per section 4.12.c.19 of the regulations and item V.15 of the checklist.

The existing septic system serving the dwelling on the plans has been added, see area labeled "E.D.A" next to the existing residential structure.

d. Please indicate the existing overhead wires serving the existing dwelling on the plans per section 4.12.c.22 of the regulations and item V.18 of the checklist.

Overhead electrical service has been shown on the plans for the existing dwelling.

e. Please clarify/explain why there is a Project Owner signature block for the Stonyfield existing conditions plan on sheet S9 and not a signature from Stonyfield.

Sheet S9 has been removed from the plan set as it was determined unnecessary in the December 17th review meeting.

f. The plans do not indicate the trees greater than 15" in diameter and species per section 4.12.c.19.viii of the regulations. Please update the plans accordingly.

A waiver has been requested as it would not be practical or beneficial to locate and identify species of trees greater than 15" in diameter.

17. We recommend the Applicant provide a note on the site preparation and demolition plan" stating that the edge of the Conservation Overlay District and Non-Disturbance (No-cut) Zones shall be appropriately delineated in the field prior to construction per section 4.14.23 of the Regulations and section VI.1.2.w of the checklist.

Such a note has been added to the plan (see note 6 on sheet C-4).

18. We recommend the Applicant clarify/address the following on the **Overall Site Plan, Site Grading Plan, Site Utility Plan, Site Layout Plan, and Erosion Control Plans:**

a. We recommend the Applicant clarify/address the following on the Overall (Master) Site Plan:

1. Please clarify the days of operation in note 4 on sheet C-05.

   Clarification has been provided with this note on the revised plans to specify that the offices are operated 7am-4pm, the facility runs 24/7 year round with exceptions for maintenance.

2. Please clarify the proposed lot area in note 5 that is inconsistent with the existing conditions plan.

   Note 5 reflects the lot area proposed after finalization and record of the proposed subdivision.

3. Please update the plan to include/address all items noted under section 4.04 of the regulations.

   The Site Plan Sheet has been updated to address the applicable criteria of Section 4.04, noting several items (bicycle parking, outdoor storage) are note applicable as none is proposed.

4. Please update the plan to include/address all notes per section 4.11 of the regulations.

   The plans have been updated to address the information required by Section 4.11. These items are addressed within the plans on the Cover Sheet, Overall Site Plan, Site Layout Plan, Grading and Drainage Plan, etc., as applicable to the scope shown on the plan for clarity and readability.

5. Please review and update the abutters that appear inconsistent with the existing conditions plan.

   The abutters list and existing conditions plan have been reconciled.

b. The site layout plan (C-06) indicates the site would be developed in phases, but the overall site plan (C-05) and the other development plans does not clarify the limits of work under the proposed phases. Please clarify accordingly.

   The intent of the site plans is to show the full buildout of the facility as depicted on sheets C-05. Sheet C-06 provided linework that shows the potential phased condition reflected on sheet PH-2 which excludes the future tribid-bio-reactors. The phases of construction to accomplish the full site construction is shown on sheet PH-1 as required by the Alteration of Terrain Bureau given the anticipated open area of each phase. An interim phase that does not include the future tribid-bio-reactors is demonstrated on sheet PH-1.

c. The plans indicate sidewalk widths of 5 feet adjacent to the buildings that do not meet the minimum width of 7 feet adjacent to buildings per section 3.08.c.2.v of the Site Plan Regulations. We recommend the Applicant update the project design to dimension and provide the minimum sidewalk widths in compliance with the Town's standard detail and regulations.

   All proposed striping where proposed around the buildings for pedestrian use has been revised to be 7' in width.

d. The site plan labels several site specific features such as Tribrid- Bioreactor, FET, 15,000 gallon tanks, enclosed flare, etc., but plans and details of these site features are absent from the submission. It is unclear what the height is for these features at the project site which is located near the Manchester Airport. In addition, it is unknown how the features are related/connected to the processing systems and how the separate buildings are connected by the processing systems. Please review and provide additional plans and details to clarify each proposed feature and the

interconnections, as well as heights to document any impacts to the flight zones of the Airport and as required for FAA permitting.

These elements are expected to be finalized and reviewed during the building permit stage of the project in addition to being reviewed by the Authorities Having Jurisdiction over these elements; FAA, NHDES Hazardous Waste Bureau, Liberty Utilities, Town of Londonderry Fire Department, etc. The project Team is coordination appropriately with the above regulatory agencies/departments and will provide a thorough presentation to the Planning Board and Staff to address the processes involved to the Town's satisfaction.

e. The plans identify a Hydrogen Sulfide Media area that would appear to be a hazardous materials concern and likely requires review by the Fire Department. We note this location is in proximity to the noted interconnection facility that is shown with several boxes, circles and squares, but no other information. We recommend the Applicant provide additional detailed information relative to the proposed processes at the site. In addition, please provide supporting information so the Fire Department is aware of the proposed Hydrogen Sulfide Media area.

Similar to comment (d) above, these elements are expected to be finalized and reviewed during the building permit stage of the project in addition to being reviewed by the Authorities Having Jurisdiction over these elements; FAA, NHDES Hazardous Waste Bureau, Liberty Utilities, Town of Londonderry Fire Department, etc. The project Team is coordination appropriately with the above regulatory agencies/departments and will provide a thorough presentation to the Planning Board and Staff to address the processes involved to the Town's satisfaction

f. The Applicant has not indicated or addressed outside storage in the application or on the plans. We note the site plan does indicates dumpsters/compactors and a separate biosolids storage bin are proposed that is considered outside storage. We recommend the Applicant clarify if any additional outside storage is proposed for this project. If so, then compliance per section 4.3.2.B of the Zoning Ordinance should be demonstrated.

The items identified in the above comment are not defined as outdoor storage by the Zoning Ordinance which will be reviewed and confirmed by the Town Code Enforcement officer and addressed to the satisfaction of the Town. No outside storage is proposed and the industrial systems are self contained enclosed systems. Please note section 4.3.2.B of the Zoning Ordinance relates to commercial zoned properties, whereas the subject site is zoned industrial.

g. Will the biosolids storage bin be exposed to the air and be an odor nuisance or an attraction for birds?

This is a closed component of the process and will adhere to the applicable regulations.

h. The existing conditions plan indicates an existing stone wall is located in the development area. Please clarify the location of the reset wall or walls as typically requested by the Heritage Commission.

The project received unanimous support from the Heritage Commission and as recommended by the Commission to the Planning Board we will reclaim stones from the stone walls to be removed, with the stones placed at the limits of work to the extent practical.

i. We recommend the Applicant verify the fire hydrant and service locations to the buildings with the Londonderry Fire Department per item VI.1.2.d.2 of the checklist. Please update the plans acceptable to the Fire Department.

Per DRC comments received by the Fire Department, a fire hydrant shall be located within 100 feet of the fire department connection (FDC) on both buildings and General-purpose hydrants shall be spaces every 500 feet. hydrants have been located. A concurrent resubmittal has been made to the Fire Department for their review, and we will notify the Planning Staff once approval is received.

j. Please label the number of stories for the proposed buildings on the site plan as typically requested by the Town. In addition, please clarify the dimension along the southwesterly side of the depackaging building that is obscured by text.

These dimensions have been added to the revised plans.

k. Please review the northerly gravel access drive from the parking lot that does not appear correct and clarify/label what type of curb is located at the pavement/gravel drive interface for proper construction.

There is only one type of curb proposed at the development, sloped bituminous curb/sloped asphalt curb. The conflict between the parking and the maintenance drive has been addressed in the revised layout plan.

l. The driveway design indicates the proposed site curbing extending into the existing cul- se sac right of way that is typically not allowed by the Department of Engineering and Environmental Services. Please remove the curb in the right of way, review the design with the Department, and update as acceptable to the Department.

The driveway design incorporates curbing to the extend necessary to meet the Town requirements to provide appropriate stormwater management/treatment of the development including the proposed driveway.

m. The proposed detention basin 1 embankment width appears to be 2 feet wide and is less than the 6 feet wide per the outlet structure detail on sheet D-22. Please revise the grading design to comply with the minimum embankment width shown in the outlet structure detail.

In a limited area at the emergency overflow spillway associated with filtration Basin #1, the "embankment" has been widened to 6'. The design as presented is now consistent with Exhibit D108 - Typical Outlet Structure at Detention Bains as required by the Town of Londonderry.

n. The proposed embankment grading along the northerly side of the site to the property line and the embankment grading along the southerly side of the pavement and gravel driveway above the detention basins shown on sheet C-07 does not provide a proper 3H:1V embankment in accordance with the regulations. We recommend the grading design be revised to 3H:1V in all locations on the site as typically requested by the Town. In addition, we recommend additional proposed contour labels be provided. It is our understanding that the Town requests slopes steeper than 3H:1V, when allowed, to be riprap. Please revise as acceptable to the Department of Engineering and Environmental Services.

The limited locations of 2H:1V slope are appropriate for their intended use and are not contrary to the Site Plan Regulations. The applicant has reviewed with the Department of Engineering and Environmental Services and additional notation for proper compaction of

these slopes has been added to the plan for proper construction. See note 23 on sheet C-03 and Note 21 on sheet D-23.

o. The westerly high embankment slope shown on sheet C-07 is noted to include a 6:1 backslope, but it is unclear how this backslope would collect and drain the 20 foot uphill embankment draining to it. We note the plans do not include a detail for construction and the stormwater analysis does not address this issue. Please review and revise the design to address this and update the details and stormwater report accordingly.

This area of fill has been reviewed with NHDES and the bench has been removed from the design as it is not required.

p. Please revise the maintenance access for Basin 1 shown on sheet C-07 to extend to the forebay area near the inlet for maintenance. In addition, please review and demonstrate the indicated access drives to the basins are appropriately located to access and maintain the outlet structures as acceptable to the Department of Engineering and Environmental Services and update as necessary.

The maintenance drive at filtration basin #1 has been extended towards the forebay and minor grading revisions incorporated to provide improved access to outlet structure.

q. The stormwater analysis indicates the entirety of the process building roof entering CB28 located 110 feet from the building, but the drainage plan does not indicate any connection to the building. The analysis also indicates the depackaging building directly discharging to the stormwater system, but no connection is indicated. Please review and revise the drainage design to include all stormwater features consistent with the submitted analysis.

A new DMH and pipe have been provided for clarity of the connection. There will be a 15" HDPE connector pipe from the vertical roof drain of the building which routes the flow to the new DMH and then filtration basin 1.

r. It is unclear how maintenance of the outlet pipes and headwalls from the basins will occur. Please review and update to demonstrate how access for maintenance of the basin outlets will occur as acceptable to the Department of Engineering and Environmental Services.

The outlet pipes and associated headwalls can be reached by a crane from the adjacent gravel maintenance road or will otherwise be maintained by maintenance personnel with hand tools with access from the 12' maintenance drives.

s. A cursory review of the drainage structure table indicates several of the structures do not have the proper rim elevations (CB18 rim=298.57 with the proposed grade shown at 295.) or proper inverts (CB 4 and CB5 note – 4.39 and -4.25 respectfully) and some CBs with no sumps, and thus appears incomplete. We recommend the Applicant review and revise the table to be complete and representative of the design.

The table has been updated and revised to be consistent with the design.

t. The utility plan indicates two industrial wastewater tanks are proposed as being points of compliance. Please review and verify the locations are appropriately accessible and acceptable to the Sewer Division.

The utility plan designs will comply with the Sewer Division as required.

u. The text shown at the easterly property line near the access drive is overlapping and illegible. Please update to be legible. In addition, please label the size and type of proposed gas line to serve the development on the utility plan.

This text conflict has been revised for clarity. The label has been updated to include size and material information, however final design will be completed by the utility provider.

v. The plans note a "feedstock" force main by others is proposed to serve the site, but the proposed sewer and water line profiles do not include/address this proposed pipeline including the size, pipe material, etc. per section 4.14.b.2.ii of the regulations and item VI2.b.2 of the checklist. In addition, it is unknown if this proposed force main conflicts with the stormwater design. Please review and revise to provide the required information and address all force main pipe crossings accordingly.

As noted, the feedstock line is shown for coordination purposes and will be an offsite improvement conducted by others but coordinated with the site plans for proper construction.

w. The driveway (roadway) plan and profile does not indicate the proposed gas line to the site and may conflict with CB5. The profile also does not indicate the proposed waterline, both proposed sewer force mains, or underdrains, or show the entire stormwater system as required by the regulations. In addition, the overhead wires are absent and a stop sign and stop bar are missing at the driveway. Please update accordingly.

The additional utility lines have been added to the driveway profile. No underdrains for the driveway are proposed.

x. We recommend the driveway culvert pipe be concrete due to the location adjacent to the conservation area and consistent with NHF&G recommendations.

A 48" RCP infilled with natural streambed material has been provided instead of the HDPE. Please see the updated plan, details and stormwater report. For the record, the design was reviewed and approved by NHF&G with the HDPE.

y. Please label the pavement radii on the driveway plans per section 4.16.C.1.xiii of the Subdivision Regulations. In addition, please review and update the plan to include all items noted in section 4.16.c of the Subdivision Regulations.

Pavement radii have been added. The items necessary for construction of the driveway have been shown, noting the above regulation citation would be for a roadway, which is not proposed (site driveway proposed).

z. Please indicate and label the limits of sawcut associated with the proposed utility connections on the driveway and force main profile sheets. In addition, please indicate the limits of clearing associated with the sewer force main. We note that some of the sewer force main information appears incomplete since the pipe extends beyond the plan view and profile. Also, please verify the north arrow orientation on the sewer force main. Please update to provide complete information.

These sawcut limits are now shown in North Wentworth Avenue. This plan only shows the limits of the sewer force main. The feedstock force main is shown for coordination purposes only and will be addressed by separate off-site plans.

aa. The force main plan notes a portion of the construction will include directional drilling, but the details for the directional drill were absent from the submission. Please update accordingly.

Means and methods of the directional drilling will be at the contractors discretion. The note is provided so it is understood an open trench at this location is not the intent of the plan.

19. We recommend the Applicant clarify/address the following on the **Construction Details:**

    a. The typical driveway (roadway) section does not indicate the proper embankment slopes per exhibit D5 of the Subdivision Regulations for the work on the roadway. Please update the detail and design accordingly.

       A driveway is proposed vs. a roadway, the above regulation does not apply.

    b. Please provide a construction detail for the following items noted on the site/grading plans:

       - Interconnection facility
       - Scale
       - Biosolids storage bin
       - 15,000 gallon tanks
       - Tribrid-bioreactor
       - FET
       - Biogas upgrading yard
       - 12' gravel drive
       - Biogas water KO
       - Enclosed flare
       - H2S media laydown area
       - 6:1 backslope bench

       Items applicable to the site plan regulations (20' gravel drive12' drainage maintenance drive, for example) have been provided on sheet D--3. The remaining items are part of the industrial process and will be reviewed once finalized in coordination with the building permit application.

    c. Please update the retaining wall detail on sheet D-04 to indicate and dimension the location of the proposed guardrail and proposed curb for proper construction.

       No retaining wall/guardrail combination is proposed.

    d. Please update the internal drop sewer manhole detail to be the current design with an inside drop bowl meeting approval of the Sewer Division.

       The detail in the plan set has historically met the approval of the sewer division and is currently being coordinated with that entity. The plans will be updated to incorporate sewer divisions review comments.

    e. The industrial tank detail makes reference to the Massachusetts DEP standards that do not apply. Please revise to provide proper specifications meeting approval of the Sewer Division.

       This is a standard reference from the manufacturer but has been removed for clarity.

    f. The pump chamber detail on sheet D-15 appears incomplete since there are no pumps and the rectangular structure does not match the detail on sheet C-16. Please review and revise as necessary meeting approval of the Sewer Division.

       The design shall be reviewed by the Sewer Division and revised if necessary.

    g. We understand the sewer design and details will be reviewed by the Sewer Division and recommend the Applicant coordinate the review with the Sewer Division. Please update acceptable to the Sewer Division.

Agreed.

h. Please review and revise the outlet structure detail to properly indicate the location of "B", "C", and "D" in the plan view. In addition please correct J for detention basin 1.

Minor adjustments have been made for clarity on "B", "C", and "D". The table has been revised to reflect the updated design from all other comments.

20. We recommend the Applicant address the following relative to the **Project Drainage Analysis:**

a. The report does not properly identify all the abutters to the project in the narrative or the impacts to all abutting lots (i.e. lots 47, 44-38 & 44-13) or the roadway as required per section 3.07.b.3 of the regulations and item Xi.2.c of the checklist. Please provide a summary table in the report narrative that indicates the pre- and post-development impacts to each abutting lot and the roadway, and indicates no increase in runoff in accordance with the regulations is achieved as typically required by the Town.

All abutters regardless of contributing flow to the analysis are now listed in the project drainage analysis noting lot 014-044-13 (Stonyfield lot) is associated with offsite improvements and not the subject of this analysis.

b. It is unclear that the Applicant has assessed the impacts for the off-site sewer connection or the separate off-site sewer service connection from Stonyfield under this project. Please review and provide additional supporting information to substantiate the existing conditions assumptions of the analysis are complete and representative of the proposed project impacts. Please update the post development analysis as applicable and clarify compliance is achieved – no increase in runoff.

The land coefficient changes within the area of development including the installation of the site driveway within the Town right-of-way and the installation of the sewer force main up to the North Wentworth Ave cul-de-sac have been identified in the pre/post development analysis. The offsite portion of the sewer forcemain beyond the cul-de-sacappears to be in a grass area based on aerial imagery, whereby no change in runoff would be anticipated by the trenching for the utility (no tree removal). Should tree removal be required, we would expect this to be addressed as part of the offsite design provided by others.

c. It is unclear if the existing conditions approach has properly address the upstream flow relative to subcatchment ES3 since the upstream flow would have to pass through the subcatchment (and not bypass it) to reach lot 44. We recommend the Applicant clarify the upstream flow contributing to the Town's existing unimproved roadway. Please provide additional information to support the analysis approach is representative of the existing conditions flow contributing to the Town's existing unimproved roadway and the proposed site development under this project.

The site plan and model include the Town's right of way in its scope. Please refer to offsite link that is modeled in the pre model, this link is data directly from USGS stream stats for this wetland section. A reach has been added to the pre-development model to not "bypass" the right of way.

An updated cross culvert has been provided in the post development. The culver is a 48" RCP with a naturalized bottom to better provide hydraulic connectivity and lessen its environmental impact.

d. The predevelopment Tc for subcatchment ES2 does not begin at the highest point consistent with subcatchment ES1 or the post development analysis to provide a proper evaluation of the downstream impacts. Please revise the Tc in the ES2 predevelopment calculations according and demonstrate compliance is achieved – no increase in runoff.

The highest elevation of a subcatchment is not a dependent variable of time of concentration. The dependent variable is the location that produces the longest hydraulic time. As currently shown ES2 Tc produces the longest time of concentration.

e. The submitted pre-development and post-development drainage plans do not include the areas of each subcatchment per section 3.07.b.7 and 8 or identify the abutters to the project. Please update the plans accordingly.

The maps have been updated with area tables. The abutters labels are now shown in the revised submission.

f. The calculations include post subcatchment FB2, but the plans do not indicate a subcatchment with the label. Please review and revise the analysis to be consistent with the post development plan subcatchment labels.

A label has been provided on the revised drainage map for clarity. FB2 is filtration basin 2.

g. Please clarify how post subcatchment PS1 (depackaging building) directly contributes to the trench drain CB TD1 and demonstrate the connection is adequately sized for the indicated 25-year design flow.

The roof will drip onto the asphalt that is tributary to the trench drain. The two subcatchments have been revised to show the portions of the roof that drain to the trench drain and CB13. The model now accurately reflects the design and is consistent with how the rest of the asphalt is modeled.

h. Please clarify how post subcatchment PS15 (process building) directly contributes to the trench drain CB28 and demonstrate the connection is adequately sized for the indicated 25-year design flow.

A new pipe and DMH have been added for clarity. The roof drain collection will be piped via a 15” HDPE pipe to the new DMH (DMH RD) and then connected to CB26. The design and model have been updated to reflect this clarification.

i. Please update the post subcatchment PS21 calculations to include the riprap and retaining walls and demonstrate compliance is achieved – no increase in runoff. In addition, please update the subcatchment PS3 calculations to include the retaining walls.

The footprints of the headwall have been added to the calculations per the above comment. Riprap provides adequate void space between the stone such that it would not be considered impervious.

j. Please revise the post subcatchment PS5 calculations to include the gravel surface noted in the predevelopment calculations for ES2 and demonstrate compliance is achieved – no increase in runoff.

The offsite gravel surfaces are entirely within one subcatchtment (ES2) in the development model but are split into two subcatchements (PS5 and PS4) in the post development model. The same total gravel offsite area is modeled in both the pre and the post model.

k. Please revise the post subcatchment PSP2 calculations to include the riprap and pond conditions and demonstrate compliance is achieved – no increase in runoff.

The footprints of the headwall have been added to the calculations per the above comment. Riprap provides adequate void space between the stone such that it would not be considered impervious.

l. Please review and provide additional information to demonstrate post subcatchments PST11, PST13, PST6, PST7, and PST9 have properly accounted for the proposed building/structure roofs and impervious areas that appear to be more than indicated in the calculations and update accordingly.

Please note that due to the increase in the maintenance drive that all the above subcatchement areas were revised, reevaluated, and recalculated in the revised post model.

m. We recommend CB4 and CB8A be double grate catch basins. Please update the plans accordingly.

CB4 receives 3.33 CFS in the 25-Year storm event and CB8A receives 2.16 CFs in that same storm event. Both structures have been redesigned with double grates and a 5' diameter structure to accommodate. Please note that CB13 has also been designed with a double grate.

n. Please revise the Tc for post subcatchment PS33 and PS34 to be the same as the predevelopment Tc for ES3 and demonstrate compliance is achieved – no increase in runoff.

Please see that Tc for the above subcatchments have been set to 6 minutes per the above comment.

o. The post development analysis includes infiltration at the detention basins but the analysis does not include calculations to demonstrate the designs have addressed frozen ground conditions (no infiltration) per the stormwater system design and management standards of the Londonderry Stormwater Regulations. Please update the calculations accordingly and demonstrate compliance is achieved – no increase in runoff.

The stormwater basins (filtration basins) are designed in accordance with the Town of Londonderry DPW & Engineering Stormwater Regulations. Specific to Section 6.B, which includes design guidelines, the stormwater treatment practices and measures have been appropriately selected and designed in accordance with the listed specifications which include but are not limited to; the NH Stormwater Manuel and NHDES Alteration of Terrain rules (RSA 485-A:17). Additional reporting during the 50-year storm event for each filtration basin has been included in the stormwater report to account for frozen ground conditions when the devices may not function at their optimal design per Section 6.B.1.A(3). The basins function as intended with no overtopping of the emergency spillway or basin berm. As previously determined by the Planning Board via actions under separate applications, the stormwater management areas are designed to the appropriate state standards (as referenced in the Town regulations), and although a more conservative approach is to exclude infiltration, the Town regulations do not stipulate this as a requirement in calculating stormwater runoff totals.

p. The Pond OS3 calculations indicate an infiltration rate that exceeds the NHDES standards of a maximum of 10in/hour. The calculations shall be revised accordingly.

This detention basin has been revised to include a limiting (clay) liner. Infiltration has

been removed from the analysis of this basin.

q. The pond routing analysis for FB#1 and OS3 indicates top grates smaller than the standard Town of Londonderry outlet structure and the detail provided in the plan set. In addition, the top grate in the calculations for FB2 indicates a grate larger than the detail. Please review and revise the calculations to be consistent and representative of the design presented in the plans and as required by the regulations, demonstrate compliance is achieved – no increase in runoff.

The grate modeling for all basins has been revised to be consistent with the Town detail & NHF&G comments. The outlet control structure "rim" is a square concrete rim.

r. The grading design indicates a swale is proposed below the southwesterly gravel drive that flows to CB16. In addition, the grading design indicates a swale along the southerly side of the maintenance drive to filtration basin 2, but a swale summary table per section 3.07.b.5 of the regulations and item XI.2.e of the checklist was missing from the report. Please update the report accordingly.

Two new reaches have been added to the post map and model to describe the swales. The swales have been modeled in hydrocad. The hydrocad output was used to create the updated swale summary table in Part 6 of the revised stormwater report.

s. The report includes an Inspection and Maintenance (I&M) manual for the stormwater management systems. We recommend the Applicant update the I&M Plan to include and address the following:

1. The proposed design includes swales draining to CB16 and a separate swale to basin 2, but the I&M is absent of identifying these features. Please provide inspection and maintenance for the swales. Please update the I&M document and checklist accordingly. The information in the plan set shall also be updated.

   The swales have now been included in the revised I&M plan, please see revised part 8 of the report.

2. The I&M does not address the long and steep westerly embankments or the 6:1 backslope/swale that may not be part of the lawn area. Please update the I&M document and checklist accordingly. The information in the plan set shall also be updated.

   The 6:1 back slope has been removed from the design. The I&M now encompasses all site features to be maintained by the operator.

3. The access driveway (North Wentworth Avenue) is not addressed in the I&M document or checklist. Please update as acceptable to the Department of Engineering and Environmental Services. The information in the plan set shall also be updated.

   This item has been added to the I&M plan.

4. Please correct the checklist that includes two detention basin 1 (#7 and #9).

   Basins #7 and #9 have been removed from the list.

5. The reporting of the amount of salt usage on an annual basis to NHDES under the Salt Minimization Plan and De-icing Log should be stated in the document and noted on the maintenance report form consistent with the Town's Stormwater Ordinance. In addition, please provide a plan showing the proposed snow storage locations in the I&M. Please update the plan set information accordingly.

Please see the updated note on the de-icing log that instructs operators to report icing and supplies the resources on where to submit this information.

21. We recommend the Applicant address the following relative to the submitted **SWPPP:**

    a. Section 1.2 has not identified a site contractor. Please update the document accordingly
    A revised SWPPP binder has been supplied stating the site contractor. The site contractor is Baumer Construction Inc.

    b. The location of the stockpiled sediment or soil per 4.4 of the document and part 2.2.5 of the CGP are not indicated on the plans in Attachment A. Please update accordingly.
    Please find the addition of the action construction plan depicting the above information.

    c. The document does not address the use of temporary sediment basins per section 2.1.12 of the CGP. Please indicate the locations and update the plan set accordingly.
    Please find the addition of the action construction plan depicting the above information.

    d. Location of specific dewatering practices to be implemented per section 4.11 of the document and part 2.4 of the CGP should be identified on the plans. Please update accordingly.
    Please find the addition of the action construction plan depicting the above information.

    e. The location of the laydown area and site staging needed for the project do not appear to be indicated on the plans. Please update accordingly.
    Please find the addition of the action construction plan depicting the above information.

    f. Please indicate and label the location of the vehicle maintenance and refueling area on the plans per Section 5.3 of the document and as required section 2.3.1 of the CGP.
    Please find the addition of the action construction plan depicting the above information.

    g. Please indicate and label the location of the equipment and vehicle washing area on the plans as required by section 2.3.2 of the CGP.
    Please find the addition of the action construction plan depicting the above information.

    h. Please indicate and label the location of the waste management area on the plans per as required per CGP section 2.3.
    Please find the addition of the action construction plan depicting the above information.

    i. Please indicate and label the location of the hazardous materials storage area on the plans as required per CGP section 2.3.3
    Please find the addition of the action construction plan depicting the above information.

    j. Please indicate and label the location of the sanitary wastes (portable toilets) on the plans as required per CGP 2.3.3.f
    Please find the addition of the action construction plan depicting the above information.

    k. Please indicate and label the location of the washout, cleanout area on the plans as required per CGP 2.3.4.
    Please find the addition of the action construction plan depicting the above information.

    l. The stormwater team and certification per sections 6.1 and 7 of the document and parts 6.1 and 7.2.2 of the CGP indicating the inspector has the necessary training and is a "qualified person" in

accordance with CGP are absent. Please update the document accordingly.
This information shall be provided in the document and to the Londonderry Department of Engineering and Environmental Services when the eNOI is certified and active.

m. The signatures for the certification under section 8 and Appendix G of the document were absent. Please update accordingly.
This information shall be provided in the document and to the Londonderry Department of Engineering and Environmental Services when the eNOI is certified and active.

n. An NOI application approval from EPA under Appendix C of the document was missing. Please update accordingly.
This information shall be provided in the document and to the Londonderry Department of Engineering and Environmental Services when the eNOI is certified and active.

o. The SWPPP submission appears to only address the approved site plan work upon the subject parcel. The off-site utility construction for the sewer force main from Stonyfield to serve the site was not included in the SWPPP. Please clarify/document how the site will obtain the necessary sewer service to become operational under the approved site plan and this SWPPP and/or another SWPPP.

p. A condition of the Londonderry Stormwater Permit will be the SWPPP reports shall be provided via e-mail to the Town at the same time they are provided to the Contractor and Owner.
Comment noted the applicant is eager to adhere to all conditions of the approvals.

Summary:

We recommend the Applicant arrange a meeting with the Department of Engineering & Environmental Services and Planning Department before addressing the issues noted above. After the meeting, we recommend the Applicant address the comments and issues noted above and resubmit revised drawings and supporting information. We recommend the Applicant provide a summary response letter with the revised drawings and supporting information addressing each comment noted above as required by the regulations. We understand that the project has not been scheduled for a Planning Board meeting at this time.

A meeting was held with the Department of Engineering and Environmental Services and Planning Department on December 17th with a follow-up meeting held with the Town Manager and Department of Public Works on December 22nd.

Sincerely,
TFMoran, Inc.

Jonathan Devine, EIT

LONDONDERRY PLANNING BOARD

SITE PLAN APPLICATION & CHECKLIST

Planning Department Date Stamp

❑ **Design Review** ☒ **Formal Application**

All information provided and submitted with this Application Checklist shall conform to the Londonderry Site Plan Regulations. ***Please note that the Planning Board may not accept and consider the application complete if the required items as outlined in the checklist are missing from the submittal.***

❑ Site Plan Amendment

I. General Information:

A. Project Name: Southern New Hampshire Green Energy Campus — 14 *(Map)* 39-2 *(Lot)*

B. Project Location: 25 N. Wentworth Ave. — Zone: GB

C. Primary Contact: Nicholas Golon, P.E. — Phone: (603) 472-4488

❑ Applicant ❑ Owner ☒ Engineer/Surveyor — E-Mail: ngolon@tfmoran.com

D. Applicant's Name: PurposeEnergy-Londonderry, LLC

Address: PO Box 4345 City: Windham State: NH Zip: 03087

Phone: (617) 202-9156 Fax: E-Mail: ONeill@purposeenergy.com

Applicant Signature: [signature] Date: 6/10/25

E. Owner's Name: Codner Nicholas F Trust 2012

Address: 162 Litchfield Road City: Londonderry State: NH Zip: 03053

Phone: (603) 432-1100 ext.161 Fax: E-Mail: ncodner@londonderrynh.org

Owner's Signature: [signature] (Agent) Date: 6/10/25

. F. Engineer/Surveyor (Firm Name): TFMoran, Inc.

Address: 48 Constitution Drive City: Bedford State: NH Zip: 03110

Phone: (603) 472-4488 Fax: E-Mail: ngolon@tfmoran.com

1) Name of Licensed Land Surveyor: Michael Dahlberg, LLS - TFMoran, Inc.

Signature: [signature]

2) Name of Licensed Professional Engineer: Nicholas Golan, P.E. - TFMoran, Inc.

Signature: [signature]

3) Name of Certified Soil Scientist: Bruce Gilday, CSS - BAG Land Consultants

4) Name of Certified Wetland Scientist: Christopher Danforth, CWS - TFMoran, Inc.

5) Name of Licensed Traffic Engineer: Robert Duval, P.E. - TFMoran, Inc.

G. Lot Area (SF) 15.31 ac Existing Building Footprint (SF): 0 sf Proposed Addition (SF) 106,702sf +/-

☐ Change or ☒ Additional Use(s): Organic Waste Processing Facility

Site Plan Application Checklist

☒ Additional Pavement (SF): 119,209 sf +/- ☐ Other Modification: _____

II. General Requirements (All Applications):

		Provided	N/A
1.	Executed Site Plan Application Form	☒	
2.	Complete Abutters list, 3 sets mailing labels	☒	
3.	Application Fees	☒	
4.	Four (4) sets of plans and electronic "PDF" plans (See #11)	☒	
5.	Copies of proposed easement deeds, protective covenants or other legal documents	☒	☐ pending
6.	Waiver request(s) with justifications	☒	☐
7.	Technical reports and supporting documents (Drainage report, Traffic Study, etc.)	☒	☐ traffic study pending under separate submittal
8.	Completed Site Plan Application Checklist	☒	
9..	Escrow Agreement and Fees	☒	☐
10..	Conditional Use Permit request(s) with justifications per Zoning	☒	☐
11.	Response Letter to DRC Review and 2 highlighted plans (Plans may substitute for 2 sets required in #4 above)	☒	☐

III. General Plan Information (All Plans):

		Provided	N/A
1.	Size and presentation of sheet(s) per requirements of the site plan regulations	☒	
2.	Title block information:		
	a. Drawing title	☒	
	b. Name of site plan	☒	
	c. Location of site plan	☒	
	d. Tax map & lot #s of subject parcel(s)	☒	
	e. Name & address of owner(s)	☒	
	f. Date of plan	☒	
	g. Scale of plan	☒	
	h. Sheet number	☒	
	i. Name, address, & telephone number of design firm	☒	
	j. Name and address of Applicant	☒	
3.	Revision block	☒	
4.	Planning Board approval block provided on appropriate sheets (Cover sheet, site plan, landscape plan only)	☒	
5.	Certification block (for engineer, surveyor, soil scientist, or wetland scientist)	☒	
6.	Match lines (if any)	☒	☐

Site Plan Application Checklist

IV. **Master Site Plan Sheet**: (Applicant may provide separate Title Sheet)

			Provided	N/A
1.		The following notes shall be provided:		
	a.	Purpose of plan	☒	
	b.	Tax map and lot #s of all subject parcels	☒	
	c.	Area (existing & proposed) of subject parcel(s)	☒	
	d.	Zoning designation of subject parcel(s)	☒	
	e.	Min. lot area, frontages & setback dimensions	☒	
	f.	Existing and proposed uses	☒	
	g.	Parking calculations, as outlined in the Regulations	☒	
	h.	% green area, as outlined in the Zoning Ordinance	☒	
	i.	% building coverage, as outlined in the Zoning Ordinance	☒	
	j.	Sanitary sewer source (name of provider company if offsite)	☒	
	k.	Water supply source (name of provider company if offsite)	☒	
	l.	Zoning variances/special exceptions with conditions	❑	☒
	m.	List FEMA sheet(s) used to identify 100-year flood elevation. (Note if no flood zone present as applicable)	☒	
	n.	List of required permits and permit approval numbers	☒	❑
	o.	List of Planning Board waivers and Conditional Use Permits with Regulation or Ordinance section reference (if applicable)	☒	❑
	p.	Note identifying which plans are on file at the Town	☒	❑
	q.	Note the following: "If, during construction, it becomes apparent that deficiencies exist in the approved design drawings, the Owner shall be required to correct the deficiencies to meet the requirements of the regulations at no expense to the Town."	☒	❑
	r.	Note the following: "If, during construction, it becomes apparent that additional erosion control measures are required to stop any erosion on the construction site due to actual site conditions, the Owner shall be required to install the necessary erosion protection at no expense to the Town."	☒	❑
	s.	Note the following: "All materials and methods of construction shall conform to Town of Londonderry Site Plan Regulations and the latest edition of the New Hampshire Department of Transportation's Standard Specifications for Road & Bridge Construction."	☒	❑
	t.	Note the following: "In accordance with Section 6.01 of the Londonderry Site Plan Regulations and RSA § 676:13, all improvements specified on these site plans shall be constructed, completed, and inspected and approved by the Town of Londonderry prior to the issuance of a certificate of occupancy."	☒	❑

	u.	For sites requiring off-site improvements, note the following: "In accordance with Section 6.01 of the Londonderry Site Plan Regulations and RSA § 676:12, all off-site improvements specified on these site plans shall be constructed, completed, and inspected and approved by the Town of Londonderry (and/or the NHDOT, if applicable) prior to the issuance of a certificate of occupancy."	☒	❑
2.		Vicinity plan (at a scale of 1"=2500')	☒	
3.		Plan index indicating all sheets	☒	❑

V. **Existing Conditions Plan:**

			Provided	**N/A**
1.		Surveyor's certification stamped and signed by LLS	☒	
2.		Boundary of entire property by metes and bounds	☒	❑
3.		Boundary monuments:		
	a.	Monuments found	☒	❑
	b.	Monuments to be set	☒	❑
4.		Map # and Lot #, name addresses, and zoning of all abutting land owners	☒	
5.		Existing streets:		
	a.	Name labeled	☒	❑
	b.	Status noted or labeled	☒	❑
	c.	Right-of-way dimensioned	☒	❑
	d.	Pavement width dimensioned	☒	❑
6.		Municipal boundaries (if any)	☒	❑
7.		Existing easements (identified by type)	☒	❑
8.		North arrow	☒	
9.		Locus map (at a scale of 1" = 2,500)	☒	
10.		Limits of wetlands & CO District Boundary	☒	❑
11.		Wetland delineation criteria & Certification	☒	❑
12.		SCS Soils (Boundary & Type)	☒	
13.		Owner(s) signature(s)	☒	
14.		All required setbacks (including any applicable buffers)	☒	
15.		Existing physical features:		
		Buildings	❑	☒
		Wells	❑	☒
		Septic systems	☒	❑
		Stone walls	☒	❑
		Paved drives	☒	❑
		Gravel drives	☒	❑
16.		Location & name (if any) of any streams or waterbodies	☒	❑
17.		Location & elevation(s) of 100-year flood zone per FEMA Flood Insurance Study or as determined by drainage study	❑	☒
18.		Location of existing overhead utility lines, poles, towers, etc.	☒	❑
19.		Plan and deed references	☒	❑
20.		Zoning District boundary lines (if any)	☒	❑

Site Plan Application Checklist

VI. **Improvement Plans (Grading Plan, Utility Plan, etc. and Stamped by Engineer Licensed in NH):**

			Provided	N/A
1.	**Grading and Drainage Plan:**			
	a.	Existing topography (two-foot contour interval minimum)	☒	❑
	b.	Proposed contours	☒	❑
	c.	Existing spot elevations	❑	☒
	d.	Proposed spot elevations	☒	❑
	e.	Existing edge of pavement	☒	❑
	f.	Proposed edge of pavement	☒	❑
	g.	Existing curb line	☒	❑
	h.	Proposed curb line	☒	❑
	i.	Existing buildings and structures	☒	❑
	j.	Proposed buildings and structures	☒	❑
	k.	Existing retaining walls	❑	☒
	l.	Proposed retaining walls	☒	❑
	m.	Existing stone walls	☒	❑
	n.	Proposed and reconstructed stone walls	❑	☒
	o.	Wetland Mapping		
		1.) Wetland limits identified	☒	❑
		2.) Impact Area in square feet for each individual location	☒	❑
		3.) Mitigation areas (as may be required)	❑	☒
	p.	Existing treeline	☒	❑
	q.	Proposed treeline	☒	❑
	r.	Benchmarks	☒	❑
	s.	Existing drainage systems:		
		1) Pipes/culverts (each location):		
		i. Type	☒	❑
		ii. Size	☒	❑
		iii. Length and slope	☒	❑
		iv. Inverts	☒	❑
		v. End sections/Headwalls	☒	❑
		2) Structures (catch basins, drain manholes, special structures):		
		i. Location (station and off-set)	☒	❑
		ii. Type	☒	❑
		iii. Size	☒	❑
		iv. Rim Elevations	☒	❑
		v. Inverts	☒	❑
		3) Swales/Ditches/Waterways:		
		i. Flow arrows (direction of flow)	❑	☒
		ii. Topography	☒	❑
		iii. Spot elevations	❑	☒
	t.	Proposed Drainage Systems:		
		1) Pipes/culverts (each location):		
		i. Type	☒	❑
		ii. Size	☒	❑
		iii. Length and slope	☒	❑
		iv. Inverts	☒	❑
		v. End sections/headwalls	☒	❑
		vi. Identify minimum cover and location	☒	❑
		vii. Outlet erosion protection	☒	❑

Site Plan Application Checklist

			Provided	N/A
2)	Structures (catchbasins, drain manholes, special structures):			
	i.	Location (sta. and off-set)	☒	❑
	ii.	Type	☒	❑
	iii.	Size	☒	❑
	iv.	Rim elevations	☒	❑
	v.	Inverts	☒	❑
3)	Swales/ditches/waterways:			
	i.	Flow arrows (direction of flow)	☒	❑
	ii.	Grading	☒	❑
	iii.	Spot elevations	☒	❑
	iv.	Erosion protection (riprap, matting, etc.)	☒	❑
u.	Temporary erosion protection during construction:			
1)	Silt fence, haybales, etc.		☒	❑
2)	Matting, mulch, etc.		☒	❑
v.	Tree protection for existing areas and/or individual trees 15” in diameter or greater		❑	☒
w.	Plan note stating that the edge of the Conservation Overlay District and Non-Distubance Zones shall be appropriately delineated in the field prior to construction		☒	❑

2. Utilities Plan:

			Provided	N/A
a.	Existing sanitary sewer system:			
1)	Pipes:			
	i.	Type	☒	❑
	ii.	Size	☒	❑
	iii.	Length and slope	☒	❑
2)	Structures:			
	i.	Location (sta. and off-set)	☒	❑
	ii.	Type	☒	❑
	iii.	Size	☒	❑
	iv.	Rim elevations	☒	❑
	v.	Inverts	☒	❑
b.	Proposed sanitary sewer system:			
1)	Pipes (gravity):			
	i.	Type	☒	❑
	ii.	Size	☒	❑
	iii.	Length and slope	☒	❑
	iv.	Separation (18" below water)	☒	❑
	v.	Identify minimum cover and locations	☒	❑
2)	Force Main:			
	i.	Type	☒	❑
	ii.	Size	☒	❑
	iii.	Direction of flow (flow arrows)	☒	❑
	iv.	Bends and thrust blocking	☒	❑
	v.	Air relief valves and structures	☒	❑
	vi.	Clean-out structures	☒	❑
	vii.	Identify minimum cover and locations	☒	❑
3)	Structures:			
	i.	Location (sta. and off-set)	☒	❑
	ii.	Type	☒	❑
	iii.	Size	☒	❑
	iv.	Rim elevations	☒	❑
	v.	Inverts	☒	❑
4)	Service laterals to each individual lot:			
	i.	Type	❑	☒

			Provided	N/A
	ii.	Size	❑	☒
	iii.	Length and slope	❑	☒
	iv.	Separation (18" below water)	❑	☒
	v.	Minimum cover and locations identified	❑	☒
	vi.	Location of connection	❑	☒
c.	Existing Water System:			
1)	Pipes:			
	i.	Type	☒	❑
	ii.	Size	☒	❑
2)	Hydrants		☒	❑
3)	Valves		☒	❑
4)	Bends and thrust blocks		☒	❑
5)	Tees		☒	❑
d.	Proposed Water System:			
1)	Pipes:			
	i.	Type	☒	❑
	ii.	Size	☒	❑
2)	Hydrants			
	i.	Locations approved by Fire Department	☒	❑
3)	Valves		☒	❑
4)	Bends and thrust blocks		☒	❑
5)	Tees		☒	❑
e.	Existing Gas Lines:			
1)	Pipes:			
	i.	Type	☒	❑
	ii.	Size	☒	❑
2)	Valves		☒	❑
f.	Proposed Gas Lines:			
1)	Pipes:			
	i.	Type	☒	❑
	ii.	Size	☒	❑
2)	Valves		☒	❑
3)	Services to each lot		☒	❑
g.	Telephone/Electrical/Cable:			
1)	U-poles		☒	❑
2)	Pedestals/transformers		☒	❑
3)	Overhead lines		☒	❑
4)	Underground lines		☒	❑
5)	Services to each lot		☒	❑

3. **Roadways:** If streets are to be built as part of a site plan (e.g., for a multi-family residential site plan), then the design of such streets shall comply with Section 3.09 of the Londonderry Subdivision Regulations, please see Subdivision Application Checklist.

VII. **Landscape Plan (Section 3.09):**

		Provided	N/A
1.	General Information		
a.	Native Plants as suggested by Appendix LS1	❑	☒
b.	No use of Invasive materials as listed in Appendix LS2	☒	❑
c.	Plant materials meet winter hardiness requirement	☒	❑

			Provided	N/A
	d.	Proposed materials are of proper caliper or height	☒	❑
	e.	Stone walls incorporated into Landscape Plan	☒	❑
	f.	Existing vegetation preservation (no-cut) areas described by metes and bounds and monumented	☒	❑
	g.	Landscaping Calculations	☒	❑
	h.	Plant Schedule	☒	❑
	I.	Landscaping Details	☒	❑
	j.	Tree Protection Detail	❑	☒
	k.	Note on Plan stating No Plant Conflicts with Snow Storage Areas, Light Fixtures, Underground Utilities	☒	❑
	l.	Note on Plan stating No Landscaping Conflicts with Sight Distance	☒	❑
	m.	Submit a Landscape Master Sheet for Review (Landscaping, site features, snow storage, light poles, detention basin edges, grading, utilities)	☒	❑
2.	Parking Lot Landscaping			
	a.	Interior landscaping percentage based on Section 3.11e	☒	❑
	b.	Interior shade trees @ 1 per 15 parking spaces	☒	❑
	c.	Perimeter shade trees @ 1 per 20 parking spaces OR 1 per 50 feet of perimeter with buffer required	☒	❑
	d.	Screening provides proper vertical opacity per Section 3.11e	☒	❑

VIII. Illumination Plan & Lighting Details (Section 3.13):

		Provided	N/A
1.	Full Cut-Off Fixtures with plan note stating all lights are full cut-off fixtures as required	☒	❑
2.	Shielded, downcast building/external signage lighting	❑	☒
3.	No direct light source at residential property lines	☒	❑
4.	Plan to scale with illumination levels shown in footcandles	☒	❑
5.	Specification (details) for all proposed lighting fixtures including photometric data, designation as IESNA “cut-off” fixtures, Color Rendering Index (CRI) of all lamps (bulbs), and other descriptive information about fixtures	☒	❑
6.	Proposed mounting height of all exterior lighting fixtures	☒	❑
7.	Illumination levels not to exceed 0.2 footcandles at any property line (Except at driveway intersections per Regulations)	☒	❑
8.	Gas Station Canopies to meet requirements of Appendix Light 2	❑	☒

IX. Building Design & Renderings (Section 3.12):

1.	Building Elevations/Renderings in compliance with Section 3.13	☒	❑
2.	Signage renderings/details	❑	☒
3.	Large Retail Establishments - Comply with Section 3.13H	❑	☒

Site Plan Application Checklist

X. Construction Detail Drawings:

Note: *Construction details to conform with NHDOT Standards & Specifications for Roads & Bridges, Town of Londonderry Department of Public Works requirements, and Subdivision & Site Plan Regulations*

		Provided	N/A
1.	Typical cross-section of pavement	☒	❑
2.	Typical driveway apron detail	☒	❑
3.	Curbing detail	☒	❑
4.	Guardrail detail	☒	❑
5.	Sidewalk detail	❑	☒
6.	Traffic signs and pavement markings	☒	❑
7.	Typical underdrain trench detail	☒	❑
8.	Drainage structure(s):		
	a. Catchbasin (including frame and grate)	☒	❑
	b. Manhole (including frame and cover)	☒	❑
	c. Outlet structure (detention basins)	☒	❑
	d. Headwalls	☒	❑
	e. Flared end sections	☒	❑
9.	Outlet protection riprap apron	☒	❑
10.	Level spreader	❑	☒
11.	Treatment swale	❑	☒
12.	Typical section at detention basin	☒	❑
13.	Typical pipe trench:		
	a. Drainage	☒	❑
	b. Sewer	☒	❑
	c. Water	☒	❑
	d. Utilities	☒	❑
14.	Sewer structures:		
	a. Manholes (including frame and cover, inverts)	☒	❑
	b. Drop manholes	☒	❑
	c. Special structures (pump stations, blowoffs, etc.)	☒	❑
	d. Pipe manhole joint details	☒	❑
15.	Typical sewer lateral service connection detail	☒	❑
16.	Project specific sewer details (sleeves, etc.)	☒	❑
17.	Typical sewer notes (per NHDES & Sewer Div. requirements)	☒	❑
18.	Hydrant detail	☒	❑
19.	Thrust block details	☒	❑
20.	Valve box detail	☒	❑
21.	Typical water connection service detail	☒	❑
22.	Erosion control details:		
	a. Haybale barriers at waterways	❑	☒
	b. Silt fence	☒	❑
	c. Stone check dam	☒	❑
	d. Stone construction entrance	☒	❑
	e. Inlet filter basket	☒	❑
	f. Haybale barrier at catchbasin	❑	☒

24.	Notes:			
	a.	General notes as required by the Department of Public Works	☒	☐
	b.	Construction sequence	☒	☐
	c.	Erosion control notes	☒	☐
	d.	Turf establishment notes	☒	☐
	e.	Sewer construction notes (as required by Sewer Ordinance)	☒	☐
	f.	Water system construction notes (as required by local water company)	☒	☐
25.	Tree protection details		☐	☒

XI. Supporting Documentation:

			Provided	**N/A**
1.	Traffic Impact Analysis:			
	a.	Traffic Impact analysis as required by Section 3.14	☒	☐
2.	Stormwater management report including the following:			
	a.	Table of contents	☒	☐
	b.	Narrative statement (including conclusions)	☒	☐
	c.	Summary table comparing existing and post-development conditions	☒	☐
	d.	Summary table of data for each pipe & piping system:		
		1.) Discharge	☒	☐
		2.) Depth of flow	☒	☐
		3.) Velocity	☒	☐
	e.	Summary table of data for each swale & channel:		
		1.) Discharge	☒	☐
		2.) Depth of flow	☒	☐
		3.) Velocity	☒	☐
	f.	Project location plan (on USGS quadrangle)	☒	☐
	g.	Watershed area plan for existing condition	☒	☐
	h.	Watershed area plan for post-development condition	☒	☐
	i.	Runoff calculations for existing & post-development conditions	☒	☐
	j.	Flood routing calculations for each detention basin	☒	☐
	k.	Design for water quality treatment facilities (level spreaders, treatment swales, etc.)	☒	☐
	l.	Riprap design calculations	☒	☐
	m.	Report stamped by licensed professional engineer in NH	☒	☐
3.	Fiscal impact study provided (if required)		☐	☒
4.	Off-site improvements:			
	a.	Design plans included in the project drawings	☒	☐
	b.	Arrangements and agreements	☒	☐
	c.	Easements	☒	☐
5.	Utility clearance letters (as applicable):			
	a.	Electric	☒	☐
	b.	Telephone	☒	☐
	c.	Cable television	☒	☐
	d.	Gas	☒	☐
	e.	Water	☒	☐
	f.	Sewer	☒	☐
6.	Other project-specific information as required by the Design Review Committee (DRC)		☐	☒

Site Plan Application Checklist

XII. Required Project Permits (as applicable to applications):

		Provided	N/A	App Submitted
1.	NHDES site-specific approval	❑	❑	☒ Pending Approval
2.	NHDES wetlands permit	❑	❑	☒ Pending Approval
3.	NHDES sewer discharge permit	❑	❑	☒ Pending Approval
4.	NHDES water supply permit	❑	☒	❑
5.	NHDES dam permit	❑	☒	❑
6.	NHDOT driveway permit	❑	☒	❑
7.	Londonderry ZBA variance(s)/special exception(s)	❑	☒	❑
8.	Londonderry sewer discharge permit	❑	❑	☒ Pending Approval
9.	Army Corps of Engineers	❑	❑	☒ Pending Approval
10.	Federal Aviation Administration	❑	❑	☒ Pending Approval
11.	Other federal, state or local permits (if applicable) for project	❑	❑	☒ Pending Approval

XIII. Acknowledgment and Signature:

The undersigned acknowledges he/she has read and understands all of the Town's current zoning, subdivision, site plan, and health regulations and requirements for obtaining all required local, state, and federal permits. .

Nicholas Golon

(Signature of person preparing plans)

Nicholas Golon, P.E. - TFMoran, Inc.

(Name)

Principal, Civil Department Manager

(Title)

12/18/25

(Date)

EXHIBIT 5

LONDONDERRY PLANNING BOARD
SUBDIVISION APPLICATION & CHECKLIST

❑ **Design Review** ■ **Formal Application**

All information provided and submitted with this Application Checklist shall conform to the Londonderry Site Plan Regulations. **Please note that the Planning Board may not accept and consider the application complete if the required items as outlined in the checklist are missing from the submittal.**

I. General Information:

A. Name of Project: Southern New Hampshire Green Energy Campus

B. Location of Project: 162 Litchfield Road (street) | 14 (Map) | 39 (lot)

GB & AR-1 (zoning)

C. Owner:

Name: Codner Nicholas F Trust 2012
Address: 162 Litchfield Road
Londonderry, NH 03053
Phone: (603) 432-1100 ext.161
Fax:
E-Mail: ncodner@londonderrynh.org
Signature: SONeill (Agent)

D. Applicant:

Name: PurposeEnergy-Londonderry, LLC c/o Sean O'neil
Address: 25 Pelham Road Suite #102, Salem, NH 03079
Phone: (844) 344-3783
Fax:
E-Mail: ONeill@purposeenergy.com
Signature: SONeill

E. Design Firm:
Name: TFMoran, Inc. - Nicholas Golon

Address: 48 Constitution Drive

Phone: (603) 472-4488

Fax:

E-Mail: ngolon@tfmoran.com

F. Name of Licensed Land Surveyor: Michael Dahlberg
(in responsible charge)
Signature:

G. Name of Licensed Professional Engineer: Nicholas Golon
(in responsible charge)
Signature:

H. Name of Certified Soil Scientist: Bruce Gilday

I. Name of Certified Wetland Scientist: Christopher Danforth

J. Date of Submittal to Planning Department: September 12, 2025

II. General Requirements (All Applications):

		Provided	N/A	
1.	Executed Subdivision Formal Application Request Form (Exhibit 2)	■	☐	
2.	Executed Subdivision Design Review Request Form (Exhibit 3)	■	☐	
3.	Complete abutters list	■	☐	
4.	All Required Fees	■	☐	
5.	Four (4) sets of plans and electronic "PDF" plans (12 sets if electronic plans not possible) submitted with all required information in accordance with the site plan regulations and this checklist	■	☐	
6.	Copies of any proposed easement deeds, protective Covenants or other legal documents	☐	■	pending
7.	Any waiver request(s) submitted with justification in writing	■	☐	
8.	Technical reports and supporting documents (see Sections X & XI of this checklist)	☐	■	
9.	Completed Subdivision Application Checklist	■	☐	

		Provided	N/A
10.	Letter explaining how DRC comments have been addressed and two (2) sets of highlighted, revised drawings (applicable if pre-application design review process was followed).	■	☐

III. General Plan Information (All Plans):

1.	Size and presentation of sheet(s) per requirements of the subdivision regulations	■	☐
2.	Title block information:		
	a. Drawing title	■	☐
	b. Name of site plan	■	☐
	c. Location of site plan	■	☐
	d. Tax map & lot #s of subject parcel(s)	■	☐
	e. Name & address of owner(s)	■	☐
	f. Date of plan	■	☐
	g. Scale of plan	■	☐
	h. Sheet number	■	☐
	i. Name, address, & telephone number of design firm	■	☐
	j. Name and address of Applicant	■	☐
3.	Revision block	■	☐
4.	Planning Board approval block provided on appropriate sheets (Cover sheet, boundary plans only)	■	☐
5.	Certification block (for engineer, surveyor, soil scientist, or wetland scientist)	■	☐
6.	Match lines (if any)	■	☐

IV. Title Sheet:
(may be consolidated with Boundary Plan)

1.	The following notes shall be provided:		
	a. Purpose of plan	■	☐
	b. Tax map and lot #s of all subject parcels	■	☐
	c. Area (existing & proposed) of subject parcel(s)	■	☐
	d. Zoning designation of subject parcel(s)	■	☐
	e. Min. lot area, frontages & setback dimensions	■	☐
	f. Existing and proposed use	■	☐
	g. Sanitary sewer source (name of provider (company) if offsite)	■	☐
	h. Water supply source (name of provider (company) if offsite)	■	☐
	i. Zoning variances/special exceptions with conditions	■	☐
	j. List FEMA sheet(s) used to identify 100-year flood elevation. (Note if no flood zone present as applicable)	☐	☐
	k. List of required permits and permit approval numbers	■	☐
	l. List of Planning Board waivers (if applicable)	■	☐
	m. Note identifying # of bedrooms per dwelling for residential use	■	☐

			Provided	N/A
	n.	Phasing notes, as required, under Section 4.18i as applicable	■	☐
	o.	Note identifying which plans are to be recorded and which are on file at the town	■	☐
	p.	Note the following: "If, during construction, it becomes apparent that deficiencies exist in the approved design drawings, the Owner shall be required to correct the deficiencies to meet the requirements of the regulations at no expense to the Town."	■	☐
	q.	Note the following: "If, during construction, it becomes apparent that additional erosion control measures are required to stop any erosion on the construction site due to actual site conditions, the Owner shall be required to install the necessary erosion protection at no expense to the Town.	■	☐
	r.	Note the following: "All materials and methods of construction shall conform to Town of Londonderry Subdivision Regulations and the latest edition of the New Hampshire Department of Transportation's Standard Specifications for Road & Bridge Construction."	■	☐
2.		Tax map sketch plan (or detail) showing proposed lot configuration at a scale 1" = 400'	■	☐
3.		Vicinity plan (at a scale of 1"=2500')	■	☐
4.		Plan index indicating all sheets	■	☐
V.		**Boundary Plan (Subdivision, Consolidation and Lot Line Adjustment:**		
1.		Surveyor's certification stamped and signed by LLS	■	☐
2.		Boundary of entire property by metes and bounds	■	☐
3.		Proposed lot configuration defined by metes and bounds	■	☐
4.		Boundary monuments:		
	a.	Monuments found	■	☐
	b.	Monuments to be set	■	☐
5.		Map # and Lot #, name addresses, and zoning of all abutting land owners	■	☐
6.		Existing streets:		
	a.	Name labeled	■	☐
	b.	Status noted or labeled	■	☐
	c.	Right-of-way dimensioned	■	☐
	d.	Pavement width dimensioned	■	☐
7.		Municipal boundaries (if any)	■	☐
8.		Existing easements (identified by type)	■	☐

		Provided	N/A
9.	Proposed easements defined by metes & bounds. Check each type of proposed easement applicable to this application:		
	a. Drainage easement(s)	☐	■
	b. Slope easement(s)	☐	■
	c. Utility easement(s)	☐	■
	d. Temporary easement(s) (such as temporary turnaround)	☐	■
	e. No-cut zone(s), including those along streams & wetlands (as may be requested by the Conservation Commission)	☐	■
	f. Vehicular & pedestrian access easement(s)	☐	■
	g. Visibility easements	☐	■
	h. Fire pond/cistern easement(s)	☐	■
	i. Roadway widening easement(s)	☐	■
	j. Walking trail easement(s)	☐	■
	k. Other easement(s) _____ Note type(s) _____	☐	■
10.	Designation of each proposed lot (by map & lot #s as provided by the assessor)	■	☐
11.	Area of each lot (in acres & square feet):		
	a. Existing lot(s)	■	☐
	b. Proposed lot(s)	■	☐
12.	North Arrow	■	☐
13.	Locus map (at a scale of 1" = 2,500)	■	☐
14.	Limits of wetlands & CO District Boundary	■	☐
15.	Wetland delineation:		
	a. Wetland delineation criteria & Certification	■	☐
16.	Owner(s) signature(s)	■	☐
17.	Proposed streets:		
	a. Name(s) labeled	☐	■
	b. Width of right-of-way dimensioned	☐	■
18.	All required setbacks (including any applicable buffers)	■	☐
19.	Physical features:		
	a. Existing features -- Buildings	■	☐
	Wells	■	☐
	Septic systems	■	☐
	Stonewalls	■	☐
	Paved drives	■	☐
	Gravel drives	■	☐
20.	Location & name (if any) of any streams or waterbodies	☐	■
21.	Location & elevation(s) of 100-year flood zone per FEMA Flood Insurance Study or as determined by drainage study	☐	■
22.	Location of existing overhead utility lines, poles, towers, etc.	■	☐

		Provided	N/A
23.	Plan and deed references	■	☐
24.	Zoning District boundary lines (if any)	■	☐
VI.	**Topographical/HISS Plan Requirements):**		
1.	Surveyor's stamp and signature by LLS	■	☐
2.	Boundary of entire property to be subdivided	■	☐
3.	Proposed lot configuration defined by metes and bounds	■	☐
4.	Boundary monuments:		
	a. Monuments found	■	☐
	b. Monuments to be set	■	☐
5.	Map # and lot #, name addresses, and zoning of all abutting land owners	■	☐
6.	Existing streets:		
	a. Name labeled	■	☐
	b. Status noted or labeled	■	☐
	c. Right-of-way dimensioned	■	☐
	d. Pavement width dimensioned	■	☐
7.	Municipal boundaries (if any)	■	☐
8.	Existing easements (identified by type)	■	☐
9.	Proposed easements defined by metes & bounds. Check each type of proposed easement applicable to this application:		
	a. Drainage easement(s)	☐	■
	b. Slope easement(s)	☐	■
	c. Utility easement(s)	☐	■
	d. Temporary easement(s) (such as temporary turnaround)	☐	■
	e. No-cut zone(s) along streams & wetlands (as may be requested by the Conservation Commission)	☐	■
	f. Vehicular & pedestrian access easement(s)	☐	■
	g. Visibility easements	☐	■
	h. Fire pond/cistern easement(s)	☐	■
	i. Roadway widening easement(s)	☐	■
	j. Walking trail easement(s)	☐	■
	k. Other easement(s) _____ Note type(s) _____	☐	■
10.	Designation of each proposed lot (by map & lot #s as provided by the assessor)	■	☐
11.	Area of each lot (in acres & square feet):		
	a. Existing lot(s)	■	☐
	b. Proposed lot(s)	■	☐
12.	North arrow	■	☐

		Provided	N/A
13.	Locus map (at a scale of 1" = 2,500) shown	■	☐
14.	Limits of wetlands	■	☐
15.	Wetland delineation:		
	a. Wetland delineation criteria	■	☐
	b. Wetland scientist certification	■	☐
16.	Owner(s) signature(s)	■	☐
17.	Proposed streets:		
	a. Name(s) labeled	☐	■
	b. Width of right-of-way dimensioned	☐	■
	c. Pavement width dimensioned	☐	■
18.	All required setbacks (including any applicable buffers)	■	☐
19.	Physical features (Existing Features):		
	a. Buildings	■	☐
	b. Wells	■	☐
	c. Septic systems	■	☐
	d. Stone walls	■	☐
	e. Paved drives	■	☐
	f. Gravel drives	■	☐
20.	Location & name (if any) of any streams or waterbodies	■	☐
21.	Location & elevation(s) of 100-year flood zone per FEMA Flood Insurance Study or as determined by drainage study	☐	■
22.	Location of existing overhead utility lines, poles, towers, etc.	■	☐
23.	Plan and deed references	■	☐
24.	Two-foot contour interval topography shown over all subject parcels	■	☐
25.	Source and datum of topographic information (USGS required)	■	☐
26.	Show at least one benchmark per sheet (min.) and per 5 acres (min.) of total site area	■	☐
27.	USDA-SCS soil survey information (where municipal sewer is to be provided)	■	☐
28.	Location, type, size & inverts of the following (as applicable):		
	a. Existing water systems	■	☐
	b. Existing sewer systems	■	☐
	c. Existing drainage systems	■	☐
	d. Existing utilities	■	☐

		Provided	N/A	see site plans & waiver requests
29.	4K Areas with test pits on all proposed lots (meeting NHDES & Town setback requirements)	☐	■	
30.	Location of all water wells with protective radii as required by the NHDES (meeting Town and NHDES setback requirements)	☐	■	
31.	Existing treelines	■	☐	
32.	Existing ledge outcroppings & other significant natural features	■	☐	
33.	HISS requirements:			
	a. Criteria for HISS delineation	☐	■	
	b. Soil scientist certification on plan (if HISS required)	☐	■	
	c. HISS mapping shown over all subject parcels (where no municipal sewer exists)	☐	■	
34.	Plan as submitted to the NHDES	☐	■	
VII.	**Improvement Plans (Stamped by Engineer Licensed in NH):**			
1.	Grading and Drainage:			
	a. Existing topography (two-foot contour interval minimum)	☐	☐	
	b. Proposed contours	☐	■	
	c. Existing spot elevations	■	☐	
	d. Proposed spot elevations	☐	■	
	e. Existing edge of pavement	■	☐	
	f. Proposed edge of pavement	☐	■	
	g. Existing curb line	■	☐	
	h. Proposed curb line	☐	■	
	i. Existing buildings and structures	■	☐	
	j. Proposed buildings and structures	☐	■	
	k. Existing retaining walls	■	☐	
	l. Proposed retaining walls	☐	■	
	m. Existing stone walls	■	☐	
	n. Reconstructed stone walls	☐	■	
	o. Existing treeline	■	☐	
	p. Proposed treeline	☐	■	
	q. Benchmarks	■	☐	
	r. Existing drainage systems:			
	1.) Pipes/culverts (each location):			
	i. Type	■	☐	
	ii. Size	■	☐	
	iii. Length and slope	■	☐	
	iv. Inverts	■	☐	
	v. End sections/Headwalls	■	☐	
	2.) Structures (catchbasins, drain manholes, special structures):			
	i. Location (sta. and off-set)	■	☐	
	ii. Type	■	☐	
	iii. Size	■	☐	
	iv. Rim Elevations	■	☐	
	v. Inverts	■	☐	

		Provided	N/A	
3.)	Swales/Ditches/Waterways:			
i.	Flow arrows (direction of flow)	■	☐	
ii.	Topography	■	☐	
iii.	Spot elevations	■	☐	
t.	Proposed Drainage Systems:			
1.)	Pipes/culverts (each location):			
i.	Type	☐	■	see site plans & waiver requests
ii.	Size	☐	■	
iii.	Length and slope	☐	■	
iv.	Inverts	☐	■	
v.	End sections/headwalls	☐	■	
vi.	Identify minimum cover and location	☐	■	
vii.	Outlet erosion protection	☐	■	
2.)	Structures (catchbasins, drain manholes, special structures):			
i.	Location (sta. and off-set)	☐	■	
ii.	Type	☐	■	
iii.	Size	☐	■	
iv.	Rim elevations	☐	■	
v.	Inverts	☐	■	
3.)	Swales/ditches/waterways:			
i.	Flow arrows (direction of flow)	☐	■	
ii.	Grading	☐	■	
iii.	Spot elevations	☐	■	
iv.	Erosion protection (riprap, matting, etc.)	☐	■	
u.	Temporary erosion protection during construction:			
1.)	Silt fence, haybales, etc.	☐	■	
2.)	Matting, mulch, etc.	☐	■	
2. Utilities:				
a.	Existing sanitary sewer system:			
1.)	Pipes:			
i.	Type	■	☐	
ii.	Size	■	☐	
iii.	Length and slope	■	☐	
2.)	Structures:			
i.	Location (sta. and off-set)	■	☐	
ii.	Type	■	☐	
iii.	Size	■	☐	
iv.	Rim elevations	■	☐	
v.	Inverts	■	☐	
b	Proposed sanitary sewer system:			
1.)	Pipes (gravity):			
i.	Type	☐	■	see site plans & waiver requests
ii.	Size	☐	■	
iii.	Length and slope	☐	■	
iv.	Separation (18" below water)	☐	■	
v.	Identify minimum cover and locations	☐	■	

			Provided	N/A	
2.)	Force Main:				see site plans & waiver requests
	i.	Type	☐	■	
	ii.	Size	☐	■	
	iii.	Direction of flow (flow arrows)	☐	■	
	iv.	Bends and thrust blocking	☐	■	
	v.	Air relief valves and structures	☐	■	
	vi.	Clean-out structures	☐	■	
	vii.	Identify minimum cover and locations	☐	■	
3.)	Structures:				
	i.	Location (sta. and off-set)	☐	■	
	ii.	Type	☐	■	
	iii.	Size	☐	■	
	iv.	Rim elevations	☐	■	
	v.	Inverts	☐	■	
4.)	Service laterals to each individual lot:				
	i.	Type	☐	■	
	ii.	Size	☐	■	
	iii.	Length and slope	☐	■	
	iv.	Separation (18" below water)	☐	■	
	v.	Minimum cover and locations identified	☐	■	
	vi.	Location of connection	☐	■	
c.	Existing Water System:				
1.)	Pipes:				
	i.	Type	■	☐	
	ii.	Size	■	☐	
2.)	Hydrants		■	☐	
3.)	Valves		■	☐	
4.)	Bends and thrust blocks		■	☐	
5.)	Tees		■	☐	
d.	Proposed Water System:				
1.)	Pipes:				
	i.	Type	■	☐	
	ii.	Size	■	☐	
2.)	Hydrants				
	i.	Locations approved by Fire Department	■	☐	
3.)	Valves		■	☐	
4.)	Bends and thrust blocks		■	☐	
5.)	Tees		■	☐	
e.	Existing Gas Lines:				
1.)	Pipes:				see site plans & waiver requests
	i.	Type	☐	■	
	ii.	Size	☐	■	
2.)	Valves		☐	■	
f.	Proposed Gas Lines:				
1.)	Pipes:				
	i.	Type	☐	■	
	ii.	Size	☐	■	
2.)	Valves		☐	■	

		Provided	N/A
3.)	Services to each lot	☐	■
g. Telephone/Electrical/Cable:			
1.)	U-poles	■	☐
2.)	Pedestals/transformers	■	☐
3.)	Overhead lines	■	☐
4.)	Underground lines	■	☐
5.)	Services to each lot	■	☐

3. Roadways:

a.	Plan and profile drawings (stamped by engineer licensed in NH)	■	☐	see site plans & waiver requests
1.)	All items required above under a. Grading and Drainage	☐	■	
2.)	All items required above under b. Utilities	☐	■	
3.)	Profile grid (station and elevation) with horizontal To vertical scale (ratio = 10:1) and datum	■	☐	
4.)	Existing grade profile	■	☐	
5.)	Proposed profile:			
i.	PVIs (station and elevation)	■	☐	
ii.	PVCs (station and elevation)	■	☐	
iii.	PVTs (station and elevation)	■	☐	
iv.	Length of vertical curve	■	☐	
v.	K-values	■	☐	
vi.	Tangent slopes	■	☐	
vii.	Drainage system	■	☐	
viii.	Sewer system	■	☐	
ix.	Water system	■	☐	
x.	Crest stations identified (stations and elevations)	■	☐	
xi.	Sag station identified (stations and elevations)	■	☐	
xii.	Existing and proposed grades at fifty (50) foot stations	■	☐	
6.)	Road intersection (equation of stations)	☐	■	
7.)	Label street name	☐	■	
8.)	Right-of-way lines	■	☐	
9.)	Easement lines:			
i.	Drainage	■	☐	
ii.	Sewer	■	☐	
iii.	Visibility	☐	■	
iv.	Utility	☐	■	
v.	Access	☐	■	
vi.	Slope	☐	■	
10.)	Wetlands Mapping:			
i.	Wetland limits identified	■	☐	
ii.	Impact area identified in square feet for each individual location	■	☐	
11.)	Driveway shown to each individual lot (with grading and culverts if required)	☐	■	

		Provided	N/A
12.)	Centerline geometry including:		
	i. Bearings and distances labeled	■	☐
	ii. Tangents	■	☐
	iii. Curve data	■	☐
	iv. PC's	■	☐
	v. PT's	■	☐
13.)	Pavement:		
	i. Width	■	☐
	ii. Corner radius (edge of pavement)	■	☐
	iii. Curbing	■	☐
14.)	Existing and proposed lot lines	■	☐
15.)	Lot designations	■	☐
16.)	Underdrain location (beginning and end stations)	☐	■
17.)	Guardrail Location (beginning and end stations, off-set)	☐	■
18.)	Traffic control signs (stop, street, etc.)	☐	■
19.)	Pavement markings	■	☐

see site plans & waiver requests

VIII. Construction Detail Drawings:

Note: Construction details to conform with NHDOT Standards & Specifications for Roads & Bridges, Town of Londonderry Department of Public Works requirements, and Subdivision Regulations

1.	Typical cross-section of pavement	☐	■
2.	Typical driveway apron detail	☐	■
3.	Curbing detail	☐	■
4.	Guardrail detail	☐	■
5.	Sidewalk detail	☐	■
6.	Traffic signs and pavement markings	☐	■
7.	Typical underdrain trench detail	☐	■
8.	Drainage structure(s):		
	a. Catchbasin (including frame and grate)	☐	■
	b. Manhole (including frame and cover)	☐	■
	c. Outlet structure (detention basins)	☐	■
	d. Headwalls	☐	■
	e. Flared end sections	☐	■
9.	Outlet protection riprap apron	☐	■
10.	Level spreader	☐	■
11.	Treatment swale	☐	■
12.	Typical section at detention basin	☐	■

			Provided	N/A	see site plans & waiver requests
13.	Typical pipe trench:				
	a.	Drainage	☐	■	
	b.	Sewer	☐	■	
	c.	Water	☐	■	
	d.	Utilities	☐	■	
14.	Sewer structures:				
	a.	Manholes (including frame and cover, inverts)	☐	■	
	b.	Drop manholes	☐	■	
	c.	Special structures (pump stations, blowoffs, etc.)	☐	■	
	d.	Pipe manhole joint details	☐	■	
15.	Typical sewer lateral service connection detail		☐	■	
16.	Typical chimney detail		☐	■	
17.	Project specific sewer details (sleeves, etc.)		☐	■	
18.	Typical sewer notes (as per NHDES and Sewer Division requirements)		☐	■	
19.	Hydrant detail		☐	■	
20.	Thrust block details		☐	■	
21.	Valve box detail		☐	■	
22.	Typical water connection service detail		☐	■	
23.	Erosion control details:				
	a.	Haybale barriers at waterways	☐	■	
	b.	Silt fence	☐	■	
	c.	Stone check dam	☐	■	
	d.	Stone construction entrance	☐	■	
	e.	Inlet filter basket	☐	■	
	f.	Haybale barrier at catchbasin	☐	■	
24.	Notes:				
	a.	General notes as required by the Department of Public Works	☐	■	
	b.	Construction sequence	☐	■	
	c.	Erosion control notes	☐	■	
	d.	Turf establishment notes	☐	■	
	e.	Sewer construction notes (as required by Sewer Ordinance)	☐	■	
	f.	Water system construction notes (as required by local water company)	☐	■	
IX.	**Cross-Sections**:				
1.	Roadway cross sections at 50-foot intervals		☐	■	
2.	Roadway cross sections at culvert locations (inlet/outlet)		☐	■	

		Provided	N/A	
3.	Scale of sections at 1" = 5' H & V	☐	■	see site plans & waiver requests
4.	Existing & finish centerline grades	☐	■	
5.	Proposed pavement, crushed gravel and bank run gravel limits	☐	■	
6.	Right-of-way and easement limits	■	☐	
7.	Roadway & shoulder cross slopes	☐	■	see site plans & waiver requests
8.	Embankment slopes	☐	■	
9.	Underdrains	☐	■	
10.	Drainage piping and structures	☐	■	
11.	Sewer piping and structures	☐	■	
12. Utilities:				
a.	Water lines	☐	■	
b.	Gas lines	☐	■	
c.	Telephone/electric/cable	☐	■	
13.	Guardrail	☐	■	

X. Supporting Documentation:

1.	Lot sizing calculations	☐	■	
2.	Test pit/perc.test data	☐	■	
3.	Stormwater management report including the following:			
a.	Table of contents	☐	■	
b.	Narrative statement (including conclusions)	☐	■	
c.	Summary table comparing existing and post-development conditions	☐	■	
d.	Summary table of data for each pipe & piping system:			
1.)	Discharge	☐	■	
2.)	Depth of flow	☐	■	
3.)	Velocity	☐	■	
e.	Summary table of data for each swale & channel:			
1.)	Discharge	☐	■	
2.)	Depth of flow	☐	■	
3.)	Velocity	☐	■	
f.	Project location plan (on USGS quadrangle)	☐	■	
g.	Watershed area plan for existing condition	☐	■	
h.	Watershed area plan for post-development condition	☐	■	
i.	Runoff calculations for existing & post-development conditions	☐	■	
j.	Flood routing calculations for each detention basin	☐	■	

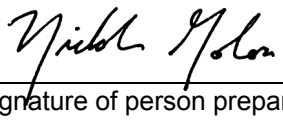
			Provided	N/A	
	k.	Design for water quality treatment facilities (level spreaders, treatment swales, etc.)	☐	■	see site plans & waiver requests
	l.	Riprap design calculations	☐	■	
	m.	Report stamped by licensed professional engineer in NH	☐	■	
4.		Traffic Impact Analysis:			
	a.	Traffic Impact analysis as required by Section 3.14	☐	■	
5.		Fiscal impact study provided (if required)	☐	■	
6.		Off-site improvements:			
	a.	Design plans included in the project drawings	☐	■	
	b.	Arrangements and agreements	☐	■	
	c.	Easements	☐	■	
7.		Utility clearance letters (as applicable):			
	a.	Electric	☐	■	
	b.	Telephone	☐	■	
	c.	Cable television	☐	■	
	d.	Gas	☐	■	
	e.	Water	☐	■	
	f.	Sewer	☐	■	
8.		Other project-specific information as required by the Design Review Committee (DRC)	■	☐	

XI. Required Project Permits (as applicable to applications):

		Provided	N/A	App Submitted	
1.	NHDES subdivision approval	☐	☐	■	see site plans
2.	NHDES site-specific approval	☐	☐	■	
3.	NHDES wetlands permit	☐	☐	■	
4.	NHDES sewer discharge permit	☐	☐	■	
5.	NHDES water supply permit	☐	☐	■	
6.	NHDES dam permit	☐	☐	■	
7.	NHDOT driveway permit	☐	☐	■	
8.	Londonderry ZBA variance(s)/special exception(s)	☐	☐	■	
9.	Londonderry sewer discharge permit	☐	☐	■	
10.	Army Corps of Engineers	☐	☐	■	
11.	Federal Aviation Administration	☐	☐	■	
12.	Other federal, state or local permits (if applicable) for project	☐	☐	■	

XII. Acknowledgment and Signature:

The undersigned acknowledges he/she has read and understands all of the Town's current zoning, subdivision, site plan, and health regulations and requirements for obtaining all required local, state, and federal permits.



(Signature of person preparing plans)

Nicholas Golon, PE

(Name)

Principal, Civil Department Manager

(Title)

December 22, 2025

(Date)

EXHIBIT 2
SUBDIVISION FORMAL APPLICATION REQUEST FORM

A. Name of Subdivision : TFMoran, Inc. - Nicholas Golon

B. Location of Subdivision: 162 Litchfield Road (Street) 14 (Map #) 39 (Lot #)

Number of Lots: 2

Total Acreage: 47.3

Zoning: (GB) & (AR-1)

C. Owner:

Name: Codner Nicholas F Trust 2012
Address: 162 Litchfield Road
Londonderry, NH 03053
Phone: (603) 432-1100 ext.161
Fax:
E-Mail: ncodner@londonderrynh.org
Signature: (Agent)

D. Applicant:

Name: PurposeEnergy-Londonderry, LLC c/o Sean O'neil
Address: 25 Pelham Road Suite #102, Salem, NH 03079
Phone: (844) 344-3783
Fax:
E-Mail: ONeill@purposeenergy.com
Signature:

E. . Design Firm:

Name: TFMoran, Inc.
Address: 48 Constitution Drive, Bedford, NH 03110
Phone: (603) 472-4488
Fax:
E-Mail: ngolon@tfmoran.com

F. Name of Licensed Land Surveyor: Michael Dahlberg, LLS
(in responsible charge)
Signature:

G. Name of Licensed Professional Engineer: Nicholas Golon
(in responsible charge)

Signature: Nicholas Golon

H. Name of Certified Soil Scientist: Bruce Gilday, CSS

I. Name of Certified Wetland Scientist: Christopher Danforth, CWS

J. Date of Submittal to Planning Department: September 12, 2025

Application Fee Attached:	☑
Escrow for Review Cost Attached:	☑
Subdivision Plans Attached:	☑
Abutters List Attached:	☑
Subdivision Application Checklist Attached:	☑
Required Documents Attached (As outlined in Subdivision Application Checklist)	☐

For Planning Department Use Only (Date Received Stamp)

Application for a Conservation Overlay District Conditional Use Permit
Form B - For a Buffer Reduction by Conditional Use Permit (Named Wetlands ONLY)

Conditional Use permit is as part of a: ■ Site Plan ■ Subdivision

I. General Information:

A. Name of Project: Southern New Hampshire Green Energy Campus

B. Location of Project: 162 Litchfield Road (Street) 25 N. Wentworth Ave. 14 (Map #) 39, 39-2 (Lot #)

C. Applicant:

Name: PurposeEnergy - Londonderry, LLC

Address: 25 Pelham Road, Suite 102
Salem, NH 03079

Phone: 617-202-9156

Fax:

Signature:

II. Required Information:

- ■ Plans showing existing and proposed conditions.
- ■ Wetland delineation certified by a Certified Wetlands Scientist and mapped by a licensed land surveyor.
- ■ Areas on plans highlighted to show areas where conditional use permit is sought
- ■ Narrative description of project and conditional use permit request.
- ■ Criteria for conditional use permit described (see below).

III. Optional Information:

- ■ Aerial Photographs
- ❑ Site Photographs

IV. Conditional Use Permit Criteria

Address, in the provided boxes, the following criteria in accordance with Section 2.6.3 of the Zoning Ordinance:

1. The structure for which the exception is sought cannot feasiblely, after consideration of all reasonable alternatives, be constructed on a portion or portions of the lot which lie outside the CO district **OR** the application of the CO district eliminates greater than 50% of the buildable area located on the parcel.

The project has been designed to avoid impacting high functioning wetlands and the associated CO district by consolidation the configuration of the facility to the extent practicable. All reasonable alternatives have been considered but wetlands currently run through the middle of the lot and the proposed development cannot feasibly be designed without impacting the buffers.

2. The proposed structure and use must be consistent with the intent of the CO district, and provisions must be made to ensure the structure's drainage will not adversely impact any wetlands and be consistent with the purpose and intent of Section VIII.

The proposed structure and use is consistent with the intent of the CO district by maintaining and enhancing the quality of surface waters and groundwater through best management practices incorporated into the design. The proposed structure is essential to the productive use of land not within the CO District but is consistent with existing uses in the vicinity and approved within the Gateway Business District

3. Description of proposed best management practices:

The site has been designed to minimize impacts within the CO district as well as the implementation of underground stormwater chambers to capture, treat, store, and infiltrate stormwater runoff to prevent flooding and improve water quality. Grass swales are proposed in the design to convey and treat stormwater by removing pollutants. Infiltration basins are located in southwest and northwest corner to manage stormwater runoff, increase groundwater recharge, and improve water quality. These measures replicate the principal wetland functions identified in the wetland functional assessment used in the initial site design.

4. There shall be no construction of parking areas within the area for which the conditional use permit is sought.

5. The maximum building coverage in the outer-50 feet of the buffer area shall be no greater than 50%.

6. Square Footage of Wetland Impacts: 8937p/348t

7. Square footage of Buffer Impacts: 117,210 sf

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

September 12, 2025

Ms Kristan Farr, Town Planner
Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

RE: Conditional Use Permit – Conservation Overlay District
Southern New Hampshire Green Energy Campus
162 Litchfield Road, Map 14/Lot 39
Londonderry, NH 03079

Dear Ms Farr:

On behalf of our client, PurposeEnergy – Londonderry, LLC, a conditional use permit for disturbance within the Conservation Overlay District (Londonderry Zoning Ordinance 4.6.1) for this project is requested.

The project, located at 162 Litchfield Road and identified as Map 14. Lot 39 consists of 49.473 acres and is located within the Gateway Business District (GB). The project is proposed on the northern 15.316 acres of the property and will be accessed from North Wentworth Avenue. A portion of the property, south of the proposed development site, was set aside as compensatory mitigation by the NHDOT for construction at the Manchester Regional Airport project. This conservation land is connected to other conservation land along Horsetrail Brook to provide contiguous wildlife corridors. Although the upper reach of Horsetrail Brook is located within Lot 39 it is more than 200 feet from the project site and is protected within the conservation easement. The 15.316 acre parcel was intentionally set aside for future development within the Gateway Business district and the proposed use is integral to the Southern New Hampshire Green Energy Campus.

Londonderry's new Southern New Hampshire Green Energy Campus will keep waste out of New Hampshire's landfills by turning it into renewable energy. About 30% of the U.S. food supply, over 30 million tons, goes to landfills every year. It is the single largest contributor to landfill waste. Meanwhile, New Hampshire's landfills are projected to exhaust their capacity in the next decade. As capacity declines, local communities could be forced to pay more for waste management, and state taxpayers could incur the high cost of landfill closure and new landfill development. New landfills are likely to be built in rural areas where they may have significant environmental impacts.

The Southern New Hampshire Green Energy Campus will reduce the waste management burden on New Hampshire by tackling the food waste problem. It will feature two connected resource recovery facilities.

- The first, RecycleWorks, will receive food waste that normally goes to landfill, including food that has passed its sell by date or is out of specification but is wrapped in glass, plastic or metal

packaging. RecycleWorks will remove the organic waste from that packaging and send it to the second facility on the campus,

- PurposeEnergy – Londonderry. PurposeEnergy will pump the food waste into tanks that digest it in a process similar to a human stomach. The tanks will also receive dairy waste directly by pipe from a local business, Stonyfield Yogurt. The digester tanks will produce renewable biogas that will be cleaned to pipeline quality and injected into the local natural gas network.

Left in its packaging, this waste would not only add dramatically to the tonnage of waste reaching New Hampshire landfills, but the decomposition of the organic material in a landfill would release methane, one of the most harmful greenhouse gases, into the atmosphere.

The Green Energy Campus is not a landfill; all of the material that comes to the campus will leave it either as recyclable material, renewable biogas, clean water, or biosolids (the residuals from digestion which will be sent to a compost facility for use as fertilizer). The net impact of the Southern New Hampshire Green Energy Campus is to

- divert 90% of solid waste away from New Hampshire landfills;
- reduce the escape of environmentally damaging methane gas resulting from decomposition of organic matter;
- support local business in the cost-effective and environmentally beneficial management of food manufacturing waste.

Based on the Conservation Overlay District definition (4.4.1.2 A-4) all uplands with 50-feet of the delineated wetlands for this project are subject to the rules and restrictions of the Conservation Overlay District

The proposed resource recovery facility is comprised of a series of tribrid bioreactors, a 36,600 s.f. depackaging building, a control room, process equipment room, lab and office building (14,688 s.f.). Supporting infrastructure includes driveways, parking, utilities, and a stormwater management system are also part of the development plan for this facility. The total project footprint is approximately 11.23 acres of the total 15.316-acre lot.

Wetlands on the entire lot were delineated by a certified wetland scientist and a wetland functional assessment was completed to identify functionally significant wetlands within the project area. This document was used in the initial planning and layout of the project to ensure the more functionally significant wetlands are avoided to the extent practicable. The report shows the higher functioning wetlands are located to the south within the existing conservation easement, those wetlands more directly connected to Horsetrail Brook. Wetlands subject to project impacts include the upper reaches of Wetland 3, the largest wetland within the project site consisting of narrow gullies that drain to the south. Wetland 4 is a small, isolated wetland of 1028 sf with low functional value. Wetland 5/6 is a higher functioning wetland located offsite to the south and east of the project. However, it will be impacted by construction of the access road from North Wentworth Ave. The principal functions identified for Wetland 3 are Wildlife Habitat and Groundwater discharge/recharge

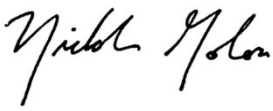
Conditional Use Permits may be granted providing the proposed buffer impacts meet the criteria in accordance with Section 4.6.1.4.B.2 of the zoning ordinance. The campus configuration was designed to minimize site development impacts. However, Wetland 3 crosses through the middle of the site making complete avoidance impracticable and infeasible. Provisions for controlling, treating and infiltrating stormwater runoff will be managed onsite to ensure water quality is maintained at preconstruction levels. Groundwater Recharge/Discharge is a Principal Function of Wetland 3 and is mitigated through the implementation of the stormwater management system. Wildlife Habitat is the second Principal Function identified for Wetland 3 that is also mitigated through the existing conservation easement that provides protection of the higher functioning wetlands (Wetland 5/6) that also maintains a contiguous, unfragmented travel corridors and habitats.

An application to fill wetlands has been submitted to the NH Department of Environmental Services Wetlands Bureau. Wetland impacts total 8,937 s.f. of permanent filling and 348 s.f of temporary construction impacts. Total impacts to the Conservation Overlay district 50-foot buffer is 117,210 s.f. As part of this review the NH Department of Fish and Game, the NH DES Alteration of Terrain Bureau, the U.S. Army Corps of Engineers and US Environmental Protection Agency will have the opportunity to review and comment on this project.

Londonderry's Director of Economic Development has determined the administrative classification of this proposed use to be "similar to Materials Recovery Facilities (NAICS 562920), Miscellaneous Food Manufacturing (NAICS 311999), and Specialized Freight (NAICS 484220)". There are other industrial uses in the vicinity that are similar, and this use has been deemed to be "permitted by right" in the Gateway Business District.

Please consider this request for relief from the Conservation Overlay District requirements. If you find you have concerns or need additional information regarding this request, please contact me at 603-472-4488 or ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.



Nicholas Golon, P.E.
Civil Department Manager, Principal

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

September 12, 2025

RE: Conditional Use Permit – Frontage Dimensional Relief
Southern New Hampshire Green Energy Campus
162 Litchfield Road, Londonderry, NH 03053
Tax Map 14, Lot 39

On behalf of our Client, PurposeEnergy - Londonderry, LLC, a conditional use permit for dimensional relief of the minimum lot frontage requirement of 150-feet per Section 4.5.2.B. of the Londonderry Zoning Ordinance is requested. Relief is requested in consideration of a proposed subdivision of tax map 14, lot 39 whereby the lot would be subdivided along the limits of the existing conservation easement established as the Airport Access Road Mitigation Area, an initiative implemented to mitigate the environmental impact of the Airport Access Road project. The subdivision would result in a remainder lot of 34.157-acres and new lot of 15.316-acres. The remainder lot, which consists of an existing single-family home will retain frontage on Litchfield Road totaling approximately 560.74-feet, with the new lot to retain frontage along North Wentworth Avenue consisting of approximately 62.96-feet. The subdivision will facilitate the development of the portion of the lot outside of the conservation easement to serve as the Southern New Hampshire Green Energy Campus. The Energy Campus will reduce the waste management burden on New Hampshire by addressing the food waste problem with two connected resource recovery facilities.

- The first, RecycleWorks, will receive food waste that normally goes to landfill, including food that has passed its sell-by date or is out of specification but is wrapped in glass, plastic or metal packaging. RecycleWorks will remove the organic waste from that packaging and send it to the second facility on the campus,
- PurposeEnergy – Londonderry. PurposeEnergy will pump the food waste into tanks that digest it in a process similar to a human stomach. The tanks will also receive dairy waste directly by pipe from a local business, Stonyfield Yogurt. The digester tanks will produce renewable biogas that will be cleaned to pipeline quality and injected into the local natural gas network.

The Green Energy Campus is not a landfill; all of the material that comes to the campus will leave it either as recyclable material, renewable biogas, clean water, or biosolids (the residuals from digestion which will be sent to a compost facility for use as fertilizer). The net impact of the Southern New Hampshire Green Energy Campus is to;

- Divert 90% of solid waste away from New Hampshire landfills;
- Reduce the escape of environmentally damaging methane gas resulting from decomposition of organic matter;
- Support local business in the cost-effective and environmentally beneficial management of food manufacturing waste.

Per the Londonderry Zoning Ordinance Section 4.5.3 Conditional Use Permits, subsection B - Dimensional Relief by Conditional Use Permit, states: “The Planning Board may through the

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

granting of a Conditional Use Permit adjust standards of any dimensional requirement of the district (including but not limited to: setback, density, green space, or frontage) for projects that are truly supportive of the goals of the GB District as noted above, and where such adjustments would allow the developer to more fully meet these goals and objectives.".

The site at the end of North Wentworth Avenue in Londonderry is zoned Gateway Business District and is located directly adjacent to the Londonderry Ecological Industrial Park which represents similar land uses already prominent in the surrounding area whereby the existing occupants enable industrial facilities to more efficiently utilize materials, and both reduce and recycle waste.

Per Section 4.5.3.B. of the Londonderry Zoning Ordinance, Conditional Use permits may be granted under the circumstance that the proposed frontage meets the following conditions:

6.2 General Criteria

The following criteria must be satisfied in order for the Planning Board to grant a conditional use permit:

A. Granting of the application would meet some public need or convenience.

   Granting of the application would allow significant reductions in solid waste being discharged to New Hampshire landfills which in turn reduces the escape of environmentally damaging methane gas resulting from decomposition of organic matter and supports local business in the cost-effective and environmentally beneficial management of food manufacturing waste.

B. Granting of the application is in the public interest.

   As similarly stated above, granting the application is in the public interest. The intended use of the lot is consistency with the Town 2013 Comprehensive Master Plan that states "…Londonderry should promote and build upon its's existing eco-park and use this area to generate competitive advantages that attract sustainable industries to Town.". This conformity with the Master Plan demonstrates the proposed development would not alter the essential character of the locality and would be in the public interest.

C. The property in question is reasonably suited for the use requested.

   The property is zoned Gateway Business District which provides a permitted by right location and is located directly adjacent to the Londonderry Ecological Industrial Park which represents similar land uses already prominent in the surrounding area whereby the existing occupants enable industrial facilities to more efficiently utilize materials, and both reduce and recycle waste.

D. The use requested would not have a substantial adverse effect on the rights of the owners of surrounding properties.

   In that the use is allowed by right, is co-located with similar uses in the immediate vicinity, and consistent with the expectations expressed by the Master Plan, the request would not have a substantial adverse effect on the rights of the owners of surrounding properties.

E. The traffic generated by the proposed use is consistent with the identified function, capacity, and level of service of transportation facilities serving the community.

Traffic from this proposal generates less than 100 trips, only 44 am trips and 77 pm trips, or one new trip every 1-2 minutes. Traffic will be distributed in several directions so there is not a concentration of trips impacting a single movement or intersection. This level of traffic falls within the allowance for ordinary background growth and can be safely accommodated without need for improvements.

F. There must be appropriate provision for access facilities adequate for the estimated traffic from public streets and sidewalks, so as to assure public safety and to avoid traffic congestion.

North Wentworth Avenue provides frontage to the lot with a private driveway to be installed to serve as the means of access from the current cu-de-sac at the end of this dead-end Class V Town road. There are no other conflicting access points, and the center of the cul-de-sac is grass with no visual obstruction, so there is adequate sightline available for the proposed driveway. North Wentworth Avenue connects to Harvey Road less than half a mile south of Pettengill Road. The roadway generally provides one travel lane in each direction with a default speed limit of 30 mph. This roadway configuration is appropriate for the intended use, assures public safety and avoids traffic congestion.

6.3.9 Gateway Business District

Applications for a Conditional Use Permit within the Gateway Business district must demonstrate compliance with the general criteria of Section 6.2 and this section.

A. The following criteria must be satisfied in order for the Planning Board to grant a conditional use permit in the Gateway Business District. The applicant shall demonstrate that:

1. The application demonstrates that the alternative design for which the Conditional Use Permit is sought does not impact the general health, safety, and general welfare of the Town, and is otherwise in compliance will all requirements of the Zoning Ordinance, Site Plan Regulations, and Subdivision Regulations, as applicable to the proposed project.

The alternative frontage is consistent with the intent of the frontage requirements in that it ensures adequate access for the intended users/emergency responders, provides access to utilities and services, and ensures public safety and welfare by preventing overcrowding of the land and appropriately manages traffic flow. The frontage provided accommodates turning movements associated with oversized vehicles as well as the largest emergency responder vehicle, and its special condition as a dead-end lot surrounded by a conservation easement on three sides furthers the purpose of not overcrowding the land and managing traffic flow. These elements demonstrate that the CUP sought will not adversely impact the general health, safety, and general welfare of the Town as it upholds the spirt and intent of the frontage requirements.

2. The applicant has demonstrated that the alternative design for which the Conditional Use Permit is sought better achieves the Objectives and Characteristics of the district, while not diminishing surrounding property values or the ability of nearby parcels to develop in accordance with the Objectives and Characteristics of the district; and

In that the use is allowed by right, is co-located with similar uses in the immediate vicinity, and consistent with the expectations expressed by the Master Plan, the request would not diminish property values or the ability of nearby parcels to develop in accordance with the objective sand characteristics of the district.

3. The property in question is reasonably suited for the use requested, and the design of the site represents to the extent practicable preservation of natural resources, open space, and does not create a hazard to surface or underground water resources.

   The Project Team took great care to select a site not only designated for industrial development, but where appropriate protections for the local environment have already been provided to preserve the ecology of the surrounding area. The site at the end of North Wentworth Avenue in Londonderry is zoned Gateway Business District which provides a permitted by right location for the use and the portion of the property intended for development was excluded from the adjacent Conservation Easement established as the Airport Access Road Mitigation Area, an initiative implemented to mitigate the environmental impact of the Airport Access Road project. The location of the mitigation area along the properties east, south and west property lines preserve valuable wildlife habitat and passageway through this portion of Londonderry. The subject property is also located directly adjacent to the Londonderry Ecological Industrial Park and represents similar land uses already prominent in the surrounding area whereby the existing occupants enable industrial facilities to more efficiently utilize materials, and both reduce and recycle waste. Appropriate controls will be put in place to ensure the facility does not create a hazard to surface or underground water resources.

4. Granting of the application is in the public interest;

   Granting of the application would allow significant reductions in solid waste being discharged to New Hampshire landfills which in turn reduces the escape of environmentally damaging methane gas resulting from decomposition of organic matter and supports local business in the cost-effective and environmentally beneficial management of food manufacturing waste. The intended use of the lot is consistency with the Town 2013 Comprehensive Master Plan that states "…Londonderry should promote and build upon its's existing eco-park and use this area to generate competitive advantages that attract sustainable industries to Town.". This conformity with the Master Plan demonstrates the proposed development would not alter the essential character of the locality and would be in the public interest.

5. The proposed use is consistent with the Objectives and Characteristics of the Gateway Business District, Section 4.5.1;

   See below response.

4.5.1 Gateway Business District

The Gateway Business District (GB) is intended to allow for the development of gateways to the Town of Londonderry, centers of commerce, and employment centers for the Southern NH region. It is the desire of the Town of Londonderry that all of these activities be developed in a manner that both serves the business interests contained in the district, and in a manner that that conveys a campus atmosphere to those arriving here. Traffic circulation and alternate modes of transportation

need to be provided for, as does parking for employees and visitors alike. A wide variety of industrial, supporting commercial development, and open space & recreational amenities are desired, in accordance with the various planning efforts undertaken by the Town in recent years (primarily the 2004 Master Plan which includes the 2003 Londonderry Business Park Design Charrette, and any other planning efforts as completed and applicable). All of these activities are envisioned as being developed in a manner that involves quality design of landscaping, a high level of quality in individual building and site design which takes into account the context of the site in its natural environment, and flexibility on the part of the Town so as to achieve the design suggested in those documents.

> As identified in the above responses the project embodies the intent of the Gateway Business District and the expectations expressed in the Town Master Plan specific to enhancing the Londonderry Ecological Park. This specific parcel has the advantage of being located at the end of North Wentworth Avenue and surrounded by conservation land that is protected in perpetuity such that the alternate frontage proposed satisfies its intended purpose and will not impact the general health, safety and general welfare of the Town.

Should there be any questions or concerns regarding this submittal or the project in general please do not hesitate to contact the undersigned at 472-4488 or ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, P.E.
Civil Department Manager, Principal

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Planners

September 12, 2025

Kellie Caron, Assistant Town Manager & Director of Economic Development
Town of Londonderry Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

Re: Waiver Request – 3.10.g.1.
Southern New Hampshire Green Energy Campus
Tax Map 14, Lot 39

Dear Kellie,

On behalf of our client, PurposeEnergy Londonderry - LLC, we respectfully request a waiver from Section 3.10.g.1 of the Londonderry Site Plan Regulations to waive the internal parking landscape area requirement.

Internal parking landscaping areas are impractical for this industrial facility due to the follow;

- No centralized parking for the facility is provided and site parking is dispersed throughout the campus in limited quantities.
- This site is unique in that it does not have a traditional street presence as it is accessed at the end of a Town ROW. There will be insignificant visibility to the site from the road.
- The inclusion of additional internal landscape area would necessitate a larger project footprint which increases the area of disturbance, limits of clearing, and increase retaining wall heights to avoid unnecessary wetland impacts.
- The site has been meticulously engineered to utilize the best technologies and efficient routing of waste and process piping. Internal landscape islands would be limited to shrubs which is not practical for this type of facility.

We feel this request is appropriate and consistent with the expectations of the Planning Board and that this landscape design associated with the Southern New Hampshire Green Energy Campus upholds the spirit of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 3.10.g.1.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
Civil Department Manager/Principal

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Bedford, NH 03110
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September 12, 2025

Kellie Caron, Assistant Town Manager & Director of Economic Development
Town of Londonderry Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

RE: Waiver Request – 3.09.d.(Table B)
Southern New Hampshire Green Energy Campus
Tax Map 14, Lot 39

Dear Kellie,

On behalf of our client, PurposeEnergy Londonderry - LLC, we respectfully request a waiver from Section 3.09(d)(Table B) of the Site Plan Regulations to allow an alternate method of parking demand calculation.

The applicant requests the use of the Parking Generation Manual by the Institute of Transportation Engineers (ITE), 6th edition, October 2023 as an alternative to the Town of Londonderry Site Plan Regulations, Section 3.09 Table B. The ITE Parking generation manual provides for a more specific evaluation of the parking needs of this specific type of facility, which is more so predicated on employee count than building square footage as it has large floor areas with unmanned process equipment. The end users have provided forecasted employee counts for their maximum buildout which has been used to define the proposed required parking. PurposeEnergy and Recycleworks have similar facilities and evaluated the employee demand for this site at 30 employees.

Using the Institute for Transportation Engineers land use code (luc) 110 - general light industrial:
avg. rate = 0.76 spaces/employee
30 employees x 0.76 spaces/employees = 23 spaces

We feel this request is appropriate and consistent with the expectations of the Planning Board and that this Site Plan the Southern New Hampshire Green Energy Campus upholds the spirit of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 3.07.g.2.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, P.E.
Principal, Civil Department Manager

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December 23, 2025

Kellie Caron, Assistant Town Manager & Director of Economic Development
Town of Londonderry Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

Re: Waiver Request – 4.12.c.19.viii.
Southern New Hampshire Green Energy Campus
Tax Map 14, Lot 39-2

Dear Kellie,

On behalf of our client, PurposeEnergy Londonderry - LLC, we respectfully request a waiver from Section 4.12.c.19.viii of the Londonderry Site Plan Regulations to waive the requirement to show trees with greater than 15" diameter and specify their species on the subdivision plans.

Given the size of the parent property (49.473-acres), it would not be practical to request the applicant to locate trees greater than 15" in diameter and specify their species over such a large area. The majority of the remainder lot (34.157-acres) is under a conservation easement, and the proposed development lot (15.316-acres) is surrounded by the same conservation easement which limits sight lines from immediately adjacent areas for which preserving large specimen trees would potentially provide a benefit. As such, we feel locating trees as suggested is not necessary and would not provide a substantial benefit to the public and may be waived accordingly.

We feel this request is appropriate and consistent with the expectations of the Planning Board and that waiving this requirement relative to this specific lot upholds the spirit of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 4.12.c.19.viii.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
Civil Department Manager/Principal

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December 23, 2025

Kellie Caron, Assistant Town Manager & Director of Economic Development
Town of Londonderry Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

Re: Waiver Request – Section 3.10, 4.17 & checklist item X1
Proposed Subdivision
Tax Map 14, Lot 39

Dear Kellie,

On behalf of our client, PurposeEnergy Londonderry - LLC, we respectfully request a waiver from Section 3.10 and 4.17 of the Londonderry Subdivision Regulation & checklist item X1 to provide site specific soil mapping in lieu of HISS mapping requirements.

The subject lots exceed the 5-acre threshold for State Subdivision, proposed lot (15.3+/- acres) and existing lot (49.5+/- acres) with both having municipal sewer available. Due to the size of the lots and the availability of municipal service, lot sizing calculations would provide no public value.

We feel this request is appropriate and consistent with the expectations of the Planning Board and that waiving this requirement relative to this specific lot upholds the spirit of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 3.02.C & 4.12.c.14 of the Londonderry Subdivision Regulation & checklist item V.14.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
Civil Department Manager/Principal

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December 23, 2025

Kellie Caron, Assistant Town Manager & Director of Economic Development
Town of Londonderry Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

Re: Waiver Request – 3.10.g.1.
Southern New Hampshire Green Energy Campus
Tax Map 14, Lot 39-2

Dear Kellie,

On behalf of our client, PurposeEnergy Londonderry - LLC, we respectfully request a waiver from Section 3.10.g.1 of the Londonderry Site Plan Regulations to waive the internal parking landscape area requirement.

Internal parking landscape areas are impractical for this industrial facility due to the follow;

- No centralized parking for the facility is provided, and site parking is dispersed throughout the campus in limited quantities.
- This site is unique in that it does not have a traditional street presence as it is accessed at the end of a Town ROW. There will be insignificant visibility to the site from the road.
- The inclusion of additional internal landscape area would necessitate a larger project footprint which increases the area of disturbance, limits of clearing, and increase retaining wall heights to avoid unnecessary wetland impacts.
- The site has been meticulously engineered to utilize the best technologies and efficient routing of waste and process piping. Internal landscape islands would be limited to shrubs which is not practical for this type of facility.

We feel this request is appropriate and consistent with the expectations of the Planning Board and that this landscape design associated with the Southern New Hampshire Green Energy Campus upholds the spirit of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 3.10.g.1.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
Civil Department Manager/Principal

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December 23, 2025

Kellie Caron, Assistant Town Manager & Director of Economic Development
Town of Londonderry Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

RE: Waiver Request – 3.09.d.(Table B)
Southern New Hampshire Green Energy Campus
Tax Map 14, Lot 39-2

Dear Kellie,

On behalf of our client, PurposeEnergy Londonderry - LLC, we respectfully request a waiver from Section 3.09(d)(Table B) of the Site Plan Regulations to allow an alternate method of parking demand calculation.

The applicant requests the use of the Parking Generation Manual by the Institute of Transportation Engineers (ITE), 6th edition, October 2023 as an alternative to the Town of Londonderry Site Plan Regulations, Section 3.09 Table B. The ITE Parking generation manual provides for a more specific evaluation of the parking needs of this specific type of facility, which is more so predicated on employee count than building square footage as it has large floor areas with unmanned process equipment. The end users have provided forecasted employee counts for their maximum buildout which has been used to define the proposed required parking. PurposeEnergy and Recycleworks have similar facilities and evaluated the employee demand for this site at 30 employees.

Using the Institute for Transportation Engineers land use code (luc) 110 - general light industrial:
avg. rate = 0.76 spaces/employee
30 employees x 0.76 spaces/employees = 23 spaces

We feel this request is appropriate and consistent with the expectations of the Planning Board and that this Site Plan the Southern New Hampshire Green Energy Campus upholds the spirit of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 3.09(d)(Table B).

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, P.E.
Civil Department Manager/Principal

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December 23, 2025

Kellie Caron, Assistant Town Manager & Director of Economic Development
Town of Londonderry Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

Re: Waiver Request – Subdivision regulation(s) Section 3.05, 3.06, 3.07, 3.08, 4.16 and check list items X.3, VII.2a-b, VIII.13-18 & Exhibit D2.
Proposed Subdivision
Tax Map 14, Lot 39

Dear Kellie,

On behalf of our client, PurposeEnergy Londonderry - LLC, we respectfully request a waiver from Sections 3.05, 3.06, 3.07, 3.08 & 4.16 of the Londonderry Subdivision Regulations and check list items X.3, VII.2a-b, VIII.13-18 & Exhibit D2 to waive the requirement to provide all technical design elements and improvement plan related information associated with the development on the proposed subdivision plans and instead provide within the corresponding site plans. The Driveway Plan and Profile and Sight Distance Plan and Profile have been provided in the Subdivision plans for coordination/verification of access. Waivers are supported by the following facts;

- The Subdivision plans provide the necessary information to convey the ownership rights of the property consistent with the regulations.
- The technical design elements, reports, and improvement plan items required by the above sections/check list items have been sufficiently provided within the site plans to meet the regulation requirements.
- Revisions to the technical documents to specifically limit them to the subdivision elements is not practical and would be an unnecessary burden to the applicant.
- The provision to provide duplicative information within the subdivision plans is not of benefit to project or the public.

We feel this request is appropriate and consistent with the expectations of the Planning Board and that waiving this requirement relative to this specific subdivision upholds the spirit of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from the above sections of the subdivision regulations.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
Civil Department Manager/Principal

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December 23, 2025

Kellie Caron, Assistant Town Manager & Director of Economic Development
Town of Londonderry Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

Re: Waiver Request – Section 3.02.C & 4.12.c.14 & checklist item V.14
Proposed Subdivision
Tax Map 14, Lot 39

Dear Kellie,

On behalf of our client, PurposeEnergy Londonderry - LLC, we respectfully request a waiver from Section 3.02.C & 4.12.c.14 of the Londonderry Subdivision Regulation & checklist item V.14 3.02.C to partially waive the requirement to install markers along the conservation overlay district for the remainer parcel.

The majority of the remainder lot is already under conservation easement and further signage would provide no public benefit. Signage on the development lot will be provided in accordance with the regulations. This is consistent with what was presented and recommended for approval by the conservation commission.

We feel this request is appropriate and consistent with the expectations of the Planning Board and that waiving this requirement relative to this specific lot upholds the spirit of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 3.02.C & 4.12.c.14 of the Londonderry Subdivision Regulation & checklist item V.14.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
Civil Department Manager/Principal

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EASEMENT DEED

KNOW ALL MEN BY THESE PRESENTS that **Sustainable Design and Development, LLC**, a New Hampshire limited liability company, with an address at 170 South River Road, Bedford, New Hampshire 03110 (hereinafter "Grantor"), for consideration paid, grants to **Nicholas F. Codner, Jr.**, with a mailing address of 162 Litchfield Road, Londonderry, New Hampshire 03053 (hereinafter "Grantee'), with QUITCLAIM COVENANTS upon the conditions hereafter set forth a sewer easement (the easement shall be referred to herein as the "Easement").

0090914

1. Recitals.

1.1 Said Easement is located on the land of Grantor in Londonderry, Rockingham County, New Hampshire and shown on the Plan of land entitled "Map 14, Lot 44 & 44-32 Subdivision Plan of Land of The Town of Londonderry Ecological Industrial Park Wentworth Avenue and Burton Drive, Londonderry, New Hampshire prepared for Sustainable Design & Development, LLC by TF Moran, Inc. scale 1" = 200' dated July 7, 1998 and revised through October 19, 1998, which shall be recorded in the Rockingham County Registry of Deeds ("Plan") and incorporated by reference.

DEC 31 10 28 AM '98

2. Grant of Easements.

Grantor, for consideration paid, hereby grants to Grantee, its successors and assigns, with Quitclaim Covenants the following:

2.1 A Sewer Easement designated as a "Proposed Private 20' Wide Sewer Easement" on the Plan of the transport of human waste from Grantee's land (Map 14, Lot 39 on the Plan) to the proposed public sewer of the Town of Londonderry or City of Manchester located in North Wentworth Avenue. (The easement area shall be referred to herein as the "Easement Area").

ROCKINGHAM COUNTY
REGISTRY OF DEEDS

Together with the perpetual easement, privilege and right of way to excavate land to construct, lay, maintain, operate, alter, repair, renew, enlarge and remove in whole or in part at any time one or more sewer lines, pipes, pumps, manholes, with all fixtures, appurtenances, and structures necessary thereto within, through or across said Easement Area and for that purpose to dig, open and fill pipe trenches and to transport pipe and other necessary materials to and from the same doing no unnecessary damage and replacing as much as possible the land to its condition before work began.

3. The Easement Deed and the rights and privileges granted hereby are perpetual and shall run with the land and are for the benefit of Map 14, Lot 39 as shown on the Plan.

4. Grantee, for itself and its successors and assigns shall keep the Easement Area in good condition and repair.

5. The easements, covenants and constitutions herein shall be binding and/or to the benefit of the parties heirs, successors and assigns.

6. The consideration for this conveyance is less than $100.00

7. Workmanlike Manner – the Grantee agrees that any and all work performed by it pursuant to the easement rights granted herein will be constructed and maintained in a workmanlike manner. All refuse and waste material will be removed and the Easement Area and surrounding land will be reasonably graded, reseeded, resoiled and repaved if pavement was disturbed, so that such Easement Area remain in a neat and clean condition.

8. Liability and Indemnity – except for injury or damage caused by Grantor's willful act, Grantor or its successors or assigns shall not be liable for any injury or damage to any property or any person performing any construction, maintenance, repair or otherwise engaging in any activities described herein. Except for injury or damage caused as aforesaid with respect to activities performed or undertaken by the Grantor or any improvements constructed by Grantor, the Grantee will defend, indemnify and hold Grantor harmless from any and all liability, damages, costs and expenses, including reasonable attorneys fees and from any and all suits, claims and demands of any kind whatsoever based upon any incident, occurrence, injury or damage which may happen as a result of any labor or task performed by the Grantee or its agents performed in the construction or maintenance, or as a result of any defaults of Grantee hereunder or as a result of the improvements constructed by Grantee or its use or exercise of its rights pursuant to such easement rights.

9. Reserving to Grantor, their successors and assigns, the use and enjoyment of said Easement Area for such purposes only as will in no way interfere with the perpetual use thereof by the Grantee, its successors and assigns for the purposes contained herein; provided, however, that the Grantor, their successors and assigns shall not erect any building or any kind of permanent structure on said Easement Area , except sewer systems, drainage structures, roadways, sidewalks, curbs, landscaping materials, utility lines, fencing and like or similar structures and systems ("Improvements") so long as such Improvements do not materially interfere with Grantee's use of the Easement Area. Grantor also reserves the right to relocate the Easement Area so long as such relocation does not reduce or diminish Grantee's rights and to determine their final location based on final as-built plans to be recorded in the Registry of Deeds.

10. Grantee, its successor and assigns, shall at all times comply with the rules, regulations and ordinances of the utility accepting said sewerage from the sewer easement. Grantee shall not dispose of any corrosive, damaging or harmful materials into said sewer line, nor dispose of any hazardous waste, flammable or similar material into said sewer line.

In witness whereof, Andover Consulting Group, Inc., the duly authorized Manager of Sustainable Design and Development, LLC, has executed this Easement Deed this 30th day of December, 1998.

Sustainable Design and Development, LLC
By: Andover Consulting Group, Inc., Manager

By: _____
Its: ~~Manager~~ President Justin S. Bellagus

STATE OF NEW HAMPSHIRE
COUNTY OF Hillsborough

The foregoing instrument was acknowledged before me this 30th day of December, 1998 by Justin S. Bellagus, Pres. of Andover Consulting Group, Inc., the duly authorized Manager of Sustainable Design and Development, LLC on behalf of said limited liability company.

_____
~~Notary Public~~/Justice of the Peace
~~My Commission Expires:~~

STATE OF NEW HAMPSHIRE
DEPARTMENT OF REVENUE ADMINISTRATION
REAL ESTATE TRANSFER TAX
XX THOUSAND XX HUNDRED AND 40 DOLLARS
MO. DAY YR. 12 31 98 358514
AMOUNT $ 40.00
VOID IF ALTERED

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2006 AUG 15 AM 10:25

ROCKINGHAM COUNTY
REGISTRY OF DEEDS

CONSERVATION EASEMENT DEED

Nicholas F. Codner, Jr. of 162 Litchfield Road, Londonderry 03053, County of Rockingham, State of New Hampshire, (hereinafter referred to as the "Grantor", which word where the context requires includes the plural and shall, unless the context clearly indicates otherwise, include the Grantor's executors, administrators, legal representatives, devisees, heirs, successors and assigns), for consideration paid, with WARRANTY covenants, grant[s] in perpetuity to the State of New Hampshire, with a principal mailing address of PO Box 483, 7 Hazen Drive, Concord 03302-0483, County of Merrimack, State of New Hampshire, acting by and through the Department of Transportation (hereinafter referred to as the "Grantee" which shall, unless the context clearly indicates otherwise, include the Grantee's successors and assigns), the Conservation Easement (herein referred to as the "Easement") hereinafter described with respect to that certain parcel of land (herein referred to as the "Property") being unimproved land situated on Litchfield Road in the Town of Londonderry, County of Rockingham, State of New Hampshire, with said Property and Easement, described in "Appendix A" attached hereto and depicted on "Exhibit A", attached hereto; and

1. **PURPOSES**
The Easement hereby granted is pursuant to NH RSA 477:45-47, exclusively for the following conservation purposes:

   A. To preserve and protect in perpetuity for its wildlife habitat qualities, the natural vegetation, soils, hydrology, wetlands, natural habitat and the scenic and aesthetic character of the Property so that the Property retains its natural qualities and functions; and
   B. Mitigation of environmental impacts, including wetland impacts, from the Manchester Airport Access Road project purposes (also known as: Bedford-Manchester-Londonderry-Litchfield-Merrimack, 11512); and
   C. Allowing maintenance of an artificially high water level to support wetlands habitat and wildlife species in the Little Cohas Marsh, the water level shall be as generated by the existing dam on Parcel 3003 as shown on the project Mitigation Plan; and
   D. To prevent any future development, construction, or use that will significantly impair or interfere with the conservation values of the Property while allowing the reserved rights of Grantor as allowed under Section 4; and
   E. Public access to be allowed only through the auspices of the Grantor, which will allow the general public to participate in limited low impact non-commercial outdoor recreational activities on the Property. Utilization of motorized vehicles is prohibited. Snowmobiles, if allowed, will be restricted to designated trails that are developed to pass through the area. Prohibition of public access is the responsibility of the Grantor to notice by erection of "No Trespassing" signs in accordance with RSA 635:4 or other public trespass laws.
   F. The management of the Property in accordance with a Management Plan (hereinafter the "Plan"), that will be implemented and periodically updated approximately every ten (10) years after consultation with a certified wetlands scientist or other professionals as may be appropriate, that encourages and facilitates improvements in wetland vegetation, soils, hydrology and habitats. The Plan will include:
      i. The Property's current owner(s), including their then current mailing address and telephone number(s);

ii. The Easement reference (by Rockingham County Registry of Deeds Book and Page numbers);
iii. A history of the Property and its management, including forestry or agricultural activities engaged in since the last Plan;
iv. An inventory of natural resources, including, but not limited to vegetation, wetland areas, and vernal pools and presence of any threatened or endangered animal or plant species.
v. A Property map, which shall delineate: the Property's boundaries, forest types, wetland areas, vernal pools, estimated locations of any threatened or endangered animal and plant species, unique geological, hydrological, historical, and/or cultural features, existing roads and other access to the Property, soil types, topography and aspect;
vi. A schedule for the routine monitoring of the Property and identification of the party(s) responsible for monitoring.

2. **GRANTEE'S RIGHTS**

A. The Grantor conveys to the Grantee the right to enter, build, maintain, and control the dam or water control structure located at site of said beaver dam and old stone dam, adjacent to Station 2521 of the Manchester and Lawrence Branch Railroad (hereinafter "Dam", and associated property flooded by said Dam), the outfall elevation of which is to be maintained at an elevation of 259.00', for purposes of perpetuating a wetland area ("Marsh").
B. The Grantee shall have the right to flow and maintain water upon so much of the Grantor's land as will be flooded by the Dam when holding water to full capacity to support wetlands habitat and wildlife species.
C. Through the auspices of the Grantor, the public has the right of pedestrian access, in perpetuity, on and across the Property for non-commercial recreational activities unless prohibited by notice posted by the Grantor along the perimeter of the Property line, in accordance with current laws and regulations. The right of overnight camping, motorized access or construction of fires on the Property by the public is not hereby conveyed. The Grantee agrees to cooperate with the Grantor to prevent use of the property inconsistent with the Purposes listed in Section 1 of this Easement.
D. The Grantee shall have reasonable access to the Property for such inspection as is necessary to determine compliance with and to enforce this Easement and exercise the rights conveyed hereby and fulfill the responsibilities and carry out the duties assumed by the acceptance of this Easement.
E. The Grantee shall have the right, but not the obligation, to maintain boundaries of the Property.
F. The Grantee shall erect and/or maintain "Safety Zone" signage so as to identify and delineate proximity of dwellings and areas where hunting is permitted within public access areas of the Little Cohas Marsh.

3. **Use Restrictions** [(Subject to the reserved rights specified in Section 4 below)]

A. The property shall be maintained in perpetuity in an undeveloped and natural condition without there being conducted thereon any residential, industrial, or commercial activities, except as described below, and provided that such uses shall not degrade the conservation purposes of this Easement. No use shall be made of the Property, and no activity shall be permitted thereon, which is inconsistent with the intent of this Easement, that being the perpetual protection and preservation of the Property, as more particularly described in Section 1 herein.
B. The Property under Easement shall not be subdivided.
C. No structure or improvement, including, but not limited to, a dwelling, any portion of a septic system, tennis court, swimming pool, dock, strip, tower, commercial facility, conduit or utility line, billboard or other means of advertising display, driveway or road made of asphalt or other impervious surface, mobile home or other temporary or permanent structure or improvement, shall be constructed, placed, or introduced onto the Property.
D. No removal of trees, brush, minerals, gravel, sand, topsoil, nor filling, or other disturbances of soil surface, nor any changes in topography, surface or subsurface water systems, wetlands, or natural habitat, except to eliminate existing, potential or future safety hazards, shall be allowed unless such activities:
    i. are commonly necessary in the accomplishment of the agricultural, forestry, conservation, habitat management, specifically reserved by Grantor and as allowed under Section 4 of this Easement; and

ii. do not harm state or federally recognized rare, threatened, or endangered species; such determination of harm to be based upon information from the New Hampshire Natural Heritage Inventory or the agency then recognized by the State of New Hampshire as having responsibility for identification and/or conservation of such species; and
iii. do not impact wetland vegetation, soils, hydrology or habitat; and
iv. are not detrimental to the purposes of this Easement.

Prior to commencement of any such activities, all necessary federal, state and local permits and approvals shall be secured and such notices as may be required under Section 8 of this Easement shall be delivered.

E. There shall be no net loss or reduction in the volume of flood storage within the easement area, nor shall there be any permanent obstructions in the floodplain.
F. There shall be no dumping, filling, injecting, stockpiling, burning or burial of any waste, refuse, or other materials whatsoever in the easement area.

4. **RESERVED RIGHTS**

A. The Grantor reserves the right to conduct agricultural activities or forestry and forest management consistent with an approved forest management plan.

B. The Grantor reserves the right to maintain and expand, as necessary, storm water detention systems that currently exist within the easement area as well as maintain storm water discharge pipes and drainage outfalls from such pipes and the continued ability to flow surface and storm water through such systems and into the stream or existing water body as these elements exist within the easement area.
C. The Grantor reserves the right to prohibit public access and/or hunting on the Property by posting such Property in accordance with RSA 635:4 or other public trespass laws.
D. The Grantor must notify the Grantee in writing at least thirty (30) days before any exercise of the aforesaid reserved rights.

5. **NOTIFICATION OF TRANSFER, MAINTENANCE OR OTHER ACTIVITIES**

A. The Grantor agrees to notify the State of New Hampshire, Department of Transportation, Bureau of Right-of-Way in writing ten (10) days before the transfer of title to the Property [or any division of ownership thereof permitted hereby].
B. The Grantee shall be under no obligation to maintain the Property or pay any taxes or assessments thereon.
C. Except as otherwise specifically stated in this Easement, Grantor shall notify Grantee in writing thirty (30) days before exercising any right reserved herein. The notice shall describe the nature, scope, design location, timetable and any other material aspect of the proposed activity in sufficient detail to permit Grantee to evaluate the proposed activity with the purposes of this Easement.

6. **BENEFITS, BURDENS AND ACCESS**

A. The burden of the Easement conveyed hereby shall run with the Property and shall be enforceable against all future owners and tenants in perpetuity; the benefits of this Easement shall not be appurtenant to any particular parcel of land but shall be in gross assignable or transferable only to the State of New Hampshire, the U.S. Government, or any subdivision of either of them, as amended, or to any qualified organization, within the meaning of Section 170 (h) (3) of the Internal Revenue Code of 1986, which organization has among its purpose the conservation and preservation of land and water areas and agrees to and is capable of enforcing the conservation purpose of this Easement. Any such assignee or transferee shall have like power of assignment or transfer.
B. The Grantee shall have access to the Property for such inspection as is necessary to determine compliance with and to enforce this Easement and exercise the rights conveyed hereby and fulfill the responsibilities and carry out the duties assumed by the acceptance of this Easement.

C. Members of general public shall, by default, have access to the Property for outdoor recreation and education activities, unless the Grantor posts appropriate notice restricting such access. Implementation of posting by the Grantor does not invoke a responsibility on the Grantee to enforce such posting. Such enforcement is subject to local or state law enforcement, as the New Hampshire state statutes provide.

7. **LEGAL REMEDIES OF GRANTEE**
   A. Nothing contained in this Easement shall be construed to entitle the Grantee to bring any action against the Grantor for any injury to or change in the Property resulting from causes beyond the Grantor's control, including, but not limited to, unauthorized actions by third parties, natural disasters such as fire, flood, storm, and earth movement, or from any prudent action taken by the Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Property resulting from such causes.
   B. The Grantee reserves the right, separately or collectively, to pursue all legal remedies against any party responsible for any actions detrimental to the conservation purposes of this Easement.
   C. Grantee shall have the right to enforce this Easement by appropriate legal means and to obtain injunctive and other equitable relief against any violations, including without limitation, relief requiring restoration of the Property to its condition prior to the time of the violation, and shall be in addition to, and not limitation of, any other rights and remedies available to the Grantee.
   D. Grantee, by its acceptance of this Easement, does not undertake any liability or obligation relating to the condition of the Property.
   E. The then Commissioner of the New Hampshire Department of Transportation (NHDOT) shall have standing to seek mandamus or such other relief against Grantee and/or Grantor as may be necessary in the event Grantee and/or Grantor has not, in the Commissioner's opinion, taken steps necessary under this section to adequately preserve and protect the conservation purposes of this Easement.

8. **NOTICES**
   All notices, requests and other communications required or permitted to be given under this Easement shall be in writing, except as otherwise provided herein, and shall be delivered in hand or sent by certified mail, postage prepaid, return receipt requested to the appropriate address set forth above or at such other address as the Grantor or the Grantee may hereafter designate by notice given in accordance herewith. Notice shall be deemed to have been given when so delivered or so mailed.

Said Conservation Easement being acquired for the Bedford-Manchester-Londonderry-Litchfield-Merrimack, DPR-F-0047(001), 11512 project on file in the records of the New Hampshire Department in Transportation and to be recorded in the Hillsborough County Registry of Deeds.

IN WITNESS WHEREOF, we have hereto under set our hand this 10th day of August, 2006.

Nicholas F. Codner, Jr.

The State of New Hampshire
County of Rockingham

Personally appeared Nicholas F. Codner, Jr., this 10TH day of AUGUST 2006, acknowledged the foregoing to be his voluntary act and deed.

Before me

Justice of the Peace/~~Notary Public~~
My commission expires: 2/25/2010

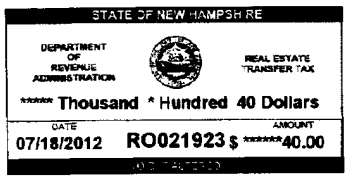
JAMES M. GILBERT
Justice of the Peace - NH
My Commission Expires February 25, 2010

APPENDIX "A"

Meaning and intended to describe a portion of that property as shown as Parcel 1051 on a master plan entitled "Manchester Airport Access Mitigation Plan" prepared by Vanasse Hangen Brustlin, Inc. on file in the records of the New Hampshire Department of Transportation and to be recorded at Rockingham County Registry of Deeds, bounded and described as follows:

Being a conservation easement interest in all that property belonging to Nicholas F. Codner, Jr. beginning at a point in the division line of land now or formerly of Granite Ridge Energy, LLC and land now or formerly of Victor D. Reis and Cecilia C. Reis and land of Nicholas F. Codner, Jr., thence S 61° 38' 48" W for a distance of three hundred seven and ninety-five hundredths (307.13) feet to a point, thence S 62° 15' 18" W for a distance of one hundred eighty-two and ninety-five hundredths (182.95) feet to a point, thence S 64° 19' 30" W for a distance of fifty-three and seventy-two hundredths (53.72) feet to a point, thence S 51° 02' 51" W for a distance of six hundred eighty-one and forty-two hundredths (681.42) feet to a point, thence N 09° 12' 51" W for a distance of seven hundred ninety-four and sixty-three hundredths (794.63) feet to a point, thence N 09° 50' 12" W for a distance of five hundred fourteen and fifty-three hundredths (514.53) feet to a point, thence N 09° 30' 46" W for a distance of one hundred sixty-eight and ninety-five hundredths (168.95) feet to a point, thence S 81° 46' 19" E for a distance of nine hundred fourteen and eleven hundredths (914.11) feet to a point, thence N 60° 51' 41" E for a distance of two hundred sixty-seven and ninety hundredths (267.90) feet to a point, thence S 08° 26' 03" E for a distance of seven hundred eighty-three and thirty-six hundredths (783.36) feet to the point of beginning.

Containing in all twenty-six and three hundred eighty-eight thousandths (26.388) acres, more or less, and being a portion of that property described in a document recorded July 3, 1996, at the Rockingham County Registry of Deeds in Book 3164, Page 2251.



C/H
L-CHIP
ROA164833

035357

2012 JUL 18 AM 10:42

ROCKINGHAM COUNTY
REGISTRY OF DEEDS

QUITCLAIM DEED

KNOW ALL MEN BY THESE PRESENTS, that I, Nicholas F. Codner, Jr. , presently of 162 Litchfield Road, Londonderry, New Hampshire 03053 for consideration paid of $1.00, grant to the Nicholas F. Codner Trust of 2012, a New Hampshire trust established pursuant to a trust agreement dated April 27, 2012, by and between Nicholas F. Codner, Jr. as Grantor and, Craig Fowler, presently of Derry, New Hampshire, as Trustee and having an address of 162 Litchfield Road, Londonderry, New Hampshire 03053 all of my rights, title and interest in and to the following, with Quitclaim Covenants:

A certain parcel of land with the buildings thereon situated on Litchfield Road in the Westerly part of the said Londonderry, bounded and described as follows:

Beginning at the Southwest corner of the premises on the highway leading form the Baptist meeting house in said Londonderry to Litchfield, now known as Corning Road, on the Northerly side of said highway; thence North 30 minutes East, by land now or formerly of Cecile Besse, 145 ½ rods to land now or formerly of Ernest Watts; thence South 87 3/4 degrees East, by land now or formerly of said Watts and by land now of formerly of Pettengill, 65 rods to land now or formerly of Leigh Nesmith; thence South, by land of said Nesmith, about 128 rods and 14.5 feet to land now or formerly of Armand and Mary Bocash at a point 200 feet from said highway; thence Northwsest, by land of said Bocash and parallel with said highway, 200 feet to a point 200 feet from said highway; thence South, by land of said Armand and Mary Bocash, 200 feet to said highway; thence West, along said highway about 52 rods and 14.5 feet to the point begun at.

Meaning and intending to convey the same premises as conveyed to the within Grantor by Quitclaim Deed of Nicholas F. Codner, Jr. and Susan M. Finney (formerly as Susan M. Codner), dated June 3, 1996, and recorded with the Rockingham County Registry of Deeds at Book 3164, Page 2251.

Grantor reserves all rights of Homestead.

N.F.C.

WITNESS my hand and seal this 18th day of June, 2012.

Nicholas F. Codner, Jr.

Witness

Witness

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM

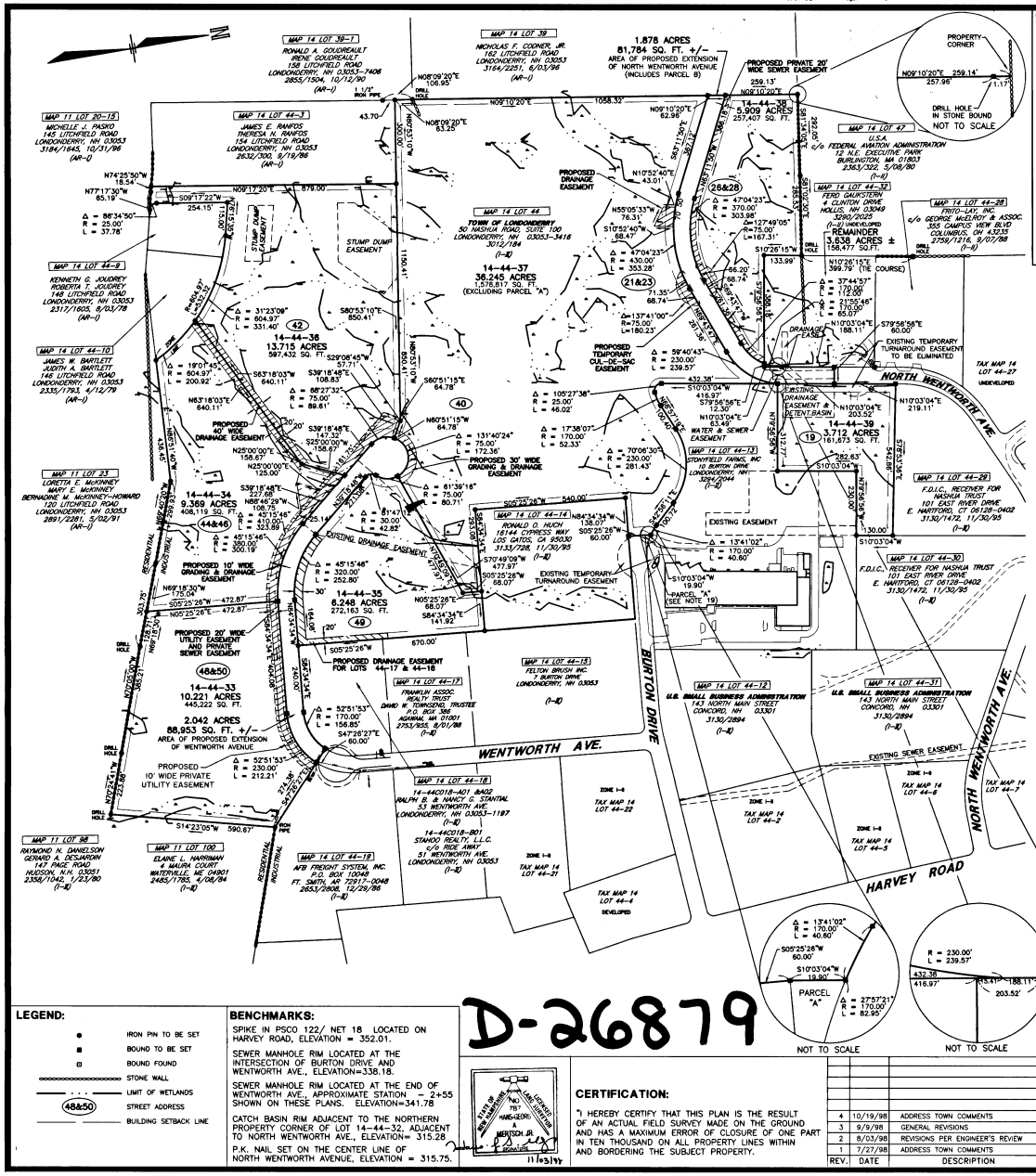
Personally appeared the above named Nicholas F. Codner, Jr., known to me or satisfactorily proven to be the person whose name is subscribed to the within instrument and acknowledged the foregoing instrument to be Nicholas F. Codner, Jr.'s free act and deed. Before me this 18th day of June, 2012.

Justice of the Peace / Notary Public
My commission expires:

FRED J. FORMAN, Justice of the Peace
My Commission Expires June 27, 2012

Printed from Internet for on 11/9/2015

Dec 31 10:20 AM '98


WENTWORTH AVE.
NORTH WENTWORTH AVE.
BURTON DRIVE
HARVEY ROAD
PROPOSED PRIVATE 20' WIDE SEWER EASEMENT
PROPOSED DRAINAGE EASEMENT
PROPOSED TEMPORARY CUL-DE-SAC EASEMENT
PROPOSED 30' WIDE GRADING & DRAINAGE EASEMENT
PROPOSED 40' WIDE DRAINAGE EASEMENT
PROPOSED 10' WIDE GRADING & DRAINAGE EASEMENT
PROPOSED 20' WIDE UTILITY EASEMENT AND PRIVATE SEWER EASEMENT
PROPOSED 10' WIDE PRIVATE UTILITY EASEMENT
PROPOSED DRAINAGE EASEMENT FOR LOTS 44-17 & 44-18
EXISTING EASEMENT
EXISTING DRAINAGE EASEMENT
EXISTING SEWER EASEMENT
EXISTING TEMPORARY TURNAROUND EASEMENT
EXISTING TEMPORARY TURNAROUND EASEMENT TO BE ELIMINATED
STUMP DUMP EASEMENT
WATER & SEWER EASEMENT
DRAINAGE EASEMENT
14-44-37 36.245 ACRES 1,578,817 SQ. FT. (EXCLUDING PARCEL "A")
14-44-38 13.715 ACRES 597,432 SQ. FT.
14-44-39 3.712 ACRES 161,673 SQ. FT.
14-44-34 9.369 ACRES 408,119 SQ. FT.
14-44-35 6.248 ACRES 272,163 SQ. FT.
14-44-33 10.221 ACRES 445,222 SQ. FT.
2.042 ACRES 88,953 SQ. FT. +/- AREA OF PROPOSED EXTENSION OF WENTWORTH AVENUE
1.878 ACRES 81,784 SQ. FT. +/- AREA OF PROPOSED EXTENSION OF NORTH WENTWORTH AVENUE (INCLUDES PARCEL B)
5.909 ACRES 257,407 SQ. FT.
3,638 ACRES ± 158,477 SQ.FT.
PARCEL "A" (SEE NOTE 19)
PARCEL "B" 255 S.F.
MAP 14 LOT 39 NICHOLAS F. CODNER, JR. 162 LITCHFIELD ROAD LONDONDERRY, NH 03053 3164/2251, 6/03/96 (AR-I)
MAP 14 LOT 38-1 RONALD A. GOUDREAULT IRENE GOUDREAULT 158 LITCHFIELD ROAD LONDONDERRY, NH 03053-7406 2855/1504, 10/12/90 (AR-I)
MAP 14 LOT 44-3 JAMES E. RANFOS THERESA N. RANFOS 154 LITCHFIELD ROAD LONDONDERRY, NH 03053 2632/300, 9/19/96 (AR-I)
MAP 14 LOT 44 TOWN OF LONDONDERRY 50 NASHUA ROAD, SUITE 100 LONDONDERRY, NH 03053-3416 3012/184 (I-N)
MAP 14 LOT 44-9 KENNETH G. JOUDREY ROBERTA T. JOUDREY 148 LITCHFIELD ROAD LONDONDERRY, NH 03053 2317/1605, 8/03/78 (AR-I)
MAP 14 LOT 44-10 JAMES W. BARTLETT JUDITH A. BARTLETT 142 LITCHFIELD ROAD LONDONDERRY, NH 03053 2335/1793, 4/12/79 (AR-I)
MAP 11 LOT 23 LORETTA E. McKINNEY MARY E. McKINNEY BERNADINE M. McKINNEY-HOWARD 120 LITCHFIELD ROAD LONDONDERRY, NH 03053 2891/2281, 5/02/91 (AR-I)
MAP 14 LOT 44-14 RONALD O. HUCH 16144 CYPRESS WAY LOS GATOS, CA 95030 3133/728, 11/30/95 (I-N)
MAP 14 LOT 44-13 STONYFIELD FARM, INC. 10 BURTON DRIVE LONDONDERRY, NH 3053-2044 (I-N)
MAP 14 LOT 44-28 FRITO-LAY, INC. c/o GEORGE McGRATH & ASSOC. 355 CAMPUS VIEW BLVD COLUMBUS, OH 43235 2759/1216, 9/07/88 (I-N)
MAP 14 LOT 44-32 FERD GAUKSTERN 4 CLINTON DRIVE HOLLIS, NH 03049 2290/2025 (I-N) UNDEVELOPED
MAP 14 LOT 44-27 UNDEVELOPED
MAP 14 LOT 44-29 F.D.I.C., RECEIVER FOR NASHUA TRUST 101 EAST RIVER DRIVE E. HARTFORD, CT 06128-0402 3130/1472, 11/30/95 (I-N)
MAP 14 LOT 44-30 F.D.I.C., RECEIVER FOR NASHUA TRUST 101 EAST RIVER DRIVE E. HARTFORD, CT 06128-0402 3130/1472, 11/30/95 (I-N)
MAP 14 LOT 44-31 U.S. SMALL BUSINESS ADMINISTRATION 143 NORTH MAIN STREET CONCORD, NH 03301 3130/2894 (I-N)
MAP 14 LOT 44-12 U.S. SMALL BUSINESS ADMINISTRATION 143 NORTH MAIN STREET CONCORD, NH 03301 3130/2894 (I-N)
MAP 14 LOT 44-15 FELTON BRUSH INC. 1 BURTON DRIVE LONDONDERRY, NH 03053 (I-N)
MAP 14 LOT 44-17 FRANKLIN ASSOC. REALTY TRUST DAVID W. TOWNSEND, TRUSTEE P.O. BOX 395 NASHUA, NH 01061 2753/955, 6/01/98 (I-N)
MAP 14 LOT 44-18 14-44C018-A01 BASS RALPH B. & NANCY G. STANTIAL 53 WENTWORTH AVE. LONDONDERRY, NH 03053-1197 (I-N)
14-44C018-B01 STANCO REALTY, L.L.C. c/o RIDE AWAY 51 WENTWORTH AVE. LONDONDERRY, NH 03053 (I-N)
MAP 14 LOT 44-19 AFB FREIGHT SYSTEM, INC. P.O. BOX 10048 FT. SMITH, AR 72917-0048 2653/2808, 12/29/86 (I-N)
MAP 11 LOT 98 RAYMOND N. DANIELSON GERARD A. DESJARDIN 147 PAGE ROAD HUDSON, NH. 03051 2358/1042, 1/23/90 (I-N)
MAP 11 LOT 100 ELAINE L. HARRIMAN 4 MAURN COURT WATERVILLE, ME 04901 2485/1785, 5/08/94 (I-N)
TAX MAP 14 LOT 44-2
TAX MAP 14 LOT 44-4
TAX MAP 14 LOT 44-5
TAX MAP 14 LOT 44-6
TAX MAP 14 LOT 44-7
TAX MAP 14 LOT 44-21
TAX MAP 14 LOT 44-22
ZONE I-8
N69°18'30"W 175.04'
S14°23'05"W 590.67'
S74°26'27"E 60.00'
S47°26'27"E 60.00'
S05°25'26"W 472.87'
S05°25'26"W 670.00'
S05°25'26"W 60.00'
S05°25'26"W 68.07'
S05°25'26"W 141.92'
S10°03'04"W 19.90'
S10°03'04"W 60.00'
S10°03'04"W 282.63'
S10°03'04"W 130.00'
S79°56'56"E 12.30'
S79°56'56"E 60.00'
N10°03'04"E 219.11'
N10°03'04"E 203.52'
N10°03'04"E 63.49'
N10°03'04"E 63.49'
N10°03'04"E 188.11'
N10°03'04"E 63.49'
N10°26'15"E 399.79' (TIE COURSE)
N10°26'15"E 133.99'
N09°10'20"E 259.13'
N09°10'20"E 62.98'
N09°10'20"E 1058.32'
N09°10'20"E 257.96'
N09°09'20"E 106.93'
N08°09'20"E 63.25'
N09°17'20"E 879.00'
N74°25'50"W 18.54'
N77°17'30"W 65.19'
S09°17'22"W 254.15'
N10°52'40"E 43.01'
N55°05'33"W 76.31'
S10°52'40"W 68.47'
S10°26'15"W 399.79'
S10°26'15"W 133.99'
S80°53'10"E 850.41'
S80°51'15"E 64.78'
S39°18'48"E 227.68'
S39°18'48"E 147.32'
S39°18'48"E 108.83'
S39°18'48"E 640.11'
S29°08'45"W 57.71'
S25°00'00"E 158.67'
S25°00'00"E 125.00'
N83°18'03"E 640.11'
N80°51'15"W 64.78'
N25°00'00"E 158.67'
N25°00'00"E 125.00'
N05°25'26"E 472.87'
N05°25'26"E 472.87'
N05°25'26"E 670.00'
N05°25'26"E 60.00'
N05°25'26"E 68.07'
N84°34'34"W 138.07'
N84°34'34"W 141.92'
N74°49'09"W 477.97'
N10°03'04"E 203.52'
N10°03'04"E 63.49'
N10°03'04"E 188.11'
N10°03'04"E 63.49'
N10°03'04"E 19.90'
N10°03'04"E 60.00'
N10°03'04"E 282.63'
N10°03'04"E 130.00'
N10°03'04"E 219.11'
N10°03'04"E 203.52'
N10°03'04"E 63.49

Abutters List

December 23, 2025 | Londonderry Green Energy Campus Project | TFM JOB #18252.02

R014-039-0
Nicholas F Codner Trust 2012
162 Litchfield Road
Londonderry, NH 03053

R014-047-0
US of America Fed Aviation Admin
12 NE Executive Park
Burlington, MA 01803

R014-044-38
State of New Hampshire
PO Box 483, 1 Hazen Drive
Concord, NH 03302-0483

R014-44-0
Granite Ridge Energy, LLC
21 North Wentworth Ave
Londonderry, NH 03053

R014 Lots 044-3 & 040-0
Tracie L & Bruce A Lemieux
154 Litchfield Road
Londonderry, NH 03053

R014-039-1
Victor D & Cecilia C Reis
158 Litchfield Road
Londonderry, NH 03053

R011-020-13
Richard A Belanger
149 Litchfield Road
Londonderry, NH 03053

R011-020-12
Nicole M Thomas
151 Litchfield Road
Londonderry, NH 03053

R011-020-11
Justin M Quish
153 Litchfield Road
Londonderry, NH 03053

R011-020-10
Sharon B Bartholomew
155 Litchfield Road
Londonderry, NH 03053

R011-020-9
Sahin B Dayioglu
157 Litchfield Road
Londonderry, NH 03053

R011-020-8
Eric J and Amber E Pomer
159 Litchfield Road
Londonderry, NH 03053

R011-020-7
John Albert & Lisa Marie Kircaldie
51 Yellowstone Road
Londonderry, NH 03053-2502

R011-020-6
Michael A St. Pierre
163 Litchfield Road
Londonderry, NH 03053-7408

R011-020-5
Clark Family Trust of 2011
165 Litchfield Road
Londonderry, NH 03053

R011-015-0
Erick Mendonsa
167 Litchfield Road
Londonderry, NH 03053

R014-051-0
Claire M Kelly
166 Litchfield Road
Londonderry, NH 03053

R014-050-0
Bruce Allan & Cindy Louise Goodwin
168 Litchfield Road
Londonderry, NH 03053

R014-007-0
Michael W Siracuse III
170 Litchfield Road
Londonderry, NH 03053

R014-005-0
Arianna O'Neil
172 Litchfield Road
Londonderry, NH 03053

R014-048-1
State of New Hampshire
PO Box 483
Concord, NH 03302-0483

R-014-003-26
Gypsum Construction Corp.
184 Rockingham Road
Londonderry, NH 03053

R014-038-0
Tana Properties Ltd. Partnership
40 Temple Street
Nashua, NH 03060

Applicant
PurposeEnergy-Londonderry, LLC
Sean O'Niel
25 Pelham Road Suite #102
Salem, NH 03079

Soil Scientist
BAG Land Consultants
Bruce A. Gilday
43 Rockingham Street
Concord, NH 03301

Wetlands Scientist
TFMoran, Inc
Christopher Danforth
48 Constitution Drive
Bedford, NH 03110

Engineer & Surveyor
TFMoran, Inc
Nicholas Golon
Michael Dahlberg
48 Constitution Drive
Bedford, NH 03110

Letter of Authorization

Nicholas Codner
162 Litchfield Road
Londonderry, NH 03053

Subject: PurposeEnergy – Londonderry

To Whom It May Concern:

I, Nicholas F. Codner, Trustee of Nicholas F Codner Trust 2012, am the landowner of 162 Litchfield Road, Londonderry, NH 03053, Tax Map 14 Lot 39. I am under contract to sell approximately 15 acres of the above noted parcel, north of the existing Conservation Easement, accessible from the right of way from North Wentworth Avenue in Londonderry to PurposeEnergy-Londonderry, LLC. PurposeEnergy-Londonderry, LLC intends to construct a new facility on the parcel from my property at 162 Litchfield Road. I support PurposeEnergy's application for all required site plan, zoning, federal, state and local permits to support the project.

Regarding permit applications associated with the project, I authorize PurposeEnergy-Londonderry, LLC, and its representatives, to sign on behalf of the owner on all local, state, and federal permit applications. I authorize TFMoran, Inc., and its representatives, to sign as agent or applicant on all local, state and federal permit applications.

Applicant/Developer:
PurposeEnergy – Londonderry LLC
25 Pelham Road, Suite 102
Salem, NH 03079

Applicant's Representative:
Sean O'Neill, VP Development

Should you need additional information or have any questions on the project please contact Sean O'Neill at (917) 776-6155 or oneill@purposeenergy.com. We look forward to welcoming PurposeEnergy's investment in Londonderry and its operations to the local business community.

Sincerely,

Nick Codner

EVERSOURCE ENERGY

Field Engineering & Design Box 330
370 Amherst St
Nashua, NH 03063

4/4//25

Re: 225 ROCKINGHAM RD LONDONDERRY, NH

To whom it may concern:

Eversource Energy agrees to provide electric service to the above site in accordance with the Tariff for Electric Service on file with the New Hampshire Public Utilities Commission (NHPUC), subject to the applicable NHPUC rules and regulations, as well as Eversource's "Requirements for Electric Service Connections".

Please keep in mind that all requirements for providing electric service, such as, but not limited to, contracts, licenses, fees, payments, easements, and inspections must be provided to Eversource prior to the construction of the electric facilities.

This letter does not constitute you having an approved electric layout, just that we provide electric service in the Town of Londonderry. There is 3 Ph distribution facilities on Rockingham Rd, but may need to be extended to this property. When you have approved plans, please work with our field representative and they will provide you with a layout.

Should you have any questions or concerns, please call us at 1-800-362-7764

Sincerely,

Marco Martinelli

Marco Martinelli
Field Supervisor Electric Design

Liberty | Business & Community Development
130 Elm Street
Manchester, NH 03031
T 800-833-4200
libertyutilities.com
#

4.10.2025

Purpose Energy LLC

Melinda Macinnis

25 Pelham Road Suite 102

Salem, NH 03079

RE: Gas Availability Letter

Proposed Londonderry Green Energy Campus, 162 Litchfield Rd, Londonderry

Melinda,

Liberty has received a request for gas availability clearance letter for a proposed industrial project located 162 Litchfield Road in Londonderry, NH. As part of this request, Liberty was provided TF Moran Test Fit Plan dated February 28, 2025.

Liberty has a 4" high pressure (60 PSIG MAOP) main located in Burton Drive and a 2" high pressure main located in Wentworth Ave that may be utilized to provide natural gas service for project. Town of Londonderry approved plans and finalized gas load information for the new project will need to be provided to Liberty to perform a full review in accordance with our current tariff and to determine scope of work required to provide natural gas service.

A final commitment to serve and agreement will be provided once full engineering review and financial analysis according to our current tariff is completed by Liberty.

If you need any additional information for this project, please feel free to call or email me at your convenience.

Respectfully,

Andy Morgan

Andrew Morgan | Liberty (New Hampshire**) |**

Manager III-GAS, Key Accounts

P: 603-782-2321 | C: 603-327-5357 | E: Andrew.Morgan@libertyutilities.com#

#

#

COMCAST BUSINESS SERVICE ORDER

Company Name: PurposeEnergy **Order #** 41687696

Service Location:		**Billing Location:**	
Address 1	225 ROCKINGHAM RD	Address 1	225 ROCKINGHAM RD
Address 2		Address 2	
City	LONDONDERRY	City	LONDONDERRY
State	NH	State	NH
Zip	03053	Zip	03053
Primary Contact Name	Melinda MacInnis	Billing Contact Name	Melinda MacInnis
Primary Contact Phone	(603) 456-9527	Billing Contact Phone	(603) 456-9527
Primary Contact Email	melinda@purposeenergy.com	Billing Contact Email	melinda@purposeenergy.com
		Tax Exempt	No
Service Term	12 Months	**Promo Code:**	
Package Code:	PL_PD_$209.99BIGigX_SE_Pkg_1yr		

Package & Promotion Details

Data, SecurityEdge Package for discounted rate of $209.99 for months 1-60, increasing to then regular rate in month 61. Equipment, installation, taxes and applicable fees, including Broadcast TV Fee, Regional Sports Fee, regulatory recovery fee and other charges extra and subject to change. Package includes Business Internet Gigabit Extra (download speed up to 1.25 Gbps) and SecurityEdge. 1 year term agreement required. Additional $10 monthly discount with enrollment in both paperless billing and automatic payments with bank account via https://business.comcast.com/myaccount within 30 days of service installation. If either paperless billing or automatic payment service is cancelled, or automatic payment method is changed to credit or debit card, the monthly service charge automatically increases by $10.00. $20 mobile discount limited to customers with Comcast Business Internet Standard service or higher who activate new Comcast Business Mobile service with minimum one Mobile Unlimited line. Mobile discount applied to Comcast Business Internet bill for 12 months. Limit one discount per account. Mobile Unlimited lines must be activated within 90 days of Internet installation to qualify for the mobile discount. After 12 months, or if any of the required services are cancelled or downgraded, or if Unlimited service is switched to By the Gig, the mobile discount will be removed. Comcast Business Internet must be installed by 4/28/2025 to qualify for the mobile discount.

Customer Initials

Package	Services Included	Qty	Package Monthly Service Charge[1]	Package Non-Recurring Charge[2]
Data, SecurityEdge Package	Business Internet Gigabit Extra (download speeds up to 1.25 Gbps)	1	$ 209.99	$ 0.00
	SecurityEdge	1		

Equipment and Additional Service(s)	Qty	Additional Monthly Service Charge[1]	Additional Non-Recurring Charge[2]
Equipment Fee			
Package Equipment Fee	1	$ 24.95	
Equipment Sub Total		**$ 24.95**	
Additional Fees			
Standard Installation Fee / Change of Service Fee	1		$ 129.95
Total Additional Charge		**$ 24.95**	**$ 129.95**

	Monthly Service Charge[1]	Non-Recurring Charge[2]
Total Charge for Service Order	**$ 234.94**	**$ 129.95**

COMCAST BUSINESS

COMCAST BUSINESS SERVICE ORDER

Company Name: PurposeEnergy **Order #** 41687696

[1] Charges identified in the Service Order Agreement are exclusive of maintenance and repair charges, and applicable federal, state, and local taxes, fees, surcharges and recoupments (however designated).
[2] Non-Recurring Charges in the Service Order Agreement reflect activation and installation fees for this order. This excludes any custom installation fees.

General Special Instructions

AGREEMENT

1. This Comcast Business Service Order Agreement ("Agreement") sets forth the terms and conditions under which Comcast Cable Communications Management, LLC and its operating affiliates ("Comcast") will provide the Services to the above-named customer ("Customer"). This Agreement consists of this document (this "SOA"), the Business Services Customer Terms and Conditions (the "Terms and Conditions"), and any jointly executed amendments ("Amendments") entered under the Agreement. In the event of inconsistency among these documents, the order of precedence will be as follows: (1) Amendments, (2) Terms and Conditions, and (3) this SOA. This Agreement shall commence and become a legally binding agreement upon Customer's execution of the SOA. The Agreement shall terminate as set forth in the Terms and Conditions. The Terms and Conditions are located at https://business.comcast.com/terms-conditions-smb. Capitalized terms not otherwise defined in this SOA shall have the meaning ascribed to them in the Terms and Conditions. Use of the Services is also subject to the then-current Acceptable Use Policy for High-Speed Internet Services (the "AUP") located at https://business.comcast.com/customer-notifications/acceptable-use-policy (or any successor URL), and the then-current Privacy Statement (the "Privacy Policy") located at https://business.comcast.com/privacy-statement (or any successor URL), both of which Comcast may update from time to time.

2. Each Comcast Business Service ("Service") carries a thirty (30) day money back guarantee. If within the first thirty (30) days following installation of a new Service, Customer is not completely satisfied, Customer may cancel the Service and Comcast will issue a refund for the monthly recurring charge paid for the first thirty (30) days of Service, excluding any custom installation fees, voice usage charges, fees, taxes, surcharges and optional service fees. Customer will be charged for any non-refundable fees and other charges. In order to be eligible for the refund, Customer must cancel the new Service within thirty (30) days of installation and return any Comcast-provided equipment in good working order. In no event shall the refund exceed $500.00. If Customer uses the Service in the first thirty (30) days, Customer will be refunded its subscription fees, but charged the applicable one-time fee. For the avoidance of doubt, this money back guarantee does not apply to renewals of an existing Service.

3. Modifications: All modifications to the Agreement, if any, must be captured in a written Amendment, executed by an authorized Comcast Vice President and the Customer. All other attempts to modify the Agreement shall be void and non-binding on Comcast. Customer by signing below, agrees and accepts the Terms and Conditions of this Agreement.

CUSTOMER SIGNATURE
By signing below, Customer agrees and accepts the Terms and Conditions of this Agreement. General Terms and Conditions can be found at http://business.comcast.com/terms-conditions/index.aspx
Signature
Name
Title
Date

FOR COMCAST USE ONLY	
Sales Representative	Shane Talley-Thomas
Sales Representative Code	
Sales Manager Name	Megan Pelletier
Sales Manager Approval	
Division	NorthEast

COMCAST BUSINESS

COMCAST BUSINESS SERVICE ORDER

Company Name: PurposeEnergy **Order #** 41687696

BUSINESS INTERNET CONFIGURATION DETAILS

Transfer Existing Comcast.net	No	**Equipment**	Comcast Owned
Number of Static Ips	0	**Business Web**	No

Outlook

N Wentworth Drive, Londonderry

From StPierre,John <jstpierre@manchesternh.gov>
Date Tue 4/15/2025 1:06 PM
To Melinda MacInnis <Melinda@purposeenergy.com>
Cc Penn,Kelly <kpenn@manchesternh.gov>; Chabot, Guy <GCHABOT@manchesternh.gov>

===== External Sender =====

Good Afternoon Melinda,

I can confirm that the Manchester Water Works is the utility which provides water service to North Wentworth Drive in Londonderry.

The Manchester Water Works will not provide a “Will Serve” letter until a full set of engineering, plumbing, and fire protection plans are provided to us for review. This typically happens during the planning board approval process.

Thank you,
John

John St.Pierre, P.E.
Planning and Meter Services Manager
Manchester Water Works
281 Lincoln Street
Manchester, NH 03103
jstpierre@manchesternh.gov
(603)792-2811

Serving our community since 1871

The Right-To-Know Law (RSA 91-A) provides that most e-mail communications, to or from City employees and City volunteers regarding the business of the City of Manchester, are government records available to the public upon request. Therefore, this email communication may be subject to public disclosure.

The Right-To-Know Law (RSA 91-A) provides that most e-mail communications, to or from City employees and City

Zachary Zweifler

From: noreply@faa.gov
Sent: Wednesday, December 17, 2025 12:52 PM
To: Zachary Zweifler
Subject: Status of FAA Filing

***** External Sender *****

Your filing is assigned Aeronautical Study Number(s) (ASN): 2025-ANE-3843-OE, 2025-ANE-3846-OE, 2025-ANE-3844-OE, 2025-ANE-3847-OE, 2025-ANE-3849-OE, 2025-ANE-3848-OE, 2025-ANE-3845-OE, 2025-ANE-3842-OE.

To review your electronic record, go to our website oeaaa.faa.gov and Search to locate your case using the assigned Aeronautical Study Number (ASN).

The FAA verified your filing and an aeronautical study has been initiated. Please allow a minimum 45 days for the FAA to complete the study. Please refer to the assigned ASN on all future inquiries regarding this filing.

For Wind Turbine proposals only, please ensure Wind Turbine Data as described on the project summary page in your registered e-filing account has been uploaded to your filing.

To ensure e-mail notifications are delivered to your inbox please add noreply@faa.gov to your address book. Notifications sent from this address are system generated FAA e-mails and replies to this address will NOT be read or forwarded for review.

Links contained in this email have been replaced. If you click on a link in the email above, the link will be analyzed for known threats. If a known threat is found, you will not be able to proceed to the destination. If suspicious content is detected, you will see a warning.

Storm Water Pollution Prevention Plan

Southern New Hampshire Green Energy Campus
North Wentworth Avenue
Londonderry, NH 03053

Prepared for:
PurposeEnergy – Londonderry, LLC
25 Pelham Road, Suite 102
Salem, NH 03079

Prepared On:
May 31, 2025

Revised On:
December 17, 2025

TFM Job Number:
18252.02

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Planners

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

Stormwater Pollution Prevention Plan (SWPPP)

For Construction Activities At:

Southern New Hampshire Green Energy Campus
North Wentworth Road
Londonderry, NH 03053

SWPPP Prepared For:

PurposeEnergy – Londonderry, LLC
25 Pelham Road Suite 102
Salem, NH 03079

SWPPP Prepared By:

TFMORAN, INC.
ROBERT DUVAL, P.E.
BRYAN LEVESQUE, P.E., CPESC
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
603-472-4488
603-472-9747

SWPPP Preparation Date:

May 31, 2025

Estimated Project Dates:

Project Start Date: TBD
Project Completion Date: TBD

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SECTION 1: CONTACT INFORMATION/RESPONSIBLE PARTIES

1.1 Operator(s) / Subcontractor(s)

Operator(s): Area of Control: Owner & Overall Site Control

PurposeEnergy-Londonderry, LLC
c/o Sean O'Neill
25 Pelham Road, Suite 102
Salem, NH 03079
(insert contact phone and email)

Emergency 24-Hour Contact:

PurposeEnergy-Londonderry, LLC
c/o Sean O'Neill
25 Pelham Road, Suite 102
Salem, NH 03079

1.2 Stormwater Team

PurposeEnergy-Londonderry, LLC: Project Owner

PurposeEnergy-Londonderry, LLC
c/o Sean O'Neill
25 Pelham Road, Suite 102
Salem, NH 03079

TBD: Site Contractor

TBD

TFMoran, Inc: SWPPP Preparation & Inspections

SWPPP Coordinator
Bryan Levesque, PE, CPESC
603-472-4488 x 358
blevesque@tfmoran.com

Stormwater Team			
Name and/or position, and contact	Responsibilities	I Have Completed Training Required by CGP 6.2	I Have Read the CGP and Understand the Applicable Requirements
TFMoran, Inc. Bryan Levesque, P.E., CPESC EPA Inspector Certification 603-472-4488 x358 blevesque@tfmoran.com	SWPPP Inspections SWPPP Revisions	☒ Yes ☐ No	☒ Yes Date: 06/01/2025
TFMoran, Inc. Dan Blais, CPESC, CESSWI EPA Inspector Certification 603-472-4488 dblais@tfmoran.com	SWPPP Inspections	☒ Yes ☐ No	☒ Yes Date: 06/01/2025
TFMoran, Inc. Scott Olsen, EIT, CPESC-IT EPA Inspector Certification 603-472-4488 solsen@tfmoran.com	SWPPP Inspections	☒ Yes ☐ No	☒ Yes Date: 06/01/2025
TFMoran, Inc. Allyson Jones EPA Inspector Certification 603-472-4488 ajones@tfmoran.com	SWPPP Inspections	☒ Yes ☐ No	☒ Yes Date: 06/01/2025

SECTION 2: SITE EVALUATION, ASSESSMENT, AND PLANNING

2.1 Project/Site Information

The Project involves the extension of a new waste to biogas digester facility on North Wentworth Road in Londonderry. The project consists of the clearing of the existing site and construction of a level building pad; construction of the new digester tanks, piping, buildings, electric, water and gas lines, sanitary sewer lines, site lighting, and a new access from the end of North Wentworth Road.

SIZE OF PROPERTY: Approx. 15 Acres
TOTAL AREA OF CONSTRUCTION DISTURBANCES: 11.4 Acres

Project Latitude/Longitude

Latitude:	Longitude:
42.905442 °N	71.431632 °W

Horizontal Reference Datum: ☒ NAD 83 or WGS 84 via Google Maps

Additional Project Information

Is the project/site located on Indian country lands, or located on a property of religious or cultural significance to an Indian tribe? ☐ Yes ☒ No

Are you applying for permit coverage as a "federal operator" as defined in Appendix A of the 2022 CGP? ☐ Yes ☒ No

2.2 Discharge Information

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)? ☒ Yes ☐ No

Are there any surface waters within 50-feet of disturbance on this project ☐ Yes ☒ No

Table 1 – Names of Receiving Waters

Name(s) of the first surface water that receives stormwater directly from your site and/or from the MS4 (note: multiple rows provided where your site has more than one point of discharge that flows to different surface waters)
1. Watts Brook

Table 2 – Impaired Waters / TMDLs (Answer the following for each surface water listed in Table 1 above)

	Is this surface water listed as "impaired"?	If you answered yes, then answer the following:			
		What pollutant(s) are causing the impairment?	Has the TMDL been completed?	Title of the TMDL document	Pollutant(s) for which there is a TMDL
1	☒ YES ☐ NO	Chloride, Dissolved Oxygen, Iron, pH, Mercury	☐ YES ☒ NO	**33883 NE Regional Mercury TMDL**	**Mercury**

Describe the method(s) you used to determine whether or not your project/site discharges to an impaired water: USEPA Waterbody Quality Assessment Reports & NHDES Data

Table 3 – Tier 2, 2.5, or 3 Waters (Answer the following for each surface water listed in Table 1 above)

	Is this surface water designated as Tier 2, Tier 2.5, or Tier 3 water? (See Appendix F)	If you answered yes, specify which Tier (2, 2.5, or 3) the surface water is designated as?
1	☐ YES ☒ NO	

2.3 Nature of the Construction Activity

Description of Project

The Project involves the extension of a new waste to biogas digester facility on North Wentworth Road in Londonderry. The project consists of the clearing of the existing site and construction of a level building pad; construction of the new digester tanks, piping, buildings, electric, water and gas lines, sanitary sewer lines, site lighting, and a new access from the end of North Wentworth Road.

Construction Support Activities

There are no support facilities proposed for this project. If they become necessary, they will be added to the SWPPP.

2.4 Sequence and Estimated Dates of Construction Activities

Approximate Sequence of Activities

Survey and stake limits of clearing and grubbing.
Survey and stake limits of disturbance.
Install temporary erosion control measures and establish stabilized construction entrance(s).
Clear and grub all of the areas to be disturbed by construction.
Construct a level building pad, construct the hew facility.
Perform all remaining site construction.
Loam and seed all disturbed areas.
Remove temporary erosion and sedimentation control measures.

2.5 Allowable Non-Stormwater Discharges

List of Allowable Non-Stormwater Discharges Present at the Site

Type of Allowable Non-Stormwater Discharge	**Likely to be Present at Your Site?**
Discharges from emergency fire-fighting activities	☒ YES ☐ NO
Fire hydrant flushings	☒ YES ☐ NO
Landscape irrigation	☒ YES ☐ NO
Waters used to wash vehicles and equipment	☒ YES ☐ NO
Water used to control dust	☒ YES ☐ NO
Potable water including uncontaminated water line flushings	☐ YES ☒ NO
Routine external building wash down	☐ YES ☒ NO
Pavement wash waters	☒ YES ☐ NO
Uncontaminated air conditioning or compressor condensate	☐ YES ☒ NO
Uncontaminated, non-turbid discharges of ground water or spring water	☒ YES ☐ NO
Foundation or footing drains	☒ YES ☐ NO
Construction dewatering water	☒ YES ☐ NO

2.6 Site Maps

Site Maps are located in Appendix A

SECTION 3: DOCUMENTATION OF COMPLIANCE WITH OTHER FEDERAL REQUIREMENTS

3.1 Endangered Species Protection

The site was reviewed using the IPAC search function of the USFWS. No critical habitats are noted for the site.

3.2 Historic Preservation

Appendix E, Step 1

Do you plan to install any of the following stormwater controls at your site? Check all that apply below, and proceed to Appendix E, Step 2.

- ☐ Dike
- ☒ Berm
- ☒ Catch Basin
- ☒ Pond
- ☒ Stormwater Conveyance Channel (e.g., ditch, trench, perimeter drain, swale, etc.)
- ☒ Culvert
- ☐ Other type of ground-disturbing stormwater control:

Appendix E, Step 2

If you answered yes in Step 1, have prior surveys or evaluations conducted on the site already determined that historic properties do not exist, or that prior disturbances at the site have precluded the existence of historic properties on site? ☒ YES ☐ NO

3.3 Safe Drinking Water Act Underground Injection Control Requirements

Do you plan to install any of the following controls?

- ☐ Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

- ☒ Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow

- ☐ Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

Subsurface infiltration systems are planned for this project.

SECTION 4: EROSION AND SEDIMENT CONTROLS

Erosion and sediment controls used on the project may include, but are not limited to:

- Construction Sequencing
- Silt Fence
- Compost Filter Socks and/or Compost Filter Berms
- Construction Entrances
- Vegetated Buffers
- Fiber Rolls/Wattles
- Storm Drain Inlet Protection
- Temporary Sediment Basins
- Stormwater Detention Basins (utilized for construction runoff storage during construction)
- Pneumatic Plugs
- Vegetated and Stone Lined Conveyance Channels/Ditches
- Geotextile Matting and Fabrics
- Stone Check Dams
- Hay Mulch with Tackifiers
- Dust Suppression with Water Truck
- Soil Stabilizers

4.1 Natural Buffers or Equivalent Sediment Controls

Buffer Compliance Alternatives
Are there any surface waters within 50 feet of your project's earth disturbances? ☒ YES ☐ NO

Buffer Exceptions
Which of the following exceptions to the buffer requirements applies to your site?

☐ This is a linear construction project that will provide and maintain an undisturbed natural buffer where this is less than 50 feet and supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer. There are locations in the project at which the limits of work are at or in wetlands and streams. To the extent practicable, the project will install and maintain two independent rows of perimeter erosion and sediment control practices of silt fence in conjunction with silt sock.

☐ Buffer disturbances are authorized under a CWA Section 404 permit.

☐ Buffer disturbances will occur for the construction of a water-dependent structure or water access area (e.g., pier, boat ramp, and trail).

None of these apply to this Project.

4.2 Perimeter Controls

General - Sediment controls will be installed along the perimeter areas of the site that will receive stormwater from earth disturbing activities.

Specific Perimeter Controls

Perimeter Control # 1 - Silt Fence

BMP Description: Silt fence should be installed along the down gradient areas of the property as shown on the plan.

Installation Schedule:	The silt fence shall be installed before construction begins as indicated on the design plans.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm:** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	The silt fence shall be inspected to ensure that it is intact and there are no gaps or tears along its length. If gaps or tears are found during the inspection, the fabric shall be repaired or replaced immediately. Accumulated sediment shall be removed from the base of the fence once it reaches one-third the height of the silt sock and disposed of in a legal manner. Before the silt fence is removed from the site, any accumulated sediment shall be removed and disposed of in a legal manner.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

<u>Alternate</u> Perimeter Control and Sediment Barrier

Perimeter Control # 2 - Erosion Control Mix Berm or Stump Grindings Berm

BMP Description: Erosion Control Mix or Stump Grindings Berm should be installed in place of or in conjunction with silt fencing as shown on the Site Map.

Installation Schedule:	The Erosion Control Mix or Stump Grindings Berm (Berm) shall be installed before construction begins as indicated on the design plans.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm:** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	The Berm should be inspected to ensure that it is intact and there are no gaps along its length. If gaps are found during the inspection, the Berm shall be repaired immediately. Accumulated sediment shall be removed from the Berm once it reaches one-third the height of the Berm and disposed of in a legal manner. Before the Berm is removed from the site, any accumulated sediment shall be removed and disposed of in a legal manner.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

<u>Alternate</u> Perimeter Control and Sediment Barrier

Perimeter Control # 3 – Erosion Control Mix or Compost Filter Sock

BMP Description: Erosion Control Mix or Compost Filter Sock should be installed in place of, or in conjunction with silt fencing as shown on the Site Map.

Installation Schedule:	The Compost Filter Sock shall be installed before construction begins as indicated on the design plans.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm:** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	The Compost Filter Sock should be inspected to ensure that it is intact and there are no gaps or tears along its length. If gaps or tears are found during the inspection, the Compost Filter Sock shall be repaired or replaced immediately. Accumulated sediment shall be removed from the Compost Filter Sock once it reaches one-half the height of the Compost Filter Sock and disposed of in a legal manner. Before the Compost Filter Sock is removed from the site, any accumulated sediment shall be removed and disposed of in a legal manner.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

4.3 Sediment Track-Out

General - Stone construction entrance pads will be utilized to minimize the track-out of sediment onto off-site streets, other paved areas, and sidewalks from vehicles exiting your construction site.

Track-Out Control # 1 - Stabilized Construction Entrance

BMP Description: The stabilized construction entrances consisting of stone and filter fabric should be installed at the entrance/exit onto existing paved surfaces, as identified on the design plans, to prevent off-site transport of sediment by construction vehicles. The anti-tracking pad shall be at least seventy-five feet long, a minimum of 12 feet wide (reduced due to narrow work zone), flared at the intersection with parking areas, and shall consist of a twelve-inch layer of 3-6" stone. The stone shall be placed over a layer of geotextile fabric to reduce mitigation of sediment from the underlying soil.

Installation Schedule:	The stabilized construction entrance shall be installed before construction begins on site. The stone shall remain in place until the subgrade of pavement is installed on site.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm:** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	The stabilized construction entrance shall be maintained in a condition that will prevent tracking or flowing of sediment onto any paved surface not within the active construction. Any sediment tracked, spilled, dropped, or washed onto these areas shall be immediately cleaned up and disposed of in a legal manner. Sediment shall be removed from the entrance at least weekly, or more often if necessary. If sediment has clogged the entrance, then additional crushed stone shall be added. Replacement of the entrance may become necessary when it becomes completely filled with sediment. The entrance shall be reshaped as indicated on the design plans for runoff control. The construction entrance shall be removed at the completion of the project.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

4.4 Stockpiled Sediments or Soils

General – The following apply to stockpiles of soils and sediment materials for the project:

- Stockpiles are to be located outside of any natural buffers established under Part 2.1.2.1a and physically separated from other stormwater controls made in accordance with Part 2.1 of the CGP.
- Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier.
- Where practicable, provide cover or appropriate temporary stabilization to protect from precipitation and/or minimize sediment discharge.
- Do not hose down or sweep accumulated soil or sediment on pavements into any stormwater conveyance (unless connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet or surface water; and,
- Unless infeasible, contain and securely protect from wind.

Specific Stockpile Controls

The perimeter controls outlined in Section 4.2 shall be utilized as a perimeter sediment barrier.

4.5 Dust Control

General - The generation of dust will be minimized to the extent feasible through the appropriate application of water and/or other dust suppression techniques.

Specific Dust Controls

Dust Control # 1 - Watering

BMP Description: Dust from the site should be controlled by using a mobile pressure-type distributor truck to apply potable water to disturbed areas. The mobile unit will apply water at a rate of 300 gallons per acre and minimize as necessary to prevent runoff and ponding.

Installation Schedule:	Dust controls will be implemented as needed upon the start of site grading, during windy conditions (forecasted or actual wind conditions of 20 mph or greater) and continue through grading operations. Potable water will be applied at a rate of 300 gallons per acre and be performed by a mobile pressure-type distributor truck no more than three times a day from May to September and once per day from October to April, or as required.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	At least one mobile unit shall always be available to distribute potable water to control dust on the site. Each mobile unit shall be equipped with a positive shutoff valve to prevent overwatering of the disturbed area. For vehicle and equipment maintenance practices, see Section 3, Part 3.4.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

4.6 Minimize the Disturbance of Steep Slopes

General

- Steep slopes will be stabilized with stone or erosion control blankets per NHDOT specifications.
- Slopes that will have a vegetative cover for final stabilization will be tracked (to the extent practicable) prior to application of slope mix seed.

Specific Steep Slope Controls

Steep Slope Control # 1 – Erosion Control Matting

BMP Description: North American Green (or approved equal) BioNet blanket slope protection should be used to provide stabilization for the slopes as shown on the project plans. The blanket slope protection shall be installed in accordance with the manufacturer's recommendations and project requirements.

Installation Schedule:	The blanket slope protection shall be installed once the slopes are final graded.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	The blanket shall be inspected to determine if cracks, tears, or breaches have formed; if so, the blanket shall be repaired immediately. Contact with the soil must be maintained and erosion should not occur under the blanket. Any areas where the blanket is not in close contact with the ground shall be repaired or replaced.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

4.7 Topsoil

General - Topsoil will be preserved, stockpiled, and reused on the site to the extent practicable.

Specific Topsoil Controls

Topsoil Control # 1 - Topsoil

BMP Description: Topsoil stripped from the construction area Should be stockpiled as identified on the SWPPP sheets. The stockpile area shall be in an area that will not interfere with the construction phases and at least 15 feet away from areas of concentrated flows or pavement. The slopes of the stockpile shall not exceed 2:1 to prevent erosion. A silt fence (or alternate perimeter control) shall be installed around the perimeter of the stockpile, in accordance with the specifications on the design plans and in Section 2.1.2.4. Of the CGP. The stockpile shall be temporarily stabilized with erosion controls as described in Section 2.1.2.4.c of the CGP if necessary.

Installation Schedule:	Topsoil stockpiles shall be established during grading activities. Temporary stabilization will be applied immediately after the slopes of the stockpile have been graded and construction equipment traverses the slopes.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm:** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	Areas on or around the stockpile that have eroded shall be immediately stabilized with proper erosion controls.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

4.8 Soil Compaction

General - To minimize topsoil compaction, to the extent practicable after loam or humus is placed, vehicle and equipment traffic will be limited in the areas where final vegetative stabilization will occur.

4.9 Storm Drain Inlets

General - The project will install inlet protection measures that remove sediment from discharge prior to entry into the storm drain inlet.

Specific Storm Drain Inlet Controls #1 - Sedimentation Control at Catch Basin

BMP Description: All existing catch basins within the paved areas should be protected from sediment by installing a filter fabric wrapped around the grate.

Installation Schedule:	Sedimentation control at the catch basins shall be installed as the catch basin structures are constructed.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance	Clean, remove and/or replace, the protection measures as sediment accumulates, if the filter becomes clogged, and/or performance is otherwise compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, you must remove the deposited sediment by the end of the same workday in which it is found or by the end of the following workday if removal by the same workday is not feasible.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

Specific Storm Drain Inlet Controls #2 - Dandy Bag II (or approved equal)

BMP Description: Existing catch basins should be protected from sediment by Dandy Bag II catch basin inserts. The inserts should be removed by the contractor once the construction site has been permanently stabilized.

Installation Schedule:	Dandy Bag II shall be installed in the existing catch basin prior to any earth moving activity on site and within the new catch basins immediately after they are installed.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm:** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	Clean, remove and/or replace, the protection measures as sediment accumulates, if the filter becomes clogged, and/or performance is otherwise compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, you must remove the deposited sediment by the end of the same workday in which it is found or by the end of the following workday if removal by the same workday is not feasible.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

4.10 Constructed Stormwater Conveyance Channels

General - Stormwater conveyance channels will be constructed at various locations for the project. These channels will be lined with non-woven geotextile fabric and stone, or an approved erosion control matting prior to directing stormwater flows to minimize erosion in the channel.

4.11 Dewatering Practices

General - Ground water and/or accumulated stormwater that is removed from excavations, trenches, foundations, vaults, or other similar points of accumulation, shall be effectively managed by appropriate controls prior to leaving the construction site. Dewatering water that is non-contaminated and non-turbid dewatering water may be able to be discharged without being routed to a control.

Specific Dewatering Practices:

Dewatering Practice # 1 - Excavation Dewatering

BMP Description: Construction dewatering practices are intended to prevent sedimentation associated with managing water removed from excavations during construction. Activities must be conducted to remove sediments, prevent the discharged water from eroding soil on the site, and preserve down gradient wetlands and ditches. Water should be pumped into a portable dewatering bag, frac tank or a dewatering area. The dewatering area shall be located on a flat surface not within a runoff path. For non-vegetated dewatering areas, a layer of crushed stone with a minimum diameter of 2 inches should be installed. The dewatering area shall be encompassed with silt fence or sediment logs to allow infiltration of water into the ground. Dewatering cannot be discharged within 20-ft of a wetland resource area or into a closed drainage system (i.e.: catch basins drain manholes, underground drainage systems).

***Installation Schedule*:**	The dewatering facility should be installed prior to starting dewatering activities.
Inspections:	**Weekly:** The dewatering facility area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized; Additionally, the dewatering facility should be inspected daily by the Contractor during the active dewatering process. **During/Post-Storm:** The environmental monitor shall also inspect the dewatering facility during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	Special attention should be paid to the buffer area of the dewatering facility for any signs of erosion or flow concentration that may damage the buffer's vegetation and/or the underlying soil. Dewatering discharge should be stopped immediately upon any sign of instability or erosion in the receiving area. If a portable dewatering bag is used for the dewatering facility, check the bag daily for rips and repair or replace as needed. If a gravel pad is used, check the surface area for erosion and install additional crushed stone if necessary. The silt fence or sediment log perimeter adjacent to the downstream side of the dewatering facility should be checked for gaps, tears or other deficiencies and repaired/replaced as needed. Dewatering should be avoided during periods of intense, heavy rain. Any repairs or replacements to the dewatering facilities should be done by the end of the same workday in which it is found or by the end of the following workday if removal by the same workday is not feasible. The dewatering effluent should be visually monitored to assess whether additional treatment is required to protect downstream receiving waters. Care must be exercised to prevent contact of dewatering effluent with oil, grease, other petroleum products, toxic and/or hazardous materials. Contaminated runoff must be contained, treated, and discharged or removed in accordance with the Project Plans and Specifications, as well as NHDES requirements. Turbid backwash water should either be hauled away for disposal or returned to the start of the treatment process. Replace or clean filter media for the dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

4.12 Chemical Treatment

Stormwater treatment chemicals will not be utilized on this project.

4.13 Other Stormwater Controls

General - This document can be amended to include other stormwater controls if they become necessary.

4.14 Site Stabilization

Site Stabilization Practice (only use this if you are <u>not</u> located in an arid, semi-arid, or drought-stricken area)

☒ *Vegetative* ☐ *Non-Vegetative*
☒ *Temporary* ☐ *Permanent*

Temporary Stabilization

BMP Description: Earthwork temporarily ceasing on a portion or the entire site and not resuming within 3 days shall be stabilized. Proposed pavement areas are to be stabilized with compacted gravels; other areas that will not be permanently seeded within 14 days of disturbance with 6" loam and not less than 2.8 lbs. of Erosion Control Seed Mix per 1,000 sq. ft. Proposed vegetated areas not exhibiting a minimum of 85% vegetative cover growth by the end of growing season, or which are disturbed after the end of growing season, shall be stabilized by sowing Erosion Control Seed Mix and mulching with hay mulch, hydraulic mulch, or other approved method. On slopes greater than 3:1, the area shall be seeded and protected with erosion control blankets or mulched using a minimum of 3.2 tons of mulch per acre that is secured with anchored netting, tackifiers, hydraulic mulch or bonded fiber matrix (BFM). The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or frozen ground and shall be completed prior to thawing or spring melting events. All ditches or swales not exhibiting a minimum of 85% vegetative growth by the end of growing season, or which are disturbed shall be stabilized temporarily with stone or composite turf reinforcement mat (North American Green SC 150). After November 15, parking surfaces where work has stopped for the winter season, shall be protected with a minimum of 3 inches of crushed gravel NHDOT Item No. 304.3.

Installation Schedule:	Inspect portions of the site where earthwork temporarily ceases and shall not resume within 3 days.
Inspection:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	If washout, breakage, or erosion occurs, the surface will be repaired, and new stabilization measures shall be added to the damaged areas.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

Site Stabilization Practice (only use this if you are not located in an arid, semi-arid, or drought-stricken area)

☒ *Vegetative* ☐ *Non-Vegetative*
☐ *Temporary* ☒ *Permanent*

Permanent Seeding

BMP Description: Permanent seeding should be applied immediately after the final design grades are achieved on portions of the site but not later than 72 hours after construction activities cease. Permanent stabilization will be completed in accordance with final stabilization procedures in Section 7. All stabilization is to be performed in compliance with the NHDOT Standard Specifications.

Installation Schedule:	Permanent seeding shall be applied immediately after the final design grades are achieved on portions of the site but not later than 72 hours after construction activities cease.
Inspection:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and permanently stabilized. **During/Post-Storm** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	If washout, breakage, or erosion occurs, the surface will be repaired, and new permanent stabilization measures shall be added to the damaged areas.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

SECTION 5: POLLUTION PREVENTION STANDARDS

5.1 Potential Sources of Pollution

Potential sources of sediment to stormwater runoff:

- Topsoil stripping and stockpiling (if necessary)
- Vehicle tracking
- Grading and excavation activities

Potential pollutants and sources, other than sediment, to stormwater runoff:

- Material Storage Area – topsoil stockpile (if necessary)
- Construction Activity – paving, concrete barrier installation, concrete pouring/mortar

Construction Site Pollutants

Trade Name Material	Chemical/Physical Description	Storm Water Pollutants
Asphalt	Black solid	Oil, petroleum distillates
Concrete	White solid	Limestone, sand
Glue, adhesives	White or yellow liquid	Polymers, epoxies
Hydraulic oil/fluids	Brown oily petroleum hydrocarbon	Mineral oil
Gasoline	Colorless, pale brown or pink petroleum hydrocarbon	Benzene, ethyl benzene, toluene, xylene, MTBE
Diesel Fuel	Clear, blue green to yellow liquid	Petroleum distillate, oil and grease, naphthalene, xylenes
Antifreeze/coolant	Clear green/yellow liquid	Ethylene glycol, propylene glycol, heavy metals (copper, lead, zinc)
Erosion	Solid Particles	Soil, Sediment
Construction Debris/ Municipal Waste	Solid Particles	Trash/Debris/Organic Material
Sanitary toilets	Various colored liquids	Bacteria, parasites, and viruses

5.2 Spill Prevention and Response

Spill Prevention and Control Procedures

BMP Description:

A Spill Prevention and Response Plan shall be prepared and identify ways in which to reduce the chance of spills, stop the source of spills, contain, and clean up spills, dispose of material containment by spills and train personnel responsible for spill prevention and response.

i. Employee Training: All employees will be trained via bi-weekly training sessions, as detailed in Section 7.
ii. Vehicle Maintenance: All vehicles and equipment including subcontractor vehicles will be checked for leaking oil and fluids. Vehicles leaking fluids will not be allowed on-site. Drip pans will be placed under all vehicles and equipment that are parked overnight.
iii. Hazardous Material Storage: Hazardous materials will be stored in accordance with Section 5, Part 5 and in accordance with all federal, state and local regulations.
iv. Spill Kits: Spill kits will be within the materials storage area.
v. Spills: All spills will be cleaned up immediately upon discovery. Spent absorbent materials and rags will be hauled off-site immediately after the spill is cleaned up in a legal manner. Spills large enough to discharge into surface waters shall be reported to the National Response Center at (800) 424-8802.
vi. Material safety data sheets, a material inventory, and emergency contact information will be maintained at the on-site project trailer.

Installation Schedule:	The spill prevention and control procedures will be implemented once construction begins on-site.
Inspection:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	All personnel shall be instructed during training sessions regarding the correct procedures for spill prevention and control. Notices that state these practices will be posted in the office trailer, and the individual who manages day-to-day site operations will be responsible for seeing that these procedures are followed.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

5.3 Fueling and Maintenance of Equipment or Vehicles

General – The following apply to the fueling and maintenance of equipment and vehicles at the site.

- Adequate clean-up supplies are to be always available to handle spills and leaks. Clean up spills or contaminated surfaces immediately, using dry clean up measures where possible and eliminate the source of the spill to prevent a discharge, or a furtherance of an ongoing discharge.
- Use drip pans and absorbents under or around leaky vehicles.
- Dispose of used clean up supplies, oil, and oily wastes in accordance with other federal, state, tribal, or local requirements; and
- Do not clean surfaces by hosing the spill area.

Specific Pollution Prevention Practices

Pollution Prevention Practice # 1 - Equipment/Vehicle Fueling and Maintenance

BMP Description: When possible, equipment/vehicle fueling, and maintenance shall be done at an offsite facility. All major equipment/ vehicle maintenance will be performed off-site. If equipment/vehicle fueling or maintenance needs to be done on site, employees and subcontractor shall be trained in proper fueling and maintenance procedures. Several types of vehicles and equipment will be used on-site throughout the project. Fuel tanks shall be kept on-site in the materials storage area. Fueling activities shall occur in the designated materials storage area. All equipment fluids generated from maintenance activities will be disposed of into designated storage in accordance with Section 5 Part 5. Absorbent, spill-cleanup materials and spill kits will be available at the staging and materials storage area. Drip pans will be placed under all equipment receiving maintenance and vehicles and equipment parked overnight.

Installation Schedule:	BMPs implemented for equipment and vehicle maintenance and fueling activities will begin at the start of the project.
Inspection:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	Vehicles and equipment will be inspected on each day of use. Leaks will be repaired immediately, or the problem vehicles(s) or equipment will be removed from the project site. Keep an ample supply of spill-cleanup materials on-site and immediately clean up spills and dispose of materials in accordance with local and state regulations. Recycle fluids whenever possible.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

SECTION 6: INSPECTION AND CORRECTIVE ACTION

6.1 Inspection Personnel and Procedures

Personnel Responsible for Inspections
Dan Blais, CPESC, CESSWI; TF Moran, Inc.
Scott Olsen, CPESC, TFMoran, Inc.
Bryan Levesque, PE, CPSEC; TF Moran, Inc.
Or Other qualified TFM personnel as may be assigned to the Project

Inspection Frequency

Inspections and monitoring are to be done in accordance with NHDOT Standard Specifications.

Weekly Inspection: At least once every 7 calendar days; and within 24 hours of the occurrence of a storm event of 0.50 inches or greater. To determine if a storm event of 0.50 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site or obtain the storm event information from a weather station that is representative of your location.

Post-Storm Inspection: In addition to the weekly inspection, the environmental monitor shall also inspect the site within 24-hrs of a rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event. *"Within 24 hours of the occurrence of a storm event"* means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.50 inches, even if the storm event is continuing. Thus, if there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.50 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

All erosion and sediment controls will be inspected in accordance with the applicable requirements of the NHDES. If you find a problem (*e.g., erosion and sediment controls need to be replaced, repaired, or maintained*), you must make the necessary repairs or modifications in accordance with the following schedule in Section 6.2 below in this document. The SWPPP Inspector shall notify the Contractor's Site Supervisor of corrective actions identified during the inspection prior to leaving the project and submit a copy of the inspection report to the Contractor. The site supervisor shall initiate corrective actions made to the deficient area within the guidelines listed in Section 6.2 below. SWPPP Action Items will be listed on the SWPPP Inspection Report. Corrective actions to address deficiencies will be recorded in the Corrective Action Log in Appendix E. For any corrective actions requiring a SWPPP amendment, the SWPPP Amendment Log in Appendix F shall be filled out appropriately and the SWPPP sheets updated as necessary.

Rain Gauge Location

The rain gauge used will be the KNHLONDO3 rain gauge from Weather Underground in the vicinity of the project.

Inspection Report Forms

A COPY OF THE SWPPP INSPECTION FORM IS LOCATED IN APPENDIX D.

6.2 Corrective Action

Immediately take all reasonable steps to address the condition, including cleaning up any contaminated surfaces so the material will not be discharged in subsequent storm events. When the problem does not require a new or replacement control or significant repair, the corrective action must be completed by the close of the next business day.

When the problem requires a new or replacement control or significant repair, install the new or modified control and make it operational, or complete the repair, by no later than seven (7) calendar days from the time of discovery. If it is infeasible 1

Personnel Responsible for Corrective Actions

PurposeEnergy Londonderry, LLC or their subcontractors

Corrective Action Forms

A COPY OF THE CORRECTIVE ACTION FORM IS LOCATED IN APPENDIX E

6.3 Delegation of Authority

The Delegation of Authority identifies the individual or position where the construction site operator has delegated authority for the purposes of signing inspection reports, certifications, or other information.

See Appendix J for the Delegation of Authority form.

SECTION 7: TRAINING

Individual(s) Responsible for Training:

PurposeEnergy Londonderry, LLC or their subcontractors

General stormwater and BMP awareness training for staff and subcontractors:

Informal training provided for all staff, including subcontractors, on the site. The training will be conducted primarily via training sessions and focus on avoiding damage to storm water BMPs and preventing illicit discharges. The training sessions will address the following topics: Erosion Control BMPs, Sediment Control BMPs, Non-stormwater BMPs, Waste Management and Materials Storage BMPs, and Emergency Procedures specific to the construction site.

See Appendix I – SWPPP Training Log.

SECTION 8: CERTIFICATION AND NOTIFICATION

- The following certification statement must be signed by a responsible corporate officer or any other person who performs policy or decision-making functions or a manager where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
- This certification must be re-signed in the event of a SWPPP Modification.

I certify under the penalty of the law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiries about the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____ Title: _____

Signature: _____ Date: _____

[Repeat as needed for multiple construction operators at the site.]

SWPPP APPENDICES

Attach the following documentation to the SWPPP:

Appendix A – Site Maps

Appendix B – 2022 Copy of the Construction General Permit (CGP)

Appendix C – Notice of Intent

Appendix D – Sample SWPPP Inspection Report Form

Appendix E – Corrective Action Form

Appendix F – SWPPP Amendment Log

Appendix G – Subcontractor Certifications/Agreements

Appendix H – Grading and Stabilization Activities Log

Appendix I – Training Log

Appendix J – Delegation of Authority

Appendix K – Endangered Species Documentation

Appendix L – Permits

Appendix M – Project Schedule (to be attached by the Contractor)

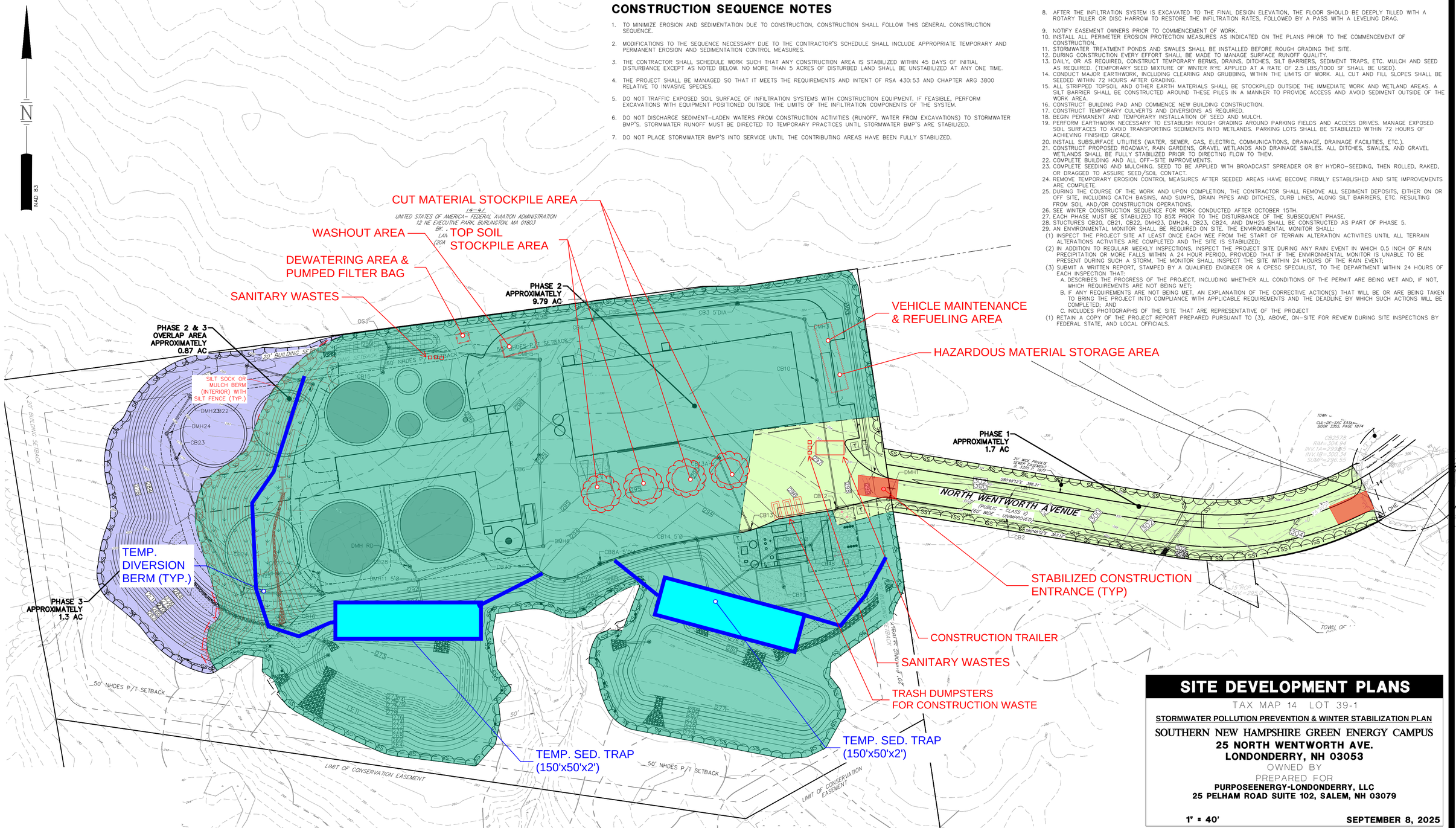
Appendix N – NRCS and Project Specific Soil Maps of the Site

Appendix O - Completed SWPPP Inspections

Appendix A – Site Maps

CONSTRUCTION SEQUENCE NOTES

1. TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, CONSTRUCTION SHALL FOLLOW THIS GENERAL CONSTRUCTION SEQUENCE.
2. MODIFICATIONS TO THE SEQUENCE NECESSARY DUE TO THE CONTRACTOR'S SCHEDULE SHALL INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.
3. THE CONTRACTOR SHALL SCHEDULE WORK SUCH THAT ANY CONSTRUCTION AREA IS STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE EXCEPT AS NOTED BELOW. NO MORE THAN 5 ACRES OF DISTURBED LAND SHALL BE UNSTABILIZED AT ANY ONE TIME.
4. THE PROJECT SHALL BE MANAGED SO THAT IT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER ARG 3800 RELATIVE TO INVASIVE SPECIES.
5. DO NOT TRAFFIC EXPOSED SOIL SURFACE OF INFILTRATION SYSTEMS WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
6. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO STORMWATER BMP'S. STORMWATER RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMP'S ARE STABILIZED.
7. DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
8. AFTER THE INFILTRATION SYSTEM IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE THE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
9. NOTIFY EASEMENT OWNERS PRIOR TO COMMENCEMENT OF WORK.
10. INSTALL ALL PERIMETER EROSION PROTECTION MEASURES AS INDICATED ON THE PLANS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
11. STORMWATER TREATMENT PONDS AND SWALES SHALL BE INSTALLED BEFORE ROUGH GRADING THE SITE.
12. DURING CONSTRUCTION EVERY EFFORT SHALL BE MADE TO MANAGE SURFACE RUNOFF QUALITY.
13. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT BARRIERS, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED. (TEMPORARY SEED MIXTURE OF WINTER RYE APPLIED AT A RATE OF 2.5 LBS/1000 SF SHALL BE USED).
14. CONDUCT MAJOR EARTHWORK, INCLUDING CLEARING AND GRUBBING, WITHIN THE LIMITS OF WORK. ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN 72 HOURS AFTER GRADING.
15. ALL STRIPPED TOPSOIL AND OTHER EARTH MATERIALS SHALL BE STOCKPILED OUTSIDE THE IMMEDIATE WORK AND WETLAND AREAS. A SILT BARRIER SHALL BE CONSTRUCTED AROUND THESE PILES IN A MANNER TO PROVIDE ACCESS AND AVOID SEDIMENT OUTSIDE OF THE WORK AREA.
16. CONSTRUCT BUILDING PAD AND COMMENCE NEW BUILDING CONSTRUCTION.
17. CONSTRUCT TEMPORARY CULVERTS AND DIVERSIONS AS REQUIRED.
18. BEGIN PERMANENT AND TEMPORARY INSTALLATION OF SEED AND MULCH.
19. PERFORM EARTHWORK NECESSARY TO ESTABLISH ROUGH GRADING AROUND PARKING FIELDS AND ACCESS DRIVES. MANAGE EXPOSED SOIL SURFACES TO AVOID TRANSPORTING SEDIMENTS INTO WETLANDS. PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
20. INSTALL SUBSURFACE UTILITIES (WATER, SEWER, GAS, ELECTRIC, COMMUNICATIONS, DRAINAGE, DRAINAGE FACILITIES, ETC.).
21. CONSTRUCT PROPOSED ROADWAY, RAIN GARDENS, GRAVEL WETLANDS AND DRAINAGE SWALES. ALL DITCHES, SWALES, AND GRAVEL WETLANDS SHALL BE FULLY STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
22. COMPLETE BUILDING AND ALL OFF-SITE IMPROVEMENTS.
23. COMPLETE SEEDING AND MULCHING. SEED TO BE APPLIED WITH BROADCAST SPREADER OR BY HYDRO-SEEDING, THEN ROLLED, RAKED, OR DRAGGED TO ASSURE SEED/SOIL CONTACT.
24. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDED AREAS HAVE BECOME FIRMLY ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE.
25. DURING THE COURSE OF THE WORK AND UPON COMPLETION, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT DEPOSITS, EITHER ON OR OFF SITE, INCLUDING CATCH BASINS, AND SUMPS, DRAIN PIPES AND DITCHES, CURB LINES, ALONG SILT BARRIERS, ETC. RESULTING FROM SOIL AND/OR CONSTRUCTION OPERATIONS.
26. SEE WINTER CONSTRUCTION SEQUENCE FOR WORK CONDUCTED AFTER OCTOBER 15TH.
27. EACH PHASE MUST BE STABILIZED TO 85% PRIOR TO THE DISTURBANCE OF THE SUBSEQUENT PHASE.
28. STUCTURES CB20, CB21, CB22, DMH23, DMH24, CB23, CB24, AND DMH25 SHALL BE CONSTRUCTED AS PART OF PHASE 5.
29. AN ENVIRONMENTAL MONITOR SHALL BE REQUIRED ON SITE. THE ENVIRONMENTAL MONITOR SHALL:
    (1) INSPECT THE PROJECT SITE AT LEAST ONCE EACH WEE FROM THE START OF TERRAIN ALTERATION ACTIVITIES UNTIL ALL TERRAIN ALTERATIONS ACTIVITIES ARE COMPLETED AND THE SITE IS STABILIZED;
    (2) IN ADDITION TO REGULAR WEEKLY INSPECTIONS, INSPECT THE PROJECT SITE DURING ANY RAIN EVENT IN WHICH 0.5 INCH OF RAIN PRECIPITATION OR MORE FALLS WITHIN A 24 HOUR PERIOD, PROVIDED THAT IF THE ENVIRONMENTAL MONITOR IS UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THE RAIN EVENT;
    (3) SUBMIT A WRITTEN REPORT, STAMPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, TO THE DEPARTMENT WITHIN 24 HOURS OF EACH INSPECTION THAT:
        A. DESCRIBES THE PROGRESS OF THE PROJECT, INCLUDING WHETHER ALL CONDITIONS OF THE PERMIT ARE BEING MET AND, IF NOT, WHICH REQUIREMENTS ARE NOT BEING MET;
        B. IF ANY REQUIREMENTS ARE NOT BEING MET, AN EXPLANATION OF THE CORRECTIVE ACTION(S) THAT WILL BE OR ARE BEING TAKEN TO BRING THE PROJECT INTO COMPLIANCE WITH APPLICABLE REQUIREMENTS AND THE DEADLINE BY WHICH SUCH ACTIONS WILL BE COMPLETED; AND
        C. INCLUDES PHOTOGRAPHS OF THE SITE THAT ARE REPRESENTATIVE OF THE PROJECT
    (1) RETAIN A COPY OF THE PROJECT REPORT PREPARED PURSUANT TO (3), ABOVE, ON-SITE FOR REVIEW DURING SITE INSPECTIONS BY FEDERAL STATE, AND LOCAL OFFICIALS.



HORIZONTAL SCALE 1"=40'
40 20 0 40

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-1

STORMWATER POLLUTION PREVENTION & WINTER STABILIZATION PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

1" = 40' **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Traffic Engineers
Land Surveyors
Landscape Architects
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Phone (603) 472-4488
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www.tfmoran.com

FILE	DR		FB		
18252-02	CK		CADFILE	18252-02 SITE PLAN	PH-1

Dec 08, 2025 - 12:32pm
P:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 SITE PLAN.dwg

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE. LONDONDERRY, NEW HAMPSHIRE

GENERAL INFORMATION

OWNER
MAP 14 LOT 39
CODNER NICHOLAS F TRUST 2012
162 LITCHFIELD ROAD
LONDONDERRY, NH 03053
603-432-1100

APPLICANT
PUPROSEENERGY-LONDONDERRY, LLC
C/O SEAN O'NEIL
25 PELHAM ROAD, SUITE 102
SALEM, NH 03079
6172029156

PREPARED FOR
PUPROSEENERGY-LONDONDERRY, LLC
C/O SEAN O'NEIL
25 PELHAM ROAD, SUITE 102
SALEM, NH 03079
6172029156

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SHAUN MULHOLLANDI, TOWN MANAGER

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KELLIE CARON, ASST. TOWN MANAGER, DIRECTOR OF ECONOMIC DEVELOPMENT

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NICK CODNER, CHIEF BUILDING INSPECTOR
& CODE ENFORCEMENT OFFICER

HEALTH DIVISION
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LONDONDERRY, NH 03053
(603) 432-1100 EXT. 151

PUBLIC WORKS & ENGINEERING
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LONDONDERRY, NH 03053
(603) 432-1100 EXT. 139
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JOHN TROTTIER, DIRECTOR OF ENGINEERING & ENVIRONMENTAL SERVICES

HIGHWAY DIVISION
268B MAMMOTH ROAD
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(603) 432-1100 EXT. 152
DAVE WHOLLEY, DIRECTOR PUBLIC WORKS & MUNICIPAL FACILITIES

POLICE DEPARTMENT
268A MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1118
KIM ALAN BERNARD, CHIEF OF POLICE

FIRE DEPARTMENT
280 MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1124
PHIL LEBLANC, ACTING CHIEF

NHDES AOT
29 HAZEN DRIVE
CONCORD, NH 03302-0095
(603) 271-2303
AMY CLARK, PE, AOT SUPERVISOR

ASSOCIATED PROFESSIONALS
GEOTECHNICAL SERVICES
ARIES ENGINEERING
104 PLEASANT STREET
CONCORD, NH 03301
(603) 226-0374
GEORGE C. HOLT, P.G.

TRAFFIC ENGINEER
TFMORAN, INC.
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
ROBERT DUVAL, PE, PRINCIPAL

WETLAND SCIENTIST
TFMORAN, INC.
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
CHRISTOPHER K. DANFORTH, CWS

SOIL SCIENTIST
BAG LAND CONSULTANTS
43 ROCKINGHAM STREET
CONCORD, NH 03301
BRUCE A. GILDAY, CSS

ABUTTERS
R014-039-0
NICHOLAS F CODNER TRUST 2012
162 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-047-0
US OF AMERICA FED AVIATION ADMIN
12 NE EXECUTIVE PARK
BURLINGTON, MA 01803

R01-044-38
STATE OF NEW HAMPSHIRE
PO BOX 483, 1 HAZEN DRIVE
CONCORD, NH 03302-0483

R014-44-0
GRANITE RIDGE ENERGY, LLC
21 NORTH WENTWORTH AVE
LONDONDERRY, NH 03053

R014 LOTS 044-3 & 040-0
TRACIE L & BRUCE A LEMIEUX
154 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-039-1
VICTOR D & CECILIA C REIS
158 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-13
RICHARD A BELANGER
149 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-12
NICOLE M THOMAS
151 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-11JUSTIN M QUISH
153 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-10
SHARON B BARTHOLOMEW
155 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-9
SAHIN B DAYIOGLU
157 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-8
ERIC J AND AMBER E POMER
159 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-7
JOHN ALBERT & LISA MARIE KIRCALDIE
51 YELLOWSTONE ROAD
LONDONDERRY, NH 03053-2502

R011-020-6
MICHAEL A ST. PIERRE
163 LITCHFIELD ROAD
LONDONDERRY, NH 03053-7408

R011-020-5
CLARK FAMILY TRUST OF 2011
165 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-015-0
ERICK MENDONSA
167 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-051-0
CLAIRE M KELLY
166 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-050-0
BRUCE ALLAN & CINDY LOUISE GOODWIN
168 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-007-0
MICHAEL W SIRACUSE III
170 LITCHFIELD ROAD
LONDONDERRY, NH 03053

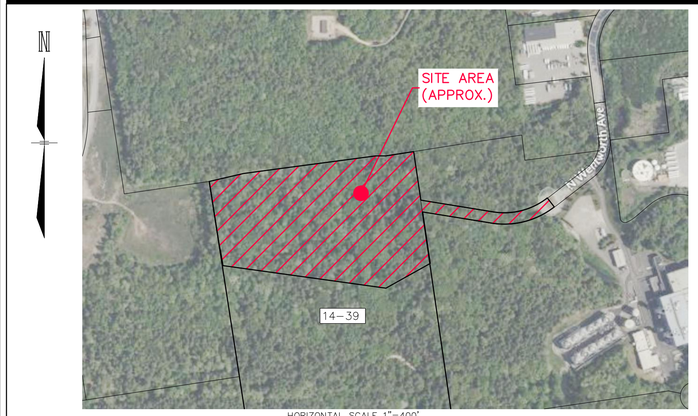
R014-005-0
ARIANNA ONEIL
172 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-048-1
STATE OF NEW HAMPSHIRE
PO BOX 483
CONCORD, NH 03302-0483

R-014-003-26
GYPSUM CONSTRUCTION CORP.
184 ROCKINGHAM ROAD
LONDONDERRY, NH 03053

R014-038-0
TANA PROPERTIES LTD. PARTNERSHIP
40 TEMPLE STREET
NASHUA, NH 03060

LOCATION PLAN



INDEX OF SHEETS

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C-03	NOTES
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C-04	SITE PREPARATION & DEMOLITION PLAN
C-05	OVERALL SITE PLAN
C-06	SITE LAYOUT PLAN
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C-08	DRAINAGE STRUCTURE TABLES
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PERMITS/APPROVALS

	NUMBER	APPROVED	EXPIRES
TOWN PLANNING BOARD SUBDIVISION APPROVAL			
TOWN PLANNING BOARD SITE PLAN REVIEW APPROVAL			
TOWN PLANNING BOARD DRIVEWAY PERMIT			
TOWN PLANNING BOARD CUP (WETLAND BUFFERS)			
TOWN PLANNING BOARD CUP (FRONTAGE)			
TOWN STORMWATER PERMIT			
TOWN SEWER DISCHARGE PERMIT			
TOWN INDUSTRIAL DISCHARGE PERMIT			
TOWN INDUSTRIAL DISCHARGE PERMIT			
US EPA CGP			
NHDES SOLID WASTE PERMIT			
NHDES INDUSTRIAL WASTEWATER DICHARGE PERMIT			
NHDES INDUSTRIAL WASTEWATER DICHARGE PERMIT			
NHDES AOT PERMIT			
NHDES SEWER CONNECTION PERMIT			
NHDES WETLAND PERMIT (MAJOR)			
NH NHB DATA CHECK	NHB24-1680	6/11/24	6/11/25
NH DHR RPR	2025PR00341	3/27/25	
FAA			

NHF&G AOT PERMIT CONDITIONS

1. BLANDING'S TURTLE (STATE ENDANGERED), EASTERN HOGNOSE SNAKE (STATE ENDANGERED), NEW ENGLAND COTTONTAIL (STATE ENDANGERED), SMOOTH GREEN SNAKE (SPECIAL CONCERN), SPOTTED TURTLE (STATE THREATENED), northern BLACK RACER (STATE THREATENED) OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. ALL OPERATORS AND PERSONNEL WORKING ON OR ENTERING THE SITE SHALL BE MADE AWARE OF THE POTENTIAL PRESENCE OF THESE SPECIES AND SHALL BE PROVIDED FLYERS THAT HELP TO IDENTIFY THESE SPECIES, ALONG WITH NHFG CONTACT INFORMATION. SEE FLYERS ON PLAN SHEET D-17.
2. RARE SPECIES INFORMATION (E.G. IDENTIFICATION, OBSERVATION AND REPORTING OF OBSERVATIONS, WHEN TO CONTACT NHFG IMMEDIATELY AND NHFG CONTACT INFORMATION) SHALL BE COMMUNICATED DURING MORNING TAILGATE MEETINGS PRIOR TO WORK COMMENCEMENT WHILE THE PROJECT IS UNDER ACTIVE CONSTRUCTION. SEE FLYERS ON PLAN SHEET D-17.
3. OBSERVATIONS OF EASTERN HOGNOSE SNAKE AND NORTHERN BLACK RACER SHALL BE REPORTED IMMEDIATELY TO NHFG WILDLIFE BIOLOGISTS MELISSA WINTERS (603-479-1129) AND BRENDAN CLIFFORD (603-944-0885) VIA GROUP TEXT. A PHOTOGRAPH WITH THE TEXT WILL BE PROVIDED IF FEASIBLE. IMMEDIATE REPORTING OF OBSERVATIONS IS CRITICAL AS NHFG BIOLOGISTS WILL NEED TO COLLECT DATA ON THE INDIVIDUAL. SEE FLYERS ON PLAN SHEET D-17.
4. NHFG SHALL HAVE THE OPPORTUNITY TO ATTEMPT TO TRAP AND RELOCATE ANY RABBITS THAT MAY BE ON SITE. ENTRAPMENT AND RELOCATION OF RABBITS SHALL BE COORDINATED NO LESS THAN THREE WEEKS IN ADVANCE WITH NHFG BEFORE WORK BEGINS.
5. ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, WITH THE EXCEPTION OF TURF REINFORCEMENT MATS, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN PLASTIC, OR MULTIFILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES. SEE DETAILS ON SHEET D-01 AND D-02.
6. TURTLES MAY BE ATTRACTED TO DISTURBED GROUND DURING NESTING SEASON. TURTLE NESTING SEASON OCCURS APPROXIMATELY MAY 15TH – JULY 30TH. ALL TURTLE SPECIES NESTS AND NORTHERN BLACK RACER NESTS ARE PROTECTED BY NH LAWS. IF A NEST IS OBSERVED OR SUSPECTED, OPERATORS SHALL CONTACT JOSH MEGYESY AT NHFG IMMEDIATELY FOR FURTHER CONSULTATION. THE NEST OR SUSPECTED NEST SHALL BE MARKED (SURROUNDING ROPED OFF OR CONE BUFFER DEPLOYED) AND AVOIDED; THIS SHALL BE COMMUNICATED TO ALL PERSONNEL ONSITE. SITE ACTIVITIES SHALL NOT OCCUR IN THE AREA SURROUNDING THE NEST OR SUSPECTED NEST UNTIL FURTHER GUIDANCE IS PROVIDED BY NHFG.
10. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES ON THE PROJECT SITE SHALL BE REPORTED IMMEDIATELY TO THE NHFG NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV, WITH THE EMAIL SUBJECT LINE: NHB24-1680, DCT25-2647 LONDONDERRY GREEN ENERGY CAMPUS, WILDLIFE SPECIES OBSERVATION.
1. PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHFG IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION, AS FEASIBLE.
11. IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHFG AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHFG.
   A. SITE OPERATORS SHALL BE ALLOWED TO RELOCATE WILDLIFE ENCOUNTERED IF DISCOVERED WITHIN THE ACTIVE WORK ZONE IF IN DIRECT HARM FROM PROJECT ACTIVITIES. WILDLIFE SHALL BE RELOCATED IN CLOSE PROXIMITY TO THE CAPTURE LOCATE BUT OUTSIDE OF THE WORK ZONE AND IN THE DIRECTION THE INDIVIDUAL WAS HEADING. NHFG SHALL BE CONTACTED IMMEDIATELY IF THIS ACTION OCCURS.
12. THE NHFG, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT, ALONG WITH NHFG CONTACT INFORMATION. THE APPLICANT SHOULD NOTIFY NHFG 30 DAYS PRIOR TO STARTING SONSTRUCTION ACTIVITIES. NHFG SHOULD HAVE THE OPPURTUNITY TO ATTEMPT TO TRAP ANDD RELOCATE ANY RABBITS THAT MAY BE ON SITE.
13. SMOOTH GREEN SNAKE (SPECIAL CONCERN) OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. ALL OPERATORS AND PERSONNEL WORKING ON OR ENTERING THE SITE SHOULD BE MADE AWARE OF THE POTENTIAL PRESENCE OF THIS SPECIES AND SHOULD BE PROVIDED FLYERS THAT HELP TO IDENTIFY THIS SPECIES, ALONG WITH NHFG CONTACT INFORMATION. SEE FLYER ON PLAN SHEET D-17.
14. A WILDLIFE EXCLUSIONARY BARRIER SHOULD BE INSTALLED AROUND THE PERIMETER OF THE SITE PRIOR TO APRIL 15TH AND MAINTAINED BETWEEN APRIL 15TH AND OCTOBER 15TH THROUGHOUT THE LIFE OF THE ACTIVE PROJECT/CONSTRUCTION ACTIVITES. THE WILDLIFE EXLUSIONARY BARRIER SHOULD BE BURIED TO A DEPTH OF NO LESS THAN 6-8" AND EXTEND NO LESS THAN 18" ABOVE EXISTING GRADE. THE WILDLIFE EXCULSIONARY BARRIER SHOULD BE INSPECTED DAILY FOR ANY DEFECTS AS WELL AS POSSIBLE TRAPPED WILDLIFE PRIOR TO SITE CONSTRUCTION ACTIVITIES.
15. WETLAND IMPACT SHOULD OCCUR BETWEEN APRIL 15TH AND OCTOBER 15TH TO AVOID IMPACTING OVERWINTERING TURTLES.
16. STAGING OF CONSTRUCTION EQUIPMENT/MATERIAL AND VEHICLE PARKING SHOULD NOT OCCUR IN SHRUB COVER OR WETLANDS AND SHRUB CONVER SHOULD NOT BE REMOVED.
17. CATCH BASINS AND OUTLET CONTROL STRUCTURES SHOULD NOT CONTAIN SUMPS AND SHOULD HAVE GRATE OPENINGS NO LARGER THAN 2" X 2".
18. OUTLET CONTROL STRUCTURES SHOULD BE A MINIMUM OF 12-18" ABOVE GRADE AND SET BACK AT LEAST 3' FROM ADJACENT SLOPES.
19. RIP-RAP SHOULD BE FILLED WITH FINER MATERIAL (NATIVE WETLAND MATERIAL, NATIVE WETLAND SEED MIX, OR GRAVEL IN BETWEEN RIP-RAP) TO CREATE A RELATIVELY SMOOTH SURFACE FOR WILDLIFE TO TRAVERSE.
20. IF HYDROSEEDING IS DEEMED NECESARY, THE MIX SHOULD NOT CONTAIN MICROPLASTICS AND DYES SHOULD BE WATER-SOLUABLE AND ECO-FRIENDLY. HYDROSEEDING SHOULD NOT OCCUR WITHIN 75 FEET OF WETLANDS. SEE PLAN SHEETS C-06.
21. AVOID OR MINIMIZE THE USE OF FERTILIZERS IN UPLAND AREAS OR TRANSITION ZONES. IF FERTILIZERS ARE NECESSARY, USE ORGANIC VERSUS SYNTHETIC FERTILIZER OPTIONS. SYNTHETIC OPTIONS SHOULD BE AVOIDED; HOWEVER, IF CHOSEN, THEY SHOULD BE CONTROLLED-RELEASED/SLO-RELEASED AND AT LOW STRENGTHS. SEE PLAN SHEETS C-06.
22. A NATIVE SEED MIXTURE SHOULD BE APPLIED TO ALL AREAS AFFECTED BY CONSTRUCTION. PLEASE SEE THE MODIFIED NEW ENGLAND CONSERVATION/WETLAND MIX BY NEW ENGLAND WETLAND PLANTS, INC AS A SEED MIXTURE OPTION THAT MAY BE USED IN AREA AFFECTED BY CONSTRUCTION. THE SEED MIXES SHALL NOT CONTAIN INVASIVE SPECIES SUCH AS CROWN VETCH, BIRD'S-FOOT TRFOIL, OXEYE DAISY, ALSIKE CLOVER, AND FLATPEA. SEE PLAN SHEET C-03 OR D-18
23. MITIGATION REQUIREMENTS INCLUDED WITH NHFG'S REVIEW AND RECOMMENDATIONS ARE CONSISTEN WITH AN AGREEMENT BETWEEN THE TOWN OF LONDONDERRY AND NHFG THAT WAS ENTERED INTO EFFECT ON MAY 28, 2019 THAT REQUIRES A MITIGATION FEE FOR EACH INDIVIDUAL PROJECT THAT OCCURS WITHIN A PREDEFINED AREA WITHIN LONDONDERRY. PER RSA 212-A:16, A MITIGATION FEE BASED ON A DISTURBANCE AREA SHOULD BE MADE PAYABLE TO THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT FOR NEGATIVE IMPACTS TO NEW ENGLAND COTTONTAIL, A STATE-ENDANGERED SPECIES. THE MEMO FIELD SHOULD IDENTIFY "NONGAME AND ENDANGERED WILDLIFE PROGRAM, NHB24-1680, DCT25-2647". THIS CHECK SHOULD BE ISSUED AND SUBMITTED TO NHFG FOLLOWING PERMIT APPROVAL AND MUST BE RECEIVED PRIOR TO ANY WORK OCCURRING ON THE SITE.
24. THESE CONSERVATION MEASURES DO NOT CONSTIUTION COMPLIANCE WITH THE FEDERAL ENGANGED SPECIES ACT (ESA). THERE MAY BE OCCURRENCES OF FEDERALLY LISTED SPECIES IN NEW HAMPSHIRE THAT ARE NOT INCLUDED ON THE DATACHECK LETTER. PLEASE VISIT THE US FISH AND WILDLIFE SERVICES'S (USFWS) INFORMATION FOR PLANNING AND CONSULTATION WEBSITE (IPAC; HTTPS://IPAC.ECOSPHERE.FWS.GOV/) FOR AN OFFICIAL LIST OF FEDERALLY LISTED SPECIES THAT MAY BE PRESENT IN YOUR PROJECT AREA. IF A FEDERAL AGENCY IS INVOLVED IN YOUR PROJECT THROUGH FUNDING, PERMIT, OR OTHER AUTHORIZATION, COORDINATE YOUR IPAC RESULTS WITH YOUR POINT OF CONTACT AT THAT AGENCY FOR FURTHER ESA REVIEW. IF THERE IS NO FEDERAL AGENCY NEXUS TO YOUR PROJECT AND YOU DETERMINE THOUGH IPAC, HABITAT EVALUATIONS, ECT. THAT A PROJECT MAY CAUSE TAKE OF FEDERALLY LISTED SPECIES, WE RECOMMENT COORDIANTION WITH THE USFWS' NEW ENGLAND GFIELD OFFICE (NEWENGLAND@FWS.GOV; 603-223-2541)

WAIVERS

THE FOLLOWING WAIVERS FROM THE TOWN OF LONDONDERRY SITE REVIEW REGULATIONS IS REQUESTED FROM THE PLANNING BOARD:

1. TOWN OF LONDONDERRY SITE REVIEW REGULATIONS SECTION 3.09(d)(TABLE B) – TO USE ITE GENERATION MANAUL FOR PARKING CALCULATION.
2. TOWN OF LONDONDERRY SITE REVIEW REGULATIONS SECTION 3.10(g)(1) – TO WAIVE AN INTERIOR PARKING LANDSCAPE AREA.
2. TOWN OF LONDONDERRY SITE REVIEW REGULATIONS SECTION 4.12.c.19.viii – TO WAIVE DELINEATING TREES WITH GREATER THEN 15" DIAMETER

Approved by the Londonderry, NH Planning Board for Phase _____

on Date:_____

Certified by:

_____

_____

OWNER'S SIGNATURE

_____ 12/22/2025

OWNER OR AUTHORIZED AGENT *DATE*

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

COVER SHEET

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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DIG SAFE NH 811 – CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE		DR		FB	–	
18252-02		CK		CADFILE	18252-02 COVER & DETAILS	C-01

Dec 23, 2025 - 2:14pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 Cover & Details.dwg

LEGEND

PROPOSED

- PROPERTY LINE
- ZONING LINE
- EASEMENT
- BASELINE
- FLOODPLAIN
- EDGE OF WATERBODY
- EDGE OF WETLAND
- SETBACK (WETLAND)
- SETBACK (STRUCTURE)
- SETBACK (PARKING)
- SETBACK (LANDSCAPE)
- GRAVEL ROAD
- EOP — EDGE OF PAVEMENT
- VGC — VERTICAL GRANITE CURB
- SGC — SLOPED GRANITE CURB
- CC — CONCRETE CURB
- ICC — INTEGRATED CONCRETE CURB
- BIT — BITUMINOUS ASPHALT CURB
- CCB — CAPE COD BERM
- SAWCUT
- BUILDING
- BUILDING ROOF OVERHANG
- BUILDING FOUNDATION
- BUILDING ENTRANCE
- OVERHEAD DOOR
- TREE LINE
- FENCE (CHAIN LINK)
- FENCE (WIRE)
- FENCE (STOCKADE)
- GUARDRAIL
- BLANKET SLOPE PROTECTION
- RETAINING WALL
- SILT FENCE
- SILT SOCK
- SOIL BOUNDARY
- LIMIT OF GRADING
- 100 — CONTOUR
- TC100.50 / BC100.00 OR 100.00 — SPOT GRADE
- ## — PARKING COUNT
- DSLY — YELLOW DOUBLE SOLID LINE
- SSLY — YELLOW SINGLE SOLID LINE
- SSLW — WHITE SINGLE SOLID LINE
- SBLW — WHITE SINGLE BROKEN LINE
- STOP — STOP BAR
- CROSSWALK
- ACCESSIBLE PARKING SYMBOL
- PAVEMENT ARROW
- TRAFFIC FLOW ARROW (NOT PAINTED)
- SIGN (SINGLE POST)
- SIGN (DOUBLE POST)
- SIGN (PYLON)
- SIGN (MONUMENT)
- BOLLARD
- D — DUMPSTER PAD

PROPOSED

- CONCRETE
- GRAVEL
- WETLAND IMPACT
- CONSTRUCTION ENTRANCE
- SNOW STORAGE
- RIPRAP
- INLET PROTECTION
- FLOW ARROW
- RIDGE — GRADE BREAK RIDGE
- DRAIN LINE
- DRAINAGE SWALE
- STORMWATER BMP
- S — SEWER LINE
- FM — SEWER FORCE MAIN LINE
- W — WATER LINE
- G — GAS LINE
- OHE — OVERHEAD UTILITY LINE
- UGE — UNDERGROUND UTILITY LINE
- CATCH BASIN
- DRAIN INLET
- OUTLET CONTROL STRUCTURE
- ROOF DRAIN
- DRAIN CLEANOUT
- DRAIN MANHOLE
- FARED END SECTION
- SEWER CLEAN OUT
- SEWER MANHOLE
- SEWER VENT
- DRAIN/SEWER/WATER PLUG OR CAP
- HYDRANT
- FIRE DEPARTMENT CONNECTION
- WATER GATE VALVE
- WATER SHUTOFF
- THRUST BLOCK
- WATER METER
- WATER MANHOLE
- WELL
- GAS GATE VALVE
- GAS SHUT OFF
- GAS METER
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- TRAFFIC CONTROL CABINET
- ELECTRIC HANDHOLE
- ELECTRIC PULL BOX
- ELECTRIC METER
- FLOOD LIGHT
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- T — TRANSFORMER PAD
- B-# — BORING LOCATION
- TP-# — TEST PIT LOCATION
- IT-# — INFILTRATION TEST LOCATION
- MW-# — MONITORING WELL

ABBREVIATIONS

GENERAL

ABAN	ABANDON
AC	ACRES
ADJ	ADJUST
APPROX	APPROXIMATE
BC	BOTTOM OF CURB
BIT	BITUMINOUS
BK/PG	BOOK & PAGE
BLDG	BUILDING
BMP	BEST MANAGEMENT PRACTICE
BS	BOTTOM OF SLOPE
BW	BOTTOM OF WALL
CONC	CONCRETE
COORD	COORDINATE
DIA	DIAMETER
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EXIST	EXISTING
FFE	FINISHED FLOOR ELEVATION
FND	FOUNDATION
HP	HIGH POINT
INV	INVERT ELEVATION
IT	INFILTRATION TEST
L	LENGTH
LF	LINEAR FEET
LSA	LANDSCAPE AREA
MAX	MAXIMUM
MIN	MINIMUM
N/F	NOW OR FORMERLY
NHFG	NEW HAMPSHIRE FISH & GAME
NTS	NOT TO SCALE
OC	ON CENTER
PAVE	PAVEMENT
PERF	PERFORATED
PROP	PROPOSED
R	RADIUS
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
REM	REMOVE
RET	RETAIN
RIM	RIM ELEVATION
ROW	RIGHT OF WAY
S	SLOPE
SF	SQUARE FEET
SW	SIDEWALK
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TP	TEST PIT
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
WCR	ACCESSIBLE WHEELCHAIR RAMP
W/	WITH

UTILITIES

CB	CATCH BASIN
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
COND	CONDUIT
DCB	DOUBLE CATCH BASIN
DIP	DUCTILE IRON PIPE
DMH	DRAIN MANHOLE
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FES	FLARED END SECTION
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
LP	LIGHT POLE
OCS	OUTLET CONTROL STRUCTURE
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
SMH	SEWER MANHOLE
SOS	SEDIMENT OIL SEPARATOR
TSV	TAPPING SLEEVE, VALVE, AND BOX
UP	UTILITY POLE

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GENERAL NOTES

1. THESE PLANS ARE PERMIT DRAWINGS ONLY AND HAVE NOT BEEN DETAILED FOR CONSTRUCTION OR BIDDING.
2. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN, INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
3. ALL IMPROVEMENTS SHOWN ON THE SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE LONDONDERRY PLANNING BOARD.
4. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF LONDONDERRY, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ALL WORK TO CONFORM TO TOWN OF LONDONDERRY DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. ALL WORK WITHIN THE RIGHT-OF-WAY OF THE LONDONDERRY AND/OR STATE SHALL COMPLY WITH APPLICABLE STANDARDS. COORDINATE ALL WORK WITHIN THE RIGHT-OF-WAY WITH APPROPRIATE LONDONDERRY, COUNTY, AND/OR STATE AGENCY.
5. THE SITE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH APPLICABLE SECTIONS OF ENV-WQ 1500. THE SITE CONTRACTOR SHALL NOTIFY THE ENGINEER IN ADVANCE OF CONSTRUCTION OF EACH STORMWATER FACILITY TO COORDINATE REQUIRED INSPECTIONS. THE CONTRACTOR SHALL TAKE PROGRESS PHOTOS DURING CONSTRUCTION OF ALL STORMWATER DRAINAGE COMPONENTS AND SEND TO THE ENGINEER.
6. SEE EXISTING CONDITIONS PLAN FOR THE HORIZONTAL AND VERTICAL DATUM.
7. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
8. CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN THE EASEMENTS.
9. PRIOR TO COMMENCING ANY SITE WORK, ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
10. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
11. TFMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
12. TEMPORARY FENCING SHALL BE PROVIDED AND COVERED WITH A FABRIC MATERIAL TO CONTROL DUST MITIGATION.
13. ALL DEMOLITION SHALL ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKWAYS, AND ANY OTHER ADJACENT OPERATING FACILITIES. PRIOR WRITTEN PERMISSION FROM THE OWNER/DEVELOPER AND LOCAL PERMITTING AUTHORITY IS REQUIRED IF CLOSURE/OBSTRUCTIONS TO ROADS, STREET, WALKWAYS, AND OTHERS IS DEEMED NECESSARY. CONTRACTOR TO PROVIDE ALTERNATE ROUTES AROUND CLOSURES/OBSTRUCTIONS PER LOCAL/STATE/FEDERAL REGULATIONS.
14. REFER TO ARCHITECTURAL PLANS FOR LAYOUT OF BUILDING FOUNDATIONS AND CONCRETE ELEMENTS WHICH ABUT THE BUILDING SUCH AS STAIRS, SIDEWALKS, LOADING DOCK RAMPS, PADS, AND COMPACTOR PADS. DO NOT USE SITE PLANS FOR LAYOUT OF FOUNDATIONS.
15. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
16. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
17. CONTRACTOR'S GENERAL RESPONSIBILITIES:
    - A. BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS, AND STANDARDS AND CONDITIONS OF ALL PROJECT-SPECIFIC PERMITS AND APPROVALS AS LISTED ON THE COVER SHEET TO THESE PLANS OR OTHERWISE REQUIRED.
    - B. NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES OF PROPOSED LAYOUT AND/OR EXISTING FEATURES.
    - C. EMPLOY A LICENSED SURVEYOR TO DETERMINE ALL LINES AND GRADES AND LAYOUT OF SITE ELEMENTS AND BUILDINGS.
    - D. THE CONTRACTOR SHALL BE RESPONSIBLE TO BECOME FAMILIAR WITH THE SITE AND ALL SURROUNDING CONDITIONS. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
    - E. MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
    - F. IN ACCORDANCE WITH RSA 430:53 AND AGR 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.
    - G. COORDINATE WITH ALL UTILITY COMPANIES AND CONTACT DIGSAFE (811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
    - H. PROTECT NEW AND EXISTING BURIED UTILITIES DURING INSTALLATION OF ALL SITE ELEMENTS. DAMAGED UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
    - I. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
    - J. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
    - K. VERIFY LAYOUT OF PROPOSED BUILDING FOUNDATIONS WITH ARCHITECT AND THAT PROPOSED FOUNDATION MEETS PROPERTY LINE AND/OR WETLAND SETBACKS PRIOR TO COMMENCING ANY FOUNDATION CONSTRUCTION.
    - L. PROVIDE AN AS-BUILT PLAN AT THE COMPLETION OF THE PROJECT TO THE TOWN PLANNER AND PER LONDONDERRY REGULATIONS.
    - M. IF ANY DEVIATIONS FROM THE APPROVED PLANS AND SPECIFICATIONS HAVE BEEN MADE, THE SITE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS STAMPED BY A LICENSED SURVEYOR OR QUALIFIED ENGINEER ALONG WITH A LETTER STAMPED BY A QUALIFIED ENGINEER DESCRIBING ALL SUCH DEVIATIONS, AND BEAR ALL COSTS FOR PREPARING AND FILING ANY NEW PERMITS OR PERMIT AMENDMENTS THAT MAY BE REQUIRED.
    - N. AT COMPLETION OF CONSTRUCTION, THE SITE CONTRACTOR SHALL PROVIDE A LETTER CERTIFYING THAT THE PROJECT WAS COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND A LETTER STAMPED BY A QUALIFIED ENGINEER THAT THEY HAVE OBSERVED ALL UNDERGROUND DETENTION SYSTEMS, INFILTRATION SYSTEMS, OR FILTERING SYSTEMS PRIOR TO BACKFILL, AND THAT SUCH SYSTEMS CONFORM TO THE APPROVED PLANS AND SPECIFICATIONS.
    - O. THIS PROJECT IS SUBJECT TO THE AOT PERMIT LISTED ON THE COVER SHEET. THE CONTRACTOR SHALL CONFORM TO ALL CONDITIONS OF THE PERMIT AND PROVIDE THE FOLLOWING DOCUMENTATION TO OWNER AND ENGINEER.
    - – ADVANCE WRITTEN NOTICE AT LEAST ONE WEEK PRIOR TO COMMENCING ANY WORK UNDER THE PERMIT AND NOTIFICATION TO AOT VIA THE START OF CONSTRUCTION FORM.
    - – UPON COMPLETION OF CONSTRUCTION, NOTIFICATION TO AOT VIA THE COMPLETION OF CONSTRUCTION FORM AND WRITTEN CERTIFICATION THAT:
      - A) ALL WORK UNDER THE PERMIT HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATION.
      - B) IF ANY DEVIATION FROM THE APPROVED PLANS WERE MADE, WRITTEN DESCRIPTIONS AND AS-BUILT DRAWINGS OF ALL SUCH DEVIATIONS, STAMPED BY A QUALIFIED ENGINEER, SHALL BE PROVIDED.
    - P. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT DEFICIENCIES EXIST IN THE APPROVED DESIGN DRAWINGS, THE OWNER SHALL BE REQUIRED TO CORRECT THE DEFICIENCIES TO MEET THE REQUIREMENTS OF THE REGULATIONS AT NO EXPENSE TO THE TOWN.
    - Q. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE TOWN.
    - R. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO TOWN OF LONDONDERRY SUBDIVISION REGULATIONS AND THE LATEST EDITION OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
    - S. IN ACCORDANCE WITH SECTION 6.01 OF THE LONDONDERRY SITE PLAN REGULATIONS AND RSA § 676:13, ALL IMPROVEMENTS SPECIFIED ON THESE SITE PLANS SHALL BE CONSTRUCTED, COMPLETED, AND INSPECTED AND APPROVED BY THE TOWN OF LONDONDERRY PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
    - T. IN ACCORDANCE WITH SECTION 6.01 OF THE LONDONDERRY SITE PLAN REGULATIONS AND RSA § 676:12, ALL OFF-SITE IMPROVEMENTS SPECIFIED ON THESE SITE PLANS SHALL BE CONSTRUCTED, COMPELTED, AND INSPECTED AND APPROVED BY THE TOWN OF LONDONDERRY (AND/OR THE NHDOT, IF APPLICABLE) PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

UTILITY NOTES

1. LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
2. ALL PROPOSED UTILITY WORK, INCLUDING MATERIAL, INSTALLATION, TERMINATION, EXCAVATION, BEDDING, BACKFILL, COMPACTION, TESTING, CONNECTIONS, AND CONSTRUCTION SHALL BE COORDINATED WITH AND COMPLETED IN ACCORDANCE WITH THE APPROPRIATE REQUIREMENTS, CODES, AND STANDARDS OF ALL CORRESPONDING UTILITY ENTITIES AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE DIGGING.
4. COORDINATE ALL WORK ADJACENT TO PROPOSED BUILDINGS WITH ARCHITECTURAL BUILDING DRAWINGS. CONFIRM UTILITY PENETRATIONS AND INVERT ELEVATIONS ARE COORDINATED PRIOR TO INSTALLATION.
5. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
6. THE EXACT LOCATION OF NEW UTILITY CONNECTIONS SHALL BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH UTILITY COMPANY, COUNTY AGENCY, AND/OR PRIVATE UTILITY COMPANY.
7. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER THE UTILITY INSTALLATION COMPLETE AND OPERATIONAL.
8. ALL UTILITY COMPANIES REQUIRE INDIVIDUAL CONDUITS. CONTRACTOR TO COORDINATE WITH TELEPHONE, CABLE, AND ELECTRIC COMPANIES REGARDING NUMBER, SIZE, AND TYPE OF CONDUITS REQUIRED PRIOR TO INSTALLATION OF ANY CONDUIT.
9. SANITARY SEWER SHALL BE CONSTRUCTED TO THE TOWN OF LONDONDERRY STANDARDS AND SPECIFICATIONS AS SHOWN ON THESE PLANS. ALL SEWER MAINS AND FITTINGS SHALL BE PVC AND SHALL CONFORM TO ASTM F 679 (SDR 35 MINIMUM). FORCE MAINS AND FITTINGS SHALL CONFORM TO NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. ALL SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. SANITARY MANHOLES SHALL CONFORM TO NHDES WATER DIVISION WASTEWATER ENGINEERING BUREAU STANDARDS AND SPECIFICATIONS SHOWN HEREON.
10. ON-SITE WATER DISTRIBUTION SHALL BE TO MANCHESTER WATER WORKS STANDARDS AND SPECIFICATIONS. WATER MAINS SHALL HAVE A MINIMUM OF 5.5' COVER. WHERE WATER PIPES CROSS SEWER LINES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. HORIZONTAL SEPARATION BETWEEN WATER AND SEWER SHALL BE 10' MINIMUM. WHERE A SANITARY LINE CROSSES A WATER LINE, SEWER LINE MUST BE CONSTRUCTED OF FORCE MAIN MATERIALS (PER ENV-WQ 704.08) FROM BUILDING OR MANHOLE TO MANHOLE, OR SUBSTITUTE RUBBER-GASKETED PRESSURE PIPE FOR THE SAME DISTANCE. WHEN SANITARY LINES PASS BELOW WATER LINES, LAY PIPE SO THAT NO JOINT IN THE SANITARY LINE WILL BE CLOSER THAN 6' HORIZONTALLY TO THE WATER LINE.
11. THRUST BLOCKS SHALL BE PROVIDED AT ALL LOCATIONS WHERE WATER LINE CHANGES DIRECTIONS OR CONNECTS TO ANOTHER WATER LINE.
12. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRING TO ALL SIGNS AND LIGHTS. CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
13. ALL PROPOSED UTILITIES SHALL BE UNDERGROUND. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES.
14. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS, TESTING, AND RELATED SERVICES AND SUBMIT COPIES OF ACCEPTANCE TO THE OWNER, UNLESS OTHERWISE INDICATED.
15. PROVIDE PERMANENT PAVEMENT REPAIR FOR ALL UTILITY TRENCHES IN EXISTING ROAD OR PAVEMENT TO REMAIN. SAW CUT TRENCH, PAVEMENT, AND GRANULAR BASE THICKNESS TO MATCH EXISTING PAVEMENT. OBTAIN ALL PERMITS REQUIRED FOR TRENCHING.
16. UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, CHAMBERS, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.
17. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:

DRAINAGE	PRIVATE
SEWER	MUNICIPAL
WATER	MUNICIPAL
GAS	LIBERTY UTILITIES
ELECTRIC	EVERSOURCE ENERGY
TELECOMM.	COMCAST XFINITY

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

NOTES & LEGEND

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Traffic Engineers
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Landscape Architects
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FILE	18252-02	DR		FB	–	C-02
		CK		CADFILE	18252-02 COVER & DETAILS	

Dec 23, 2025 - 2:14pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_CSD\PRODUCTION\18252-02 Cover & Details.dwg

CONSTRUCTION SEQUENCE NOTES

1. TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, CONSTRUCTION SHALL FOLLOW THIS GENERAL CONSTRUCTION SEQUENCE.
2. MODIFICATIONS TO THE SEQUENCE NECESSARY DUE TO THE CONTRACTOR'S SCHEDULE SHALL INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.
3. CONDUCT A PRE-CONSTRUCTION MEETING WITH THE OWNER, CONTRACTOR, TOWN ENGINEER, AND OTHER TOWN DEPARTMENTS. TOWN INSPECTIONS SHALL BE CONDUCTED AT INTERVALS AS REQUIRED BY THE TOWN OF LONDONDERRY PUBLIC WORKS AND ENGINEERING DEPARTMENT.
4. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
5. CUT AND CLEAR TREES WITHIN AREA OF DISTURBANCE UNLESS OTHERWISE NOTED.
6. CONSTRUCT TEMPORARY AND PERMANENT EROSION CONTROL FACILITIES, AND BASINS PRIOR TO ANY ROUGH GRADING.
7. CONSTRUCT PERMANENT SWALES PRIOR TO ANY ROUGH GRADING. SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
8. GRUB & ROUGH GRADE SITE FOR PHASED WORK AREA. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING. ALL DISTURBED AREAS SHALL BE STABILIZED NO LATER THAN 72 HOURS AFTER CONSTRUCTION ACTIVITY CEASES. IF EARTHWORK TEMPORARILY CEASES ON A PORTION OF OR THE ENTIRE SITE, AND WILL NOT RESUME WITHIN 21 DAYS, THE AREA SHALL BE STABILIZED.
9. AN AREA SHALL BE CONSIDERED STABILIZED IF:
   A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED, OR
   D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
10. CONSTRUCT CULVERTS, STORMWATER MANAGEMENT AREAS, AND SWALES. PLACE FLARED END SECTIONS, RIP-RAP AND OTHER DRAINAGE FACILITIES ACCORDING TO PLAN. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND BASINS PRIOR TO DIRECTING FLOW TO THEM.
11. INSTALL ALL UNDERGROUND UTILITIES.
12. CONSTRUCT BUILDINGS AND STRUCTURES.
13. CONSTRUCT PARKING AND FINISH GRADE SITE ACCORDING TO PLAN. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING.
14. THE CONTRACTOR SHALL INSPECT ALL TEMPORARY EROSION CONTROL MEASURES AT LEAST ONCE A WEEK AND WITHIN TWENTY-FOUR (24) HOURS OF THE END OF A STORM WITH RAINFALL AMOUNT GREATER THAN 0.5 INCHES. THE INSPECTIONS SHALL VERIFY THAT THE STRUCTURAL BMPS SHOWN AND DESCRIBED ON THE PLANS ARE IN GOOD CONDITION AND ARE MINIMIZING EROSION. A MAINTENANCE AND INSPECTION REPORT SHALL BE MADE WITH EACH INSPECTION.
15. COMPLETE PERMANENT SEEDING.
16. REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE ALL AREAS ARE STABILIZED WITH A SUITABLE STAND OF GRASS, PAVEMENT OR COMPACTED GRAVELS.
17. REFER TO THE STORMWATER MANAGEMENT PLAN FOR EROSION CONTROL MEASURES AND SPECIFIC INFORMATION.

GENERAL NOTES

1. WHERE DEPTH OF COVER IS LESS THAN 3 FEET CLASS V REINFORCED CONCRETE PIPE SHALL BE USED.
2. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
4. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
5. EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES STANDARDS. THESE DETAILS SERVE AS A GUIDE ONLY.
6. REFER TO THE TOWN STANDARD DETAILS, LATEST REVISION, FOR THE APPLICABLE REGULATIONS AND STANDARDS.
7. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND BASINS PRIOR TO DIRECTING FLOW TO THEM.
8. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. SEE PHASING PLAN FOR ADDITIONAL INFORMATION ON ALLOWABLE AREAS OF DISTURBANCE.

WINTER CONSTRUCTION

IN ADDITION TO THE OTHER NOTES CONTAINED ON THIS PLAN, THE FOLLOWING MUST BE IMPLEMENTED:

1. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED AS SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
2. ANY AREA WITHIN 50 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIER.
3. TEMPORARY MULCH MUST BE APPLIED WITHIN 7 DAYS OF SOIL EXPOSURE OR PRIOR TO ANY STORM EVENT, BUT AFTER EVERY WORKDAY IN AREAS WITHIN 100 FEET FROM A PROTECTED NATURAL RESOURCE.
4. AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE PERMANENTLY MULCHED THE SAME DAY.
5. IN THE EVENT OF A SNOWFALL GREATER THAN 1 INCH (FRESH OR CUMULATIVE), THE SNOW SHALL BE REMOVED FROM THE AREAS DUE TO BE SEEDED AND MULCHED.
6. LOAM SHALL BE FREE OF FROZEN CLUMPS BEFORE IT IS APPLIED.
7. A DITCH THAT WILL BE CONSTRUCTED DURING THE WINTER MUST BE STABILIZED WITH RIPRAP.
8. ALL PROPOSED VEGETATIVE AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
9. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
10. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF GRAVEL PER NHDOT ITEM 304.3.
11. ALL TEMPORARY AND PERMANENT STABILIZATION REQUIREMENTS DENOTED IN ADDITIONAL PLAN NOTES SHALL BE APPLICABLE DURING WINTER CONSTRUCTION.

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EROSION CONTROL NOTES

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED:

1. INSTALLATION OF SILTATION FENCES AND/OR OTHER EROSION CONTROL MEASURES SHALL BE COMPLETED PRIOR TO THE START OF SITE WORK IN ANY GIVEN AREA. PREFABRICATED SILTATION FENCES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. SILTATION FENCES AND/OR OTHER EROSION CONTROL MEASURES SHALL BE KEPT CLEAN DURING CONSTRUCTION AND REMOVED WHEN ALL SLOPES HAVE A VEGETATIVE COVER OF GREATER THAN 85%. EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE A WEEK AND WITHIN TWENTY-FOUR (24) HOURS OF THE END OF A STORM WITH RAINFALL AMOUNT GREATER THAN 0.5 INCHES.
3. EXISTING VEGETATION IS TO REMAIN UNDISTURBED WHEREVER POSSIBLE.
4. THE AREA OF LAND EXPOSED AND THE TIME OF EXPOSURE SHALL BE MINIMIZED. UNLESS A LARGER AREA IS ALLOWED UNDER ENV-WQ 1505.03(c), NO MORE THAN 5 ACRES SHALL BE DISTURBED (NOT STABILIZED) AT ANY TIME. DISTURBED AREAS MUST BE STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 45 DAYS AFTER INTIAL DISTURBANCE. CUT AND FILL SLOPES SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING.
5. ALL DISTURBED AREAS SHALL HAVE A MINIMUM OF 6" OF LOAM. ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

   PARK SEED MIX (NHDOT TYPE 44) MIN. 135 LBS/ACRE:
   33% CREEPING RED FESCUE (MIN. 45 LBS/ACRE)
   42% PERENNIAL RYEGRASS (MIN. 55 LBS/ACRE)
   21% KENTUCKY BLUEGRASS (MIN. 30 LBS/ACRE)
   4% REDTOP (MIN. 5 LBS/ACRE)

   MODIFIED NEW ENGLAND CONSERVATION WILDLIFE MIX (MIN. 25 LBS/ACRE)*
   CONTAINS: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), BLUE VERVAIN (VERBENA HASTATA), BLACK EYED SUSAN (RUDBECKIA HIRTA), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).
   *SEED MIX SHALL NOT CONTAIN INDIAN GRASS (SORGHASTRUM NUTANS), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), OR COMMON SNEEZEWEED (HELENIUM AUTUNALE).

   TEMPORARY LAWN MIX: (MIN. 47 LBS/ACRE)
   100% ANNUAL RYE

   A. PLACING LOAM ON SITE
      a. ALL SUBGRADE ELEVATIONS SHOULD BE UNIFORMLY GRADED TO RECEIVE LOAM AND SHALL BE INSPECTED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO PLACEMENT OF LOAM.
      b. PLACE LOAM TO FORM A MINIMUM DEPTH OF 4" WHEN ROLLED, UNLESS OTHERWISE INDICATED.
      c. ALL DEPRESSIONS EXPOSED DURING THE ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM.

   B. SEED BED PREPARATION
      AFTER FINISH GRADING AND JUST BEFORE SEEDING, THE AREAS TO BE SEEDED SHALL BE LOOSENED TO PROVIDE A ROUGH, FIRM BUT FINELY PULVERIZED SEEDBED. THE INTENT IS A TEXTURE CAPABLE OF RETAINING WATER, SEED AND FERTILIZER WHILE REMAINING STABLE AND ALLOWING SEED TIME TO GERMINATE. SEED SHALL BE APPLIED TO THE CONDITIONED SEEDBED NOT MORE THAN 48 HOURS AFTER THE SEEDBED HAS BEEN PREPARED.
6. LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE SOIL PRIOR TO OR AT THE TIME OF AT THE TIME OF SEEDING. A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS. PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. SEEDING PRACTICES SHALL COMPLY WITH LOCAL USDA SOIL CONSERVATION SERVICES RECOMMENDATIONS.
7. HAY OR STRAW MULCH OR JUTE MATTING SHALL BE USED WHERE INDICATED ON THE PLANS. IF JUTE MATTING IS USED, IT SHALL BE LAID IN THE DIRECTION OF RUNOFF FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
8. MULCHING SHALL COMPLY WITH:
   ENV-WQ 1506.01 EROSION CONTROL METHODS: TEMPORARY AND PERMANENT MULCHING.
   (a) HAY AND STRAW MULCHES SHALL BE ANCHORED WITH MULCH NETTING OR TACKIFIER SO THAT THEY ARE NOT BLOWN AWAY BY WIND OR WASHED AWAY BY FLOWING WATER;
   (b) MULCH MATERIALS SHALL BE SELECTED BASED UPON SOILS, SLOPE, FLOW CONDITIONS, AND TIME OF YEAR;
   (c) HAY OR STRAW MULCH SHALL BE APPLIED AT A RATE OF 1.5 TO 2 TONS PER ACRE, EQUIVALENT TO 70 TO 90 POUNDS PER 1,000 SQUARE FEET.
   ENV-WQ 1506.02 EROSION CONTROL METHODS: VEGETATION. VEGETATING DISTURBED AREAS SHALL BE COMPLETED ONLY AS SPECIFIED BELOW:
   (h) AREAS SEEDED BETWEEN MAY 15TH TO AUGUST 15TH SHALL BE COVERED WITH HAY OR STRAW MULCH MEETING THE CRITERIA OF ENV-WQ 1506.01(a) THROUGH (c).
9. PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. SEEDED AREAS SHALL BE MULCHED AND PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS.
10. WATER SHALL BE USED FOR DUST CONTROL IN APPROPRIATE AREAS.
11. TEMPORARY DIVERSION SWALES, SEDIMENT TRAPS AND/OR BASINS MUST BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL SOILS ARE STABILIZED. TACKIFIER SHALL BE APPLIED IN ALL TEMPORARY STABILIZATION UTILIZING SEEDING. SEE PHASING PLAN, FOR ADDITIONAL INFORMATION.
12. OWNER SHALL MAINTAIN AT LEAST 85% COVERAGE OF VEGETATION IN GOOD CONDITION (EVENLY DISTRIBUTED, WITH NO BARE AREAS) AND REPAIR AREAS OF EROSION.

OVERWINTER STABILIZATION

1. PERMANENT STABILIZATION CONSISTS OF AT LEAST 85% VEGETATION, PAVEMENT/GRAVEL BASE OR RIPRAP.
2. DO NOT EXPOSE SLOPES OR LEAVE SLOPES EXPOSED OVER THE WINTER OR FOR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY PROTECTED WITH MULCH.
3. APPLY HAY MULCH AT TWICE THE STANDARD RATE (150 LBS. PER 1,000 SF). THE MULCH MUST BE THICK ENOUGH SUCH THAT THE GROUND SURFACE WILL NOT BE VISIBLE AND MUST BE ANCHORED.
4. USE MULCH AND MULCH NETTING OR AN EROSION CONTROL MULCH BLANKET OR MIX FOR ALL SLOPES GREATER THAN 8% OR OTHER AREAS EXPOSED TO DIRECT WIND.
5. INSTALL AN EROSION CONTROL BLANKET IN ALL DRAINAGE WAYS (BOTTOM AND SIDES) WITH A SLOPE GREATER THAN 3%.
6. SEE THE VEGETATION MEASURES FOR MORE INFORMATION ON SEEDING DATES AND TYPES.

CONSTRUCTION SEQUENCE NOTES (FOR ALTERATION OF TERRAIN)

1. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO BMP'S DURING ANY STAGE OF CONSTRUCTION.
2. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
3. AFTER INFILTRATION SYSTEMS ARE EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
4. DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
5. DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED, IF NECESSARY, AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

GRADING & DRAINAGE NOTES

1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 AND THE TOWN OF LONDONDERRY AS APPLICABLE.
2. THE CONTRACTOR SHALL PREPARE, MAINTAIN, AND EXECUTE A S.W.P.P.P. IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
5. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEER'S RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE, INCLUDING AND NOT LIMITED TO DEWATERING METHODS, PERIMETER DRAINS AND TIE INTO STORMWATER MANAGEMENT SYSTEM, ETC.
6. COORDINATE WITH GEOTECHNICAL/STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
7. COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILED GRADING AT BUILDING, AND SIZE AND LOCATION OF ALL BUILDING SERVICES.
8. COORDINATE WITH MECHANICAL AND PLUMBING PLANS FOR ROOF DRAIN INFORMATION.
9. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS, AND ALIGNMENTS.
10. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS, AND LOADING AREAS.
11. THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER DEEPER THAN 1/4" FOR A PERIOD OF MORE THAN 15 MINUTES AFTER FLOODING.
12. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
13. ALL SIDEWALK AND OTHER CURB REVEALS SHALL BE 6" WITH A TOLERANCE OF PLUS OR MINUS 3/8". WHERE SIDEWALK IS TO BE FLUSH, THE PAVEMENT REVEAL SHALL BE 1/4" WITH A TOLERANCE OF 1/8".
14. THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
15. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
16. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND SHALL MEET TOWN OF LONDONDERRY STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
17. STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO TOWN OF LONDONDERRY & NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
18. NO FILL SHALL BE PLACED IN ANY WETLAND AREA.
19. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
20. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
21. DENSITY REQUIREMENTS:

MINIMUM DENSITY*	LOCATION
95%	BELOW PAVED OR CONCRETE AREAS
95%	TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL
90%	BELOW LOAM AND SEED AREAS

   *ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM ASTM D-6938 OR EQUIVOLENT METHOD.
22. PER THE GEOTECHNICAL REPORT: STRUCTURAL FILL SHOULD BE USED FOR ENGINEERED FILLS BELOW PROPOSED BUILINGS, BIOREACTORS, TANKS, RETAINING WALLS, AND FOUNDATION BACKFILL.
23. PER THE GEOTECHNICAL REPORT: COMMON FILL SHOULD BE USED FOR ENGINEERED FILLS BELOW ROADWAY, PARKING, AND OTHER NON-STRUCTURAL AREAS.

Type	Sieve Size	% Passing
Structural Fill, NHDOT 304.3 (Crushed Gravel)	3" (75 mm) 2" (50 mm) 1" (25 mm) No. 4 (4.75 mm) No. 200 (75 µm)	100 95-100 55-85 27-52 0-12* (in sand portion)
Common Fill	8" No. 200 (75 µm)	100 0-15 when placed within 3 feet of finished grade in paved areas

SITE PREPARATION NOTES

1. LONDONDERRY EMERGENCY SERVICES (POLICE/FIRE) SHALL HAVE ACCESS TO THE SITE AT ALL TIMES DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
3. THE CONTRACTOR SHALL VERIFY ALL SURVEY INFORMATION IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
4. EXISTING UTILITY SERVICES TO BE DISCONTINUED ARE TO BE CAPPED AS REQUIRED BY THE RESPECTIVE UTILITY COMPANIES.
5. ALL DEMOLITION AND CONSTRUCTION DEBRIS SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
6. IN THAT THE PROJECT WILL DISTURB MORE THAN 5-ACRES AT ONE TIME A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL OR A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE ("MONITOR") SHALL BE EMPLOYED TO INSPECT THE SITE FROM THE START OF ALTERATION OF TERRAIN ACTIVITIES UNTIL THE SITE IS IN FULL COMPLIANCE WITH THE ALTERATION OF TERRAIN PERMIT ("PERMIT").
   A. DURING THIS PERIOD, THE MONITOR SHALL INSPECT THE SUBJECT SITE AT LEAST ONCE A WEEK, AND IF POSSIBLE, DURING ANY ½ INCH OR GREATER RAIN EVENT (I.E. ½ INCH OF PRECIPITATION OR MORE WITHIN A 24 HOUR PERIOD). IF UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THIS EVENT.
   B. THE MONITOR SHALL PROVIDE TECHNICAL ASSISTANCE AND RECOMMENDATION TO THE CONTRACTOR ON THE APPROPRIATE BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROLS REQUIRED TO MEET THE REQUIREMENTS OF RSA 485-A:17 AND ALL APPLICABLE DES PERMIT CONDITIONS.
   C. WITHIN 24 HOURS OF EACH INSPECTION, THE MONITOR SHALL SUBMIT A REPORT TO DES VIA EMAIL (TO KEVIN THATCHER AT KEVIN.D.THATCHER@DES.NH.GOV).
7. CONTRACTOR TO INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE WORK. REFER TO THE STORMWATER MANAGEMENT PLAN FOR SPECIFIC INFORMATION.
8. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN OF LONDONDERRY'S CONSTRUCTION STANDARDS AND DETAILS (LATEST ADDITION), AND THE TOWN STANDARDS SHALL TAKE PRECEDENCE IN CASE OF ANY DETAILS OR PLANS IN CONFLICT.
8. FINAL CONSTRUCTION SEQUENCING SUBJECT TO CONTRACTOR AND OWNER CONFIRMATION.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

NOTES

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/30/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
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Land Surveyors
Landscape Architects
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FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 COVER & DETAILS	C-03

Dec 23, 2025 - 2:14pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_CSD\PRODUCTION\18252-02 Cover & Details.dwg

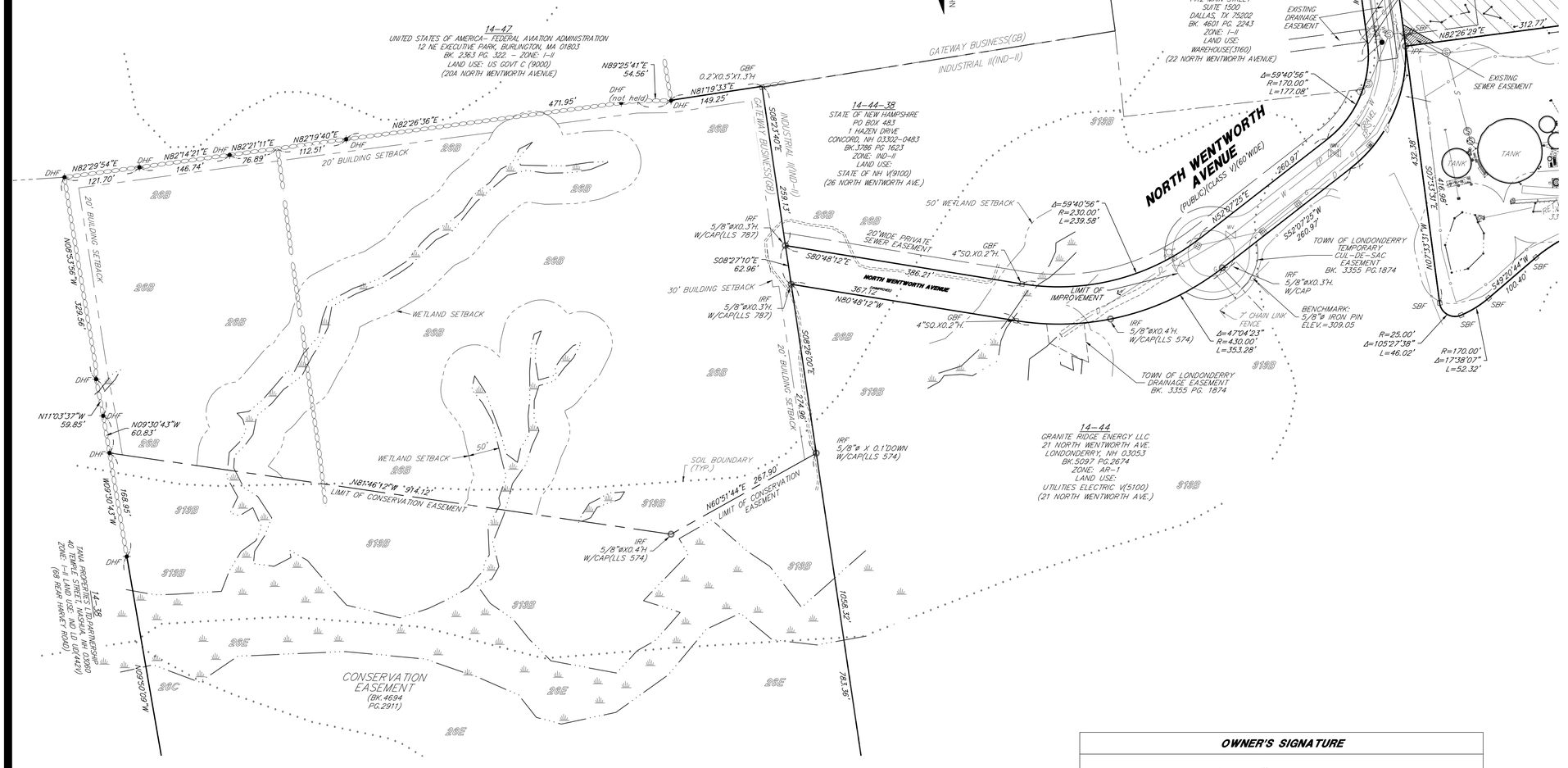
LEGEND

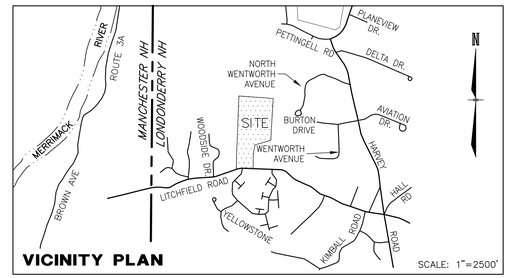
STONE BOUND (FOUND)	SAC	SLOPED ASPHALT CURB	ABUTTING PROPERTY LINE
IRON PIN (FOUND)	OHW	OVERHEAD WIRES	BUILDING SETBACK
DRILL HOLE (FOUND)		STONEWALL	EDGE OF PAVEMENT
UTILITY POLE	302	2' CONTOUR	ZONING DISTRICT BOUNDARY
GUY WIRE		10' CONTOUR	PROPERTY BOUNDARY
BENCHMARK	280	SOILS BOUNDARY	EASEMENT LINE
WATER VALVE	26A	SOILS MAP UNIT SYMBOL	W WATER LINE
HYDRANT		WETLAND DELINEATION	G GAS LINE
CATCH BASIN	5-12	WETLAND FLAG LOCATION	D DRAIN LINE
DIRECTION OF DRAINAGE FLOW		WETLAND SETBACK	S SEWER LINE

N

TFM

NH-SPC 83/86





NOTES

1. OWNER OF RECORD OF MAP 14 LOT 39: CRAIG FOWLER (TRUSTEE)
   NICHOLAS F. CODNER 2012 TRUST
   162 LITCHFIELD ROAD
   LONDONDERRY, NH 03053
   DEED REFERENCE: BK. 5336 PG. 1874
   AREA = 2,155,033 S.F. OR 49.473 ACRES
2. 14-39 INDICATES TAX MAP AND LOT NUMBER.
3. THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS PRESENT ON TAX MAP 14, LOT 39, LOCATED AT 162 LITCHFIELD ROAD AND THE WESTERLY PORTION OF NORTH WENTWORTH AVENUE IN LONDONDERRY, NEW HAMPSHIRE, AS SHOWN HEREON, AND NO OTHER PURPOSE.
4. CURRENT ZONING:
   GATEWAY BUSINESS (GB)
   MINIMUM LOT SIZE: 43,560 S.F./1 ACRE (SUBJECT TO PLANNING BOARD APPROVAL)
   MINIMUM LOT FRONTAGE: 150 FEET
   MAXIMUM BUILDING HEIGHT: 50 FEET
   MINIMUM GREEN SPACE: 25 PERCENT
   MINIMUM BUILDING SETBACKS: FRONT 30 FEET. SIDE & REAR 20 FEET.

   AGRICULTURAL/RESIDENTIAL (AR-1)
   MINIMUM LOT SIZE: (MUNICIPAL WATER & SEWER)
   SINGLE FAMILY (1-2 BEDROOMS): 35,000 S.F.
   SINGLE FAMILY (3 OR MORE BEDROOMS): 40,000 S.F.
   DUPLEX (2-4 BEDROOMS)(BOTH DWELLINGS): 52,500 S.F.
   DUPLEX (5 OR MORE BEDROOMS): 60,000 S.F.
   (NO MUNICIPAL SEWER)
   SINGLE OR TWO FAMILY RESIDENCE: 43,560 S.F./1 ACRE
   MINIMUM LOT FRONTAGE (CLASS V OR BETTER)
   SINGLE FAMILY: 150 FEET
   TWO FAMILY: 200 FEET
   MAXIMUM BUILDING HEIGHT: 35 FEET
   MINIMUM BUILDING SETBACKS: FRONT 40 FEET, SIDE & REAR 15 FEET.

   INDUSTRIAL II (IND-II)
   MINIMUM LOT SIZE: 43,560 S.F. (SUBJECT TO PLANNING BOARD APPROVAL)
   MINIMUM LOT FRONTAGE (CLASS V OR BETTER): 150 FEET
   MAXIMUM BUILDING HEIGHT: 50 FEET
   MINIMUM BUILDING SETBACKS: FRONT 30 FEET, SIDE & REAR 20 FEET.
5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER: 33015C0318E, EFFECTIVE DATE: MAY 17, 2005, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.
6. HORIZONTAL DATUM: NAD 83/86. VERTICAL DATUM: NGVD 29. BENCHMARKS SET: AS NOTED
7. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL MAY DETERMINE.
8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.
9. SEE SHEETS S-03 THROUGH S-09 FOR BENCHMARK INFORMATION.
10. SEE SHEETS S-03 THROUGH S-09 FOR DETAILED UTILITY INFORMATION.

Graphic Scale

100' 50' 0' 100' 200' 300' 400'

1" = 100'

TAX MAP 14 LOT 39

EXISTING CONDITIONS PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
ARCO/MURRAY
113 NORTH MAY STREET, CHICAGO, IL 60607

SCALE: 1" = 100' **JUNE 12, 2024**

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REV.	DATE	DESCRIPTION	DR	CK
2	12-18-25	PER REVIEW COMMENTS FROM TOWN	MRD	MRD
1	11-17-25	REVISE SEWER EASEMENT DEED REFERENCE	MRD	MRD

CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION "IT'S THE LAW"
811 Dig Safe MA-ME-NH-RI-VT

WETLAND SCIENTIST CERTIFICATION

JURISDICTIONAL WETLANDS SHOWN ON THIS PLAN WERE DELINEATED ON AUGUST 16, 2024 BY CHRISTOPHER K. DANFORTH CWS #077. THE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2, JANUARY 2012. DOMINANT HYDRIC SOILS WITHIN THE WETLAND(S) WERE IDENTIFIED USING "FIELD INDICATORS OF HYDRIC SOILS OF THE UNITIED STATES" A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, NRCS, VERSION 8.1, 2017. DOMINANCE OF HYDROPHYTIC VEGETATION WAS DETERMINED USING THE USACE NATIONAL WETLAND PLANT LIST, NWPL 2016 VERSION 3.3 HTTP://WETLAND_PLANTS.USACE.ARMY.MIL.

STATE OF NEW HAMPSHIRE
CHRISTOPHER K. DANFORTH
No. 077
8/28/2024
CERTIFIED WETLAND SCIENTIST

OWNER'S SIGNATURE

OWNER OR AUTHORIZED AGENT — 12/22/2025 DATE

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. FURTHER, THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY MADE BY THIS OFFICE IN MAY OF 2024. SAID SURVEY HAS AN ERROR OF CLOSURE OF NOT LESS ACCURACY THAN ONE PART IN TEN THOUSAND (1:10,000).

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Michael R Dahlberg — 12-22-25
LICENSED LAND SURVEYOR — DATE

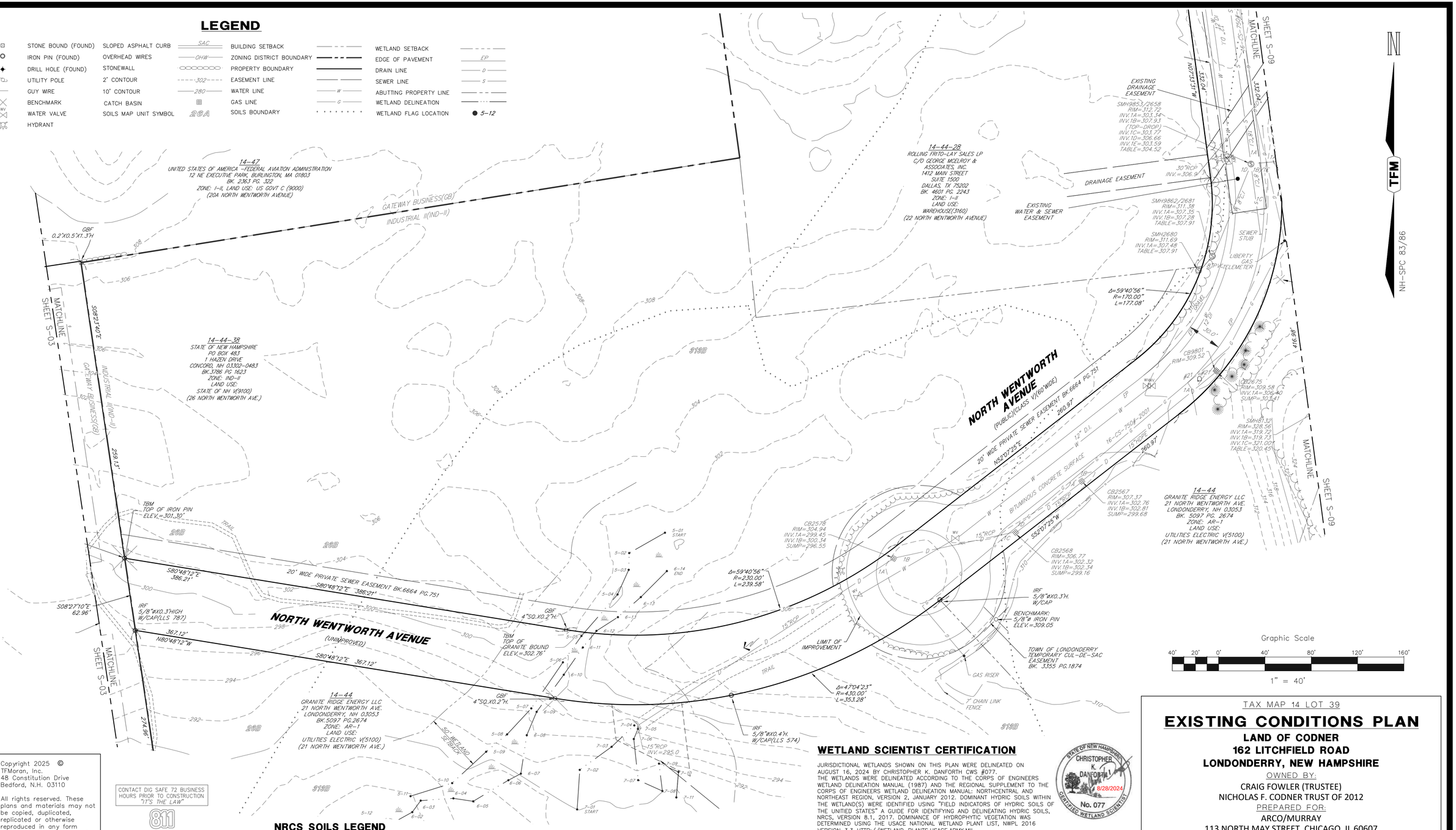
STATE OF NEW HAMPSHIRE No. 714 MICHAEL R. DAHLBERG LICENSED LAND SURVEYOR
Michael R Dahlberg SIGNATURE

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE		DR	TNB	FB	2229/2230	
	18252.01	CK	MRD	CADFILE	18252-01 Survey	S-01

LEGEND

STONE BOUND (FOUND)	SLOPED ASPHALT CURB	SAC	BUILDING SETBACK	WETLAND SETBACK	
IRON PIN (FOUND)	OVERHEAD WIRES	OHW	ZONING DISTRICT BOUNDARY	EDGE OF PAVEMENT	EP
DRILL HOLE (FOUND)	STONEWALL		PROPERTY BOUNDARY	DRAIN LINE	D
UTILITY POLE	2' CONTOUR	302	EASEMENT LINE	SEWER LINE	S
GUY WIRE	10' CONTOUR	280	WATER LINE	ABUTTING PROPERTY LINE	
BENCHMARK	CATCH BASIN		GAS LINE	WETLAND DELINEATION	
WATER VALVE	SOILS MAP UNIT SYMBOL	26A	SOILS BOUNDARY	WETLAND FLAG LOCATION	5-12
HYDRANT					



Graphic Scale

40' 20' 0' 40' 80' 120' 160'

1" = 40'

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CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION "IT'S THE LAW"

811 Dig Safe MA-ME-NH-RI-VT

REV.	DATE	DESCRIPTION	DR	CK
2	12-18-25	PER REVIEW COMMENTS FROM TOWN	MRD	MRD
1	11-17-25	REVISE SEWER EASEMENT DEED REFERENCE	MRD	MRD

NRCS SOILS LEGEND

SOILS INFORMATION SHOWN HEREON IS GRAPHICALLY REPRODUCED FROM THE USDA NATURAL RESOURCES CONSERVATION SERVICE, NATIONAL COOPERATIVE SOIL SURVEY OF ROCKINGHAM COUNTY, NEW HAMPSHIRE.

26A	WINDSOR LOAMY SAND, 0 TO 3 PERCENT SLOPES
26B	WINDSOR LOAMY SAND, 3 TO 8 PERCENT SLOPES
26C	WINDSOR LOAMY SAND, 8 TO 15 PERCENT SLOPES
26E	WINDSOR LOAMY SAND, 15 TO 60 PERCENT SLOPES
45B	MONTAUK FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES, VERY STONY
116	SCARBORO MUCK, COASTAL LOWLAND, 0 TO 3 PERCENT SLOPES
319B	DEERFIELD LOAMY FINE SAND, 3 TO 8 PERCENT SLOPES

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STATE OF NEW HAMPSHIRE · CHRISTOPHER K. DANFORTH · No. 077 · 8/28/2024 · CERTIFIED WETLAND SCIENTIST

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Michael R Dahlberg — 12-22-25
LICENSED LAND SURVEYOR — DATE

STATE OF NEW HAMPSHIRE · LICENSED LAND SURVEYOR · No. 714 · MICHAEL R. DAHLBERG · SIGNATURE

TAX MAP 14 LOT 39

EXISTING CONDITIONS PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
ARCO/MURRAY
113 NORTH MAY STREET, CHICAGO, IL 60607

SCALE: 1" = 40' **JUNE 12, 2024**

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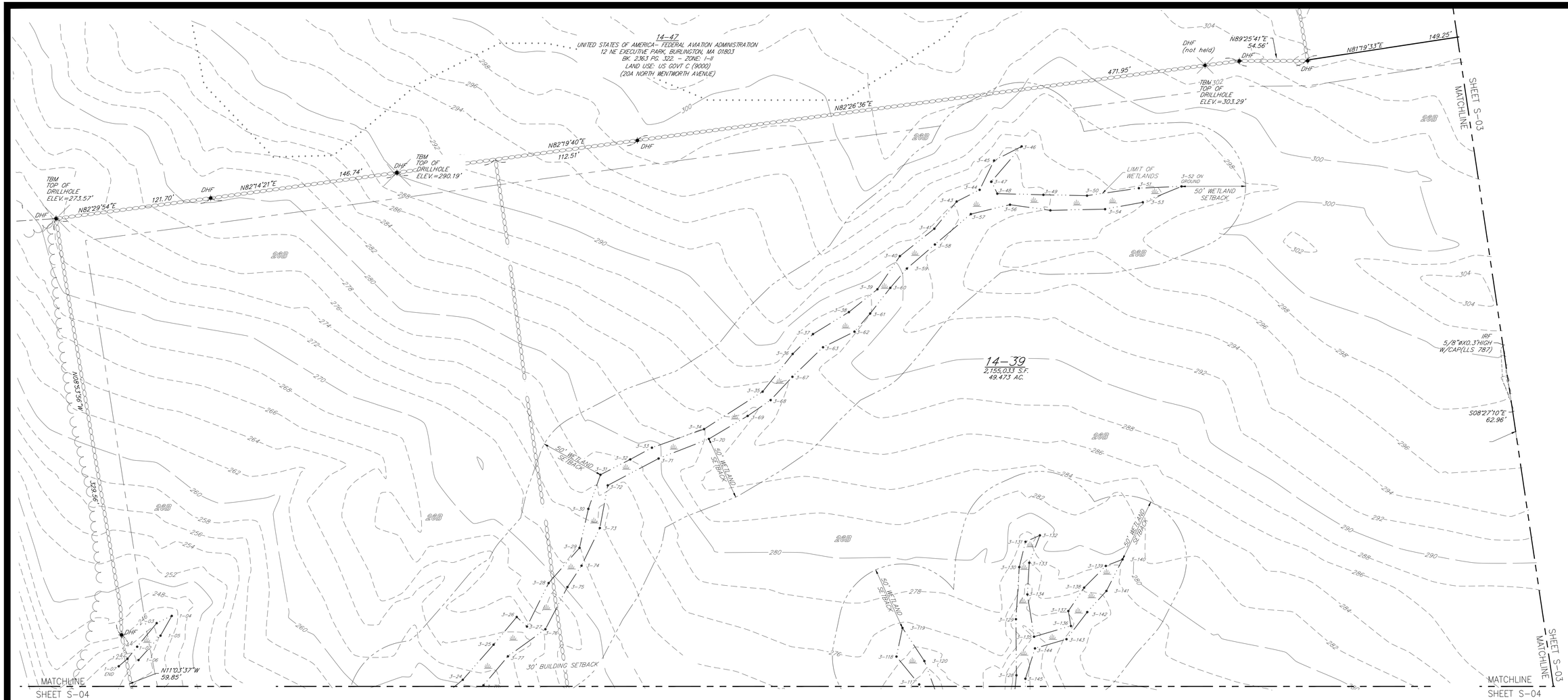
FILE		DR	TNB	FB	2229/2230	
	18252.01	CK	MRD	CADFILE	18252-01 Survey	S-02



LEGEND

STONE BOUND (FOUND)	SLOPED ASPHALT CURB	SAC	BUILDING SETBACK
IRON PIN (FOUND)	OVERHEAD WIRES	OHW	ZONING DISTRICT BOUNDARY
DRILL HOLE (FOUND)	STONEWALL		PROPERTY BOUNDARY
UTILITY POLE	2' CONTOUR	302	EASEMENT LINE
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HYDRANT	WETLAND DELINEATION		SEWER LINE
CATCH BASIN	WETLAND FLAG LOCATION	5-12	ABUTTING PROPERTY LINE
MAILBOX	WETLAND SETBACK		
EDGE OF PAVEMENT	DIRECTION OF DRAINAGE FLOW		

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STATE OF NEW HAMPSHIRE CHRISTOPHER K. DANFORTH No. 077 CERTIFIED WETLAND SCIENTIST 8/28/2024

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Michael R Dahlberg 12-22-25
LICENSED LAND SURVEYOR DATE

STATE OF NEW HAMPSHIRE No. 714 MICHAEL R. DAHLBERG LICENSED LAND SURVEYOR
Michael R Dahlberg
SIGNATURE

TAX MAP 14 LOT 39

EXISTING CONDITIONS PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
ARCO/MURRAY
113 NORTH MAY STREET, CHICAGO, IL 60607

SCALE: 1" = 40' **JUNE 12, 2024**

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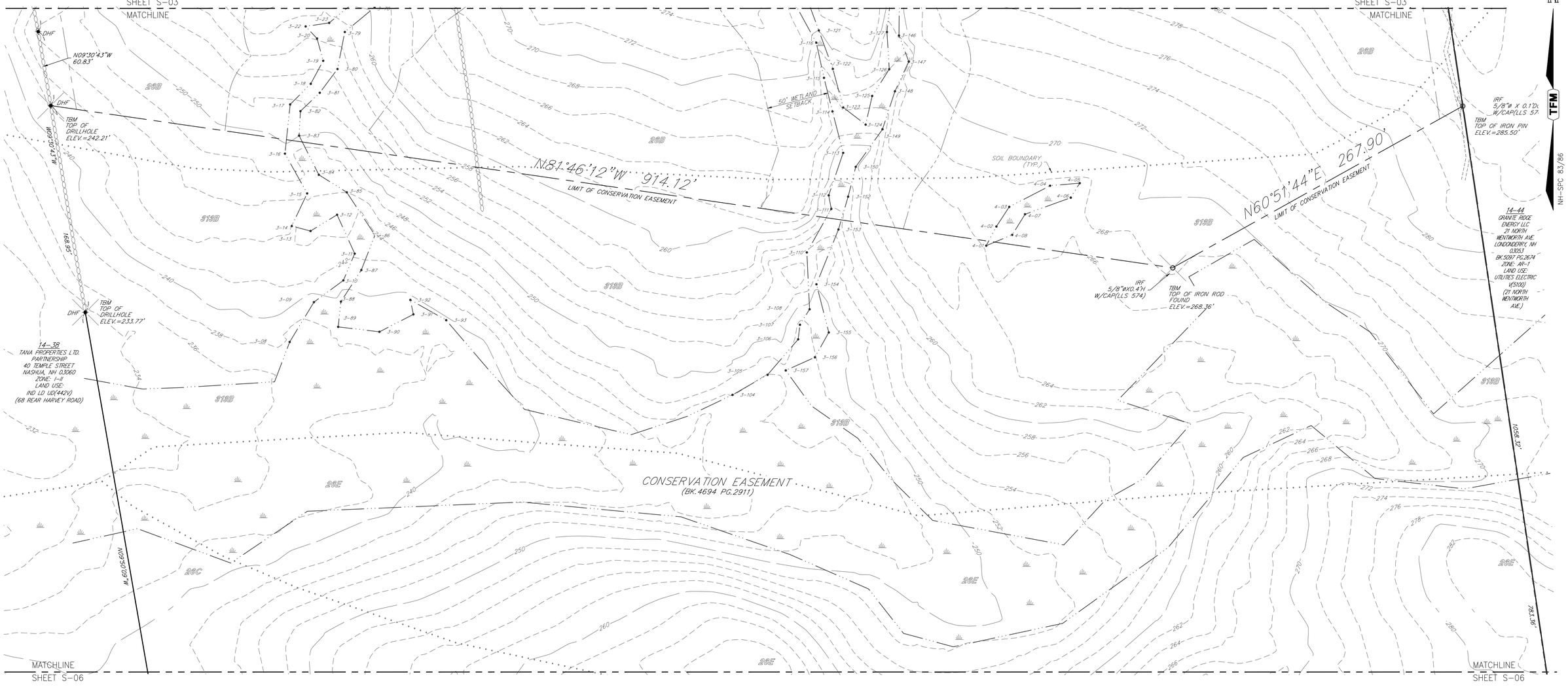
FILE		DR		FB		
18252.01		TNB		2229/2230		S-03
		CK	MRD	CADFILE	18252-01 Survey	



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2	12-18-25	PER REVIEW COMMENTS FROM TOWN	MRD	MRD
1	11-17-25	REVISE SEWER EASEMENT DEED REFERENCE	MRD	MRD

WETLAND NOTE

THE WETLANDS DEPICTED ON THIS SHEET AND THOSE LOCATED WITHIN THE EXISTING CONSERVATION EASEMENT WERE DIGITIZED FROM PLANS OF RECORD PREPARED FOR THE STATE OF NEW HAMPSHIRE AND RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAN #

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STATE OF NEW HAMPSHIRE
CHRISTOPHER K. DANFORTH
8/28/2024
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Michael R Dahlberg 12-22-25
LICENSED LAND SURVEYOR DATE

STATE OF NEW HAMPSHIRE
No. 714
MICHAEL R. DAHLBERG
LICENSED LAND SURVEYOR
SIGNATURE

TAX MAP 14 LOT 39

EXISTING CONDITIONS PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
ARCO/MURRAY
113 NORTH MAY STREET, CHICAGO, IL 60607

SCALE: 1" = 40' **JUNE 12, 2024**

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FILE		DR	TNB	FB	2229/2230	
	18252.01	CK	MRD	CADFILE	18252-01 Survey	S-04

NOTES

1. SITE PREP. NOTES ON SHEET C-03.
2. SEE GRADING AND DRAIANGE NOTES ON SHEET C-03
3. SEE CONSTRUCTION SEQUENCING AND EROSION CONTROL NOTES ON SHEET C-03
4. SEE STORMWATER MANAGEMENT NOTES ON C-12
5. SEE CONSTRUCTION PHASING NOTES ON SHEET PH-1.
6. THE EDGE OF THE CONSERVATION OVERLAY AND NON-DISTURBANCE (NO-CUT) ZONES SHALL BE APPROPRIATELY DELINEATED IN THE FIELD PRIOR TO CONSTUCTION.

SITE SPECIFIC SOILS LEGEND

SYMBOL	MAP UNIT	DRAINAGE	HSG
26	WINDSOR	WELL	A
313	DEERFIELD	MODERATELY WELL	B
546/P	WALPOLE	VERY POORLY	C

SLOPE DESIGNATION	PERCENT SLOPE
B	0 TO 8%
C	8 TO 15%
D	15 TO 25%
E	>25%

STATE OF NEW HAMPSHIRE
BRUCE A. GILDAY
No. 012
CERTIFIED SOIL SCIENTIST

SOILS CERTIFICATION

THE SITE SPECIFIC SOIL MAPPING WAS PERFORMED DECEMBER 2024 BY BRUCE A. GILDAY, CERTIFIED SOIL SCIENTIST #012, OF BAG LAND CONSULTANTS, IN CONCORD, NH. THIS MAPPING WAS PERFORMED ACCORDING TO THE STANDARDS OF THE "SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE AND VERMONT," VERSION 7.0, JULY 2021. THESE STANDARDS ARE PUBLISHED BY THE SOCIETY OF SOIL SCIENTISTS OF NORTHERN NEW ENGLAND (SSSNNE).

WILDLIFE EXCLUSIONARY FENCING (POSTS INTERIOR TO SITE)

STONEWALL TO BE RELOCATED WITHIN LIMITS OF WORK WHERE PRACTICAL, COORDINATE WITH OWNER (TYP.)

PROPOSED TREELINE

CLEAR AND GRUB

81,954 SF 50' WETLAND BUFFER IMPACT AREA

APPROX. LIMITS OF DISTURBANCE

WETLAND IMPACT AREA
199 SF. TEMPORARY IMPACT
8,132 SF. PERMANENT IMPACT

25,298 SF 50' WETLAND BUFFER IMPACT AREA

WETLAND IMPACT AREA
65 SF. TEMPORARY IMPACT
439 SF. PERMANENT IMPACT

SILT SOCK OR MULCH BERM WITH SILT FENCE WITHIN 50' OF WETLAND BOUNDARY (TYP.)

SILT SOCK OR MULCH BERM (INTERIOR) WITH SILT FENCE (TYP.)

INSTALL CONSERVATION OVERLAY DISTRICT SIGN 50' O.C. (MAX)

PROPOSED TREELINE (TYP.)

INSTALL PERIMETER CONTROL WITH INTERIOR WILDLIFE RAMPS EVERY 75' (SEE DETAIL)

LIMIT OF CONSERVATION EASEMENT

NORTH WENTWORTH AVENUE

MATCHLINE

STABILIZED CONSTRUCTION ENTRANCE

RIGHTS TO BUILD AND MAINTAIN ACCESS, UTILITIES, AND WAYFINDING SIGNAGE TO BE CONVEYED TO TAX MAP 14 LOT 39-2. FINAL FORM OF CONVEYENCE TO BE DETERMINED. AREA =38,7±

20' WIDE PRIVATE SEWER EASEMENT B. 3355 P. 1872

TOWN OF LONDONDERRY TEMPORARY CUL-DE-SAC EASEMENT BOOK 3355, PAGE 1874

AREA OF WETLAND TO BE CLEARED WITH STUMPS LEFT IN PLACE

WETLAND IMAPCT
366 SF. PERMANENT
84 SF. TEMPORARY

4,470 SF 50' WETLAND BUFFER IMPACT AREA
STREAM BED SCOUR PROTECTION

5,488 SF 50' WETLAND BUFFER IMPACT AREA

HORIZONTAL SCALE 1"=50'
50 25 0 50

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SITE PREPARATION & DEMOLITION PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 50' **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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FILE	DR		FB		
18252-02		CK		CADFILE	18252-02 SITE PLAN

C-04

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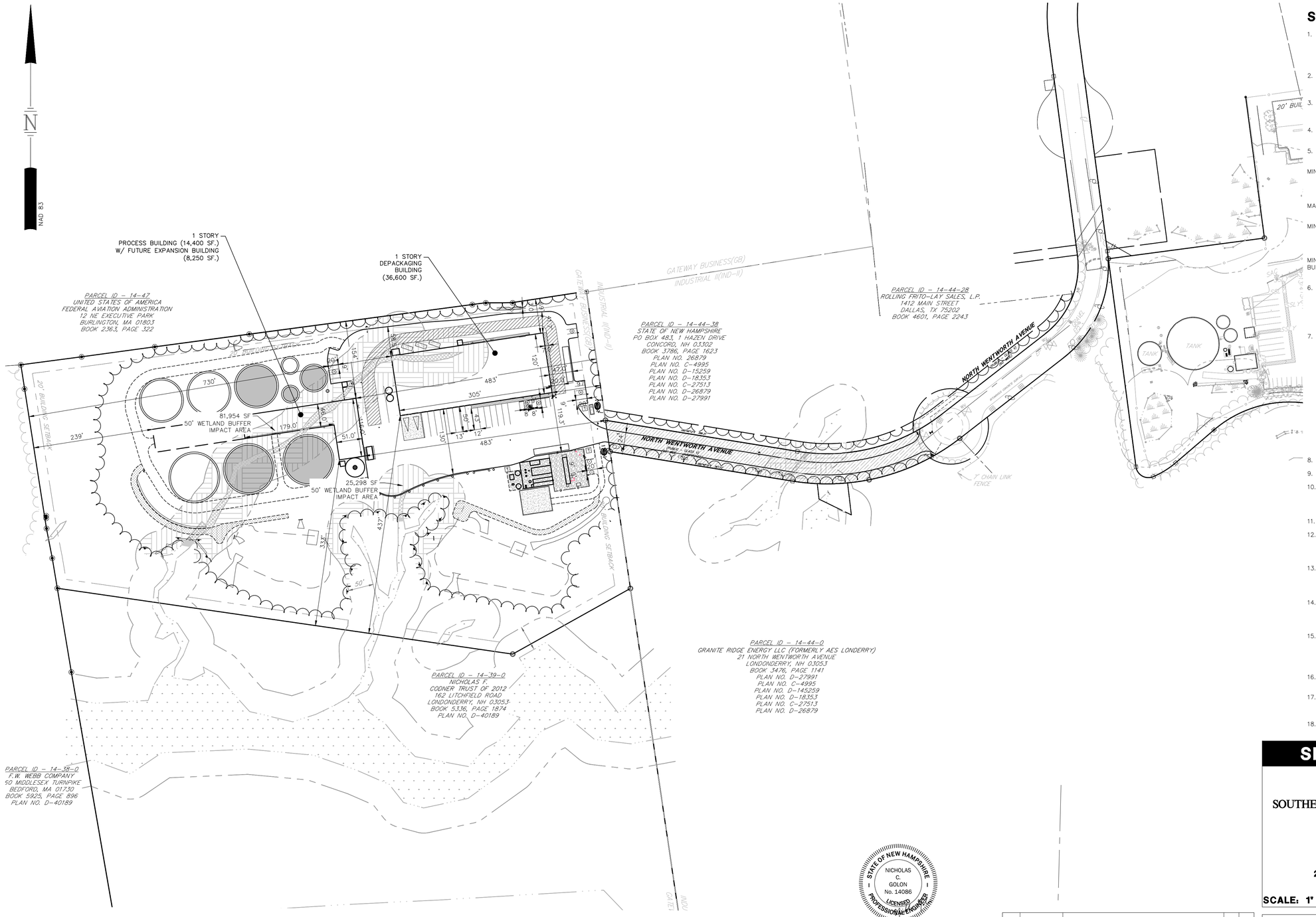
Dec 23, 2025 - 2:15pm
P:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 SITE PLAN.dwg



SITE DATA

1. OWNER OF RECORD OF MAP 14 LOT 39:

   CRAIG FOWLER (TRUSTEE) NICHOLAS F. CODNER TRUST 2012, 162 LITCHFIELD ROAD
   DEED REFERENCE TO PARCEL IS BK 5336 PG 1874
   AREA OF PARCEL = 2,155,033± SF OR 49.473± ACRES

2. ZONED: GATEWAY BUSINESS (GB)
   EXISTING USE: UNDEVELOPED
   PROPOSED USE: ORGANIC WASTE PROCESSING FACILITY

3. THE PURPOSE OF THIS PLAN IS TO CONSTRUCT A RESOURCE RECOVERY CENTER. ASSOCIATED IMPROVEMENTS INCLUDE AND ARE NOT LIMITED TO ACCESS, GRADING, STORMWATER MANAGEMENT SYSTEMS, UTILITIES, LIGHTING, AND LANDSCAPING.

4. TYPICAL HOURS OF OPERATION (OFFICE): 7 AM TO 4 PM MONDAY TO FRIDAY. FACILTY RUNS 24–7 YEAR ROUND WITH EXCEPTIONS FOR MAINTENANCE.

5. DIMENSIONAL REQUIREMENTS (CURRENT ZONING)

	REQUIRED:	PROVIDED:
MINIMUM LOT DIMENSIONS:		
LOT AREA	43,560 SF (1.00± AC)	667,167.7 SF* (15.316± AC)
LOT FRONTAGE	150 FT	60 FT
MAXIMUM STRUCTURE DIMENSIONS:		
STRUCTURE HEIGHT	50 FT	39.5 FT
MINIMUM SETBACKS/BUFFER:		
BUILDING FRONT	30 FT	96.6 FT
BUILDING SIDE	20 FT	69.4 FT
BUILDING REAR	20 FT	351.9 FT
MINIMUM GREEN SPACE	25%	64%%
BUILDING COVERAGE	N/A	

   * UPON FINALIZATION AND RECORDING OF LOT SUBDIVISION

6. PARKING REQUIREMENTS

PARKING SPACES (SEE CALCULATION)	1 PER 800 SF FA	64 SPACES
ACCESSIBLE SPACES (REQ'D BY ADA)	3 FOR 51–75 SPACES	3 SPACES
PARKING SPACE SIZE	9 FT X 20 FT	9 FT X 20 FT
AISLE WIDTH	22 FT	22 FT

7. PARKING CALCULATIONS

   REQUIRED PARKING RATIO:
   RESOURCE RECOVERY CETNER: 1 SPACE PER 800 SF FLOOR AREA

TOTAL REQUIRED = 50,700 SF FA/800 SF	= 64	SPACES
TOTAL	= 64	SPACES

   PARKING PROVIDED PER ITE:

   LAND USE CODE (LUC) 110 – GENERAL LIGHT INDUSTRIAL

   AVG. RATE = 0.76 SPACES/EMPLOYEE

   30 EMPLOYEES x 0.76 SPACES/EMPLOYEES = 23 SPACES

   THE SITE PROVIDES 23 CAR PARKING SPACES AND 6 TRUCK PARKING SPACES.

8. THIS PLANSET IS ON FILE AT THE TOWN OF LONDONDERRY PLANNING DEPARTMENT

9. THE SITE WILL BE SERVICED BY MUNICIPAL SEWER AND WATER.

10. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0318E, EFFECTIVE DATE OF MAY 17, 2005, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.

11. ALL BUILDINGS ON SITE SHALL BE 1 STORY.

12. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEAUSRES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE TOWN.

13. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO TOWN OF LONDONDERRY SUBDIVISION REGULATIONS AND THE LATEST EDITION OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION.

14. IN ACCORDANCE WITH SECTION 6.01 OF THE LONDONDERRY SITE PLAN REGUALTIONS AND RSA 676.13, ALL IMPROVMENTS SPECIFIED ON THESE SITE PLAN SHALL BE CONSTRUCTED, COMPLETED, INSPECTED AND APPROVED BY THE TOWN OF LONDONDERRY PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

15. IN ACCORDANCE WITH SECTION 6.01 OF THE LONDONDERRY SITE PLAN REGULATIONS AND RSA 676:12, ALL OFF–SITE IMPROVEMENTS SPECIFIED ON THESE SITE PLAN SHALL BE CONSTRUCTED, COMPLETED, INSPECTED AND APPROVED BY THE TOWN OF LONDONDERRY (AND/OR THE NHDOT, IF APPLICABLE) PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

16. APPLICANT SHALL COORDINATE TRAINING MEETING WITH LONDONDERRY POLICE & FIRE DEPARTMENTS.

17. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT DEFINCIENCIES EXIST IN THE APPROVED DESIGN DRAWINGS, THE OWNER SHALL BE REQUIRED TO CORRECT THE DEFICIENCIES TO MEET THE REGULATIONS AT NO EXPENSE TO THE TOWN.

18. THIS PLAN SET HAS BEEN PREPARED FOR THE FULL BUILDOUT OF THE FACILITY NOTING A PHASED CONSTRUCTION SCHEDULE.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

OVERALL SITE PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 100' **SEPTEMBER 8, 2025**

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OWNER'S SIGNATURE

OWNER OR AUTHORIZED AGENT — DATE 12/22/2025

Approved by the Londonderry, NH Planning Board for Phase _____

on Date: _____

Certified by:

_____

_____

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=100'
100 50 0 100

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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48 Constitution Drive
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Fax (603) 472-9747
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FILE 18252-02 | DR | FB | CK | CADFILE 18252-02 SITE PLAN | C-05

Dec 23, 2025 - 2:15pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 SITE PLAN.dwg

14-47
UNITED STATES OF AMERICA- FEDERAL AVIATION ADMINISTRATION
12 NE EXECUTIVE PARK, BURLINGTON, MA 01803
BK. 2363 PG. 322 - ZONE: I-II
LAND USE: US GOVT C (9000)
(20A NORTH WENTWORTH AVENUE)

N
NAD 83

NOTES

1. SEE NOTES ON SHEET C-03.
2. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS NOTED OTHERWISE.
3. LIGHTING, SIGNAGE, LANDSCAPING, AND SCREENING SHALL MEET THE REQUIREMENTS OF THE LONDONDERRY ZONING ORDINANCE AND SITE PLAN REGULATIONS.
4. SNOW SHALL NOT BE STOCKPILED IN STORMWATER BMP'S, WETLAND BUFFERS, OR WETLANDS. SEE SNOW STORAGE LOCATIONS. IN THE EVENT THAT THE SNOW STORAGE AREAS PROVIDED ON THE SITE ARE COMPLETELY UTILIZED, EXCESS SNOW SHALL BE TRANSPORTED OFF SITE FOR DISPOSAL IN ACCORDANCE WITH NHDES REGULATION. IF SNOW IS STORED WITHIN PARKING AREA, KEEP CATCH BASINS CLEAR.

MODULAR BLOCK RETAINING WALL
NATURAL GAS GENERATOR PAD
10,000 GAL LIFT STATION
26' x 32' SCREENING ROOM (RECEIVIING)
DETENTION BASIN #1
20' BUILDING SETBACK
50' NHDES P/T SETBACK
EOG
FUTURE FET
FUTURE 81' TRIBRID-BIOREACTOR
81' TRIBRID-BIOREACTOR
FET 1
FET 2
CB5
CB4
CCB
NO PARKING FIRE ACCESS
50' WETLAND BUFFER
ROLL UP DOOR
DOWN CAST WALL PACK (TYP.)
PFO1B
ODOR CONTROL PAD
DUMPSTER/COMPACTOR AREA
1 STORY DEPACKAGING BUILDING (36,600 SF)
FF=297
H=39.5'
15,000 GAL TANK
6' DIA RE-AERATION TANK
1 STORY PROCESS BUILDING (±14,100 SF)
FF=296
H=24.5'
TIPPING TRUCK GARAGE DOORS (RECEIVING)
LOADING DOCK DOOR (TYP.)
R7-8
R7-8a
(BUILDING MOUNTED)
CONC. WHEEL STOP (TYP.)
ROLL UP DOOR
RECEIVING
ACCESS DRIVE
CONCRETE APRON (SEE DETAILS)
CONCRETE RETAINING WALL (BY OTHERS)
11' X 26' BIOSOLIDS STORAGE BIN (ELEVATED)
BIT. CONC. PAVEMENT (TYP.)
OUTBOUND SCALE
INBOUND SCALE
SNOW STORAGE (TYP.)
18' DOWN CAST LIGHT POLE (TYP.)
INDUSTRIAL PARK DRIVE (PUBLIC)
TRANSFORMER PAD 20'L X 8'W CONC. PAD FOR SEWER PUMP STATION AND BACK UP GENERATOR
RELOCATED STONES
TRANSFORMER P
INTERCONNECTION FACILITY YARD
LOAM AND SEED (TYP.)
FUTURE PROCESS BUILDING (±8,250 SF)
WETLAND IMPACT AREA
199 SF. TEMPORARY IMPACT
8,132 SF. PERMANENT IMPACT
FUTURE 96' TRIBRID-BIOREACTOR
96' TRIBRID-BIOREACTOR
20' GRAVEL DRIVE
BIOGAS WATER KO
ENCLOSED FLARE AND CLEAR RADIUS
GUARDRAIL
BIOGAS UPGRADING YARD
TRANSFORMER PAD
H_2S MEDIA LAYDOWN AREA (CONC. PAD)
12' MAINTENANCE DRIVE
WETLAND IMPACT AREA
65 SF. TEMPORARY IMPACT
439 SF. PERMANENT IMPACT
REINFORCED MODULAR BLOCK RETAINING WALL
FILTRATION BASIN #1 AREA
FILTRATION BASIN #2 AREA
PROPOSED TREELINE (TYP.)
WETLAND CONSERVATION BOUNDARY SIGNS (TYP.)
LIMIT OF CONSERVATION EASEMENT
LIMIT OF CONSERVATION EASEMENT
CONSERVATION EASEMENT (BOOK 4634, PAGE 2911)
20' BUILDING SETBACK

HORIZONTAL SCALE 1"=40'
40 20 0 40

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SITE LAYOUT PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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OWNER OR AUTHORIZED AGENT — DATE 12/22/2025

Approved by the Londonderry, NH Planning Board for Phase _____
on Date:_____
Certified by:
_____
_____

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
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4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Structural Engineers
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Land Surveyors
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Fax (603) 472-9747
www.tfmoran.com

FILE: 18252-02 | DR: | FB: | CK: | CADFILE: 18252-02 SITE PLAN | C-06

Dec 23, 2025 - 2:16pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 SITE PLAN.dwg

14-47
UNITED STATES OF AMERICA- FEDERAL AVIATION ADMINISTRATION
12 NE EXECUTIVE PARK, BURLINGTON, MA 01803
BK. 2363 PG. 322 - ZONE: I-A
LAND USE: US GOVT C (9000)
(20A NORTH WENTWORTH AVENUE)

N
NAD 83

DETENTION BASIN 1
W/ LINER SEE DETAIL
BOTTOM = 294.00
BERM = 296.00
EMERGENCY SPILLWAY = 295.50
3'Wx5'L RIPRAP SPILLWAY
ELEV=295.50

TBM
TOP OF DRILLHOLE
ELEV=290.12'

20' BUILDING SETBACK

50' NHDES P/T SETBACK

81'
TRIBRID-BIOREACTOR

FUTURE 81'
TRIBRID-BIOREACTOR

FUTURE 81'
TRIBRID-BIOREACTOR

FUTURE PROCESS
BUILDING
(±8,250 SF)

INV.O ROOF DRAIN = 289.50

1 STORY
PROCESS
BUILDING
(±14,100 SF)
FF=296
H=24.5'

96'
TRIBRID-BIOREACTOR

96'
TRIBRID-BIOREACTOR

FUTURE 96'
TRIBRID-BIOREACTOR

1 STORY
DEPACKAGING BUILDING
(36,600 SF)
FF=297
H=39.5'

TRENCH DRAIN TD1
RIM = 294.0
INV.O = 289.5

MODULAR BLOCK
RETAINING WALL
TOW=303.0
BOW=300.0

MODULAR BLOCK
RETAINING WALL
TOW=300.0
BOW=297.5

TBM
TOP OF DRILLHOLE
ELEV=303.29'

MATCHLINE (C-13)

RIP RAP PLUNGE POOL
BOT. = 276.00
SEE SHEET D22

HEADWALL #1
INV=277.0

CUTOFF SWALE W/
UNDERDRAINED TRENCH
W=3'
D=0.25'
S=0.065

HEADWALL #2
INV=274.0

10.4'Wx15.6'L
RIPRAP OUTLET
ELEV=276.40

REINFORCED MODULAR
BLOCK RETAINING WALL
TOW=279.0
BOW=262.0

TOW=279
BOW=262

TOW=278
BOW=262

TOW=270
BOW=264

TOW=260
BOW=257

HEADWALL 3
INV.O = 265.75

OS1
RIM=277.30

6'Wx9'L RIPRAP SPILLWAY
ELEV=277.50

FILTRATION BASIN 1
BOTTOM = 273.00
FILTER MEDIA = 271.50
BERM = 278.00
EMERGENCY SPILLWAY = 277.50

LIMIT OF CONSERVATION EASEMENT

FOREBAY 1
BOTTOM = 274.00
BERM = 278.00

HEADWALL 5
INV.O = 277.00

HEADWALL 4
INV.O = 277.00

OS2
RIM=279.00

FILTRATION BASIN 2
BOTTOM = 277.00
FILTER MEDIA = 275.50
BERM = 280.00
EMERGENCY SPILLWAY = 279.50
6'Wx9'L RIPRAP SPILLWAY
ELEV=279.50

RIPRAP
APRON
(TYP.)

FOREBAY 2
6' x 122' BOTTOM = 276.50
BERM = 280.00
21'W x 9'L RIPRAP WEIR
ELEV=278.80

RIPRAP SWALE
W=8'
D=6"
S=0.06 '/'

20' BUILDING SETBACK

CB1, CB2, CB3 5'Ø, CB4, CB5, CB6, CB8A 5'Ø, CB10, CB12, CB13, CB13A 5'Ø, CB14 5'Ø, CB15, CB16, CB17 5'Ø, CB18, CB19, CB20, CB21, CB22, CB23, CB24, CB27, CB28, CB30
DMH1, DMH3, DMH5, DMH5A, DMH6, DMH9 5'Ø, DMH11 5'Ø, DMH23, DMH24, DMH25, DMH 26, DMH RD

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

GRADING & DRAINAGE PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=40'
40 20 0 40

REV	DATE	DESCRIPTION	DR	CK
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4	10/24/2025	NHF&G APPROVAL	JD	NG
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Civil Engineers
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FILE	18252-02	DR		FB		C-07
		CK		CADFILE	18252-02 SITE PLAN	

Dec 23, 2025 - 2:16pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_CSD\PRODUCTION\18252-02 SITE PLAN.dwg

Pipe Table				
Pipe Name	SIZE	MATERIAL	Length	Slope
CB10–CB12	15"	HDPE PIPE	169 LF	0.010
DMH1–CB12	15"	HDPE PIPE	65 LF	0.010
CB14–DMH9	24"	HDPE PIPE	81 LF	0.010
CB13–CB14	15"	HDPE PIPE	71 LF	0.012
CB1–CB2	15"	HDPE PIPE	22 LF	0.010
CB2–DMH1	15"	HDPE PIPE	156 LF	0.010
CB12–CB18	15"	HDPE PIPE	60 LF	0.010
CB6–CB8A	24"	HDPE PIPE	153 LF	0.008
CB8A–CB14	18"	HDPE PIPE	131 LF	0.010
DMH9–POND2	30"	HDPE PIPE	24 LF	0.005
CB30–DMH11	24"	HDPE PIPE	92 LF	0.010
DMH11–POND1	24"	HDPE PIPE	46 LF	0.005
CB28–DMH11	15"	HDPE PIPE	25 LF	0.008
CB27–DMH26	15"	HDPE PIPE	28 LF	0.010
CB20–CB21	15"	HDPE PIPE	94 LF	0.025
CB21–CB22	15"	HDPE PIPE	44 LF	0.009
CB22–DMH23	15"	HDPE PIPE	73 LF	0.010
DMH23–DMH24	15"	HDPE PIPE	58 LF	0.010
CB24–DMH25	15"	HDPE PIPE	82 LF	0.011
DMH25–DMH26	15"	HDPE PIPE	113 LF	0.009
DMH26–DMH11	18"	HDPE PIPE	126 LF	0.010
DMH6–CB8A	24"	HDPE PIPE	80 LF	0.010
DMH24–CB23	15"	HDPE PIPE	37 LF	0.009
OS3–DMH5	18"	HDPE PIPE	199 LF	0.010
DMH5–DMH5A	24"	HDPE PIPE	132 LF	0.010

Pipe Table				
Pipe Name	SIZE	MATERIAL	Length	Slope
CB4–DMH5	18"	HDPE PIPE	191 LF	0.010
CB23–CB24	15"	HDPE PIPE	110 LF	0.010
CB13A–CB13	15"	HDPE PIPE	102 LF	0.010
CB17–DMH9	18"	HDPE PIPE	108 LF	0.015
CB5–CB4	15"	HDPE PIPE	14 LF	0.007
TD–CB13A	24"	HDPE PIPE	56 LF	0.010
CB18–CB17	18"	HDPE PIPE	45 LF	0.010
CB19–CB17	15"	HDPE PIPE	50 LF	0.010
CB3–DMH3	15"	HDPE PIPE	90 LF	0.010
DMH3–CB10	15"	HDPE PIPE	82 LF	0.010
OS2–OUT	15"	HDPE PIPE	31 LF	0.016
OS1–OUT	15"	HDPE PIPE	60 LF	0.004
CB16–HW2	15"	HDPE PIPE	61 LF	0.030
CB15–OS3	15"	HDPE PIPE	38 LF	0.009
DMH RD–CB28	15"	HDPE PIPE	39 LF	0.005
PROCESS –DMH RD	15"	CORRUGATED HDPE PIPE	72 LF	0.005
DMH5A–DMH6	24"	CORRUGATED HDPE PIPE	114 LF	0.010

NOTES

1. SEE NOTES ON SHEET C-02.
2. SEE GRADING AND DRAINAGE PLAN ON SHEET C-07

STRUCTURE TABLE		
STRUCTURE NAME	STRUCTURE DETAILS	SUMP
CB1	RIM = 297.43 CB1–CB2 INV OUT = 293.18	0.0
CB2	RIM = 297.43 CB1–CB2 INV IN = 292.96 CB2–DMH1 INV OUT = 292.64	0.0
CB3 5'Ø	RIM = 296.74 CB4–DMH5 INV IN = 289.15 CB3–DMH3 INV OUT = 289.05	0.0
CB4	RIM = 297.46 CB5–CB4 INV IN = 291.16 CB4–DMH5 INV OUT = 291.06	0.0
CB5	RIM = 296.65 CB5–CB4 INV OUT = 291.26	0.0
CB6	RIM = 294.80 CB6–CB8A INV OUT = 288.00	0.0
CB8A 5'Ø	RIM = 293.10 CB6–CB8A INV IN = 286.82 CB8A–CB14 INV IN = 284.69	0.0
CB10	RIM = 296.00 DMH3–CB10 INV IN = 286.15 CB10–CB12 INV OUT = 285.94	0.0
CB12	RIM = 296.75 CB10–CB12 INV IN = 284.25 CB12–CB18 INV OUT = 284.15	0.0
CB13	RIM = 294.50 CB13A–CB13 INV IN = 289.66 CB13–CB14 INV OUT = 288.00	0.0
CB13A 5'Ø	RIM = 294.95 TD–CB13A INV IN = 288.94 CB13A–CB13 INV OUT = 290.70	0.0
CB14 5'Ø	RIM = 293.10 CB13–CB14 INV IN = 287.13 CB8A–CB14 INV OUT = 286.00 CB14–DMH9 INV OUT = 280.06	0.0
CB15	RIM = 296.08 CB15–OS3 INV OUT = 291.94	0.0
CB16	RIM = 281.80 CB16–HW2 INV OUT = 277.55	0.0
CB17 5'Ø	RIM = 298.57 CB18–CB17 INV OUT = 282.45 CB17–DMH9 INV OUT = 279.72 CB19–CB17 INV OUT = 285.00	0.0
CB18	RIM = 298.57 CB18–CB17 INV IN = 282.00 CB12–CB18 INV IN = 283.55	0.0
CB19	RIM = 293.00 CB19–CB17 INV IN = 284.50	0.0
CB20	RIM = 293.44 CB20–CB21 INV OUT = 289.20	0.0
CB21	RIM = 291.69 CB20–CB21 INV IN = 286.90 CB21–CB22 INV OUT = 286.80	0.0
CB22	RIM = 293.45 CB21–CB22 INV IN = 286.41 CB22–DMH23 INV OUT = 286.31	0.0

STRUCTURE TABLE		
STRUCTURE NAME	STRUCTURE DETAILS	SUMP
CB23	RIM = 293.50 DMH24–CB23 INV IN = 284.46 CB23–CB24 INV OUT = 284.31	0.0
CB24	RIM = 293.40 CB23–CB24 INV IN = 283.20 CB24–DMH25 INV OUT = 283.10	0.0
CB27	RIM = 292.34 CB27–DMH26 INV OUT = 288.15	0.0
CB28	RIM = 293.39 DMH RD–CB28 INV IN = 288.85 CB28–DMH11 INV OUT = 288.75	0.0
CB30	RIM = 295.91 DMH6–CB8A INV IN = 285.92 CB30–DMH11 INV OUT = 285.80	0.0
DMH RD	RIM = 294.18 PROCESS –DMH RD INV IN = 289.15 DMH RD–CB28 INV OUT = 289.05	0.0
DMH1	RIM = 300.00 DMH1–CB12 INV IN = 289.30 CB2–DMH1 INV IN = 291.08	0.0
DMH3	RIM = 296.65 CB3–DMH3 INV IN = 288.15 DMH3–CB10 INV OUT = 286.97	0.0
DMH5	RIM = 296.65 OS3–DMH5 INV IN = 289.51 DMH5–DMH5A INV OUT = 289.40	0.0
DMH5A	RIM = 293.04 DMH5–DMH5A INV IN = 288.13 DMH5A–DMH6 INV OUT = 288.00	0.0
DMH6	RIM = 294.50 DMH5A–DMH6 INV IN = 286.82 DMH6–CB8A INV OUT = 286.72	0.0
DMH9 5'Ø	RIM = 292.03 CB17–DMH9 INV IN = 278.10 CB14–DMH9 INV IN = 279.25 DMH9–POND2 INV OUT = 278.12	0.0
DMH11 5'Ø	RIM = 292.73 CB30–DMH11 INV IN = 284.88 CB28–DMH11 INV IN = 288.54 DMH26–DMH11 INV IN = 279.54 DMH11–POND1 INV OUT = 277.23	0.0
DMH23	RIM = 293.73 CB22–DMH23 INV IN = 285.59 DMH23–DMH24 INV OUT = 285.49	0.0
DMH24	RIM = 293.70 DMH23–DMH24 INV IN = 284.91 DMH24–CB23 INV OUT = 284.81	0.0
DMH25	RIM = 293.90 CB24–DMH25 INV IN = 282.23 DMH25–DMH26 INV OUT = 282.10	0.0
DMH26	RIM = 293.70 DMH25–DMH26 INV IN = 281.05 CB27–DMH26 INV IN = 287.87 DMH26–DMH11 INV OUT = 280.80	0.0
OS1	RIM = 277.30 OS1–OUT INV OUT = 266.00	0.0
OS2	RIM = 279.00 OS2–OUT INV OUT = 272.00	0.0
OS3	RIM = 295.90 CB15–OS3 INV IN = 291.60 OS3–DMH5 INV OUT = 291.50	0.0

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DRAINAGE STRUCTURE TABLES

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NONE **SEPTEMBER 8, 2025**

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NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
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Land Surveyors
Landscape Architects
Scientists
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Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
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FILE 18252-02 | DR | FB | CADFILE | 18252-02 SITE PLAN | C-08

Dec 23, 2025 - 2:16pm
P:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 SITE PLAN.dwg

14-47
UNITED STATES OF AMERICA- FEDERAL AVIATION ADMINISTRATION
12 NE EXECUTIVE PARK, BURLINGTON, MA 01803
BK. 2363 PG. 322 – ZONE: I-A
LAND USE: US GOVT C (9000)
(20A NORTH WENTWORTH AVENUE)

B

N
NAD 83

NOTES

1. SEE NOTES ON SHEET C-02.

HYDRANT
CB5
CB4
CB3 5'Ø
DMH3
OS3
DMH5
CB21
CB15
CB20
CB22
DMH23
DMH24
CB23
81' TRIBRID-BIOREACTOR
FUTURE 81' TRIBRID-BIOREACTOR
FUTURE 81' TRIBRID-BIOREACTOR
HYDRANT
SMH2
SMH1
SANITARY SEWER 8" PVC INV.O=289.33
INDUSTRIAL SEWER 8" PVC INV.O=289.33
DMH5A
1 STORY PROCESS BUILDING (±14,100 SF) FF=296 H=24.5'
FUTURE PROCESS BUILDING (±8,250 SF)
CB6
SMH10
INDUSTRIAL WASTE WATER TANK POINT OF COMPLIANCE RIM=295.6± INV.I = 289.28 INV.O = 289.20
4" STORZ FIRE DEPARTMENT CONNECTION
2" DEOMESTIC SERVICE WITH CURB STOP & BOX
96' TRIBRID-BIOREACTOR
96' TRIBRID-BIOREACTOR
DMH RD
HYDRANT
CB24
FUTURE 96' TRIBRID-BIOREACTOR
CB27
CB28
DMH25
DMH26
DMH11 5'Ø
CB30
DMH6
CB8A 5'Ø
CB14 5'Ø
CB16
1 STORY DEPACKAGING BUILDING (36,600 SF.)
FF=297 H=39.5'
INDUSTRIAL WASTE WATER TANK POINT OF COMPLIANCE RIM=296.4± INV.I = 289.21 INV.O = 289.13
4" STORZ FIRE DEPARTMENT CONNECTION
2" DEOMESTIC SERVICE WITH CURB STOP & BOX
SANITARY SEWER 8" PVC INV.O=289.33
HYDRANT W/ BOLLARD
CB10
6" DI FIRE SERVICE
6"X6"X2" DI MJ TEE
8"X8"X6" DI MJ ANCHOR TEE WITH 6" GATE VALVE
FEEDSTOCK FM SHOWN FOR COORDINATION (DESIGN BY OTHERS)
CB13A 5'Ø
SMH5
SMH3
SMH11
8" DI
8"X8"X6" MJ ANCHOR TEE WITH 6" GATE VALVE
CB12
CB13
CB17 5'Ø
CB18
CB19
DMH9 5'Ø
6" SDR35, PUMP STATION VENT (3-FT TALL)
SEWER PUMP STATION (6'DIA) RIM=298.5 INV IN=294.2
VALVE PIT (8'DIA)
MASTER ELECTRICAL ENCLOSURE (FINAL DESIGN/SELECTION BY OTHERS)
DIESEL EMERGENCY GENERATOR (FINAL DESIGN/SELECTION BY OTHERS)
8"X8"X6" MJ ANCHOR TEE WITH 6" GATE VALVE
HYDRANT
DMH1
OHE
6"X6"X6" MJ ANCHOR TEE WITH 6" GATE VALVE
COORDINATE SIZE AND MATERIALS OF GAS LINE WITH LIBERTY UTILITY
8"X8"X2" MJ ANCHOR TEE WITH 2" GATE VALVE
UGE
UGE/T/C
W
T
LIMIT OF CONSERVATION EASEMENT

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

UTILITY PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=40'
40 20 0 40

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C-09

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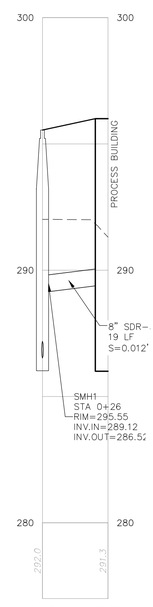
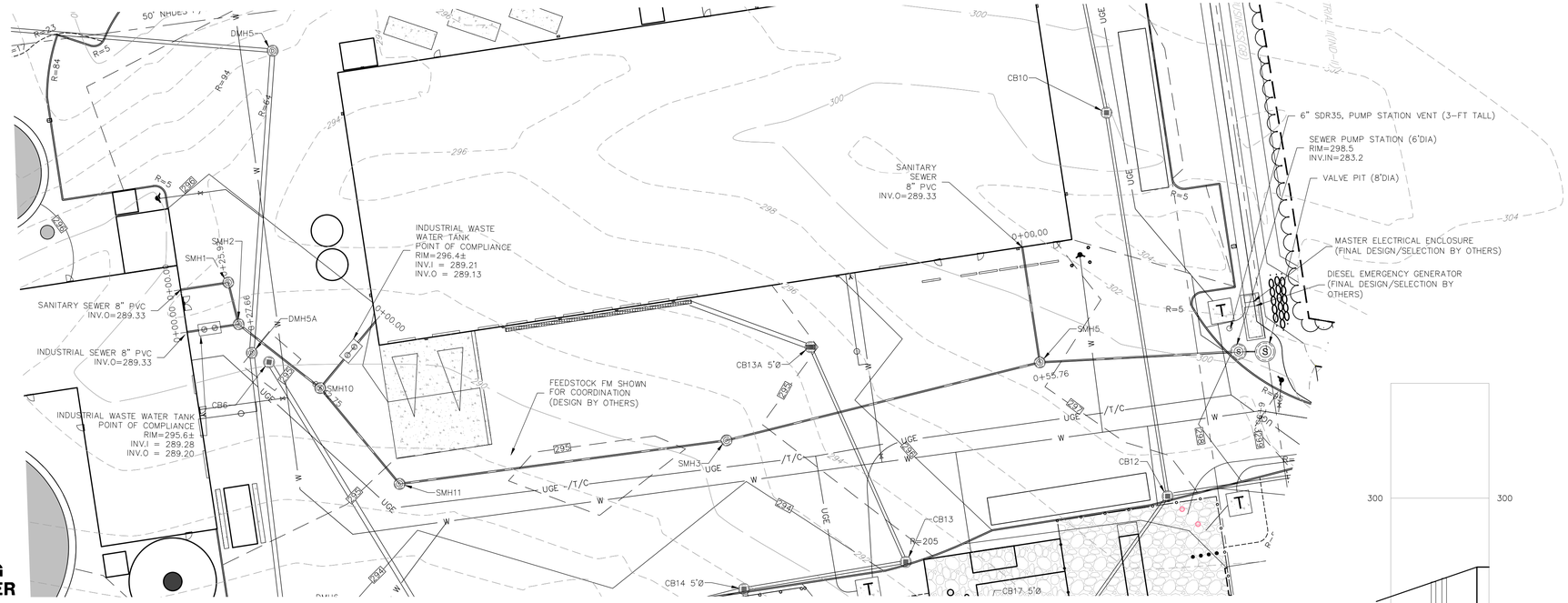
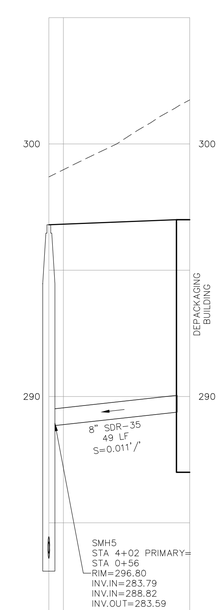
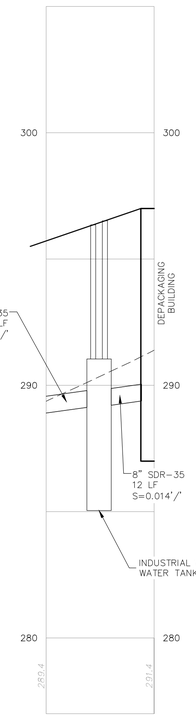


PROCESS BLDG SANITARY SEWER

SCALE: 1"=30'H / 1"=3'V

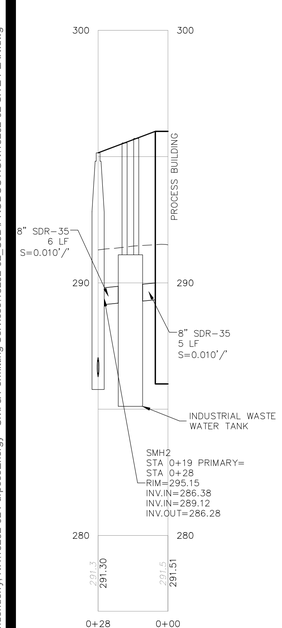






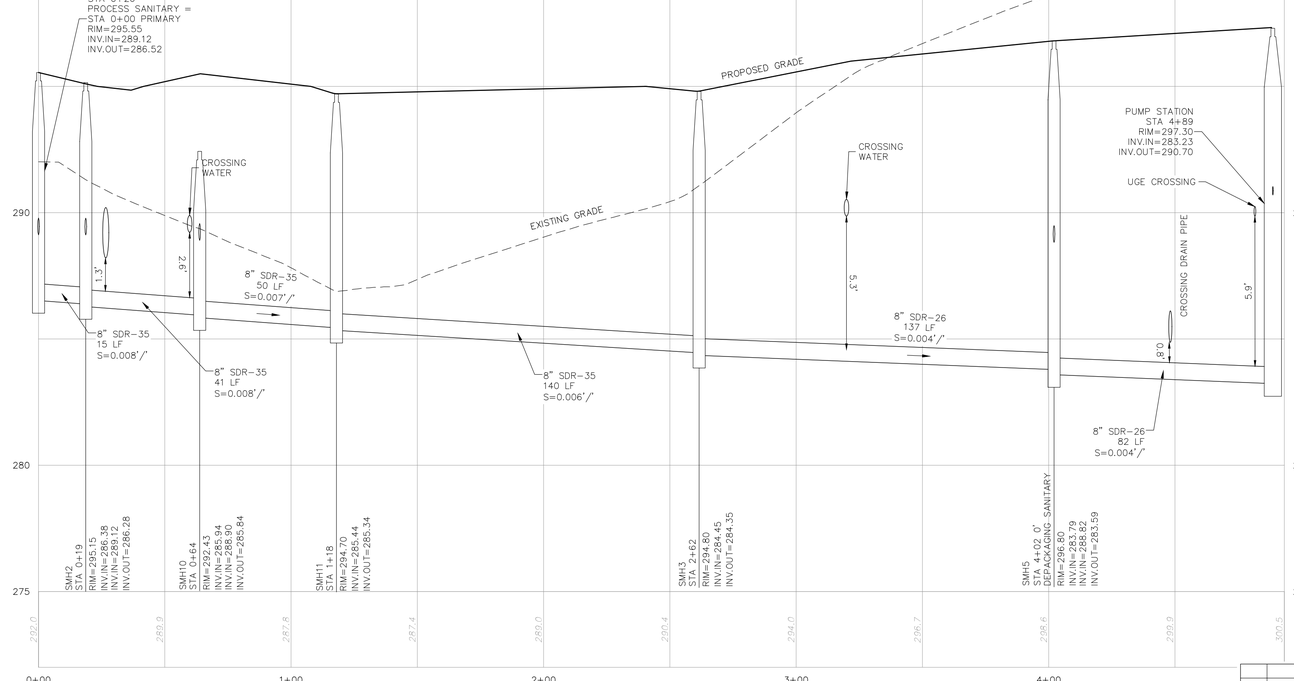
DEPACKING BLDG INDUSTRIAL SEWER

SCALE: 1"=30'H / 1"=3'V



PROCESS BLDG INDUSTRIAL SEWER

SCALE: 1"=30'H / 1"=3'V



PRIMARY SITE SEWER

SCALE: 1"=30'H / 1"=3'V

HORIZONTAL SCALE 1"=30'

VERTICAL SCALE 1"=3'

NOTES

1. SEE NOTES ON SHEET C-02.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SITE SEWERS PLAN AND PROFILE

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.

LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC

25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

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PROJ.	18252-02	DR		FB		C-10
		CK		CADFILE	18252-02 SITE PLAN	

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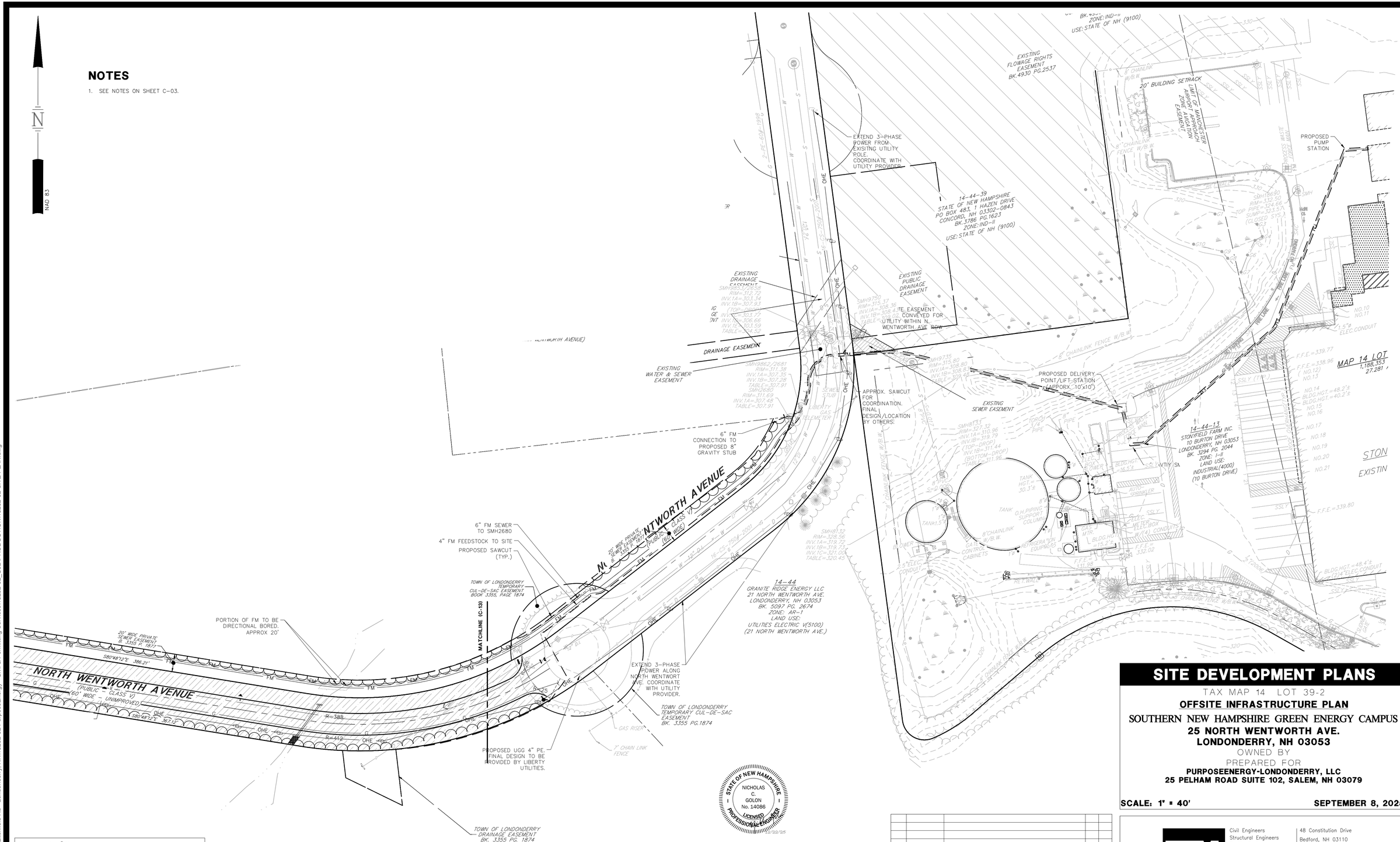
NOTES

1. SEE NOTES ON SHEET C-03.



SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

OFFSITE INFRASTRUCTURE PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

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LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC

25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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FILE	18252-02	DR		FB		C-11
		CK		CADFILE	18252-02 SITE PLAN	

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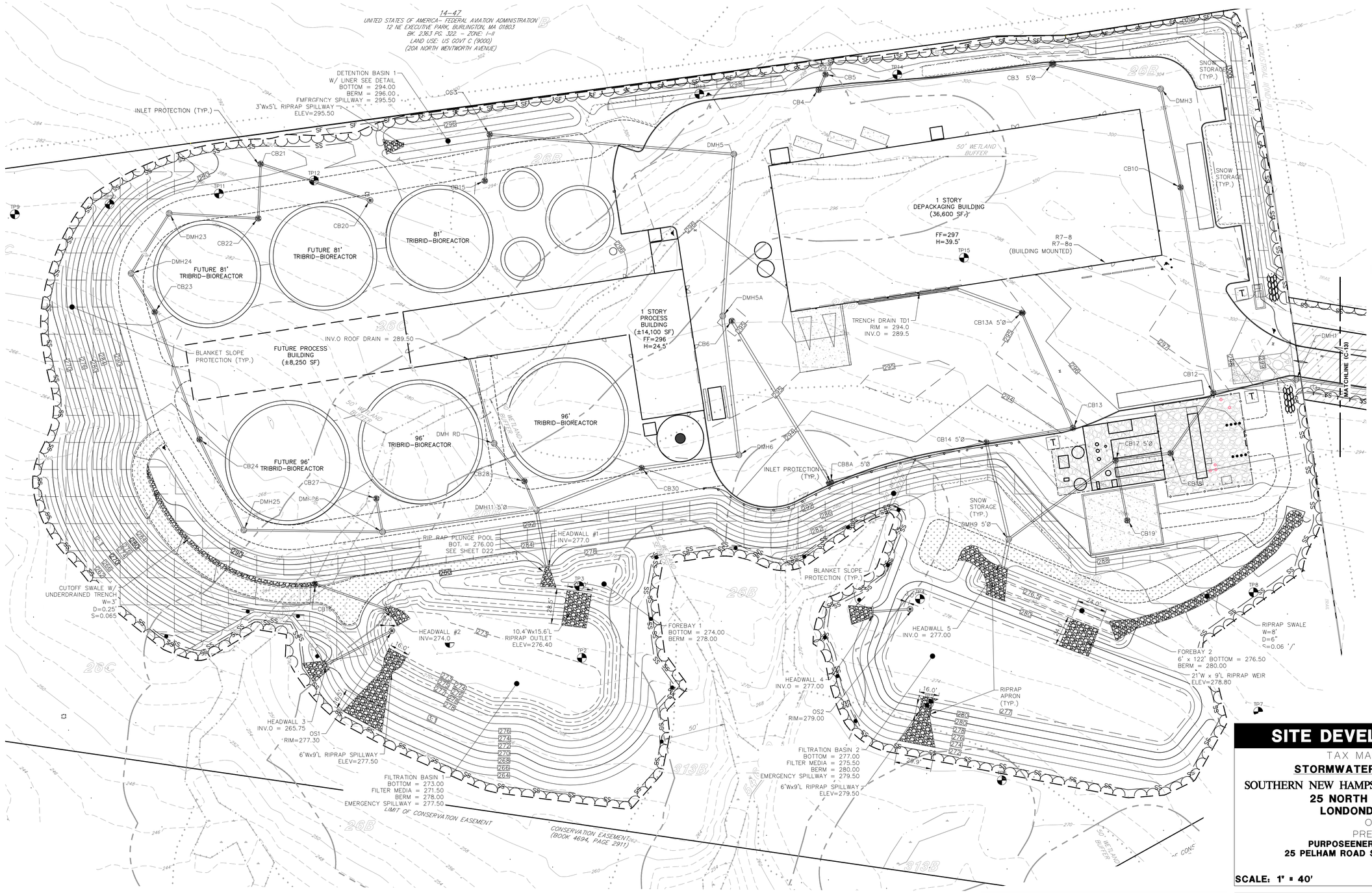

NOTES

1. SEE SHEET D-01 FOR STORMWATER MANAGMENT AND CONSTRUCTION GENERAL PERMIT NOTES.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

STORMWATER MANAGEMENT PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.

LONDONDERRY, NH 03053

OWNED BY

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25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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40 20 0 40

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18252-02	CK		CADFILE	18252-02 SITE PLAN	C-12

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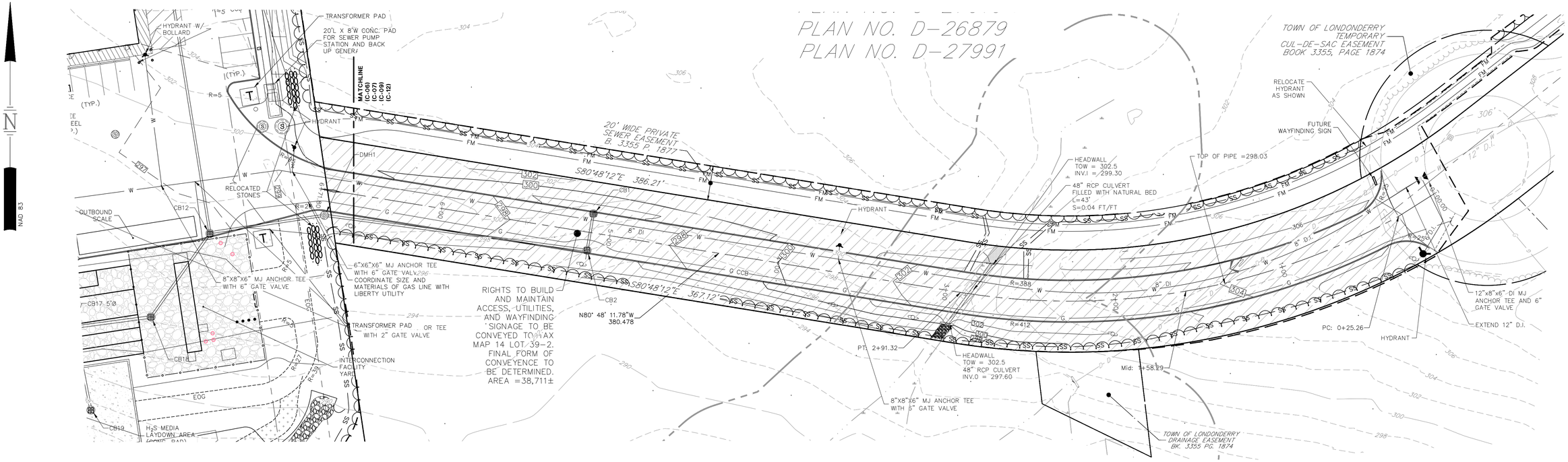

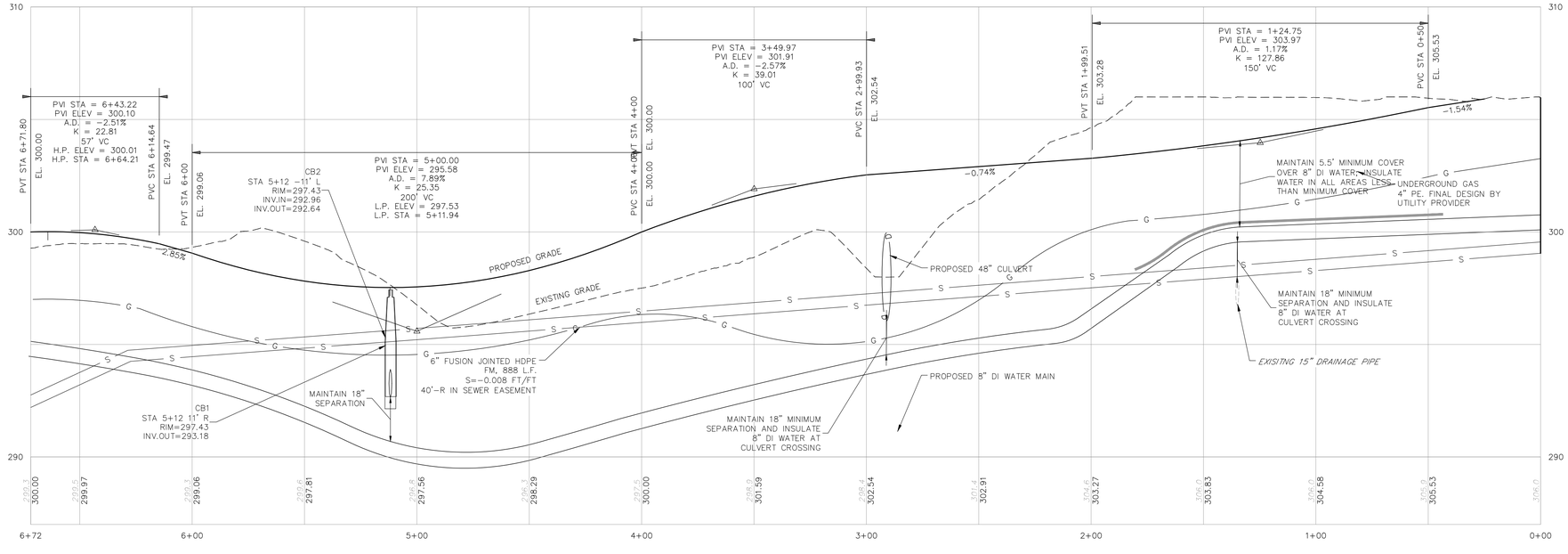

PROPOSED DRIVEWAY

HORIZONTAL SCALE 1"=30'
30 15 0 30
VERTICAL SCALE 1"=3'
3 0 3

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DRIVEWAY PLAN & PROFILE

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25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
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25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

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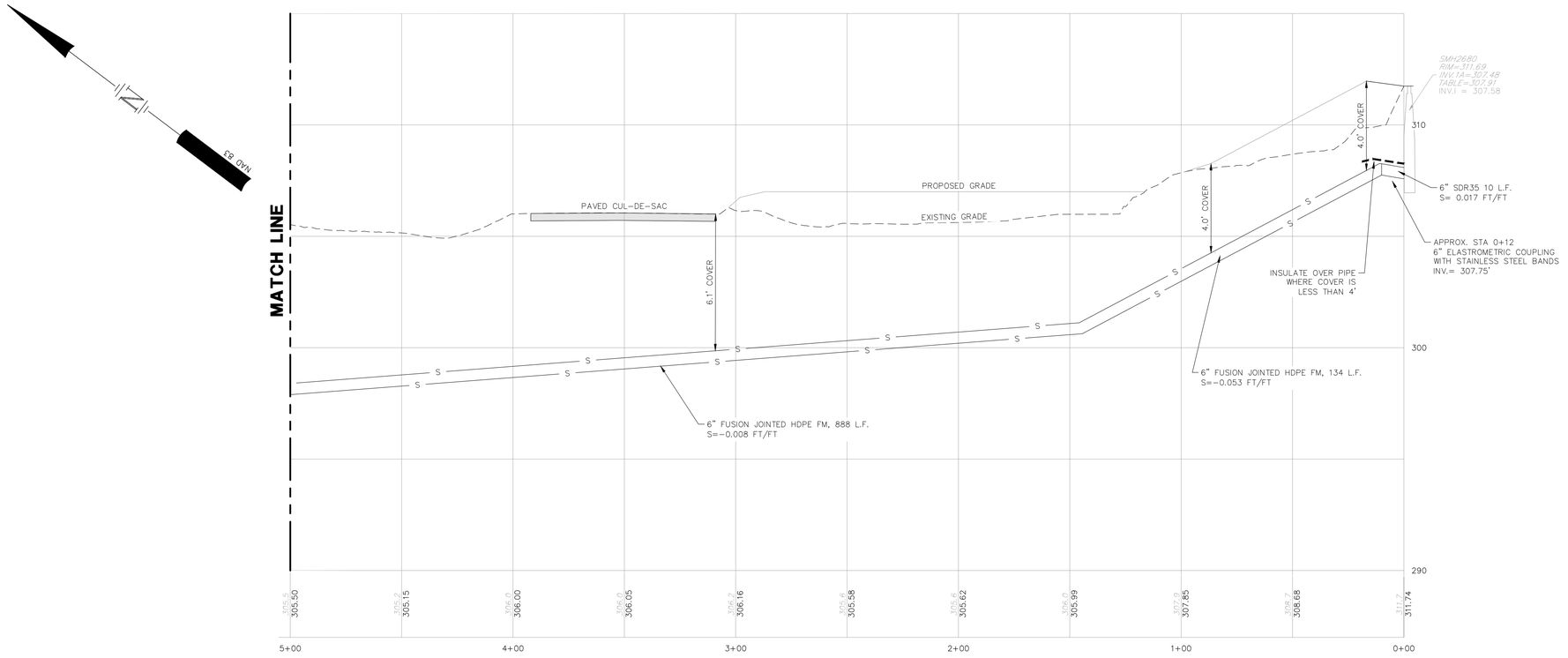
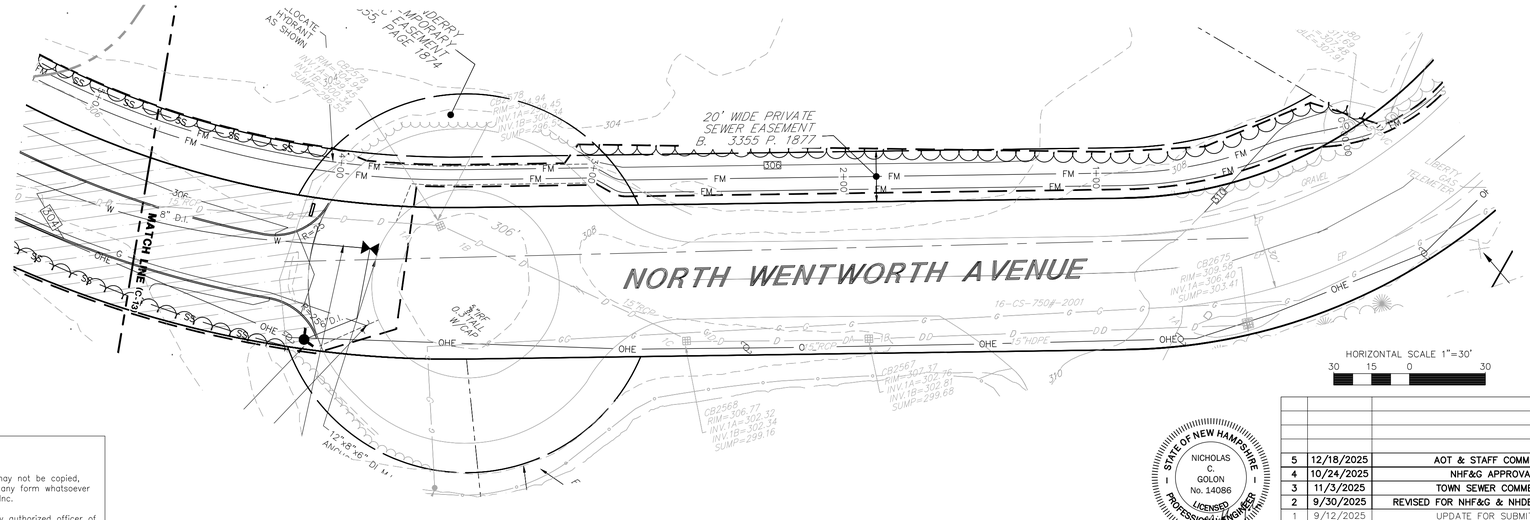
NOTES

1. SEE NOTES ON SHEET C-03.



SEWER FORCEMAIN TO MUNICIPAL SYSTEM

SCALE: 1" = 30' H/1"=3' V



HORIZONTAL SCALE 1"=30'

30 15 0 30

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

FORCEMAIN PLAN AND PROFILE

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

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FILE	18252-02	DR		FB		C-14
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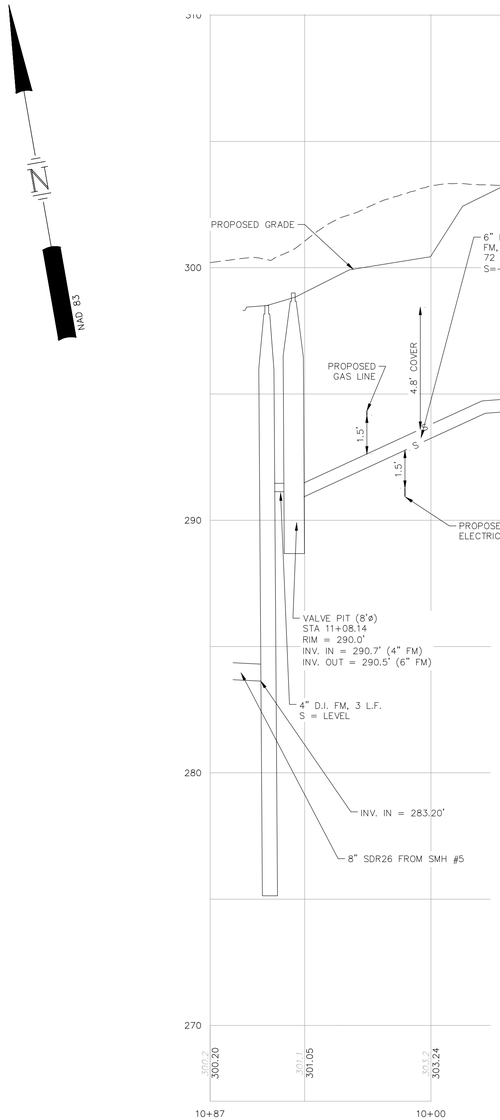

SEWER FORCEMAIN TO MUNICIPAL SYSTEM

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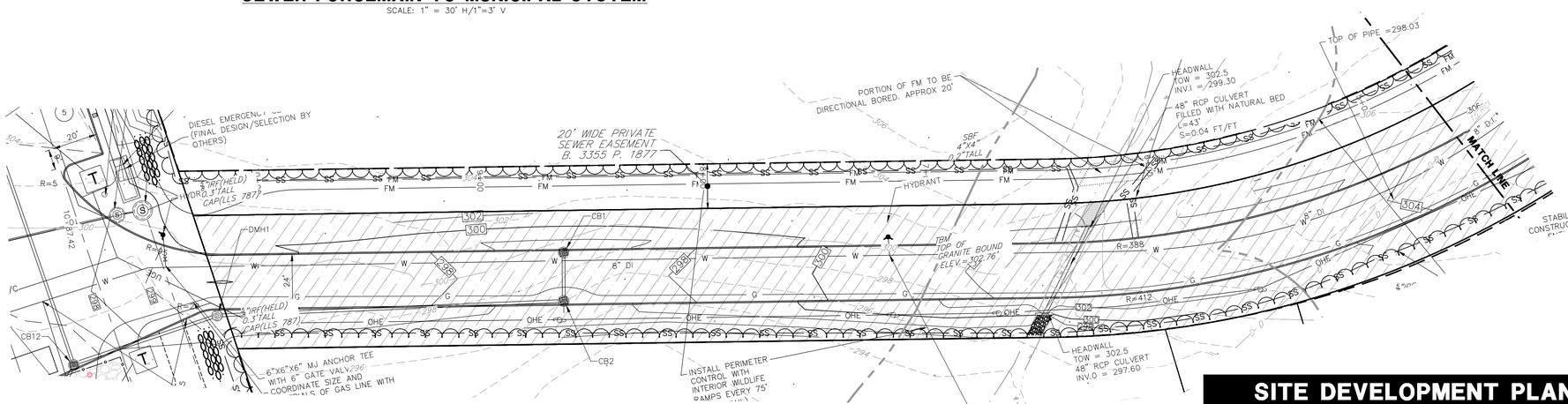

HORIZONTAL SCALE 1"=30'

30 15 0 30

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

FORCEMAIN PLAN AND PROFILE

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FILE	DR		FB		
18252-02	CK		CADFILE	18252-02 SITE PLAN	C-15

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NOTES

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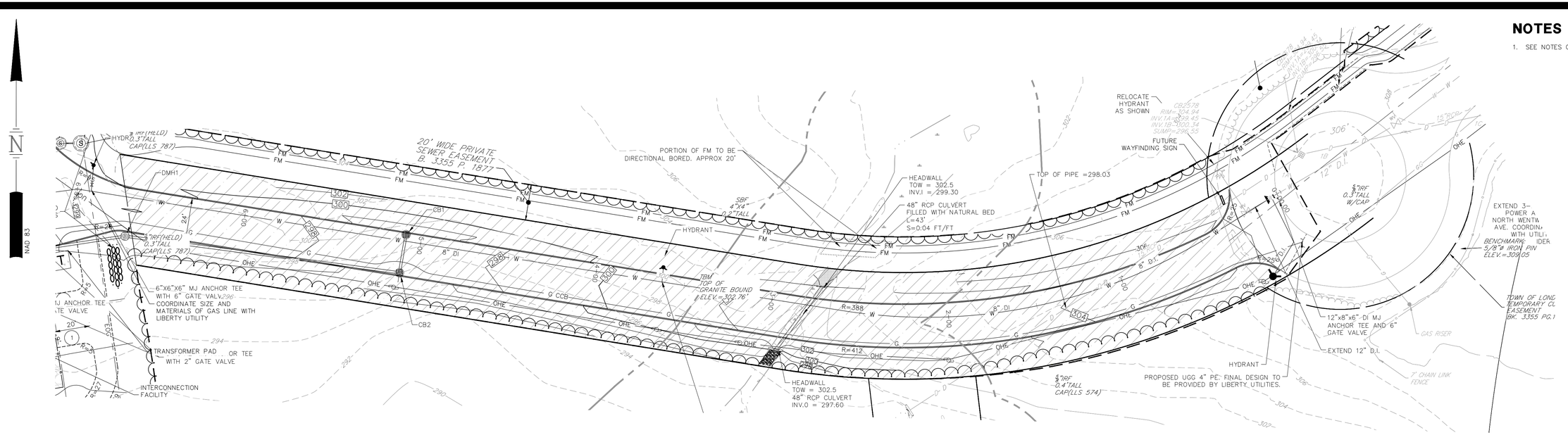

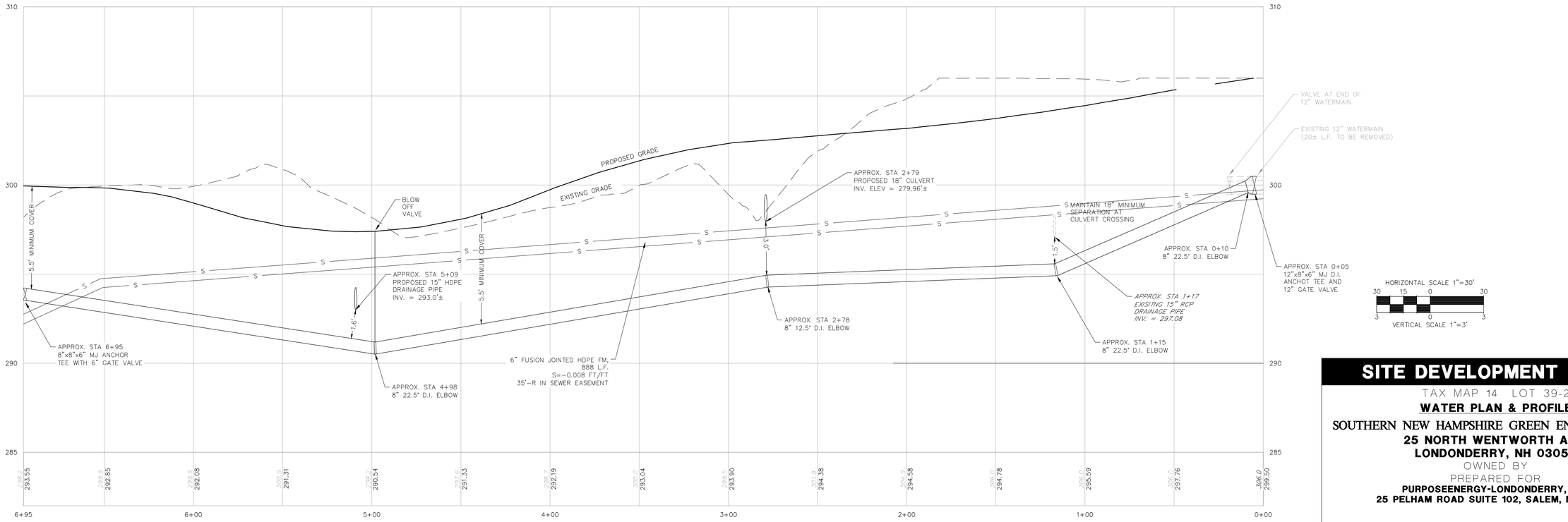

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

WATER PLAN & PROFILE

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LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	18252-02	DR		FB		C-16
		CK		CADFILE	18252-02 SITE PLAN	

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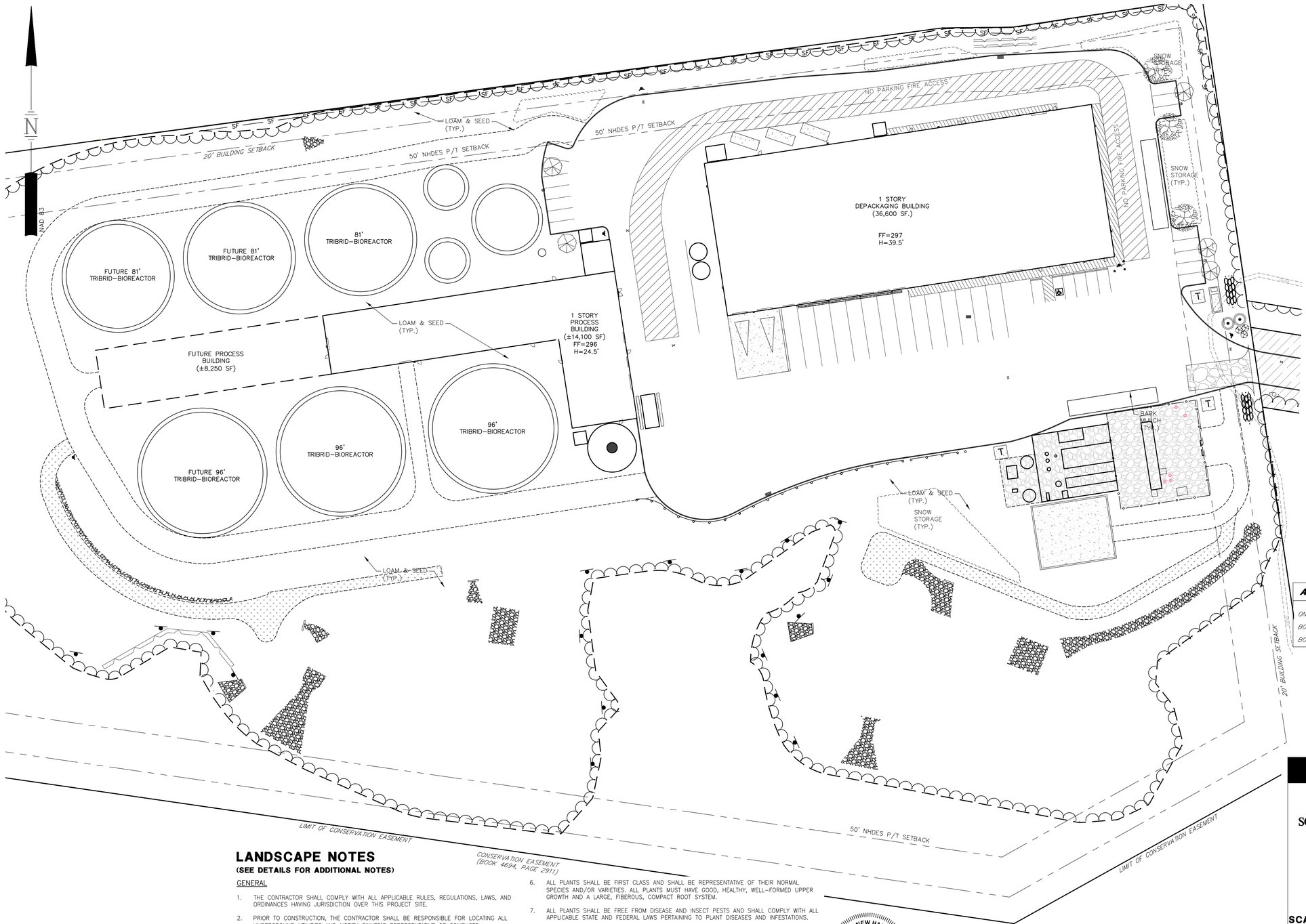

LANDSCAPE LEGEND

SYMBOL	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
	3	QUERCUS RUBRA RED OAK	2 1/2" TO 3" CAL.	B&B
	5	QUERCUS P. 'GREEN PILLAR' GREEN PILLAR PIN OAK	2 1/2" TO 3" CAL.	B&B
	3	JUNIPERUS VIRGINIANA HILLSPIRE' HILLSPIRE EASTERN RED CEDAR	6' TO 7'	B&B
	3	SYRINGA VULGARIS 'NEW AGE LAVENDER' NEW AGE LAVENDER LILAC	5 GAL.	CONT.

LANDSCAPE REQUIREMENTS

GREEN SPACE REQUIREMENT:
REQUIRED: 25%
PROVIDED: 64%

INTERIOR PARKING LANDSCAPE AREA REQUIREMENTS:
(3.10g1. OF SITE PLAN REG.'S) *WAIVER REQUIRED

INTERNAL PARKING LOT LANDSCAPING:
(3.10g3. OF SITE PLAN REG.'S)
1 TREE/15 PARKING SPACES (19 SPACES/15) = 1.2 TREES
TOTAL TREES REQUIRED = 1
TREES PROVIDED = 2 TREES

PARKING LOT PERIMETER LANDSCAPING:
(3.10g5. OF SITE PLAN REG.'S)
1 SHADE TREE/20' OF PARKING PERIMETER = 117 SF/20' = 5.8 SHADE TREES
TOTAL TREES REQUIRED = 6
TREES PROVIDED = 6 TREES

SCREENING FROM PUBLIC RIGHT-OF-WAY:
(3.10g6. OF SITE PLAN REG.'S)
EXISTING VEGETATION TO SATISFY REQUIREMENT.

ACCORDING TO THE USDA PLANT HARDINESS ZONE MAP THE ANNUAL MINIMUM TEMERATURE ZONES FOR SOUTHERN NH ARE BETWEEN ZONE 4 (−30 TO −20 DEGREES) AND ZONE 5 (−20 TO −10 DEGREES). THE PLANT MATERIALS SHOWN ON THIS PLAN HAVE A HARDINESS ZONE TO MEET THAT OF SOUTHERN NH.

THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE THROUGHOUT CONSTRUCTION OF PROTECTIVE TREE FENCING LOCATED 12" INCHES OFF THE THE DRIPLINE OF ALL TREES TO BE PROTECTED. PRIOR TO CONSTRUCTION THE CONTRACTOR IS REQUIRED TO HAVE ALL NO-CUT ZONES DELINEATED IN THE FIELD.

THE CONTRACTOR/APPLICANT IS RESPONSIBLE FOR REPLACEMENT OF "ANY TREES DESIGNATED TO REMAIN, WHICH HAVE BEEN DAMAGED, KILLED OR REMOVED AS A RESULT OF CONSTRUCTION ACTIVITIES". SEE TOWN OF LONDONDERRY "LANDSCAPE DESIGN STANDARDS" SECTION 3.10.D OF THE SITE PLAN REGULATIONS.

THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF ALL LANDSCAPE AREAS ONCE CONSTRUCTION IS COMPLETED AS OUTLINED IN THE TOWN OF LONDONDERRY, "LANDSCAPE DESIGN STANDARDS" SECTION 3.10.F OF THE SITE PLAN REGULATIONS.

APPROVED BY THE TOWN OF LONDONDERRY PLANNING BOARD

ON _____

BOARD MEMBER _____ AND

BOARD MEMBER _____

LANDSCAPE NOTES

(SEE DETAILS FOR ADDITIONAL NOTES)

GENERAL

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES, REGULATIONS, LAWS, AND ORDINANCES HAVING JURISDICTION OVER THIS PROJECT SITE.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
3. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON PLANS BEFORE PRICING THE WORK. ANY DIFFERENCE IN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. LANDSCAPE QUANTITIES SHOWN ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN LANDSCAPE LEGEND.
4. THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT PRIOR TO STARTING WORK AND VERIFY THAT THE PLANS IN THE CONTRACTOR'S POSSESSION ARE THE MOST CURRENT PLANS AVAILABLE AND ARE THE APPROVED PLAN SET FOR USE IN CONSTRUCTION.
5. ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA) [FORMERLY THE AMERICAN ASSOCIATION OF NURSERYMEN] IN THE AMERICAN STANDARD FOR NURSERY STOCK (AS AMENDED) [ANSI Z60.1–1996].
6. ALL PLANTS SHALL BE FIRST CLASS AND SHALL BE REPRESENTATIVE OF THEIR NORMAL SPECIES AND/OR VARIETIES. ALL PLANTS MUST HAVE GOOD, HEALTHY, WELL-FORMED UPPER GROWTH AND A LARGE, FIBEROUS, COMPACT ROOT SYSTEM.
7. ALL PLANTS SHALL BE FREE FROM DISEASE AND INSECT PESTS AND SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS PERTAINING TO PLANT DISEASES AND INFESTATIONS.
8. ALL TREES SHALL BE BALLED AND BURLAPPED (B & B) UNLESS OTHERWISE NOTED OR APPROVED BY LANDSCAPE ARCHITECT.
9. IF APPLICABLE, THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.
10. ALL INVASIVE PLANT SPECIES FROM THE "NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST", TO BE REMOVED SHALL BE DONE SO IN ACCORDANCE WITH THE "INVASIVE SPECIES ACT, HB 1258–FN."
11. LANDSCAPING SHALL NOT CONFLICT WITH SNOW STORAGE, LIGHT FIXTURES, OR SIGHT DISTANCE.

GUARANTEE

1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE WORK FOR A PERIOD OF ONE

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

HORIZONTAL SCALE 1"=40'
40 20 0 40

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SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

LANDSCAPE PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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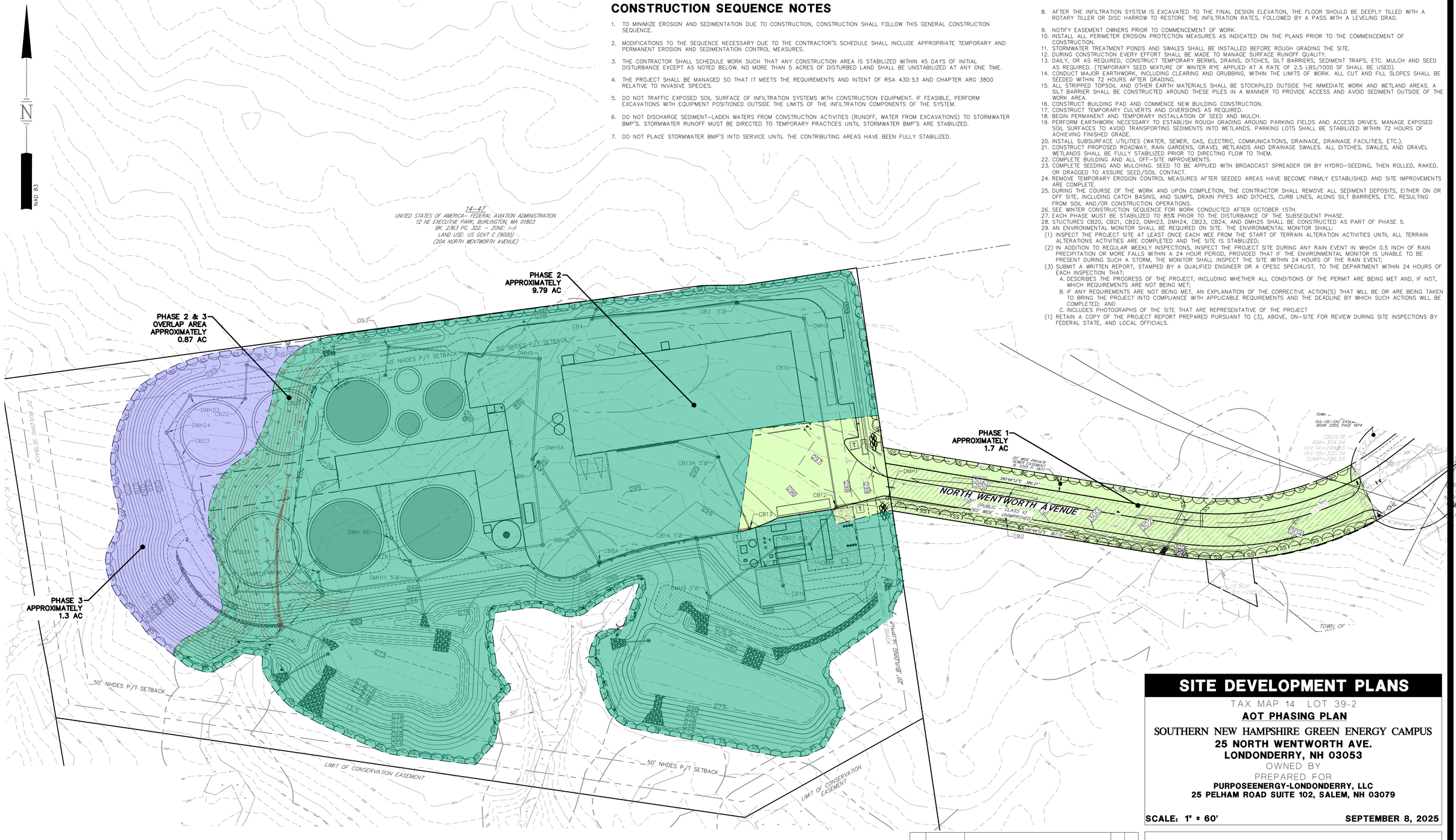
CONSTRUCTION SEQUENCE NOTES

1. TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, CONSTRUCTION SHALL FOLLOW THIS GENERAL CONSTRUCTION SEQUENCE.
2. MODIFICATIONS TO THE SEQUENCE NECESSARY DUE TO THE CONTRACTOR'S SCHEDULE SHALL INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.
3. THE CONTRACTOR SHALL SCHEDULE WORK SUCH THAT ANY CONSTRUCTION AREA IS STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE EXCEPT AS NOTED BELOW. NO MORE THAN 5 ACRES OF DISTURBED LAND SHALL BE UNSTABILIZED AT ANY ONE TIME.
4. THE PROJECT SHALL BE MANAGED SO THAT IT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER ARG 3800 RELATIVE TO INVASIVE SPECIES.
5. DO NOT TRAFFIC EXPOSED SOIL SURFACE OF INFILTRATION SYSTEMS WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
6. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO STORMWATER BMP'S. STORMWATER RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMP'S ARE STABILIZED.
7. DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
8. AFTER THE INFILTRATION SYSTEM IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE THE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
9. NOTIFY EASEMENT OWNERS PRIOR TO COMMENCEMENT OF WORK.
10. INSTALL ALL PERIMETER EROSION PROTECTION MEASURES AS INDICATED ON THE PLANS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
11. STORMWATER TREATMENT PONDS AND SWALES SHALL BE INSTALLED BEFORE ROUGH GRADING THE SITE.
12. DURING CONSTRUCTION EVERY EFFORT SHALL BE MADE TO MANAGE SURFACE RUNOFF QUALITY.
13. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT BARRIERS, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED. (TEMPORARY SEED MIXTURE OF WINTER RYE APPLIED AT A RATE OF 2.5 LBS/1000 SF SHALL BE USED).
14. CONDUCT MAJOR EARTHWORK, INCLUDING CLEARING AND GRUBBING, WITHIN THE LIMITS OF WORK. ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN 72 HOURS AFTER GRADING.
15. ALL STRIPPED TOPSOIL AND OTHER EARTH MATERIALS SHALL BE STOCKPILED OUTSIDE THE IMMEDIATE WORK AND WETLAND AREAS. A SILT BARRIER SHALL BE CONSTRUCTED AROUND THESE PILES IN A MANNER TO PROVIDE ACCESS AND AVOID SEDIMENT OUTSIDE OF THE WORK AREA.
16. CONSTRUCT BUILDING PAD AND COMMENCE NEW BUILDING CONSTRUCTION.
17. CONSTRUCT TEMPORARY CULVERTS AND DIVERSIONS AS REQUIRED.
18. BEGIN PERMANENT AND TEMPORARY INSTALLATION OF SEED AND MULCH.
19. PERFORM EARTHWORK NECESSARY TO ESTABLISH ROUGH GRADING AROUND PARKING FIELDS AND ACCESS DRIVES. MANAGE EXPOSED SOIL SURFACES TO AVOID TRANSPORTING SEDIMENTS INTO WETLANDS. PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
20. INSTALL SUBSURFACE UTILITIES (WATER, SEWER, GAS, ELECTRIC, COMMUNICATIONS, DRAINAGE, DRAINAGE FACILITIES, ETC.).
21. CONSTRUCT PROPOSED ROADWAY, RAIN GARDENS, GRAVEL WETLANDS AND DRAINAGE SWALES. ALL DITCHES, SWALES, AND GRAVEL WETLANDS SHALL BE FULLY STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
22. COMPLETE BUILDING AND ALL OFF-SITE IMPROVEMENTS.
23. COMPLETE SEEDING AND MULCHING. SEED TO BE APPLIED WITH BROADCAST SPREADER OR BY HYDRO-SEEDING, THEN ROLLED, RAKED, OR DRAGGED TO ASSURE SEED/SOIL CONTACT.
24. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDED AREAS HAVE BECOME FIRMLY ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE.
25. DURING THE COURSE OF THE WORK AND UPON COMPLETION, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT DEPOSITS, EITHER ON OR OFF SITE, INCLUDING CATCH BASINS, AND SUMPS, DRAIN PIPES AND DITCHES, CURB LINES, ALONG SILT BARRIERS, ETC. RESULTING FROM SOIL AND/OR CONSTRUCTION OPERATIONS.
26. SEE WINTER CONSTRUCTION SEQUENCE FOR WORK CONDUCTED AFTER OCTOBER 15TH.
27. EACH PHASE MUST BE STABILIZED TO 85% PRIOR TO THE DISTURBANCE OF THE SUBSEQUENT PHASE.
28. STUCTURES CB20, CB21, CB22, DMH23, DMH24, CB23, CB24, AND DMH25 SHALL BE CONSTRUCTED AS PART OF PHASE 5.
29. AN ENVIRONMENTAL MONITOR SHALL BE REQUIRED ON SITE. THE ENVIRONMENTAL MONITOR SHALL:
    (1) INSPECT THE PROJECT SITE AT LEAST ONCE EACH WEE FROM THE START OF TERRAIN ALTERATION ACTIVITIES UNTIL ALL TERRAIN ALTERATIONS ACTIVITIES ARE COMPLETED AND THE SITE IS STABILIZED;
    (2) IN ADDITION TO REGULAR WEEKLY INSPECTIONS, INSPECT THE PROJECT SITE DURING ANY RAIN EVENT IN WHICH 0.5 INCH OF RAIN PRECIPITATION OR MORE FALLS WITHIN A 24 HOUR PERIOD, PROVIDED THAT IF THE ENVIRONMENTAL MONITOR IS UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THE RAIN EVENT;
    (3) SUBMIT A WRITTEN REPORT, STAMPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, TO THE DEPARTMENT WITHIN 24 HOURS OF EACH INSPECTION THAT:
        A. DESCRIBES THE PROGRESS OF THE PROJECT, INCLUDING WHETHER ALL CONDITIONS OF THE PERMIT ARE BEING MET AND, IF NOT, WHICH REQUIREMENTS ARE NOT BEING MET;
        B. IF ANY REQUIREMENTS ARE NOT BEING MET, AN EXPLANATION OF THE CORRECTIVE ACTION(S) THAT WILL BE OR ARE BEING TAKEN TO BRING THE PROJECT INTO COMPLIANCE WITH APPLICABLE REQUIREMENTS AND THE DEADLINE BY WHICH SUCH ACTIONS WILL BE COMPLETED; AND
        C. INCLUDES PHOTOGRAPHS OF THE SITE THAT ARE REPRESENTATIVE OF THE PROJECT
    (1) RETAIN A COPY OF THE PROJECT REPORT PREPARED PURSUANT TO (3), ABOVE, ON-SITE FOR REVIEW DURING SITE INSPECTIONS BY FEDERAL STATE, AND LOCAL OFFICIALS.



SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

AOT PHASING PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.

LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC

25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 60' **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=60'
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PH-1

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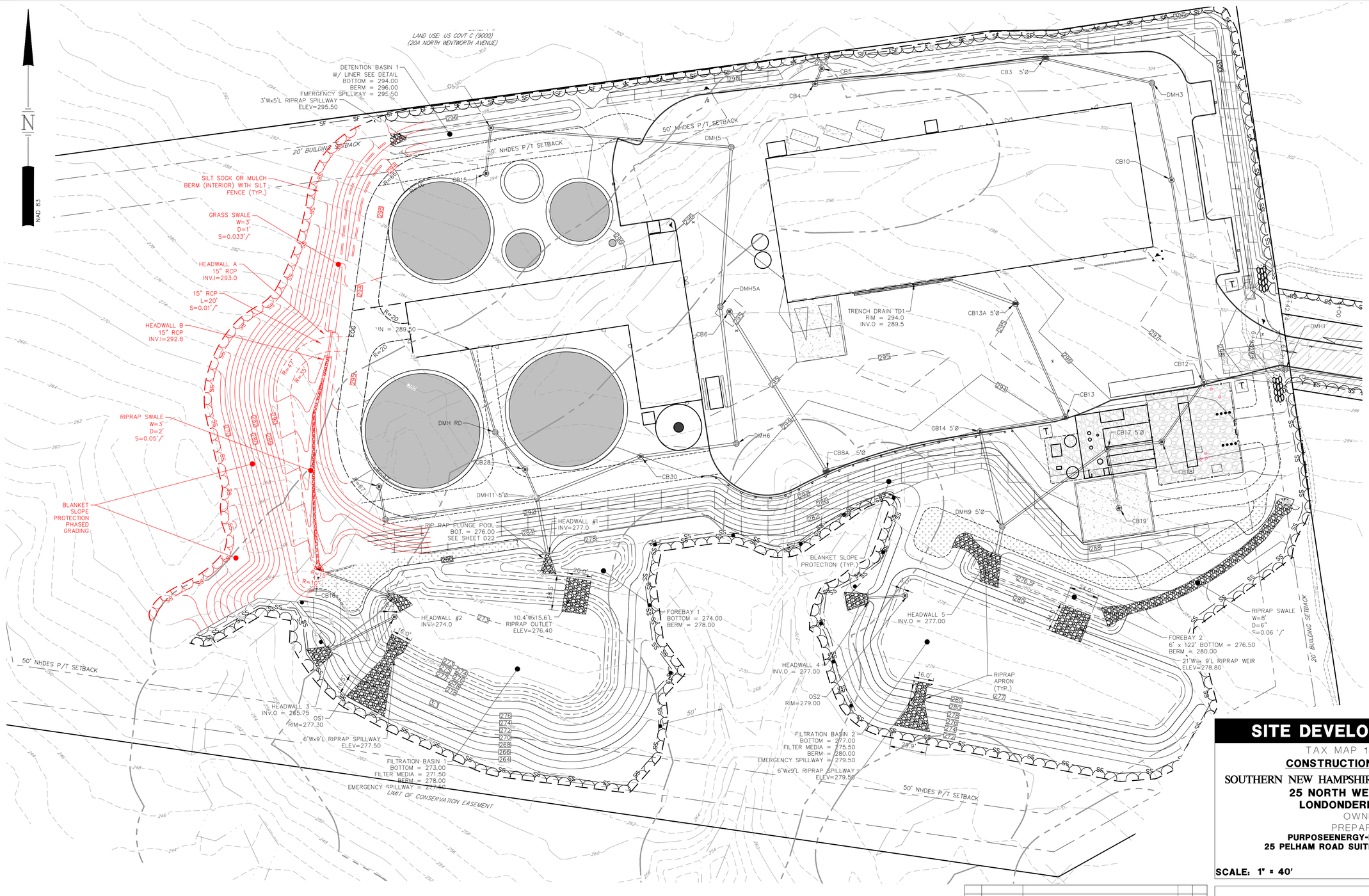

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

CONSTRUCTION PHASING PLAN

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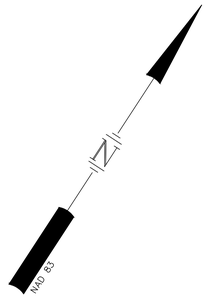
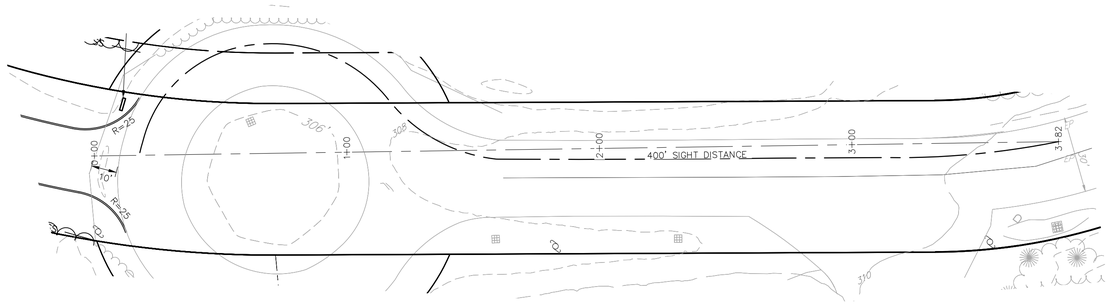
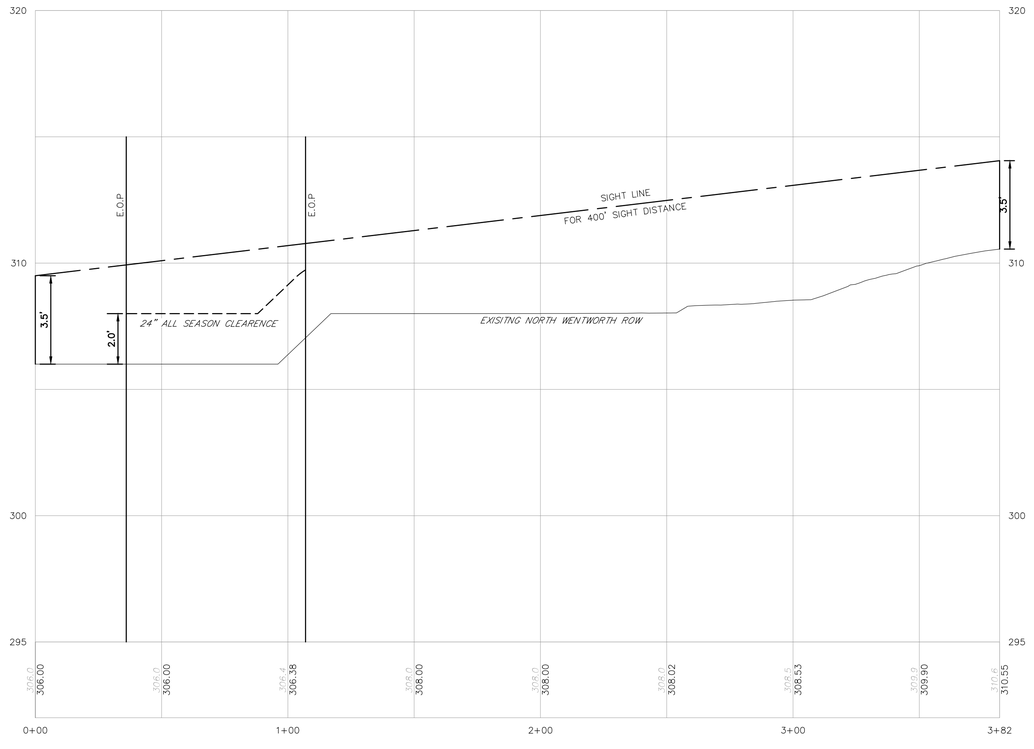
NOTES

1. POSTED SPEED LIMIT ON NORTH WENTWORTH AVE. IS 30 MPH.
2. TOWN OF LONDONDERRY SIGHT DISTANCE CALCULATIONS:

   SUBDIVISION REGULATIONS SECTION 3.09.F.2 & EHXIBIT D3
   MINIMUM ALL SEASON SIGHT DISTANCE = 365–FEET (NON–RESIDNETIAL) WHICH IS EXCEEDED.







SITE DISTANCE

HORIZONTAL SCALE 1"=30'
30 15 0 30
VERTICAL SCALE 1"=3'
3 0 3

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SIGHT DISTANCE

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CONSTRUCTION GENERAL PERMIT

1. THE OWNER, IN CONJUNCTION WITH THE CONTRACTOR (OPERATORS), MUST OBTAIN A CONSTRUCTION GENERAL PERMIT (CGP) FOR LARGE CONSTRUCTION ACTIVITIES (FIVE OR MORE ACRES) OR SMALL CONSTRUCTION ACTIVITIES (GREATER THAN ONE ACRE BUT LESS THAN FIVE ACRES) FROM THE ENVIRONMENTAL PROTECTION AGENCY (EPA). AS PART OF THE CGP, A STORMWATER NOTICE OF INTENT (NOI) MUST BE SUBMITTED TO THE EPA AT LEAST 7 DAYS PRIOR TO COMMENCING CONSTRUCTION. THE NOI MUST BE SUBMITTED TO STORM WATER NOTICE OF INTENT (4203M), USEPA, 1200 PENNSYLVANIA AVE. NW, WASHINGTON, DC 20460.

2. THE CGP OUTLINES A SET OF PROVISIONS MANDATING THE OWNER AND CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER REGULATIONS, INCLUDING, BUT NOT LIMITED TO, STORM WATER POLLUTION PREVENTION PLANS (SWPPP'S), IMPLEMENTATION OF EROSION AND SEDIMENTATION CONTROLS, EQUIPMENT MAINTENANCE GUIDELINES, ETC. PLEASE CONTACT USEPA OFFICE OF WASTEWATER MANAGEMENT AT 202-564-9545 OR AT WWW.EPA.GOV/NPDES/STORMWATER FOR ADDITIONAL INFORMATION. FOR FURTHER ASSISTANCE, CONTACT ABBY SWAINE OF NEW ENGLAND'S EPA REGION 1 AT 617-918-1841.

NOTES

1. IT IS BEING PROPOSED TO CONSTRUCT AN ORGANIC WASTE PROCESSING FACILITY INCLUDING ACCESS, GRADING, STORMWATER MANAGEMENT SYSTEMS, UTILITIES, AND LANDSCAPING.

TOTAL SITE AREA: 15.3 AC (SITE PARCEL)
TOTAL PROPOSED AREA OF DISTURBANCE: 13.0 AC

SOILS SHOWN WERE PREPARED IN ACCORDANCE WITH THE SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEWHAMPSHIRE AND VERMONT, VERSION 7.0, HULY 2021.
26 – WINDSOR
313 – DEERFIELD
546/P – WALPOLE

2. STORM WATER DRAINAGE SYSTEM IS SHOWN ON THE PLAN. SEE GRADING & DRAINAGE PLAN AND INVERT TABLES FOR RIM, INVERT, PIPE LENGTH, AND SLOPE INFORMATION.
POST-CONSTRUCTION RUNOFF COEFFICIENT: C=0.37
IMPERVIOUS SURFACE AREA: 5.9± AC
*IMPERVIOUS AREA AND POST-DEVELOPMENT RUNOFF COEFFICIENT DO NOT INCLUDE OFFSITE RUN-ON AREAS

3. STABILIZATION PRACTICES FOR EROSION AND SEDIMENTATION CONTROLS:

TEMPORARY STABILIZATION – TOPSOIL STOCKPILES AND DISTURBED AREAS OF THE CONSTRUCTION SITE THAT WILL NOT BE REDISTURBED FOR 14 DAYS OR MORE MUST BE STABILIZED BY THE 14TH DAY AFTER THE LAST DISTURBANCE. THE TEMPORARY SEED SHALL BE ANNUAL RYE APPLIED AT THE RATE OF 1.1 LBS PER 1,000 SF. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY. AREAS OF THE SITE THAT WILL BE PAVED WILL BE TEMPORARILY STABILIZED BY APPLYING GEOTEXTILES AND A STONE SUB-BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED. CALCIUM CHLORIDE SHALL BE USED FOR DUST CONTROL IF NEEDED.

PERMANENT STABILIZATION – DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 3 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. THE PERMANENT SEED MIX SHALL BE AS SPECIFIED BY THE LANDSCAPE PLAN NOTES OR MAY OTHERWISE CONSIST OF 0.45 LBS/1,000 SF TALL FESCUE, 0.20 LBS/1,000 SF CREEPING RED FESCUE, AND 0.20 LBS/1,000 SF BIRDSFOOT TREFOIL. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE IF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY.

4. STRUCTURAL PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

SILT SOCK – WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE DISTURBED AREAS AND WILL DELINEATE THE LIMITS OF WORK FOR THE PROPOSED CONSTRUCTION. THE SILT SOCK WILL BE INSTALLED BY OTHERS. POSTS SHALL BE USED WITH AT LEAST 6" OF THE POST BURIED BELOW THE GROUND SURFACE TO PREVENT THE SILT SOCK FROM FORMING GAPS NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE SILT SOCK WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

SILT FENCE – WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE DISTURBED AREAS AND WILL DELINEATE THE LIMITS OF WORK FOR THE PROPOSED CONSTRUCTION. THE SILT FENCE WILL BE INSTALLED BY STRETCHING REINFORCED FILTER FABRIC BETWEEN POSTS WITH AT LEAST 8" OF THE FABRIC BURIED BELOW THE GROUND SURFACE TO PREVENT GAPS FROM FORMING NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE FILTER FABRIC WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

STABILIZED CONSTRUCTION ENTRANCE – WILL BE INSTALLED IN ACCORDANCE WITH THE DETAIL AT THE ENTRANCE TO THE CONSTRUCTION SITE TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS OFF THE SITE. THE STABILIZED ENTRANCE WILL BE 20'-WIDE AND FLARE AT THE ENTRANCE TO THE PAVED ROAD AND HAVE A DEPTH OF 12" OF STONE. THE STABILIZED ENTRANCE SHALL BE MAINTAINED UNTIL THE REMAINDER OF THE CONSTRUCTION SITE HAS BEEN FULLY STABILIZED. THE PAVED STREET ADJACENT TO THE SITE SHALL BE SWEPT ON A WEEKLY BASIS TO REMOVE EXCESS MUD AND DIRT FROM BEING TRACKED FROM THE SITE. TRUCKS HAULING MATERIAL TO AND/OR FROM THE SITE SHALL BE COVERED WITH A TARPAULIN.

CATCH BASINS – WILL BE CLEANED ON AN ANNUAL BASIS TO REMOVE ALL SEDIMENTS FROM THE CATCH BASIN SUMPS.

CATCH BASIN PROTECTION – WILL BE INSTALLED AT ALL CATCH BASINS WITHIN THE CONSTRUCTION AREA. FILTER FABRIC WILL BE INSTALLED AROUND THE GRATES OF CATCH BASINS THAT ARE LOCATED IN THE TRAVEL WAY AND STONE/FILTER FABRIC PROTECTION WILL BE INSTALLED AT THE CATCH BASINS FOUND WITHIN THE PARKING AREA AND GRASS.

BLANKET SLOPE PROTECTION – SHALL BE INSTALLED ON ALL 2:1 SLOPES OR STEEPER ON SITE. ANCHOR THE TOP OF THE BLANKET BY ANCHORING THE BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING. ROLL THE BLANKET IN THE DIRECTION OF STORM WATER FLOW. WHERE 2 OR MORE STRIPS OF BLANKET ARE REQUIRED, A MINIMUM OF 4" OF OVERLAP SHALL BE PROVIDED.

STONE CHECK DAMS – WILL BE INSTALLED IN EXISTING AND PROPOSED GRASS SWALES TO REDUCE THE VELOCITY OF CONCENTRATED STORM WATER FLOWS AND PREVENT EROSION OF THE SWALE.

5. STORM WATER MANAGEMENT

STORM WATER DRAINAGE FOR DEVELOPED AREAS WILL BE COLLECTED BY A PIPE AND CATCH BASIN CLOSED DRAINAGE SYSTEM. APPROXIMATELY 3.6 ACRES OF THE 15.3 ACRE SITE WILL REMAIN UNTOUCHED AND IN ITS NATURAL STATE. WHEN CONSTRUCTION IS COMPLETE THE FACILITY AND PARKING AREA WILL BE ROUTED TO TWO (2) SURFACE STORMWATER TREATMENT FILTER BASINS.

6. ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURE DUMPSTERS OR APPROVED ENCLOSURE AND REMOVED FROM THE SITE ON A WEEKLY BASIS. NO CONSTRUCTION WASTE SHALL BE BURIED ON SITE. PORTABLE TOILET SANITARY WASTE FACILITIES WILL BE PROVIDED DURING CONSTRUCTION AND MAINTAINED/DISPOSED OF ON A REGULAR BASIS IN ACCORDANCE WITH TOWN AND STATE REGULATIONS.

7. A LIST OF CONSTRUCTION ITEMS AND OTHER PRODUCTS USED ON THIS PROJECT SHALL BE KEPT ON RECORD WITH THIS PLAN ONSITE. ALL CHEMICALS, PETROLEUM PRODUCTS AND OTHER MATERIALS USED DURING CONSTRUCTION SHALL BE STORED IN A SECURE AREA, AND PRECAUTIONS USED TO PREVENT POTENTIAL SOURCES OF CONTAMINATION OR POLLUTION. ANY SPILL OF THESE TYPES OF SUBSTANCES SHALL BE CLEANED UP AND DISPOSED OF IN A LEGAL MANNER AS SPECIFIED BY STATE REGULATIONS AND THE MANUFACTURER. ANY SPILL IN AMOUNTS EQUAL TO OR EXCEEDING REPORTABLE QUANTITY AS DEFINED BY THE EPA SHALL TAKE THE FOLLOWING STEPS:
- NOTIFY THE NATIONAL RESPONSE CENTER IMMEDIATELY AT (888) 424-8802; IN WASHINGTON, D.C., CALL (202) 426-2675.
- WITHIN 14 DAYS, SUBMIT A WRITTEN DESCRIPTION OF THE RELEASE TO THE EPA REGIONAL OFFICE PROVIDING THE DATE AND CIRCUMSTANCES OF THE RELEASE AND THE STEPS TO BE TAKEN TO PREVENT ANOTHER RELEASE.
- MODIFY THE POLLUTION PREVENTION PLAN TO INCLUDE THE INFORMATION LISTED ABOVE.

GOOD HOUSEKEEPING:
THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT.
- AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB;
- ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE;
- PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL;
- SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER;
- WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER;
- MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED;
- TRASH DUMPSTERS SHALL BE GASKETED OR HAVE A SECURE WATERTIGHT LID AND BE PLACED AWAY FROM STORMWATER CONVEYANCES AND DRAINS;
- THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

HAZARDOUS PRODUCTS:
THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
- PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE;
- ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION;
- IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

PRODUCT SPECIFIC PRACTICES:
THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:
PETROLEUM PRODUCTS:
ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS:
FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

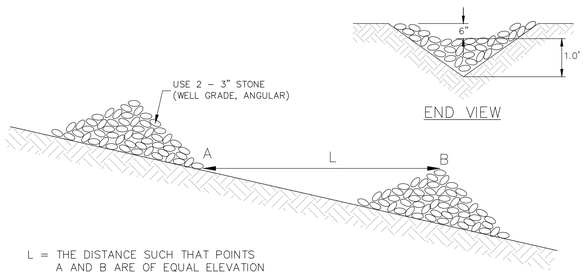
PAINTS:
ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS:
EXCESS CONCRETE SHALL BE USED IN AREAS DESIGNATED BY THE SITE CONTRACTOR. WASH WATER SHALL BE DISPOSED OF USING BEST MANAGEMENT PRACTICES. BUILDING CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL DRUM WASH WATER ASSOCIATED WITH CONCRETE FOR THE BUILDING PAD. SITE CONTRACTOR TO COORDINATE AND PROVIDE BUILDING CONTRACTOR WITH AN AREA FOR DRUM WASH WATER.

SPILL CONTROL PRACTICES:
IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
- MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
- MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
- ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
- THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF SIZE.
- THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
- THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THEY WILL DESIGNATE AT LEAST THREE OTHER SITE PERSONNEL WHO WILL EACH RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.

11. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN RECORDS OF CONSTRUCTION ACTIVITIES, INCLUDING DATES OF MAJOR GRADING ACTIVITIES, DATES WHEN CONSTRUCTION ACTIVITIES HAVE TEMPORARILY CEASED ON A PORTION OF THE SITE, DATES WHEN WORK IS COMPLETED ON A PORTION OF THE SITE, AND DATES WHEN STABILIZATION MEASURES ARE INITIATED ONSITE.

12. THE CONTRACTOR SHALL PERFORM INSPECTIONS OR HAVE A CONSULTING ENGINEER PERFORM INSPECTIONS EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS AFTER A STORM OF 0.5" OR GREATER. INSPECTIONS REPORTS ARE TO BE KEPT ON FILE AT THE SITE WITH THIS PLAN. MAINTENANCE OR MODIFICATION SHALL BE IMPLEMENTED AND ADDED TO THE PLAN AS RECOMMENDED BY THE QUALIFIED INSPECTOR.



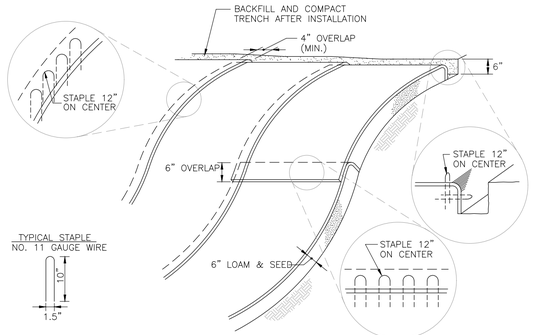
END VIEW

L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

CHECK DAM

STONE CHECK DAM

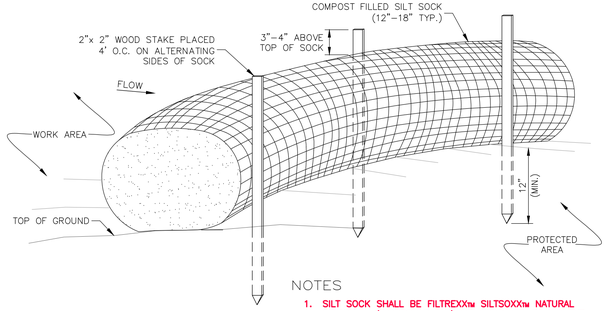
IN SWALE NOT TO SCALE



1. BLANKET SLOPE PROTECTION SHALL MEET REQUIREMENTS OF ENV-WQ 1506.15 MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS.
2. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING.
3. ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
4. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SWALE, PLACE BLANKET END OVER END WITH 6 INCH (MIN.) OVERLAP AND ANCHOR DOWN SLOPE BLANKET IN A 6 INCH DEEP TRENCH.
6. BLANKET SHALL BE NORTH AMERICAN GREEN C125BN, EAST COAST EROSION CONTROL ECC-2B, AMERICAN EXCELSIOR COMPANY CURLEX III FIBRENET, ROLANKA GEONATURAL EROSION & SEDIMENT CONTROL MATTE JUTEMAT OR BIOD-OCF 30, OR APPROVED EQUAL.
7. **BLANKET SHALL NOT CONTAIN WELDED PLASTIC, PLASTIC, MULTI-FILAMENT, OR MONO-FILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8".**

BLANKET SLOPE PROTECTION

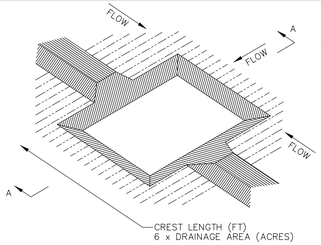
FOR EROSION CONTROL NOT TO SCALE



NOTES
1. **SILT SOCK SHALL BE FILTREXX™ SILTSOXX™ NATURAL ORIGINAL™ (BIODEGRADABLE) OR APPROVED EQUIVALENT.**
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

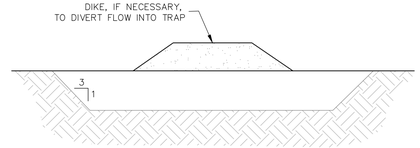
SILT SOCK

NOT TO SCALE



NOTES
1. SEDIMENT TRAP TO BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL BASINS/PONDS ARE STABILIZED. IF IT IS DETERMINED THAT CONSTRUCTION OF A SEDIMENT TRAP IS WARRANTED, CONSULT WITH ENGINEER TO DETERMINE APPROPRIATE NUMBER AND DIMENSIONS.

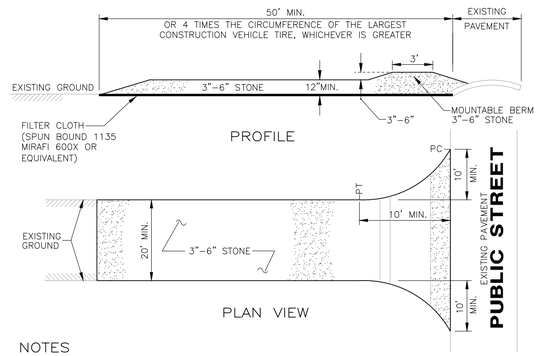
SEDIMENT TRAP – ISOMETRIC VIEW



SECTION A-A

SEDIMENT TRAP

NOT TO SCALE



PROFILE

PLAN VIEW

NOTES
1. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE SURFACE.
2. NO SURFACE WATER SHALL BE DIRECTED TOWARD CONSTRUCTION ENTRANCES.
3. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
4. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
5. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN STORM EVENT.

STABILIZED CONSTRUCTION ENTRANCE

SEE PLAN FOR PROPOSED LOCATION NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

STATE OF NEW HAMPSHIRE – NICHOLAS C. GOLON No. 14086 – LICENSED PROFESSIONAL ENGINEER – 12/22/25

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE 18252-02 | DR | | FB | – | D-01
CK | | CADFILE | 18252-02 COVER & DETAILS

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48 Constitution Drive, Bedford, N.H. 03110

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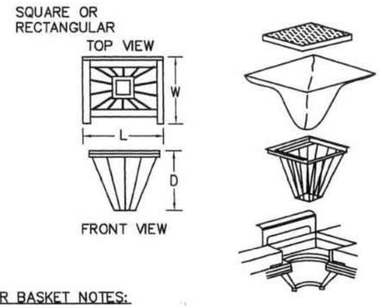
Dec 23, 2025 - 2:23pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_CSD\PRODUCTION\18252-02 Cover & Details.dwg

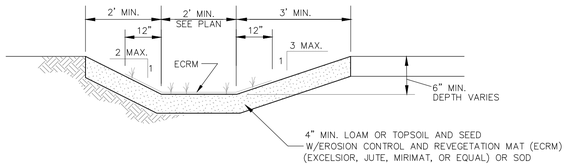


FILTER BASKET NOTES:

1. INLET BASKETS SHALL BE USED ON ALL CATCH BASINS WITHIN THE PROJECT LIMITS WITHIN PAVED AREAS. INLET FILTER BASKETS SHALL BE "SILT SACK®" OR APPROVED EQUAL.
2. FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND EXTEND AT LEAST 6 INCHES PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.
3. THE FILTER FABRIC SHALL BE A GEO-TEXTILE FABRIC: POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:
   GRAB STRENGTH: 300 lb. MINIMUM IN ANY PRINCIPAL DIRECTION (ASTM D-4632).
   MULLEN BURST STRENGTH: MINIMUM 800 psi (ASTM D-3786).
4. THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 40 U.S. STANDARD SIEVE AND MINIMUM PERMEABILITY OF 40 gpm/sq. ft.
5. THE INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM ENTERING THE DRAINAGE PIPING SYSTEM AND/OR CAUSING SURFACE FLOODING.
6. INLET BASKETS SHALL BE MAINTAINED IN PLACE UNTIL ALL PAVING IS COMPLETED AND ALL UNPAVED AREAS HAVE BEEN STABILIZED WITH VEGETATION.

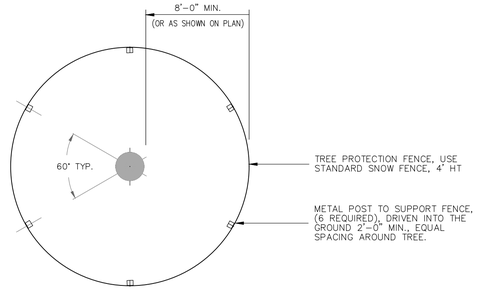
INLET FILTER BASKET

NOT TO SCALE



GRASS LINED SWALE

FOR USE WHERE VELOCITIES ARE 3 FPS OR LESS NOT TO SCALE

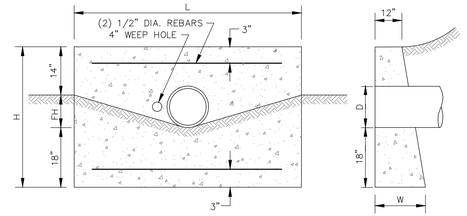


NOTES:
EXCAVATING WITHIN 10 FEET OF EXISTING TREES SHALL BE PERFORMED BY HAND DIGGING, HYDRAULIC, OR PNEUMATIC TOOLS METHODS. THE USE OF HEAVEY EQUIPMENT SHALL BE AVOIDED. NO ROOTS GREATER THAN 2 INCHES IN DIAMETER SHALL BE CUT WITHOUT APPROVAL OF AN ARBORIST. WHEN ROOTS MUST BE CUT, THEY SHALL BE CUT CLEANLY WITH A SHARP SAW TO SOUND WOOD AND FLUSH WITH THE TRENCH SITE. AVOID EXPOSING ROOTS DURING HOT, DRY WEATHER. BACKFILL TRENCHES AS SOON AS POSSIBLE WITH SOIL AND SOAK WITH WATER THE SAME DAY. IF THE TRENCH MUST BE LEFT OPEN FOR AN EXTENDED AMOUNT OF TIME, ALL ROOTS MUST BE KEPT MOIST BY WRAPPING THEM IN PEAT MOSS AND BURLAP.

TREE PROTECTION

NOT TO SCALE

NOMINAL PIPE SIZE D	LENGTH OF BARS	L	H	FH	W
12	3'-2"	3'-6"	3'-6"	0'-10"	1'-10.5"
15	4-2	4-6	3-9	1-1	1-11.25
18	5-2	5-6	4-0	1-4	2-0
24	7-2	7-6	4-6	1-10	2-1.5
30	9-2	9-6	5-0	2-4	2-3
36	11-2	11-6	5-6	2-10	2-4.5
42	13-2	13-6	6-0	3-4	2-6
48	15-2	15-6	6-6	3-10	2-7.5



CONCRETE HEADWALL

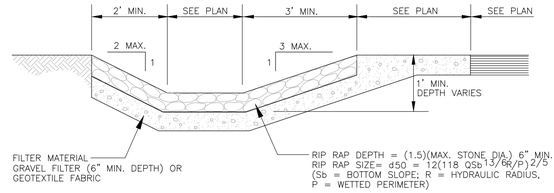
SINGLE PIPE SYSTEM NOT TO SCALE

RIP-RAP GRADATION

STONE SIZE	% FINER BY WEIGHT D 50 = 6"	D50 = 9"	D 50 = 12"	D50 = 18"	D 50 = 24"
2"	0-15%	0%	–	–	–
4"	20-35%	10-20%	0-10%	–	–
6"	35-50%	25-35%	10-25%	0-10%	–
8"	50-65%	30-50%	20-30%	10-20%	0-10%
10"	60-80%	40-60%	30-40%	15-30%	5-15%
12"	75-100%	–	–	–	–
15"	–	70-100%	45-60%	25-40%	20-30%
20"	–	–	70-100%	40-60%	30-45%
30"	–	–	–	70-100%	50-70%
40	–	–	–	–	70-100%

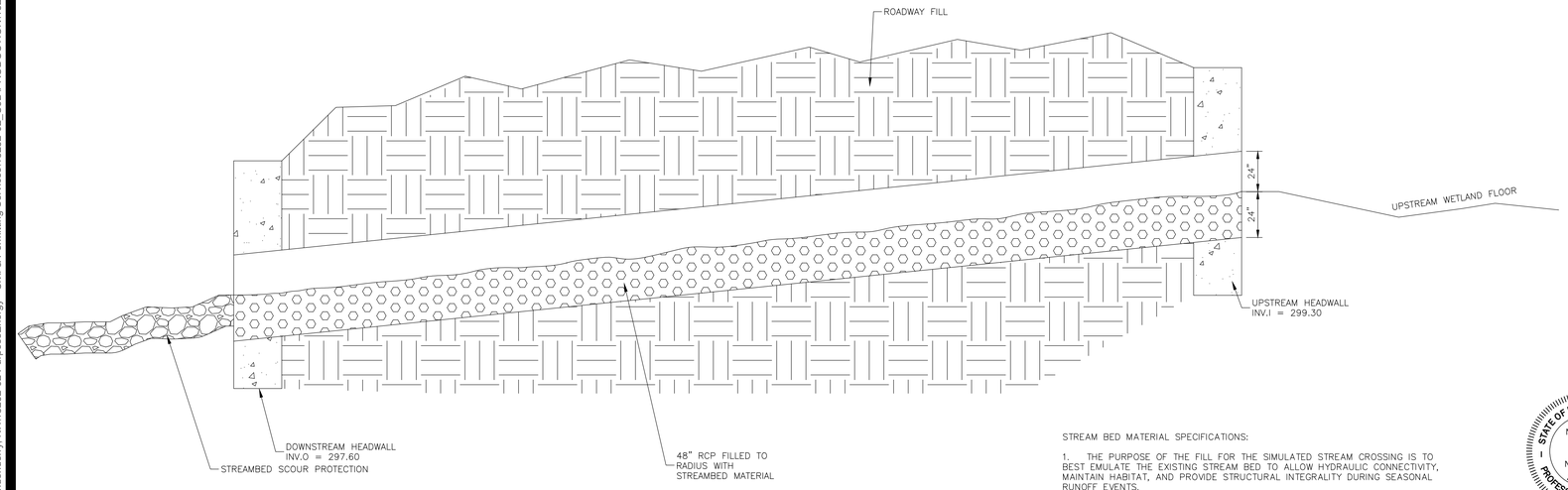
GRAVEL FILTER GRADATION

SIEVE SIZE	% PASSING BY WEIGHT
3½"	100
3"	85-100
1½"	60-90
¾"	40-70
⅜"	20-50
NO. 4	10-40
NO. 200	0-8



RIP RAP SWALE

FOR USE WHERE VELOCITIES EXCEED 3 FPS NOT TO SCALE



STREAM BED MATERIAL SPECIFICATIONS:

1. THE PURPOSE OF THE FILL FOR THE SIMULATED STREAM CROSSING IS TO BEST EMULATE THE EXISTING STREAM BED TO ALLOW HYDRAULIC CONNECTIVITY, MAINTAIN HABITAT, AND PROVIDE STRUCTURAL INTEGRALITY DURING SEASONAL RUNOFF EVENTS.
2. THE STREAMBED MATERIAL SHALL CONSIST OF WELL GRADED, ROUNDED, FLAT BOTTOM, NATURAL RIVER BED MATERIAL. NO ANGULAR ROCK TO BE USED.
3. COBBLES, STONES, AND GRAVELS:

STONE SIZE	PERCENT PASSING BY WEIGHT
8"	50%
4"	40%
2"	10%

CROSS CULVERT SECTION

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

PROJECT	DR	FB	–	D-02
18252-02	CK	CADFILE	18252-02 COVER & DETAILS	

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Dec 23, 2025 - 2:23pm
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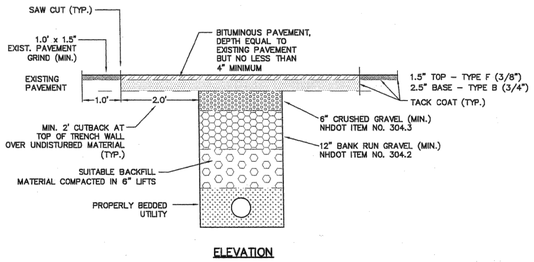
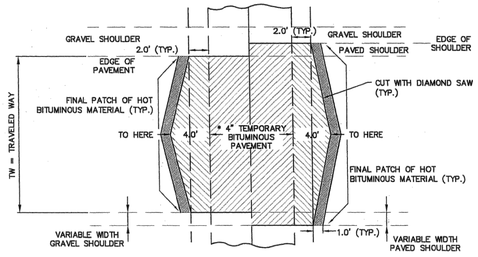


ELEVATION

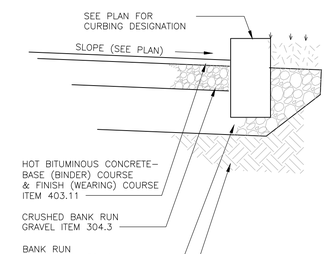


PLAN

* TO BE REMOVED FOR PERMANENT REPAIR

PAVEMENT TRENCH PATCH

FLUSH NOT TO SCALE



LAYER	STANDARD DUTY
TOP	1.5"
BINDER	2.5"
CRUSHED GRAVEL	6"
BANK RUN GRAVEL	12"

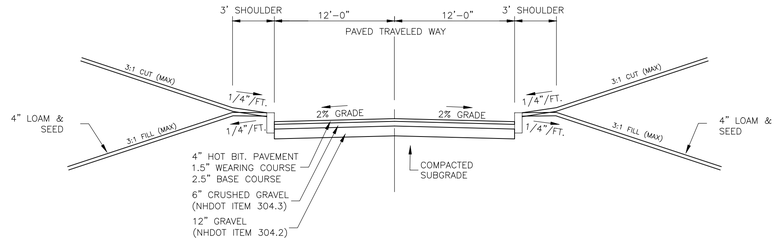
ROAD CONSTRUCTION NOTES

REMOVE ALL LOAM, CLAY, MUCK, STUMPS, AND OTHER IMPROPER PAVEMENT FOUNDATION MATERIAL WITHIN 2' OF SUBGRADE. REPLACE WITH COMPACTED GRANULAR FILL MATERIAL ACCEPTABLE TO APPROVING AGENCY. COMPACTION TO BE AT LEAST 95% OF STANDARD PROCTOR.

ALL PAVEMENT, BASE MATERIALS AND WORKMANSHIP TO BE IN COMPLIANCE WITH N.H.D.O.T. "STANDARDS FOR ROAD AND BRIDGE CONSTRUCTION" LATEST EDITION.

PAVEMENT SECTION

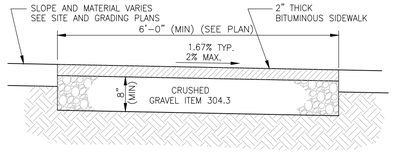
NOT TO SCALE



1. ALL ROADWAY MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE LATEST NHDOT SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. PROVIDE 4" MIN. COMPACTED LOAM AND SEED ON ALL SIDE SLOPES AND DRAINAGE SWALES UNLESS OTHERWISE NOTED.
3. ALL LEDGE SHALL BE REMOVED TO 6" BELOW SUBGRADE.
4. CURBING SHALL BE BITUMINOUS CONCRETE CURB.

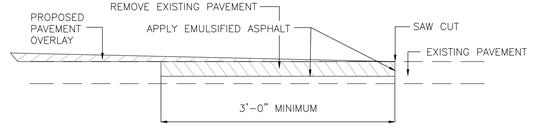
DRIVEWAY SECTION

NOT TO SCALE



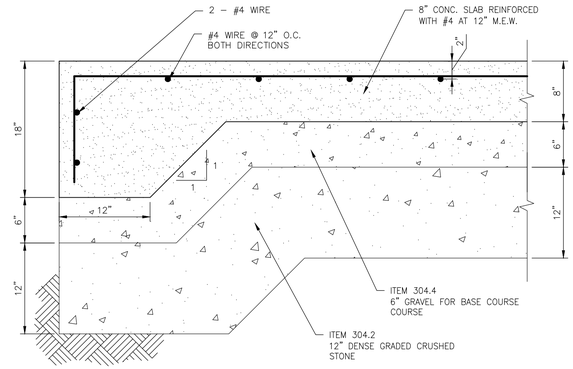
BITUMINOUS SIDEWALK

NOT TO SCALE



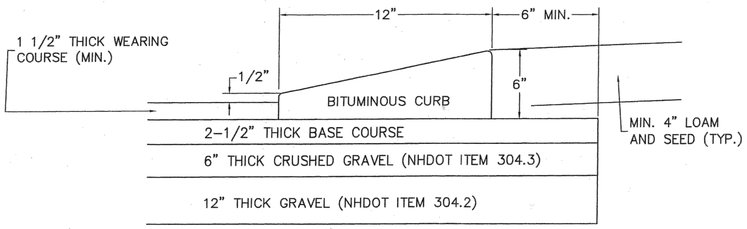
PAVEMENT SAWCUT

NOT TO SCALE



CONCRETE PAD DETAIL

NOT TO SCALE

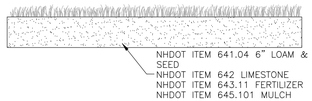


NOTES:

1. APPLY TACK COAT PRIOR TO PLACEMENT OF CURB
2. BITUMINOUS CURB MATERIAL SHALL MEET THE REQUIREMENTS OF NHDOT SECTION 609.
3. CAPE COD BERM DIMENSIONS SHALL MATCH THOSE GIVEN IN THIS DETAIL.

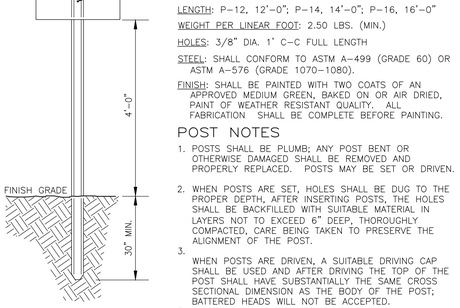
BITUMINOUS CONCRETE CURB

NOT TO SCALE



LOAM & SEED DETAIL

NOT TO SCALE



LENGTH: P-12, 12'-0"; P-14, 14'-0"; P-16, 16'-0"

WEIGHT PER LINEAR FOOT: 2.50 LBS. (MIN.)

HOLES: 3/8" DIA. 1' C-C FULL LENGTH

STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070-1080).

FINISH: SHALL BE PAINTED WITH TWO COATS OF AN APPROVED MEDIUM GREEN, BAKED ON OR AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

POST NOTES

1. POSTS SHALL BE PLUMB; ANY POST BENT OR OTHERWISE DAMAGED SHALL BE REMOVED AND PROPERLY REPLACED. POSTS MAY BE SET OR DRIVEN.
2. WHEN POSTS ARE SET, HOLES SHALL BE DUG TO THE PROPER DEPTH, AFTER INSERTING POSTS, THE HOLES SHALL BE BACKFILLED WITH SUITABLE MATERIAL IN LAYERS NOT TO EXCEED 6" DEEP, THOROUGHLY COMPACTED, CARE BEING TAKEN TO PRESERVE THE ALIGNMENT OF THE POST.
3. WHEN POSTS ARE DRIVEN, A SUITABLE DRIVING CAP SHALL BE USED AND AFTER DRIVING THE TOP OF THE POST SHALL HAVE SUBSTANTIALLY THE SAME CROSS SECTIONAL DIMENSION AS THE BODY OF THE POST; BATTERED HEADS WILL NOT BE ACCEPTED.
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6. WHEN SIGN IS IN PLACE NO PART OF POST SHALL EXTEND ABOVE THE SIGN.
7. DIMENSIONS SHOWN ARE NOMINAL.
8. ALTERNATE SECTIONS MUST BE APPROVED PRIOR TO USE.

PROTECTED CONSERVATION AREA

DO NOT DISTURB SOILS OR VEGETATION

VIOLATORS WILL BE PROSECUTED

For Information Or To Report A Violation Call The Code Enforcement Officer At 432-1100 Ext. 125

SIGN NOTE

SIGNS SHALL BE PLACED ON TREES IN BUFFER LINE OR SHALL BE INSTALLED ON SIGN POSTS AS SHOWN. THE MAXIMUM SPACING BETWEEN SIGNS SHALL BE 50 FEET.

CONSERVATION OVERLAY DISTRICT SIGN

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
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LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

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1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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FILE	18252-02	DR		FB	-	D-03
		CK		CADFILE	18252-02 COVER & DETAILS	

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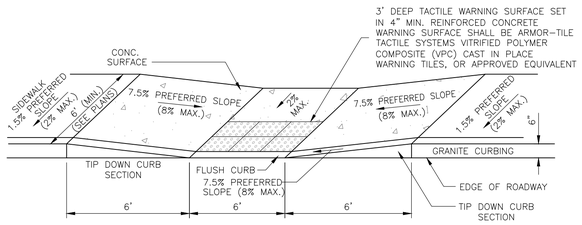
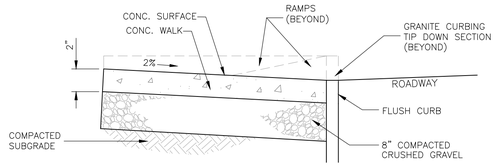
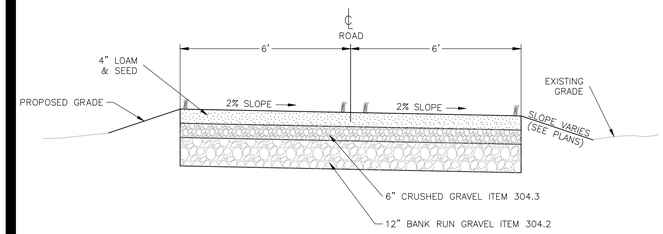




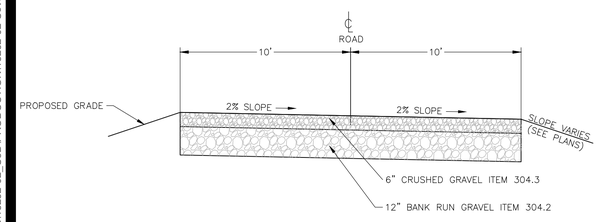
ACCESSIBLE RAMP RECESSED IN WALK

WITH DETECTABLE WARNING SURFACE (VPC) NOT TO SCALE



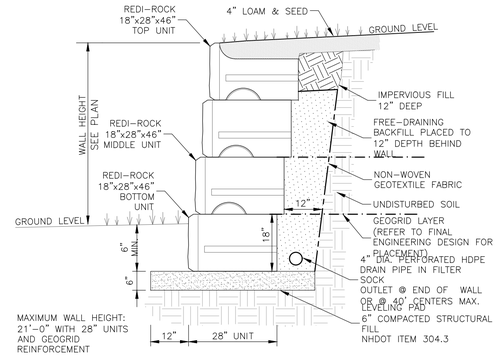
MAINTENANCE DRIVE

STORMWATER MANAGEMENT AREAS NOT TO SCALE



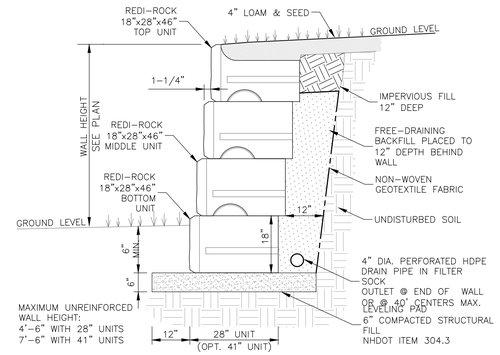
GRAVEL MAINTENANCE DRIVE

PROCESS BUILDING NOT TO SCALE



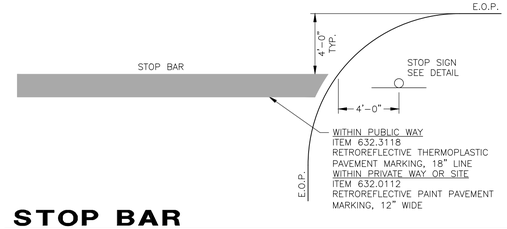
REDI-ROCK RETAINING WALL

REINFORCED WITH GEOGRID SCALE: 1/2"=1'-0"



REDI-ROCK RETAINING WALL

UNREINFORCED SCALE: 1/2"=1'-0"



STOP BAR

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 9/22/25

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FILE	18252-02	DR		FB	–	D-04
		CK		CADFILE	18252-02 COVER & DETAILS	

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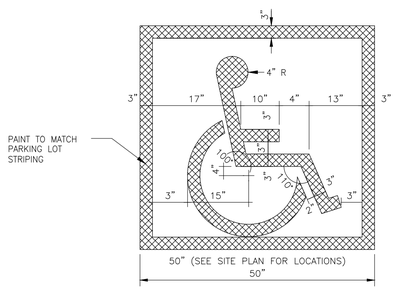

PAINTED ACCESSIBLE SYMBOL

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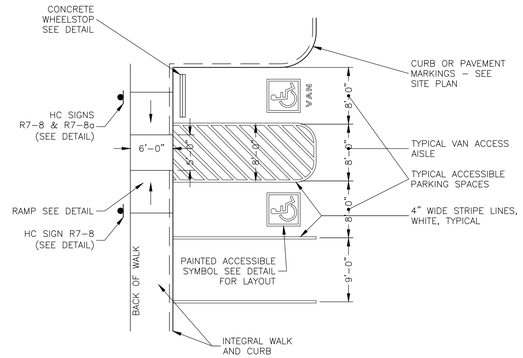


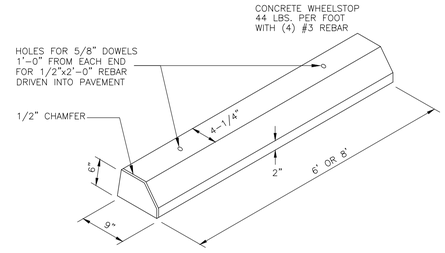
VAN ACCESSIBLE STRIPING LAYOUT

NOT TO SCALE



LADDER CROSSWALK

NOT TO SCALE

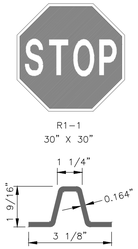


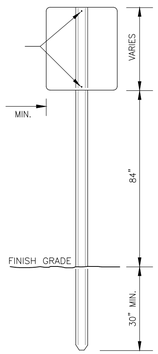
CONCRETE WHEELSTOP

NOT TO SCALE









LENGTH: P–12, 12'–0"; P–14, 14'–0"; P–16, 16'–0".

WEIGHT PER LINEAR FOOT: 2.50 LBS. (MIN.)

HOLES: 3/8" DIA. 1' C–C FULL LENGTH

STEEL: SHALL CONFORM TO ASTM A–499 (GRADE 60) OR ASTM A–576 (GRADE 1070–1080).

FINISH: SHALL BE PAINTED WITH TWO COATS OF AN APPROVED MEDIUM GREEN, BAKED ON OR AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

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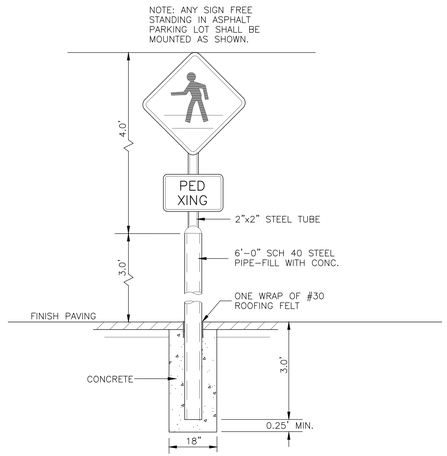
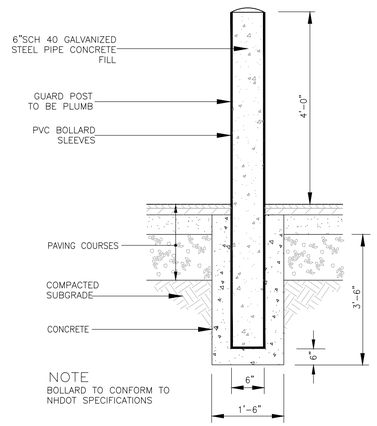
SIGN POST IN GRADE

NOT TO SCALE



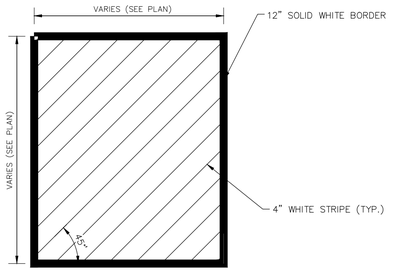
SIGN POLE IN PAVEMENT

NOT TO SCALE



GUARD POST (BOLLARD)

NOT TO SCALE



LOADING ZONE PAINT

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
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Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
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Phone (603) 472-4488
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		CK		CADFILE	18252-02 COVER & DETAILS	

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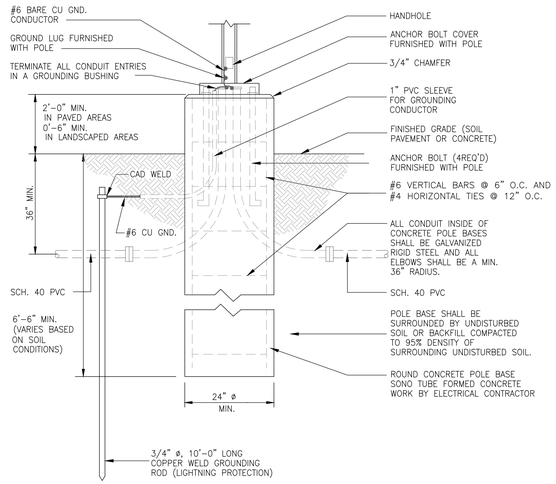
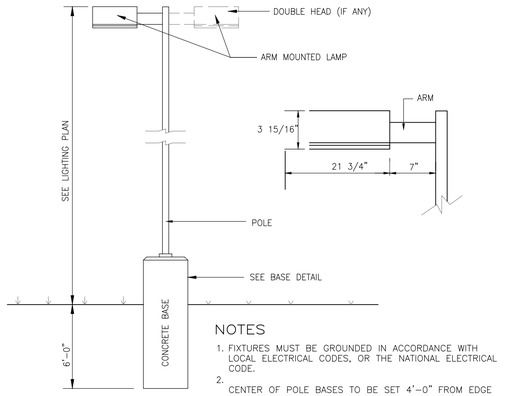


LIGHT POLE BASE

NOT TO SCALE



LIGHT POLE

NOTES

1. FIXTURES MUST BE GROUNDED IN ACCORDANCE WITH LOCAL ELECTRICAL CODES, OR THE NATIONAL ELECTRICAL CODE.
2. CENTER OF POLE BASES TO BE SET 4'-0" FROM EDGE OF PAVEMENT, EXCEPT WHERE OTHERWISE INDICATED ON
3. DRAWING.
   LIGHTING SHOWN HERE IS AREA LIGHTING, SUPPLEMENTAL BUILDING-MOUNTED FIXTURES AT DOORWAYS, ETC. MAY
4. BE REQUIRED.
   SEE LIGHTING PLAN FOR FIXTURE SCHEDULE.

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SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
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SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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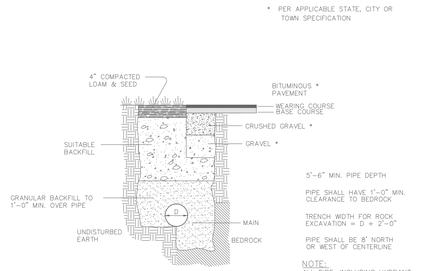


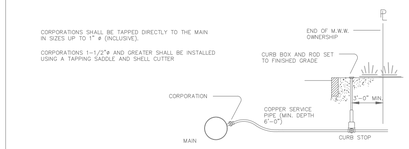
TYPICAL TRENCH DETAIL

NOT TO SCALE

6-22-95

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD1A
	STANDARD DETAIL	

95SD1



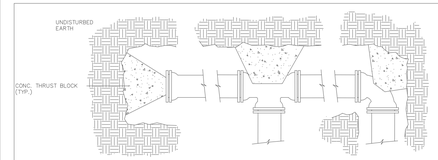
TYPICAL SERVICE CONNECTION

NOT TO SCALE

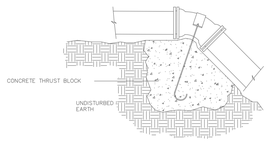
6-22-95

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD2
	STANDARD DETAIL	

95SD2



PLAN – HORIZONTAL BENDS, TEES AND PLUGS



ELEVATION – VERTICAL BENDS

THRUST BLOCK DIMENSIONS TO BE DETERMINED IN FIELD BY ENGINEER BASED ON PIPE SIZE, WATER PRESSURE AND SOIL TYPE.

STONE BACKING MAY BE SUBSTITUTED FOR CONCRETE THRUST BLOCKS PROVIDED THE STONE(S) ARE OF EQUAL SIZE AND BEAR ON UNDISTURBED EARTH.

USE OF JOINT RESTRAINT SYSTEMS SHALL NOT ELIMINATE THRUST BLOCK REQUIREMENTS (WHERE POSSIBLE).

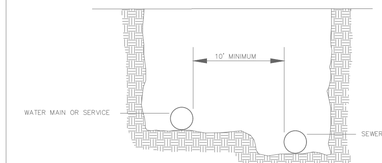
TYPICAL THRUST BLOCKS

NOT TO SCALE

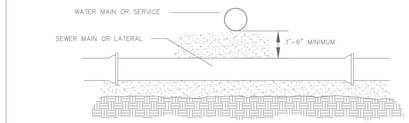
6-22-95

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD4
	STANDARD DETAIL	

95SD4



PARALLEL INSTALLATION



MAIN CROSSINGS

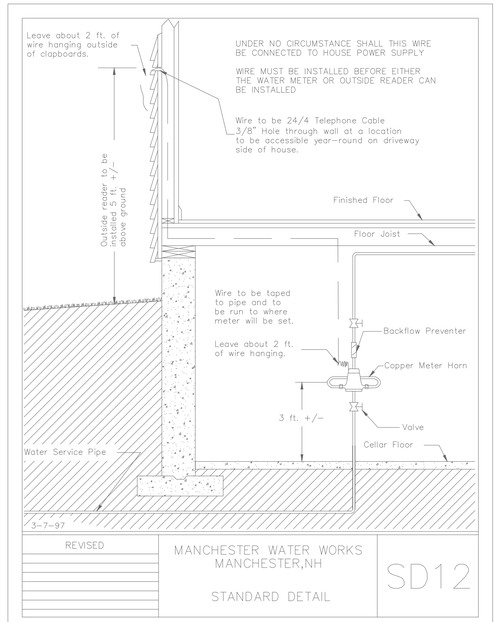
WATER MAIN/SEWER MAIN SEPARATION

NOT TO SCALE

6-22-95

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD6
	STANDARD DETAIL	

95SD6



3-7-97

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD12
	STANDARD DETAIL	

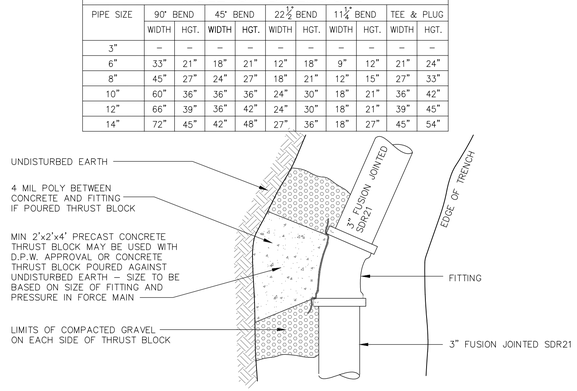


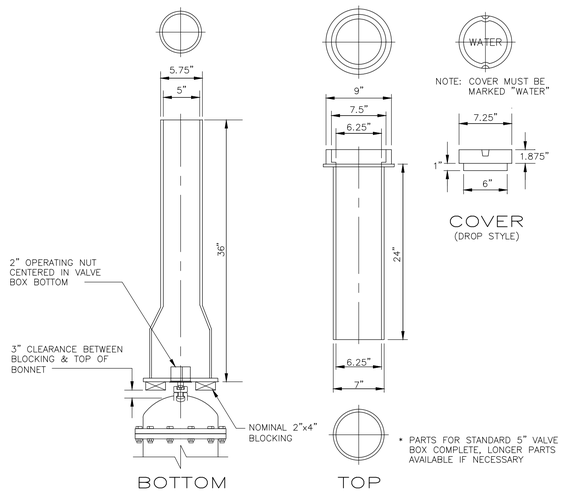
TABLE OF DIMENSIONS										
PIPE SIZE	90° BEND		45° BEND		22½° BEND		11¼° BEND		TEE & PLUG	
	WIDTH	HGT.	WIDTH	HGT.	WIDTH	HGT.	WIDTH	HGT.	WIDTH	HGT.
3"	–	–	–	–	–	–	–	–	–	–
6"	33"	21"	18"	21"	12"	18"	9"	12"	21"	24"
8"	45"	27"	24"	27"	18"	21"	12"	15"	27"	33"
10"	60"	36"	36"	36"	24"	30"	18"	21"	36"	42"
12"	66"	39"	36"	42"	24"	30"	18"	21"	39"	45"
14"	72"	45"	42"	48"	27"	36"	18"	27"	45"	54"

NOTE

1. ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO D.P.W. TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 6' FROM TOP OF PIPE TO FINISH GRADE, UNLESS NOTED OTHERWISE. REFER TO SEWER EXTENSION PROFILE.

THRUST BLOCKING BEHIND FITTINGS INSTALLATION

NOT TO SCALE



VALVE BOX

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE – NICHOLAS C. GOLON No. 14086 – LICENSED PROFESSIONAL ENGINEER – 9/30/25

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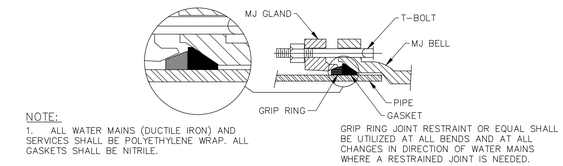


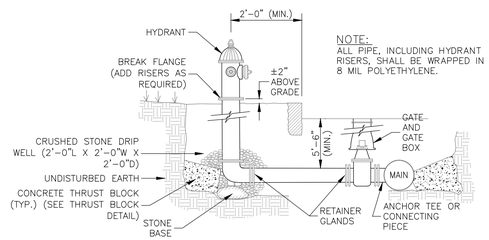
NOTE:

1. ALL WATER MAINS (DUCTILE IRON) AND SERVICES SHALL BE POLYETHYLENE WRAP. ALL GASKETS SHALL BE NITRILE.

GRIP RING JOINT RESTRAINT OR EQUAL SHALL BE UTILIZED AT ALL BENDS AND AT ALL CHANGES IN DIRECTION OF WATER MAINS WHERE A RESTRAINED JOINT IS NEEDED.

GRIP RING JOINT RESTRAINT

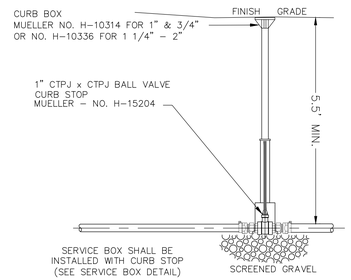
NOT TO SCALE



NOTE:
ALL PIPE, INCLUDING HYDRANT RISERS, SHALL BE WRAPPED IN 8 MIL POLYETHYLENE.

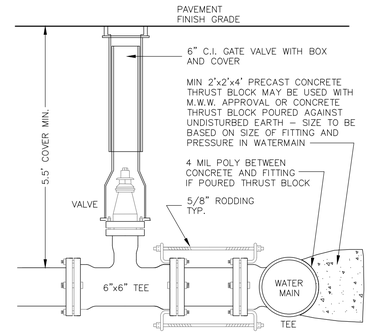
TYPICAL HYDRANT INSTALLATION

MANCHESTER WATER WORKS NOT TO SCALE



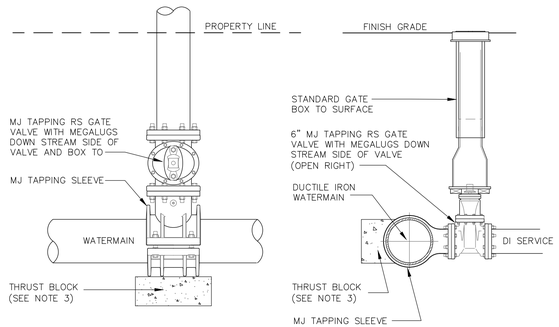
CURB STOP

NOT TO SCALE



BURIED GATE VALVE

NOT TO SCALE



NOTE

1. ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO M.W.W. TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTHS OF 5'-6" FROM TOP OF PIPE TO FINISH GRADE.
3. MIN 2'x2'x4' PRECAST CONCRETE THRUST BLOCK MAY BE USED WITH M.W.W. APPROVAL OR CONCRETE THRUST BLOCK POURED AGAINST UNDISTURBED EARTH - SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATERMAIN.

WET TAP TEE INSTALLATION

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SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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SEWER SERVICE NOTES

1) MINIMUM SIZE PIPE FOR SEWER SERVICE SHALL BE FOUR INCHES.

2) PIPE AND JOINT MATERIALS:
   A. PLASTIC SEWER PIPE
      1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 TO T-3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
D2680	*ABS (COMPOSITES WALL)	8" THROUGH 15"

*PVC: POLY VINYL CHLORIDE
*ABS: ACRYLONITRILE-BUTADIENE-STYRENE

      2. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.

      ABS TRUSS PIPE AND FITTINGS SHALL CONFORM TO ASTM D-2680, POLYMER COMPOUNDING SHALL BE TO ASTM D-1788 (CLASS 322).

      JOINTS FOR ABS TRUSS PIPE SHALL BE CHEMICAL WELDED COUPLINGS TYPE SC IN ACCORDANCE WITH ASTM D-2680, FORMING A CHEMICAL WELDED JOINT.

   B. DUCTILE-IRON PIPE, FITTINGS AND JOINTS.

      1. DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
         A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.
         A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.
      2. JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:
         A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS

3) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

4) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER-TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATIOI WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5) TEES AND WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURERS' INSTRUCTIONS USING A BOLTED, CLAMPED OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 15" DIAMETER.

6) SEWER SERVICE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 6 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.

   THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN 1/4" INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

7) TESTING: THE COMPLETED SEWER SERVICE SHALL BE SUBJECTED TO A THIRD PARTY LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS: (PRIOR TO BACKFILLING)

   A. ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.

      LOW PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:

         ASTM F1417-92(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR".

         UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW PRESSURE AIR TESTING OF INSTALLED SEWER PIPE".

   LEAKAGE OBSERVED IN ANY ONE OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER TIGHTNESS.

8) ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.

9) WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE.

10) BEDDING: CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67.

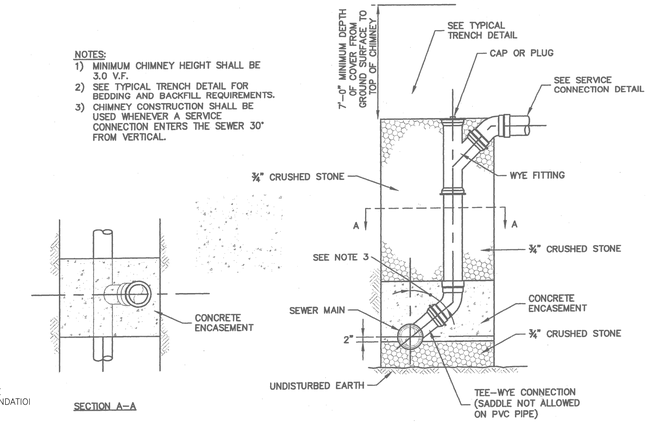
100% PASSING	1 INCH SCREEN
90%-100% PASSING	3/4 INCH SCREEN
20%-55% PASSING	3/8 INCH SCREEN
0%-10% PASSING	#4 SIEVE
0%-5% PASSING	#8 SIEVE

   WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, CRUSHED STONE 1/2 INCH TO 1 1/ INCH SHALL BE USED.

11) LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.

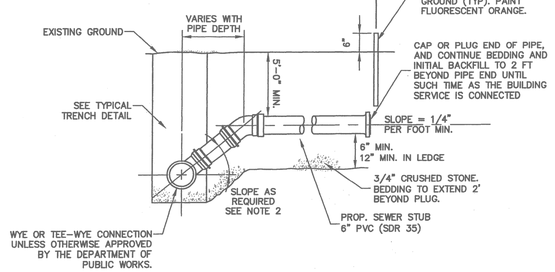
12) CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE SEWER CONNECTION. CHIMNEY INSTALLATION AS RECOMMENDED BY THE PIPE MANUFACTURER MAY BE USED IF APPROVED BY THE ENGINEER.

SEWER SERVICE DETAILS



CHIMNEY (SEE NOTE 12)

NOT TO SCALE



NOTES:
1. ALL SERVICE CONNECTIONS TO BE 6" MINIMUM UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. USE CHIMNEY DETAIL WHERE SERVICE CONNECTION ENTERS SEWER AT GREATER THAN 60° TO THE HORIZONTAL.

SEWER SERVICE

NOT TO SCALE

GRAVITY SEWER NOTES

1. MINIMUM SIZE PIPE FOR GRAVITY SEWER SHALL BE 8-INCHES.
2. PIPE AND JOINT MATERIALS FOR PLASTIC SEWER PIPE SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034-04a	* PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679-03	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F794-03	PVC (RIBBED WALL)	8" THROUGH 36"
F1760-01(2005)e1	PVC, RECYCLED	ALL DIAMETERS

*PVC: POLY VINYL CHLORIDE

3. PLASTIC SEWER PIPE SHALL HAVE A PIPE STIFFNESS RATING OF AT LEAST 46 POUNDS PER SQUARE INCH AT 5 PERCENT PIPE DIAMETER DEFLECTION, AS MEASURED IN ACCORDANCE WITH ASTM D2412-02 DURING MANUFACTURE.
4. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212-96(a)(2003)e1 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.
5. DUCTILE-IRON PIPE, FITTINGS AND JOINTS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION (AWWA).

   AWWA C150/A21.50 FOR THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A536 FOR DUCTILE IRON CASTINGS.

   AWWA C151/A21.51 FOR DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL- OR SAND-LINED MOLDS FOR WATER, WASTEWATER, AND RECLAIMED WATER SYSTEMS.

   JOINTS SHALL BE OF THE MECHANICAL TYPE, PUSH-ON TYPE, OR BALL- AND SOCKET TYPE AS APPROPRIATE FOR THE SPECIFIC APPLICATION. JOINTS AND GASKETS SHALL CONFORM TO AWWA C151/A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS.
6. CONCRETE PIPE SHALL CONFORM TO AWWA C302-04.
7. PRESTRESSED CONCRETE CYLINDER PIPE AND FITTINGS SHALL CONFORM TO AWWA C301-99.
8. JOINTS SEALS FOR CONCRETE CYLINDER PIPE SHALL BE OIL RESISTANT ELASTOMERIC MATERIAL CONFORMING TO ASWWA C301-99 SPECIFICATIONS.
9. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
10. GRAVITY SEWER PIPE TESTING SHALL BE AS FOLLOWS:

    ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.

    LOW PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:

       ASTM F1417-92(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR".

       UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW PRESSURE AIR TESTING OF INSTALLED SEWER PIPE".
11. ALL NEW GRAVITY SEWERS SHALL BE CLEANED AND VISUALLY INSPECTED AND SHALL BE TRUE TO LINE AND GRADE FOLLOWING INSTALLATION AND PRIOR TO USE.
12. ALL PLASTIC SEWER PIPE SHALL BE DEFLECTION TESTED NOT LESS THAN 30 DAYS FOLLOWING INSTALLATION.
13. THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5 PERCENT OF THE AVERAGE INSIDE DIAMETER.
14. TRENCH CONSTRUCTION SHALL CONFORM TO THE FOLLOWING:

    SEWERS SHALL BE BURIED TO A MINIMUM DEPTH OF 6' BELOW GRADE IN ALL ROADWAY LOCATIONS AND TO A MINIMUM DEPTH OF 4 FEET BELOW GRADE IN ALL CROSS COUNTRY LOCATIONS.

    WHERE SEWER LINES CROSS WATER PIPES, A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. AT SEWER/WATER INTERSECTIONS, A MINIMUM OF 6 FEET SHALL BE PROVIDED FROM THE WATER LINE TO THE SEWER PIPE JOINT. 12" SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE REQUIRED BETWEEN SEWER LINES AND ALL OTHER PIPES.

    TRENCH DIMENSIONS FOR SEWER PIPE LESS THAN 15 INCHES IN DIAMETER, THE ALLOWABLE TRENCH WIDTH AT A PLANE 12 INCHES ABOVE THE PIPE SHALL BE NO MORE THAN 36 INCHES AND FOR PIPE 15 INCHES AND LARGER, THE ALLOWABLE WIDTH SHALL BE EQUAL TO THE PIPES OUTSIDE DIAMETER PLUS 24 INCHES.

    PIPE TRENCH BEDDING MATERIAL AND FILL MATERIAL FOR EXCAVATION BELOW GRADE SHALL BE CRUSHED STONE TO ASTM C33-03 STONE SIZE NO. 67. THE PIPE SAND BLANKET MATERIAL SHALL BE GRADED SAND FREE FROM ANY ORGANIC MATERIALS, GRADED SUCH THAT 100 PERCENT PASSED THE 1/2-INCH SIEVE AND A MAXIMUM OF 15 PERCENT PASSES A #200 SIEVE. IN LIEU OF A SAND BLANKET, A STONE ENVELOPE 6 INCHES THICK COMPLETELY AROUND THE PIPE USING 3/4-INCH STONE MAY BE USED.

    PIPE BEDDING MATERIAL SHALL EXTEND FROM A HORIZONTAL PLANE THROUGH THE PIPE AXIS TO 6-INCHES BELOW THE BOTTOM OF THE OUTSIDE SURFACE OF THE PIPE.

    PIPE SAND BLANKET MATERIAL SHALL COVER THE PIPE A MINIMUM OF 12 INCHES ABOVE THE CROWN OF THE OUTSIDE SURFACE.

    COMPACTION SHALL BE IN 12-INCH LAYERS FOR BEDDING AND BLANKET MATERIALS.

    BACKFILL MATERIAL SHALL BE IN 3-FOOT LAYERS TO THE GROUND SURFACE EXCEPT FOR ROAD CONSTRUCTION WHERE THE FINAL 3-FEET SHALL BE COMPACTED IN 12-INCH LAYERS TO THE ROAD BASE SURFACE.

    TRENCH BACKFILL MATERIAL IN ROADWAY LOCATIONS SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION, EXCLUDING DEBRIS, PAVEMENT PIECES, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT, CLAY, EXCAVATED LEDGE, ROCKS OVER 6 INCHES IN THE LARGEST DIMENSION, OR ANY OTHER UNSUITABLE MATERIAL NOT APPROVED BY THE ENGINEER.

    TRENCH BACKFILL AT CROSS-COUNTRY LOCATIONS SHALL BE AS DESCRIBED ABOVE EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLE RECONSTRUCTION, WHEN NECESSARY WILL BE PRESERVED. BACKFILL SHALL BE MOUNDED 6-INCHES ABOVE ORIGINAL GROUND.

    BASE COURSE MATERIALS FOR TRENCH REPAIRS SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.

    WHERE SHEETING IS PLACED ALONG SIDE OF THE PIPE AND EXTENDS BELOW MID-DIAMETER, THE SHEETING SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN ONE FOOT ABOVE THE TOP OF THE PIPE AND AT LEAST 3 FEET BELOW FINISH GRADE.

    TRENCHES FOR SEWER PIPES WITH SLOPES OVER 0.08 FEET PER FOOT AND TRENCHES FOR SEWER PIPES BELOW THE SEASONAL HIGH GROUND WATER LEVEL SHALL HAVE IMPERVIOUS TRENCH DAMS CONSTRUCTED EVERY 300 FEET TO PREVENT POTENTIAL DISTURBANCE TO PIPE BEDDING AND BLANKET MATERIALS.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-09

Dec 23, 2025 - 2:24pm
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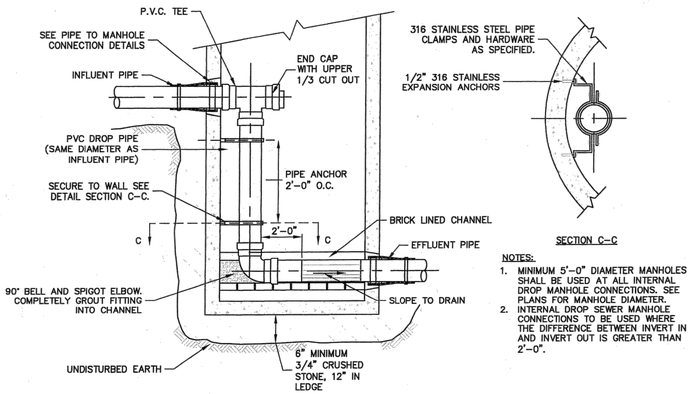
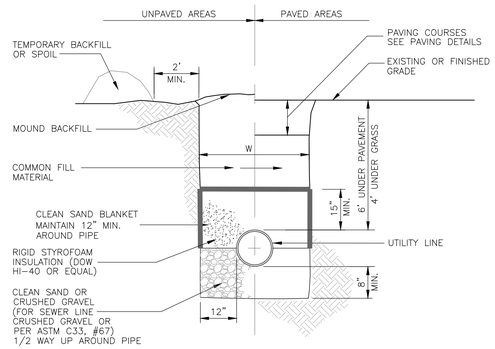


NOTES:
1. MINIMUM 5'-0" DIAMETER MANHOLES SHALL BE USED AT ALL INTERNAL DROP MANHOLE CONNECTIONS. SEE PLANS FOR MANHOLE DIAMETER.
2. INTERNAL DROP SEWER MANHOLE CONNECTIONS TO BE USED WHERE THE DIFFERENCE BETWEEN INVERT IN AND INVERT OUT IS GREATER THAN 2'-0".

TYPICAL SEWER MANHOLE
WITH INTERNAL DROP CONNECTION

NOT TO SCALE

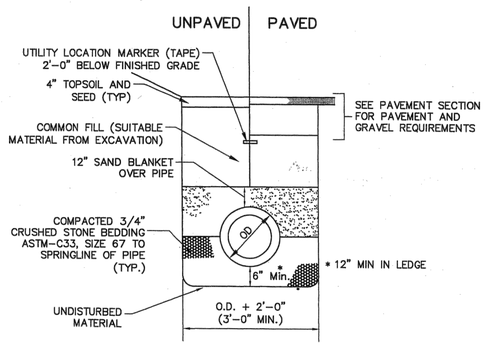


NOTE

W=MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.

PIPE INSULATION

NOT TO SCALE



TYPICAL SEWER PIPE TRENCH

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
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3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
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LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR
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SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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Land Surveyors
Landscape Architects
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	18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-10

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GENERAL NOTES

1. ALL SEWER CONSTRUCTION STANDARDS AND DETAILS SHALL ADHERE TO ENV-WQ 700, EFFECTIVE DATE JULY 1, 2025.
2. IT IS THE INTENTION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES SHALL BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT AND ADEQUATE JOINTING. THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND HS-20-44 LOADING INCLUDING THE FRAME AND COVER.
3. SEWER MANHOLE DIAMETER SHALL BE AS INDICATED ON THE PLANS.
4. LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN OF LONDONDERRY AND NHDES REQUIREMENTS. INVERT AND SHELF TO BE PLACED AFTER PASSING THE LEAKAGE TEST.
   (a) ALL MANHOLES SHALL BE TESTED FOR LEAKAGE USING A VACUUM TEST IN ACCORDANCE WITH THE ASTM C1244 STANDARD IN EFFECT WHEN THE TESTING IS PERFORMED.
   (b) THE MANHOLE VACUUM TEST SHALL CONFORM TO THE FOLLOWING:
      1. THE INITIAL VACUUM GAUGE TEST PRESSURE SHALL BE 10 INCHES Hg.
      2. THE MINIMUM ACCEPTABLE TEST HOLD TIME FOR 1-INCH Hg PRESSURE DROP TO 9 INCHES SHALL BE:
         A. NOT LESS THAN 2 MINUTES FOR MANHOLES LESS THAN 10 FEET DEEP.
         B. NOT LESS THAN 2.5 MINUTES FOR MANHOLES 10 TO 15 FEET DEEP.
         C. NOT LESS THAN 3 MINUTES FOR MANHOLES MORE THAN 15 FEET DEEP.
   (c) THE MANHOLE SHALL BE REPAIRED AND RETESTED IF THE TEST HOLD TIMES FAIL TO ACHIEVE THE ACCEPTANCE LIMITS SPECIFIED IN (b) ABOVE.
   (d) INVERTS AND SHELVES SHALL NOT BE INSTALLED UNTIL AFTER SUCCESSFUL TESTING IS COMPLETE.
   (e) FOLLOWING COMPLETION OF THE LEAKAGE TEST, THE FRAME AND COVER SHALL BE PLACED ON TOP OF THE MANHOLE OR SOME OTHER MEANS USED TO PREVENT ACCIDENTAL ENTRY BY UNAUTHORIZED PERSONS, CHILDREN OR ANIMALS, UNTIL THE CONTRACTOR IS READY TO MAKE FINAL ADJUSTMENT TO GRADE.
5. CARE SHALL BE TAKEN TO ENSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE. BASE SECTION TO BE FULL.
6. MANHOLE CHANNELS REQUIRING CHANGE IN ALIGNMENT ARE TO BE BUILD ON A SMOOTH RADIUS.
7. IN CROSS COUNTRY AREAS BEYOND ROADWAY RIGHT-OF-WAYS, THE MANHOLE FRAME ELEVATION SHALL BE A MINIMUM OF 6" ABOVE FINISHED GRADE. GRADE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE MANHOLE.
8. FRAMES AND COVERS: MANHOLES FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. 3-INCH (MINIMUM HEIGHT) LETTERS WITH THE WORD "SEWER" SHALL BE PLAINLY CAST INTO THE CENTER OF EACH MANHOLE COVER.
9. BARRELS, CONE SECTIONS AND CONCRETE GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE AND SHALL CONFORM ENV-WQ 704.12 & 704.13.
10. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478-06.
11. BASE SECTIONS SHALL BE OF MONOLITHIC CONSTRUCTION TO A POINT AT LEAST 6 INCHES ABOVE THE CROWN OF THE INCOMING PIPE.
12. MANHOLE CONE SECTIONS SHALL BE ECCENTRIC IN SHAPE.
13. ALL PRECAST SECTIONS AND BASES SHALL HAVE THE DATE OF MANUFACTURE AND THE NAME OR TRADEMARK OF THE MANUFACTURER IMPRESSED OR INDELIBLY MARKED ON THE INSIDE WALL.
14. ALL PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING.
15. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H-20 LOADS.
16. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATERTIGHTNESS USING A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT. APPROVED ELASTOMERIC SEALANTS ARE:
   (a) SIKAFLEX-12-SL; OR
   (b) SONNEBORN BUILDING PRODUCTS-SONOLASTIC SL-1
17. THE MINIMUM INTERNAL DIAMETER OF MANHOLES SHALL BE 48 INCHES. FOR SEWERS LARGER THAN 24-INCH DIAMETER. MANHOLE DIAMETERS SHALL BE INCREASED SO AS TO PROVIDE AT LEAST 12-INCHES OF SHELF ON EACH SIDE OF THE SEWER.
18. LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE TO ENV-WQ 704.17.
19. BRICK MASONRY FOR SHELF, INVERT AND GRADE ADJUSTMENT SHALL COMPLY WITH ASTM C32-05, CLAY OR SHALE, FOR GRADE SS HARD BRICK.
20. MORTAR SHALL BE COMPOSED OF PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION. PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE:
   (a) 4.5 PARTS SAND AND 1.5 PARTS CEMENT; OR
   (b) 4.5 PARTS SAND, 1 PART CEMENT AND 0.5 PART HYDRATED LIME
21. CEMENT SHALL BE TYPE II PORTLAND CEMENT CONFORMING TO ASTM C150-05. HYDRATED LIME SHALL BE TYPE S CONFORMING TO ASTM C207-06 "STANDARD SPECIFICATIONS FOR HYDRATED LIME FOR MASONRY PURPOSES". SAND SHALL CONSIST OF INERT NATURAL SAND CONFORMING TO ASTM C33-03 "STANDARD SPECIFICATIONS FOR CONCRETE, FINE AGGREGATES".
22. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED OR PRECAST CONCRETE SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF THE PIPE AND FLOW. AT CHANGES IN DIRECTIONS, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.
23. FRAMES AND COVERS: MANHOLES FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN, CLASS 30, CONFORMING TO ASTM A48/48M AND PROVIDE A 30-INCH CLEAR OPENING. 3-INCH WORD (MINIMUM HEIGHT) LETTERS "SEWER" SHALL BE PLAINLY CAST INTO THE TOP SURFACE. THE CASTING SHALL BE OF EVEN GRAINED CAST IRON, SMOOTH, AND FREE FROM SCALE, LUMPS, BLISTERS, SAND HOLES AND DEFECTS. CONTACT SURFACES OF COVERS AND FRAMES SHALL BE MACHINED AT THE FOUNDRY TO PREVENT ROCKING OF COVERS IN ANY ORIENTATION.
24. BEDDING: PRECAST BASES SHALL BE PLACED ON A 6-INCH (12-INCH IN LEDGE) LAYER OF COMPACTED BEDDING MATERIAL THAT CONFORMS TO ASTM C33-03 NO. 67 STONE AND FREE FROM CLAY, LOAM AND ORGANIC MATTER. THE EXCAVATION SHALL BE PROPERLY DEWATERED WHILE PLACING BEDDING MATERIAL AND SETTING OF THE BASE OR POURING CONCRETE. WATER-STOPS SHALL BE USED AT THE HORIZONTAL JOINT OF THE CAST-IN-PLACE MANHOLES.

100% PASSING	1" SCREEN
90-100% PASSING	3/4" SCREEN
20-55% PASSING	3/8" SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE

25. FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES FROM ANY MANHOLE CONNECTION: (a) WITHIN 48 INCHES FOR REINFORCED CONCRETE PIPE (RCP). (b) WITHIN 60 INCHES FOR PVC PIPE LARGER THAN 15" DIAMETER.
26. NO FLEXIBLE JOINT SHALL BE REQUIRED FOR DUCTILE IRON PIPE OR PVC PIPE UP THROUGH 15-INCH DIAMETER.
27. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS FOLLOWS:
   A. ELASTOMERIC, RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND PIPE SURFACES.
   B. CAST INTO WALL OR SECURED WITH STAINLESS STEEL CLAMPS.
   C. ELASTOMERIC SEALING RING CAST IN THE MANHOLE OPENING WITH THE SEAL FORMED ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING.

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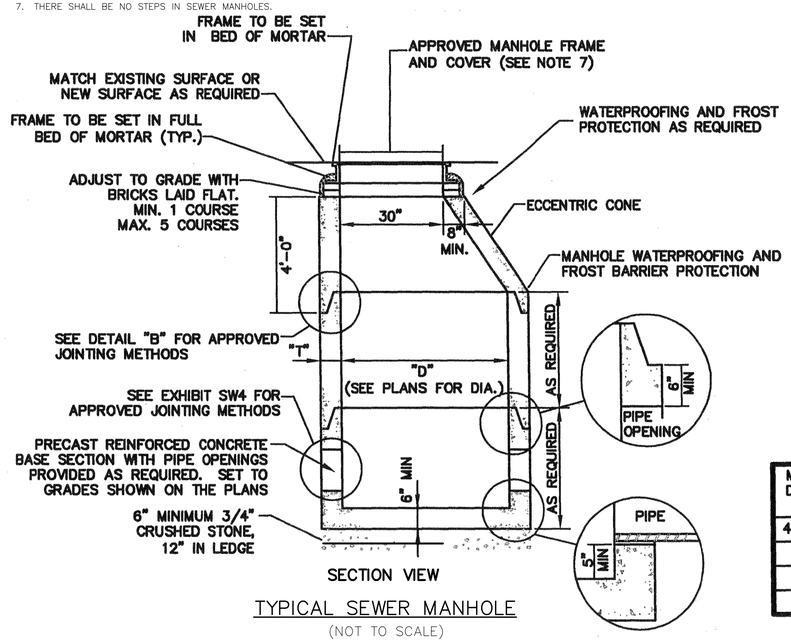
1. IN CROSS COUNTRY AREAS BEYOND ROADWAY RIGHT-OF-WAYS, THE MANHOLE FRAME ELEVATION SHALL BE A MINIMUM OF 6" ABOVE FINISHED GRADE. GRADE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE MANHOLE
2. THE INVERT OF THE INCOMING PIPE SHALL BE NO MORE THAN 6 INCHES ABOVE THE OUTGOING PIPE UNLESS A DROP ENTRY IS USED.
3. THE SEWER CONNECTIONS SHALL BE INSPECTED BY AUTHORIZED TOWN OF LONDONDERRY PUBLIC WORKS AND ENGINEERING DEPARTMENT PERSONNEL BEFORE ANY BACKFILLING. INSPECTION HOURS ARE BETWEEN 9:00AM AND 4:30PM, MONDAY-FRIDAY, WITH AT LEAST 2 DAYS OF ADVANCE NOTICE.
4. THE SEWER SERVICE MANHOLE SHALL BE VACUUM TESTED AND THE PVC PIPING PRESSURE TESTED WITH AUTHORIZED TOWN OF LONDONDERRY PUBLIC WORKS AND ENGINEERING DEPARTMENT PERSONNEL PRESENT ON SITE WITH A WITNESS.
5. ALL SEWER CONSTRUCTION AND USE SHALL CONFORM TO THE STATE OF NEW HAMPSHIRE STANDARD SEWER CONSTRUCTION SPECIFICATION AND THE TOWN OF LONDONDERRY SEWER USE ORDINANCE.
6. A MANDATORY PRECONSTRUCTION MEETING SHALL BE HELD WITH THE TOWN, CONTRACTOR, OWNER AND ALL UTILITY REPRESENTATIVES PRIOR TO ANY CONSTRUCTION. NO WORK SHALL BEGIN UNTIL APPROVAL BY THE DEPARTMENT OF PUBLIC WORKS HAS BEEN OBTAINED.
7. THERE SHALL BE NO STEPS IN SEWER MANHOLES.

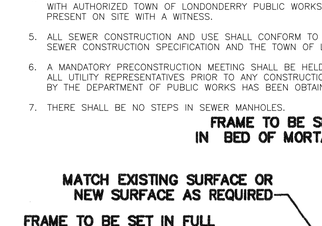


SECTION VIEW

TYPICAL SEWER MANHOLE

(NOT TO SCALE)

MANHOLE DIAMETER "D"	MAX. PIPE DIAMETER STRAIGHT THROUGH TO 45° DEFLECTION	"T" (WALL THICKNESS)
48" (MIN.)	30" OD MAX.	5" (MIN.)
60"	44" OD MAX.	6"
72"	51" OD MAX.	7"
96"	72" OD MAX.	9"



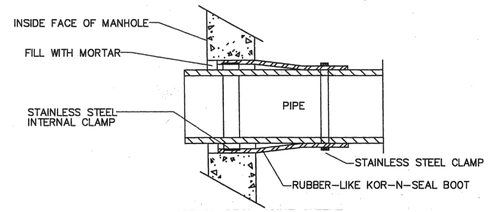
ELASTOMERIC SEALANT

NOTE:
ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS

DETAIL "B" HORIZONTAL JOINTS

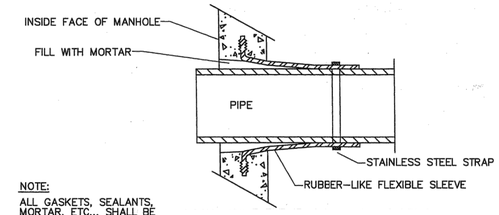
SECTION "A-A"

SECTION "B-B"



KOR-N-SEAL JOINT SLEEVE

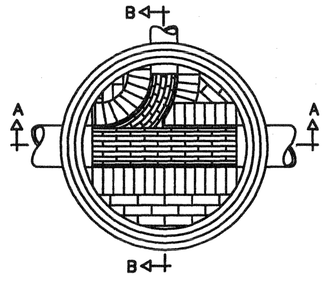
(OR ACCEPTABLE SUBSTITUTE)



NOTE:
ALL GASKETS, SEALANTS, MORTAR, ETC... SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS

LOCK-JOINT FLEXIBLE MANHOLE SLEEVE

(OR ACCEPTABLE SUBSTITUTE)



PLAN VIEW

TYPICAL MANHOLE - PLAN VIEW

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

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18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-11

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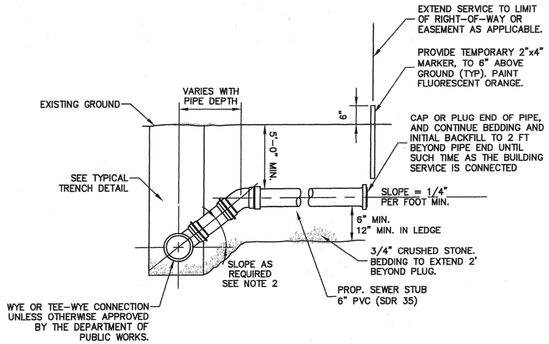
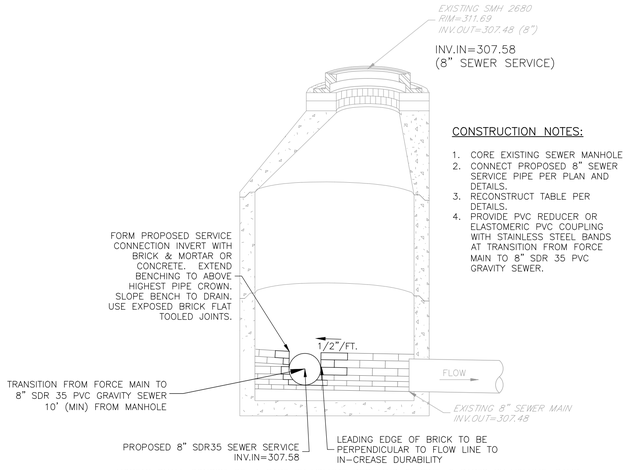


NOTES:
1. ALL SERVICE CONNECTIONS TO BE 6" MINIMUM UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. USE CHIMNEY DETAIL WHERE SERVICE CONNECTION ENTERS SEWER AT GREATER THAN 60° TO THE HORIZONTAL.

SEWER SERVICE CONNECTION

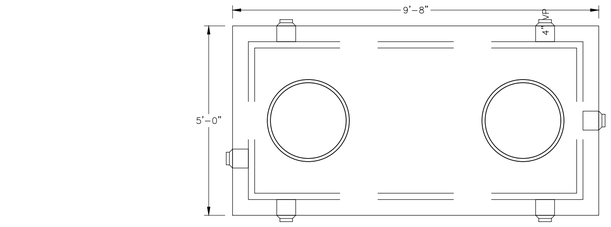


CONSTRUCTION NOTES:
1. CORE EXISTING SEWER MANHOLE
2. CONNECT PROPOSED 8" SEWER SERVICE PIPE PER PLAN AND DETAILS.
3. RECONSTRUCT TABLE PER DETAILS.
4. PROVIDE PVC REDUCER OR ELASTOMERIC PVC COUPLING WITH STAINLESS STEEL BANDS AT TRANSITION FROM FORCE MAIN TO 8" SDR 35 PVC GRAVITY SEWER.

MORTAR SHALL CONSIST OF: 1 PART BY VOLUME PORTLAND CEMENT, 2 PARTS BY VOLUME, DAMP WASHED COARSE SAND AND POTABLE WATER TO PRODUCE A CONSISTENCY OF STIFF PASTE. SEAL ALL PRECAST JOINTS WITH MORTAR.

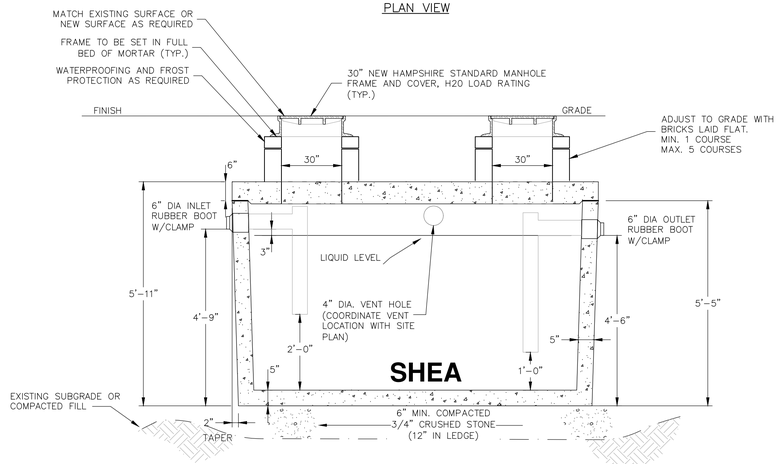
SEWER SERVICE CONNECTION

EX. SMH2680 NOT TO SCALE



PLAN VIEW

NOTES
1. TANK, WHETHER A SINGLE UNIT OR MULTIPLE SECTIONS, SHALL BE SEALED SO AS TO MEET N.H.D.E.S. WATERTIGHT SPECIFICATIONS.
2. SEE TYPICAL SEWER MANHOLE DETAIL AND AND JOINT DETAILS FOR ADDITIONAL DETAILS.



SECTION VIEW

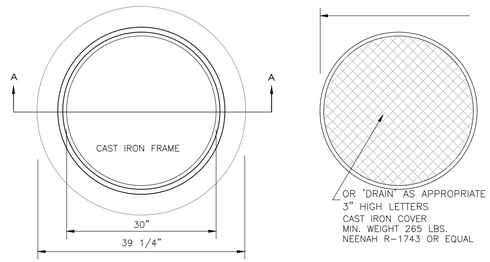
ITEM NO.	M1000H	H-20 (6" TOP)
	M1000HT10	H-20 (10" TOP)

WEIGHT:
BOTTOM = 11,250#
10" TOP = 5,960#
6" TOP = 3,575#

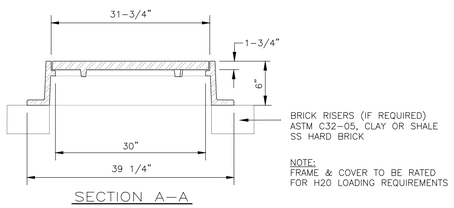
NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. ALL REINFORCEMENT PER ASTM C1227.
3. TEES AND BAFFLES SOLD SEPARATELY.
4. TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN.
5. DESIGNED FOR AASHTO HS-20 LOADING, 1 TO 5 FT COVER.

INDUSTRIAL TANK DETAIL

SHEA CONCRETE 1,000 GALLON SEPTIC TANK (OR APPROVED EQUAL) NOT TO SCALE



PLAN VIEW

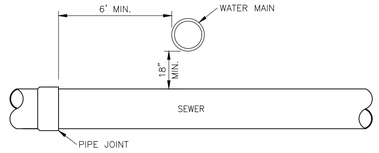


SECTION A-A

NOTE:
FRAME & COVER TO BE RATED FOR H20 LOADING REQUIREMENTS

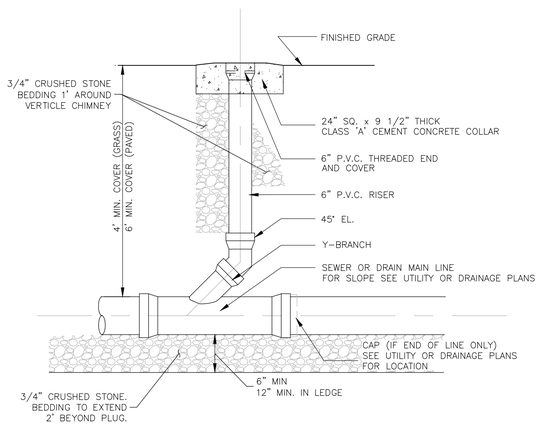
MANHOLE FRAME & COVER

HEAVY DUTY



SEWER / WATER INTERSECTIONS

ELEVATION VIEW NOT TO SCALE



SEWER CLEAN OUT

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 10/22/25

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		CK		CADFILE	18252-02 COVER & DETAILS	

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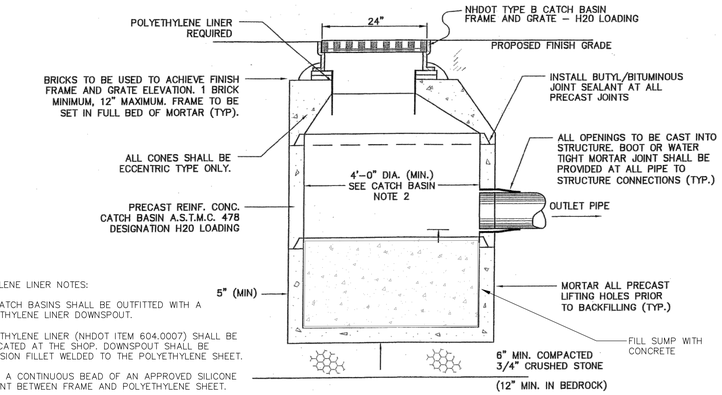


POLYETHYLENE LINER NOTES:

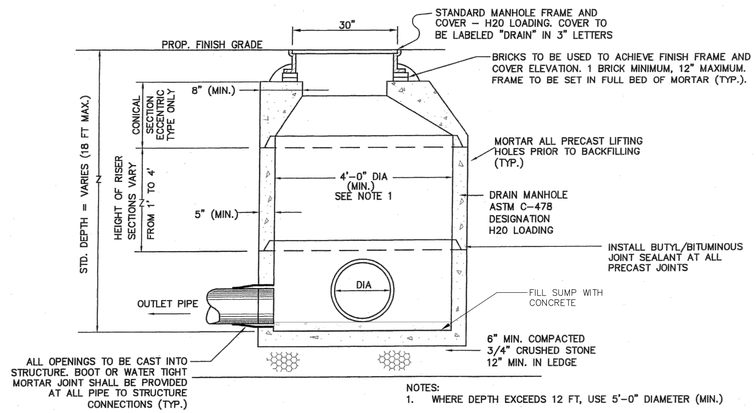
1. ALL CATCH BASINS SHALL BE OUTFITTED WITH A POLYETHYLENE LINER DOWNSPOUT.
2. POLYETHYLENE LINER (NHDOT ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
3. PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT BETWEEN FRAME AND POLYETHYLENE SHEET.
4. PLACE A CLASS AA CONCRETE TO 2" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE).
5. TRIM POLYETHYLENE SHEET A MAXIMUM OF 4" OUTSIDE THE FLANGE ON THE FRAME FOR THE CATCH BASIN BEFORE PLACING CONCRETE (EXCEPT AS SHOWN WHEN USED WITH CURB).
6. THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 3" FROM THE CENTER OF THE DOWNSPOUT IN ANY DIRECTION.

CATCH BASIN NOTES:

1. WHERE DEPTH EXCEEDS 12 FT, USE 5'–0" DIAMETER (MIN.)
2. MINIMUM PIPE DROP (INLET TO OUTLET) SHALL BE 3" UNLESS OTHERWISE APPROVED BY THE TOWN OF LONDONDERRY DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.
3. ALL BOOTS, GASKETS, AND SEALANTS, SHALL BE IN ACCORDANCE WITH MANUFACTURES WRITTEN INSTRUCTIONS.
4. ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C–478 DESIGNAT ION H20 LOADING.

CATCH BASIN

NOT TO SCALE



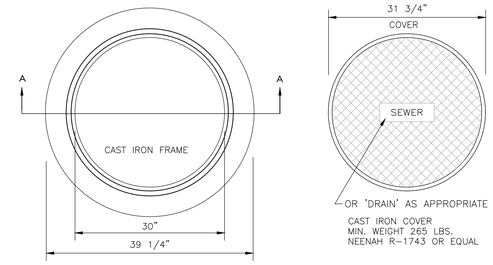
NOTES:

1. WHERE DEPTH EXCEEDS 12 FT, USE 5'–0" DIAMETER (MIN.)
2. MINIMUM PIPE DROP (INLET TO OUTLET) SHALL BE 3" UNLESS OTHERWISE APPROVED BY THE DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.
3. ALL BOOTS, GASKETS AND SEALANTS SHALL BE IN ACCORDANCE WITH MANUFACTURES WRITTEN INSTRUCTIONS

DRAIN MANHOLE

ECCENTRIC CONE

NOT TO SCALE

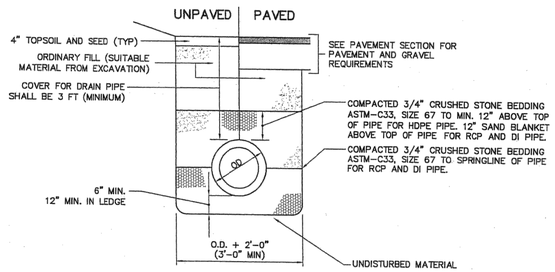


NOTE:
FRAME & COVER TO BE RATED FOR H20 LOADING REQUIREMENTS

MANHOLE FRAME & COVER

HEAVY DUTY

NOT TO SCALE



NOTE:

DRAIN PIPE SHALL BE 15" DIAMETER MIN.

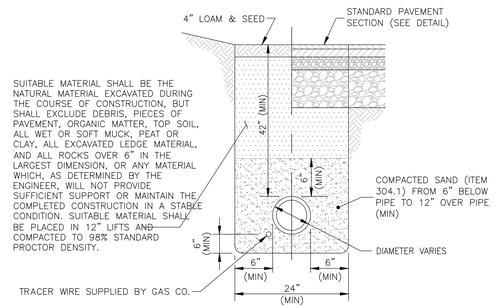
PLASTIC DRAIN PIPE (HDPE) SHALL BE ADS N–12 (CORRUGATED EXTERIOR/SMOOTH INTERIOR) OR EQUAL MEETING AASHTO M–252 AND H–20 LOADING.

DI DRAIN PIPE SHALL BE CL. 50.

RC DRAIN PIPE SHALL BE CLASS III UNLESS OTHERWISE NOTED.

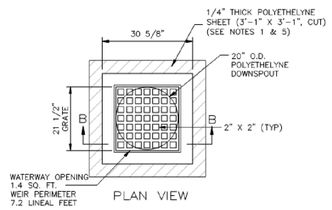
STORM DRAIN TRENCH

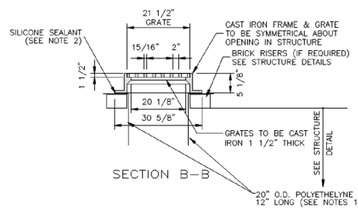
NOT TO SCALE



GAS MAIN TRENCH

NOT TO SCALE





1. POLYETHYLENE LINER (ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
2. PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT (SUBSIDIARY TO ITEM 604.0007) BETWEEN FRAME AND POLYETHYLENE SHEET (SEE SECTION A–A, PLATE 4).
3. PLACE CLASS AA CONCRETE TO 2" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE). USE ON DRAINAGE STRUCTURES 4' MIN. DIAMETER ONLY.
4. TRIM POLYETHYLENE SHEET A MAXIMUM OF 4" OUTSIDE THE FLANGE ON THE FRAME FOR THE CATCH BASIN BEFORE PLACING CONCRETE (EXCEPT AS SHOWN WHEN USED WITH 3–FLANGE FRAME AND CURB)
5. THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 6" FROM THE CENTER OF THE DOWNSPOUT IN AS SHOWN WHEN USED WITH 3–FLANGE FRAME AND CURB).
6. PLACED ONLY IN DRAINAGE STRUCTURES IN PAVEMENT. ANY DIRECTION.

CATCH BASIN FRAME AND GRATE

NEENAH R–3404 OR EQUIVALENT

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

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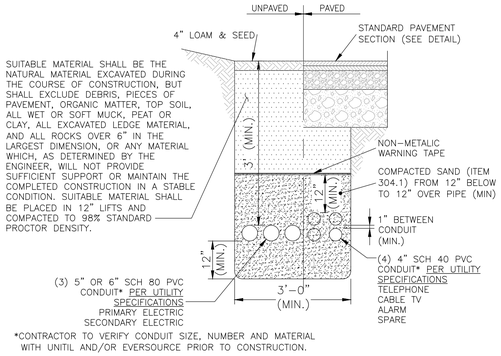
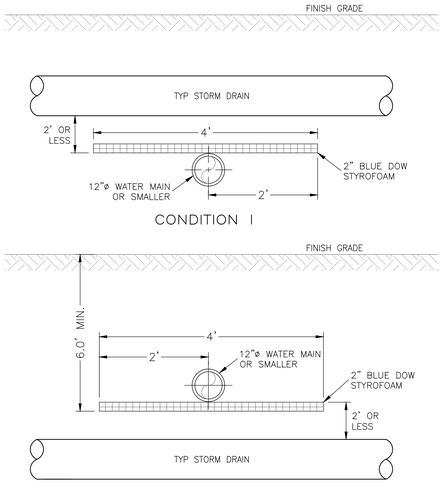


UTILITY TRENCH

NOT TO SCALE

NOTES

1. ALL CONDUITS SHALL BE 6" GRAY, ELECTRICAL GRADE, SCHEDULE 80 PVC CONDUIT WITH THE EXCEPTION OF THE SWEEPS AT RISER POLE AND THE FIRST HORIZONTAL AND VERTICAL CONDUIT SECTIONS AT EACH RISER POLE WHICH SHALL BE 6" HOT-DIPPED, GALVANIZED RIGID STEEL.
   a. THE STEEL TO PVC CONDUIT TRANSITIONS SHALL BE MADE WITH PVC THREADED ADAPTORS.
2. CONDUITS SHALL BE INSTALLED IN STRAIGHT LINES.
   a. NO SWEEPS SHALL BE USED IN THE CONDUIT SYSTEM EXCEPT AT RISER POLES AND EQUIPMENT PADS.
   b. THE MAXIMUM CHANGE IN CONDUIT DIRECTION BETWEEN TO CONTIGUOUS LENGTH OF CONDUIT SHALL BE LIMITED TO 2.5 DEGREES.
   c. ALL HORIZONTAL AND/OR VERTICAL CONDUIT BEND/CHANGES IN DIRECTION, NO MATTER HOW SMALL, SHALL BE REVIEWED AND APPROVED BY UNITIL.
3. ALL CONDUIT RUNS SHALL BE CLEANED BY PULLING A PLUG OR MANDREL (NO SMALLER THAN ¼" LESS THAN THE CONDUIT) THROUGH EACH CONDUIT.
4. ALL CONDUITS SHALL HAVE A 2,500# FLAT, WOVEN, POLYESTER PULLING LINE INSTALLED.
5. TEMPORARY CAPS SHALL BE INSTALLED ON THE END OF CONDUITS UNTIL CABLES ARE INSTALLED.
6. THE CONDUIT DUCT BANK INSTALLATION SHALL BE INSPECTED AND ACCEPTED BY UNITIL PRIOR TO BACKFILL.

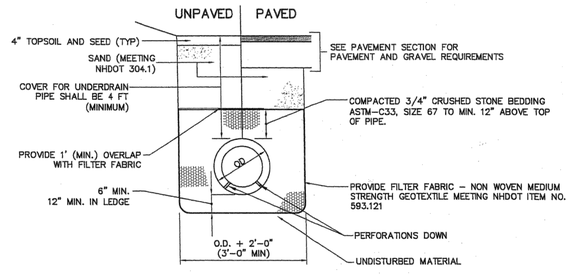


NOTES

1. INSULATION REQUIREMENTS MAY BE MODIFIED BY WATER DEPT. BASED ON FIELD CONDITIONS, ETC.
2. THE LENGTH OR WIDTH OF INSULATION SHALL EXTEND 1 STORM DRAIN PIPE DIAMETER BEYOND THE EDGE OF STORM DRAIN PIPE IN EACH DIRECTION OR A MINIMUM OF 2' BEYOND THE CENTERLINE OF THE STORM DRAIN PIPE, WHICHEVER IS GREATER.
3. ALL BUTT JOINT SEAMS TO BE OVERLAPPED WITH A 1' PIECE OF INSULATION CENTERED OVER SEAM.

STORM DRAIN / WATER MAIN INTERSECTING RUNS

ELEVATION VIEW NOT TO SCALE



NOTE:

PLASTIC UNDERDRAIN PIPE (HDPE) SHALL BE 6" DIAMETER (MIN.) ADS N-12 (CORRUGATED EXTERIOR/SMOOTH INTERIOR) OR EQUAL MEETING AASHTO M-252 AND H-20 LOADING.

UNDERDRAIN TRENCH

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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PUMP STATION DESIGN NOTES

Env–Wq 704.07 FORCE MAINS:

1. FORCE MAINS FOR CONSTANT SPEED PUMPS SHALL BE SIZED TO YIELD A CLEANSING VELOCITY OF 3 FEET PER SECOND OR GREATER AT DESIGN PUMP CAPACITY.
2. FORCE MAINS FOR VARIABLE SPEED PUMPS SHALL BE SIZED TO YIELD A VELOCITY OF 2 FEET PER SECOND OR GREATER AT AVERAGE DAILY DESIGN FLOW.
3. SEWER FORCE MAIN SHALL BE 6" INCHES IN NOMINAL DIAMETER FOR THE SEWER FROM THE SITE.
4. FORCE MAINS SHALL BE PROVIDED WITH AUTOMATIC AIR RELIEF VALVE(S) AT HIGH POINTS TO PREVENT AIR LOCKING.
5. FORCE MAINS SHALL ENTER THE GRAVITY SEWER SYSTEM AT THE FLOW LINE OF THE RECEIVING MANHOLE.
6. FORCE MAINS SHALL BE PROVIDED WITH DRAINAGE BLOW–OFFS, PROPERLY VALVED, AT LOW POINTS. SPACE SHALL BE AVAILABLE AT SUCH LOCATIONS FOR HANDLING THE DISPLACED WASTE WITHOUT DANGER OF POLLUTION OR HEALTH HAZARD.
7. FORCE MAINS SHALL BE DESIGNED IN ACCORDANCE WITH Env–Wq 704.07, CONSTRUCTED WITH MATERIALS AS SPECIFIED IN Env–Wq 704.08, AND TESTED AS SPECIFIED IN Env–Wq 704.09.
8. THRUST BLOCKS MADE FROM INORGANIC, CORROSION–RESISTANT MATERIAL SHALL BE PLACED AT ALL BENDS, ELBOWS, TEES AND JUNCTIONS.
9. FORCE MAINS SHALL BE DESIGNED TO WITHSTAND HYDROSTATIC PRESSURES OF AT LEAST 2.5 TIMES THE DESIGN TOTAL DYNAMIC HEAD.

Env–Wq 704.09 FORCE MAIN AND PRESSURE SEWER TESTING:

1. FORCE MAINS AND PRESSURE SEWERS AND FORCE MAINS AND PRESSURE SEWERS SHALL BE TESTED IN ACCORDANCE WITH SECTION 5 OF THE AWWA C600, "INSTALLATION OF CAST IRON WATER MAINS AND THEIR APPURTENANCES" STANDARD IN EFFECT WHEN THE TEST IS CONDUCTED, AVAILABLE AS NOTED IN APPENDIX D, AT A PRESSURE EQUAL TO THE GREATER OF 150 PERCENT OF THE DESIGN OPERATING TOTAL DYNAMIC HEAD OR AT LEAST 100 PSI.

Env–Wq 705.04 PUMP STATION ACCESS:

1. DRY WELL SHALL PROVIDE ACCESSIBILITY FOR THE REPAIR AND REMOVAL OF PUMPS, MOTORS, AND OTHER ITEMS OF EQUIPMENT THAT ARE ESSENTIAL TO THE SEWAGE PUMPING PROCESS.
2. SEPARATE EXTERIOR ENTRANCES SHALL BE PROVIDED TO BOTH WET WELLS AND DRY WELLS OF SEWAGE PUMPING STATIONS.
3. FOR BUILT–IN–PLACE SEWAGE PUMPING STATIONS, ACCESS TO LOWER LEVELS SHALL BE BY STAIRWAYS WITH HANDRAILS.
4. PREFABRICATED STATIONS MAY HAVE LADDERS WITH LESS THAN OR EQUAL TO A 75° SLOPE OR SPIRAL STAIRS.
5. VERTICAL DISTANCES BETWEEN FLOORS OR REST LANDINGS SHALL NOT EXCEED 12 FEET.
6. SAFETY BARRIERS TO PREVENT FALLING SHALL BE PROVIDED AT LANDINGS.
7. POWER ELEVATORS PROPOSED FOR ALL DEEP STATIONS SHALL HAVE A CAPACITY LIMIT OF NOT LESS THAN 600 POUNDS.
8. LIFTING EQUIPMENT SHALL BE PROVIDED FOR SUBMERSIBLE PUMP REMOVAL.
9. LIFTING CHAINS SHALL BE STAINLESS STEEL OR OTHER CORROSION RESISTANT MATERIAL.

Env–Wq 705.07 ELECTRICAL REQUIREMENTS:

1. SUBMERSIBLE PUMPS FOR SEWAGE PUMPING STATIONS SHALL CONFORM TO THE NEC REQUIREMENTS ADOPTED BY REFERENCE IN THE STATE BUILDING CODE PURSUANT TO RSA 155–A:1, IV, FOR INSTALLATION IN AREAS CLASSIFIED BY THE NEC AS CLASS I, DIVISION I.
2. ELECTRICAL SYSTEMS AND COMPONENTS INCLUDING MOTORS, LIGHTS, CABLE, CONDUITS, SWITCH BOXES AND CONTROL CIRCUITS SHALL BE PROTECTED FROM FLOODING IN ACCORDANCE WITH Env–Wq 705.01.
3. ELECTRICAL SYSTEMS AND COMPONENTS INCLUDING MOTORS, LIGHTS, CABLES, CONDUITS, SWITCH BOES AND CONTROL CIRCUITS IN ENCLOSED OR PARTIALLY ENCLOSED SPACES WHERE FLAMMABLE MIXTURES OCCASIONALLY MAY BE PRESENT, INCLUDING RAW SEWAGE WET WELLS, SHALL BE CERTIFIED BY THE MANUFACTURER AS:
   A. COMPLYING WITH THE NEC REQUIREMENTS ADOPTED BY REFERENCE IN THE STATE BUILDING CODE PURSUANT TO RSA 155–A:1, IV, FOR CLASS 1, DIVISION 1 LOCATIONS; OR
   B. BEING RATED FOR CLASS I DIVISION 2 REQUIREMENTS WHERE MECHANICAL VENTILATION IS PROVIDED IN ACCORDANCE WITH THE NFPA AS ADOPTED BY REFERENCE IN THE STATE FIRE CODE IN SAF–C 6000.
4. ALL ELECTRICAL EQUIPMENT AND WORK SHALL COMPLY WITH THE REQUIREMENTS OF NEC AS ADOPTED BY REFERENCE IN THE STATE BUILDING CODE PURSUANT TO RSA 155–A:1, IV, AND NFPA AS ADOPTED BY REFERENCE IN THE STATE FIRE CODE IN SAF–C 6000 IN EFFECT AT THE TIME OF INSTALLATION.

Env–Wq 705.08 VENTILATION REQUIREMENTS:

1. MECHANICAL VENTILATION FOR PERSONNEL AND EQUIPMENT SHALL BE PROVIDED FOR ALL OCCUPIED SPACES WITHIN SEWAGE PUMPING STATION IN ACCORDANCE WITH THE NFPA AS INCORPORATED BY REFERENCE IN THE STATE FIRE CODE IN SAF–C 6000.
2. MECHANICAL VENTILATION FOR BELOW–GRADE DRY WELLS SHALL BE PROVIDED, SO ARRANGED AS TO INDEPENDENTLY VENTILATE THE DRY WELL AND THE WET WELL.
3. THERE SHALL BE NO INTERCONNECTION BETWEEN THE WET WELL AND DRY WELL VENTILATION SYSTEMS.
4. SWITCHES FOR OPERATION OF VENTILATION EQUIPMENT SHALL BE MARKED AND LOCATED CONVENIENTLY.
5. DEHUMIDIFICATION SHALL BE PROVIDED IN BELOW–GROUND DRY WELLS.
6. VENTILATION OF WET WELLS SHALL PROVIDE AT LEAST 30 AIR CHANGES PER HOUR IF THE VENTILATION SYSTEM IS OPERATED INTERMITTENTLY, OR AT LEAST 12 AIR CHANGES PER HOUR IF THE VENTILATION SYSTEM IS OPERATED CONTINUOUSLY.
7. FANS INSTALLED WITHIN THE WET WELL STRUCTURE SHALL BE SUITABLE FOR A CLASS I, DIVISION I, GROUP C OR D ENVIRONMENT.
8. VENTILATION OF SUBMERSIBLE PUMP CHAMBERS OR SUCTION LIFE WET WELLS WHERE THERE IS NO OCCUPANCY FOR REGULAR MAINTENANCE PURPOSES MAY BE BY GRAVITY VENTILATION.
9. VENTILATION EXHAUST FROM WET WELLS SHALL NOT CAUSE AN ODOR NUISANCE TO THE PUBLIC OR SURROUNDING OCCUPIED BUILDINGS.
10. ACCESS DOORS TO WET WELLS SHALL HAVE WARNING SIGNS ON THE UNDERSIDE WHICH READ, "WARNING – HAZARDOUS AREA, ENTER ONLY WITH PROPER EQUIPMENT" OR "CONFINED SPACE, ENTRY BY PERMIT ONLY", AS APPROPRIATE.
11. THE ALARM SHALL INCLUDE A LOCAL AUDIBLE ENUNCIATOR AND LIGHT.

PUMP STATION OPERATIONAL INSTRUCTIONS

1. THE FOLLOWING MAINTENANCE SHALL BE DONE ON A MONTHLY BASIS (AT A MINIMUM):
2. PUMP STATION SHALL BE VISUALLY INSPECTED TO ENSURE THAT PUMPS AND APPURTENANCES ARE FUNCTIONING, PIPE SUPPORTS ARE SECURELY FIXED TO THE MANHOLE, STAINLESS STEEL LIFTING CHAINS ARE SAFELY STORED WITHIN THE PUMP STATION. IF ANY OF THE ABOVE PARTS ARE NOT FUNCTIONING AS DESIGNED THEY SHALL BE REPAIRED IMMEDIATELY.
3. PUMP STATION AND VALVE MANHOLE ACCESS HATCHES ARE WORKING PROPERLY. IF THE ACCESS HATCHES ARE NOT FUNCTIONING PER THE MANUFACTURER'S RECOMMENDATIONS, THEY SHALL BE REPAIRED IMMEDIATELY.
4. ELECTRIC CONTROL PANEL SHALL BE INSPECTED TO CONFIRM ELAPSED TIME METER, HIGH WATER ALARM, LOW LEVEL ALARM, LOSS OF ONE OR MORE PHASES OF POWER SUPPLY OR VOLTAGE DROP ALARM, LOSS OF ALARM TRANSMISSION LINE, AND STANDBY GENERATOR APPLICATION ALARM. IF ANY OF THE ALARMS ARE NOT FUNCTIONING AS DESIGNED, THEY SHALL BE REPAIRED IMMEDIATELY.
5. THE BACK–UP GENERATOR SHALL BE INSPECTED ON A MONTHLY BASIS (AT A MINIMUM, UNLESS OTHERWISE NOTED):
6. ALL RECOMMENDATIONS FROM THE MANUFACTURER AND OPERATOR'S MANUAL SHALL BE STRICTLY FOLLOWED.
7. THE GENERATOR SHALL BE PRIMED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
8. ALL FLUIDS SHALL BE CHECKED ON A DAILY BASIS AND ADDED ON AN AS NEEDED BASIS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
9. ALL PARTS SHALL BE CHECKED ON A DAILY BASIS AND SHALL BE FIXED IMMEDIATELY WHEN NOT FUNCTIONING PROPERLY.
10. PUMP STATION OPERATION & MAINTENANCE (O&M) MANUAL SHALL BE SUBMITTED TO NHDES WASTEWATER BUREAU WITHIN 60 DAYS FOLLOWING COMPLETION OF PUMP STATION CONSTRUCTION.

Env–Wq 705.09 ALARM SYSTEMS:

1. ALARM SYSTEMS SHALL BE PROVIDED FOR ALL SEWAGE PUMPING STATIONS.
2. THE ALARM SIGNAL SHALL BE ACTIVATED IN ONE OF THE FOLLOWING CASES:
   A. HIGH WATER IN THE WET WELL.
   B. LOW WATER IN THE WET WELL.
   C. LOSS OF ONE OR MORE PHASES OF POWER SUPPLY OR SEVERE VOLTAGE DROP.
   D. HIGH WATER LEVEL IN THE PUMP ROOM SUMP.
   E. LOSS OF ALARM TRANSMISSION CAPABILITY.
   F. STANDBY GENERATOR APPLICATION.
   G. PUMP MALFUNCTION, INCLUDING SHAFT SEAL FAILURE.
   H. LOSS OF AIR PRESSURE IN A BUBBLER TUBE SYSTEM.
   I. LEVEL SENSING MALFUNCTION OR FAILURE.
   J. LOSS OF VENTILATION IN AREAS CLASSIFIED AS CLASS 1 DIVISION 2 AND USING MECHANICAL VENTILATION PER THE NFPA AS INCORPORATED BY REFERENCE IN THE STATE FIRE CODE IN SAF–C 6000.
   K. INTRUSION.
   L. TEMPERATURE OUTSIDE NORMAL OPERATING RANGES.
3. THE HIGH WATER ALARM AND LOW WATER ALARM TRIGGERS SHALL BE SEPARATE DEVICES, INDEPENDENT OF THE PUMP WET WELL LEVEL CONTROL SYSTEM AND SET AT ELEVATIONS ABOVE AND BELOW THE LAG PUMP ON AND OFF ELEVATIONS.
4. SATISFACTORY OPERATION OF THE ALARM SYSTEM SHALL BE INDICATED ON A PANEL WITH A LIGHT WHICH LIGHTS UP UPON FAILURE OF THE ALARM SYSTEM.
5. THE POWER SOURCE FOR THE ALARM SYSTEM SHALL BE:
   A. AN INDEPENDENT BATTERY WITH A CONTINUOUS CHARGE OR;
   B. MAIN LINE POWER WITH A BACK–UP BATTERY SYSTEM, WHICH SHALL BE CONNECTED AUTOMATICALLY SHOULD MAIN POWER FAIL.
6. THE ALARM SIGNAL SHALL BE TRANSMITTED THROUGH A 24 HOUR PER DAY, 7 DAY PER WEEK NOTIFICATION SYSTEM TO THE APPROPRIATE UTILITY OPERATOR.
7. THE ALARM SHALL INCLUDE A LOCAL AUDIBLE ENUNCIATOR AND LIGHT.
8. PROVISION SHALL BE MADE TO PERMIT SILENCING OF THE AUDIBLE ENUNCIATOR MANUALLY, AFTER THE ALARM HAS BEEN SOUNDED, BUT THE LIGHT SHALL CONTINUE UNTIL THE ALARM CONDITION HAS BEEN RECTIFIED.
9. ALARM SIGNALS FOR PRIVATELY–OPERATED SEWER PUMPING STATIONS SHALL BE TRANSMITTED TO THE RESPONSIBLE MAINTENANCE PERSON DIRECTLY OR VIA AN ANSWERING SERVICE.
10. IF A CENTRAL SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SYSTEM EXISTS AT THE WWTP, THE PUMPING STATION ALARMS SHALL BE CONNECTED TO THE SCADA SYSTEM USING PROGRAMMABLE LOGIC CONTROLLER (PLC) TECHNOLOGY.

Env–Wq 705.10 INSTRUCTION AND EQUIPMENT:

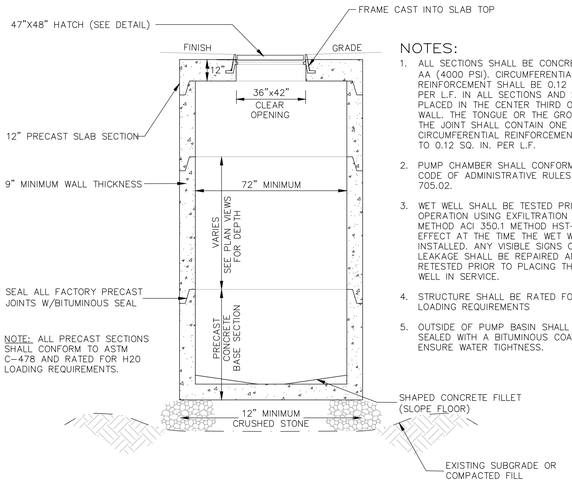
1. THE OWNER SHALL OBTAIN AN OPERATION AND MAINTENANCE MANUAL THAT PROVIDES INFORMATION AND GUIDANCE FOR DAY–TO–DAY OPERATION OF THE SEWAGE PUMPING STATION AND PROVIDE A COPY TO NHDES.

Env–Wq 705.11 EMERGENCY OPERATION:

1. THE ENGINEER SHALL RECOMMEND EMERGENCY OPERATION PROCEDURES TO PREVENT THE BACK–UP, OVERFLOW, OR OTHER UNPERMITTED DISCHARGE OF WASTEWATER FROM THE SEWAGE PUMPING STATION.
2. AN INDEPENDENT ENGINE–GENERATOR TYPE SOURCE OF ELECTRIC POWER SHALL BE PROVIDED FOR ELECTRICALLY–DRIVEN PUMPS. THIS SOURCE SHALL BE AUTOMATICALLY ACTIVATED BY FAILURE OF ANY PHASE OF POWER SUPPLY OR UPON ANY FLUCTUATION IN VOLTAGE, THE AMOUNT OR DURATION OF WHICH WOULD CAUSE DAMAGE TO THE MOTORS. INSTALLATIONS SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE AND THE STATE FIRE CODE IN SAF–C 6000.
3. THE EMERGENCY POWER GENERATOR SHALL BE PERMANENTLY SECURED IN PLACE, WITH PROVISIONS FOR REMOVAL TO FACILITATE GENERATOR REPAIR OR REPLACEMENT.
4. PROVISIONS SHALL BE MADE FOR AUTOMATIC AND MANUAL START–UP AND CUT–IN. THE CONTROLS SHALL BE SUCH THAT UPON AUTOMATIC START–UP UNDER EMERGENCY CONDITIONS, SHUT–DOWN SHALL BE ACCOMPLISHED AUTOMATICALLY ON RESTORATION OF UTILITY POWER WITH CONTROLLED SHUT–DOWN OF THE UNIT. MANUAL SHUT–DOWN SHALL ALSO BE PROVIDED. PROVISION SHALL BE MADE TO ALLOW PUMPS TO RUN DOWN BEFORE RE–ENERGIZING ON TRANSFER OF POWER.
5. THE EMERGENCY POWER GENERATOR SHALL BE SIZED TO SEQUENTIALLY START AND OPERATE ALL PUMPS NEEDED TO HANDLE DESIGN MAXIMUM WASTE FLOWS, PLUS LIGHTING, VENTILATION, CONTROLS, AND GRINDING OR SCREENING.
6. THE EMERGENCY POWER GENERATOR SHALL BE LOCATED ABOVE GRADE WITH VENTILATION OF EXHAUST GASES.
7. ALL EMERGENCY POWER GENERATION EQUIPMENT SHALL BE PROVIDED WITH INSTRUCTIONS FOR ROUTINE EXERCISING, LOAD TESTING AND MAINTENANCE.
8. THE GENERATOR ENGINE CONTROLS SHALL BE EQUIPPED WITH AN AUTOMATIC EXERCISER WHICH CAN BE SET ON ANY SELECTED SCHEDULE TO START THE GENERATOR, RUN THE GENERATOR UNDER NO LOAD OR LOAD CONDITIONS BY SELECTION AND SHUT THE GENERATOR OFF WITHOUT ACTUATING THE ALARM SYSTEM.
9. THE OWNER SHALL PROVIDE EACH EMERGENCY GENERATOR WITH ENOUGH FUEL FOR THE GENERATOR TO RUN UNDER FULL LOAD OR PEAK STATION FLOW FOR AT LEAST 46 HOURS OR UNDER NORMAL OPERATING CONDITIONS FOR AT LEAST 96 HOURS, WHICHEVER REQUIRES THE GREATER AMOUNT OF FUEL.
10. NO SEWAGE PUMPING STATION BY–PASSES ALLOWING THE DISCHARGE OF RAW SEWAGE EITHER OVERLAND OR TO ANY WATER COURSE SHALL BE PERMITTED.

GENERATOR STANDARD SPECIFICATIONS

1. GENERAC STANDBY GENERATOR, MODEL SD015T
   - 1.1. RATED MAXIMUM POWER CAPACITY: 15,000 WATTS
   - 1.2. RATED VOLTAGE: 240
   - 1.3. PHASE: 3
   - 1.4. TYPE OF ENGINE: PERKINS 2.2L
   - 1.5. OPERATING RPM: 1,800
   - 1.6. FUEL CONSUMPTION: HALF LOAD: 1.0 GAL/HR; FULL LOAD: 1.3 GAL/HR
2. INSTALLATIONS SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE NEC AND THE STATE FIRE CODE IN SAF–C 6000.
3. EMERGENCY GENERATOR SHALL HAVE ENOUGH FUEL TO OPERATE FOR EITHER 48–HRS UNDER FULL LOAD OR 96–HRS UNDER NORMAL OPERATING CONDITIONS, WHICHEVER REQUIRES MORE FUEL.
   - 3.1. HALF LOAD: 1.0 GAL/HR X 96–HRS = 96.0 GALLONS
   - 3.2. FULL LOAD: 1.3 GAL/HR X 48–HRS = 62.4 GALLONS
4. A 130–GALLON DIESEL FUEL TANK IS INCORPORATED INTO THE GENERATOR ASSEMBLY.
5. SEE PLANS FOR GENERATOR, VENT PIPE, AND ENCLOSURE LOCATIONS.
6. FINAL GENERATOR SELECTION SHALL CONFORM TO THESE MINIMUM STANDARDS. COORDINATE WITH OWNER, CONTRACTOR AND ELECTRICAL CONSULTANT.

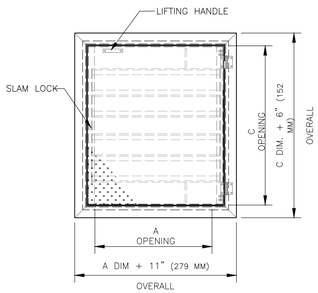


NOTES:

1. ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 PSI). CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER L.F. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.
2. PUMP CHAMBER SHALL CONFORM TO NH CODE OF ADMINISTRATIVE RULES Env–Wq 705.02.
3. WET WELL SHALL BE TESTED PRIOR TO OPERATION USING EXFILTRATION TESTING METHOD ACI 350.1 METHOD HST–NML IN EFFECT AT THE TIME THE WET WELL IS INSTALLED. ANY VISIBLE SIGNS OF LEAKAGE SHALL BE REPAIRED AND RETESTED PRIOR TO PLACING THE WET WELL IN SERVICE.
4. STRUCTURE SHALL BE RATED FOR H20 LOADING REQUIREMENTS
5. OUTSIDE OF PUMP BASIN SHALL BE SEALED WITH A BITUMINOUS COATING TO ENSURE WATER TIGHTNESS.

PUMP CHAMBER MANHOLE

SLAB TOP — NOT TO SCALE



SERIES H1R ACCESS DOOR

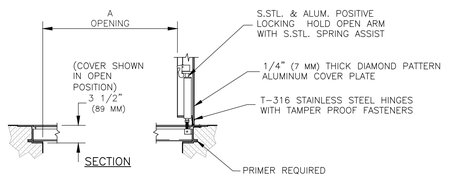
STANDARD FEATURES:

- AUTO–LOCK T–316 STAINLESS STEEL HOLD OPEN ARM WITH RELEASE HANDLE
- T–316 STAINLESS STEEL HINGES AND ATTACHING HARDWARE
- T–316 STAINLESS STEEL SLAM LOCK WITH REMOVABLE KEY
- STAINLESS STEEL COMPRESSION SPRING ASSIST
- SINGLE LEAF CONSTRUCTION
- H20 LOAD RATING (SEE NOTES)
- EXTRUDED ALUMINUM FRAME
- RECESSED LIFTING HANDLE
- LIFETIME GUARANTEE

NOTES:

1) SUITABLE FOR USE IN OFF STREET LOCATION WHERE NOT SUBJECTED TO HIGH DENSITY TRAFFIC.

2) PROVIDE A FULL BED OF CLASS "A" CONCRETE UNDER FRAME AND SUPPORT ANGLES.



PUMP CHAMBER HATCH

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
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Landscape Architects
Scientists
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FILE	DR		FB	–	
18252–02	CK		CADFILE	18252–02 COVER & DETAILS	D–15

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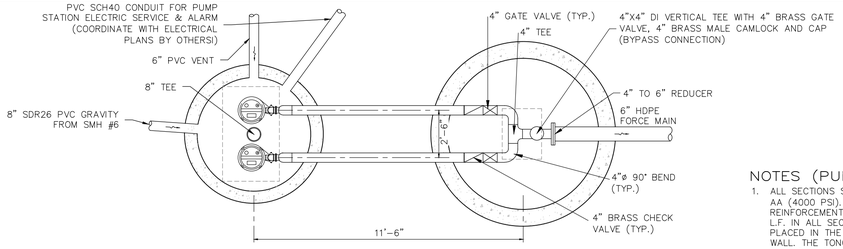
This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

Dec 23, 2025 - 2:24pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 Cover & Details.dwg



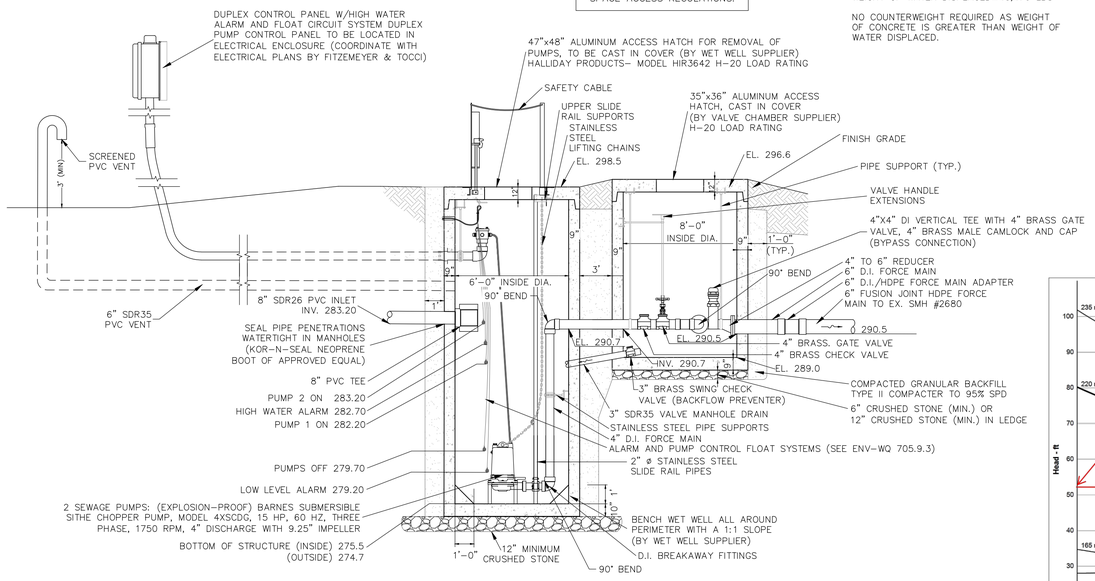
NOTES (PUMP STATION MANHOLE):

1. ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 PSI). CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER L.F. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.
2. PUMP CHAMBER SHALL CONFORM TO NH CODE OF ADMINISTRATIVE RULES Env-Wq 705.02.
3. BUOYANCY CALCULATIONS:
   WEIGHT OF CONCRETE=56,019 LBS
   WEIGHT OF WATER DISPLACED=40,476 LBS

   NO COUNTERWEIGHT REQUIRED AS WEIGHT OF CONCRETE IS GREATER THAN WEIGHT OF WATER DISPLACED.

CAUTION

THIS IS A CONFINED SPACE. DO NOT ENTER WITHOUT FOLLOWING OSHA CONFINED SPACE ACCESS REGULATIONS.



WASTEWATER FLOW INFORMATION

AVERAGE DAILY FLOW:	120,440 GPD (84 GPM)
PEAK DAILY FLOW:	650,376 GPD (452 GPM)

PUMP INFORMATION (AT PEAK DAILY FLOW RATE)

STATIC HEAD:	28'
FRICTION HEAD:	24'
TOTAL DYNAMIC HEAD:	52'

WET WELL STORAGE

VOLUME OF WET WELL:	211 GAL/VERTICAL FT
AVAIL. VERT STORAGE: (INV. TO PUMP OFF)	3.5 FT
VOLUME AVAILABLE:	740 GALLONS

PUMP STATION NOTES:

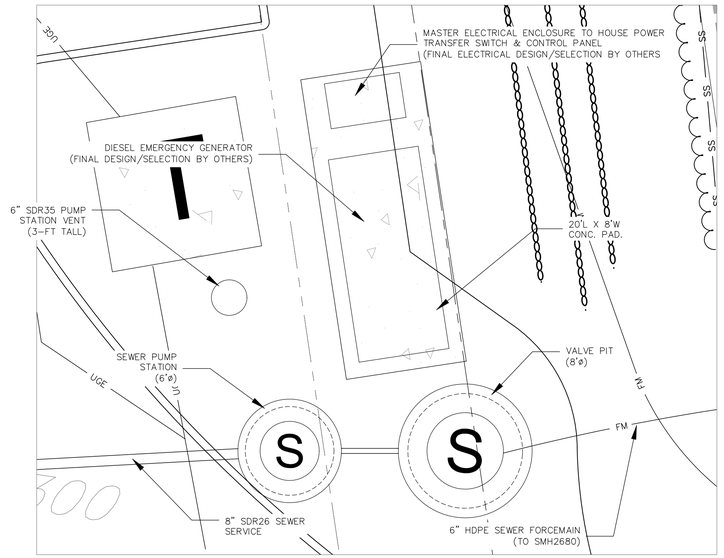
ALL PIPE AND FITTINGS TO BE PRODUCED BY A SINGLE MANUFACTURER AND TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS. BURIED PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM F 1668. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564. PRIMER SHALL CONFORM TO ASTM F 656.

NOTES:

1. STRUCTURES AND HATCHES TO BE H-20 LOADING. SUBMERSIBLE PUMPS AND ALL ELECTRICAL COMPONENTS SHALL BE SUITABLE FOR USE IN CLASS 1 DIVISION 1 HAZARDOUS LOCATIONS.
2. DUPLEX AUTOMATIC CONTROL PANEL AND ALARM PANEL TO BE PLACED IN ENCLOSURE. SYSTEM SHALL INCLUDE BOTH AUDIBLE AND VISUAL ALARMS. COORDINATE LOCATION WITH ARCHITECT.
3. USE 2 DUPLEX (EXPLOSION-PROOF) BARNES SUBMERSIBLE SITHE CHOPPER PUMP, MODEL 4XSCDG, 15 HP, 60 HZ, THREE PHASE, 1750 RPM, 4" DISCHARGE WITH 9.25" IMPELLER, OR APPROVED EQUAL.
4. OUTSIDE OF PUMP BASIN SHALL BE SEALED WITH A BITUMINOUS COATING TO ENSURE WATER TIGHTNESS.
5. ALL JOINTS SHALL BE SEALED WITH A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT.
6. CONTROL PANEL TO BE WIRED TO ALTERNATE OPERATION OF PUMPS. PUMP CONTROLS SHALL PROVIDE AUTOSTART OF LAG PUMP SHOULD LEAD PUMP FAIL TO START.
7. SEPARATE ELECTRICAL CIRCUITS SHALL BE PROVIDED FOR THE PUMPS AND ALARM SYSTEMS.
8. AN ADDITIONAL RECEPTACLE SHALL BE PROVIDED FOR CONNECTION OF GENERATOR IN THE EVENT OF POWER OUTAGE.
9. ALL PIPE AND FITTINGS TO BE PRODUCED BY A SINGLE MANUFACTURER AND TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS. BURIED PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM F 1668. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564. PRIMER SHALL CONFORM TO ASTM F 656.
10. PUMP STATIONS SHALL BE OUTFITTED WITH AUDIBLE ALARM, FLASHING WARNING LIGHT AND DISCONNECT TO BE MOUNTED ADJACENT TO EACH PUMP STATION.
11. PUMP STATION SHALL RECORD PUMP RUN TIMES AND HAVE CONTINUOUS FLOW RECORDING.
12. AN OPERATION AND MAINTENANCE MANUAL IS REQUIRED AND SHALL BE PROVIDED TO THE OWNER/OPERATOR PURSUANT TO ENV-WQ 705.10(a).
13. VALVE PIT SHALL BE EQUIPPED WITH A BYPASS CONNECTION TO ALLOW FOR CONNECTION OF A PUMP AROUND WET WELL FOR MAINTENANCE, REPAIRS AND CONSTRUCTION PURSUANT TO ENV-WQ 705.02(e)(2).

PUMP STATION / VALVE MANHOLE DETAIL

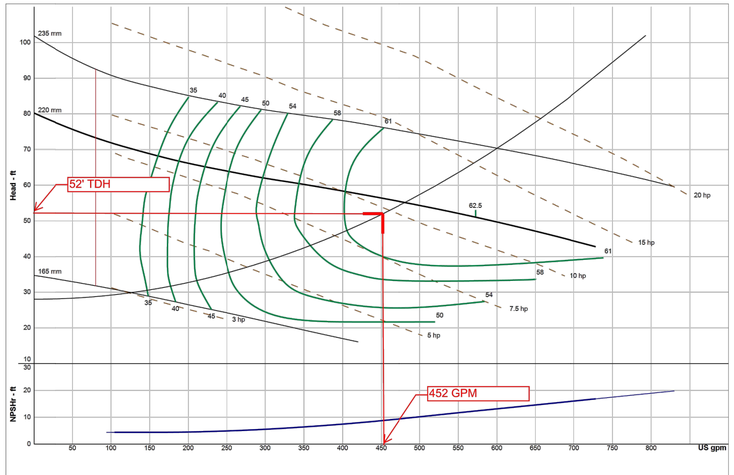
NOT TO SCALE



SEWER PUMP STATION PLAN VIEW

SCALE: 1"=5'

NOTES:
1. SYSTEM COMPONENTS (ELECTRICAL, CONTROLS, EMERGENCY GENERATOR, ETC.) SHOWN FOR COORDINATION PURPOSES ONLY.
2. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL PLANS (BY OTHERS) FOR CONSTRUCTION DETAILS.



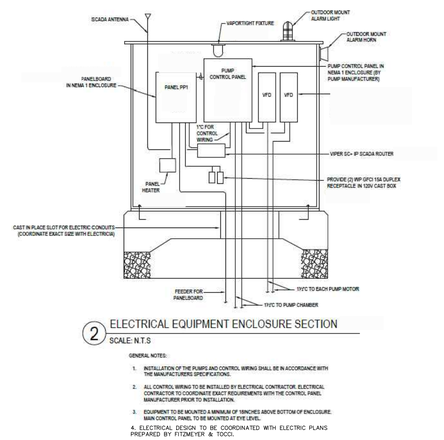
Company:	Crane Barnes.60	Size:	4ESCDG / 4XESCDG
Name:	Catalog: Barnes.60, Vers 4/23/20	Speed:	1750 rpm
Date: 06/05/2025	envie ESC 4" Chopper - 1800 rpm	Dia:	220 mm
	Design Point: 452 US gpm, 52 ft	Curve:	---
	Static Head: 28.05 ft		

BARNES

PUMP CURVE DATA

BARNES SUBMERSIBLE CHOPPER PUMP

NOT TO SCALE



2 ELECTRICAL EQUIPMENT ENCLOSURE SECTION

SCALE: N.T.S

GENERAL NOTES:
1. INSTALLATION OF THE PUMPS AND CONTROL WIRING SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
2. ALL CONTROL WIRING TO BE INSTALLED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO COORDINATE EXACT REQUIREMENTS WITH THE CONTROL PANEL MANUFACTURER PRIOR TO INSTALLATION.
3. EQUIPMENT TO BE MOUNTED A MINIMUM OF 18INCHES ABOVE BOTTOM OF ENCLOSURE. MAIN CONTROL PANEL TO BE MOUNTED AT EYE LEVEL.
4. ELECTRICAL DESIGN TO BE COORDINATED WITH ELECTRIC PLANS PREPARED BY FITZMEYER & TOCCI.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

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2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 10/22/25

TFM — Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists
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Dec 23, 2025 - 2:25pm
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NEW HAMPSHIRE
STATE ENDANGERED

BLANDING'S TURTLE

Report Sightings: Contact Wildlife Biologist Josh Megyesy at (603) 271 – 1125 or the Wildlife Division at (603) 271 – 2461. Observation reports can be sent to RAARP@wildlife.nh.gov. Photographs and exact locations are strongly encouraged.



Specific Information:

- Adults are 7 – 9 inches long.
- Shell is highly domed with light speckles.
- Distinct yellow throat and chin.
- Uses variety of wetlands and moves extensively over land.
- Turtles are frequently concealed by leaves and undergrowth and may not be easily visible.
- Turtles are most active from April 15 – October 15.
- During nesting season (May 15 – July 15) turtles are attracted to disturbed ground.





This species is protected under RSA 212-A and Fis 1000. Thank you for reporting any observations.

PLEASE DO NOT DISTURB OR HANDLE WILDLIFE

New England Cottontail *(Sylvilagus transitionalis)*

(New Hampshire State-Endangered)



- Adults are 15-17" in length
- Brown and gray coat that does NOT change color with the seasons.
- Black spot between the years is sometimes visible but not always present.
- Can be mistaken for non-native Eastern cottontails.

Please report sightings to NH Fish and Game at RAARP@wildlife.nh.gov or at 603-271-2461. Photo documentation, location, and date/time of observation is helpful.

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REPORT OBSERVATIONS
Smooth Green Snake
(Species of Special Concern)

Report sightings to NHFG Wildlife Division at NHFGReview@wildlife.nh.gov

Reference NHB# and project name if applicable.
Please report promptly, noting specific location and date.
Photographs strongly encouraged.



- Thin, bright green snake
- 10-20 inches long
- White or pale yellow underside
- Found in open or lightly forested habitats such as grassy fields, meadows, blueberry barrens, and forest openings
- Dead individuals turn blue





Northern Black Racer

(New Hampshire state threatened species)



- Solid black with a white throat and chin
- Slender with glossy scales, 3-6 ft. long
- Hatchlings are very small and patterned



Immediately report sightings to NH Fish and Game
Melissa Winters (603-479-1129) or
Brendan Clifford (603-944-0885)
Please report promptly, noting specific location and date
Photographs strongly encouraged

EASTERN HOGNOSE SNAKE

(New Hampshire state endangered species)

*Egg laying occurs **June 1 - July 15th**,*
*Young emerge in **August - September**.*



Identifying traits

- Black, gray or patterned appearance
- Upturned snout
- Adults are 2-3 ft. long
- May spread neck out or hiss
- May play dead if they feel threatened.
- Rarely bite – display is a defense strategy



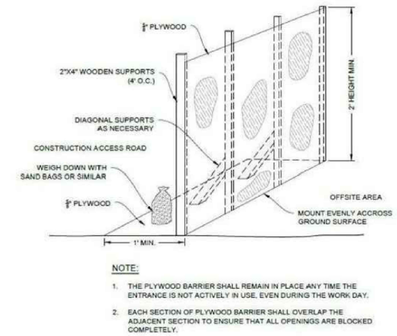
Habitat Use

- Can be found in a variety of habitats throughout the season



Immediately report sightings to NH Fish & Game
Melissa Winters (603-479-1129) or
Brendan Clifford (603-944-0885)
Please report promptly, noting specific location and date.
Photographs strongly encouraged.

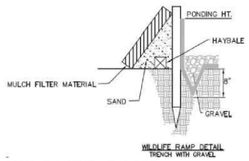
State Laws Pertaining to this Species
RSA 212-A:7, FIS 804.05, Fis 1401.03 (a)



NOTE:
1. THE PLYWOOD BARRIER SHALL REMAIN IN PLACE ANY TIME THE ENTRANCE IS NOT ACTIVELY IN USE, EVEN DURING THE WORK DAY.
2. EACH SECTION OF PLYWOOD BARRIER SHALL OVERLAP THE ADJACENT SECTION TO ENSURE THAT ALL OPENINGS ARE BLOCKED COMPLETELY.

WILDLIFE EXCLUSIONARY BARRIER GATE

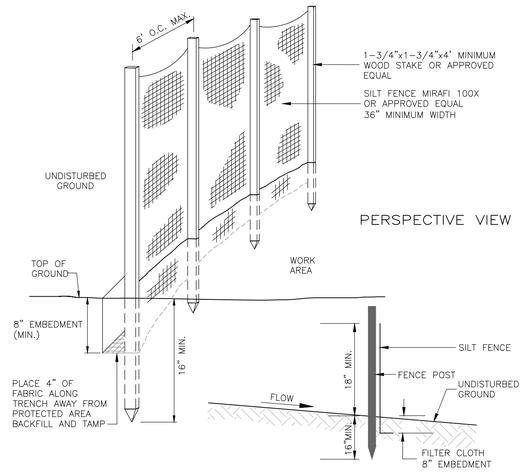
NOT TO SCALE



WILDLIFE RAMP DETAIL
TRENCH WITH GRAVEL

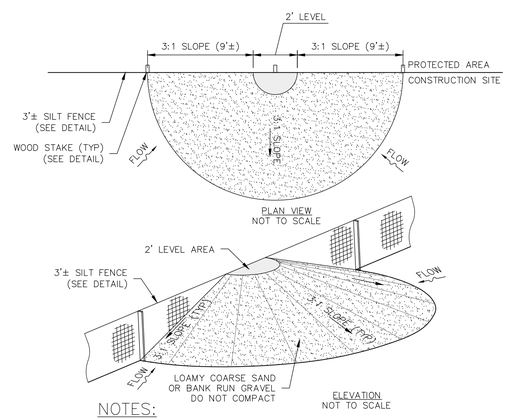
WILDLIFE RAMP

NOT TO SCALE



SILT FENCE

NOT TO SCALE



NOTES:

1. RAMP TO BE ON SIDE OF FENCE WHERE CONSTRUCTION ACTIVITIES OCCUR.
2. REFER TO SILT FENCE DETAIL FOR FENCE INSTALLATION.
3. SPACE AT 75'.

SILTATION FENCE WILDLIFE RAMP

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
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		CK		CADFILE	18252-02 COVER & DETAILS	

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LANDSCAPE NOTES

SITE AND SOIL PREPARATION

1. WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR LEDGE, NOTIFY LANDSCAPE ARCHITECT/ENGINEER BEFORE PLANTING.

2. ALL DISTURBED AREAS & PLANTING AREAS, INCLUDING AREAS TO BE SODDED, SHALL RECEIVE THE FOLLOWING SOIL PREPARATION PRIOR TO PLANTING: A MINIMUM OF 6 INCHES OF LIGHTLY COMPACTED TOPSOIL SHALL BE INSTALLED OVER THE SUBSOIL IF TOPSOIL HAS BEEN REMOVED OR IS NOT PRESENT.

3. LOAM SHALL CONSIST OF LOOSE FRIABLE TOPSOIL WITH NO ADMIXTURE OF REFUSE OR MATERIAL TOXIC TO PLANT GROWTH. LOAM SHALL BE FREE FROM STONES, LUMPS, STUMPS, OR SIMILAR OBJECTS LARGER THAN TWO INCHES (2") IN GREATEST DIAMETER, SUBSOIL, ROOTS, AND WEEDS. THE MINIMUM AND MAXIMUM PH VALUE SHALL BE FROM 5.5 TO 7.0. LOAM SHALL CONTAIN A MINIMUM OF TWO PERCENT (2%) AND A MAXIMUM OF FIVE PERCENT (5%) ORGANIC MATTER AS DETERMINED BY LOSS BY IGNITION. SOIL TEXTURE SHALL BE SANDY CLAY LOAM OR SANDY LOAM WITH CLAY CONTENT BETWEEN 15 AND 25%, AND A COMBINED CLAY/SILT CONTENT OF NO MORE THAN 55%. NOT MORE THAN SIXTY-FIVE PERCENT (65%) SHALL PASS A NO. 200 SIEVE AS DETERMINED BY THE WASH TEST IN ACCORDANCE WITH ASTM D1140. IN NO INSTANCE SHALL MORE THAN 20% OF THAT MATERIAL PASSING THE #4 SIEVE CONSIST OF CLAY SIZE PARTICLES.

4. NATURAL TOPSOIL NOT CONFORMING TO THE PARAGRAPH ABOVE OR CONTAINING EXCESSIVE AMOUNTS OF CLAY OR SAND SHALL BE TREATED BY THE CONTRACTOR TO MEET THOSE REQUIREMENTS.

5. SUBMIT TEST RESULTS OBTAINED FROM SOURCE TO ENGINEER/LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL, PRIOR TO SPREADING OPERATIONS.

6. APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT TO USE THE TOPSOIL WILL DEPEND UPON THE RESULTS OF THE SOIL TESTS.

7. THE BURDEN OF PROOF OF SOIL AMENDMENT INSTALLATION RESTS WITH THE CONTRACTOR. SOIL TESTS MAY BE REQUIRED AT THE CONTRACTOR'S EXPENSE IN ORDER TO CONFIRM AMENDMENT INSTALLATION.

SEEDING

1. ROUGH GRADING SHALL BE COMPLETED PRIOR TO THE START OF PLANTING IN ANY GIVEN AREA OF THE PROJECT SITE.

2. SEEDING SHALL BE DONE BETWEEN APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 15, EXCEPT FOR RESEEDING OF BARE SPOTS AND MAINTENANCE. ALL DISTURBED AREAS NOT COVERED BY BUILDINGS, PAVING OR AREAS THAT HAVE NOT BEEN OTHERWISE DEVELOPED SHALL BE SEEDED OR SODDED. SLOPES GREATER THAN 3:1 SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET. AFTER OCTOBER 15 DISTURBED SOILS SHALL BE PROTECTED IN ACCORDANCE WITH THE WINTER CONSTRUCTION NOTES.

ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

PARK SEED MIX (NHDOT TYPE 44) MIN. 135 LBS/ACRE:
- 33% CREEPING RED FESCUE (MIN. 45 LBS/ACRE)
- 42% PERENNIAL RYEGRASS (MIN. 55 LBS/ACRE)
- 21% KENTUCKY BLUEGRASS (MIN. 30 LBS/ACRE)
- 4% REDTOP (MIN. 5 LBS/ACRE)

MODIFIED NEW ENGLAND CONSERVATION WILDLIFE MIX (MIN. 25 LBS/ACRE)*
CONTAINS: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), BLUE VERVAIN (VERBENA HASTATA), BLACK EYED SUSAN (RUDBECKIA HIRTA), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).
*SEED MIX SHALL NOT CONTAIN INDIAN GRASS (SORGHASTRUM NUTANS), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), OR COMMON SNEEZEWEED (HELENIUM AUTUNALE).

TEMPORARY LAWN MIX: (MIN. 47 LBS/ACRE)
100% ANNUAL RYE

*SEED MIX SHALL NOT CONTAIN INDIAN GRASS (SORGHASTRUM NUTANS), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), OR COMMON SNEEZEWEED (HELENIUM AUTUNALE).

PLANTING

1. EXCAVATE PITS, PLANTERS, BEDS AND TRENCHES WITH VERTICAL SIDES AND WITH BOTTOM OF EXCAVATION SLIGHTLY RAISED AT CENTER TO PROVIDE PROPER DRAINAGE. LOOSEN HARD SUBSOIL IN BOTTOM OF EXCAVATION.

2. ANY LEDGE OR RUBBLE MATERIAL SHALL BE FRACTURED TO A DEPTH OF 3 FEET AND EXCAVATED TO A DEPTH OF 30 INCHES FOR TREE POCKETS AND 18 INCHES FOR SHRUB BEDS. THIS PROCEDURE SHALL BE HANDLED BY THE SITE CONTRACTOR. SITE TOPSOIL SHALL BE DEPOSITED IN ALL EXCAVATED POCKETS.

3. DISPOSE OF SUBSOIL REMOVED FROM PLANTING EXCAVATIONS. DO NOT MIX WITH PLANTING SOIL OR USE AS BACKFILL.

4. FILL EXCAVATIONS FOR TREES AND SHRUBS WITH WATER AND ALLOW TO PERCOLATE OUT BEFORE PLANTING.

5. DISH TOP OF BACKFILL TO ALLOW FOR MULCH – PLANT SAUCERS SHALL BE AS SHOWN ON DETAIL SHEETS; 6' DIAMETER FOR ALL DECIDUOUS TREES, AND FOR EVERGREEN TREES A RADIUS 2' BEYOND THE OUTER MOST BRANCHES.

6. MULCH TREES, SHRUBS, PLANTERS AND BEDS. PROVIDE NOT LESS THAN 3" THICKNESS OF BARK MULCH, 3/8"–2" OF WIDTH, AND WORK INTO TOP OF BACKFILL. FINISH LEVEL WITH ADJACENT FINISH GRADES AS DIRECTED IN THE FIELD.

7. TREEGATOR WATERING SYSTEM OR APPROVED EQUAL SHALL BE INSTALLED FOR ALL DECIDUOUS TREES AT TIME OF PLANTING AND REMOVED BEFORE FROST. WATERING RATE TO BE APPLIED PER MANUFACTURER'S SPECIFICATIONS.

8. ALL PLANT MATERIALS SHALL HAVE DEAD OR DAMAGED BRANCHES REMOVED AT TIME OF PLANTING. ALL TAGS AND RIBBONS SHALL BE REMOVED AT THIS TIME.

9. THE CONTRACTOR SHALL REQUEST A FINAL OBSERVATION BY THE OWNER'S REPRESENTATIVE UPON COMPLETION OF INSTALLATION.

10. AVOID OR MINIMIZE THE USE OF FERTILIZERS IN UPLAND AREAS OR TRANSITION ZONES. IF FERTILIZERS ARE NECESSARY, USE ORGANIC VERSUS SYNTHETIC FERTILIZERS OPTIONS. SYNTHETIC OPTIONS SHOULD BE AVOIDED; HOWEVER, IF CHOSEN, THEY SHOULD BE CONTROLLED-RELEASE/SLOW-RELEASE AND AT LOW STRENGTHS.

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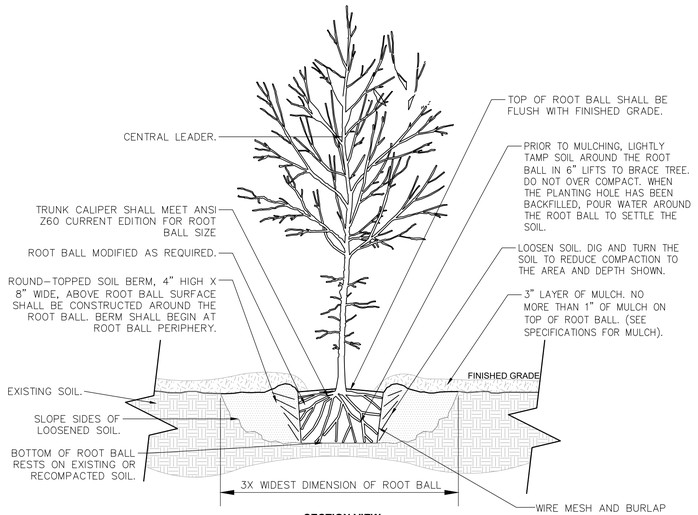
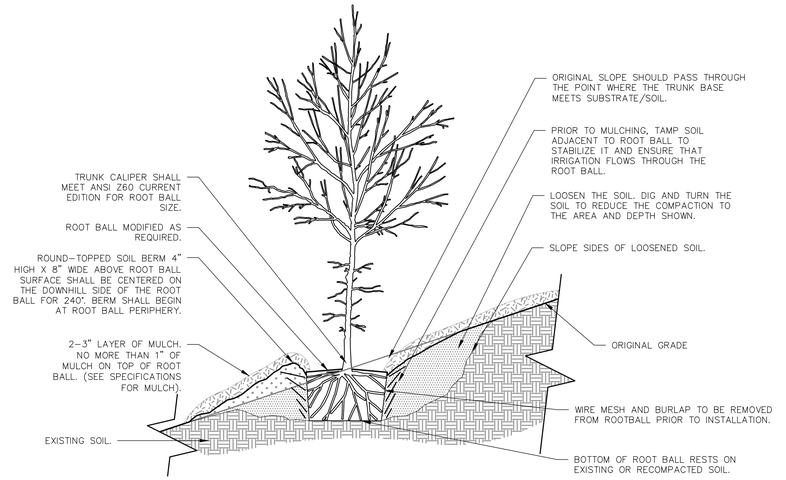


SECTION VIEW

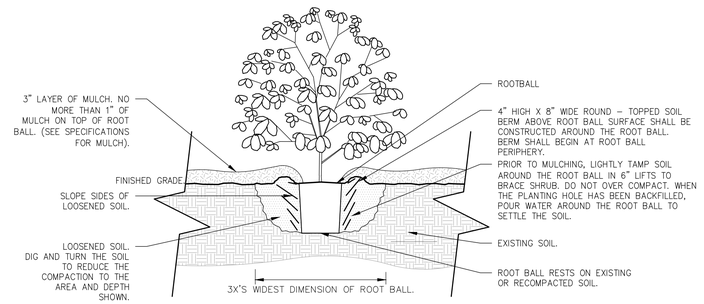
TREE WITH MULCH BERM

NOT TO SCALE



TREE ON SLOPE 5% (20:1) TO 50% (2:1)

NOT TO SCALE



SECTION VIEW

SHRUB PLANTING

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
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2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Land Surveyors
Landscape Architects
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STORMWATER MANAGEMENT INSPECTION & MAINTENANCE MANUAL

COPIES OF THE I&M REPORTS SHALL BE FILED WITH THE TOWN ON AN ANNUAL BASIS.

Inspection & Maintenance Manual

PurposeEnergy-Londonderry, LLC
Southern New Hampshire Green Energy Campus
North Wentworth Avenue, Londonderry, NH
September 12, 2025
Revised December 18, 2025

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- Pretreatment Practices
  - Sediment Forebays
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  - Culvert
  - Catch Basin
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- System Components
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Inspection & Maintenance Log

Deicing Data Form

Inspection Checklist and Inspection & Maintenance Plan

Description of Project

The Southern New Hampshire Green Energy Campus will reduce the waste management burden on New Hampshire by tackling the food waste problem. It will feature two connected resource recovery facilities.

- The first, RecycleWorks, will receive food waste that normally goes to landfill, including food that has passed its sell by date or is out of specification but is wrapped in glass, plastic, or metal packaging. RecycleWorks will remove the organic waste from that packaging and send it to the second facility on the campus,
- PurposeEnergy – Londonderry. PurposeEnergy will pump the food waste into tanks that digest it in a process similar to a human stomach. The tanks will also receive dairy waste directly by pipe from a local business, Stonyfield Yogurt. The digester tanks will produce renewable biogas that will be cleaned to pipeline quality and injected into the local natural gas network.

The Green Energy Campus is not a landfill; all of the material that comes to the campus will leave it either as recyclable material, renewable biogas, clean water, or biosolids (the residuals from digestion which will be sent to a compost facility for use as fertilizer). The net impact of the Southern New Hampshire Green Energy Campus is to

- divert 90% of solid waste away from New Hampshire landfills;
- reduce the escape of environmentally damaging methane gas resulting from decomposition of organic matter;
- support local business in the cost-effective and environmentally beneficial management of food manufacturing waste.

The site consists of the following major elements:

- 36,600 sf Depackaging Facility (RecycleWorks)
- A 14,100 sf Process Building, with future expansion of 9,800 sf (PurposeEnergy)
- tribrid bio-reactors
- 3 flow equalization tanks
- 26' x 32' screening room building
- A biogas upgrading yard
- An interconnection facility yard
- Truck scales
- Parking and trucking interconnection

An open and closed drainage system is proposed to attenuate, convey, and treat runoff from the proposed development. A series of catchbasins, sediment forebays, two (2) filtration basins and one (1) detention basin, strategically located though the site will provide pretreatment/treatment and manage runoff.

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
North Wentworth Ave.
Londonderry, NH 03053

Responsible Party

Operator: PurposeEnergy-Londonderry, LLC

Address: PurposeEnergy-Londonderry, LLC

Contact: Sean O'Neill, oneail@purposeenergy.com, (917).776.6155

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
North Wentworth Ave.
Londonderry, NH 03053

Stormwater Practices – Schedule of Maintenance

The following practices shall be inspected twice annually, once following snowmelt (spring) and once following leaf-drop (fall):

- Sediment Forebays
- Filtration/Detention Basins
- Catch Basin

The following practices shall be inspected annually following snowmelt (spring):

- Culvert
- Catch Basin
- Headwalls
- Riprap Aprons
- Swales

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
North Wentworth Ave.
Londonderry, NH 03053

Stormwater Practices – Maintenance Guidelines

Treatment Practices
(Inspected twice a year)

Filtration/Detention Basin
Maintenance Requirements:
- To be inspected twice annually, once following snowmelt (spring) and once following leaf-drop (fall);
- Removal of debris from inlet and outlet structures;
- Removal of accumulated sediment;
- Periodic mowing of embankments;
- Removal of woody vegetation from embankments;
- Inspection and repair of embankments; and
- If an infiltration system does not drain within 72-hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore infiltration function, including but not limiting to removal of accumulated sediments or reconstruction of the infiltration trench.

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
North Wentworth Ave.
Londonderry, NH 03053

Pretreatment Practices
(Inspected twice a year)

Sediment Forebay
Maintenance Requirements:
- To be inspected at least twice annually, once following snowmelt and once following leaf-drop and cleaned as indicated by inspection;
- Conduct periodic mowing of embankments (two times per year) to control growth of woody vegetation on embankments;
- Remove debris from outlet structure;
- Remove and dispose of accumulated sediment; and
- Install and maintain a staff gage or other measuring device to indicate depth of sediment accumulation and level at which clean-out is required. It shall be cleaned out when sediment fills half the sump depth (minimum sump depth is 2 feet when clear).

Conveyance Practices
(Inspections As Noted)

Culvert
Maintenance Requirements:
- To be inspected at least twice annually, once following snow-melt (spring) and once following leaf drop (fall), and cleaned as indicated by inspection.
- Inspect culvert inlet, outlet, and structure.
- Remove accumulated sediments greater than 2 inches in depth and debris at the inlet, at the outlet, and within the conduit.
- Repair any erosion damage at the culvert's inlet and outlet.

Catch Basin
Maintenance Requirements:
- To be inspection a least twice annually, once following snow-melt and once following leaf-drop and cleaned as indicated by inspection;
- Sediment should be removed annually and when it approaches half the sump depth; and
- If floating hydrocarbons are observed during an inspection, the material should be removed immediately by skimming, absorbent materials, or other method and disposed of in conformance with applicable state and federal regulations.

Headwalls
Maintenance Requirements:
- Inspect at least once annually for accumulation of sediment and debris and for signs of erosion along embankments;
- Remove debris whenever observed during inspection; and
- Remove sediment when accumulation exceeds 25% of channel depth.

Riprap Apron/Plunge Pool
Maintenance Requirements:
- Inspect at least once annually for damage and deterioration; and
- Repair damages immediately.

Riprap Swales
Maintenance Requirements:
- Inspect at least once annually for damage and deterioration
- Remove lodged debris

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
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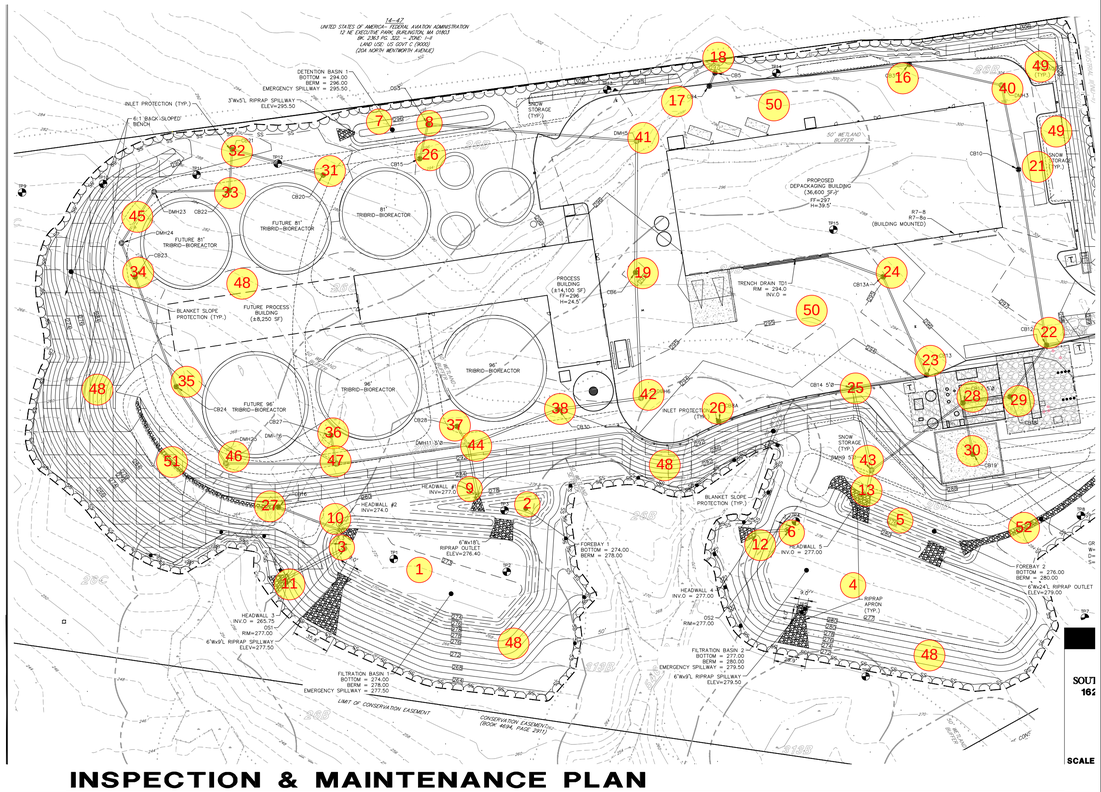
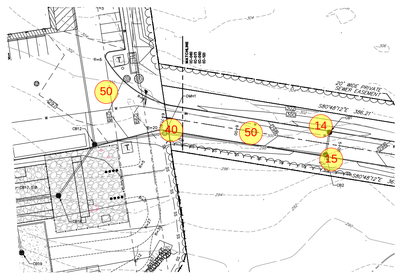


INSPECTION & MAINTENANCE PLAN

NOT TO SCALE



STORMWATER MANAGEMENT INSPECTION & MAINTENANCE MANUAL

COPIES OF THE I&M REPORTS SHALL BE FILED WITH THE TOWN ON AN ANNUAL BASIS.

- Repair damages immediately.

System Components

Access Driveway (North Wentworth Ave ROW):
Maintenance Requirements (only for section constructed by this site plan):

- Sediments and debris should be removed and disposed of from impervious areas by power-broom sweeping.
- Sweep at least two (2) times per year and on a more frequent basis depending on sanding operations.
- All resulting sweepings shall be collected and properly disposed of off-site in accordance with NHDES and other applicable requirements.

Driveway, Sidewalk, and Parking Areas:
Maintenance Requirements:

- Sediments and debris should be removed and disposed of from impervious areas by power-broom sweeping.
- Sweep at least two (2) times per year and on a more frequent basis depending on sanding operations.
- All resulting sweepings shall be collected and properly disposed of off-site in accordance with NHDES and other applicable requirements.

Lawns and Landscaping Areas:
Maintenance Requirements:

- Inspect, maintain, and repair as necessary development area lawns and landscaped areas to ensure a stabilized surface.
- Maintain lawn areas with healthy turf. Take steps to necessary to restore distressed turf to good health.
- Ensure that landscape mulch materials are refreshed as necessary and does not wash onto sidewalks or other adjacent surfaces.

Control of Invasive Plans

During maintenance activities, check for the presence of invasive plants. If invasive plants are found, they shall be controlled and removed in a safe manner as described on the following pages.

Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as "hitchhikers" among shipments of other plants, seeds, packing materials or fresh produce. Invasive plants can cause harm by:

- Becoming weedy and overgrown;
- Killing established shade trees;
- Obstructing pipes and drainage systems
- Forming dense beds in water
- Lowering water levels in lakes, streams, and wetlands
- Destroying natural communities
- Promoting erosion on stream banks and hillsides
- Resisting control except by hazardous chemicals.

Inspection & Maintenance Log

Date	Inspector	BMPs checked	Maintenance Required

Deicing Plan

The project Chloride Management Plan is described in the following pages. Also attached is a Deicing log to be used to document maintenance procedures, and the current NHDES Fact Sheet.

Beaver Brook has been declared an impacted watershed in need of corrective action due to Chloride loading, most notably resulting from winter maintenance activities. Londonderry has a Salt Reduction Plan (SRP) that provides a procedural framework for the Town of Londonderry to continuously strive to improve winter maintenance operations while effectively and efficiently using road salt during the snow and ice removal operations. Londonderry will provide winter maintenance to town roadways, parking lots, and sidewalks in accordance with Londonderry's Winter Maintenance Snow and Ice Control Policy while striving to minimize adverse impacts to the environment by:

- Adhering to the procedures contained within the SRP;
- Committing to ongoing winter maintenance staff training and education;
- Reporting fiscal year salt usage to New Hampshire Department of Environmental Services (NHDES);
- Re-evaluating the effectiveness of the SRP as needed to incorporate new technologies or changes in procedures.

Under the existing SRP, the Town has identified four strategies to help meet the Total Maximum Demand Load allocation within the Little Cohas Brook / Cohas Brook Watershed. The current load is estimated at 854.47 tons/year imported to the watershed. The town's reduction goals are 6% for year one, 12% for year two, and 18% for year three to be achieved from the following strategies:

- Equipment upgrade pilot project;
- Improved calibration;
- Private sector outreach;
- Improved weather system monitoring.

NHDES will monitor the progress made by each community impacting the Little Cohas Brook / Cohas Brook watershed and may require modifications to each plan. In recognition of the Little Cohas Brook / Cohas Brook Watershed chloride reduction plan for Londonderry, and that approximately 40% of the chloride impact is a result of winter operations on private roadways and parking lots, the PurposeEnergy-Londonderry, LLC will be guided by the following actions:

- Private Maintenance Contracting Equipment Upgrades and Training
  All snow removal contactors shall be NH Certified Green SnowPro contractors who have been trained and are knowledgeable of Best Management Practices (BMP) for snow removal with reduced salt application. These practices are published and are updated though the UNH – Technology Transfer (T2) program. All private contractors employed by PurposeEnergy-Londonderry, LLC roadway maintenance will use only pre-approved methods for spreading abrasives on private roadways and parking lots. When salt is applied, it will be applied only in accordance with best management practices and will include pre-treatment and ground speed-controlled spreaders.
- Improved Weather System Monitoring
  PurposeEnergy-Londonderry, LLC will coordinate weather information gathered by both the town and NHDOT for use by maintenance contractors. In doing so, contractors will be able to make more informed decisions as to when and to what extent chloride is applied to roadways, sidewalks, and parking lots;
- Increased Mechanical/Removal Capabilities
  PurposeEnergy-Londonderry, LLC will endeavor to use mechanical removal means on a more frequent basis using more manpower and equipment than traditionally used to shorten plowing intervals and reduce the need for salting to break up hard packed snow. Shortened maintenance routes with shorter service intervals will be used to stay ahead of snowfall, thus reducing the need to sand and salt after snow and ice packing has already occurred.
- Public Awareness Campaign
  PurposeEnergy-Londonderry, LLC will inform all future developers, grantees, and tenants of the need to reduce salt application on roadways, parking lots, and sidewalks.

The manual, as with the Town's Salt Reduction Plan, is intended to be a dynamic document, modified as required based on knowledge gained from past practices and technological advancement to reflect chloride best management practices.

Deicing Data Form

Note: The operator shall report annual salt usage within the municipal boundaries to NHDES's New Hampshire Salt Management System Database at: https://www.nhmed.des.nh.gov/salt-resources/winter-maintenance/

Location: Southern New Hampshire Green Energy Campus North Wentworth Ave. Londonderry, NH 03053				
Date:				
Air Temperature	**Pavement Temperature**	**Relative Humidity**	**Dew Point**	**Sky**
Reason for applying:				
Area of Application:				
Chemical:				
Application Time:				
Application Amount:				
Observation (first day):				
Observation (after event):				
Observation (before next application):				

Name:

*__New Hampshire Certified Green SnowPro__ Applicator shall be employed for winter snow and ice management activities

Inspection Checklist

Date:	**Project Name: Southern New Hampshire Green Energy Campus**
Inspector's Name/Title:	
Inspector's Contact Information:	
☐ 1st Yearly Inspection	BMP's to be inspected: All
☐ 2nd Yearly Inspection	BMP's to be inspected: Treatment and Pretreatment Practices

BMP* **Refer to following Inspection & Maintenance Plan for BMP location**		Maintenance Required	Corrective Action Needed and Notes
1	Filtration Basin 1	☐ Yes ☐ No	
2	Forebay 1	☐ Yes ☐ No	
3	Outlet Structure 1	☐ Yes ☐ No	
4	Filtration Basin 2	☐ Yes ☐ No	
5	Forebay 2	☐ Yes ☐ No	
6	Outlet Structure 2	☐ Yes ☐ No	
7	Detention Basin 1	☐ Yes ☐ No	
8	Outlet Structure 3	☐ Yes ☐ No	
9	Headwall 1	☐ Yes ☐ No	
10	Headwall 2	☐ Yes ☐ No	
11	Headwall 3	☐ Yes ☐ No	
12	Headwall 4	☐ Yes ☐ No	

13	Headwall 5	☐ Yes ☐ No	
14	CB1	☐ Yes ☐ No	
15	CB2	☐ Yes ☐ No	
16	CB3	☐ Yes ☐ No	
17	CB4	☐ Yes ☐ No	
18	CB5	☐ Yes ☐ No	
19	CB6	☐ Yes ☐ No	
20	CB8A	☐ Yes ☐ No	
21	CB10	☐ Yes ☐ No	
22	CB12	☐ Yes ☐ No	
23	CB13	☐ Yes ☐ No	
24	CB13A	☐ Yes ☐ No	
25	CB14	☐ Yes ☐ No	
26	CB15	☐ Yes ☐ No	
27	CB16	☐ Yes ☐ No	
28	CB17	☐ Yes ☐ No	
29	CB18	☐ Yes ☐ No	
30	CB19	☐ Yes ☐ No	
31	CB20	☐ Yes ☐ No	
32	CB21	☐ Yes ☐ No	
33	CB22	☐ Yes ☐ No	
34	CB23	☐ Yes ☐ No	
35	CB24	☐ Yes ☐ No	

36	CB27	☐ Yes ☐ No	
37	CB28	☐ Yes ☐ No	
38	CB30	☐ Yes ☐ No	
39	DMH1	☐ Yes ☐ No	
40	DMH3A	☐ Yes ☐ No	
41	DMH5	☐ Yes ☐ No	
42	DMH6	☐ Yes ☐ No	
43	DMH9	☐ Yes ☐ No	
44	DMH11	☐ Yes ☐ No	
45	DMH24	☐ Yes ☐ No	
46	DMH25	☐ Yes ☐ No	
47	DMH26	☐ Yes ☐ No	
48	Development Area Lawns (Typ.)	☐ Yes ☐ No	
49	Development Area Landscaping (Typ.)	☐ Yes ☐ No	
50	Parking Lot & Driveway Sweeping (Typ.)	☐ Yes ☐ No	
51	Swale R1		
52	Swale R2		
	Other	☐ Yes ☐ No	
52			

*Best Management Practices
**Photographs of BMPs shall be included as part of the required Inspections
***Copies of Inspection & Maintenance Records shall be provided to the Town of Londonderry on an annual basis and the NHDES AoT Bureau upon request
**** SWPPP reports shall be provided via e-mail to the Town of Londonderry at the same time they are provide to the Contractor and Owner

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
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Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	18252-02	DR		FB	–	D-20
		CK		CADFILE	18252-02 COVER & DETAILS	

Dec 23, 2025 - 2:25pm
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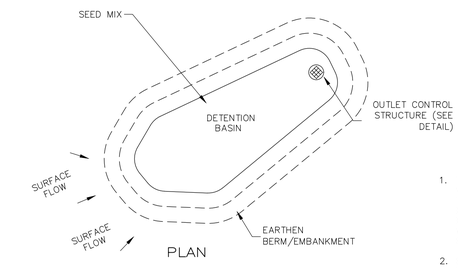

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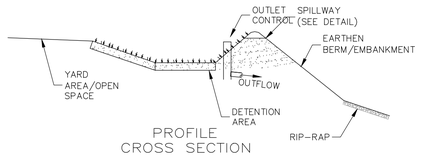
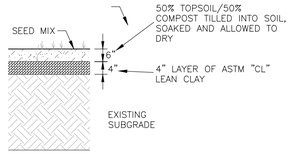


PROFILE
CROSS SECTION

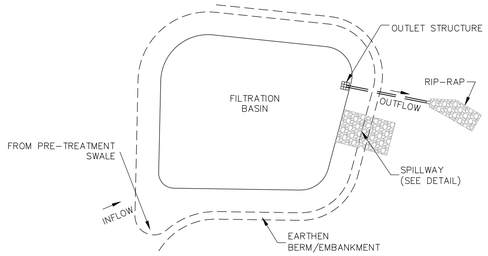


BASIN BOTTOM

1. THE INSTALLER SHALL NOT ALLOW ANY VEHICULAR OR CONSTRUCTION EQUIPMENT TRAVEL TO OCCUR ACROSS THE PROPOSED BASIN AREA AT ANY TIME EXCEPT DURING EXCAVATION OF TOPSOIL, SUBSOIL AND OTHER MATERIALS NOT SUITABLE FOR BED BOTTOM CONDITIONS.
2. CAUTION SHOULD BE EXERCISED DURING SITE PREPARATION TO AVOID COMPACTION OF THE INFILTRATIVE SURFACE.
3. SEED MIX
   NEW ENGLAND ROADSIDE MATRIX WET MEADOW SEED MIX (MIN. 35 LBS/ACRE)
4. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE BASIN.
5. VEGETATION SHOULD BE ESTABLISHED IMMEDIATELY.
6. DO NOT PLACE SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

DETENTION BASIN

NOT TO SCALE



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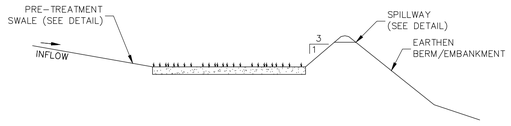
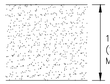


PROFILE



BASIN BOTTOM

FILTER MEDIA NOTES

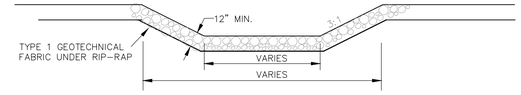
1. ASTM C-33 CONCRETE SAND (50%-55% BY VOLUME)
2. LOAMY SAND TOPSOIL WITH 15%-25% FINES PASSING THE NO. 200 SIEVE (20%-30% BY VOLUME)
3. MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH WITH LESS THAN 5% PASSING THE NO. 200 SIEVE (20%-30% BY VOLUME)

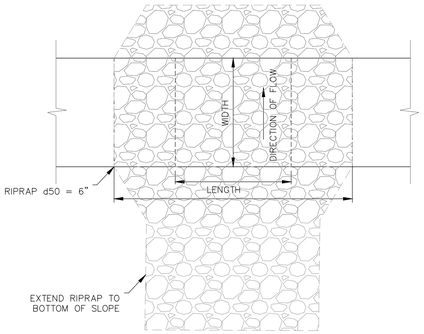
FILTRATION BASIN NOTES

1. THE INSTALLER SHALL NOT ALLOW ANY VEHICULAR OR CONSTRUCTION EQUIPMENT TRAVEL TO OCCUR ACROSS THE PROPOSED BASIN AREA AT ANY TIME EXCEPT DURING EXCAVATION OF TOPSOIL, SUBSOIL AND OTHER MATERIALS NOT SUITABLE FOR BED BOTTOM CONDITIONS.
2. CAUTION SHOULD BE EXERCISED DURING SITE PREPARATION TO AVOID COMPACTION OF THE INFILTRATIVE SURFACE.
3. SEED MIX
   NEW ENGLAND ROADSIDE MATRIX WET MEADOW SEED MIX (MIN. 35 LBS/ACRE)
4. FILTER MEDIA SOIL SAMPLE TO BE PROVIDED TO THE ENGINEER PRIOR TO PLACEMENT. ON SITE MIXING OF MANUFACTURED SOIL MAY BE ACCEPTABLE PENDING ENGINEER APPROVAL.
5. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE BASIN.
6. AFTER THE BASIN IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
7. VEGETATION SHOULD BE ESTABLISHED IMMEDIATELY.
8. DO NOT PLACE FILTRATION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
9. FILTRATION MEDIA SHALL BE INSTALLED ALONG INTERIOR SIDE SLOPES TO ELEVATION EQUAL TO OUTLET STRUCTURE RIM OR WEIR ELEVATION, WHICHEVER IS LOWER.
10. FILL TO BRING EMBANKMENT AREAS TO GRADE SHALL BE EXISTING SIDE MATERIALS OR IMPORTED MATERIAL CONSISTENT WITH THE GEOTECHNICAL REPORT RECOMMENDATIONS FOR COMMON FILL (SEE NOTE 21 AND 22 ON SHEET C-02).

FILTRATION BASIN

NOT TO SCALE





WEIR	TOP OF BASIN BERM EL.	WEIR INV.	LENGTH	WIDTH
SEDIMENT FOREBAY #1	278.0	276.40	10.4'	15.6'
SEDIMENT FOREBAY #2	280.0	278.90	21.0'	9.0'

BROAD CRESTED WEIR

FROM FOREBAYS

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

PREPARE BEDDING:

BACKFILL MATERIAL AROUND THE END SECTION MAY BE THE SAME AS THE MATERIAL AROUND THE PIPE, PLACE A FEW INCHES OF BACKFILL MATERIAL IN THE TRENCH OR DITCH WHERE THE END SECTION WILL BE PLACED. COMPACT AND CONTOUR THIS BEDDING MATERIAL TO GENERALLY MATCH THE END SECTION, EXCAVATE AN AREA IN THE BEDDING WHERE TOE TROUGH WILL SEAT SO THAT THE END SECTION WILL BE LEVEL WITH THE BOTTOM OF THE TRENCH OR DITCH IN THE FINISHED INSTALLATION.

PLACE END SECTION OF PIPE:

OPEN THE END SECTION COLLAR AND SEAT IT OVER THE TWO PIPE CONNECTIONS. ONCE THE END SECTION IS POSITIONED, CHECK TO MAKE SURE THAT THE INVERT OF THE END SECTION MATCHES THE INVERT OF THE PIPE AND THAT THE END SECTION IS LEVEL WITH THE TRENCH OR DITCH BOTTOM.

SECURE THE END SECTION:

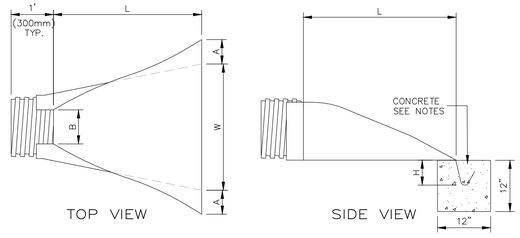
SLIP THE STAINLESS STEEL ROD THROUGH THE PRE-DRILLED HOLES AT THE TOP OF THE COLLAR. THE ROD SHOULD BE BETWEEN THE CROWNS OF THE TWO PIPE CONNECTIONS. PLACE A WASHER ON EITHER END OF THE ROD. PLACE A NUT ON EITHER END OF THE ROD AND TIGHTEN WITH A WRENCH.

SECURE THE TOE TROUGH:

TO PREVENT WASHOUTS FROM HIGH VELOCITY FLOW, IT IS RECOMMENDED THAT THE TROUGH BE SECURED WITH CONCRETE. POUR CONCRETE IN THE TROUGH UP TO THE LEVEL OF THE TRENCH OR DITCH BOTTOM AND ALONG THE ENTIRE LENGTH OF THE TROUGH.

FINISH BACKFILL:

SHOVEL BACKFILL AROUND THE END SECTION IN 6 TO 9 INCH LAYERS EQUALLY ON BOTH SIDES, KNIFING IT TO ELIMINATE VOIDS. TAMP WITH A SMALL-FACED COMPACTOR OR OTHER EQUIPMENT SUITABLE FOR SMALL AREAS. CONTINUE PLACING, KNIFING, AND COMPACTING BACKFILL LAYERS TO THE TOP OF THE END SECTION TO SEAT IT WELL INTO THE BACKFILL.



	DIMENSIONS, INCHES (mm)					
PIPE DIAMETER	PART NO.	A, ±1 (25)	B MAX	H, ±1 (25)	L, ±1/2 (13)	W, ±2 (50)
12", 15" (300,375)	1210 NP	6.5 (165)	10 (254)	6.5 (165)	25 (635)	29 (736)
18" (450)	1810 NP	7.5 (190)	15 (380)	6.5 (168)	32 (812)	35 (890)
24" (600)	2410 NP	7.5 (190)	18 (450)	6.5 (165)	36 (900)	45 (1140)
30" (750)	3010 NP	10.5 (266)	NA	7.0 (178)	53 (1346)	68 (1725)
36" (900)	3610 NP	10.5 (266)	NA	7.0 (178)	53 (1346)	68 (1725)

FLARED END SECTION

HIGH DENSITY POLYETHYLENE (HDPE)

NOT TO SCALE

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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Bedford, NH 03110
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Fax (603) 472-9747
www.tfmoran.com

FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-21

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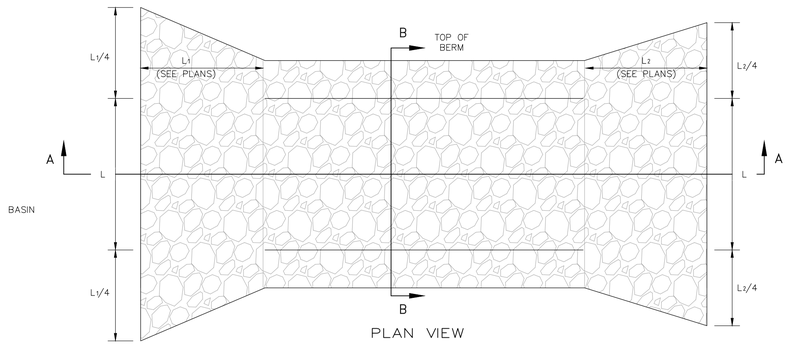
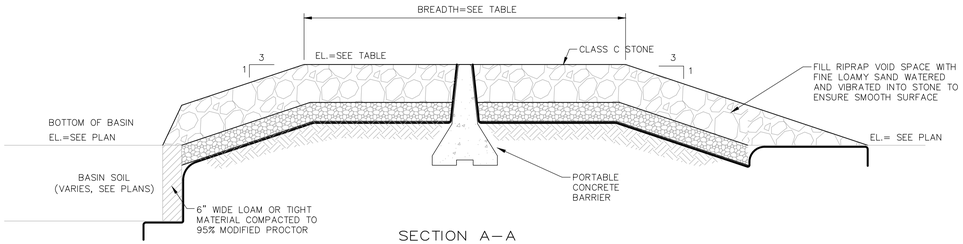
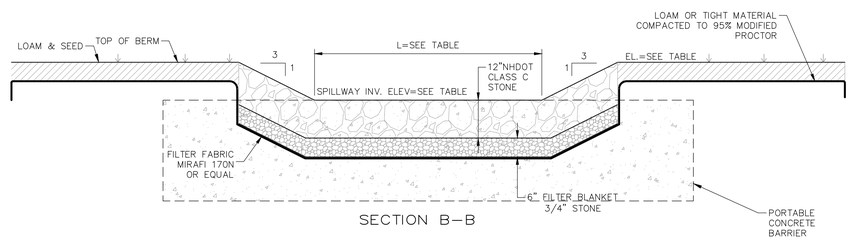
RIP-RAP GRADATION

	% FINER BY WEIGHT				
STONE SIZE	D 50 = 6"	D50 = 9"	D 50 = 12"	D50 = 18"	D50 = 24"
2"	0-15%	0%	–	–	–
4"	20-35%	10-20%	0-10%	–	–
6"	35-50%	25-35%	10-25%	0-10%	–
8"	50-65%	30-50%	20-30%	10-20%	0-10%
10"	60-80%	40-60%	30-40%	15-30%	5-15%
12"	75-100%	–	–	–	–
15"	–	70-100%	45-60%	25-40%	20-30%
20"	–	–	70-100%	40-60%	30-45%
30"	–	–	–	70-100%	50-70%
40	–	–	–	–	70-100%





SECTION A-A

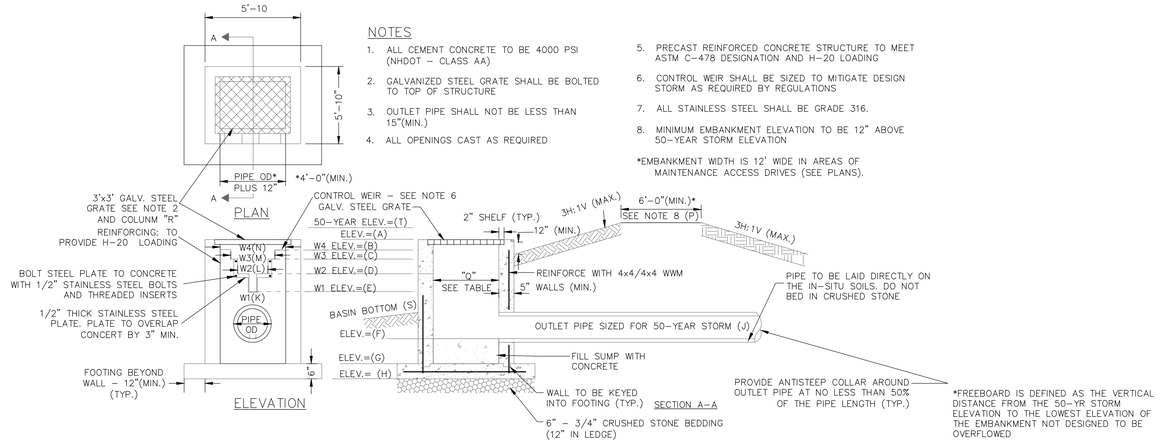


SECTION B-B

SYSTEM	TOP OF BASIN BERM EL.	SPILLWAY INV.	LENGTH (L)	BREADTH
FILTRATION BASIN #1	278.0	277.5	6'	9'
FILTRATION BASIN #2	280.0	279.5	6'	9'
DETENTION BASIN #1	296.0	295.5	3'	5'

SPILLWAY

FROM BASINS NOT TO SCALE



NOTES

1. ALL CEMENT CONCRETE TO BE 4000 PSI (NHDOT - CLASS AA)
2. GALVANIZED STEEL GRATE SHALL BE BOLTED TO TOP OF STRUCTURE
3. OUTLET PIPE SHALL NOT BE LESS THAN 15"(MIN.)
4. ALL OPENINGS CAST AS REQUIRED
5. PRECAST REINFORCED CONCRETE STRUCTURE TO MEET ASTM C-478 DESIGNATION AND H-20 LOADING
6. CONTROL WEIR SHALL BE SIZED TO MITIGATE DESIGN STORM AS REQUIRED BY REGULATIONS
7. ALL STAINLESS STEEL SHALL BE GRADE 316.
8. MINIMUM EMBANKMENT ELEVATION TO BE 12" ABOVE 50-YEAR STORM ELEVATION

*EMBANKMENT WIDTH IS 12' WIDE IN AREAS OF MAINTENANCE ACCESS DRIVES (SEE PLANS).

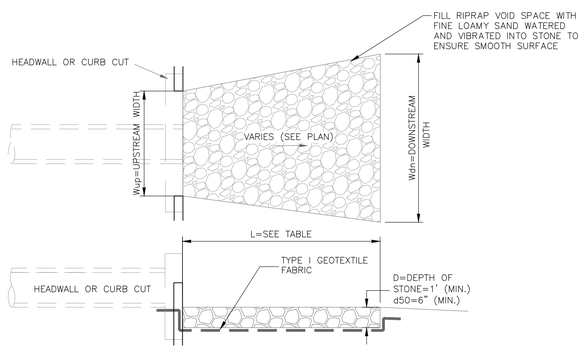
*FREEBOARD IS DEFINED AS THE VERTICAL DISTANCE FROM THE 50-YR STORM ELEVATION TO THE LOWEST ELEVATION OF THE EMBANKMENT NOT DESIGNED TO BE OVERFLOWED

	ELEVATIONS/DIMENSIONS																	
OUTLET STRUCTURE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	FREEBOARD (A-T)
FILTRATION BASIN #1	277.30	296.65	295.95	274.55	273.95	266.00	265.50	265.00	15"	1.2"	2.4"	6.0"	14.4"	278.00	4.00'x4.00'	4.50'x4.50'	273.00	277.00	1.00'
FILTRATION BASIN #2	279.00	–	278.65	278.35	277.75	272.00	271.50	271.00	15"	1.2"	6.0"	30.0"	–	280.00	4.00'x4.00'	4.50'x4.50'	277.00	278.97	1.03'
RETENTION BASIN #1	294.50	–	–	–	294.00	290.00	289.50	289.00	18"	9.0"	–	–	–	296.00	5.00'x5.00'	5.50'x5.50'	294.00	294.50	1.50'

OUTLET STRUCTURE AT STORMWATER BASINS

NOT TO SCALE

OUTLET	Do (ft.)	Q25 (cfs)	Tw (ft.)	La (ft.)	Wup (ft.)	Wdn (ft.)	d50 (in.)*
Headwall1(DMH11)	2.00	10.3	1.8	24.9	6.0	16.0	6.0
Headwall2 (CB16)	1.25	0.1	0.1	8.9	3.8	12.6	6.0
Headwall3 (OS1)	1.25	2.3	0.1	11.7	3.8	15.5	6.0
Headwall4 (OS2)	1.25	0.3	0.1	9.1	3.8	12.9	6.0
Headwall5 (DMH9)	2.50	16.9	2.0	30.3	7.5	19.6	6.0

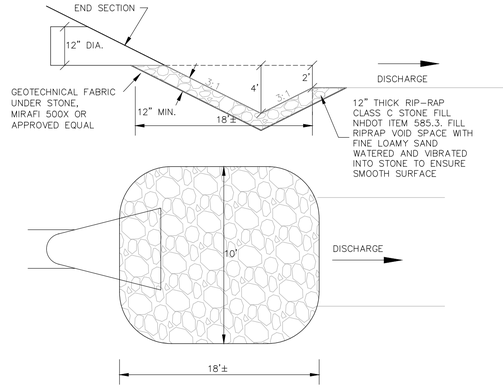


CONSTRUCTION SPECIFICATIONS:

1. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIP-RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK USED FOR RIP-RAP SHALL CONFORM TO THE SPECIFIED GRADATION (D50=6" (MIN)).
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP-RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP-RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

OUTLET APRON

NOT TO SCALE



RIP RAP PLUNGE POOL

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
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Bedford, NH 03110
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Fax (603) 472-9747
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FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-22

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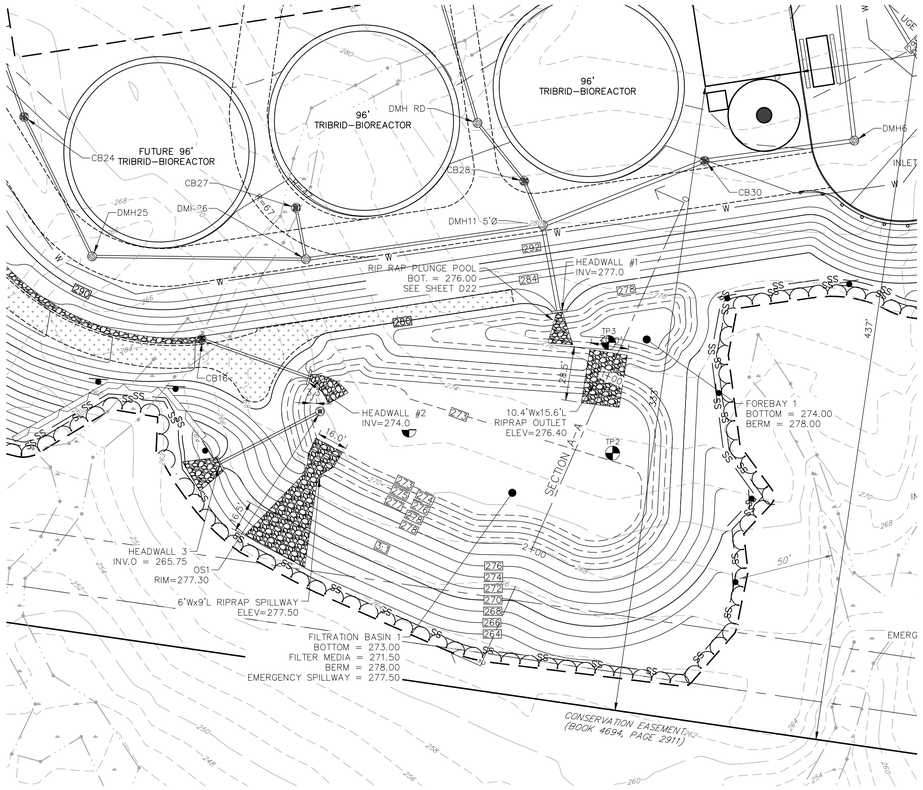
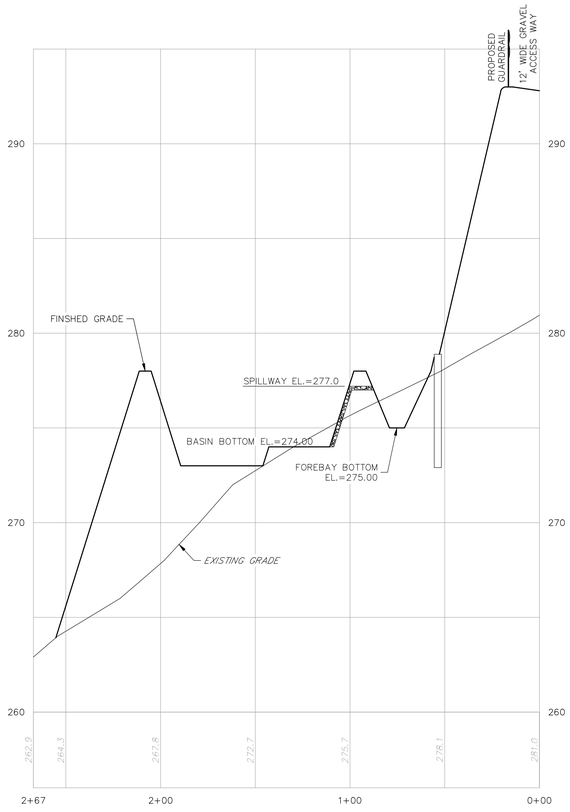


FILTRATION BASIN #1 PLAN VIEW

SCALE: 1"=40'



FILTRATION BASIN #1 SECTION A-A

SCALE: 1"=40' H/1"=4' V

GRADING & DRAINAGE NOTES

1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV–WQ 1500 AS APPLICABLE.
2. THE CONTRACTOR SHALL PREPARE, MAINTAIN, AND EXECUTE A S.W.P.P.P. IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
5. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEER'S RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE, INCLUDING AND NOT LIMITED TO DEWATERING METHODS, PERIMETER DRAINS AND TIE INTO STORMWATER MANAGEMENT SYSTEM, ETC.
6. COORDINATE WITH GEOTECHNICAL REPORT FOR SITE PREPARATION AND OTHER PERTINENT INFORMATION.
7. COORDINATE WITH ELECTRICAL DESIGN PLANS FOR DETAILED GRADING AT ELECTRICAL STRUCTURES, AND SIZE AND LOCATION OF ALL ELECTRICAL SERVICES.
8. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, DRIVES, ROADS, AND ALIGNMENTS.
10. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS, AND LOADING AREAS.
11. THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER DEEPER THAN 1/4" FOR A PERIOD OF MORE THAN 15 MINUTES AFTER FLOODING.
12. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
13. ALL SIDEWALK AND OTHER CURB REVEALS SHALL BE 6" WITH A TOLERANCE OF PLUS OR MINUS 3/8". WHERE SIDEWALK IS TO BE FLUSH, THE PAVEMENT REVEAL SHALL BE 1/4" WITH A TOLERANCE OF 1/8".
14. THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
15. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
16. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND SHALL MEET LOCAL STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
17. STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
18. NO FILL SHALL BE PLACED IN ANY WETLAND AREA.
19. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
20. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
21. DENSITY REQUIREMENTS:

MINIMUM DENSITY*	LOCATION
95%	BELOW PAVED OR CONCRETE AREAS
95%	TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL
90%	BELOW LOAM AND SEED AREA
90%	EMBANKMENTS/PERIMETER SLOPES ASSOCIATED WITH STORMWATER MANAGEMENT AREAS
70%	STORMWATER MANAGEMENT AREAS BASIN BOTTOMS, INCLUDING SUBGRADE

*ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D–1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D–1556 OR ASTM D–6938.

22. COMMON FILL GRADATION REQUIREMENTS *PER GEOTECHNICAL REPORT SPECIFICATIONS

SIEVE SIZE	PERCENT FINER BY WEIGHT
8 INCH	100
NO. 4	25 – 70
NO.200	0 – 12 (TOTAL)

23. SWALES ARE TO BE VEGETATED OR STONE LINED PRIOR TO DIRECTING RUNOFF TO THEM.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
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4	10/24/2025	NHF&G APPROVAL	JD	NG
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2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
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Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
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		CK		CADFILE	18252-02 COVER & DETAILS	

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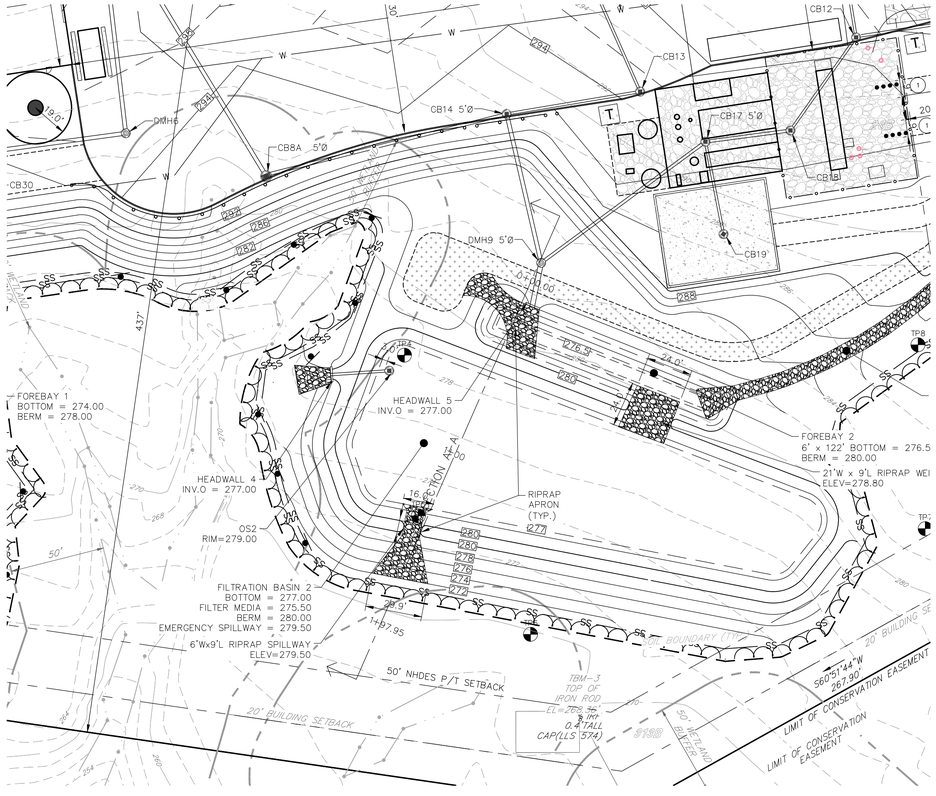
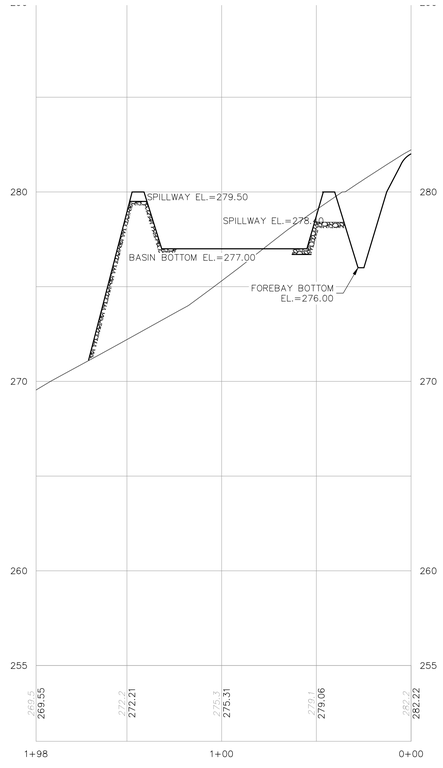
GRADING & DRAINAGE NOTES

1. SEE NOTES ON SHEET D-23.





FILTRATION BASIN #2

FILTRATION BASIN #2 PLAN VIEW

SCALE: 1"=40'

FILTRATION BASIN #2 SECTION A-A

SCALE: 1"=40' H/1"=4' V

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12/22/25

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SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
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Fax (603) 472-9747
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FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-24

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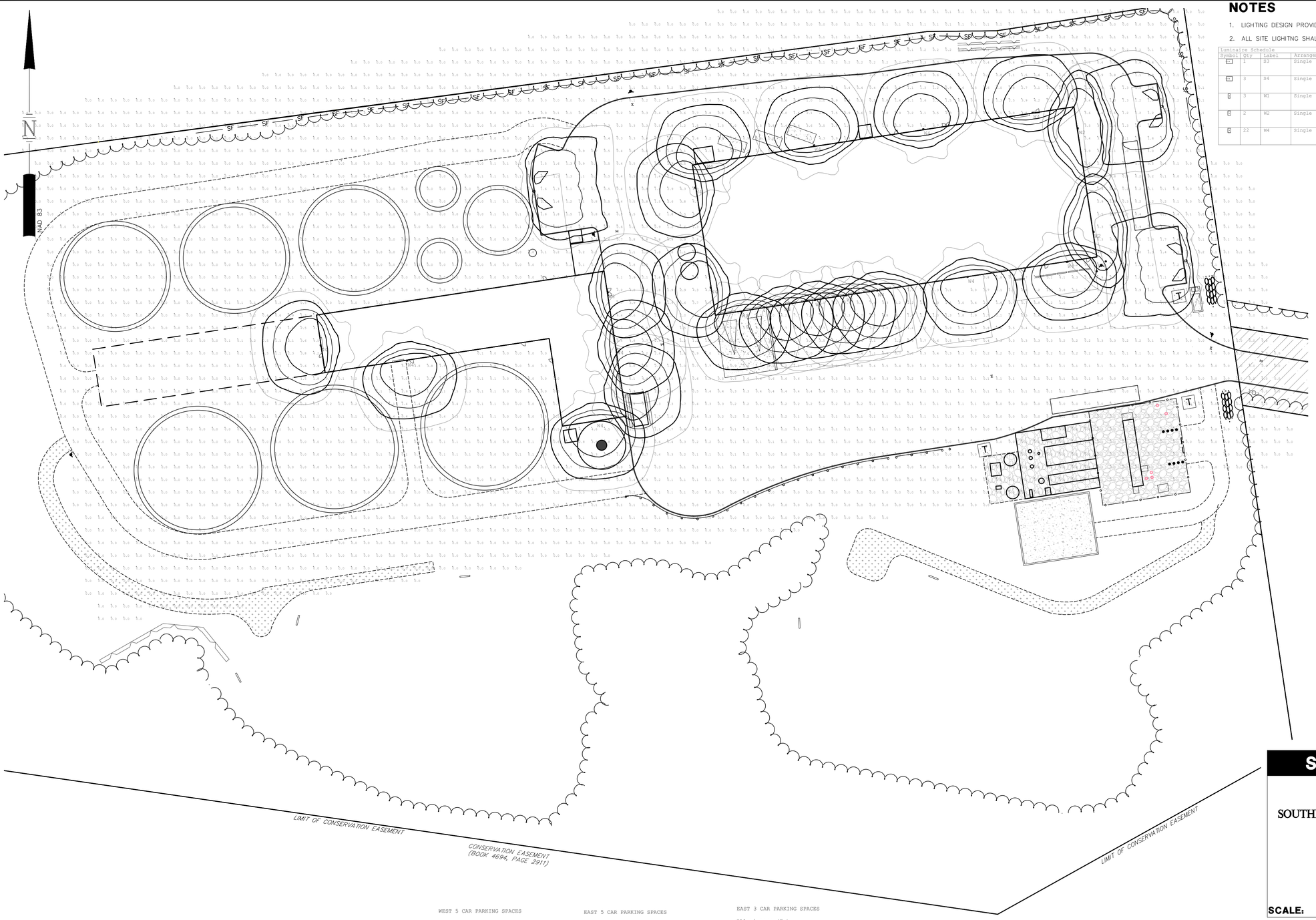

NOTES

1. LIGHTING DESIGN PROVIDED BY EXPOSURE INCORPORATED.
2. ALL SITE LIGHITNG SHALL BE FULL CUTOFF, DOWNCAST FIXTURE TYPES.

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Description	[MANUFAC]	Tag
	1	S3	Single	VALS-09L-5W-UNV-30K8-CXX-SA-IMSBTL1 / 4SQ B3 S1LG16 S CXX AB 48C	LSI INDUSTRIES, INC.	16' POLE ON 2' BASE
	3	S4	Single	VALS-09L-4P-30K8-CXX-SA-IMSBTL1 / 4SQ B3 S1LG16 S CXX AB 48C	LSI INDUSTRIES, INC.	16' POLE ON 2' BASE
	3	W1	Single	XWS-LED-3L-FTW-UNV-DIM-30-80CRI-IMSBTIL-CXX	LSI INDUSTRIES, INC.	WALL MOUNTED 8' AFG
	2	W2	Single	XWM-2-LED-8L-30K8-UE-CXX-IMSBTIL	LSI INDUSTRIES, INC.	WALL MOUNTED 16' AFG
	22	W4	Single	XWM-4-LED-8L-30K8-UE-CXX-IMSBTIL	LSI INDUSTRIES, INC.	WALL MOUNTED 16' AFG

DOCK AREAS
Illuminance (Fc)
Average = 4.62
Maximum = 9.3
Minimum = 0.9
Avg/Min Ratio = 5.13
Max/Min Ratio = 10.33

PARKING AT BACK OF BLDG
Illuminance (Fc)
Average = 3.76
Maximum = 6.4
Minimum = 2.2
Avg/Min Ratio = 1.71
Max/Min Ratio = 2.91

TRUCK PKG AT BACK OF BLDG
Illuminance (Fc)
Average = 1.92
Maximum = 5.1
Minimum = 0.4
Avg/Min Ratio = 4.80
Max/Min Ratio = 12.75

PARKING IN FRONT OF BLDG
Illuminance (Fc)
Average = 2.51
Maximum = 4.1
Minimum = 1.1
Avg/Min Ratio = 2.28
Max/Min Ratio = 3.73



POLE MOUNTED FIXTURE
V-LOCITY SMALL VALS (S3 & S4)



WALL MOUNTED FIXTURE
MIRADA MEDIUM WALL SCONCE XWM (W2 & W4)



WALL MOUNTED FIXTURE
MIRADA SMALL WALL SCONCE XWS VC (W1)

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

LIGHTING PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

HORIZONTAL SCALE 1"=20'
20 10 0 20

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
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	18252-02	CK		CADFILE	18252-02 SITE PLAN	L-01

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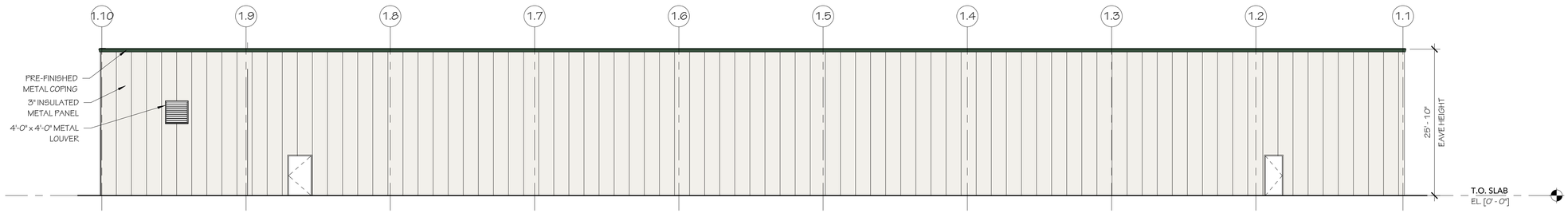
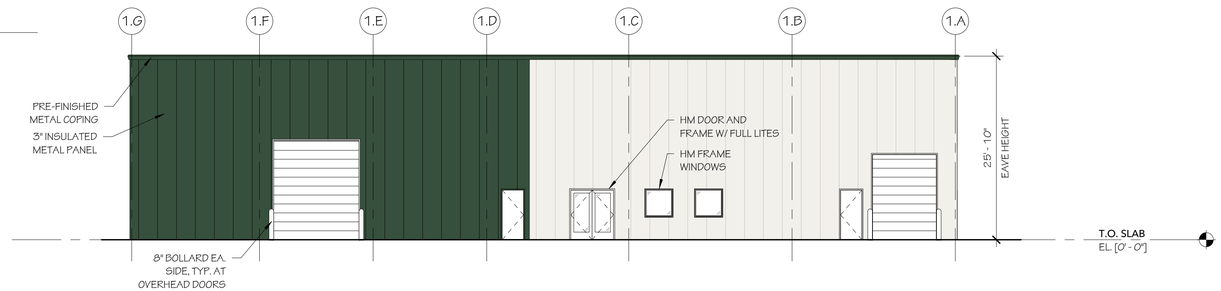


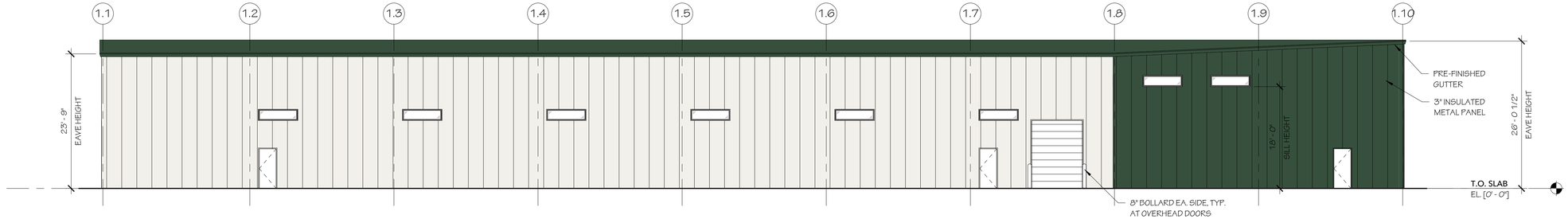
4 NORTH ELEVATION

3/32" = 1'-0" PROCESS BUILDING



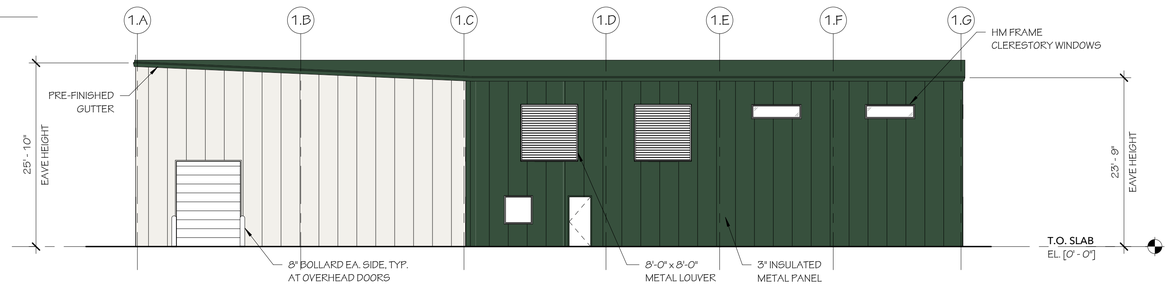
3 EAST ELEVATION

3/32" = 1'-0" PROCESS BUILDING



2 SOUTH ELEVATION

3/32" = 1'-0" DEPACK BUILDING



1 WEST ELEVATION

3/32" = 1'-0" PROCESS BUILDING

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-1

BUILDING ELEVATIONS

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25 NORTH WENTWORTH AVE.
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3/32" = 1'-0" SEPTEMBER 8, 2025

REV	DATE	DESCRIPTION	DR	CK
1	12/08/25	REVISION #1	JQ	MQ

285 SOUTH OHIO STREET
P.O. BOX 3
MINSTER, OHIO 45865
(419) 628-3364
www.baumerconstruction.com

JOB #	DR	JQ	SCALE	3/32" = 1'-0"	A-1
25.02	CK	MQ	DATE	12/08/2025	

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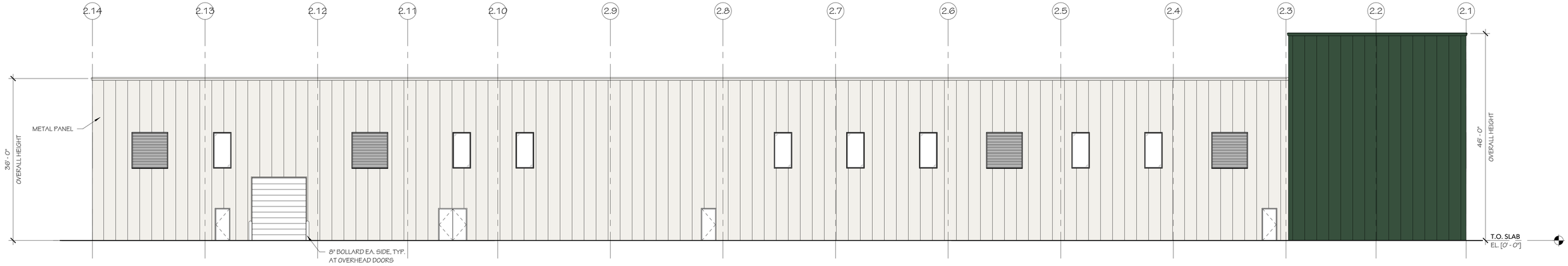
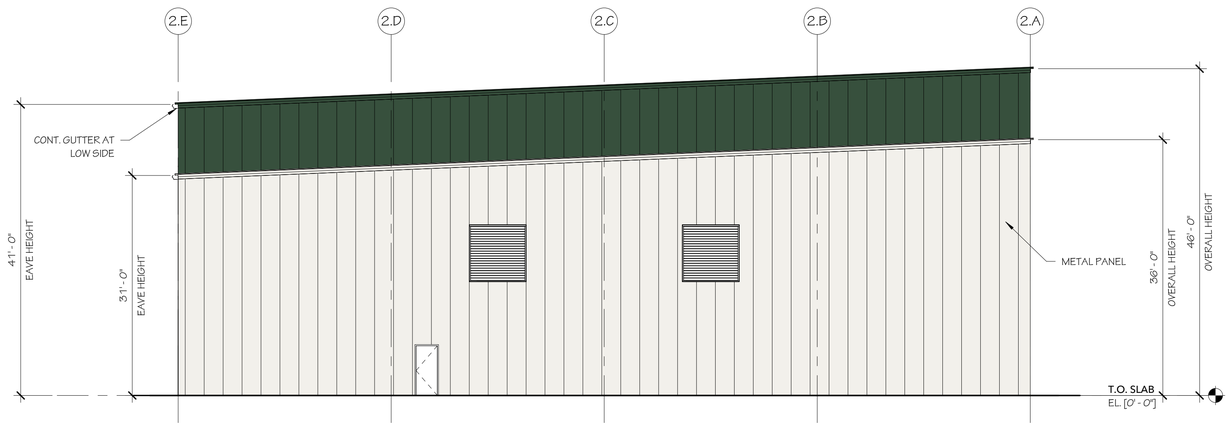


2 NORTH ELEVATION

3/32" = 1'-0" DEPACK BUILDING



1 EAST ELEVATION

3/32" = 1'-0" DEPACK BUILDING

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-1

BUILDING ELEVATIONS

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3/32" = 1'-0" SEPTEMBER 8, 2025

REV	DATE	DESCRIPTION	DR	CK
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JOB #		DR	JQ	SCALE	3/32" = 1'-0"	A-2
	25.02	CK	MQ	DATE	12/08/2025	

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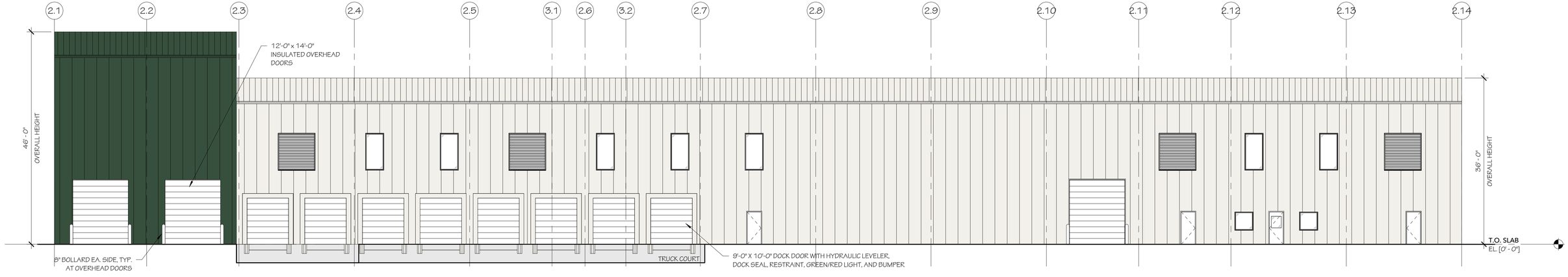
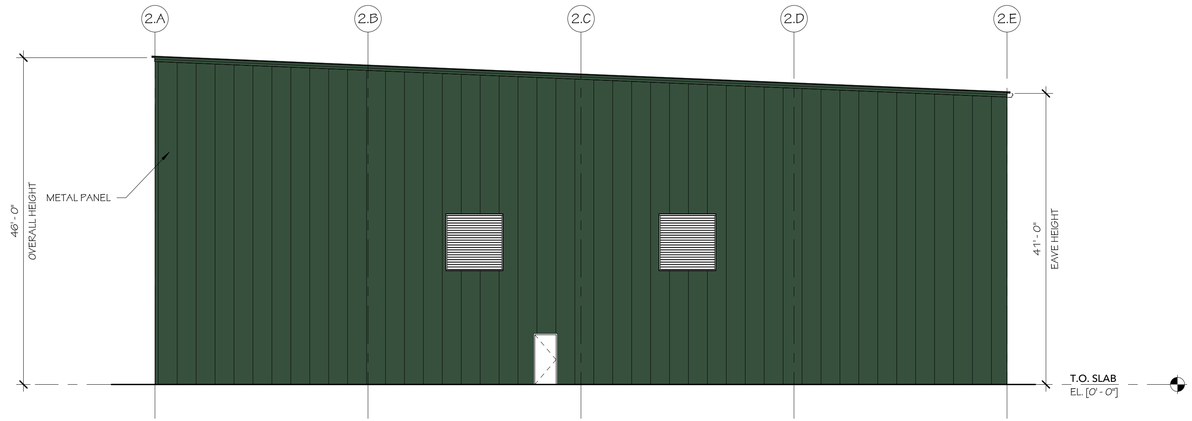


4 SOUTH ELEVATION

3/32" = 1'-0" | DEPACK BUILDING



3 WEST ELEVATION

3/32" = 1'-0" | DEPACK BUILDING

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-1

BUILDING ELEVATIONS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY
PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

3/32" = 1'-0" SEPTEMBER 8, 2025

REV	DATE	DESCRIPTION	DR	CK
1	12/08/25	REVISION #1	JQ	MQ

BAUMER CONSTRUCTION INC.
285 SOUTH OHIO STREET
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MINSTER, OHIO 45865
(419) 628-3364
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JOB #					
25.02	DR	JQ	SCALE	3/32" = 1'-0"	A-3
	CK	MQ	DATE	12/08/2025	

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Appendix B – 2022 CGP (Construction General Permit)

National Pollutant Discharge Elimination System (NPDES)
Construction General Permit (CGP) for Stormwater Discharges from Construction Activities

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §1251 et. seq., (hereafter CWA), as amended by the Water Quality Act of 1987, P.L. 100-4, "operators" of construction activities (defined in Appendix A) that meet the requirements of Part 1.1 of this National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP), are authorized to discharge pollutants in accordance with the effluent limitations and conditions set forth herein. Permit coverage is required from the "commencement of construction activities" (see Appendix A) until one of the conditions for terminating CGP coverage has been met (see Part 8.2).

This permit becomes effective on 12:00 am, February 17, 2022.

This permit and the authorization to discharge expire at 11:59pm, February 16, 2027.

Signed and issued this 18 day of January 2022

DEBORAH SZARO
Digitally signed by DEBORAH SZARO
Date: 2022.01.18 08:31:14 -05'00'

Deborah Szaro,
Acting Regional Administrator, EPA Region 1.

Signed and issued this 18 day of January 2022

JAVIER LAUREANO
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Javier Laureano,
Director, Water Division, EPA Region 2.

Signed and issued this 18 day of January 2022

CARMEN GUERRERO PEREZ
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Carmen Guerrero-Perez,
Director, Caribbean Environmental Protection Division, EPA Region 2.

Signed and issued this 18 day of January 2022

CATHERINE LIBERTZ
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Catherine A. Libertz,
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JEANEANNE GETTLE
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Jeaneanne Gettle,
Director, Water Division, EPA Region 4.

Signed and issued this 18 day of January 2022

Digitally signed by TERA FONG
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Tera Fong,
Director, Water Division, EPA Region 5.

Signed and issued this 18 day of January 2022

CHARLES MAGUIRE
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DN: c=US, o=U.S. Government, ou=Environmental Protection Agency, cn=CHARLES MAGUIRE, 0.9.2342.19200300.100.1.1=68001003650036
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Charles W. Maguire,
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JEFFERY ROBICHAUD
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Jeffery Robichaud,
Director, Water Division, EPA Region 7.

Signed and issued this 18 day of January 2022

DARCY OCONNOR
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Darcy O'Connor,
Director, Water Division, EPA Region 8.

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TOMAS TORRES
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Tomás Torres,
Director, Water Division, EPA Region 9.

Signed and issued this 18 day of January 2022

DANIEL OPALSKI
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Daniel D. Opalski,
Director, Water Division, EPA Region 10.

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1 HOW TO OBTAIN COVERAGE UNDER THE CONSTRUCTION GENERAL PERMIT (CGP)

To be covered under this permit, you must meet the eligibility conditions and follow the requirements for obtaining permit coverage in this Part.

1.1 ELIGIBILITY CONDITIONS

1.1.1 You are an "operator" of a construction site for which discharges will be covered under this permit. For the purposes of this permit and in the context of stormwater discharges associated with construction activity, an "operator" is any party associated with a construction project that meets either of the following two criteria:

a. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or

b. The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Where there are multiple operators associated with the same project, all operators must obtain permit coverage.[1] Subcontractors generally are not considered operators for the purposes of this permit.

1.1.2 Your site's construction activities:

a. Will disturb one or more acres of land, or will disturb less than one acre of land but are part of a common plan of development or sale (as defined in Appendix A) that will ultimately disturb one or more acres of land; or

b. Have been designated by EPA as needing permit coverage under 40 CFR § 122.26(a)(1)(v) or 40 CFR § 122.26(b)(15)(ii);

1.1.3 Your site is located in an area where EPA is the permitting authority and where coverage under this permit is available (see Appendix B);

1.1.4 Discharges from your site are not:

a. Already covered by a different NPDES permit for the same discharge; or

b. In the process of having coverage under a different NPDES permit for the same discharge denied, terminated, or revoked.[2, 3]

1.1.5 You can demonstrate you meet one of the criteria in the Endangered Species Protection section of the Notice of Intent (NOI) that you submit for coverage under this permit, per Part 1.4, with respect to the protection of Federally listed endangered or threatened species and Federally designated critical habitat under the Endangered Species Act

[1] If the operator of a "construction support activity" (see Part 1.2.1c) is different than the operator of the main site, that operator must also obtain permit coverage. See Part 7.1 for clarification on the sharing of permit-related functions between and among operators on the same site and for conditions that apply to developing a SWPPP for multiple operators associated with the same site.

[2] Parts 1.1.4a and 1.1.4b do not include sites currently covered under the 2017 CGP that are in the process of obtaining coverage under this permit, nor sites covered under this permit that are transferring coverage to a different operator.

[3] Notwithstanding a site being made ineligible for coverage under this permit because it falls under the description of Parts 1.1.4a or 1.1.4b, above, EPA may waive the applicable eligibility requirement after specific review if it determines that coverage under this permit is appropriate.

(ESA). If the EPA Regional Office grants you a waiver from electronic reporting per Part 1.4.2, you must complete the ESA worksheet in Appendix D to demonstrate you meet one of the criteria and submit it with your paper NOI (Appendix I).

1.1.6 You have completed the screening process in Appendix E relating to the protection of historic properties; and

1.1.7 You have complied with all requirements in Part 9 imposed by the applicable State, Indian Tribe, or Territory in which your construction activities and/or discharge will occur.

1.1.8 For "new sources" (as defined in Appendix A) only:

a. EPA has not, prior to authorization under this permit, determined that discharges from your site will not meet applicable water quality standards. Where such a determination is made prior to authorization, EPA may notify you that an individual permit application is necessary. However, EPA may authorize your coverage under this permit after you have included appropriate controls and implementation procedures designed to bring your discharge into compliance with this permit, specifically the requirement to meet water quality standards. In the absence of information demonstrating otherwise, EPA expects that compliance with the requirements of this permit, including the requirements applicable to such discharges in Part 3, will result in discharges that meet applicable water quality standards.

b. Discharges from your site to a Tier 2, Tier 2.5, or Tier 3 water[4] will not lower the water quality of the applicable water. In the absence of information demonstrating otherwise, EPA expects that compliance with the requirements of this permit, including the requirements applicable to such discharges in Part 3.2, will result in discharges that will not lower the water quality of such waters.

1.1.9 If you plan to add "cationic treatment chemicals" (as defined in Appendix A) to stormwater and/or authorized non-stormwater prior to discharge, you may not submit your NOI until you notify your applicable EPA Regional Office (see Appendix J) in advance and the EPA Regional Office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will result in discharges that meet applicable water quality standards.

[4] Note: Your site will be considered to discharge to a Tier 2, Tier 2.5, or Tier 3 water if the first receiving water to which you discharge is identified by a State, Tribe, or EPA as a Tier 2, Tier 2.5, or Tier 3 water. For discharges that enter a storm sewer system prior to discharge, the first receiving water to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system. The current list of Tier 2, Tier 2.5, and Tier 3 waters located in the areas eligible for coverage under this permit can be found at https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates. You can also use EPA's Discharge Mapping Tool (https://www.epa.gov/npdes/epas-stormwater-discharge-mapping-tools) to assist you in identifying whether any receiving waters to which you discharge are listed as impaired (and the pollutant for which it is impaired) and whether an approved total maximum daily load (TMDL) exists for that waterbody.

1.2 TYPES OF DISCHARGES AUTHORIZED[5]

1.2.1 The following stormwater discharges are authorized under this permit provided that appropriate stormwater controls are designed, installed, and maintained (see Parts 2 and 3):

- **a.** Stormwater discharges, including stormwater runoff, snowmelt runoff, and surface runoff and drainage, associated with construction activity under 40 CFR § 122.26(b)(14) or § 122.26(b)(15)(i);
- **b.** Stormwater discharges designated by EPA as needing a permit under 40 CFR §122.26(a)(1)(v) or § 122.26(b)(15)(ii);
- **c.** Stormwater discharges from on or off-site construction support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided that:
  - **i.** The support activity is directly related to the construction site required to have permit coverage for stormwater discharges;
  - **ii.** The support activity is not a commercial operation, nor does it serve multiple unrelated construction sites;
  - **iii.** The support activity does not continue to operate beyond the completion of the construction activity at the site it supports; and
  - **iv.** Stormwater controls are implemented in accordance with Part 2 and Part 3 for discharges from the support activity areas; and
- **d.** Stormwater discharges from earth-disturbing activities associated with the construction of staging areas and the construction of access roads conducted prior to active mining.

1.2.2 The following non-stormwater discharges associated with your construction activity are authorized under this permit provided that, with the exception of water used to control dust and to irrigate vegetation in stabilized areas, these discharges are not routed to areas of exposed soil on your site and you comply with any applicable requirements for these discharges in Parts 2 and 3:

- **a.** Discharges from emergency fire-fighting activities;
- **b.** Fire hydrant flushings;
- **c.** Landscape irrigation;
- **d.** Water used to wash vehicles and equipment, provided that there is no discharge of soaps, solvents, or detergents used for such purposes;
- **e.** Water used to control dust;
- **f.** Potable water including uncontaminated water line flushings;

[5] See "Discharge" as defined in Appendix A. Note: Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA Section 402(k) by disclosure to EPA, State, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the SWPPP, or during an inspection.

g. External building washdown, provided soaps, solvents, and detergents are not used, and external surfaces do not contain hazardous substances (as defined in Appendix A) (e.g., paint or caulk containing polychlorinated biphenyls (PCBs));

h. Pavement wash waters, provided spills or leaks of toxic or hazardous substances have not occurred (unless all spill material has been removed) and where soaps, solvents, and detergents are not used. You are prohibited from directing pavement wash waters directly into any receiving water, storm drain inlet, or constructed or natural site drainage features, unless the feature is connected to a sediment basin, sediment trap, or similarly effective control;

i. Uncontaminated air conditioning or compressor condensate;

j. Uncontaminated, non-turbid discharges of ground water or spring water;

k. Foundation or footing drains where flows are not contaminated with process materials such as solvents or contaminated ground water; and

l. Uncontaminated construction dewatering water[6] discharged in accordance with Part 2.4.

1.2.3 Also authorized under this permit are discharges of stormwater listed above in Part 1.2.1, or authorized non-stormwater discharges listed above in Part 1.2.2, commingled with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization.

1.3 PROHIBITED DISCHARGES[7]

The discharges listed in this Part are prohibited outright or authorized only under the identified conditions. To prevent the discharges in Parts 1.3.1 through 1.3.5, operators must comply with the applicable pollution prevention requirements in Part 2.3 or ensure the discharge is authorized by another NPDES permit consistent with Part 1.2.3 for commingled discharges.

1.3.1 Wastewater from washout of concrete, unless managed by an appropriate control as described in Part 2.3.4;

1.3.2 Wastewater from washout and/or cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;

1.3.3 Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;

1.3.4 Soaps, solvents, or detergents used in vehicle and equipment washing or external building washdown; and

1.3.5 Toxic or hazardous substances from a spill or other release.

[6] EPA notes that operators may need to comply with additional procedures to verify that the dewatering discharge is uncontaminated. Operators should review Part 9 to determine if any of these requirements apply to their discharge and should ensure that they have complied with any State, Tribal, or local dewatering requirements that apply.

[7] EPA includes these prohibited non-stormwater discharges here as a reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2. Any unauthorized non-stormwater discharges must be covered under an individual permit or alternative general permit.

1.4 SUBMITTING YOUR NOTICE OF INTENT (NOI)

All "operators" (as defined in Appendix A) associated with your construction site who meet the Part 1.1 eligibility conditions, and who seek coverage under this permit, must submit to EPA a complete and accurate NOI in accordance with the deadlines in Table 1 prior to commencement of construction activities (as defined in Appendix A).

Exception: If you are conducting construction activities in response to a public emergency (e.g., mud slides, earthquake, extreme flooding conditions, widespread disruption in essential public services), and the related work requires immediate authorization to avoid imminent endangerment to human health, public safety, or the environment, or to reestablish essential public services, you may discharge on the condition that a complete and accurate NOI is submitted within 30 calendar days after commencing construction activities (see Table 1) establishing that you are eligible for coverage under this permit. You must also provide documentation in your Stormwater Pollution Prevention Plan (SWPPP) to substantiate the occurrence of the public emergency pursuant to Part 7.2.3i.

1.4.1 Prerequisite for Submitting Your NOI

You must develop a SWPPP consistent with Part 7 before submitting your NOI for coverage under this permit.

1.4.2 How to Submit Your NOI

You must use EPA's NPDES eReporting Tool (NeT) to electronically prepare and submit your NOI for coverage under the 2022 CGP unless you received a waiver from your applicable EPA Regional Office.

To access NeT, go to https://cdx.epa.gov/cdx.

Waivers from electronic reporting may be granted based on one of the following conditions:

a. If your operational headquarters is physically located in a geographic area (i.e., ZIP code or census tract) that is identified as under-served for broadband Internet access in the most recent report from the Federal Communications Commission; or

b. If you have limitations regarding available computer access or computer capability.

If the EPA Regional Office grants you approval to use a paper NOI, and you elect to use it, you must complete the form in Appendix H.

1.4.3 Deadlines for Submitting Your NOI and Your Official Date of Permit Coverage

Table 1 provides the deadlines for submitting your NOI and the official start date of your permit coverage, which differ depending on when you commence construction activities.

Table 1 NOI Submittal Deadlines and Official Start Date for Permit Coverage.

Type of Operator	NOI Submittal Deadline[8]	Permit Authorization Date[9]
Operator of a new site (i.e., a site where construction activities commence on or after February 17, 2022)	At least 14 calendar days before commencing construction activities.	14 calendar days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization is delayed or denied.
Operator of an existing site (i.e., a site with 2017 CGP coverage where construction activities commenced prior to February 17, 2022)	No later than May 18, 2022.	14 calendar days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization is delayed or denied. Provided you submit your NOI no later than May 18, 2022, your authorization under the 2017 CGP is automatically continued until you have been granted coverage under this permit or an alternative NPDES permit, or coverage is otherwise terminated.
New operator of a permitted site (i.e., an operator that through transfer of ownership and/or operation replaces the operator of an already permitted construction site that is either a "new site" or an "existing site")	At least 14 calendar days before the date the transfer to the new operator will take place.	14 calendar days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization is delayed or denied.
Operator of an "emergency-related project" (i.e., a project initiated in response to a public emergency (e.g., mud slides, earthquake, extreme flooding conditions, disruption in essential public services), for which the related work requires immediate authorization to avoid imminent endangerment to human health or the environment, or to reestablish essential public services)	No later than 30 calendar days after commencing construction activities.	You are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization is delayed or denied.

[8] If you miss the deadline to submit your NOI, any and all discharges from your construction activities will continue to be unauthorized under the CWA until they are covered by this or a different NPDES permit. EPA may take enforcement action for any unpermitted discharges that occur between the commencement of construction activities and discharge authorization.

[9] Discharges are not authorized if your NOI is incomplete or inaccurate or if you are not eligible for permit coverage.

1.4.4 Modifying your NOI

If after submitting your NOI you need to correct or update any fields, you may do so by submitting a "Change NOI" form using NeT. Waivers from electronic reporting may be granted as specified in Part 1.4.2. If the EPA Regional Office has granted you approval to submit a paper NOI modification, you may indicate any NOI changes on the same NOI form in Appendix H.

When there is a change to the site's operator, the new operator must submit a new NOI, and the previous operator must submit a Notice of Termination (NOT) form as specified in Part 8.3.

The following modifications to an NOI form will result in a 14-day review process:

- Changes to the name of the operator;
- Changes to the project or site name;
- Changes to the estimated area to be disturbed;
- Changes to the name of the receiving water[10], or additions to the applicable receiving waters;
- Changes to eligibility information related to endangered species protection or historic preservation;
- Changes to information provided related to the use of chemical treatment at your site; and
- Changes to answers provided regarding the demolition of structures over 10,000 square feet of floor space built or renovated before January 1, 1980.

During the 14-day review process, you may continue to operate based on the information provided in your original NOI, but you must wait until the review period has ended before you may commence or continue activities on any portion of your site that would be affected by any of the above modifications, unless EPA notifies you that the authorization is delayed or denied.

1.4.5 Your Official End Date of Permit Coverage

Once covered under this permit, your coverage will last until the date that:

a. You terminate permit coverage consistent with Part 8; or

b. You receive permit coverage under a different NPDES permit or a reissued or replacement version of this permit after expiring on February 16, 2027; or

c. You fail to submit an NOI for coverage under a reissued or replacement version of this permit before the deadline for existing construction sites where construction activities continue after this permit has expired.

1.5 REQUIREMENT TO POST A NOTICE OF YOUR PERMIT COVERAGE

You must post a sign or other notice of your permit coverage at a safe, publicly accessible location in close proximity to the construction site. The notice must be located so it is visible from the public road that is nearest to the active part of the construction

[10] As defined in Appendix A, a "receiving water" is "a "Water of the United States" as defined in 40 CFR §122.2 into which the regulated stormwater discharges.

site, and it must use a font large enough to be readily viewed from a public right-of-way.[11] At a minimum, the notice must include:

a. The NPDES ID (i.e., permit tracking number assigned to your NOI and the EPA webpage where a copy of the NOI can be found (https://permitsearch.epa.gov/epermit-search/ui/search));

b. A contact name and phone number for obtaining additional construction site information;

c. The Uniform Resource Locator (URL) for the SWPPP (if available), or the following statement: "If you would like to obtain a copy of the Stormwater Pollution Prevention Plan (SWPPP) for this site, contact the EPA Regional Office at [*include the appropriate CGP Regional Office contact information found at* https://www.epa.gov/npdes/contact-us-stormwater#regional];" and

d. The following statement "If you observe indicators of stormwater pollutants in the discharge or in the receiving water, contact the EPA through the following website: https://www.epa.gov/enforcement/report-environmental-violations."

2 TECHNOLOGY-BASED EFFLUENT LIMITATIONS

You must comply with the following technology-based effluent limitations in this Part for all authorized discharges.[12]

2.1 GENERAL STORMWATER CONTROL DESIGN, INSTALLATION, AND MAINTENANCE REQUIREMENTS

You must design, install, and maintain stormwater controls required in Parts 2.2, 2.3, and 2.4 to minimize the discharge of pollutants in stormwater from construction activities.[13] To meet this requirement, you must:

2.1.1 Account for the following factors in designing your stormwater controls:

a. The expected amount, frequency, intensity, and duration of precipitation;[14]

b. The nature of stormwater runoff (i.e., flow) and run-on at the site, including factors such as expected flow from impervious surfaces, slopes, and site drainage features. You must design stormwater controls to control stormwater volume, velocity, and peak flow rates to minimize discharges of pollutants in stormwater and to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points; and

c. The soil type and range of soil particle sizes expected to be present on the site.

[11] If the active part of the construction site is not visible from a public road, then place the notice of permit coverage in a position that is visible from the nearest public road and as close as possible to the construction site.

[12] For each of the effluent limits in Part 2, as applicable to your site, you must include in your SWPPP (1) a description of the specific control(s) to be implemented to meet the effluent limit; (2) any applicable design specifications; (3) routine maintenance specifications; and (4) the projected schedule for installation/implementation. See Part 7.2.6.

[13] The permit does not recommend or endorse specific products or vendors.

[14] Stormwater controls must be designed using the most recent data available to account for recent precipitation patterns and trends.

If your site is exposed to or has previously experienced major storms, such as hurricanes, storm surge, extreme/heavy precipitation, and flood events, you should also include consideration of and contingencies for whether implementing structural improvements, enhanced/resilient stormwater controls, and other mitigation measures may help minimize impacts from stormwater discharges from such major storm events.

2.1.2 Design and install all stormwater controls in accordance with good engineering practices, including applicable design specifications.[15]

2.1.3 Complete installation of stormwater controls by the time each phase of construction activities has begun.

a. By the time construction activity in any given portion of the site begins, install and make operational any downgradient sediment controls (e.g., buffers, perimeter controls, exit point controls, storm drain inlet protection) that control discharges from the initial site clearing, grading, excavating, and other earth-disturbing activities.[16]

b. Following the installation of these initial controls, install and make operational all stormwater controls needed to control discharges prior to subsequent earth-disturbing activities.

2.1.4 Ensure all stormwater controls are maintained and remain in effective operating condition during permit coverage and are protected from activities that would reduce their effectiveness.

a. Comply with any specific maintenance requirements for the stormwater controls listed in this permit, as well as any recommended by the manufacturer.[17]

b. If at any time you find that a stormwater control needs routine maintenance (i.e., minor repairs or other upkeep performed to ensure the site's stormwater controls remain in effective operating condition, not including significant repairs or the need to install a new or replacement control), you must immediately initiate the needed work, and complete such work by the close of the next business day. If it is infeasible to complete the routine maintenance by the close of the next business day, you must document why this is the case and why the repair or other upkeep to be performed should still be considered routine maintenance in your inspection report under Part 4.7.1c and complete such work no later than seven (7) calendar days from the time of discovery of the condition requiring maintenance.

c. If you must repeatedly (i.e., three (3) or more times) make the same routine maintenance fixes to the same control at the same location, even if the fix can be completed by the close of the next business day, you must either:

i. Complete work to fix any subsequent repeat occurrences of this same problem under the corrective action procedures in Part 5, including keeping any records

[15] Design specifications may be found in manufacturer specifications and/or in applicable erosion and sediment control manuals or ordinances. Any departures from such specifications must reflect good engineering practices and must be explained in your SWPPP. You must also comply with any additional design and installation requirements specified for the effluent limits in Parts 2.2, 2.3, and 2.4.

[16] Note that the requirement to install stormwater controls prior to each phase of construction activities for the site does not apply to the earth disturbance associated with the actual installation of these controls. Operators should take all reasonable actions to minimize the discharges of pollutants during the installation of stormwater controls.

[17] Any departures from such maintenance recommendations made by the manufacturer must reflect good engineering practices and must be explained in your SWPPP.

of the condition and how it was corrected under Part 5.4; or

ii. Document in your inspection report under Part 4.7.1c why the specific reoccurrence of this same problem should still be addressed as a routine maintenance fix under this Part.[18]

d. If at any time you find that a stormwater control needs a significant repair or that a new or replacement control is needed, you must comply with the corrective action deadlines for completing such work in in Part 5.2.1c.

2.2 EROSION AND SEDIMENT CONTROL REQUIREMENTS

You must implement erosion and sediment controls in accordance with the following requirements to minimize the discharge of pollutants in stormwater from construction activities.

2.2.1 Provide and maintain natural buffers and/or equivalent erosion and sediment controls for discharges to any receiving waters that is located within 50 feet of the site's earth disturbances.

a. Compliance Alternatives. For any discharges to receiving waters located within 50 feet of your site's earth disturbances, you must comply with one of the following alternatives:

i. Provide and maintain a 50-foot undisturbed natural buffer; or

ii. Provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by erosion and sediment controls that achieve, in combination, the sediment load reduction equivalent to a 50-foot undisturbed natural buffer; or

iii. If infeasible to provide and maintain an undisturbed natural buffer of any size, implement erosion and sediment controls to achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

See Appendix F, Part F.2 for additional conditions applicable to each compliance alternative.

b. Exceptions. See Appendix F, Part F.2 for exceptions to the compliance alternatives.

2.2.2 Direct stormwater to vegetated areas and maximize stormwater infiltration and filtering to reduce pollutant discharges, unless infiltration would be inadvisable due to the underlying geology (e.g., karst topography) and ground water contamination concerns, or infeasible due to site conditions.[19]

[18] Such documentation could include, for example, that minor repairs completed within the required timeframe are all that is necessary to ensure that the stormwater control continues to operate as designed and installed and that the stormwater control remains appropriate for the flow reaching it.

[19] Operators should consider whether factors such as specific contaminant concerns from the construction site, the underlying soils or geology, hydrology, depth to the ground water table, or proximity to source water or wellhead protection area(s) make the site unsuitable for infiltrating construction stormwater. Site conditions that may be of particular concern include proximity to: a current or future drinking water aquifer; a drinking water well or spring (including private/household wells); highly conductive geology such as karst; known pollutant hot spots, such as hazardous waste sites, landfills, gas stations, brownfields; an on-site sewage system or underground storage tank; or soils that do not allow for infiltration. Operators may find it helpful to consult EPA's Drinking Water Mapping Application to Protect Source Waters (DWMAPS). DWMAPS is an online mapping tool that can be used to locate drinking water providers, potential sources of contamination, polluted waterways, and information on protection initiatives in the site area.

2.2.3 Install sediment controls along any perimeter areas of the site that are downslope from any exposed soil or other disturbed areas.[20]

a. The perimeter control must be installed upgradient of any natural buffers established under Part 2.2.1, unless the control is being implemented pursuant to Part 2.2.1a.ii-iii;

b. To prevent stormwater from circumventing the edge of the perimeter control, install the perimeter control on the contour of the slope and extend both ends of the control up slope (e.g., at 45 degrees) forming a crescent rather than a straight line;

c. After installation, to ensure that perimeter controls continue to work effectively:

i. Remove sediment before it has accumulated to one-half of the above-ground height of any perimeter control; and

ii. After a storm event, if there is evidence of stormwater circumventing or undercutting the perimeter control, extend controls and/or repair undercut areas to fix the problem.

d. Exception. For areas at "linear construction sites" (as defined in Appendix A) where perimeter controls are infeasible (e.g., due to a limited or restricted right-of-way), implement other practices as necessary to minimize pollutant discharges to perimeter areas of the site.

2.2.4 Minimize sediment track-out.

a. Restrict vehicle use to properly designated exit points;

b. Use appropriate stabilization techniques[21] at all points that exit onto paved roads;

i. Exception: Stabilization is not required for exit points at linear utility construction sites that are used only episodically and for very short durations over the life of the project, provided other exit point controls[22] are implemented to minimize sediment track-out;

c. Implement additional track-out controls[23] as necessary to ensure that sediment removal occurs prior to vehicle exit; and

d. Where sediment has been tracked-out from your site onto paved roads, sidewalks, or other paved areas outside of your site, remove the deposited sediment by the end of the same business day in which the track-out occurs or by the end of the next business day if track-out occurs on a non-business day. Remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal. You are prohibited from hosing or sweeping tracked-out

[20] Examples of perimeter controls include filter berms; different types of silt fence such as wire-backed silt fence, super silt fence, or multi-layer geotextile silt fence; compost filter socks; gravel barriers; and temporary diversion dikes.

[21] Examples of appropriate stabilization techniques include the use of aggregate stone with an underlying geotextile or non-woven filter fabric, and turf mats.

[22] Examples of other exit point controls include preventing the use of exit points during wet periods; minimizing exit point use by keeping vehicles on site to the extent possible; limiting exit point size to the width needed for vehicle and equipment usage; using scarifying and compaction techniques on the soil; and avoiding establishing exit points in environmentally sensitive areas (e.g., *karst areas; steep slopes)*.

[23] Examples of additional track-out controls include the use of wheel washing, rumble strips, and rattle plates.

sediment into any constructed or natural site drainage feature, storm drain inlet, or receiving water.[24]

2.2.5 Manage stockpiles or land clearing debris piles composed, in whole or in part, of sediment and/or soil:[25]

a. Locate the piles outside of any natural buffers established under Part 2.2.1 and away from any constructed or natural site drainage features, storm drain inlets, and areas where stormwater flow is concentrated;

b. Install a sediment barrier along all downgradient perimeter areas of stockpiled soil or land clearing debris piles;[26]

c. For piles that will be unused for 14 or more days, provide cover[27] or appropriate temporary stabilization (consistent with Part 2.2.14);

d. You are prohibited from hosing down or sweeping soil or sediment accumulated on pavement or other impervious surfaces into any constructed or natural site drainage feature, storm drain inlet, or receiving water.

2.2.6 Minimize dust. On areas of exposed soil, minimize dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged in stormwater from the site.

2.2.7 Minimize steep slope disturbances. Minimize the disturbance of "steep slopes" (as defined in Appendix A).[28]

2.2.8 Preserve native topsoil, unless infeasible.[29]

2.2.9 Minimize soil compaction.[30] In areas of your site where final vegetative stabilization will occur or where infiltration practices will be installed:

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[24] Fine grains that remain visible (e.g., staining) on the surfaces of off-site streets, other paved areas, and sidewalks after you have implemented sediment removal practices are not a violation of Part 2.2.4.

[25] The requirements in Part 2.2.5 do not apply to the storage of rock, such as rip rap, landscape rock, pipe bedding gravel, and boulders. Refer to Part 2.3.3a for the requirements that apply to these types of materials.

[26] Examples of sediment barriers include berms, dikes, fiber rolls, silt fences, sandbags, gravel bags, or straw bale.

[27] Examples of cover include tarps, blown straw and hydroseeding.

[28] Where disturbance to steep slopes cannot be avoided, operators should consider implementing controls suitable for steep slope disturbances that are effective at minimizing erosion and sediment discharge (e.g., preservation of existing vegetation, hydraulic mulch, geotextiles and mats, compost blankets, earth dikes or drainage swales, terraces, velocity dissipation devices). To identify slopes and soil types that are of comparatively higher risk for sediment discharge in areas of the country where the CGP is in effect, operators can use the tables in Appendix F (see Tables F-2 thru F-6).

[29] Stockpiling topsoil at off-site locations, or transferring topsoil to other locations, is an example of a practice that is consistent with the requirements in Part 2.2.8. Preserving native topsoil is not required where the intended function of a specific area of the site dictates that the topsoil be disturbed or removed. For example, some sites may be designed to be highly impervious after construction, and therefore little or no vegetation is intended to remain, or may not have space to stockpile native topsoil on site for later use, in which case it may not be feasible to preserve topsoil.

[30] Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted.

a. Restrict vehicle and equipment use in these locations to avoid soil compaction; and

b. Before seeding or planting areas of exposed soil that have been compacted, use techniques that rehabilitate and condition the soils as necessary to support vegetative growth.

2.2.10 Protect storm drain inlets.

a. Install inlet protection measures that remove sediment from discharges prior to entry into any storm drain inlet that carries stormwater from your site to a receiving water, provided you have authority to access the storm drain inlet.[31] Inlet protection measures are not required for storm drain inlets that are conveyed to a sediment basin, sediment trap, or similarly effective control; and

b. Clean, or remove and replace, the inlet protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same business day in which it is found or by the end of the following business day if removal by the same business day is not feasible.

2.2.11 Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points.[32]

2.2.12 If you install a sediment basin or similar impoundment:

a. Situate the basin or impoundment outside of any receiving water. and any natural buffers established under Part 2.2.1;

b. Design the basin or impoundment to avoid collecting water from wetlands;

c. Design the basin or impoundment to provide storage for either:

i. The calculated volume of runoff from a 2-year, 24-hour storm;[33] or

ii. 3,600 cubic feet per acre drained.

d. Utilize outlet structures that withdraw water from the surface of the sediment basin or similar impoundment, unless infeasible;[34]

e. Use erosion controls and velocity dissipation devices to prevent erosion at inlets and outlets; and

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[31] Inlet protection measures can be removed in the event of flood conditions or to prevent erosion.

[32] Examples of stormwater controls that can be used to comply with this requirement include the use of erosion controls and/or velocity dissipation devices (e.g., check dams, sediment traps), within and along the length of a constructed site drainage feature and at the outfall to slow down stormwater.

[33] Operators may refer to https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates for guidance on determining the volume of precipitation associated with their site's local 2-year, 24-hour storm event.

[34] The circumstances in which it is infeasible to design outlet structures in this manner are rare. Exceptions may include areas with extended cold weather, where using surface outlets may not be feasible during certain time periods (although they must be used during other periods). If you determine that it is infeasible to meet this requirement, you must provide documentation in your SWPPP to support your determination, including the specific conditions or time periods when this exception will apply.

f. Remove accumulated sediment to maintain at least one-half of the design capacity and conduct all other appropriate maintenance to ensure the basin or impoundment remains in effective operating condition.

2.2.13 If using treatment chemicals (e.g., *polymers, flocculants, coagulants*):

a. Use conventional erosion and sediment controls before and after the application of treatment chemicals. Chemicals may only be applied where treated stormwater is directed to a sediment control *(e.g., sediment basin, perimeter control)* before discharge.

b. Select appropriate treatment chemicals*.* Chemicals must be appropriately suited to the types of soils likely to be exposed during construction and present in the discharges being treated *(i.e., the expected turbidity, pH, and flow rate of stormwater flowing into the chemical treatment system or area)*.

c. Minimize discharge risk from stored chemicals. Store all treatment chemicals in leak-proof containers that are kept under storm-resistant cover and surrounded by secondary containment structures *(e.g., spill berms, dikes, spill containment pallets),* or provide equivalent measures designed and maintained to minimize the potential discharge of treatment chemicals in stormwater or by any other means *(e.g., storing chemicals in a covered area, having a spill kit available on site and ensuring personnel are available to respond expeditiously in the event of a leak or spill)*.

d. Comply with State/local requirements. Comply with applicable State and local requirements regarding the use of treatment chemicals.

e. Use chemicals in accordance with good engineering practices and specifications of the chemical provider/supplier. Use treatment chemicals and chemical treatment systems in accordance with good engineering practices, and with dosing specifications and sediment removal design specifications provided by the provider/supplier of the applicable chemicals, or document in your SWPPP specific departures from these specifications and how they reflect good engineering practice.

f. Ensure proper training. Ensure all persons who handle and use treatment chemicals at the construction site are provided with appropriate, product-specific training prior to beginning application of treatment chemicals. Among other things, the training must cover proper dosing requirements.

g. Perform additional measures specified by the EPA Regional Office for the authorized use of cationic chemicals. If you have been authorized to use cationic chemicals at your site pursuant to Part 1.1.9, you must perform all additional measures as conditioned by your authorization to ensure the use of such chemicals will not result in discharges that do not meet water quality standards.

2.2.14 Stabilize exposed portions of the site. Implement and maintain stabilization measures (*e.g., seeding protected by erosion controls until vegetation is established,*[35] *sodding, mulching, erosion control blankets, hydromulch, gravel*) that minimize erosion from any areas of exposed soil on the site in accordance with Part.

[35] If you will be evaluating the use of some type of erosion control netting to the site as part of your site stabilization, EPA encourages you to consider employing products that have been shown to minimize

a. Stabilization Deadlines:[36]

Table 2 Deadlines for Initiating and Completing Site Stabilization.

Total Amount of Land Disturbance Occurring At Any One Time[37]	**Deadline**
i. Five acres or less (≤5.0) **Note: this includes sites disturbing more than five acres (>5.0) total over the course of a project, but that limit disturbance at any one time (i.e., *phase the disturbance*) to five acres or less (≤5.0)**	• Initiate the installation of stabilization measures immediately[38] in any areas of exposed soil where construction activities have permanently ceased or will be temporarily inactive for 14 or more calendar days;[39] and • Complete the installation of stabilization measures as soon as practicable, but no later than 14 calendar days

impacts on wildlife. For instance, the U.S. Fish & Wildlife Service provides recommendations on the type of netting practices that are considered "wildlife friendly," including those that use natural fiber or 100 percent biodegradable materials and that use a loose weave with a non-welded, movable jointed netting, as well as those products that are not wildlife friendly including square plastic netting that are degradable (e.g., photodegradable, UV-degradable, oxo-degradable), netting made from polypropylene, nylon, polyethylene, or polyester. Other recommendations include removing the netting product when it is no longer needed. See https://www.fws.gov/midwest/eastlansing/library/pdf/WildlifeFriendlyErosionControlProducts_revised.pdf for further information. There also may be State, Tribal, or local requirements about using wildlife friendly erosion control products.

[36] EPA may determine, based on an inspection carried out under Part 4.8 and corrective actions required under Part 5.3, that the level of sediment discharge on the site makes it necessary to require a faster schedule for completing stabilization. For instance, if sediment discharges from an area of exposed soil that is required to be stabilized are compromising the performance of existing stormwater controls, EPA may require stabilization to correct this problem.

[37] Limiting disturbances to five (5) acres or less at any one time means that at no time during the project do the cumulative earth disturbances exceed five (5) acres. The following examples would qualify as limiting disturbances at any one time to five (5) acres or less:

1. The total area of disturbance for a project is five (5) acres or less.
2. The total area of disturbance for a project will exceed five (5) acres, but the operator ensures that no more than five (5) acres will be disturbed at any one time through implementation of stabilization measures. In this way, site stabilization can be used to "free up" land that can be disturbed without exceeding the five (5)-acre cap to qualify for the 14-day stabilization deadline. For instance, if an operator completes stabilization of two (2) acres of land on a five (5)-acre disturbance, then two (2) additional acres could be disturbed while still qualifying for the longer 14-day stabilization deadline.

[38] The following are examples of activities that would constitute the immediate initiation of stabilization:

1. Prepping the soil for vegetative or non-vegetative stabilization as long as seeding, planting, and/or installation of non-vegetative stabilization products takes place as soon as practicable, but no later than one (1) calendar day of completing soil preparation;
2. Applying mulch or other non-vegetative product to the exposed area;
3. Seeding or planting the exposed area;
4. Starting any of the activities in # 1 – 3 on a portion of the entire area that will be stabilized; and
5. Finalizing arrangements to have stabilization product fully installed in compliance with the deadlines for completing stabilization.

[39] The requirement to initiate stabilization immediately is triggered as soon as you know that construction work on a portion of the site is temporarily ceased and will not resume for 14 or more days, or as soon as you know that construction work is permanently ceased. In the context of this provision, "immediately" means as soon as practicable, but no later than the end of the next business day, following the day when the construction activities have temporarily or permanently ceased.

Total Amount of Land Disturbance Occurring At Any One Time[37]	Deadline
	after stabilization has been initiated.[40]
ii. More than five acres (>5.0)	• Initiate the installation of stabilization measures immediately[41] in any areas of exposed soil where construction activities have permanently ceased or will be temporarily inactive for 14 or more calendar days;[42] and • Complete the installation of stabilization measures as soon as practicable, but no later than seven (7) calendar days after stabilization has been initiated.[43]

b. Exceptions:

i. Arid, semi-arid, and drought-stricken areas (as defined in Appendix A)**.** If it is the seasonally dry period (as defined in Appendix A)[44] or a period in which drought is occurring, and vegetative stabilization measures are being used:

(a) Immediately initiate and, within 14 calendar days of temporary or permanent cessation of work in any portion of your site, complete the installation of temporary non-vegetative stabilization measures to the extent necessary to prevent erosion;

(b) As soon as practicable, given conditions or circumstances on the site, complete all activities necessary to seed or plant the area to be stabilized; and

(c) If construction is occurring during the seasonally dry period, indicate in your SWPPP the beginning and ending dates of the seasonally dry period and your site conditions. Also include the schedule you will follow for initiating and completing vegetative stabilization.

ii. Unforeseen circumstances. Operators that are affected by unforeseen circumstances[45] that delay the initiation and/or completion of vegetative stabilization:

[40] If vegetative stabilization measures are being implemented, stabilization is considered "installed" when all activities necessary to seed or plant the area are completed, including the application of any non-vegetative protective cover (e.g., mulch, erosion control blanket), if applicable. If non-vegetative stabilization measures are being implemented, stabilization is considered "installed" when all such measures are implemented or applied.

[41] See footnote 38.

[42] See footnote 39.

[43] See footnote 40.

[44] The term "seasonally dry period" as defined in Appendix A refers to a month in which the long-term average total precipitation is less than or equal to 0.5 inches. Refer to EPA's Seasonally Dry Period Locator Tool at https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates and supporting maps for assistance in determining whether a site is operating during a seasonally dry period for the area.

[45] Examples include problems with the supply of seed stock or with the availability of specialized equipment and unsuitability of soil conditions due to excessive precipitation and/or flooding.

(a) Immediately initiate and, within 14 calendar days, complete the installation of temporary non-vegetative stabilization measures to prevent erosion;

(b) Complete all soil conditioning, seeding, watering or irrigation installation, mulching, and other required activities related to the planting and initial establishment of vegetation as soon as conditions or circumstances allow it on your site; and

(c) Document in the SWPPP the circumstances that prevent you from meeting the deadlines in Part 2.2.14a and the schedule you will follow for initiating and completing stabilization.

iii. Discharges to a sediment- or nutrient-impaired water or to a water that is identified by your State, Tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes. Complete stabilization as soon as practicable, but no later than seven (7) calendar days after stabilization has been initiated.

c. Final Stabilization Criteria (for any areas not covered by permanent structures)**:**

i. Establish uniform, perennial vegetation *(*i.e.*, evenly distributed, without large bare areas)* to provide 70 percent or more of the vegetative cover native to local undisturbed areas; and/or

ii. Implement permanent non-vegetative stabilization measures[46] to provide effective cover of any areas of exposed soil.

iii. Exceptions:

(a) **Arid, semi-arid, and drought-stricken areas** (as defined in Appendix A). Final stabilization is met if the area has been seeded or planted to establish vegetation that provides 70 percent or more of the vegetative cover native to local undisturbed areas within three (3) years and, to the extent necessary to prevent erosion on the seeded or planted area, non-vegetative erosion controls have been applied to provide cover for at least three years without active maintenance.

(b) **Disturbed areas on agricultural land that are restored to their preconstruction agricultural use.** The Part 2.2.14c final stabilization criteria do not apply.

(c) **Areas that need to remain disturbed.** In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed, and only the minimum area needed remains disturbed *(*e.g.*, dirt access roads, utility pole pads, areas being used for storage of vehicles, equipment, materials)*.

2.3 POLLUTION PREVENTION REQUIREMENTS[47]

You must implement pollution prevention controls in accordance with the following requirements to minimize the discharge of pollutants in stormwater and to prevent the discharge of pollutants from spilled or leaked materials from construction activities.

[46] Examples of permanent non-vegetative stabilization measures include riprap, gravel, gabions, and geotextiles.

[47] Under this permit, you are not required to minimize exposure for any products or materials where the exposure to precipitation and to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

2.3.1 For equipment and vehicle fueling and maintenance:

a. Provide an effective means of eliminating the discharge of spilled or leaked chemicals, including fuels and oils, from these activities;[48]

b. If applicable, comply with the Spill Prevention Control and Countermeasures (SPCC) requirements in 40 CFR part 112 and Section 311 of the CWA;

c. Ensure adequate supplies are available at all times to handle spills, leaks, and disposal of used liquids;

d. Use drip pans and absorbents under or around leaky vehicles;

e. Dispose of or recycle oil and oily wastes in accordance with other Federal, State, Tribal, or local requirements; and

f. Clean up spills or contaminated surfaces immediately, using dry clean up measures (do not clean contaminated surfaces by hosing the area down), and eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge.

2.3.2 For equipment and vehicle washing:

a. Provide an effective means of minimizing the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other types of wash waters;[49]

b. Ensure there is no discharge of soaps, solvents, or detergents in equipment and vehicle wash water; and

c. For storage of soaps, detergents, or solvents, provide either (1) cover *(*e.g., *plastic sheeting, temporary roofs)* to minimize the exposure of these detergents to precipitation and to stormwater, or (2) a similarly effective means designed to minimize the discharge of pollutants from these areas.

2.3.3 For storage, handling, and disposal of building products, materials, and wastes:[50]

a. *For building materials and building products*,[51] provide either (1) cover (e.g., *plastic sheeting, temporary roofs*) to minimize the exposure of these products to

[48] Examples of effective means include:

- Locating activities away from receiving waters, storm drain inlets, and constructed or natural site drainage feature so that stormwater coming into contact with these activities cannot reach waters of the U.S.;
- Providing secondary containment (e.g., *spill berms, dikes, spill containment pallets*) and cover where appropriate; and
- Having a spill kit available on site and ensuring personnel are available to respond expeditiously in the event of a leak or spill.

[49] Examples of effective means include locating activities away from receiving waters and storm drain inlets or constructed or natural site drainage features and directing wash waters to a sediment basin or sediment trap, using filtration devices, such as filter bags or sand filters, or using other similarly effective controls.

[50] Compliance with the requirements of this permit does not relieve compliance requirements with respect to Federal, State, or local laws and regulations governing the storage, handling, and disposal of solid, hazardous, or toxic wastes and materials.

[51] Examples of building materials and building products typically present at construction sites include asphalt sealants, copper flashing, roofing materials, adhesives, concrete admixtures, and gravel and mulch stockpiles.

precipitation and to stormwater, or (2) a similarly effective means designed to minimize the discharge of pollutants from these areas.

Exception: Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

b. *For pesticides, herbicides, insecticides, fertilizers, and landscape materials:*

i. In storage areas, provide either (1) cover (e.g., *plastic sheeting, temporary roofs*) to minimize the exposure of these chemicals to precipitation and to stormwater, or (2) a similarly effective means designed to minimize the discharge of pollutants from these areas; and

ii. Comply with all application and disposal requirements included on the registered pesticide, herbicide, insecticide, and fertilizer label (see also Part 2.3.5).

c. *For diesel fuel, oil, hydraulic fluids, other petroleum products, and other chemicals:* The following requirements apply to the storage and handling of chemicals on your site. If you are already implementing controls as part of an SPCC or other spill prevention plan that meet or exceed the requirements of this Part, you may continue to do so and be considered in compliance with these provisions provided you reference the applicable parts of the SPCC or other plans in your SWPPP as required in Part 7.2.6b.viii.

i. If any chemical container has a storage capacity of less than 55 gallons:

(a) The containers must be water-tight, and must be kept closed, sealed, and secured when not being actively used;

(b) If stored outside, use a spill containment pallet or similar device to capture small leaks or spills; and

(c) Have a spill kit available on site that is in good working condition (i.e., not damaged, expired, or used up) and ensure personnel are available to respond immediately in the event of a leak or spill.

ii. If any chemical container has a storage capacity of 55 gallons or more:

(a) The containers must be water-tight, and must be kept closed, sealed, and secured when not being actively used;

(b) Store containers a minimum of 50 feet from receiving waters, constructed or natural site drainage features, and storm drain inlets. If infeasible due to site constraints, store containers as far away from these features as the site permits. If site constraints prevent you from storing containers 50 feet away from receiving waters or the other features identified, you must document in your SWPPP the specific reasons why the 50-foot setback is infeasible, and how you will store containers as far away as the site permits;

(c) Provide either (1) cover (e.g., temporary roofs) to minimize the exposure of these containers to precipitation and to stormwater, or (2) secondary containment (e.g., curbing, spill berms, dikes, spill containment pallets, double-wall, above-ground storage tank); and

(d) Have a spill kit available on site that is in good working condition (i.e., not

damaged, expired, or used up) and ensure personnel are available to respond immediately in the event of a leak or spill. Additional secondary containment measures are listed at 40 CFR § 112.7(c)(1).

iii. Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly. You are prohibited from hosing the area down to clean surfaces or spills. Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge.

d. *For hazardous or toxic wastes:*[52]

i. Separate hazardous or toxic waste from construction and domestic waste;

ii. Store waste in sealed containers, constructed of suitable materials to prevent leakage and corrosion, and labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable Federal, State, Tribal, or local requirements;

iii. Store all outside containers within appropriately-sized secondary containment (e.g., *spill berms, dikes, spill containment pallets*) to prevent spills from being discharged, or provide a similarly effective means designed to prevent the discharge of pollutants from these areas *(*e.g., *storing chemicals in a covered area, having a spill kit available on site);*

iv. Dispose of hazardous or toxic waste in accordance with the manufacturer's recommended method of disposal and in compliance with Federal, State, Tribal, and local requirements;

v. Clean up spills immediately, using dry clean-up methods, and dispose of used materials properly. You are prohibited from hosing the area down to clean surfaces or spills. Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge; and

vi. Follow all other Federal, State, Tribal, and local requirements regarding hazardous or toxic waste.

e. *For construction and domestic wastes:*[53]

i. Provide waste containers *(*e.g., *dumpster, trash receptacle)* of sufficient size and number to contain construction and domestic wastes;

(a) For waste containers with lids, keep waste container lids closed when not in use, and close lids at the end of the business day and during storm events. For waste containers without lids, provide either (1) cover *(*e.g., *a tarp, plastic sheeting, temporary roof)* to minimize exposure of wastes to precipitation, or (2) a similarly effective means designed to minimize the discharge of pollutants *(*e.g., *secondary containment)*;

(b) On business days, clean up and dispose of waste in designated waste

[52] Examples of hazardous or toxic waste that may be present at construction sites include paints, caulks, sealants, fluorescent light ballasts, solvents, petroleum-based products, wood preservatives, additives, curing compounds, and acids.

[53] Examples of construction and domestic wastes include packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, styrofoam, concrete, demolition debris; and other trash or discarded materials.

containers; and

(c) Clean up immediately if containers overflow, and if there is litter elsewhere on the site from escaped trash.

ii. Waste containers are not required for the waste remnant or unused portions of construction materials or final products that are covered by the exception in Part 2.2.3a provided that:

(a) These wastes are stored separately from other construction or domestic wastes addressed by Part 2.3.3e.i (i.e., wastes not covered by the exception in Part 2.3.3a). If the wastes are mixed, they must be stored in waste containers as required in Part 2.3.3e.i; and

(b) These wastes are stored in designated areas of the site, the wastes are described in the SWPPP (see Part 7.2.6b.ix), and identified in the site plan (see Part 7.2.4i).

f. *For sanitary waste*, position portable toilets so they are secure and will not be tipped or knocked over, and are located away from receiving waters, storm drain inlets, and constructed or natural site drainage features.

2.3.4 For washing applicators and containers used for stucco, paint, concrete, form release oils, curing compounds, or other materials:

a. Direct wash water into a leak-proof container or leak-proof and lined pit designed so no overflows can occur due to inadequate sizing or precipitation;

b. Handle washout or cleanout wastes as follows:

i. For liquid wastes:

(a) Do not dump liquid wastes or allow them to enter into constructed or natural site drainage features, storm inlets, or receiving waters;

(b) Do not allow liquid wastes to be disposed of through infiltration or to otherwise be disposed of on the ground;

(c) Comply with applicable State, Tribal, or local requirements for disposal

ii. Remove and dispose of hardened concrete waste consistent with your handling of other construction wastes in Part 2.3.3e; and

c. Locate any washout or cleanout activities as far away as possible from receiving waters, constructed or natural site drainage features, and storm drain inlets, and, to the extent feasible, designate areas to be used for these activities and conduct such activities only in these areas.

2.3.5 For the application of fertilizers:

a. Apply at a rate and in amounts consistent with manufacturer's specifications, or document in the SWPPP departures from the manufacturer specifications where appropriate in accordance with Part 7.2.6b.x;

b. Apply at the appropriate time of year for your location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth;

c. Avoid applying before heavy rains that could cause excess nutrients to be discharged;

d. Never apply to frozen ground;

e. Never apply to constructed or natural site drainage features; and

f. Follow all other Federal, State, Tribal, and local requirements regarding fertilizer application.

2.3.6 Emergency Spill Notification Requirements

Discharges of toxic or hazardous substances from a spill or other release are prohibited, consistent with Part 1.3.5. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR part 110, 40 CFR part 117, or 40 CFR part 302 occurs during a 24-hour period, you must notify the National Response Center (NRC) at (800) 424-8802 or, in the Washington, DC metropolitan area, call (202) 267-2675 in accordance with the requirements of 40 CFR part 110, 40 CFR part 117, and 40 CFR part 302 as soon as you have knowledge of the release. You must also, within seven (7) calendar days of knowledge of the release, provide a description of the release, the circumstances leading to the release, and the date of the release. State, Tribal, or local requirements may necessitate additional reporting of spills or discharges to local emergency response, public health, or drinking water supply agencies.

2.4 CONSTRUCTION DEWATERING REQUIREMENTS

Comply with the following requirements to minimize the discharge of pollutants from dewatering[54] operations.

2.4.1 Route dewatering water through a sediment control (e.g., sediment trap or basin, pumped water filter bag) designed to prevent discharges with visual turbidity; [55]

2.4.2 Do not discharge visible floating solids or foam;

2.4.3 The discharge must not cause the formation of a visible sheen on the water surface, or visible oily deposits on the bottom or shoreline of the receiving water. Use an oil-water separator or suitable filtration device (such as a cartridge filter) designed to remove oil, grease, or other products if dewatering water is found to or expected to contain these materials;

2.4.4 To the extent feasible, use well-vegetated (e.g., grassy or wooded), upland areas of the site to infiltrate dewatering water before discharge.[56] You are prohibited from using receiving waters as part of the treatment area;

2.4.5 To prevent dewatering-related erosion and related sediment discharges:

a. Use stable, erosion-resistant surfaces (e.g., well-vegetated grassy areas, clean filter stone, geotextile underlayment) to discharge from dewatering controls;

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[54] "Dewatering" is defined in Appendix A as "the act of draining accumulated stormwater and/or ground water from building foundations, vaults, and trenches, or other similar points of accumulation."

[55] For the purposes of this permit, visual turbidity is present where there is a sediment plume in the discharge or the discharge appears cloudy, or opaque, or has a visible contrast that can be identified by an observer.

[56] See footnote 19.

b. Do not place dewatering controls, such as pumped water filter bags, on steep slopes (as defined in Appendix A); and

c. At all points where dewatering water is discharged, comply with the velocity dissipation requirements of Part 2.2.11.

2.4.6 For backwash water, either haul it away for disposal or return it to the beginning of the treatment process;

2.4.7 Replace and clean the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications; and

2.4.8 Comply with dewatering-specific inspection requirements in Part 4.

3 WATER QUALITY-BASED EFFLUENT LIMITATIONS

3.1 GENERAL EFFLUENT LIMITATION TO MEET APPLICABLE WATER QUALITY STANDARDS

Discharges must be controlled as necessary to meet applicable water quality standards. Discharges must also comply with any additional State or Tribal requirements that are in Part 9.

In the absence of information demonstrating otherwise, EPA expects that compliance with the conditions in this permit will result in stormwater discharges being controlled as necessary to meet applicable water quality standards. If at any time you become aware, or EPA determines, that discharges are not being controlled as necessary to meet applicable water quality standards, you must take corrective action as required in Parts 5.1 and 5.2, and document the corrective actions as required in Part 5.4.

EPA may insist that you install additional controls (to meet the narrative water quality-based effluent limit above) on a site-specific basis, or require you to obtain coverage under an individual permit, if information in your NOI or from other sources indicates that your discharges are not controlled as necessary to meet applicable water quality standards. This includes situations where additional controls are necessary to comply with a wasteload allocation in an EPA-established or approved TMDL.

If during your coverage under a previous permit, you were required to install and maintain stormwater controls specifically to meet the assumptions and requirements of an EPA-approved or established TMDL (for any parameter) or to otherwise control your discharge to meet water quality standards, you must continue to implement such controls as part of your coverage under this permit.

3.2 WATER QUALITY-BASED CONDITIONS FOR SITES DISCHARGING TO CERTAIN IMPAIRED AND HIGH QUALITY RECEIVING WATERS

For any portion of the site that discharges to a sediment or nutrient-impaired water or to a water that is identified by your State, Tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes,[57] you must comply with the inspection frequency specified in Part 4.3 and you must comply with the stabilization deadline specified in Part 2.2.14b.iii.[58]

[57] Refer to Appendix A for definitions of "impaired water" and "Tier 2," "Tier 2.5," and "Tier 3" waters. For assistance in determining whether your site discharges to impaired waters, EPA has developed a tool that is available at https://www.epa.gov/npdes/epas-stormwater-discharge-mapping-tools. For assistance in determining whether your site discharges to a Tier 2, 2.5, or 3 water, refer to the list of such waters at https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates.

[58] If you qualify for any of the reduced inspection frequencies in Part 4.4, you may conduct inspections in

If you discharge to a water that is impaired for a parameter other than a sediment-related parameter or nutrients, EPA will inform you if any additional controls are necessary for your discharge to be controlled as necessary to meet water quality standards. These controls might include those necessary for your discharge to be consistent with the assumptions of any available wasteload allocation in any applicable TMDL. In addition, EPA may require you to apply for and obtain coverage under an individual NPDES permit.

In addition, on a case-by-case basis, EPA may notify operators of new sites or operators of existing sites with increased discharges that additional analyses, stormwater controls, and/or other measures are necessary to comply with the applicable antidegradation requirements, or notify you that an individual permit application is necessary.

If you discharge to a water that is impaired for polychlorinated biphenyls (PCBs) and are engaging in demolition of any structure with at least 10,000 square feet of floor space built or renovated before January 1, 1980, you must:

a. Implement controls[59] to minimize the exposure of PCB-containing building materials, including paint, caulk, and pre-1980 fluorescent lighting fixtures, to precipitation and to stormwater; and

b. Ensure that disposal of such materials is performed in compliance with applicable State, Federal, and local laws.

3.3 TURBIDITY BENCHMARK MONITORING FOR SITES DISCHARGING DEWATERING WATER TO PROTECT THE WATER QUALITY OF SENSITIVE WATERS

For sites discharging dewatering water to "sensitive waters" (i.e., receiving waters listed as impaired for sediment or a sediment-related parameter (as defined in Appendix A), or receiving waters designated as a Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes) you are required to comply with the benchmark monitoring requirements in this Part and document the procedures you will use at your site in your SWPPP pursuant to Part 7.2.8. A summary of these requirements is included in Table 1.

EPA notes that the benchmark threshold is not an effluent limitation, rather it is an indicator that the dewatering controls may not be working to protect water quality, which the operator must investigate and correct as appropriate. A benchmark exceedance is not a permit violation. However, if a benchmark exceedance triggers corrective action in Part 5.1.5a, failure to conduct any required action is a permit violation.

Where there are multiple operators associated with the same site, the operators may coordinate with one another to carry out the monitoring requirements of this Part in order to avoid duplicating efforts. Such coordinating arrangements must be described in the SWPPP consistent with Part 7.2.8. Regardless of how the operators divide the

accordance with Part 4.4 for any portion of your site that discharges to a sensitive water.

[59] Examples of controls to minimize exposure of PCBs to precipitation and stormwater include separating work areas from non-work areas and selecting appropriate personal protective equipment and tools, constructing a containment area so that all dust or debris generated by the work remains within the protected area, and using tools that minimize dust and heat (<212°F). For additional information, refer to Part 2.3.3 of the CGP Fact Sheet.

responsibilities for monitoring and reporting, each operator remains responsible for compliance with these requirements.[60]

3.3.1 Turbidity monitoring requirements[61]

a. **Sampling frequency.** You must collect at least one turbidity sample from your dewatering discharge each day a discharge occurs.

b. **Sampling location.** Samples must be taken at all points where dewatering water is discharged. Samples must be taken after the dewatering water has been treated by installed treatment devices pursuant to Parts 2.4.1 and 2.4.3 and prior to its discharge off site into a receiving water, constructed or natural site drainage feature, or storm drain inlet.

c. **Representative samples.** Samples taken must be representative of the dewatering discharge for any given day as required in Appendix G (standard permit conditions), Part G.10.2.

d. **Test methods.** Samples must be measured using a turbidity meter that reports results in nephelometric turbidity units (NTUs) and conforms with a Part 136-approved method (e.g., methods 180.1 and 2130). You are required to use the meter, and conduct a calibration verification prior to each day's use, consistent with the manufacturer's instructions.

3.3.2 Turbidity benchmark

a. The benchmark threshold for turbidity for this permit is 50 NTUs (referred to elsewhere in this permit as the "standard 50 NTU benchmark") unless EPA has authorized the use of an alternate benchmark in accordance with Part 3.3.2b.

b. **Request for alternate benchmark threshold.**

i. At any time prior to or during your coverage under this permit, you may request that EPA approve a benchmark for your site that is higher than 50 NTUs if you have information demonstrating the higher number is the same as your receiving water's water quality standard for turbidity. Unless EPA approves an alternate benchmark, you will be required to use the standard 50 NTU benchmark. To request approval of an alternate benchmark, you must submit the following information to your applicable EPA Regional Office (see Appendix K):
(a) The current turbidity water quality standard that applies to your receiving

[60] For instance, if Operator A relies on Operator B to meet the Part 3.3.1 turbidity monitoring requirements, the Part 3.3.4 reporting and recordkeeping requirements, and the Part 5.2.2 corrective action provisions when applicable, Operator A does not have to duplicate these same functions if Operator B is implementing them for both operators to be in compliance with the permit. However, Operator A remains responsible for complying with these permit requirements if Operator B fails to take actions that were necessary for Operator A to comply with the permit. See also footnote 83. EPA notes that both Operator A and B are required to submit turbidity monitoring reports as required under Part 3.3.4, however, Operator A's report does not need to include the data collected by Operator B as long as Operator B submits the required data and Operator A's report indicates that it is relying on Operator B to report the data. See Part 3.3.4a.

[61] Operators may find it useful to consult EPA's *Monitoring and Inspection Guide for Construction Dewatering*, available at https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates, which provides guidelines on how to correctly monitor for turbidity, determine if the weekly average exceeds the benchmark, and, if so, how to proceed with corrective action.

water and the source/citation.[62]

(b) If the applicable turbidity water quality standard requires information on natural or background turbidity levels (e.g., "no more than 10 NTU above natural turbidity levels") to determine the specific standard for the receiving water, include available data that can be used to establish the natural turbidity levels of your receiving water (including literature studies or Federal, State, Tribal, or local government data). Data must be representative of the natural turbidity levels of your specific receiving water. Identify the source(s) of all data provided, including if the data are from samples you collected of the receiving water.

ii. EPA will inform you of its decision on whether to approve the requested alternate benchmark within 30 days. EPA may approve your request, request additional time (e.g., if additional information is needed to substantiate the data you provided), or deny your request. Unless and until EPA approves your request to use an alternate benchmark, you are required to use the standard benchmark of 50 NTUs and take any required corrective actions if an exceedance occurs.

3.3.3 Comparison of turbidity samples to benchmark. Compare the weekly average[63] of your turbidity monitoring results to the standard 50 NTU benchmark, or alternate benchmark if approved by EPA.

a. If the weekly average of your turbidity monitoring results exceeds the standard benchmark (or your approved alternate benchmark), you are required to conduct follow-up corrective action in accordance with Part 5.2.2 and document any corrective action taken in your corrective action log in accordance with Part 5.4.

b. For averaging purposes, a "monitoring week" starts with a Monday and ends on Sunday. Once a new monitoring week starts, you will need to calculate a new average for that week of turbidity monitoring results.[64] A weekly average may consist of one or more turbidity monitoring results.

c. Although you are not required to collect and analyze more than one turbidity sample per day from your dewatering discharge, if you do collect and analyze more than one sample on any given day, you must include any additional results in the

[62] For instance, if your site is located in Washington, DC, and you are discharging to a Class B water, for which the water quality standard is that turbidity may not increase above ambient levels by more than 20 percent, you would reference "Water Quality Standards for the District of Columbia, Chapter 11, Section 1104.8."

[63] A "weekly average" is defined as the sum of all of the turbidity samples taken during a "monitoring week" divided by the number of samples measured during that week. Average values should be calculated to the nearest whole number.

[64] For example, if turbidity samples from your dewatering discharge in week 1 result in values of 30 NTU on Tuesday, 40 NTU on Wednesday, and 45 NTU on Thursday, your weekly average turbidity value would be 38.33 NTU ((30+40+45) ÷ 3 = 38 NTU). If in week 2, your turbidity samples resulted in values of 45 NTU on Monday, 30 NTU on Tuesday, 25 NTU on Wednesday, and 15 NTU on Thursday, you would calculate a new average for that week, which would yield an average turbidity value of 28.75 NTU ((45+30+25+15) ÷ 4 = 29 NTU). By comparison, if your samples on consecutive days from Friday to Monday were 60 NTU, 45 NTU, 40 NTU, and 43 NTU, respectively, and there are no other dewatering discharges for the remainder of the week, you would calculate one weekly average for the Friday to Sunday to be 48 NTU ((60+45+40) ÷ 3 = 48 NTU), and a separate weekly average for the one Monday to be 43 NTU (43 ÷ 1 = 43 NTU).

calculation of your weekly average (i.e., add all individual results for that monitoring week and divide by the total number of samples).[65]

d. If you are conducting turbidity monitoring for more than one dewatering discharge point, you must calculate a weekly average turbidity value for each discharge point and compare each to the turbidity benchmark.

3.3.4 Reporting and recordkeeping.

a. You must submit reports of your weekly average turbidity data to EPA no later than 30 days following the end of each monitoring quarter. If there are monitoring weeks in which there was no dewatering discharge, or if there is a monitoring quarter with no dewatering discharge, indicate this in your turbidity monitoring report. If another operator associated with your same site is conducting turbidity monitoring on your behalf pursuant to Part 3.3, indicate this in your turbidity monitoring report.

b. For the purposes of this permit, the following monitoring quarters and reporting deadlines apply:

Table 3. Monitoring Quarters and Deadlines for Reporting Turbidity Benchmark Monitoring Data.

Monitoring Quarter #	**Months**	**Reporting Deadline** (no later than 30 days after end of the monitoring quarter)
1	January 1 – March 31	April 30
2	April 1 – June 30	July 30
3	July 1 – September 30	October 30
4	October 1 – December 31	January 30

c. You must use EPA's NPDES eReporting Tool (NeT) to electronically submit your quarterly turbidity data, unless, consistent with Part 1.4.2, you received a waiver from your applicable EPA Regional Office. If the EPA Regional Office grants you approval to use a paper turbidity monitoring report form, and you elect to use it, you must complete the form in Appendix K. If EPA approves of your request to use an alternate turbidity benchmark pursuant to Part 3.3.2b, EPA will substitute the alternate benchmark in your NeT account.

d. For each day in which you are required to monitor, you must record the monitoring information required by Appendix G, Parts G.10.2 and G.10.3 and retain all such information for a period of at least three years from the date this permit expires or from the date your authorization is terminated.

[65] For example, if during a monitoring week you take two turbidity samples on Tuesday with a value of 30 NTU and 35 NTU, three samples on Wednesday with a value of 40 NTU, 45 NTU, and 48 NTU, and one sample on Thursday with a value of 45 NTU, your weekly average turbidity value for this week would be 41 NTU ((30+35+40+45+48+45) ÷ 6 = 41 NTU).

Table 4. Summary of Turbidity Benchmark Monitoring Requirements.

Applicability	Sampling Requirement	Turbidity Benchmark	Corrective Action	Reporting
Sites discharging dewatering water to a sediment-impaired water or to a water designated as a Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes.	Collect at least one turbidity sample per day, from each discharge point, on any day there is a dewatering discharge. Use turbidity sampling procedures specified in Part 3.3.1.	Compare the weekly average of your turbidity monitoring results to the 50 NTU benchmark (or alternate benchmark if approved by EPA).	If the weekly average of turbidity monitoring results exceeds the 50 NTU turbidity benchmark (or alternate benchmark if approved by EPA), you are required to take follow-up corrective action in accordance with Part 5.2.2.	Report all weekly average turbidity monitoring results on a quarterly basis via NeT-CGP (unless use of the paper monitoring form in Appendix K is approved by EPA) no later than 30 days following the end of each monitoring quarter.

4 INSPECTION REQUIREMENTS

4.1 PERSON(S) RESPONSIBLE FOR CONDUCTING SITE AND DEWATERING INSPECTIONS

The person(s) inspecting your site may be a person on your staff or a third party you hire to conduct such inspections. You are responsible for ensuring that any person conducting inspections pursuant to this Part is a "qualified person." A qualified person is someone who has completed the training required by Part 6.3.

4.2 FREQUENCY OF INSPECTIONS.[66]

At a minimum, you must conduct a site inspection in accordance with one of the two schedules listed below, unless you are subject to the Part 4.3 site inspection frequency for discharges to sediment or nutrient-impaired or high quality waters, or qualify for a Part 4.4 reduction in the inspection frequency:

4.2.1 At least once every seven (7) calendar days; *or*

4.2.2 Once every 14 calendar days *and* within 24 hours[67] of the occurrence of:

- **a.** A storm event that produces 0.25 inches or more of rain within a 24-hour period.
  - **i.** If a storm event produces 0.25 inches or more of rain within a 24-hour period (including when there are multiple, smaller storms that alone produce less than 0.25 inches but together produce 0.25 inches or more in 24 hours), you are required to conduct one inspection within 24 hours of when 0.25 inches of rain or more has fallen.

[66] Inspections are only required during the site's normal working hours.

[67] For the purposes of the inspection requirements in this Part, conducting an inspection "within 24 hours" means that once either of the two conditions in Parts 4.2.2a or 4.2.2b are met you have 24 hours from that time to conduct an inspection. For clarification, the 24 hours is counted as a continuous passage of time, and not counted by business hours (e.g., 3 business days of 8 hours each). When the 24-hour inspection time frame occurs entirely outside of normal working hours, you must conduct an inspection by no later than the end of the next business day.

ii. If a storm event produces 0.25 inches or more of rain within a 24-hour period on the first day of a storm and continues to produce 0.25 inches or more of rain on subsequent days, you must conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the last day of the storm that produces 0.25 inches or more of rain (i.e., only two inspections would be required for such a storm event).[68]

b. A discharge caused by snowmelt from a storm event that produces 3.25 inches[69] or more of snow within a 24-hour period. You are required to conduct one inspection once the discharge of snowmelt from a 3.25-inch or more snow accumulation occurs. Additional snowmelt inspections are only required if following the discharge from the first snowmelt, there is a discharge from a separate storm event that produces 3.25 inches or more of snow.

4.2.3 To determine whether a storm event meets either of the thresholds in Parts 4.2.2a or 4.2.2b:

a. For rain, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any 24-hour period during which there is 0.25 inches or more of rainfall, you must record the total rainfall measured for that day in accordance with Part 4.7.1d.

b. For snow, you must either take measurements of snowfall at your site,[70] or rely on similar information from a local weather forecasting provider that is representative of your location.

4.3 INCREASE IN INSPECTION FREQUENCY FOR CERTAIN SITES.

The increased inspection frequencies established in this Part take the place of the Part 4.2 inspection frequencies for the portion of the site affected.

4.3.1 For any portion of the site that discharges to a sediment or nutrient-impaired water or to a water that is identified by your State, Tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes (see Part 3.2), you must conduct an once every seven (7) calendar days *and* within 24 hours of the occurrence of a storm event that produces 0.25 inches or more of rain within a 24-hour period, or within 24 hours of a snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period.

[68] For example, if 0.30 inches of rain falls on Day 1, 0.25 inches of rain falls on Day 2, and 0.10 inches of rain fall on Day 3, you would be required to conduct a first inspection within 24 hours of the Day 1 rainfall and a second inspection within 24 hours of the Day 2 rainfall, but a third inspection would not be required within 24 hours of the Day 3 rainfall.

[69] This is the amount of snow that is equivalent to 0.25 inches of rain, based on information from the National Oceanic and Atmospheric Administration (NOAA) indicating that 13 inches of snow is, on average, equivalent to 1 inch of rain. See https://www.nssl.noaa.gov/education/svrwx101/winter/faq/.

[70] For snowfall measurements, EPA suggests use of NOAA's National Weather Service guidelines at https://www.weather.gov/jkl/snow_measurement. These guidelines recommend use of a "snowboard" (a piece of wood about 16 inches by 16 inches) that is placed in an unobstructed part of the site on a hard surface.

Refer to Parts 4.2.3a and 4.2.3b for the requirements to determine if a storm event produces enough rain or snow to trigger the inspection requirement.

4.3.2 For sites discharging dewatering water, you must conduct an inspection in accordance with Part 4.6.3 during the discharge once per day on which the discharge occurs. The Part 4.2 inspection frequency still applies to all other portions of the site, unless the site is affected by either the increased frequency in Part 4.3.1 or the reduced frequency in Part 4.4.

4.4 REDUCTIONS IN INSPECTION FREQUENCY

4.4.1 Stabilized areas.

a. You may reduce the frequency of inspections to twice per month for the first month, no more than 14 calendar days apart, then once per month until permit coverage is terminated consistent with Part 8 in any area of your site where the stabilization steps in Part 2.2.14a have been completed. If construction activity resumes in this portion of the site at a later date, the inspection frequency immediately increases to that required in Parts 4.2 and 4.3, as applicable. You must document the beginning and ending dates of this period in your SWPPP.

b. Exception. For "linear construction sites" (as defined in Appendix A) where disturbed portions have undergone final stabilization at the same time active construction continues on others, you may reduce the frequency of inspections to twice per month for the first month, no more than 14 calendar days apart, in any area of your site where the stabilization steps in Part 2.2.14a have been completed. After the first month, inspect once more within 24 hours of the occurrence of a storm event that produces 0.25 inches of rain or more within a 24-hour period, or within 24 hours of a snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period. If there are no issues or evidence of stabilization problems, you may suspend further inspections. If "wash-out" of stabilization materials and/or sediment is observed, following re-stabilization, inspections must resume at the inspection frequency required in Part 4.4.1a. Inspections must continue until final stabilization is visually confirmed following a storm event that produces 0.25 inches of rain or more within a 24-hour period.

4.4.2 Arid, semi-arid, or drought-stricken areas (as defined in Appendix A). If it is the seasonally dry period[71] or a period in which drought is occurring, you may reduce the frequency of inspections to once per month and within 24 hours of the occurrence of a storm event that produces 0.25 inches of rain or more within a 24-hour period, or within 24 hours of a snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period. You must document that you are using this reduced schedule and the beginning and ending dates of the seasonally dry period in your SWPPP. Follow the procedures in Part 4.2.3a and 4.2.3b, accordingly, to determine if a storm event occurs that produces 0.25 inches or more of rain or 3.25 inches or more of snow within a 24-hour period. For any 24-hour period during which there is 0.25 inches or more of rainfall, or 3.25 inches or more of snow, you must record the total rainfall or snow measured for that day in accordance with Part 4.7.1d.

[71] See footnote 44.

4.4.3 Frozen conditions:

a. If you are suspending construction activities due to frozen conditions, you may temporarily suspend inspections on your site until thawing conditions (as defined in Appendix A) begin to occur if:

i. Discharges are unlikely due to continuous frozen conditions that are likely to continue at your site for at least three (3) months based on historic seasonal averages.[72] If unexpected weather conditions (such as above freezing temperatures or rain events) make discharges likely, you must immediately resume your regular inspection frequency as described in Parts 4.2 and 4.3, as applicable;

ii. Land disturbances have been suspended; and

iii. All disturbed areas of the site have been stabilized in accordance with Part 2.2.14a.

b. If you are still conducting construction activities during frozen conditions, you may reduce your inspection frequency to once per month if:

i. Discharges are unlikely due to continuous frozen conditions that are likely to continue at your site for at least three (3) months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain events) make discharges likely, you must immediately resume your regular inspection frequency as described in Parts 4.2 and 4.3, as applicable; and

ii. Except for areas in which you are actively conducting construction activities, disturbed areas of the site have been stabilized in accordance with Part 2.2.14a.

You must document the beginning and ending dates of this period in your SWPPP.

4.5 AREAS THAT MUST BE INSPECTED

During your site inspection, you must at a minimum inspect the following areas of your site:

4.5.1 All areas that have been cleared, graded, or excavated and that have not yet completed stabilization consistent with Part 2.2.14a;

4.5.2 All stormwater controls, including pollution prevention controls, installed at the site to comply with this permit;[73]

4.5.3 Material, waste, borrow, and equipment storage and maintenance areas that are covered by this permit;

4.5.4 All areas where stormwater typically flows within the site, including constructed or natural site drainage features designed to divert, convey, and/or treat stormwater;

4.5.5 All areas where construction dewatering is taking place, including controls to treat the dewatering discharge and any channelized flow of water to and from those controls;

[72] Use data sets that include the most recent data available to account for recent precipitation patterns and trends.

[73] This includes the requirement to inspect for sediment that has been tracked out from the site onto paved roads, sidewalks, or other paved areas consistent with Part 2.2.4.

4.5.6 All points of discharge from the site; and

4.5.7 All locations where stabilization measures have been implemented.

You are not required to inspect areas that, at the time of the inspection, are considered unsafe to your inspection personnel.

4.6 REQUIREMENTS FOR INSPECTIONS

4.6.1 During each site inspection, you must at a minimum:

a. Check whether all stormwater controls *(*i.e.*, erosion and sediment controls and pollution prevention controls)* are properly installed, appear to be operational, and are working as intended to minimize pollutant discharges.

b. Check for the presence of conditions that could lead to spills, leaks, or other accumulations of pollutants on the site.

c. Identify any locations where new or modified stormwater controls are necessary to meet the requirements of Parts 2 and/or 3.

d. Check for signs of visible erosion and sedimentation *(*i.e.*, sediment deposits)* that have occurred and are attributable to your discharge at points of discharge and, if applicable, on the banks of any receiving waters flowing within or immediately adjacent to the site;

e. Check for signs of sediment deposition that are visible from your site and attributable to your discharge (e.g., sand bars with no vegetation growing on top in receiving waters or in other constructed or natural site drainage features, or the buildup of sediment deposits on nearby streets, curbs, or open conveyance channels).

f. Identify any incidents of noncompliance observed.

4.6.2 If a discharge is occurring during your inspection:

a. Identify all discharge points at the site; and

b. Observe and document the visual quality of the discharge, and take note of the characteristics of the stormwater discharge, including color; odor; floating, settled, or suspended solids; foam; oil sheen; and other indicators of stormwater pollutants. Check also for signs of these same pollutant characteristics that are visible from your site and attributable to your discharge in receiving waters or in other constructed or natural site drainage features.

4.6.3 For dewatering inspections conducted pursuant to Parts 4.3.2, record the following in a report within 24 hours of completing the inspection:

a. The inspection date;

b. Names and titles of personnel making the inspection;

c. Approximate times that the dewatering discharge began and ended on the day of inspection;[74]

d. Estimates of the rate (in gallons per day) of discharge on the day of inspection;

[74] If the dewatering discharge is a continuous discharge that continues after normal business hours, indicate that the discharge is continuous.

e. Whether or not any of the following indications of pollutant discharge were observed at the point of discharge to any receiving waters flowing through or immediately adjacent to the site and/or to constructed or natural site drainage features or storm drain inlets:[75]

i. a sediment plume, suspended solids, unusual color, presence of odor, decreased clarity, or presence of foam; and/or

ii. a visible sheen on the water surface or visible oily deposits on the bottom or shoreline of the receiving water; and

f. Photographs of (1) the dewatering water prior to treatment by a dewatering control(s) and the final discharge after treatment; (2) the dewatering control(s); and (3) the point of discharge to any receiving waters flowing through or immediately adjacent to the site and/or to constructed or natural site drainage features, storm drain inlets, and other conveyances to receiving waters.

You must also comply with the Part 4.7.2, 4.7.3, and 4.7.4 requirements for signing the reports, keeping them available on site, and retaining copies.

4.6.4 Based on the results of your inspection:

a. Complete any necessary maintenance repairs or replacements under Part 2.1.4 or under Part 5, whichever applies; and

b. Modify your SWPPP site map in accordance with Part 7.4.1 to reflect changes to your stormwater controls that are no longer accurately reflected on the current site map.

4.7 INSPECTION REPORT

4.7.1 You must complete an inspection report within 24 hours of completing any site inspection. Each inspection report (except for dewatering inspection reports, which are covered in Part 4.6.3) must include the following:

a. The inspection date;

b. Names and titles of personnel making the inspection;

c. A summary of your inspection findings, covering at a minimum the observations you made in accordance with Part 4.6, including any problems found during your inspection that make it necessary to perform routine maintenance pursuant to Part 2.1.4b or corrective action pursuant to Part 5. Include also any documentation as to why the corrective action procedures under Part 5 are unnecessary to fix a problem that repeatedly occurs as described in Part 2.1.4c;

d. If you are inspecting your site at the frequency specified in Part 4.2.2, Part 4.3, or Part 4.4.1b, and you conducted an inspection because of a storm event that produced rainfall measuring 0.25 inches or more within a 24-hour period, you must include the applicable rain gauge or weather station readings that triggered the inspection. Similarly, if you conducted an inspection because of a snowmelt discharge from a storm event that produced 3.25 inches or more of snow within a 24-hour period, you must include any measurements taken of snowfall at your site, or weather station information you relied on; and

[75] If the operator observes any of these indicators of pollutant discharge, corrective action is required consistent with Parts 5.1.5b and 5.2.2.

e. If you determined that it is unsafe to inspect a portion of your site, you must describe the reason you found it to be unsafe and specify the locations to which this condition applies.

4.7.2 Each inspection report must be signed by the operator's signatory in accordance with Appendix G, Part G.11 of this permit.

4.7.3 You must keep a copy of all inspection reports at the site or at an easily accessible location, so that it can be made immediately available at the time of an on-site inspection or upon request by EPA.[76]

4.7.4 You must retain all inspection reports completed for this Part for at least three (3) years from the date that your permit coverage expires or is terminated.

4.8 INSPECTIONS BY EPA

You must allow EPA, or an authorized representative of EPA, to conduct the following activities at reasonable times. To the extent that you are utilizing shared controls, that are not on site, to comply with this permit, you must make arrangements for EPA to have access at all reasonable times to those areas where the shared controls are located.

4.8.1 Enter onto all areas of the site, including any construction support activity areas covered by this permit, any off-site areas where shared controls are utilized to comply with this permit, discharge locations, adjoining waterbodies, and locations where records are kept under the conditions of this permit;

4.8.2 Access and copy any records that must be kept under the conditions of this permit;

4.8.3 Inspect your construction site, including any construction support activity areas covered by this permit (see Part 1.2.1c), any stormwater controls installed and maintained at the site, and any off-site shared controls utilized to comply with this permit; and

4.8.4 Sample or monitor for the purpose of ensuring compliance.

5 CORRECTIVE ACTIONS

5.1 CONDITIONS TRIGGERING CORRECTIVE ACTION.

You must take corrective action to address any of the following conditions identified at your site:

5.1.1 A stormwater control needs a significant repair or a new or replacement control is needed, or, in accordance with Part 2.1.4c, you find it necessary to repeatedly (i.e., three (3) or more times) conduct the same routine maintenance fix to the same control at the same location (unless you document in your inspection report under Part 4.7.1c that the specific reoccurrence of this same problem should still be addressed as a routine maintenance fix under Part 2.1.4); or

5.1.2 A stormwater control necessary to comply with the requirements of this permit was never installed, or was installed incorrectly; or

[76] Inspection reports may be prepared, signed, and kept electronically, rather than in paper form, if the records are: (a) in a format that can be read in a similar manner as a paper record; (b) legally dependable with no less evidentiary value than their paper equivalent; and (c) immediately accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form. For additional guidance on the proper practices to follow for the electronic retention of inspection report records, refer to the Fact Sheet discussion related to Part 4.7.3.

5.1.3 Your discharges are not meeting applicable water quality standards;

5.1.4 A prohibited discharge has occurred (see Part 1.3); or

5.1.5 During discharge from site dewatering activities:

a. The weekly average of your turbidity monitoring results exceeds the 50 NTU benchmark (or alternate benchmark if approved by EPA pursuant to Part 3.3.2b); or

b. You observe or you are informed by EPA, State, or local authorities of the presence of the conditions specified in Part 4.6.3e.

5.2 CORRECTIVE ACTION DEADLINES

5.2.1 If responding to any of the Part 5.1.1, 5.1.2, 5.1.3, or 5.1.4 triggering conditions, you must:

a. Immediately take all reasonable steps to address the condition, including cleaning up any contaminated surfaces so the material will not discharge in subsequent storm events; and

b. When the problem does not require a new or replacement control or significant repair, the corrective action must be completed by the close of the next business day; or

c. When the problem requires a new or replacement control or significant repair, install the new or modified control and make it operational, or complete the repair, by no later than seven (7) calendar days from the time of discovery. If it is infeasible to complete the installation or repair within seven (7) calendar days, you must document in your records why it is infeasible to complete the installation or repair within the 7-day timeframe and document your schedule for installing the stormwater control(s) and making it operational as soon as feasible after the 7-day timeframe. Where these actions result in changes to any of the stormwater controls or procedures documented in your SWPPP, you must modify your SWPPP accordingly within seven (7) calendar days of completing this work.

5.2.2 If responding to either of the Part 5.1.5 triggering conditions related to site dewatering activities, you must:

a. Immediately take all reasonable steps to minimize or prevent the discharge of pollutants until you can implement a solution, including shutting off the dewatering discharge as soon as possible depending on the severity of the condition[77] taking safety considerations into account;

b. Determine whether the dewatering controls are operating effectively and whether they are causing the conditions; and

c. Make any necessary adjustments, repairs, or replacements to the dewatering controls to lower the turbidity levels below the benchmark or remove the visible plume or sheen.

[77] For instance, if the weekly average of your turbidity monitoring results or a single sample is extremely high (e.g., a single turbidity sample results in 355 NTUs or higher), you should take action to safely shut off the discharge so that you can evaluate the cause of the high turbidity. Note: A single turbidity sample of 355 NTUs or higher means that the weekly average turbidity value will exceed 50 NTU regardless of the turbidity values the other days during the week.

When you have completed these steps and made any changes deemed necessary, you may resume discharging from your dewatering activities.

5.3 CORRECTIVE ACTION REQUIRED BY EPA

You must comply with any corrective actions required by EPA as a result of permit violations found during an inspection carried out under Part 4.8.

5.4 CORRECTIVE ACTION LOG

5.4.1 For each corrective action taken in accordance with this Part, you must record the following in a corrective action log:

- **a.** Within 24 hours of identifying the corrective action condition, document the specific condition and the date and time it was identified.
- **b.** Within 24 hours of completing the corrective action (in accordance with the deadlines in Part 5.2), document the actions taken to address the condition, including whether any SWPPP modifications are required.

5.4.2 Each entry into the corrective action log, consisting of the information required by both Parts 5.4.1a and 5.4.1b, must be signed by the operator's signatory in accordance with Appendix G, Part G.11.2 of this permit.

5.4.3 You must keep a copy of the corrective action log at the site or at an easily accessible location, so that it can be made immediately available at the time of an on-site inspection or upon request by EPA.[78]

5.4.4 You must retain the corrective action log for at least three (3) years from the date that your permit coverage expires or is terminated.

6 STORMWATER TEAM FORMATION/STAFF TRAINING REQUIREMENTS

6.1 STORMWATER TEAM

Each operator, or group of multiple operators, must assemble a "stormwater team" that will be responsible for carrying out activities necessary to comply with this permit. The stormwater team must include the following people:

- **a.** Personnel who are responsible for the design, installation, maintenance, and/or repair of stormwater controls (including pollution prevention controls);
- **b.** Personnel responsible for the application and storage of treatment chemicals (if applicable);
- **c.** Personnel who are responsible for conducting inspections as required in Part 4.1; and
- **d.** Personnel who are responsible for taking corrective actions as required in Part 5.

Members of the stormwater team must be identified in the SWPPP pursuant to Part 7.2.2.

[78] The corrective action log may be prepared, signed, and kept electronically, rather than in paper form, if the records are: (a) in a format that can be read in a similar manner as a paper record; (b) legally dependable with no less evidentiary value than their paper equivalent; and (c) immediately accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form. For additional guidance on the proper practices to follow for the electronic retention of corrective action log records, refer to the Fact Sheet discussion related to Part 4.7.3.

6.2 GENERAL TRAINING REQUIREMENTS FOR STORMWATER TEAM MEMBERS

Prior to the commencement of construction activities, you must ensure that all persons[79] assigned to the stormwater team understand the requirements of this permit and their specific responsibilities with respect to those requirements, including the following related to the scope of their job duties:

a. The permit requirements and deadlines associated with installation, maintenance, and removal of stormwater controls, as well as site stabilization;

b. The location of all stormwater controls on the site required by this permit and how they are to be maintained;

c. The proper procedures to follow with respect to the permit's pollution prevention requirements; and

d. When and how to conduct inspections, record applicable findings, and take corrective actions. Specific training requirements for persons conducting site inspections are included in Part 6.3.

You are responsible for ensuring that all activities on the site comply with the requirements of this permit. You are not required to provide or document formal training for subcontractors or other outside service providers (unless the subcontractors or outside service providers are responsible for conducting the inspections required in Part 4, in which case you must provide such documentation consistent with Part 7.2.2), but you must ensure that such personnel understand any requirements of this permit that may be affected by the work they are subcontracted to perform.

6.3 TRAINING REQUIREMENTS FOR PERSONS CONDUCTING INSPECTIONS

For projects that receive coverage under this permit on or after February 17, 2023, to be considered a qualified person under Part 4.1 for conducting inspections under Part 4, you must, at a minimum, either:

a. Have completed the EPA construction inspection course developed for this permit and have passed the exam; or

b. Hold a current valid construction inspection certification or license from a program that, at a minimum, covers the following:[80]

- **i.** Principles and practices of erosion and sediment control and pollution prevention practices at construction sites;
- **ii.** Proper installation and maintenance of erosion and sediment controls and pollution prevention practices used at construction sites; and
- **iii.** Performance of inspections, including the proper completion of required reports and documentation, consistent with the requirements of Part 4.

[79] If the person requiring training is a new employee who starts after you commence construction activities, you must ensure that this person has the proper understanding as required above prior to assuming particular responsibilities related to compliance with this permit. For emergency-related projects, the requirement to train personnel prior to commencement of construction activities does not apply, however, such personnel must have the required training prior to NOI submission.

[80] If one of the following topics (e.g., installation and maintenance of pollution prevention practices) is not covered by the non-EPA training program, you may consider supplementing the training with the analogous module of the EPA course (e.g., Module 4) that covers the missing topic.

For projects that receive coverage under this permit prior to February 17, 2023, any personnel conducting site inspections pursuant to Part 4 on your site must, at a minimum, be a person knowledgeable in the principles and practice of erosion and sediment controls and pollution prevention, who possesses the appropriate skills and training to assess conditions at the construction site that could impact stormwater quality, and the appropriate skills and training to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of this permit.[81]

6.4 STORMWATER TEAM'S ACCESS TO PERMIT DOCUMENTS

Each member of the stormwater team must have easy access to an electronic or paper copy of applicable portions of this permit, the most updated copy of your SWPPP, and other relevant documents or information that must be kept with the SWPPP.

7 STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

7.1 GENERAL REQUIREMENTS

All operators associated with a construction site under this permit must develop a SWPPP consistent with the requirements in Part 7 prior to their submittal of the NOI.[82, 83, 84] The SWPPP must be kept up-to-date throughout coverage under this permit.

If a SWPPP was prepared under a previous version of this permit, the operator must review and update the SWPPP to ensure that this permit's requirements are addressed prior to submitting an NOI for coverage under this permit.

7.2 SWPPP CONTENTS

At a minimum, the SWPPP must include the information specified in this Part and as specified in other parts of this permit.

7.2.1 All Site Operators. Include a list of all other operators who will be engaged in construction activities at the site, and the areas of the site over which each operator has control.

[81] If you receive coverage for a project prior to February 17, 2023, and construction activities for the same project will continue after February 17, 2023, the personnel conducting inspections do not need to take the additional training specified in Parts 6.3a and 6.3b for inspections conducted on the project site. If the same operator obtains coverage for a different project on or after February 17, 2023, personnel conducting inspections would be required to meet the requirements for a qualified person by completing the training in either Part 6.3a or Part 6.3b.

[82] The SWPPP does not establish the effluent limits and/or other permit terms and conditions that apply to your site's discharges; these limits, terms, and conditions are established in this permit.

[83] Where there are multiple operators associated with the same site, they may develop a group SWPPP instead of multiple individual SWPPPs. Regardless of whether there is a group SWPPP or multiple individual SWPPPs, each operator is responsible for compliance with the permit's terms and conditions. In other words, if Operator A relies on Operator B to satisfy its permit obligations, Operator A does not have to duplicate those permit-related functions if Operator B is implementing them such that both operators are in compliance with the permit. However, Operator A remains responsible for permit compliance if Operator B fails to take actions necessary for Operator A to comply with the permit. In addition, all operators must ensure, either directly or through coordination with other operators, that their activities do not cause a violation or compromise any other operators' controls and/or any shared controls. See also footnote 60.

[84] There are a number of commercially available products to assist operators in developing the SWPPP, as well as companies that can be hired to help develop a site-specific SWPPP. The permit does not state which are recommended, nor does EPA endorse any specific products or vendors. Where operators choose to rely on these products or services, the choice of which ones to use to comply with the requirements of this Part is a decision for the operator alone.

7.2.2 Stormwater Team. Identify the personnel (by name and position) that you have made part of the stormwater team pursuant to Part 6.1, as well as their individual responsibilities, including which members are responsible for conducting inspections.

Include verification that each member of the stormwater team has received the training required by Part 6.2. Include documentation that members of the stormwater team responsible for conducting inspections pursuant to Part 4 have received the training required by Part 6.3. If personnel on your team elect to complete the EPA inspector training program pursuant to Part 6.3a, you must include copies of the certificate showing that the relevant personnel have completed the training and passed the exam. If personnel on your team elect to complete a non-EPA inspector training program pursuant to Part 6.3b, you must include documentation showing that these persons have successfully completed the program and their certification or license is still current. You must also confirm that the non-EPA inspector training program satisfies the minimum elements for such programs in Part 6.3b.

7.2.3 Nature of Construction Activities. Include the following:

- **a.** A description of the nature of your construction activities, including the age or dates of past renovations for structures that are undergoing demolition;
- **b.** The size of the property (in acres or length in miles if a linear construction site);
- **c.** The total area expected to be disturbed by the construction activities (to the nearest quarter acre or nearest quarter mile if a linear construction site);
- **d.** A description of any on-site and off-site construction support activity areas covered by this permit (see Part 1.2.1c);
- **e.** The maximum area expected to be disturbed at any one time, including on-site and off-site construction support activity areas;
- **f.** A description and projected schedule for the following:[85]
  - **i.** Commencement of construction activities in each portion of the site, including clearing and grubbing, mass grading, demolition activities, site preparation (i.e., excavating, cutting and filling), final grading, and creation of soil and vegetation stockpiles requiring stabilization;
  - **ii.** Temporary or permanent cessation of construction activities in each portion of the site;
  - **iii.** Temporary or final stabilization of exposed areas for each portion of the site; and
  - **iv.** Removal of temporary stormwater controls and construction equipment or vehicles, and the cessation of construction-related pollutant-generating activities.

[85] If plans change due to unforeseen circumstances or for other reasons, the requirement to describe the sequence and estimated dates of construction activities is not meant to "lock in" the operator to meeting these dates. When departures from initial projections are necessary, this should be documented in the SWPPP itself, or in associated records, as appropriate.

g. A list and description of all pollutant-generating activities[86] on the site. For each pollutant-generating activity, include an inventory of pollutants or pollutant constituents (e.g., *sediment, fertilizers, pesticides, paints, caulks, sealants, fluorescent light ballasts, contaminated substrates, solvents, fuels*) associated with that activity, which could be discharged in stormwater from your construction site. You must take into account where potential spills and leaks could occur that contribute pollutants to stormwater discharges, and any known hazardous or toxic substances, such as PCBs and asbestos, that will be disturbed or removed during construction;

h. Business days and hours for the project;

i. If you are conducting construction activities in response to a public emergency (see Part 1.4), a description of the cause of the public emergency *(*e.g., *mud slides, earthquake, extreme flooding conditions, widespread disruption in essential public services)*, information substantiating its occurrence *(*e.g., *State disaster declaration or similar State or local declaration)*, and a description of the construction necessary to reestablish affected public services.

7.2.4 Site Map. Include a legible map, or series of maps, showing the following features of the site:

a. Boundaries of the property;

b. Locations where construction activities will occur, including:

i. Locations where earth-disturbing activities will occur (note any phasing), including any demolition activities;

ii. Approximate slopes before and after major grading activities (note any steep slopes (as defined in Appendix A));

iii. Locations where sediment, soil, or other construction materials will be stockpiled;

iv. Any receiving water crossings;

v. Designated points where vehicles will exit onto paved roads;

vi. Locations of structures and other impervious surfaces upon completion of construction; and

vii. Locations of on-site and off-site construction support activity areas covered by this permit (see Part 1.2.1c).

c. Locations of any receiving waters within the site and all receiving waters within one mile downstream of the site's discharge point(s). Also identify if any of these receiving waters are listed as impaired or are identified as a Tier 2, Tier 2.5, or Tier 3 water;

d. Any areas of Federally listed critical habitat within the action area of the site as defined in Appendix A;

e. Type and extent of pre-construction cover on the site (e.g., vegetative cover, forest, pasture, pavement, structures);

f. Drainage patterns of stormwater and authorized non-stormwater before and after major grading activities;

[86] Examples of pollutant-generating activities include paving operations; concrete, paint, and stucco washout and waste disposal; solid waste storage and disposal; and dewatering activities.

g. Stormwater and authorized non-stormwater discharge locations, including:

i. Locations where stormwater and/or authorized non-stormwater will be discharged to storm drain inlets, including a notation of whether the inlet conveys stormwater to a sediment basin, sediment trap, or similarly effective control;[87]

ii. Locations where stormwater or authorized non-stormwater will be discharged directly to receiving waters (i.e., not via a storm drain inlet); and

iii. Locations where turbidity benchmark monitoring will take place to comply with Part 3.3, if applicable to your site.

h. Locations of all potential pollutant-generating activities identified in Part 7.2.3g;

i. Designated areas where construction wastes that are covered by the exception in Part 2.3.3e.ii because they are not pollutant-generating will be stored;

j. Locations of stormwater controls, including natural buffer areas and any shared controls utilized to comply with this permit; and

k. Locations where polymers, flocculants, or other treatment chemicals will be used and stored.

7.2.5 Non-Stormwater Discharges. Identify all authorized non-stormwater discharges in Part 1.2.2 that will or may occur.

7.2.6 Description of Stormwater Controls.

a. For each of the Part 2.2 erosion and sediment control requirements, Part 2.3 pollution prevention requirements, and Part 2.4 construction dewatering requirements, as applicable to your site, you must include the following:

i. A description of the specific control(s) to be implemented to meet these requirements;

ii. The design specifications for controls described in Part 7.2.6a.i (including references to any manufacturer specifications and/or erosion and sediment control manuals/ordinances relied upon);[88]

iii. Routine stormwater control maintenance specifications; and

iv. The projected schedule for stormwater control installation/implementation.

b. You must also include any of the following additional information as applicable.

i. **Natural buffers and/or equivalent sediment controls** (see Part 2.2.1 and Appendix F). You must include the following:

(a) The compliance alternative to be implemented;

(b) If complying with alternative 2, the width of natural buffer retained;

[87] The requirement to show storm drain inlets in the immediate vicinity of the site on your site map only applies to those inlets that are easily identifiable from your site or from a publicly accessible area immediately adjacent to your site.

[88] Design specifications may be found in manufacturer specifications and/or in applicable erosion and sediment control manuals or ordinances. Any departures from such specifications must reflect good engineering practice and must be explained in the SWPPP.

(c) If complying with alternative 2 or 3, the erosion and sediment control(s) you will use to achieve an equivalent sediment reduction, and any information you relied upon to demonstrate the equivalency;

(d) If complying with alternative 3, a description of why it is infeasible for you to provide and maintain an undisturbed natural buffer of any size;

(e) For "linear construction sites" where it is infeasible to implement compliance alternative 1, 2, or 3, a rationale for this determination, and a description of any buffer width retained and/or supplemental erosion and sediment controls installed; and

(f) A description of any disturbances that are exempt under Part 2.2.1 that occur within 50 feet of a receiving water.

ii. Perimeter controls for a "linear construction site" (see Part 2.2.3d). For areas where perimeter controls are not feasible, include documentation to support this determination and a description of the other practices that will be implemented to minimize discharges of pollutants in stormwater associated with construction activities.

Note: Routine maintenance specifications for perimeter controls documented in the SWPPP must include the Part 2.2.3c.i requirement that sediment be removed before it has accumulated to one-half of the above-ground height of any perimeter control.

iii. Sediment track-out controls (see Parts 2.2.4b and 2.2.4c). Document the specific stabilization techniques and/or controls that will be implemented to remove sediment prior to vehicle exit.

iv. Inlet protection measures (see Part 2.2.10a). Where inlet protection measures are not required because the storm drain inlets to which your site discharges are conveyed to a sediment basin, sediment trap, or similarly effective control, include a short description of the control that receives the stormwater flow from the site.

v. Sediment basins (see Part 2.2.12). In circumstances where it is infeasible to utilize outlet structures that withdraw water from the surface, include documentation to support this determination, including the specific conditions or time periods when this exception will apply.

vi. Treatment chemicals (see Part 2.2.13), you must include the following:

(a) A listing of the soil types that are expected to be exposed during construction in areas of the project that will drain to chemical treatment systems. Also include a listing of soil types expected to be found in fill material to be used in these same areas, to the extent you have this information prior to construction;

(b) A listing of all treatment chemicals to be used at the site and why the selection of these chemicals is suited to the soil characteristics of your site;

(c) If the applicable EPA Regional Office authorized you to use cationic treatment chemicals for sediment control, include the specific controls and implementation procedures designed to ensure that your use of cationic

treatment chemicals will not lead to a discharge that does not meet water quality standards;

(d) The dosage of all treatment chemicals to be used at the site or the methodology to be used to determine dosage;

(e) Information from any applicable Safety Data Sheet (SDS);

(f) Schematic drawings of any chemically enhanced stormwater controls or chemical treatment systems to be used for application of the treatment chemicals;

(g) A description of how chemicals will be stored consistent with Part 2.2.13c;

(h) References to applicable State or local requirements affecting the use of treatment chemicals, and copies of applicable manufacturer's specifications regarding the use of your specific treatment chemicals and/or chemical treatment systems; and

(i) A description of the training that personnel who handle and apply chemicals have received prior to permit coverage, or will receive prior to use of the treatment chemicals at your site.

vii. Stabilization measures (see Part 2.2.14). You must include the following:

(a) The specific vegetative and/or non-vegetative practices that will be used;

(b) The stabilization deadline that will be met in accordance with Part 2.2.14;

(c) If complying with the deadlines for sites in arid, semi-arid, or drought-stricken areas, the beginning and ending dates of the seasonally dry period (as defined in Appendix A)[89] and the schedule you will follow for initiating and completing vegetative stabilization; and

(d) If complying with deadlines for sites affected by unforeseen circumstances that delay the initiation and/or completion of vegetative stabilization, document the circumstances and the schedule for initiating and completing stabilization.

viii. Spill prevention and response procedures (see Parts 1.3.5, 2.3.3c, 2.3.3d, and 2.3.6). You must include the following:

(a) Procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases. Identify the name or position of the employee(s) responsible for detection and response of spills or leaks; and

(b) Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity consistent with Part 2.3.6 and established under either 40 CFR part 110, 40 CFR part 117, or 40 CFR part 302, occurs

[89] See footnote 44.

during a 24-hour period. Contact information must be in locations that are readily accessible and available to all employees.

You may also reference the existence of SPCC plans developed for the construction activity under Section 311 of the CWA, or spill control programs otherwise required by an NPDES permit for the construction activity, provided that you keep a copy of that other plan on site.[90]

ix. Waste management procedures (see Part 2.3.3). Describe the procedures you will follow for handling, storing, and disposing of all wastes generated at your site consistent with all applicable Federal, State, Tribal, and local requirements, including clearing and demolition debris, sediment removed from the site, construction and domestic waste, hazardous or toxic waste, and sanitary waste. You must also include the following additional information:

(a) If site constraints prevent you from storing chemical containers 50 feet away from receiving waters or the other site drainage features as required in Part 2.3.3c.ii(b), document in your SWPPP the specific reasons why the 50-foot setback is not feasible, and how you will store containers as far away as the site permits; and

(b) If there are construction wastes that are subject to the exception in Part 2.3.3e.ii, describe the specific wastes that will be stored on your site.

x. Application of fertilizers (see Part 2.3.5). Document any departures from the manufacturer specifications where appropriate.

7.2.7 Procedures for Inspection, Maintenance, and Corrective Action. Describe the procedures you will follow for maintaining your stormwater controls, conducting site inspections, and, where necessary, taking corrective actions, in accordance with Part 2.1.4, Part 4, and Part 5 of this permit, accordingly. Also include:

a. The inspection schedule you will follow, which is based on whether your site is subject to Part 4.2 or Part 4.3, or whether your site qualifies for any of the reduced inspection frequencies in Part 4.4;

b. If you will be conducting inspections in accordance with the inspection schedule in Part 4.2.2, Part 4.3, or Part 4.4.1b, the location of the rain gauge or the address of the weather station you will be using to obtain rainfall data;

c. If you will be reducing your inspection frequency in accordance with Part 4.4.1b, the beginning and ending dates of the seasonally defined arid period for your area or the valid period of drought;

d. If you will be reducing your inspection frequency in accordance with Part 4.4.3, the beginning and ending dates of frozen conditions on your site; and

e. Any maintenance or inspection checklists or other forms that will be used.

7.2.8 Procedures for Turbidity Benchmark Monitoring from Dewatering Discharges (if applicable). If you are required to comply with the Part 3.3 turbidity benchmark

[90] Even if you already have an SPCC or other spill prevention plan in existence, your plans will only be considered adequate if they meet all of the requirements of this Part, either as part of your existing plan or supplemented as part of the SWPPP.

monitoring requirements, describe the procedures you will follow to collect and evaluate samples, report results to EPA and keep records of monitoring information, and take corrective action when necessary. Include the specific type of turbidity meter you will use for monitoring, as well as any manuals or manufacturer instructions on how to operate and calibrate the meter. Describe any coordinating arrangement you may have with any other permitted operators on the same site with respect to compliance with the turbidity monitoring requirements, including which parties are tasked with specific responsibilities. If EPA has approved of an alternate turbidity benchmark pursuant to Part 3.3.2b, include any data and other documentation you relied on to request use of the specific alternative benchmark.

7.2.9 Compliance with Other Requirements.

a. Threatened and Endangered Species Protection. Include documentation required in the Endangered Species Protection section of the NOI in NeT, or the ESA worksheet in Appendix D, supporting your eligibility with regard to the protection of threatened and endangered species and designated critical habitat.

b. Historic Properties. Include documentation required in Appendix E supporting your eligibility with regard to the protection of historic properties.

c. Safe Drinking Water Act Underground Injection Control (UIC) Requirements for Certain Subsurface Stormwater Controls. If you are using any of the following stormwater controls at your site, document any contact you have had with the applicable State agency[91] or EPA Regional Office responsible for implementing the requirements for underground injection wells in the Safe Drinking Water Act and EPA's implementing regulations at 40 CFR § 144 -147. Such controls would generally be considered Class V UIC wells:

i. Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system);

ii. Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow; and

iii. Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system).

7.2.10 SWPPP Certification. Your signatory must sign and date your SWPPP in accordance with Appendix G, Part G.11.

7.2.11 Post-Authorization Additions to the SWPPP. Once you are authorized for coverage under this permit, you must include the following documents as part of your SWPPP:

a. A copy of your NOI submitted to EPA along with any correspondence exchanged between you and EPA related to coverage under this permit;

b. A copy of the acknowledgment letter you receive from NeT assigning your NPDES ID (i.e.*, permit tracking number*);

[91] For State UIC program contacts, refer to the following EPA website: https://www.epa.gov/uic.

c. A copy of this permit (an electronic copy easily available to the stormwater team is also acceptable).

7.3 ON-SITE AVAILABILITY OF YOUR SWPPP

You must keep a current copy of your SWPPP at the site or at an easily accessible location so that it can be made available at the time of an on-site inspection or upon request by EPA; a State, Tribal, or local agency approving stormwater management plans; the operator of a storm sewer system receiving discharges from the site; or representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).[92]

EPA may provide access to portions of your SWPPP to a member of the public upon request. Confidential Business Information (CBI) will be withheld from the public, but may not be withheld from EPA, USFWS, or NMFS.[93]

If an on-site location is unavailable to keep the SWPPP when no personnel are present, notice of the plan's location must be posted near the main entrance of your construction site.

7.4 SWPPP MODIFICATIONS

7.4.1 You must modify your SWPPP, including the site map(s), within seven (7) days of any of the following conditions:

a. Whenever new operators become active in construction activities on your site, or you make changes to your construction plans, stormwater controls, or other activities at your site that are no longer accurately reflected in your SWPPP. This includes changes made in response to corrective actions triggered under Part 5. You do not need to modify your SWPPP if the estimated dates in Part 7.2.3f change during the course of construction;

b. To reflect areas on your site map where operational control has been transferred (and the date of transfer) since initiating permit coverage;

c. If inspections or investigations by EPA or its authorized representatives determine that SWPPP modifications are necessary for compliance with this permit;

d. Where EPA determines it is necessary to install and/or implement additional controls at your site in order to meet the requirements of this permit, the following must be included in your SWPPP:

i. A copy of any correspondence describing such measures and requirements; and

[92] The SWPPP may be prepared, signed, and kept electronically, rather than in paper form, if the records are: (a) in a format that can be read in a similar manner as a paper record; (b) legally dependable with no less evidentiary value than their paper equivalent; and (c) immediately accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form. For additional guidance on the proper practices to follow for the electronic retention of the SWPPP, refer to the Fact Sheet discussion related to Part 4.7.3.

[93] Information covered by a claim of confidentiality will be disclosed by EPA only to the extent of, and by means of, the procedures set forth in 40 CFR part 2, Subpart B. In general, submitted information protected by a business confidentiality claim may be disclosed to other employees, officers, or authorized representatives of the United States concerned with implementing the CWA. The authorized representatives, including employees of other executive branch agencies, may review CBI during the course of reviewing draft regulations.

ii. A description of the controls that will be used to meet such requirements.

e. To reflect any revisions to applicable Federal, State, Tribal, or local requirements that affect the stormwater controls implemented at the site; and

f. If applicable, if a change in chemical treatment systems or chemically enhanced stormwater control is made, including use of a different treatment chemical, different dosage rate, or different area of application.

7.4.2 You must maintain records showing the dates of all SWPPP modifications. The records must include the name of the person authorizing each change (see Part 7.2.9 above) and a brief summary of all changes.

7.4.3 All modifications made to the SWPPP consistent with Part 7.4 must be authorized by a person identified in Appendix G, Part G.11.b.

7.4.4 Upon determining that a modification to your SWPPP is required, if there are multiple operators covered under this permit, you must immediately notify any operators who may be impacted by the change to the SWPPP.

8 HOW TO TERMINATE COVERAGE

Until you terminate coverage under this permit, you must comply with all conditions and effluent limitations in the permit. To terminate permit coverage, you must submit to EPA a complete and accurate Notice of Termination (NOT), which certifies that you have met the requirements for terminating in Part 8.

8.1 MINIMUM INFORMATION REQUIRED IN NOT

8.1.1 NPDES ID (i.e*., permit tracking number)* provided by EPA when you received coverage under this permit;

8.1.2 Basis for submission of the NOT (see Part 8.2);

8.1.3 Operator contact information;

8.1.4 Name of site and address (or a description of location if no street address is available); and

8.1.5 NOT certification.

8.2 CONDITIONS FOR TERMINATING CGP COVERAGE

You may terminate CGP coverage only if one or more of the conditions in Parts 8.2.1, 8.2.2, or 8.2.3 has occurred. Until your termination is effective consistent with Part 8.5, you must continue to comply with the conditions of this permit.

8.2.1 You have completed all construction activities at your site and, if applicable, construction support activities covered by this permit (see Part 1.2.1c), and you have met all of the following requirements:

a. For any areas that (1) were disturbed during construction, (2) are not covered by permanent structures, and (3) over which you had control during the construction activities, you have met the requirements for final vegetative or non-vegetative stabilization in Part 2.2.14c.

To document that you have met these stabilization requirements, you must take either ground or aerial photographs that show your site's compliance with the Part 2.2.14 stabilization requirements and submit them with your NOT. If any portion of your

site is covered by one of the exceptions in Part 2.2.14c.iii, indicate which exception applies and include a supplementary explanation with your photographs that provides the necessary context for why this portion of the site is in compliance with the final stabilization criteria even though it appears to be unstabilized. You are not required to take photographs of every distinct part of your site that is being stabilized, however, the conditions of the site portrayed in any photographs that are submitted must be substantially similar[94] to those of the areas that are not photographed. You must also comply with the following related to these photographs:

i. Take photographs both before and after the site has met the final stabilization criteria in Part 2.2.14c;

ii. All photographs must be clear and in focus, and in the original format and resolution; and

iii. Include the date each photograph was taken, and a brief description of the area of the site captured by the photograph (e.g., photo shows application of seed and erosion control mats to remaining exposed surfaces on northeast corner of site).

b. You have removed and properly disposed of all construction materials, waste and waste handling devices, and have removed all equipment and vehicles that were used during construction, unless intended for long-term use following your termination of permit coverage;

c. You have removed all stormwater controls that were installed and maintained during construction, except those that are intended for long-term use following your termination of permit coverage or those that are biodegradable (as defined in Appendix A); and

d. You have removed all potential pollutants and pollutant-generating activities associated with construction, unless needed for long-term use following your termination of permit coverage; or

8.2.2 You have transferred control of all areas of the site for which you are responsible under this permit to another operator, and that operator has submitted an NOI and obtained coverage under this permit; or

8.2.3 Coverage under an individual or alternative general NPDES permit has been obtained.

8.3 HOW TO SUBMIT YOUR NOT

You must use EPA's NPDES eReporting Tool (NeT) to electronically prepare and submit an NOT for the 2022 CGP.

To access NeT, go to https://cdx.epa.gov/cdx.

Waivers from electronic reporting may be granted as specified in Part 1.4.2. If the EPA Regional Office grants you approval to use a paper NOT, and you elect to use it, you must complete the form in Appendix I.

[94] Stabilization conditions that are substantially similar would include areas that are using the same type of stabilization measures and that have similar slopes, soils, and topography, and have achieved the same level of stabilization.

8.4 DEADLINE FOR SUBMITTING THE NOT

You must submit an NOT within 30 calendar days after any one of the conditions in Part 8.2 occurs.

8.5 EFFECTIVE DATE OF TERMINATION OF COVERAGE

Your authorization to discharge under this permit terminates at midnight of the calendar day that a complete NOT is submitted to EPA.

9 PERMIT CONDITIONS APPLICABLE TO SPECIFIC STATES, INDIAN COUNTRY LANDS, OR TERRITORIES

The provisions in this Part provide additions to the applicable conditions of this permit to reflect specific additional conditions required as part of the State or Tribal CWA Section 401 certification process, or the Coastal Zone Management Act (CZMA) certification process, or as otherwise established by the permitting authority. The specific additional revisions and requirements only apply to activities in those specific States, Indian country, and areas in certain States with Federal Facilities or areas subject to construction projects by Federal Operators. States, Indian country, and other areas not included in this Part do not have any additions to the applicable conditions of this permit.

9.1 EPA REGION 1

9.1.1 NHR100000 State of New Hampshire

a. Should the permit coverage for an individual applicant be insufficient to achieve water quality standards, the New Hampshire Department of Environmental Services (NHDES) may prepare additional 401 certification conditions for that applicant. Any additional 401 certification conditions will follow all required NHDES public participation requirements.

b. If you disturb 100,000 square feet or more of contiguous area, you must also comply with RSA 485-A:17 and Env-Wq 1500, and, unless exempt, apply for an Alteration of Terrain (AoT) permit from NHDES. This requirement also applies to a lower disturbance threshold of 50,000 square feet or more when construction occurs within the protected shoreline under the Shoreland Water Quality Protection Act (see RSA 483-B and Env-Wq 1400). A permit application must also be filed if your project disturbs an area of greater than 2,500 square feet, is within 50 feet of any surface water, and has a flow path of 50 feet or longer disturbing a grade of 25 percent or greater. Project sites with disturbances smaller than those discussed above, that have the potential to adversely affect state surface waters, are subject to the conditions of an AoT General Permit by Rule (Env-Wq 1503.03).

c. You must determine that any excavation dewatering discharges are not contaminated before they will be authorized as an allowable non-stormwater discharge under this permit (see Part 1.2.2 of the Construction General Permit or CGP). In the absence of information demonstrating otherwise, the water is considered uncontaminated if there is no groundwater contamination within 1,000 feet of the groundwater dewatering location. Information on groundwater contamination can be generated over the Internet via the NHDES web site http:// des.nh.gov/ by using the One Stop Data Mapper. For a toxic substance included in the New Hampshire surface water quality standards, see Env-Wq 1703.21 (see https://www.des.nh.gov/sites/g/fi1es/ehbemt 341/files/documents/2020-01/Env-Wg

1700.pdf). If it is determined that the groundwater to be dewatered is near a remediation or other waste site, you must apply for the Remediation General Permit (see https://www3.epa.gov/region1/npdes/rgp.html)

d. As a minimum, you must treat any uncontaminated excavation "dewatering" discharges and "stormwater" discharges, as those terms are defined in Appendix A of the CGP, as necessary, to remove suspended solids and turbidity so that the surface waters receiving the construction discharges[95] meet New Hampshire surface water quality standards for turbidity (Env-Wq 1703.11 and Env-Wq 1703.03(c)(1)c), benthic deposits (Env-Wq 1703.03(c)(1)a), and Env-Wq 1703.08) and foam, debris, scum or other visible substances (i.e., plumes or visual turbidity)[96] (Env-Wq 1703.03(c)(1)b).

i. For all Construction Activities covered under this CGP, the following shall apply to ensure compliance with the aforementioned regulations for turbidity, benthic deposits and visible substances:

Unless otherwise specified, site inspection requirements shall comply with Part 4 of the CGP. As a minimum site inspection frequency shall be in accordance with Part 4.2.2 of the CGP (and Part 4.3.2 of the CGP for sites discharging dewatering water). Site inspection frequency may be reduced in accordance with Part 4.4 of the CGP (Reductions in Inspection Frequency). Monitoring of the receiving water for visible turbidity and benthic sediment deposits shall be conducted each site inspection and results reported in the Inspection Report required in Part 4.7 of the CGP. Should visible turbidity or benthic sediment deposits attributable or partly attributable to your construction activities be present in the receiving water, the "Corrective Actions" specified in Part 5 shall be immediately implemented to correct the water quality standard violations. In addition, daily monitoring (including photographs) of the receiving water shall be conducted until there is no visible turbidity or benthic deposits. Inspection Reports required in Part 4.7 of the CGP shall include, but not be limited to, the distance downstream and the percent of the river width[97] where visible turbidity was observed, and the period of time that the visible turbidity persisted. A copy of the Inspection Report(s) shall be made available to NHDES within 24 hours of receiving a written request from NHDES.

ii. For Construction Activities, disturbing 5 acres or more of land at any one time (excluding areas that have been completely stabilized in accordance with the final stabilization criteria specified in Part 2.2.14.c of the CGP), the following shall

[95] Construction Discharges include uncontaminated "dewatering" and "stormwater" discharges as those terms are defined in Appendix A of the CGP. Controlled construction discharges are construction discharges where the rate of flow can be regulated such as from a construction settling basin or NHDES approved flocculation system.

[96] For the definition of visual turbidity, see the definition for "Non-Turbid" in Appendix A of the CGP, which states the following:" "Non-Turbid" - a discharge that is free from visual turbidity. For the purposes of this permit, visual turbidity refers to a sediment plume or other cloudiness in the water caused by sediment that can be identified by an observer." *[EPA interprets the text of this footnote as intending to reference the Appendix A definitions of "visual turbidity" and "non-turbid" in the final permit.]*

[97] The distance downstream and the percent of river width where visible turbidity (i.e., plume) is observed is required to determine the extent of the river affected and to determine if there was a "zone of passage" (i.e., a portion of the receiving water where there was no visible turbidity where mobile organisms could pass without being adversely impacted). The percent of river width affected is equal 100 multiplied by the width of the plume (in feet) divided by the width of the receiving water (in feet).

apply to ensure compliance with the aforementioned regulations for turbidity, benthic deposits and visible substances.

Item 9.1.1.d.i) above shall apply to all construction discharges and the minimum site inspection frequency shall comply with Part 4.3.1 of the CGP (and Part 4.3.2 of the CGP for sites discharging dewatering water). Site inspection frequency may be reduced in accordance with Part 4.4 of the CGP (Reductions in Inspection Frequency).

With regards to controlled construction discharges, if there is no visible turbidity (i.e., plumes) or benthic deposits, and, in the absence of information demonstrating otherwise, turbidity measurements of less than or equal to 50 nephelometric turbidity units (NTU) in the controlled construction discharges at the outlet prior to mixing with the receiving surface waters, shall be presumed to meet New Hampshire surface water quality standards for the parameters listed above. As a minimum, the controlled construction discharges must be sampled at each site inspection.

If any controlled construction discharge exceeds 50 NTU, or if visible turbidity or benthic sediment deposits attributable or partly attributable to any construction discharge are observed in the receiving water, then the "Corrective Actions" specified in Part 5 of the CGP shall be immediately implemented.

In addition, should such violation occur, and, in order to determine compliance with surface water quality standards for turbidity (Env-Wq 1703.11 and Env-Wq 1703.03(c)(1)c), benthic deposits (Env-Wq 1703.03(c)(1)a), and Env-Wq 1703.08) and foam, debris, scum or other visible substances (Env-Wq 1703.03(c)(1)b)), turbidity monitoring shall be immediately implemented as specified below:

Turbidity samples of the receiving water shall be immediately taken in the receiving water upstream and beyond the influence of the construction activity, and, unless a mixing zone[98] is approved by NHDES, no more than 75 feet downstream of each controlled construction discharge that exceeded 50 NTU and no more than 75 feet downstream of each construction discharge that caused visible turbidity.

Downstream samples shall be taken at locations in the receiving water that are most likely influenced by the discharge (e.g., if visible turbidity (i.e., a plume) is present, the sample shall be taken in the plume). Samples shall be collected a minimum of 2 times per day during the daylight hours at times when construction activities are most likely to cause turbidity in the receiving water and shall continue until the turbidity water quality standards are met in the receiving water (i.e., the difference between the upstream and downstream turbidity level is no greater than 10 NTU).

[98] Permittees may request a distance greater than 75 feet downstream of a construction discharge for determining compliance with turbidity standards in Class B surface waters, by submitting a mixing zone request to NHDES that complies with Env-Wq 1707.02. If a mixing zone is approved, NHDES is required to include conditions to ensure that the criteria on which the approval is based are met (Env-Wq 1707.03).

If water quality standards are not met during daylight hours on any day, sampling shall resume the next day and continue no fewer than 2 times per day until water quality standards are met. The date, time, location and results of turbidity measurements, as well as a summary identifying the cause of the violations, corrective actions that were implemented, the period of time that the receiving water exceeded turbidity standards and the distance downstream and the percent of the river width where visible turbidity was observed, and the period of time that the visible turbidity persisted, shall be recorded and included in the Inspection Report required in Part 4.7 of the CGP. Turbidity measurements shall be conducted via a field meter in accordance with the requirements for turbidity specified in Table 1B in 40 CFR 136.3 (see 40 CFR §136.3 Identification of test procedures - Code of Federal Regulations ecfr.io). Field meters shall be calibrated every day sampling is conducted and prior to the first sample.

e. Construction site owners and operators are encouraged to consider opportunities for post- construction groundwater recharge using infiltration best management practices (BMPs) during site design and preparation of the SWPPP in order to assure compliance with Env-Wq 1703.03 and Env-Wq 1703.11. If your construction site is in a town that is required to obtain coverage under the NPDES General Permit for discharges from Municipal Separate Storm Sewer Systems (MS4) you may be required to use such practices. The SWPPP must include a description of any on-site infiltration that will be installed as a post-construction stormwater management measure or reasons for not employing such measures such as 1) The facility is located in a wellhead protection area as defined in RSA 485- C:2; or 2) The facility is located in an area where groundwater has been reclassified to GAA, GA1 or GA2 pursuant to RSA 485-C and Env-DW 901; or 3) Any areas that would be exempt from the groundwater recharge requirements contained in Env-Wq 1507.04, including all land uses or activities considered to be a "High-load Area" (see Env-Wq 1502.30). For design considerations for infiltration measures see Env-Wq 1508.06. Note that there may be additional local requirements that fall under the NH MS4 permittee's Authorization to Discharge Permit for those regulated areas.

f. Appendix F of the CGP contains information regarding Tier 2, or high quality waters in the various states. ***[EPA notes that this information has now been moved to https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates]*** Although there is no official list of tier 2 waters for New Hampshire, it can be assumed that all New Hampshire surface waters are tier 2 for turbidity unless 1) the surface water that you are proposing to discharge into is listed as impaired for turbidity in the states listing of impaired waters (see https://nhdes-surface-water-quality-assessment-site-nhdes.hub.arcgis.com/) or 2) sampling upstream of the proposed discharge location shows turbidity values greater than 10 NTU (Env-Wq 1703.11). A single grab sample collected during dry weather (no precipitation within 48 hours) is acceptable.

g. To ensure compliance with RSA 485-C, RSA 485-A, RSA 485-A:13, I(a), Env-Wq 1700 and Env-Wq 302, the following information may be requested by NHDES. This information must be kept on site unless you receive a written request from NHDES that it be sent to the address shown below in 9.1.1.h.

i. A list of all non-stormwater discharges that occur at the facility, including their source locations and the control measures being used (see Part 1.2.2 of the CGP).

ii. Records of sampling and analysis required for construction dewatering and stormwater discharges (see 9.1.1.d above).

h. All required or requested documents must be sent to: NH Department of Environmental Services, Watershed Management Bureau, P.O. Box 95 Concord, NH 03302-0095.

9.1.2 MAR100000 Commonwealth of Massachusetts (except Indian country)

a. All discharges covered by the Construction General Permit shall comply with the provisions pursuant to 314 CMR 3.00, 314 CMR 4.00, 314 CMR 9.00, including applicable construction stormwater standards and 310 CMR 10.00.

b. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05(5)(e) to maintain surface waters free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife, permittees are prohibited from discharging dewatering water under the CGP from sites that are designated as Superfund/CERCLA or RCRA, and must make accommodations to dispose of the dewatering discharges appropriately, such as coverage under the Remediation General Permit (RGP).

c. Pursuant to 314 CMR 3.11 (2)(a), and in accordance with MassDEP's obligation to protect Outstanding Resource Waters under 314 CMR 4.04(3), applicants seeking coverage under the 2022 CGP that propose to carry out construction activities near Outstanding Resource Waters as identified in 314 CMR 4.06, shall submit to MassDEP for review:

i. a copy of the Stormwater Pollution Prevention Plan (SWPPP),

ii. a copy of the EPA NOI, and

iii. MassDEP's Stormwater BMP Checklist.

For purposes of this review, the permittee shall submit these documents to MassDEP at the same time they are submitted to EPA. Instructions on how to submit these documents to MassDEP and where to find the MassDEP Stormwater BMP Checklist and obtain authorization to discharge can be found here: https://www.mass.gov/how-to/wm-15-npdes-general-permit-notice-of- intent.

d. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05(5)(e) to maintain surface waters free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife, applicants that propose to dewater under the 2022 CGP and plan to discharge to certain waters as described below, shall determine that any dewatering discharges are not contaminated by testing the proposed discharge as described below as part of the application for WM15 authorization. Unless otherwise specified, testing described in this section should be conducted using the methods in 40 CFR 136.

i. Applicants for sites that plan to discharge to Outstanding Resource Waters as identified in 314 CMR 4.06 shall test one sample of the proposed dewatering discharge water for pH, E. Coli (for discharges to freshwater), fecal coliform (for

discharges to salt water), Enterococci (for discharges to salt water), total suspended solids, oil and grease, total nitrogen, total phosphorus, and all parameters with numeric criteria listed in the Massachusetts Surface Water Quality Standards at 314 CMR 4.05(e). Results shall be reported to MassDEP as part of the WM15 application. To determine if the dewatering discharge could be covered under the 2022 CGP, the effluent at zero dilution must meet numeric water quality criteria. If the effluent does not meet numeric water quality criteria, the applicant shall contact EPA Region 1 to discuss coverage under the Remediation General Permit.

ii. Applicants for sites that propose to discharge to Public Water Supplies (314 CMR 4.06(1)(d)1) shall also test one sample of the proposed dewatering discharge water for per- and polyfluoroalkyl substances (PFAS), as outlined in the table below. Results shall be reported to MassDEP as part of the WM15 application. If any PFAS compounds are detected, the applicant shall apply for coverage under the NPDES Remediation General Permit for Massachusetts if required.

PFAS Testing Parameters for Discharges to Public Drinking Water Supplies[99]	
Perfluorohexanesulfonic acid (PFHxS), grab	Report ng/L
Perfluoroheptanoic acid (PFHpA), grab	Report ng/L
Perfluorononanoic acid (PFNA), grab	Report ng/L
Perfluorooctanesulfonic acid (PFOS), grab	Report ng/L
Perfluorooctanoic acid (PFOA), grab	Report ng/L
Perfluorodecanoic acid (PFDA), grab	Report ng/L

iii. Applicants for sites that propose to discharge to an impaired water as identified in the most recent final Massachusetts Integrated List of Waters,shall test one sample of the proposed dewatering discharge water for the parameter(s) for which the waterbody is impaired. To determine if the dewatering discharge could be covered under the 2022 CGP, the effluent at zero dilution must meet numeric water quality criteria. If the effluent does not meet numeric water quality criteria, the applicant shall contact EPA Region 1 to discuss coverage under the Remediation GeneralPermit and shall apply for RGP coverage if required.

iv. For dewatering discharges to all other waters, if any pollutants are knownor believed present in the proposed dewatering discharge water, the applicant shall apply for coverage under the NPDES Remediation General Permit for Massachusetts if required. For the purposes of this condition, a pollutant is "known present" if measured above the analytical detection limit using a sufficiently sensitive test method in an environmental sample, and "believed present" if a pollutant has not been measured in an environmental sample but will be added or generated prior to discharge, such as through a treatment process. Consequently, a pollutant is "known absent" if measured as non-detect relative to the analytical detection limit using a sufficiently sensitive test method in an environmental sample, and "believed absent" if a pollutant has not been measured in an environmentalsample but will not be added or generated prior to discharge and is not a parameter that applies to the applicable activity category for a site. If any pollutants are known or believed present in the

[99] PFAS testing shall follow established EPA methods 537 or 537.1 for drinking water until EPA Method 3512 for non-potable water becomes available.

proposed dewatering discharge water, the applicant shall test one sample of the proposed dewatering discharge water for the pollutants known or believed to be present. To determine if the dewatering discharge could be covered under the 2022 CGP, the effluent at zero dilution must meet numeric water quality criteria. If the effluent does not meet numeric water quality criteria, the applicant shall contact EPA Region 1 to discuss coverage under the Remediation General Permit.

e. Pursuant to 314 CMR 3.11 (2)(a), and in accordance with MassDEP's obligation to protect Outstanding Resource Waters under 314 CMR 4.04(3), applicants that propose to dewater under the 2022 CGP and discharge to Outstanding Resource Waters as identified in 314 CMR 4.06, shall submit the SWPPP and associated documents to MassDEP to review. MassDEP shall complete review within 30 daysof receipt.

f. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05 to maintain surface waters free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to the waterbody, permittees that have been authorized to dewater under the 2022 CGP and that discharge to Outstanding Resource Waters as identified in 314 CMR 4.06 shall carry out daily benchmark monitoring for turbidity[100] for the duration of dewatering. Permittees shall compare the weekly average of the turbidity monitoring results with the established benchmark turbidity value of 25 Nephelometric Turbidity Units (NTU). If a permittee's weekly average turbidity results exceed the benchmark, the operator shall conduct follow-up corrective action to determine the source of the problem and to make any necessary repairs or upgrades to the dewatering controls to lower the turbidity levels. The permittee shall document any corrective action taken in its corrective action log. Furthermore, permittees at these sites shall carry out inspections at higher frequency, specifically, daily inspections of the dewatering discharge treatment for the duration of the discharge. The permittee shall inspect the site for sediment plume or whether a hydrocarbon sheen is visible at the point of discharge, estimate the flow rate at the point of discharge, and inspect the site downstream to assess whether sedimentation is attributable to the dewatering discharges.

g. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05 to maintain surface waters free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to the waterbody, permittees shall store materials outside the Base Flood Elevation[101] when feasible to prevent displacing runoff and erosion.

h. Pursuant to 314 CMR 3.11 (2)(a), and in accordance with MassDEP's obligation to maintain surface waters free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses under 314 CMR 4.05(5)(c), all applicants who apply for coverage under the 2022 CGP shall follow guidelines on fertilizer application, including use of fertilizer containing no phosphorus, in accordance with 330 CMR 31.00 Plant Nutrient Application Requirements for

[100] Applicants shall follow EPA Method 180.1 to monitor for turbidity

[101] Base Flood Elevation (BFE) is the elevation of surface water resulting from a flood that has a 1% chance of equaling or exceeding that level in any given year. The BFE is shown on the Flood Insurance Rate Map (FIRM) for zones AE, AH, A1–A30, AR, AR/A, AR/AE, AR/A1– A30, AR/AH, AR/AO, V1–V30 and VE. (Source: https://www.fema.gov/node/404233).

Agricultural Land and Non-Agricultural Turf and Lawns. Further, fertilizer shall never be applied to a site when a rain event greater than 0.5 inches is forecast in the next 48 hours.

i. Pursuant to 314 CMR 3.11 (2)(a), all applicants who apply for coverage under the 2022 CGP and elect to carry out site inspections every 14 days shall also inspect sites within 24 hours of 0.25 inches of precipitation events or greater over 24 hours,or within 24 hours of a discharge that occurred due to snowmelt from 3.25 inches or greater of snow accumulation.[102] During the high flow periods in spring (i.e., months of April to June), inspection frequency shall be increased to once per week for all sites.

  i. To determine whether 3.25 inches or greater of snow accumulation has occurred at a site, snowfall measurements can be taken at the site,[103] or theoperator can rely on similar information from a local weather forecast.

j. Implementing structural improvements, enhanced/resilient pollution prevention measures, and other mitigation measures can help to minimize impacts from stormwater discharges from major storm events such as hurricanes, storm surge, extreme/heavy precipitation,[104] and flood events. Pursuant to 314 CMR 3.11 (2)(a), if such stormwater control measures are already in place due to existing requirements mandated by other state, local or federal agencies, the SWPPP shall include a brief description of the controls and a reference to the existing requirement(s). If the site may be exposed to or has previously experienced suchmajor storm events[105], additional stormwater control measures that may be considered, and implemented as necessary, include, but are not limited to:

  i. Reinforce materials storage structures to withstand flooding and additional exertion of force;

  ii. Prevent floating of semi-stationary structures by elevating to the Base Flood Elevation (BFE) level or securing with non-corrosive device;

  iii. When a delivery of exposed materials is expected, and a storm is anticipated within 48 hours, delay delivery until after the storm or storematerials as appropriate (refer to emergency procedures);

[102] This is the amount of snow that is equivalent to 0.25 inches of rain, based on information from the National Oceanic and Atmospheric Administration (NOAA) indicating that 13 inches of snow is, on average, equivalent to 1 inch of rain. See https://www.nssl.noaa.gov/education/svrwx101/winter/faq/.

[103] NOAA's National Weather Service has guidelines on snowfall measurements at https://www.weather.gov/jkl/snow_measurement. These guidelines recommend use of a "snowboard" (a piece of wood about 16 inches by 16 inches) that is placed in an unobstructed part of the site on a hard surface.

[104] Heavy precipitation refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal. What constitutes a period of heavy precipitation varies according to location and season. Heavy precipitation does not necessarily mean the total amount of precipitation at a location has increased— just that precipitation is occurring in more intense or more frequent events.

[105] To determine if your facility is susceptible to an increased frequency of major storm events that could impact the discharge of pollutants in stormwater, you may reference FEMA, NOAA, or USGS flood map products at https://www.usgs.gov/faqs/where-can-i-find-flood-maps?qt-news_science_products=0#qtnews_science_products.

iv. Temporarily store materials and waste above the Base Flood Elevation ***[EPA notes that it has deleted a footnote reference to the term "Base Flood Elevation" since the same footnote is already included in Part 9.1.2.g, above.]*** level;

v. Temporarily reduce or eliminate outdoor storage;

vi. Temporarily relocate any mobile vehicles and equipment to higher ground;

vii. Develop scenario-based emergency procedures for major storms that are complementary to regular stormwater pollution prevention planning andidentify emergency contacts for staff and contractors; and

viii. Conduct staff training for implementing your emergency procedures atregular intervals.

k. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05(5)(e) to maintain surface waters free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife, permittees who seek coverage under the 2022 CGP and anticipate to carry out dust control shall limit their dust control methodology to using water only and specifically avoid using other techniques, such as solutions containing calcium chloride.

l. If MassDEP requests a copy of the Stormwater Pollution Prevention Plan (SWPPP) for any construction site at any time, the permittee shall submit the SWPPP to MassDEP within 14 days of such a request. MassDEP may conduct an inspection of any site covered by this permit to ensure compliance with state lawrequirements, including state water quality standards.

9.1.3 MTR10F000 Areas in the State of Vermont located at a federal facility

a. Earth disturbance at any one time is limited to five acres.

b. All areas of earth disturbance must have temporary or final stabilization within 14 days of the initial disturbance. After this time, disturbed areas must be temporarily or permanently stabilized in advance of any runoff producing event. A runoff producing event is an event that produces runoff from the construction site. Temporary stabilization is not required if precipitation is not forecast and work is to continue in the next 24-hours or if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of two feet or greater (e.g. house foundation excavation, utility trenches). Areas of a construction site that drain to sediment basins are not considered eligible for this exemption, and the exemption applies only to the excavated area itself.

c. Site inspections on active construction sites shall be conducted daily during the period from October 15 through April 15.

d. The use of chemical treatments (e.g. polymers, flocculants, and coagulants) for the settling and/or removal of sediment from stormwater runoff associated with construction and construction-related activities requires prior written approval and an approved site and project-specific plan, from the Vermont Agency of Natural Resources. In addition, the use of cationic polymers is prohibited unless approved by the Vermont Agency of Natural Resources under a site and project-specific plan.

e. Any applicant under EPA's CGP shall allow authorized Vermont Agency of Natural Resources representatives, at reasonable times and upon presentation of credentials, to enter upon the project site for purposes of inspecting the project and determining

compliance with this Certification.

f. The Vermont Agency of Natural Resources may reopen and alter or amend the conditions of this Certification over the life of the EPA 2022 Construction General Permit when such action is necessary to assure compliance with the VWQS.

9.2 EPA REGION 2

9.2.1 NYR10I000 Indian country within the State of New York

a. Saint Regis Mohawk Tribe

i. Any Responsible-Person/Decision-Maker required under the CGP to submit a Notice of Intent (NOI) to EPA for coverage under the CGP, must concurrently submit an electronic copy of the NOI to the SRMT Environmental Division, Water Resource Program Manager. Additionally, an electronic copy of the Notice of Termination (NOT) must be provided within three business days after electronic confirmation is received from EPA that the NOT has been accepted. The NOI and NOT must be electronically provided to the following addresses:

Mr. Tieman W. Smith
Water Resources Program Manager Saint Regis Mohawk Tribe
449 Frogtown Road
Akwesasne, NY 13655 Tiernan.Smith@srmt-nsn.gov 518.358.2272 ext. 5073

ii. Any Responsible-Person/Decision-Maker that is required as part of the CGP to prepare a Discharge Management Plan (OMP) or Storm Water Management Plan (SWMP) and/or Storm Water Pollution Prevention Plan (SWPPP) must submit an electronic copy of the DMP, SWMP and/or SWPPP to the SRMT Environment Division, Water Resources Program Manager IO business days prior to the start of construction of any work to be conducted under the CGP. The applicable documents must be provided to the electronic address listed above.

iii. Any Responsible-Person/Decision-Maker that is required under the CGP to submit an annual report to EPA must submit an electronic copy of the annual report concurrently to the SRMT Water Resource Program. Additionally, any correspondences between the applicant and EPA related to analytical data, written reports, corrective action, enforcement, monitoring, or an adverse incident must likewise be routed to the SRMT Water Resources Program at the above electronic address.

iv. An "Authorization to Proceed Letter" with site-specific mitigation requirements may be sent out to the permittee when a review of the NOI and OMP, SWMP and /or SWPPP on a case-by-case basis, is completed by the SRMT Environment Division, Water Resource Program. This approval will allow the application to proceed if all mitigation requirements are met.

b. Seneca Nation

i. Under Part 1.1.5 of the CGP, the Seneca Nation requests that an applicant must demonstrate that they meet the eligibility criteria listed in Appendix D (certify in your Notice of Intent (NOI) that you meet one of the eligibility criteria [Criterion A-F]) as well as species and critical habitats that are listed under the Seneca Nation's "Fishing and Conservation Laws" and the "Seneca Nation of Indians Comprehensive Conservation Law".

ii. The Tribal Historic Preservation Office (THPO) was established in 2000 after the Seneca Nation received a recognition letter from the National Park Service (NPS); therefore under Part 1.1.6 of the CGP (Appendix E) and prior to submitting a Notice of Intent (NOI) operators must complete the Nation's TPHO, Project Review Form (https://sni.org/media/246603/sni-thpo-project-review-form.pdf) and submit the completed form with associated information to the Tribal Historic Preservation Officer at 90 Ohi:yo' Way, Salamanca, NY 14779. Federal agencies engaging in construction activities must provide for construction review by a certified construction reviewer in accordance with 7 Del. C. §§4010 & 4013 and 7 DE Admin. Code 5101, subsection 6.1.6.

iii. Under Part 1.2 of the CGP, discharges must also follow the Section 13 of the Guide for Construction (Seneca Nation of Indians Source Water Code) and respectively, Council Resolution, dated April 13, 2013 (CN: R-04-13-13-11) to ensure that the health, safety and welfare of the citizens of the Seneca Nation, and all other within the Lands and Territories of the Seneca Nation of Indians, and to facilitate the adequate provisions of water through the elimination or prevention of ground water contamination in the vicinity of wells that supply drinking water for the Nation. The area is known as the Source Water Protection Area (SWPA) and specified activities are regulated within this SWPA, as cited in Section 13 of the Guide for Construction and Section VI, of CN: R-04-13-13-11.

iv. Under Part 1.4, any operator who seeks coverage of the CGP, and is required to submit a notice of intent NOI and Notice of Termination (NOT) (as necessary) to the EPA for coverage, under Part 1.4.2 must also submit a copy of the NOI to the Seneca Nation's Environmental Protection Department (EPD) within three business days of submittal to the EPA, (address shown below). Respectively, a copy of the NOT (as described under Part 8.3 of the CGP), which certifies that you have met the requirements of Part 8, must be provided within three business days after electronic confirmation is received from the EPA that the NOT has been accepted. In addition to a NOI and NOT, the Seneca Nation (Environmental Protection Department [EPD]) would require an Environmental Impact Assessment (EA) (Long Form), as shown in Section 2 of the Seneca Nation of Indians Laws, Ordinances & Policies (Guide for Construction), to be completed and submitted to the EPD prior to any project to determine whether the impacts from a project would create significant and detrimental effects to the Nation's lands, water (violate WQS), and environment. The NOI, NOT, and EA must be submitted electronically to epd@sni.org and provided to the following address:

Seneca Nation
Environmental Protection Department (EPD) Attn: Director of EPD
12837 Route 438
Irving, NY 14081

v. Under Part 3.0 of the CGP, discharges must be controlled as necessary to meet applicable WQS. The Seneca Nation is working actively towards finalizing and implementing the; therefore, the EPD would require an applicant to submit or grant access to the permit to obtain information on the impact of effluents on receiving waters, including the capability of receiving waters to support future designated uses and achieve the WQS of the Nation; and to advise prospective dischargers of discharge requirements, and coordinate with the appropriate

permitting agencies. As stated in the Decision Document, under Section 303(c) of the CWA, 33 U.S.C. § 1313(c), states develop, review, and revise (as appropriate) water quality standards for surface waters of the United States. At a minimum, such standards are to include designated water uses, water quality criteria to protect such uses, and an antidegradation policy. 40 C.F.R. § 131.6. In addition, under Section 401 of the CWA states may grant, condition, or deny "certification" for federally permitted or licensed activities that may result in a discharge to the waters of the United States 33 U.S.C. § 1341.

vi. Under Part 7.2.8(a)(b)(c) and for Part 9 of the CGP, the following Sections of the Seneca Nation's Guide for Construction shall be considered, in conjunction with the CGP:

(a) Section 1. Executive Order - To Establish a Policy for Governing Access to Nation Territories and Facilities by Officials of Foreign Government, dated March 31, 2011

(b) Section 3. Natural Resources Committee, Sand and Gravel Law (CN: R-06-24-05-08)

(c) Section 4. Fishing and Conservation Laws - Part 1.1.5 of the CGP

(d) Section 5. Seneca Nation of Indians Comprehensive Conservation Law, adopted January 14, 2012

(e) Section 9. Food is Our Medicine (FIOM) Program/Native Planting Policy (CN: R-03- 08-14-14)

(f) Section 10. Forestry Management Plan (CN: R-08-14-10-23)

(g) Section 11. Timber Ordinance #411-092, dated May 8, 1982

(h) Section 14. Flood Damage Prevention Local Law, dated September 27, 1988

(i) Section 16. Utilities Ordinance No. 87-100

(j) Authorizing Emergency Action and Contingency Plan to Restrain Pollution of Nations Waters, (Council Resolution: R-03-01-18-10), dated March 10, 2018 Seneca Nation of Indians Permit Application for Construction within Waterways Permit, Form NR98-01.00

9.3 EPA REGION 3

9.3.1 DCR100000 District of Columbia

a. Discharges authorized by this permit shall comply with the District of Columbia Water Pollution Control Act of 1984, as amended (DC Official Code § 8-103.01 and § 8-103.06, et seq.) to ensure that District of Columbia waters, waters in adjacent and downstream states, and the beneficial uses of these waters will not be harmed or degraded by the discharges.

b. Discharges authorized by this permit must comply with §§ 1104.1 and 1104.8 of Chapter 11 and the provisions of Chapter 19 of Title 21of District of Columbia Municipal Regulations in order to attain and maintain designated uses of the District of Columbia waters.

c. The permittee shall comply with the District of Columbia Stormwater Management and Soil Erosion and Sediment Control regulations in Chapter 5 of Title 21 of the District of Columbia Municipal Regulations.

d. The permittee shall comply with the District of Columbia Flood Management Control regulations in Chapter 31 of Title 20 of the District of Columbia Municipal Regulations.

e. The permittee shall submit a copy of the Stormwater Pollution Prevention Plan (SWPPP) to the Regulatory Review Division, Department of Energy & Environment, Government of the District of Columbia, 1200 First Street, NE, 5th Floor, Washington, DC 20002, during the review and approval of the permittee's DOEE Erosion and Sediment Control Plan in accordance with the provisions of Chapter 542 of Title 21 of the District of Columbia Municipal Regulations.

f. Upon request, the permittee shall submit all inspection and monitoring reports as required by this permit and 40 CFR § 122.41 to the Associate Director, Inspection and Enforcement Division, Department of Energy & Environment, Government of the District of Columbia, 1200 First Street, NE, 5th Floor, Washington, DC 20002; telephone (202) 535-2226, or by email at Joshua.Rodriguez@dc.gov.

g. In the event the permittee intends to discharge dewatering water, groundwater, or groundwater comingled with stormwater from a known contaminated site, the permittee shall contact the Regulatory Review Division, Department of Energy & Environment, Government of the District of Columbia, 1200 First Street, NE, 5th Floor, Washington, DC 20002; telephone (202) 535-2600, or by email at MS4DischargeAuthorization@dc.gov to request authorization to discharge dewatering water, groundwater, or groundwater comingled with stormwater to the District's Municipal Separate Storm Sewer System (MS4) or to a surface water body pursuant to §§ 8-103.02, 8-103.06, and 8-103.07 of the District of Columbia Water Pollution Control Act of 1984, as amended.

9.3.2 DER10F000 Areas in the State of Delaware located at a federal facility (as defined in Appendix A)

a. Federal agencies must submit a sediment and stormwater management plan (SSMP) and receive Department approval prior to undertaking any land clearing, soil movement or construction activity unless conducting an exempt activity.

b. Federal construction activities are required to have a third-party Certified Construction Reviewer (CCR) perform weekly reviews to ensure the adequacy of construction activities pursuant to the approved SSMP and regulations.

Implementation of approved SSMPs requires the daily oversight of construction activity by certified responsible personnel.

c. Implementation of approved SSMPs requires the daily oversight of construction activity by certified responsible personnel.

d. A current copy of the SSMP must be maintained at the construction site.

e. Unless authorized by the Department, not more than 20 acres may be disturbed at any one time.

9.4 EPA REGION 4

No additional conditions

9.5 EPA REGION 5

9.5.1 MIR10I000 Indian country within the State of Minnesota

a. Fond du Lac Reservation

i. New dischargers wishing to discharge to an Outstanding Reservation Resource Water (ORRW)[106] must obtain an individual permit from EPA for storm water discharges from large and small construction activities.

ii. A copy of the Storm Water Pollution Prevention Plan (SWPPP) must be submitted to the Office of Water Protection at least fifteen (15) days in advance of sending the Notice of Intent to EPA. The SWPPP can be submitted electronically to richardgitar@FDLREZ.com or by hardcopy sent to:

Fond du Lac Reservation
Office of Water Protection
1720 Big Lake Road
Cloquet, MN 55720

iii. Copies of the Notice of Intent (NOI) and the Notice of Termination (NOT) must be sent to the Fond du Lac Office of Water Protection at the same time they are submitted to EPA. [The condition helps the Office of Water Protection keep track of when a project is about to start and when it has ended. FDL Water Quality Certification Ordinance, Section 204 (a) (2)).

iv. If the project will entail a discharge to any watercourse or open water body, the turbidity limit shall NOT exceed 10% of natural background within the receiving water(s) as determined by Office of Water Protection staff. For such discharges, turbidity sampling must take place within 24 hours of a ½-inch or greater rainfall event. The results of the sampling must be reported to the Office of Water Protection within 7 days of the sample collection. All sample reporting must include the date and time, location (GPS: UTM/Zone 15), and NTU. CGP applicants are encouraged to work with the Office of Water Protection in determining the most appropriate location(s) for sampling. [This condition helps both the Office of Water Protection and the project proponent in knowing whether or not their erosion control efforts are effective. FDL Water Quality Certification, Section 204 (b) (1)).

v. Receiving waters with open water must be sampled for turbidity prior to any authorized discharge as determined by Office of Water Protection staff. This requirement only applies to receiving waters which no ambient turbidity data exists. [This condition allows the Office of Water Protection to obtain a baseline turbidity sample in which to compare to other samples. FDL Water Quality Certification Ordinance, Section 204 (b) (2)].

vi. All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in the Water Quality Standards of the Fond du Lac Reservation, Ordinance #12/98, as amended. This includes, but is not limited to, the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of water of the Fond du Lac

[106] Although additional waters may be designated in the future, currently Perch Lake, Rice Portage Lake, Miller Lake, Deadfish Lake, and Jaskari Lake are designated as ORRWs.

Reservation for any of the uses designated in the Water Quality Standards of the Fond du Lac Reservation. These uses include wildlife, aquatic life, warm water fisheries, cold water fisheries, subsistence fishing (netting), primary contact recreation, secondary contact recreation, cultural, wild rice areas, aesthetic waters, agriculture, navigation, commercial and wetlands. It also includes the designated uses of wetlands including, but not limited to, baseflow discharge, cultural opportunities, flood flow attenuation, groundwater recharge, indigenous floral and fauna) diversity and abundance, nutrient cycling, organic carbon export/cycling, protection of downstream water quality, recreation, resilience against climactic effects, sediment/shoreline stabilization, surface water storage, wild rice, and water dependent wildlife. [In addition to listing the designated uses of waters of the Fond du Lac Reservation, this condition also limits the project proponent to discharges that will not violate our Water Quality Standards. FDL Water Quality Certification Ordinance, Section 204 (a) (7)).

vii. Appropriate steps shall be taken to ensure that petroleum products or other chemical pollutants are prevented from entering waters of the Fond du Lac Reservation. All spills must be reported to the appropriate emergency management Agency (National Response Center AND the State Duty Officer), and measures shall be taken immediately to prevent the pollution of waters of the Fond du Lac Reservation, including groundwater. The Fond du Lac Office of Water Protection must also be notified immediately of any spill regardless of size. [This condition helps protect water quality and also reminds project proponents of their responsibility in reporting spill events. FDL Water Quality Certification Ordinance, Section 204 (b) (3)).

viii. All seed mixes, whether used for temporary stabilization or permanent seeding, shall NOT contain any annual ryegrass (Lolium species). Wild rye (Elymus species) or Oats (Avena species) may be used as a replacement in seed mixes. [This condition prevents the use of annual ryegrass on the Reservation. Annual ryegrass is allelopathic, which means it produces biochemical in its roots that inhibit the growth of native plants. If used in seed mixes, annual ryegrass could contribute to erosion, especially on slopes. However, the condition also specifies substitute grasses that germinate almost as fast as annual ryegrass for use as a cover crop to help prevent erosion. FDL Water Quality Certification Ordinance, Section 204 (t) (1)).

ix. To prevent the introduction of invasive species, ALL contractors and subcontractors MUST disclose information stating prior equipment location(s) and ALL known invasive species potentially being transported from said location(s). All equipment MUST undergo a high pressure wash (including any equipment mats) BEFORE ENTERING the Fond du Lac Reservation. Personal equipment such as work boots, gloves, vest, etc. MUST be clean of debris, dirt and plant and animal material BEFORE ENTERING the Fond du Lac Reservation. Equipment being transported from known infested areas MUST undergo a high pressure wash as soon as possible after leaving the infested site and again BEFORE ENTERING the Fond du Lac Reservation, to avoid transport of invasive species into areas surrounding the Reservation. Written certification of equipment cleaning MUST be provided to the Fond du Lac Office of Water Protection. Upon arrival, ALL contractor and subcontractor equipment will be inspected by appointed Fond du Lac staff. If equipment is deemed unsatisfactory, the equipment MUST

undergo a high pressure washing until the equipment is cleared by the inspector, until such time, minimal travel will be allowed through the Reservation. The contractor shall be held responsible for the control of any invasive species introduced as a result of their project. [This condition requires the project proponent to prevent the inadvertent introduction of invasive species by taking an active role in cleaning all vehicles, equipment, and equipment mats before entering the Reservation. This condition has been placed in certifications since 2012, due to the introduction of Wild Parsnip in 2011 from a pipeline contractor. It is much easier to prevent the introduction of an invasive species than it is to eradicate it once it has been introduced. Many invasive plant species form monocultures, preventing native plants from growing. This situation often leads to cases of erosion, which in turn effects water quality. FOL Water Quality Certification Ordinance, Section 204 (g) (1)].

x. A copy of this certification MUST be kept by the contractor on-site at all times and be available for viewing by all personnel, including inspectors. [This condition ensures that the information contained in the certification, especially the conditions, is readily available onsite for reference. FOL Water Quality Certification Ordinance, Section 204 (a) (9)].

b. The Grand Portage Band of Lake Superior Chippewa

i. The CGP authorization is for construction activities that may occur within the exterior boundaries of the Grand Portage Reservation in accordance to the Grand Portage Land Use Ordinance. The CGP regulates stormwater discharges associated with construction sites of one acre or more in size. Only those activities specifically authorized by the CGP are authorized by this certification (the "Certification").

ii. All construction stormwater discharges authorized by the CGP must comply with the Water Quality Standards and Water Resources Ordinance, as well as Applicable Federal Standards (as defined in the Water Resources Ordinance).

iii. All appropriate steps must be taken to ensure that petroleum products or other chemical pollutants are prevented from entering the Waters of the Reservation. All spills must be reported to the appropriate emergency-management agency, and measures must be taken to prevent the pollution of the Waters of the Reservation, including groundwater.

iv. The 2022 CGP requires inspections and monitoring reports of the construction site stormwater discharges by a qualified person. Monitoring and inspection reports must comply with the minimum requirements contained in the 2022 CGP. The monitoring plan must be prepared and incorporated into the Storm Water Pollution Prevention Plan (the "SWPP"). A copy of the SWPP must be submitted to the Board at least 30 days in advance of sending the requisite Notice of Intent to EPA. The SWPP should be sent to:

Grand Portage Environmental Resources Board

P.O. Box 428

Grand Portage, MN 55605

Copies of the Notice of Intent and Notice of Termination required under the General Permit must be submitted to the Board at the address above at the same time they are submitted to the EPA.

v. If requested by the Grand Portage Environmental Department, the permittee must provide additional information necessary for a case-by-case eligibility determination to assure compliance with the Water Quality Standards and any Applicable Federal Standards. The burden is on the applicant to demonstrate compliance with the Water Quality Standards, the Water Resources Ordinance, and Applicable Federal Standards whether or not the application is ultimately eligible for the CGP.

vi. CGP discharges must not cause nuisance conditions as defined in Grand Portage Water Quality Standards.

vii. The Board retains full authority to ensure compliance with and to enforce the provisions of the Water Resource Ordinance and Water Quality Standards, Applicable Federal Standards, and these Certification conditions. Nothing herein affects the scope or applicability of other controlling tribal or federal requirements, including but not limited to impacts to cultural, historical, or archeological features or sites, or properties that may be eligible for listing on the National Register of Historic Places under the National Historic Preservation Act, 54 U.S.C. §§ 300101 et seq.

viii. Appeals related to Board actions taken in accordance with any of the preceding conditions may be heard by the Grand Portage Tribal Court.

c. Leech Lake Band of Ojibwe

i. The water quality standards that apply to the construction site are the standards at the time the operator submits its Notice of Intent (NOI) to EPA and the LLBO WRP (see conditions # 2 and # 3).

ii. A copy of the Stormwater Pollution Prevention Plan (SWPPP) must be submitted to the LLBO WRP at least 30 days in advance of sending the NOI for the project to EPA. See attached LLBO 401 Water Quality Certification Ordinance. Section 304(a)(1). The SWPPP should be submitted electronically to Jeff.Harper@llojibwe.net and by hardcopy sent to:

Leech Lake Band of Ojibwe
ATTN: Water Resources Program - 401 Cert
Division of Resource Management
190 Sailstar Drive NW
Cass Lake, Minnesota 56633

iii. Copies of the NOI and the Notice of Termination (NOT) must be submitted to the LLBO WRP at the same time they are submitted to EPA. See attached LLBO 401 Water Quality Certification Ordinance, Section 304(a)(2). The NOI and NOT should be submitted electronically to Jeff.Harper@llojibwe.net and sent by hardcopy to the address cited in condition # 2.

iv. Any and all other conditions listed in Section 304 of the attached LLBO 401 Water Quality Certification Ordinance shall be observed unless the LLBO WRP deems that certain conditions therein are not applicable to the project in need of a permit under this certification.

v. A copy of this certification MUST be kept by the contractor on-site at all times and be available for viewing by all personnel, including inspectors.

vi. Upon consideration of the NOI, if the LLBO WRP finds that the discharge will not be controlled as necessary to meet applicable water quality standards, the LLBO WRP may insist, consistent with Part 3.1 of the CGP, that additional controls are installed to meet applicable water quality standards, or recommend to EPA that the operator obtain coverage under an individual permit.

9.5.2 WIR10I000 Indian country within the State of Wisconsin

a. Bad River Band of Lake Superior Tribe of Chippewa Indians

i. Only those activities specifically authorized by the CGP are authorized by this Certification. This Certification does not authorize impacts to cultural properties, orhistorical sites, or properties that may be eligible for listing as such.

ii. All projects which are eligible for coverage under the CGP and are located within the exterior boundaries of the Bad River Reservation shall be implemented in such a manner that is consistent with the Tribe's Water Quality Standards (WQS). The Tribe's WQS can be viewed at: http://www.badriver-nsn.gov/wp-content/uploads/2020/01/NRD_WaterQualityStandards_2011.pdf

iii. Operators are not eligible to obtain authorization under the CGP for all new discharges to an Outstanding Tribal Resource Water (OTRW or Tier 3 water). OTRWs, or Tier 3 waters, include the following: Kakagon Slough and the lower wetland reaches of its tributaries that support wild rice, Kakagon River, Bad River Slough, Honest John Lake, Bog Lake, a portion of Bad River, from where it enters the Reservation through the confluence with the White River, and Potato River. OTRWs can be viewed at: https://www.arcgis.com/apps/View/index.html?appid=6f44c371217e4ee8b5f1c2c705c 7c7c5

iv. An operator proposing to discharge to an Outstanding Resource Water (ORW or Tier 2.5 water) under the CGP must comply with the antidegradation provisions of the Tribe's WQS. ORWs, or Tier 2.5 waters, include the following: a portion of Bad River, from downstream the confluence with the White River to Lake Superior, White River, Marengo River, Graveyard Creek, Bear Trap Creek, Wood Creek, Brunsweiler River, Tyler Forks, Bell Creek, and Vaughn Creek. ORWs can be viewed at: https://www.arcgis.com/apps/View/index.html?appid=6f44c371217e4ee8b5f1c2c705c 7c7c5. The antidegradation demonstration materials described in provision E.4.iii., and included on the antidegradation demonstration template found at: https://www.badriver-nsn.gov/natural-resources/projectreviews/, must be submitted to the following address:

Bad River Tribe's Natural Resources Department

Attn: Water Regulatory Specialist

P.O. Box 39 Odanah, WI 54861

WaterReg@badriver-nsn.gov

v. An operator proposing to discharge to an Exceptional Resource Water (ERW or Tier 2 water) under the CGP must comply with the antidegradation provisions of the Tribe's WQS. ERWs, or Tier 2 waters, include the following: any surface water within the exterior boundaries of the Reservation that is not specifically classified as an Outstanding Resource Water (Tier 2.5 water) or an Outstanding Tribal Resource Water (Tier 3 water). ERWs can be viewed at:

https://www.arcgis.com/apps/View/index.html?appid=6f44c371217e4ee8b5f1c2c705c 7c7c5. The antidegradation demonstration materials described in provision E.4.ii., and included on the antidegradation demonstration template found at: https://www.badriver-nsn.gov/natural-resources/projectreviews/, must be submitted to the following address:

Bad River Tribe's Natural Resources Department
Attn: Water Regulatory Specialist
P.O. Box 39 Odanah, WI 54861
WaterReg@badriver-nsn.gov

vi. Projects utilizing cationic treatment chemicals within the Bad River Reservation boundaries are not eligible for coverage under the CGP.

vii. A discharge to a surface water within the Bad River Reservation boundaries shall not cause or contribute to an exceedance of the turbidity criterion included in the Tribe's WQS, which states: Turbidity shall not exceed 5 NTU over natural background turbidity when the background turbidity is 50 NTU or less, or turbidity shall not increase more than 10% when the background turbidity is more than 50 NTU.

viii. All projects which are eligible for coverage under the CGP within the exterior boundaries of the Bad River Reservation must comply with the Bad River Reservation Wetland and Watercourse Protection Ordinance, or Chapter 323 of the Bad River Tribal Ordinances, including the erosion and sedimentation control, natural buffer, and stabilization requirements. Questions regarding Chapter 323 and requests for permit applications can be directed to the Wetlands Specialist in the Tribe's Natural Resources Department at (715) 682-7123 or wetlands@badriver-nsn.gov.

ix. An operator of a project, which is eligible for coverage under the CGP, that would result in an allowable discharge under the CGP occurring within the exterior boundaries of the Bad River Reservation must notify the Tribe prior to the commencing earth-disturbing activities. The operator must submit a copy of the Notice of Intent (NOI) to the following addresses at the same time it is submitted to the U.S. EPA:

Bad River Tribe's Natural Resources Department
Attn: Water Regulatory Specialist
P.O. Box 39 Odanah, WI 54861
WaterReg@badriver-nsn.gov

Bad River Tribe's Natural Resources Department
Attn: Tribal Historic Preservation Officer (THPO)
P.O. Box 39 Odanah, WI 54861
THPO@badriver-nsn.gov

The operator must also submit a copy of the Notice of Termination (NOT) to the above addresses at the same time it is submitted to the U.S. EPA. Photographs showing the current site conditions must be included as part of the NOT to document the stabilization requirements have been met.

x. The THPO must be provided 30 days to comment on the project.

xi. The operator must obtain THPO concurrence in writing. This written concurrence will outline measures to be taken to prevent or mitigate effects to historic properties. For more information regarding the specifics of the cultural resources process, see 36 CFR Part 800. A best practice for an operator is to consult with the THPO during the planning stages of an undertaking.

xii. An operator of a project, which is eligible for coverage under the CGP, that would result in an allowable discharge under the CGP occurring within the exterior boundaries of the Bad River Reservation must submit a copy of the Stormwater Pollution Prevention Plan (SWPPP) to the following address at the same time as submitting the NOI:

Bad River Tribe's Natural Resources Department
Attn: Water Regulatory Specialist
P.O. Box 39 Odanah, WI 54861
WaterReg@badriver-nsn.gov

xiii. Any corrective action reports that are required under the CGP must be submitted to the following address within one (1) working day of the report completion:

Bad River Tribe's Natural Resources Department
P.O. Box 39 Odanah, WI 54861
WaterReg@badriver-nsn.gov

xiv. An operator of a project, which is eligible for coverage under the CGP, that would result in an allowable discharge under the CGP occurring within the exterior boundaries of the Bad River Reservation must submit a copies of the inspection reports (including photographs) to the following address within 24 hours of completing any site inspection required:

Bad River Tribe's Natural Resources Department Attn: Water Regulatory Specialist
P.O. Box 39 Odanah, WI 54861
WaterReg@badriver-nsn.gov

xv. An operator shall be responsible for meeting any additional permit requirements imposed by the U.S. EPA necessary to comply with the Tribe's antidegradation policies if the discharge point is located upstream of waters designated by the Tribe.

9.6 EPA REGION 6

9.6.1 NMR100000 State of New Mexico, except Indian country

a. In Outstanding National Resource Waters (ONRWs) in New Mexico, no degradation is permitted except in limited, specifically defined instances. Therefore, Operators are not eligible to obtain authorization under this general permit for stormwater discharges to waters classified as ONRWs listed in Paragraph D of 20.6.4.9 New Mexico Administrative Code (NMAC), also referred to as "Tier 3 waters" as defined in Appendix A of this permit. Exception: When construction activities are in response to a public emergency (e.g., wildfire, extreme flooding, etc.) and the related work requires immediate authorization to avoid a threat to public health or safety.

i. Operators who conduct construction activities in response to a public emergency to mitigate an immediate threat to public health or safety shall

adhere to the requirements in 20.6.4.8(A)(3)(c) NMAC, including notifying the New Mexico Environment Department (NMED) within seven days of initiation of the emergency action and providing NMED with a summary of the action taken within 30 days of initiation of the emergency action.

ii. For all other scenarios, Operators with proposed discharges to ONRWs in New Mexico shall obtain coverage from EPA under an NPDES Individual Permit and will comply with the additional standards and regulations related to discharges to ONRWs in 20.6.4.8(A) NMAC. Additional information is available from:

New Mexico Environment Department Surface Water Quality Bureau
P.O. Box 5469
Santa Fe, NM 87502-5469 Telephone: 505-827-0187
https://www.env.nm.gov/surface-water-quality/wqs/
https://gis.web.env.nm.gov/oem/?map=swqb

b. If construction dewatering activities are anticipated at a construction site and non-stormwater discharges of groundwater, subsurface water, spring water, and/or other dewatering water are anticipated, the Operators/Permittees must complete the following steps:

1. Review the state's Ground Water Quality Bureau Mapper (https://gis.web.env.nm.gov/GWQB/) and Petroleum Storage Tank Bureau Mapper (https://gis.web.env.nm.gov/GWQB/).

   Check if the following sources are located within the noted distance from the anticipated construction dewatering activity. At a minimum, a list of the following potential sources of contaminants and pollutants at the noted distance is to be kept in the SWPPP.

Source of Potential Contamination or Pollutants*	Constituents likely to be required for testing*
Within 0.5 mile of an open Leaking Underground Storage Tank (LUST) site	BTEX (Benzene, Toluene, Ethylbenzene, and Xylene) plus additional parameters depending on site conditions**
Within 0.5 mile of an open Voluntary Remediation site	All applicable parameters or pollutants listed in 20.6.4.13, 20.6.4.52, 20.6.4.54, 20.6.4.97 thru 20.6.4.99, 20.6.4.101 through 20.6.4.899, and 20.6.4.900 NMAC (or an alternate list approved by the NMED-SWQB)*
Within 0.5 mile of an open RCRA Corrective Action Site	
Within 0.5 mile of an open Abatement Site	
Within 0.5 mile of an open Brownfield Site	
Within 1.0 mile or more of a Superfund site or National Priorities List (NPL) site with associated groundwater contamination.	
Construction activity contaminants and/or natural water pollutants	Additional parameters depending on site activities and conditions (Contact NMED- SWQB for an alternate list)*

*For further assistance determining whether dewatering may encounter contaminated sources, please contact the NMED Ground Water Quality Bureau at 505-827-2965 or NMED Surface Water Quality Bureau (SWQB) at 505-827-0187.

** EPA approved sufficiently sensitive methods must be used. For known PCB sources and analysis, EPA Method 1668C must be used (see https://www.epa.gov/cwa-methods).

2. If dewatering activities are anticipated, information on the flow rate and potential to encounter contaminated groundwater, subsurface water, spring water, or dewatering water must be provideddirectly to NMED at the following address:

   NMED Surface Water Quality Bureau

   Program Manager, Point Source Regulation
   SectionPO Box 5469, Santa Fe, NM 87502

   Please call the SWQB to obtain the appropriate email address (505-827-0187).

3. In addition, the Operator/Permittee must characterize the quality of the groundwater and subsurface water, spring water, or dewatering water being considered for discharge according to the table above and including dissolved hardness and pH. Considering the contaminant sources listed in the table above, water quality data may already be available. For further assistance, contactthe

NMED Surface Water Quality Bureau (505-827-0187), Ground Water Quality Bureau (505-827- 2965), Petroleum Storage Tank Bureau (505-476-4397), or Hazardous Waste Bureau (505-476- 6000).

i. The Operator/Permittee must submit recent analytical test results (i.e., within the past 5 years) according to the table above, and including dissolved hardness and pH, to the EPA Region 6 Stormwater Permit Contact and the NMED Surface Water Quality Bureau (see contact information in #2 above). If the test data exceed applicable water quality standards, then the groundwater, subsurface water, spring water, or dewatering water cannot be discharged into surface waters under this general permit. Operators/Permittees may submit an NPDES Individual Permit application to treat and discharge to waters of the U.S. or find alternative disposal measures. No discharges to surface waters are allowed until authorized.

ii. If the discharge has the potential to affect groundwater (e.g., land application), the Operator/Permittee must submit an NOI to the NMED Ground Water Quality Bureau (see 20.6.2.1201 NMAC – Notice of Intent to Discharge).

4. The Operator/Permittee must document any findings and all correspondence with NMED and EPA in the SWPPP.

c. Operators who intend to obtain authorization under this permit for new and existing storm water dischargesfrom construction sites must satisfy the following condition:

i. The SWPPP must include site-specific interim and permanent stabilization, managerial, and structural solids, erosion and sediment control best management practices (BMPs) and/or other controls that are designed to prevent to the maximum extent practicable an increase in the sediment yield and flow velocity from pre-construction, pre-development conditions to assure thatapplicable standards in 20.6.4 NMAC, including the antidegradation policy, and TMDL waste load allocations (WLAs) are met. This requirement applies to discharges both during construction and after construction operations have been completed. The SWPPP must identify and document the rationale for selecting these BMPs and/or other controls. The SWPPP must also describe design specifications, construction specifications, maintenance schedules (including a long-term maintenance plan), criteria for inspections, and expected performance and longevity of these BMPs.For sites greater than 5 acres in size, BMP selection must be made based on the use of appropriatesoil loss prediction models (i.e. SEDCAD, RUSLE, SEDIMOT, MULTISED, etc.) OR equivalent generallyaccepted (by professional erosion control specialists) soil loss prediction tools.

ii. For all sites, the Operator(s) must demonstrate, and include documentation in the SWPPP, that implementation of the site-specific practices will ensure that the applicable standards and TMDL WLAs are met, and will result in sediment yields and flow velocities that, to the maximum extent practicable, will not be greater than the sediment yield levels and flow velocities from preconstruction, pre-development conditions.

iii. All SWPPPs must be prepared in accordance with good engineering practices by qualified (e.g., CPESC certified, engineers with appropriate training) erosion control specialists familiar with the use of soil loss prediction models and design of erosion and sediment control systems based on these models (or equivalent soil

loss prediction tools). Qualifications of the preparer (e.g., professional certifications, description of appropriate training) must be documented in the SWPPP.The Operator(s) must design, implement, and maintain BMPs in the manner specified in the SWPPP.

NMED supports the use of EPA's small residential lot template if a site qualifies to use it as explained inthe permit, as long as it is consistent with the above requirements. NMED's requirement does not preclude small residential sites from using the template, but it may require an additional short paragraphto justify the selection of specific BMPs for the site.

d. Operators must notify NMED when discharges of toxic or hazardous substances or oil from a spill or other release occurs - see Emergency Spill Notification Requirements, Part 2.3.6 of the permit. For emergencies, Operators can call 505-827-9329 at any time. For non-emergencies, Operators can call 866-428-6535 (voice mail 24-hours per day) or 505-476-6000 during business hours from 8am-5pm, Monday through Friday. Operators can also call the NMED Surface Water Quality Bureau directly at 505-827-0187.

e. Operators of small construction activities (i.e., 1-5 acres) are not eligible to qualify for a waiver in lieu of needing to obtain coverage under this general permit based on Item C.3 of Appendix C (Equivalent Analysis Waiver) in the State of New Mexico.

9.6.2 NMR10I000 Indian country within the State of New Mexico, except Navajo Reservation Lands that are covered under Arizona permit AZR10000I and Ute Mountain Reservation Lands that are covered under Colorado permit COR10000I.

a. Nambe Pueblo

i. The operator must provide a copy of the Notice of Intent (NOI) and Notice of Termination (NOT) to the Nambe Pueblo Governor's Office at the same time it is provided to the US Environmental Protection Agency. The NOI and NOT should be provided to the following address:

Office of the Governor Nambe Pueblo

!SA NPI02 WEST

Nambe Pueblo, New Mexico 87506

ii. The operator must provide a copy of the Storm Water Pollution Prevention Plan (SWPPP) to Nambe Pueblo at the same time it is submitted to the EPA, either by email to governor@nambepueblo.org or mailed to the above address.

iii. The operator must provide copies of inspection reports, a copy of the corrective action log, and modifications made to the SWPPP as a result of inspection findings, upon request by the Nambe Pueblo Department of Environmental and Natural Resources or Nam be Governor.

b. Ohkay Owingeh Tribe

i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOI) to the Ohkay Owingeh Office of Environmental Affairs, a copy of NOI modifications and the Notice of Termination (NOT), must be provided within three business days after EPA provides electronic confirmation that the submission has been received. The NOI and NOT must be provided to the following address:

Naomi L. Archuleta - Environmental Programs Manager Ohkay Owingeh Office of Environmental Affairs
P.O. Box 717
Ohkay Owingeh, NM 87566
naomi.archuleta@ohkay.org

Noah Kaniatobe - Environmental Specialist Ohkay Owingeh, Office of Environmental Affairs
P.O. Box 717
Ohkay Owingeh, NM 87566
noah.kaniatohe@ohkay.org

ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copy of the Storm Water Pollution Prevention Plan (SWPPP) to Ohkay Owingeh Office of Environmental Affairsat the same time that the NOI is submitted to the tribe (see contact information listed above).

iii. Following each incident where the operator takes a corrective action the operator must provide thecorrective action log to the Ohkay Owingeh Office of Environmental Affairs.

iv. The operator must notify Ohkay Owingeh Office of Environmental Affairs within 24 hours, in the event of an emergency spill in addition to the notification requirements at Part 2.3.6 of the CGP. Please contact: Ohkay Owingeh Tribal Police Department at 505.852.2757.

Please contact:
Ohkay Owingeh
Tribal Police Department
505.852.2757

c. Pueblo of Isleta

i. All operators obtaining permit coverage under the EPA CGP must submit a copy of the certified Notice ofIntent (NOI) to the Pueblo of Isleta at the same time it is submitted to EPA for projects occurring within the exterior boundaries of the Pueblo of Isleta. Additionally, a copy of NOI modifications and the Notice of Termination (NOT), must be provided within three business days after EPA provides electronic confirmation that the submission has been received. The Notices must be provided to the following address:

Water Quality Control OfficerPueblo of Isleta
Environment DepartmentPO Box 1270
Isleta NM 87022
505-869-7565
WQCO@isletapueblo.com

ii. The operator must notify the Pueblo of Isleta's Dispatch at 505-869-3030 as soon as possible and thePueblo of Isleta Water Quality Control Officer within 10 hours, in the event of a spill of hazardous ortoxic substances or if health or the

environment become endangered in addition to the notification requirements at Part 2.3.6 and at I.12.6.1 of the CGP.

iii. All operators obtaining permit coverage under the EPA CGP must submit an electronic copy of the Stormwater Pollution Prevention Plan (SWPPP) to the Pueblo of Isleta Water Quality Control Officer atthe above address, 30 days prior to submitting the certified NOI to EPA. If the electronic file is too largeto send through e-mail, a zip file or flash drive may be submitted.

iv. All operators obtaining permit coverage under the EPA CGP must give 2 days advance notice to the Pueblo of Isleta Water Quality Control Officer of any planned changes in the permitted activity whichmay result in noncompliance with permit requirements.

v. All operators obtaining permit coverage under the EPA CGP must post a sign or other notice of permit coverage at a safe, publicly accessible location in close proximity to the construction site. The notice mustbe located so that it is visible from the public road or tribal road that is nearest to the active part of the construction site. The sign must be maintained on-site from the time construction activities begin until final stabilization is met.

vi. Erosion and sediment controls shall be designed to retain sediment on-site and project-generatedwaste materials that have the potential to discharge pollutants shall not be placed on open soil oron a surface that is not stabilized. Volumes of sediment over five (5) cubic yards must be removed from the active construction site; additionally, if sediment is placed for disposal withinthe exterior boundaries of the Pueblo of Isleta, disposal must be within a tribally approved sediment disposal site.

d. Pueblo of Laguna

i. All operators obtaining permit coverage under the EPA CGP must submit an electronic copy of the certified (signed) Notice of Intent (NOI) to the Pueblo of Laguna's Environmental & Natural Resources Department (ENRD) within three business days of submittal to the EPA. Additionally, a copy of NOI modifications and the Notice of Termination (NOT), must be provided within three business days after the EPA provides electronic confirmation that the submission has been received. The NOI and NOT must be electronically submitted to info.environmental@pol-nsn.gov.

ii. All operators obtaining permit coverage under the EPA CGP must submit an electronic copy of the Stormwater Pollution Prevention Plan (SWPPP) to the Pueblo of Laguna's ENRD 14 days prior to the submittal of the NOI (see contact information listed above).

iii. The operator must provide copies of corrective actions logs and modifications made to the SWPPP as a result of inspection findings to the Pueblo of Laguna ENRD (see contact information above).

iv. In addition to the notification requirements of Part 2.3.6 of the CPG ***[EPA interprets this intending to refer to the CGP]***, the operator must notify the Pueblo of Laguna ENRD at 505-552-7512 in the event of an emergency spill as soon as possible.

e. Pueblo of Sandia. The following conditions apply only to discharges on the Pueblo of Sandia Reservation:

i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOI) to the Pueblo of Sandia Environment Department concurrently with submittal to the EPA. Additionally, a copy of NOI modifications and the Notice of Termination (NOT), must be provided concurrently with submittal to the EPA. The NOI and NOT must be provided electronically to the following addresses:

Electronic Addresses:

Amy Rosebrough (Water Quality Manager): rosebrough@sanidapueblo.nsn.us
Greg Kaufman (Environment Director):gkaufman@sandiapueblo.nsn.us

ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copy of the Stormwater Pollution Prevention Plan (SWPPP) to the Pueblo of Sandia Environment. Department at least 14 days prior to submittal of the NOI to the Pueblo (see contact information listed above).

iii. If requested by the Pueblo of Sandia Environment Department, the permittee must provide additional information necessary on a case-by-case basis to assure compliance with the Pueblo of Sandia Water Quality Standards and/or applicable Federal Standards.

iv. An "Authorization to Proceed Letter" with site specific mitigation requirements may be sent out to the permittee when a review of the NOI and SWPPP, on a case-by-case basis, is completed by the Pueblo of Sandia Environment Department. This approval will allow the application to proceed if all mitigation requirements are met.

v. The Pueblo of Sandia will not allow Small Construction Waivers (Appendix C) to be granted for any small construction activities.

vi. The operator must provide copies of inspection reports, a copy of the corrective action log, and modifications made to the SWPPP as a result of inspection findings to the Pueblo of Sandia Environment Department upon request. An inspection report and corrective action log must be submitted to the Pueblo within 3 days of any inspection that results in corrective action (see contact information listed above).

vii. The operator must notify the Pueblo of Sandia within 24 hours in the event of an emergency spill, in addition to the notification requirements at Part 2.3.6 of the COP (see contact information listed above).

viii. Before submitting a Notice of Termination (NOT) to the EPA, permittees must clearly demonstrate to the Pueblo of Sandia Environment Department through a site visit or documentation that requirements for site stabilization have been met and any temporary erosion control structures have been removed. A short letter stating that the NOT is acceptable and all requirements have been met will be sent to the permittee to add to the permittee's NOT submission to the EPA.

f. Pueblo of Santa Ana. The following conditions apply only to discharges on the Pueblo of Santa Ana Reservation:

i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOI) to the Pueblo's Department of Natural Resources within three business days of submittal to EPA. Additionally, a copy of NOI modifications and the Notice of Termination (NOT), must be

provided within three business days after EPA provides electronic confirmation that the submission has been received. The NOI and NOT must be provided to the following address:

Regular U.S. Delivery Mail:
Pueblo of Santa Ana
Department of Natural Resources Water Resources Division
Attn: Andrew Sweetman 02 Dove Rd
Santa Ana Pueblo, NM 87004

Electronically:
Andrew Sweetman
Water Resources Division Manager Andrew.Sweetman@santaana-nsn.gov
Tammy Montoya Hydrologist
Tammy.Montoya@santaana-nsn.gov

ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copyof the Stormwater Pollution Prevention Plan (SWPPP) to the to the Pueblo's Department of Natural Resources at the same time that the NOI is submitted to the tribe (see contact information listed above).

iii. The operator must provide copies of inspection reports, a copy of the corrective action log, and modifications made to the SWPPP as a result of inspection findings, upon request by the Pueblo's Department of Natural Resources.

iv. The operator must notify the Pueblo's Department of Natural Resources within 24 hours in the event of an emergency spill, in addition to the notification requirements at Part 2.3.6 of the CGP.

g. Pueblo of Taos

i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOi) to the Taos Pueblo Environmental Office and Taos Pueblo Governor's Office within three business days of submittal to EPA. Additionally, a copy of NOi modifications and the Notice of Termination (NOT), must be provided within three business days after EPA provides electronic confirmation that the submission has been received. The NOi and NOTmust be provided to the following addresses:

Honorable Governor of Taos Pueblo PO Box 1846
Taos, New Mexico 87571

Taos Pueblo Environmental Office PO Box 1846
Taos, New Mexico 87571

ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copy of theStormwater Pollution Prevention Plan (SWPPP) to the Taos Pueblo Environmental Office when the NOI is submitted to the tribe. Electronic copy of SWPPP downloaded on flash drive may be sent to the above address for the Taos Pueblo Environmental Office.

iii. The operator must provide a copy of the corrective action log following each corrective action undertaken and modifications made to the SWPPP as a result of

a corrective action to the Taos Pueblo Environmental Office at address listed above.

h. Pueblo of Tesuque.

i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOI) to the Pueblo of Tesuque Department of Environment and Natural Resources (DENR) and the Pueblo's Governor within three business days of submittal to EPA. Additionally, a copy of any NOi modifications and the Notice of Termination (NOT), must be provided within three business days after EPA provides electronic confirmation that the submission has been received. The NOI and NOT must be provided to the following address:

Governor Mark Mitchell Pueblo of Tesuque
20 TP 828
Santa Fe, NM 87506 governor@puebloftesuque.org

Sage Mountain.flower Pueblo of Tesuque
Department of Environment and Natural Resources Director
20 TP 828

ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copyof the Stormwater Pollution Prevention Plan (SWPPP) to Pueblo of Tesuque DENR and the Pueblo's Governor at the same time that the NO! is submitted to the EPA (see contact information listed above).

iii. The operator must provide a copy of the corrective action log, and any modifications made tothe SWPPP as a result of inspection findings, or upon request by the Pueblo of Tesuque DENR.

iv. The operator must notify the Pueblo of Tesuque DENR within 24 hours in the event of an emergency spill, in addition to the notification requirements at Part 2.3.6 of the CGP (seecontact information listed above).

i. Santa Clara Indian Pueblo.

i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOI) to the Santa Clara Pueblo Office of Environmental Affairs at the same time the NOI is submitted to the U.S. EPA. Additionally, a copy of the NOI modifications and the Notice of Termination (NOT), must be provided at the same time after electronic confirmation is received from EPA that the NOT has been accepted. The NOI and NOT shall be provided to the following address in electronic format:

Dino Chavarria,
Santa Clara Pueblo
Office of Environmental Affairs
dinoc@santaclarapueblo.org

ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copy of the Stormwater Pollution Prevention Plan to the Santa Clara Pueblo Office of Environmental Affairs at the same time the NOI is submitted to the U.S. EPA (see contact information listed above).

iii. The operator must notify the Santa Clara Pueblo Office of Environmental Affairs at the address above within 24 hours, in the event of an emergency spill, in addition to the notification requirements at Part 2.3.6 of the CGP

9.6.3 OKR10I000 Indian country within the State of Oklahoma, except areas of Indian country covered by an extension of state program authority pursuant to Section 10211 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA).

a. Pawnee Nation. The following conditions apply only to discharges within Pawnee Indian country:

i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Pawnee Nation at the same time it is submitted to the Environmental Protection Agency to the following address:

Pawnee Nation Department of Environmental Conservation and Safety
P.O. Box 470
Pawnee, OK 74058
Or email to dnrs@pawneenation.org

ii. An electronic copy of the Storm Water Pollution Prevention Plan (SWPPP) must be submitted to the Pawnee Nation Department of Environmental Conservation and Safety at the same time the NOI is submitted.

iii. The operator must provide access to the site for inspections and for copies of inspection reports, copy of the corrective action log and modifications, made to the SWPPP because of inspection findings, upon request by the Pawnee Nation DECS.

iv. The Pawnee Nation Department of Environmental Conservation and Safety must be notified at 918.762.3655 immediately upon discovery of any noncompliance with any provision of the permit conditions.

9.6.4 OKR10F000 Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, or the Oklahoma Department of Agriculture and Forestry including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09).

a. For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Lee Creek or any water or watershed designated "ORW" in Oklahoma's Water Quality Standards, this permit may only be used to authorize discharges from temporary construction activities. Certification is denied for any on-going activities such as sand and gravel mining or any other mineral mining.

b. For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Lee Creek or any water or watershed designated "ORW" in Oklahoma's Water Quality Standards, certification is denied for any discharges originating from support activities, including, but not limited to, concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, or borrow areas.

c. Dewatering discharges into sediment or nutrient-impaired waters, and waters identified as Tier 2, Tier 2.5, or Tier 3 (OAC 785:46-13) shall be controlled to meet water quality standards for turbidity in those waters as follows:

i. Cool Water Aquatic Community/Trout Fisheries: 10 NTUs (OAC 785: 45-5-12(f)(7)(A)(i)

ii. Lakes: 25 NTUs (OAC 785: 45-5-12(f)(7)(A)(ii)

iii. In waters where background turbidity exceeds these values, turbidity from dewatering discharges should be restricted to not exceed ambient levels (OAC 785: 45-5-12(f)(7)(B)

9.7 EPA REGION 7

No additional conditions.

9.8 EPA REGION 8

9.8.1 MTR10I000 Indian country within the State of Montana

a. Blackfeet Nation.

i. The Applicant and applicants for projects authorized under the NWPs should obtain all other permits, licenses, and certifications that may be required by federal, state, or tribal authority. Primary relevant tribal permit will be ALPO (Ordinance 117). Others may apply. It is the applicant's responsibility to know the tribal and local ordinances and complete all necessary permissions before they can commence work.

ii. If a project is unable to meet the enclosed conditions, or if certification is denied for an applicable NWP, the Applicant may request an individual certification from Blackfeet. An individual certification request must follow the requirements outlined in 40 CFR 121.5 of EPA's CWA § 401 Certification Rule, effective September 11, 2020.

iii. Copies of this certification should be kept on the job site and readily available for reference.

iv. If the project is constructed and/or operated in a manner not consistent with the applicable NWP, general conditions, or regional conditions, the permittee may be in violation of this certification.

v. Blackfeet and EPA representatives may inspect the authorized activity and any mitigation areas to determine compliance with the terms and conditions of the NWP.

vi. This NWP Reissuance does not reduce Tribal authority under any other rule.

vii. The project, including any stream relocations and restoration, must be built as shown and as otherwise described in the application, the construction plans, cross sections, mitigation plans and other supporting documents submitted to this office. Impacts to aquatic systems and restoration efforts will be monitored by an appropriate aquatic resource professional to ensure that disturbed areas are restored to at least their original condition.

viii. All existing water uses will be fully maintained during and after the completion of the project. (If applicable)

ix. Where practicable, perform all in-channel and wetland work during periods of low flow or drawn—down or when dry

x. Equipment staging areas must be located out of all delineated wetlands

xi. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during and immediately after construction, and all exposed soil and other fills, as well as any work below the ordinary high-water mark or in a wetland, must be permanently stabilized as soon as possible

xii. Materials such as piling, culverts, sandbags, fabric, mats, timbers used for temporary facilities in wetlands or below the high- water mark of Waters of the US must be free from oil, gas, excess dirt, loose paint and other pollutants.

xiii. Equipment staging areas in wetlands or in stream or river channels must be placed on mats, or other measures must be taken to minimize soil disturbance and compaction.

xiv. Clearing of riparian or wetland vegetation for the sole purpose of constructing work bridges, detours, staging areas or other temporary facilities must be limited to the absolute minimum necessary. When temporary impacts to native riparian or wetland vegetation are unavoidable, it must be mowed or cut above ground with the topsoil and root mass left intact.

xv. Remove all temporary fills and structures in the entirety when they are no longer needed. Restore affected areas to the appropriate original and planned contours where possible. Re-vegetate disturbed areas with appropriate native species when native species are impacted.

xvi. Construction methods and best management practices (BMPs) must minimize aquatic resource impacts to the maximum extent possible. Any BMPs described in the Joint Application must be followed. BMPs should include installation and maintenance of sediment control measures; separation, storage and reuse of any topsoil; and recovery of all disturbed areas where possible. All best management practices must in place prior to the onset of construction or as soon as practicable during the construction process.

xvii. Best available technology and/or best management practices must be utilized to protect existing water uses and maintain turbidity and sedimentation at the lowest practical level.

xviii. Applicant/contractor should manage disturbed streambank topsoil in a manner that optimizes plant establishment for the site.

xix. When operating equipment or otherwise undertaking construction in wetlands and water bodies the following conditions apply:

(a) Work should be done in dry conditions if possible.

(b) All equipment is to be inspected for oil, gas, diesel, anti-freeze, hydraulic fluid or other petroleum leaks. All such leaks will be properly repaired and equipment cleaned prior to being allowed on the project site. Leaks that occur after the equipment is moved to the project site will be fixed the same day or the next day or removed from the project area. The equipment is not allowed to continue operation once a leak is discovered.

(c) All equipment is to be inspected and cleaned before and after use to minimize the spread or introduction of invasive or undesirable species.

(d) Construction equipment shall not operate below the existing water surface except as follows:

- Impacts from construction should be minimized through the use of best management practices submitted in the permit application.
- Essential work below the waterline shall be done in a manner to minimize impacts to aquatic system and water quality.

(e) Containment booms and/or absorbent material must be available onsite. Any spills of petroleum products must be reported to the Army Corps, Blackfeet Nation BEO Office and the US EPA within 24 hours.

xx. Upland, riparian and in-stream vegetation should be protected except where its removal is necessary for completion of work. Revegetation should be completed as soon as possible. Applicant/contractor should revegetate disturbed soil in a manner that optimizes plant establishment for the site. Revegetation must include topsoil replacement, planting, seeding, fertilization, liming and weed-free mulching as necessary. Applicant must use native plant material and soils where appropriate and feasible. This certification does not allow for the introduction of non-native flora and fauna. All disturbed surface areas must be restored to pre-construction contours and elevation.

xxi. Spoils piles should not be placed or stored within the delineated wetlands or streams unless protected by a temporary structure designed to divert and handle high flows that can be anticipated during permit activity. Spoils piles should be placed on landscaping fabric or some other material to separate spoils material and allow retrieval of spoils material with minimal impact.

xxii. Impacts to wetlands shall not exceed 4.92 acres.

xxiii. Any unexpected and additional impacts to waters of the US should be reported to the

xxiv. Army Corps, Blackfeet Environmental Office Water Quality Coordinator and the US EPA.

xxv. All instream and stream channel reconstruction work must be completed before the stream is diverted into the new channel.

xxvi. Any temporary crossings, bridge supports, cofferdams, or other structures that are necessary during permit activity should be designed to handle high flows that can be anticipated during permit activity. All temporary structures should be completely removed from the water body at the conclusion of the permitted activity and the area restored to a natural function and appearance.

xxvii. The certification does not authorize any unconfined discharge of liquid cement into the waters of the United States. Grouting riprap must occur under dry conditions with no exposure of wet concrete to the water body.

xxviii. BMPs shall include application of certified weed-free straw or hay across all disturbed wetland areas that are temporarily impacted; installation and maintenance of sediment control measures during construction and if necessary, after construction is completed; use of heavy mud mats if necessary; separation,

storage and reuse of all streambank topsoil and wetland topsoil, as appropriate; and recovery of all disturbed wetland and streambank areas where possible. All conditions set by the Blackfeet Tribe and US Army Corps must be followed.

xxix. All applicants, including federal agencies, must notify EPA and the Blackfeet Environmental Office of the use of all NWPs for which certification has been granted prior to commencing work on the project. Notifications must include:

(a) project location (lat. Long., exact point on map);

(b) NWP that will be used and the specific activity that will be authorized under the NWP;

(c) amount of permanent and temporary fills;

(d) a short summary of the proposed activity, and all other federal, state, tribal or local permits or licenses required for the project;

(e) complete contact information of both the applicant and contractor (name, name of the company or property if applicable, telephone, mobile, and email); and,

(f) Summary of best management practices that will be used.

(g) A summary of communications with the affected Tribe's water quality staff regarding the project, including any concerns or issues.

(h) Notify Blackfeet and EPA at least 7 days before the completion of construction and operations begin.

xxx. Point source discharges may not occur: (1) in fens, bogs or other peatlands; (2) within 100 feet of the point of discharge of a known natural spring source; or (3) hanging gardens.

xxxi. Except as specified in the application, no debris, silt, sand, cement, concrete, oil or petroleum, organic material, or other construction related materials or wastes shall be allowed to enter into or be stored where it may enter into waters of the U.S.

xxxii. Silt fences, straw wattles, and other techniques shall be employed as appropriate to protect waters of the U.S. from sedimentation and other pollutants.

xxxiii. Water used in dust suppression shall not contain contaminants that could violate water quality standards.

xxxiv. Erosion control matting that is either biodegradable blankets or loose-weave mesh must be used to the maximum extent practicable.

xxxv. All equipment used in waters of the U.S. must be inspected for fluid leaks and invasive species prior to use on a project. All fluid leaks shall be repaired and cleaned prior to use or when discovered, or if the fluid leak can't be repaired, the equipment shall not be used on site. Equipment used in waters with the possibility of aquatic nuisance species infestation must be thoroughly cleaned and effectively decontaminated before they are used on the project.

xxxvi. Vegetation should be protected except where its removal is necessary for completion of the work. Locations disturbed by construction activities should be revegetated with appropriate native vegetation in a manner that optimizes plant establishment for the specific site.

xxxvii. Revegetation may include topsoil replacement, planting, seeding, fertilization, liming, and weed-free mulching, as necessary. Where practical, stockpile weed- seed-free topsoil and replace it on disturbed areas. All revegetation materials, including plants and plant seed shall be on site or scheduled for delivery prior to or upon completion of the earth moving activities.

xxxviii. Activities may not result in any unconfined discharge of liquid cement into waters of the U.S. Grouting riprap must occur under dry conditions with no exposure of wet concrete to the waterbody.

xxxix. Activities that may result in a point source discharge shall occur during seasonal low flow or no flow periods to the extent practicable.

xl. The placement of material (discharge) for the construction of new dams is not certified, except for stream restoration projects.

xli. Any decision-maker that is required under 7.0 of the CGP to prepare a Stormwater Pollution Prevention Plan (SWPPP), must submit an electronic copy of the SWPPP to the Blackfeet Environmental Office at least 30 days before construction starts for review and approval. Any modifications to the SWPPP should be submitted to the Blackfeet Environmental Office.

xlii. Any Decision-maker required under Part 1.4 of the CGP to submit a Notice of Intent (NOI) to EPA for coverage under the CGP, must submit a copy of the NOI to the Blackfeet Environmental Office within three business days of submittal to EPA. Additionally, a copy of the Notice of Termination (NOT) must be provided within three business days after electronic confirmation is received from EPA that the NOT has been accepted. The NOI and NOT must be provided to the following address Gerald Wagner, Blackfeet Environmental Office Director.

62 Hospital Drive, Browning, MT 59417

beo.director@gmail.com

b. Fort Peck Tribes.

i. Any Decision-maker required under Part 1.4 of the CGP to submit a Notice of Intent (NOI) to EPA for coverage under the CGP, must submit a copy of the NOI to the Fort Peck Tribes Office of Environmental Protection within three business days of submittal to EPA. Additionally, a copy of the Notice of Termination (NOT) must be provided within three business days after electronic confirmation is received from EPA that the NOT has been accepted. The NOI and NOT must be provided to the following address:

Martina Wilson, Office of Environmental Protection Director

501 Medicine Bear Rd Poplar, MT 59255

martinawilson@fortpecktribes.net

ii. Any Decision-maker that is required under Part 7.0 of the CGP to prepare a Stormwater Pollution Prevention Plan (SWPPP), must submit an electronic copy of the SWPPP to the Fort Peck Tribes Office of Environmental Protection at least 30 days before construction starts for review and approval. Any modifications to the

SWPPP should be submitted to the Fort Peck Tribes Office of Environmental Protection.

iii. Any Decision-maker that is required under Part 8.0 of the CGP to submit a weekly, bi-weekly, and/or annual report to EPA, must submit an electronic copy of the annual report to the Fort Peck Tribes Office of Environmental Protection within three business days after submittal to EPA.

9.9 EPA REGION 9

9.9.1 CAR10I000 Indian country within the State of California

a. Morongo Band of Mission Indians

i. A copy of the Stormwater Pollution Prevention Plan (SWPPP) must be submitted (either mailed or electronically) to the MEPD no less than thirty (30) days before commencing construction activities:

Morongo Band of Mission Indians
Environmental Protection Department
12700 Pumarra Road
Banning, CA 92220
Email: epd@morongo-nsn.gov

ii. Copies of the Notice of Intent (NOI) and the Notice of Termination (NOT) must be sent to the MEPD at the same time they are submitted to EPA.

iii. Operators of an "emergency-related project" must submit notice to the MEPD within twenty- four (24) hours after commencing construction activities.

iv. Spills, leaks, or unpermitted discharges must be reported to the MEPD within twenty-four (24) hours of the incident, in addition to the reporting requirements of the CGP.

v. Projects utilizing cationic treatment chemicals (as defined in Appendix A of the CGP) within the Morongo Reservation are not eligible for coverage under this certification of the CGP.

vi. Facilities covered under the CGP will be subject to compliance inspections by MEPD staff, including compliance with final site stabilization criteria prior to submitting an NOI ***[EPA assumes this intended to refer to an NOT]***.

9.9.2 GUR100000 Island of Guam

a. For purposes of this Order, the term "Project Proponent" shall mean U.S. Environmental Protection Agency, and its agents, assignees, and contractors.

b. For purposes of this Order, the permit "Operator" shall mean any party associated with a construction project that meets either of the following two criteria:

i. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications (e.g. in most cases this is the owner of the site); or

ii. The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the permit; in most cases this is the general contractor of the project).

Subcontractors generally are not considered operators for the purposes of this permit.

c. The Project Proponent shall enforce the proposed 2022 CGP and ensure that the Operator complies with the conditions of the permit at all times.[107] (40 CFR §121.11(c))

d. All submittals required by this Order shall be sent to the Guam Environmental Protection Agency Attn: 401 Federal Permit Manager, Non-Point Source Program, EMAS Division, 3304 Mariner Avenue, Bldg. 17-3304, Barrigada, Guam 96913, AND via email to jesse.cruz@epa.guam.gov. The submittals shall be identified with WQC Order #2021- 04 and include the COP Permit Number, certifying representative's name, title, mailing address and phone number. (§51060)(4) 2017 GWQS)

e. A copy of the Operator's signed Stormwater Pollution Prevention Plan (SWPPP) and signed Notice of Intent (NOI) and Notice of Termination (NOT) submitted to EPA for review and approval, shall concurrently be submitted to Guam EPA, consistent with condition A4. Coordination with Guam EPA is encouraged when the receiving water(s) for the proposed discharge is/are being identified. (§10105.B.5.d.) GSESCR; (§51060)(4) 2017 GWQS)

f. The Operator must comply with the conditions and requirements set forth in 22 GAR 10, Guam Soil Erosion and Sediment Control Regulations (GSESCR).

g. Before submitting the NOT to EPA, Operators shall comply with GSESC regulations at §10105.B10. (Stabilization of Affected Areas) and §10107.B. {Final Inspection and Approval)

h. All operators/owners shall comply with the general design criteria for best management practices (BMPs) acceptable for meeting the Construction and Post-construction stormwater criteria in the 2006 CNMI and Guam Stormwater Management Manual. (E.O. 2012-02)

i. Operating reports and monitoring and analytical data (e.g. Discharge Monitoring Reports (DMRs), follow-up monitoring reports, Exceedance Reports for Numerical Effluent Limits, etc.) submitted to EPA shall be concurrently submitted to Guam EPA, consistent with condition A4. §51060)(4) 2017 GWQS

j. The Operators who install a sediment basin or similar impoundment shall maintain the storage capacity of five thousand cubic feet {5,000 cu. ft.) per acre of project area tributary to the basin. (§10105.B.5.i.) GSESCR

k. (1) This Order does not authorize EPA to qualify Rainfall Erosivity Waivers to stormwater discharges associated with small construction activities (i.e. 1-5 acres). Operators are required to apply for an NOI for those projects eligible for coverage under the proposed 2022 CGP. An Erosion and Sediment Control Plan is required for every site that would be covered by the proposed 2022 CGP. (22 GAR §10104) The average annual rainfall for Guam and the CNMI exceeds I00 inches per year in many locations. These climatic conditions combined with the region's unique limestone, volcanic geologic formations, sensitive water resources and significant land

[107] By incorporating this condition into the permit, EPA acknowledges receipt of Guam's certification conditions.

development forces make stormwater discharges a very significant environmental and economic issue. (2006 CNMJ/Guam Stormwater Management Manual) E.O. 2012-02

(2) This Order does not authorize EPA to approve a Sediment TMDL Waiver for the Ugum River. Operators of construction activities eligible for a TMDL Waiver in lieu of coverage under the proposed 2022 CGP, shall submit a complete and accurate waiver certification as described in C.2., Appendix C - (Small Construction Waivers) to Guam EPA per condition A4., prior to notifying EPA of its intention to obtain a waiver. §51060)(4) 2017 GWQS

l. The Project Proponent shall submit to Guam EPA a signed Statement of Understanding of Water Quality Certification Conditions.[108] (see Attachment A for an example) per condition A4. §51060)(4) 2017 GWQS

m. The Operator shall comply with applicable provisions of the Guam Pesticides Act of2007 (10 GCA Chapter 50) and implementing regulations at Title 22 GAR Chapter 15 for any use and application of pesticides.

n. Point source discharge(s) to waterbodies under the jurisdiction of Guam EPA must be consistent with the antidegradation policy in 22 GAR §510l(b).

o. The operator shall carry out construction activities in such a manner that will not violate Guam Water Quality Standards (GWQS). Proposed 2022 CGP discharges are prohibited as follows:

- **i.** In Marine Waters, Category M-1 Excellent 22 GAR Chapter 5 §5102(b)(I); and
- **ii.** In Surface Waters, Category S-1 High 22 GAR Chapter 5 §5102(c)(I)

p. In addition to complying with construction dewatering requirements in Part 2.4 and site inspection requirements for all areas where construction dewatering is taking place in Part 4 of the proposed 2022 CGP, Operators shall comply with all dewatering conditions and requirements set forth in 22 GAR 7, Water Resources Development and Operating Regulations, to include securing Guam EPA permits prior to any dewatering activities.

q. The Operator shall develop and implement a Spill Prevention and Containment Plan.

r. The Operator shall have adequate and appropriate spill response materials on hand to respond to emergency release of oil, petroleum or any other material into waters of the territory.

s. Any unpermitted discharge into territorial waters or onto land with a potential for entry into territorial waters, is prohibited. If this occurs, the Operator shall immediately take the following actions:

- **i.** Cease operations at the location of the violation or spill.
- **ii.** Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.
- **iii.** Notify Guam EPA of the failure to comply. All petroleum spills shall be reported immediately to:

[108] By incorporating this condition into the permit, EPA acknowledges receipt of Guam's certification conditions.

(a) Guam's Emergency 911 system

(b) Guam EPA's 24-Hour Spill Response Team at (671) 888-6488 or during working hours (671) 300-4751

(c) US Coast Guard Sector Guam (671) 355-4824

(d) National Response Center 1-800-424-8802

iv. Submit a detailed written report to Guam EPA within five days of noncompliance that describes the nature of the event corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.

t. Compliance with this condition does not relieve the Operator from responsibility to maintain continuous compliance with the terms and conditions of this Order or the resulting liability from failure to comply.

u. Submittal or reporting of any of this information does not provide relief from any subsequent enforcement actions for unpermitted discharges to waters of the United States.

v. This Order is valid for five (5) Years from Date of Certification, unless otherwise approved by the Guam EPA Administrator.

w. The Operator shall be required to adhere to the current Guam Coral Spawning Moratorium dates for both hard and soft corals where in-water activities and/or construction activity in close proximity with marine waters may impair water quality. These dates can be obtained from the Guam Department of Agriculture, Division of Aquatic and Wildlife Resources, or the NOAA NMFS Pacific Islands Regional Office Habitat Conservation Division.

x. The Operator shall provide notice to Guam EPA consistent with Condition A4:

(a) Immediately upon discovery of noncompliance with the provisions of this Order.

y. A Notice of Violation/Work Stop Order will be issued if certification conditions are not adhered to or when significant or sustained water quality degradation occurs. Work or discharge shall be suspended or halted until the Operator addresses environmental problems/concerns to Guam EPA's satisfaction. Guam EPA may also levy penalties and fines (10 GCA §47111). Invalidity or enforceability of one or more provisions of this certification shall not affect any other provision of this certification.

9.10 EPA REGION 10

9.10.1 IDR10I000 Indian country within the State of Idaho, except Duck Valley Reservation lands (see Region 9)

a. Shoshone-Bannock Tribes

i. Copies of the following information must be sent to the SBT-WRD:

(a) Notice of Intents (NOI)

The Notice of Intent shall be forwarded to the SBT-WRD within thirty (30) days of receipt of submitting NOI to the USEPA.

Shoshone-Bannock Tribes Water Resources Department
PO Box 306 Pima Drive
Fort Hall, ID 83203 Phone: (208) 239-4582
Fax: (208) 239-4592
Or Email ctanaka@sbtribes.com

b. If requested by the SBT-WRD, the permittee must submit a copy of the SWPPP to SBT-WRD within fourteen (14) days of the request.

9.10.2 ORR10I000 Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9)

a. Confederated Tribes of Coos, Lower Umpqua, and Siuslaw

i. No activities allowed under the CGP shall result in the degradation of any Tribal waters or affect resident aquatic communities or resident or migratory wildlife species at any life stage.

ii. The operator shall be responsible for achieving compliance with CTCLUSI Water Quality Standards and all other tribal codes, regulations, and laws as they exist at the time that the permit is submitted.

iii. The operator shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the CTCLUSI Water Quality Program before, or at the same time as, it is submitted to EPA.

iv. The operator shall be responsible for submitting all Stormwater Pollution Prevention Plans (SWPPP) required under this general permit to the CTCLUSI Water Quality Program for review and determination that the SWPPP is sufficient to meet Tribal Water Quality Standards, prior to the beginning of any discharge activities taking place.

v. The operator shall be responsible for reporting an exceedance to Tribal Water Quality Standards to the CTCLUSI Water Quality Program at the same time it is reported to EPA.

vi. The THPO will be provided 30 days to comment on the APE as defined in the permit application.

vii. If the project is an undertaking, a cultural resource assessment must occur. All fieldwork must be permitted by the THPO (as appropriate), conducted by qualified personnel (as outlined by the Secretary of Interior's Standards and Guidelines; http://www.nps.gov/history/local-law/arch_stnds_O.htm) and documented according to Oregon Reporting Standards (Reporting_Guidelines.pdf) (oregon.gov). The resulting report must be submitted to the THPO and the THPO must concur with the finding of effect and recommendations before any ground disturbing work can occur. The THPO requires 30 days to review all reports.

viii. The operator must obtain THPO concurrence in writing. If historic properties are present, this written concurrence will outline measures to be taken to prevent or mitigate adverse effects to historic properties.

b. Confederated Tribes of the Umatilla Indian Reservation

i. The operator shall be responsible for achieving compliance with the

Confederated Tribes of the Umatilla Indian Reservation's (CTUIR) Water Quality Standards.

ii. The operator shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the CTUIR Water Resources Program at the address below, at the same time it is submitted to EPA.

iii. The operator shall be responsible for submitting all Stormwater Pollution Prevention Plans (SWPPP) required under this general permit to the CTUIR Water Resources Program for review and determination that the SWPPP is sufficient to meet Tribal Water Quality Standards, prior to the beginning of any discharge activities taking place.

iv. The operator shall be responsible for reporting an exceedance to Tribal Water QualityStandards to the CTUIR Water Resources Program at the same time it is reported to EPA.

Confederated Tribes of the Umatilla Indian Reservation
Water Resources Program
46411 Timíne Way
Pendleton, OR 97801
(541) 429-7200

v. The THPO will be provided 30 days to comment on the APE as defined in the permit application.

vi. If the project is an undertaking, a cultural resource assessment must occur. All fieldwork must be permitted by the Tribal Historic Preservation Office (as appropriate), conducted by qualified personnel (as outlined by the Secretary of Interior's Standards and Guidelines; http://www.nps.gov/history/local-law/arch_stnds_0.htm) and documented according to Oregon Reporting Standards (Reporting_Guidelines.pdf (oregon.gov). The resulting report must be submitted to the THPO and the THPO must concur with the finding of effect and recommendations before any ground disturbing work can occur. The THPO requires 30 days to review all reports.

vii. The operator must obtain THPO concurrence in writing. If historic properties are present, this written concurrence will outline measures to be taken to prevent or mitigate adverse effects to historic properties.

9.10.3 WAR10F000 Areas in the State of Washington, except those located on Indian country, subject to construction activity by a Federal Operator

a. For purposes of this Order, the term "Project Proponent" shall mean those that are seeking coverage under this permit, and its agents, assignees and contractors.

b. The Federal Agency shall mean the US Environmental Protection Agency. The Federal Agency shall enforce the permit and ensure that the Project Proponent complies with the conditions of the permits at all times.

c. Failure of any person or entity to comply with this Certification may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Certification.

d. The Certification conditions within this Order must be incorporated into EPA's final NPDES permit. Per 40 CFR 121.10(a), all certification conditions herein that satisfy the

requirements of 40 CFR 121.7(d) must be incorporated into the permit. Per 40 CFR 121.10(b), the permit must clearly identify all certification conditions.

e. This Certification does not authorize exceedances of water quality standards established in chapter 173-201A WAC.

f. Discharges from construction activity must not cause or contribute to violations of the Water Quality Standards for Surface Water of the State of Washington (chapter 173-201A WAC), Ground Water Quality Standards (chapter 173- 200 WAC), Sediment Management Standards (chapter 173-204 WAC), and standards in the EPA's Revision of certain Federal water quality criteria applicable to Washington (40 CFR 131.45). Discharges that do not comply with these standards are prohibited.

g. Prior to discharge of stormwater and non-stormwater to waters of the State, the Permittee must apply all known, available, and reasonable methods of prevention, control, and treatment (AKART). This includes the preparation and implementation of an adequate Stormwater Pollution Prevention Plan (SWPPP), with all appropriate Best Management Practices (BMPs) installed and maintained in accordance with the SWPPP and the terms and conditions of the permit.

i. BMPs must be consistent with:

(a) The Stormwater Management Manual for Western Washington (most current approved edition at the time this permit was issued), for sites west of the crest of the Cascade Mountains; or

(b) The Stormwater Management Manual for Eastern Washington (most current approved edition at the time this permit was issued), for sites east of the crest of the Cascade Mountains; or

(c) Revisions to either manual, or other stormwater management guidance documents or manuals which provide equivalent level of pollution prevention, that are approved by Ecology and incorporated into this permit in accordance with the permit modification requirements of WAC 173-226-230. (For purposes of this section, the stormwater manuals listed in Appendix 10 of the Phase I Municipal Stormwater Permit are approved by Ecology); or

(d) Documentation in the SWPPP that the BMPs selected provided an equivalent level of pollution prevention, compared to the applicable stormwater management manuals, including:

- The technical basis for the selection of all stormwater BMPs (scientific, technical studies, and/or modeling) that support the performance claims for the BMPs being selected.
- An assessment of how the selected BMP will satisfy AKART requirements and the applicable federal technology-based treatment requirements under 40 CFR part 125.3.

The Stormwater Management Manuals for Eastern and Western Washington can be found at: https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals.

ii. An adequate SWPPP must include a narrative and drawings. All BMPs must be clearly referenced in the narrative and marked on the drawings. The SWPPP

narrative must include documentation to explain and justify the pollution prevention decisions made for the project. Documentation must include:

(a) Information about existing site conditions (topography, drainage, soils, vegetation, etc.).

(b) Potential erosion problem areas.

(c) The 13 elements of a SWPPP, including BMPs used to address each element. Unless site conditions render the element unnecessary and the exemption is clearly justified in the SWPPP, the 13 elements are as follows:

- Preserve Vegetation/Mark Clearing Limits
- Establish Construction Access
- Control Flow Rates
- Install Sediment Controls
- Stabilize Soils
- Protect Slopes
- Protect Drain Inlets
- Stabilize Channels and Outlets
- Control Pollutants
- Control Dewatering
- Maintain BMPs
- Manage the Project
- Protect Low Impact Development (LID) BMPs

h. Discharges of stormwater and authorized non-stormwater must be monitored for turbidity (or transparency) and, in the event of significant concrete work or engineered soils, pH must also be monitored. As applicable based on project specifics, monitoring, benchmarks, and reporting requirements contained in Condition S.4. (pp.10-16) of the Washington State Construction Stormwater General Permit, effective January 1, 2021, shall apply.

i. Discharges to segments of waterbodies listed as impaired by the State of Washington under Section 303(d) of the Clean Water Act for turbidity, fine sediment, phosphorus, or pH must comply with the following numeric effluent limits:

Parameter identified in 303(d) listing	Parameter Sampled	Unit	Analytical Method	Numeric Effluent Limit
• Turbidity • Fine Sediment • Phosphorus	Turbidity	NTU	SM2130	25 NTUs at the point where the stormwater is discharged from the site.
High pH	pH	su	pH meter	In the range of 6.5 – 8.5

All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current EPA-approved listing of impaired waters that exists on the

effective date of the permit, or the date when the operator's complete permit application is received by EPA, whichever is later.

The EPA approved WQ Assessment can be found at: https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-improvement/Assessment-of-state-waters-303d

j. Discharges to a waterbody that is subject to a Total Maximum Daily Load (TMDL) for turbidity, fine sediment, high pH, or phosphorus must be consistent with the TMDL.

- **i.** Where an applicable TMDL sets specific waste load allocations or requirements for discharges covered by this permit, discharges shall be consistent with any specific waste load allocations or requirements established by the applicable TMDL.
- **ii.** Where an applicable TMDL has established a general waste load allocation for construction stormwater discharges, but no specific requirements have been identified, compliance with this permit will be assumed to be consistent with the approved TMDL.
- **iii.** Where an applicable TMDL has not specified a waste load allocation for construction stormwater discharges, but has not excluded these discharges, compliance with this permit will be assumed to be consistent with the approved TMDL.
- **iv.** Where an applicable TMDL specifically precludes or prohibits discharges from construction activity, the operator is not eligible for coverage under this permit.

Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus which has been completed and approved by EPA as of the effective date of the permit, or prior to the date of the operator's complete application for permit coverage is received by EPA, whichever is later.

k. Discharges to waters of the state from the following activities are prohibited:

- **i.** Concrete wastewater.
- **ii.** Wastewater from washout and clean-up of stucco, paint, form release oils, curing compounds and other construction materials.
- **iii.** Process wastewater as defined by 40 Code of Federal Regulations (CFR) 122.2.
- **iv.** Slurry materials and waste from shaft drilling, including process wastewater from shaft drilling for construction of building, road, and bridge foundations unless managed to prevent discharge to surface water.
- **v.** Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.
- **vi.** Soaps or solvents used in vehicle and equipment washing.
- **vii.** Wheel wash wastewater, unless managed to prevent discharge to surface water.
- **viii.** Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, unless managed according to appropriate controls described within the permit.

l. This Certification is valid until the expiration date including any administrative extension or termination date of the NPDES 2022 Construction General Permit. (40 CFR § 122.46)

m. The Federal Agency shall enforce and the Project Proponent must comply with all the reporting and notification conditions of the NPDES 2022 Construction General Permit in order to comply with this Order and the certification conditions herein (40 CFR § 121.11).

n. You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do all of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person (see addresses below). E-mail is not accepted.

You must also comply with other applicable requirements in chapter 43.21B RCW and chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503 **Pollution Control Hearings Board** 1111 Israel RD SW STE 301 Tumwater, WA 98501	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608 **Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

CONTACT INFORMATION

Please direct all questions about this Order to:

Noel Tamboer
Department of Ecology
P.O. Box 47600
Olympia, WA 98503-7600

(360) 701-6171
noel.tamboer@ecy.wa.gov

9.10.4 WAR10I000 Indian country within the State of Washington

a. Lummi Nation

i. This certification does not exempt and is provisional upon compliance with other applicable statutes and codes administered by federal and Lummi tribal agencies. Pursuant to Lummi Code of Laws (LCL) 17.05.020(a), the operator must also obtaina land use permit from the Lummi Planning Department as provided in Title 15 of theLummi Code of Laws and regulations adopted thereunder.

ii. Pursuant to LCL 17.05.020(a), each operator shall develop and submit a Storm WaterPollution Prevention Plan to the Lummi Water Resources Division for review and approval by the Water Resources Manager prior to beginning any discharge activities.

iii. Pursuant to LCL Title 17, each operator shall be responsible for achieving compliance with the Water Quality Standards for Surface Waters of the Lummi

iv. Indian Reservation (Lummi Administrative Regulations [LAR] 17 LAR 07.010 through 17 LAR 07.210 together with supplements and amendments thereto).

v. Each operator shall submit a signed copy of the Notice of Intent (NOI) to the Lummi Water Resources Division at the same time it is submitted electronically to the Environmental Protection Agency (EPA) and shall provide the Lummi Water Resources Division the acknowledgement of receipt of the NOI from the EPA and the associated NPDES tracking number provided by the EPA within 7 calendar days of receipt from the EPA.

vi. Each operator shall submit a signed copy of the Notice of Termination (NOT) to the Lummi Water Resources Division at the same time it is submitted electronically to the EPA and shall provide the Lummi Water Resources Division the EPA acknowledgement of receipt of the NOT.

vii. Storm Water Pollution Prevention Plans, Notice of Intent, Notice of Termination and associated correspondence with the EPA shall be submitted to:

Lummi Natural Resources Department
ATTN: Water Resources Manager 2665 Kwina Road
Bellingham, WA 98226-9298

b. Port Gamble S'Klallam Tribe

i. No discharge from the project site shall cause exceedances of Port Gamble S'KlallamSurface Water Quality Standards narrative or numeric criteria in Tribal waters. This includes activities outside of Tribal lands that occur upstream of Tribal waters.

(a) If any exceedance of these water quality standards occurred, the Natural Resources Department shall be notified immediately.

- The Department shall additionally be provided a complete draft of the proposed corrective action within a reasonable timeframe and its approval will be required before any corrective action may be taken.

ii. Operators performing activities under the CGP that may affect Tribal waters will requirea permit and shall submit their plans to the Port Gamble S'Klallam Natural Resources Department for review.

- The Department has the right to require conditions outside of this Water QualityCertification prior to permit approval.

iii. No activities allowed under the CGP shall result in the degradation of any Tribal watersor change in designated uses.

iv. No activities allowed under the CGP shall affect resident aquatic communities or resident/migratory wildlife species at any life stage.

- Biological assessment methods used to determine the effect of an activity allowedunder the CGP shall be approved by the PGST Natural Resources Department.

v. No activities allowed under the CGP shall be conducted within wetland and stream bufferzones, nor shall said activities affect in any way wetland or stream buffers, as defined by *PGST Law and Order Code 24.08.01(c)*.

vi. Concentrations for substances listed within the table in *Water Quality Standards for Surface Waters* sec. 7(7) shall not be exceeded by activities allowed under the CGP.

c. Spokane Tribe of Indians

i. Pursuant to Tribal Law and Order Code (TLOC) Chapter 30 each operator shall be responsible for achieving compliance with the Surface Water Quality Standards of the Spokane Tribe. The operator shall notify the Spokane Tribe, Water Control Board (WCB) of any spills of hazardous material and;

ii. Each operator shall submit a signed hard copy of the Notice of Intent (NOI) to the WCB at the same time it is submitted to EPA.

iii. The permittee shall allow the Tribal Water Control Board or its designee to inspect and sample at the construction site as needed.

iv. Each operator shall submit a signed copy of the Notice of Termination (NOT) to the WCB at the same time it is submitted to EPA

The correspondence address for the Spokane Tribe Water Control Board is:

Water Control Board c/o Brian Crossley PO Box480
Wellpinit WA 99040
(509)626-4409
crossley@spokanetribe.com

d. Swinomish Tribe

i. Owners and operators seeking coverage under this permit must submit a copy of the Notice of Intent (NOI) to the DEP at the same time the NOI is submitted to EPA.

ii. Owners and operators must also submit to the DEP changes in NOI and/or Notices of Termination at the same time they are submitted to EPA.

iii. Owners and operators seeking coverage under this permit must also submit a Stormwater Pollution Prevention Plan to the DEP for review and approval by DEP prior to beginning any discharge activities.

e. Tulalip Tribes

i. Submission of NOI: Copies of the Notice of Intent (NOI),) Certification shall be submitted to the Tribe's Natural Resources Department to notify the Tribes of the

pending project and in order for the Tribes to review the projects potential impacts to endangered or threatened species.

ii. Submission of SWPPP: A copy of the Stormwater Pollution Plans (SWPPPs) shall be submitted to the Tribe's Natural Resources Department along with the NOI during the 30 day waiting period.

iii. Submission of Monitoring Data and Reports: The results of any monitoring required by this permit and reports must be sent to the Tribe's Natural Resources Depa1tment,

iv. The Tulalip Tribes are federally recognized successors in the interest to the Snohomish, Snoqualmie, Skykomish, and other allied tribes and bands signatory to the Treaty of Point Elliott.

v. including a description of the corrective actions required and undertaken to meet effluent limits or benchmarks (as applicable).

vi. Authorization to Inspect: The Tribe's Natural Resources Department may conduct an inspection of any facility covered by this permit to ensure compliance with tribal water quality standards. The Department may enforce its certification conditions.

vii. Submission of Inspection Reports: Inspection reports must be sent to the Tribe's Natural Resources Department, including a description of the corrective actions required and undertaken to meet effluent limits or benchmarks (as applicable).

viii. Permits on-site: A copy of the pe1mit shall be kept on the job site and readily available for reference by the construction supervisor, construction managers and foreman, and Tribal inspectors.

ix. Project Management: The applicant shall ensure that project managers, construction managers and foreman, and other responsible parties have read and understand conditions of the permit, this certification, and other relevant documents, to avoid violations or noncompliance with this certification.

x. Emergency Spill Notification Requirements: In the event of a spill or the contractor shall immediately take action to stop the violation and correct the problem, and immediately repo1t spill to the Tulalip Tribes Police Department (425) 508-1565. Compliance with this condition does not relieve the applicant from responsibility to maintain continuous compliance with the tem1S and conditions of this certification or the resulting liability from failure to comply.

xi. Discharges to CERCLA Sites: This permit does not autho1ize direct stormwater discharges to certain sites undergoing remedial cleanup actions pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) unless first approved by the appropriate EPA Regional office. In the case of the Tulalip Landfill site (WAD980639256), the Tulalip Tribes also requests notification by the facility and consultation with EPA prior to discharge. Contaminants at this site may include but are not limited to: dioxins, furans, arsenic, copper, lead, zinc, 4- methyl-phenol, Hex-CB, HPAHs, PCBs, PCE, cadmium, mercury, and LPAHs.

xii. Discharge-related Activities that have Potential to Cause an Adverse Effect on Historic Properties: Installation of stormwater controls that involve subsurface disturbances may potentially have an adverse impact on historic properties.

xiii. Procedures detailed in the permit shall be completed. Richard Young, of the Tulalip Tribe's Cultural Resources Department shall be contacted prior to initiating discharge- related activities that may have an impact on historic properties. His contact information is (360) 716-2652, ryoung@tulaliptribes-nsn.gov.

xiv. Invalidation: This certification will cease to be valid if the project is constructed and/or operated in a manner not consistent with the project description contained in

xv. the permit. This certification will also cease to be valid and the applicant must reapply with an updated application if info1mation contained in the permit is voided by subsequent submittals.

xvi. Modification: Nothing in this certification waives the Tulalip Tribes of Washington's authority to issue modifications to this ce1iification if additional impacts due to operational changes are identified, or if additional conditions are necessary to protect water quality or further protect the Tribal Communities interest.

xvii. incorporation by reference: TI1is certification does not exempt the applicant from compliance with other statues and codes administered by the Tribes, county, state and federal agencies.

xviii. Compliance with Tribe's I996 Water Quality Standards: Each permittee shall be responsible for controlling discharges and achieving compliance with the T1ibe's Water Quality Standards.

xix. Compliant with Tulalip Tribes Tidelands Management Policy: Permittee shall be responsible for achieving compliance with applicable sections of the Tulalip Tribe's Tidelands Management Policy. (Tulalip Tribal Code Title 8 Chapter 8.30).

xx. Compliant with Tulalip Tribes Environmental Infractions: Permittee shall be responsible for achieving compliance with applicable sections of the Tulalip Tribe's Environmental Infractions. (Tulalip Tribal Code Title 8 Chapter 8.20).

xxi. Where to Submit information and for further Coordination: All requested documents should be sent to the: Tulalip Tribes Natural Resources Environmental Department c/o Kurt Nelson and Valerie Streeter, 6704 Marine Drive, Tulalip, Washington 98271. For further 40 I Certification coordination with the Tulalip Tribes Natural Resources Department, please contact Mr. Kurt Nelson (360) 716-4617 knelson@tu1aliptribes- nsn.gov. 6406 Marine Dr., Tulalip WA 98271.

f. Makah Tribe

i. The permittee shall be responsible for meeting any additional permit requirements imposed by EPA necessary to comply with the Makah Tribe's Water Quality Standards if the discharge point is located within the Makah's U&A treaty reserved areas.

ii. Each permittee shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to Makah Fisheries Management, Water Quality Department at the address listed below at the same time it is submitted to the EPA.

Makah Water Quality
Makah Fisheries Management (MFM)
ray.colby@makah.com

PO Box 115
Neah bay, WA 98357

iii. All supporting documentation and certifications in the NOI related to coverage under the general permit for Endangered Species Act purposes shall be submitted to the Tribe's Habitat programs for their review.

iv. If EPA requires coverage under an individual or alternative permit, the permittee shall submit a copy of the permit to Assistant Fisheries Director, ray.colby@makah.com.

v. The permittee shall submit all Stormwater Pollution Prevention plan (SWPP) to MFM for review and approval prior to beginning any activities resulting in a discharge to Makah tribal waters.

vi. The permittee shall notify Ray Colby, ray.colby@makah.com (360) 645-3150 prior to conducting inspections at construction sites generating stormwater discharges to tribal waters.

vii. The operator shall treat dewatering discharges with controls necessary to minimize discharges of pollutants to surface waters, or ground waters, and from stormwater runoff onsite from excavations, trenches, foundations, or storage areas. To the extent feasible, at all points where dewatering is discharged, comply with the velocity dissipation using check dams, sediment traps, and grouted outlets.

g. Puyallup Tribe of Indians

i. The permittee shall be responsible for meeting any additional permit requirements imposed by EPA necessary to comply with the Puyallup Tribe's antidegradation procedures.

ii. Each permittee shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to Char Naylor, Tribal Water Quality Manager at the following e-mail address: (char.naylor@puyalluptribe-nsn.gov) at the same time it is submitted to EPA.

iii. All supporting documentation and certifications in the NOI related to coverage under the general permit for Endangered Species Act purposes shall be submitted to Char Naylor, Tribal Water Quality Manager/Assistant Fisheries Director (char.naylor@puyalluptribe-nsn.gov) for review.

iv. If EPA requires coverage under an individual or alternative permit, the permittee shall submit a copy of the permit to Char Naylor at the email address listed above.

v. The permittee shall submit all stormwater pollution prevention plans to Char Naylor for review and approval prior to beginning any activities resulting in a discharge to Puyallup tribal waters.

vi. The permittee shall contact Brandon Reynon (Brandon.reynon@puyalluptribe-nsn-gov), Tribe's Historic Preservation Officer or Jennifer Keating (Jennifer.keating@puyalluptribe-nsn.gov), Tribe's Assistant Historic Preservation Officer regarding historic properties and cultural resources.

vii. To minimize the discharge of pollutants to groundwater or surface waters from stormwater that is removed from excavations, trenches, foundations, vaults, or

other storage areas, treat dewatering discharges with controls necessary to minimize discharges of pollutants. Examples of appropriate controls include sediment basins or sediment traps, sediment socks, dewatering tanks, tube settlers, weir tanks, and filtration systems (e.g., bag or sand filters) that are designed to remove sediment.

To the extent feasible, utilize vegetated, upland areas of the site to infiltrate dewatering water before discharge. At all points where dewatering water is discharged, utilize velocity dissipation controls. Examples of velocity dissipation devices include check dams, sediment traps, riprap, and grouted riprap at outlets.

viii. The permittee shall provide and maintain natural buffers to the maximum extent possible (and/or equivalent erosion and sediment controls) when tribal waters are located within 100 feet of the boundaries. If infeasible to provide and maintain an undisturbed 100 foot natural buffer, erosion and sediment controls to achieve the sediment load reduction equivalent to a 100-foot undisturbed natural buffer shall be required.

Appendix C – Notice of Intent

NPDES FORM 3510-9		UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 NOTICE OF INTENT (NOI) FOR THE 2022 NPDES CONSTRUCTION PERMIT	FORM Approved OMB No. 2040-0305 Expires on 02/28/2025

This collection of information is approved by OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. (OMB Control No. 2040-0305). Responses to this collection of information are mandatory in accordance with this permit and EPA NPDES regulations (40 CFR 122.28(b)(2)). An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The public reporting and recordkeeping burden for this collection of information are estimated to average 1.1 to 19.6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden to the Regulatory Support Division Director, U.S. Environmental Protection Agency (2821T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Permit Information

This form has not yet been certified.

NPDES ID:

State/Territory to which your project/site is discharging: NH

Is your project/site located on federally recognized Indian Country lands? No

Is your project/site located on Lands of Exclusive Federal Jurisdiction? No

Are you requesting coverage under this NOI as a *"Federal Operator"* or a *"Federal Facility"* as defined in Appendix A (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-a-definitions.pdf)? No

Have stormwater discharges from your current construction site been covered previously under an NPDES permit? No

Will you use polymers, flocculants, or other treatment chemicals at your construction site? No

Has a Stormwater Pollution Prevention Plan (SWPPP) been prepared in advance of filling this NOI, as required? Yes

Are you able to demonstrate that you meet one of the criteria listed in Appendix D (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-d-endangered-species-protection.pdf) with respect to protection of threatened or endangered species listed under the Endangered Species Act (ESA) and federally designated critical habitat?

Yes

Have you completed the screening process in Appendix E (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-e-historic-properties.pdf) relating to the protection of historic properties? Yes

Indicating "Yes" below, I confirm that I understand that CGP only authorized the allowable stormwater discharges in Part 1.2.1 and the allowable non-stormwater discharges listed in Part 1.2.2. Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state or local authorities after issuance of this permit via any means, Including the Notice of Intent (NOI) to be covered by the permit, the Stormwater Pollution Prevention Plan (SWPPP), during an Inspection, etc. If any discharges requiring NPDES permit coverage other than the allowable stormwater and non-stormwater discharges listed in Parts 1.2.1 and 1.2.2 will be discharged, they must be covered under another NPDES permit.

Yes

Operator Information

Operator Information

Operator Name: Baumer Construction

Operator Mailing Address:

Address Line 1: 285 South Ohio Street

Address Line 2: PO Box 3

City: Minster

ZIP/Postal Code: 45865

State/Province: OH

County or Similar Division: Auglaize

Country: US

Operator Point of Contact Information

First Name **Middle Initial** **Last Name:** Matthew J Quinter

Title: Project Engineer/Surveyor

Phone: 419-628-3364

Ext.:

Email: matt@baumerconstruction.com

NOI Preparer Information

☑ **This NOI is being prepared by someone other than the certifier.**

First Name **Middle Initial** **Last Name:** Bryan L Levesque

Organization: TF Moran

Phone: 603-472-4488

Ext.:

Email: blevesque@tfmoran.com

Project/Site Information

Project/Site Name: New Digester Facility

Project/Site Address

Address Line 1: North Wentworth Avenue

Address Line 2:

City: Londonderry

ZIP/Postal Code: 03053

State: NH

County or Similar Division: Rockingham

Latitude/Longitude: 42.905442°N, 71.431632°W

Latitude/Longitude Data Source: Google Maps **Horizontal Reference Datum:** NAD 83

Project Start Date: 12/02/2026 **Project End Date:** 12/31/2028 **Estimated Area to be Disturbed:** 11.25

Types of Construction Sites:

- Commercial
- Industrial
- Utility

Will there be demolition of any structure built or renovated before January 1, 1980? No

Will you be discharging dewatering water from your site? No

Was the pre-development land use used for agriculture? No

Are there other operators that are covered under this permit for the same project site? No

Have earth-disturbing activities commenced on your project/site? No

Is your project/site located on federally recognized Indian Country lands? No

Is your project/site located on a property of religious or cultural significance to an Indian tribe? No

Discharge Information

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)? Yes

Are there any waters of the U.S. within 50 feet of your project's earth disturbances? No

Are any of the waters of the U.S. to which you discharge designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water) or as a Tier 3 water (Outstanding National Resource Water)? See Resources, Tools and Templates (https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates)

No

ID: 001 **Name:** Watts Brook **Description:** Watts Brook

Latitude/Longitude: 42.903°N, 71.434°W

Tier Designation: N/A

Is this receiving water impaired (on the CWA 303(d) list)? No

Has a TMDL been completed for this receiving waterbody? No

Stormwater Pollution Prevention Plan (SWPPP)

Will all required personnel, including those conducting inspections at your site, meet the training requirements in Part 6 of this permit? Yes

First Name Middle Initial Last Name: Matthew J Quinter

Title: Project Engineer/Surveyor

Phone: 419-628-3364 **Ext.:**

Email: matt@baumerconstruction.com

Endangered Species Protection Worksheet: Criterion A

Determine ESA Eligibility Criterion

Are your discharges and discharge-related activities already addressed in another operator's valid certification of eligibility for your "action area" under the current 2022 CGP? No

Has consultation between you, a Federal Agency, and the USFWS and/or the NMFS under section 7 of the Endangered Species Act (ESA) concluded? No

Are your construction activities the subject of a permit under section 10 of the ESA by the USFWS and/or NMFS, and this authorization addresses the effects of your site's discharges and discharge-related activities on ESA-listed species and/or designated critical habitat?

No

You must determine whether species listed as either threatened or endangered, or their critical habitat(s) are located in your site's action area (i.e., all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action, including areas beyond the footprint of the site that are likely to be affected by stormwater discharges, discharge-related activities, and authorized non-stormwater discharges).

Determine your Action Area

You must consider the following in determining the action area for your site, and **confirm that all the following are true**:

- **In determining my "action area", I have considered that discharges of pollutants into downstream areas can expand the action area well beyond the footprint of my site and the discharge point(s). I have taken into account the controls I will be implementing to minimize pollutants and the receiving waterbody characteristics (e.g., perennial, intermittent, ephemeral) in determining the extent of physical, chemical, and/or biotic effects of the discharges. I confirm that all receiving waterbodies that could receive pollutants from my site are included in my action area.**

  True

-

In determining my "action area", I have considered that discharge-related activities must also be accounted for in determining my action area. I understand that discharge-related activities are any activities that cause, contribute to, or result in stormwater and authorized non-stormwater point source discharges, and measures such as the siting, construction timing, and operation of stormwater controls to control, reduce, or prevent pollutants from being discharged. I understand that any new or modified stormwater controls that will have noise or other similar effects, and any disturbances associated with construction of controls, are part of my action area.

True

Determine is ESA-listed species and/or critical habitat are in your site action area.

ESA-listed species and designated critical habitat are under the purview of the NMFS and the USFWS, and in many cases, you will need to acquire species and critical habitat lists from both federal agencies.

National Marine Fisheries Service (NMFS)

For NMFS species and designated critical habitat information, use the following webpage:

- https://www.epa.gov/npdes/construction-general-permit-cgp-threatened-and-endangered-species-eligibility (https://www.epa.gov/npdes/construction-general-permit-cgp-threatened-and-endangered-species-eligibility)

I have checked the webpage listed above and confirmed that:

- (●) There are no NMFS-protected species and/or designated critical habitat in my action area.
- ( ) There are NMFS-protected species and/or designated critical habitat in my action area.

U.S. Fish and Wildlife Service (USFWS)

For USFWS species and critical habitat information, use the following webpage:

- https://www.epa.gov/npdes/construction-general-permit-cgp-threatened-and-endangered-species-eligibility (https://www.epa.gov/npdes/construction-general-permit-cgp-threatened-and-endangered-species-eligibility)

I have checked the webpage listed above and confirmed that:

- (●) There are no FWS-protected species and/or designated critical habitat in my action area.
- ( ) There are FWS-protected species and/or designated critical habitat in my action area.

You are eligible under **Criterion A**.

Identify the USFWS information sources used (Note: state resources are not acceptable):

IPAC search

Identify the NMFS information sources used (Note: state resources are not acceptable):

IPAC search

You must attach:

- Aerial image(s) of the site.
- A printout of the species' list(s) showing no ESA-listed species or designated critical habitat in my action area.

Name	Uploaded Date	Size
Species List_ New England Ecological Services Field Office.pdf (attachment/2143583)	12/19/2025	252.03 KB
18252-00 NRCS Soils Report_2025-05-13.pdf (attachment/2143584)	12/19/2025	1.16 MB

Have you attached aerial image(s) of the site? Yes

Have you attached a printout of the species' list(s) showing no ESA-listed species or designated critical habitat in my action area? Yes

Have you provided documentation in your SWPPP supporting your eligibility under Criterion A? Yes

Historic Preservation

Are you installing any stormwater controls as described in Appendix E (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-e-historic-properties.pdf) that require subsurface earth disturbances? (Appendix E (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-e-historic-properties.pdf), Step 1)

Yes

↳ **Have prior surveys or evaluations conducted on the site already determined historic properties do not exist, or that prior disturbances have precluded the existence of historic properties? (Appendix E (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-e-historic-properties.pdf), Step 2):**

Yes

Certification Information

Form has not been certified yet.

NPDES FORM 3510-9		UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 NOTICE OF INTENT (NOI) FOR THE 2022 NPDES CONSTRUCTION PERMIT	FORM Approved OMB No. 2040-0305 Expires on 02/28/2025

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Permit Information

This form has not yet been certified.

NPDES ID:

State/Territory to which your project/site is discharging: NH

Is your project/site located on federally recognized Indian Country lands? No

Is your project/site located on Lands of Exclusive Federal Jurisdiction? No

Are you requesting coverage under this NOI as a *"Federal Operator"* or a *"Federal Facility"* as defined in Appendix A (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-a-definitions.pdf)? No

Have stormwater discharges from your current construction site been covered previously under an NPDES permit? No

Will you use polymers, flocculants, or other treatment chemicals at your construction site? No

Has a Stormwater Pollution Prevention Plan (SWPPP) been prepared in advance of filling this NOI, as required? Yes

Are you able to demonstrate that you meet one of the criteria listed in Appendix D (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-d-endangered-species-protection.pdf) with respect to protection of threatened or endangered species listed under the Endangered Species Act (ESA) and federally designated critical habitat?

Yes

Have you completed the screening process in Appendix E (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-e-historic-properties.pdf) relating to the protection of historic properties? Yes

Indicating "Yes" below, I confirm that I understand that CGP only authorized the allowable stormwater discharges in Part 1.2.1 and the allowable non-stormwater discharges listed in Part 1.2.2. Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the Stormwater Pollution Prevention Plan (SWPPP), during an Inspection, etc. If any discharges requiring NPDES permit coverage other than the allowable stormwater and non-stormwater discharges listed in Parts 1.2.1 and 1.2.2 will be discharged, they must be covered under another NPDES permit.

Yes

Operator Information

Operator Information

Operator Name: PurposeEnergy - Londonderry, LLC

Operator Mailing Address:

Address Line 1: 25 Pelham Road Suite 102

Address Line 2:

City: Salem

ZIP/Postal Code: 03079

State/Province: NH

County or Similar Division: Rockingham

Country: US

Operator Point of Contact Information

First Name **Middle Initial** **Last Name:** Sean . ONeill

Title: Project Manager

Phone: 617-202-9156 **Ext.:** 706

Email: ONeill@purposeenergy.com

NOI Preparer Information

☑ **This NOI is being prepared by someone other than the certifier.**

First Name **Middle Initial** **Last Name:** Bryan L Levesque

Organization: TF Moran

Phone: 603-472-4488 **Ext.:**

Email: blevesque@tfmoran.com

Project/Site Information

Project/Site Name: New Digester Facility

Project/Site Address

Address Line 1: North Wentworth Avenue

Address Line 2:

City: Londonderry

ZIP/Postal Code: 03053

State: NH

County or Similar Division: Rockingham

Latitude/Longitude: 42.905442°N, 71.431632°W

Latitude/Longitude Data Source: Google Maps **Horizontal Reference Datum:** NAD 83

Project Start Date: 06/30/2025 **Project End Date:** 12/31/2028 **Estimated Area to be Disturbed:** 11.25

Types of Construction Sites:

- Commercial
- Industrial
- Utility

Will there be demolition of any structure built or renovated before January 1, 1980? No

Will you be discharging dewatering water from your site? No

Was the pre-development land use used for agriculture? No

Are there other operators that are covered under this permit for the same project site? No

Have earth-disturbing activities commenced on your project/site? No

Is your project/site located on federally recognized Indian Country lands? No

Is your project/site located on a property of religious or cultural significance to an Indian tribe? No

Discharge Information

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)? Yes

Are there any waters of the U.S. within 50 feet of your project's earth disturbances? No

Are any of the waters of the U.S. to which you discharge designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water) or as a Tier 3 water (Outstanding National Resource Water)? See Resources, Tools and Templates (https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates)

No

ID: 001 **Name:** Watts Brook **Description:** Watts Brook

Latitude/Longitude: 42.903°N, 71.434902°W

Tier Designation: N/A

Is this receiving water impaired (on the CWA 303(d) list)? No

Has a TMDL been completed for this receiving waterbody? No

Stormwater Pollution Prevention Plan (SWPPP)

Will all required personnel, including those conducting inspections at your site, meet the training requirements in Part 6 of this permit? Yes

First Name Middle Initial Last Name: Sean . ONeill

Title: Project Manager

Phone: 617-202-9156 **Ext.:**

Email: ONeill@purposeenergy.com

Endangered Species Protection Worksheet: Criterion A

Determine ESA Eligibility Criterion

Are your discharges and discharge-related activities already addressed in another operator's valid certification of eligibility for your "action area" under the current 2022 CGP? No

Has consultation between you, a Federal Agency, and the USFWS and/or the NMFS under section 7 of the Endangered Species Act (ESA) concluded? Yes

Are your construction activities the subject of a permit under section 10 of the ESA by the USFWS and/or NMFS, and this authorization addresses the effects of your site's discharges and discharge-related activities on ESA-listed species and/or designated critical habitat?

No

You must determine whether species listed as either threatened or endangered, or their critical habitat(s) are located in your site's action area (i.e., all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action, including areas beyond the footprint of the site that are likely to be affected by stormwater discharges, discharge-related activities, and authorized non-stormwater discharges).

Determine your Action Area

You must consider the following in determining the action area for your site, and **confirm that all the following are true**:

- **In determining my "action area", I have considered that discharges of pollutants into downstream areas can expand the action area well beyond the footprint of my site and the discharge point(s). I have taken into account the controls I will be implementing to minimize pollutants and the receiving waterbody characteristics (e.g., perennial, intermittent, ephemeral) in determining the extent of physical, chemical, and/or biotic effects of the discharges. I confirm that all receiving waterbodies that could receive pollutants from my site are included in my action area.**

  True

-

In determining my "action area", I have considered that discharge-related activities must also be accounted for in determining my action area. I understand that discharge-related activities are any activities that cause, contribute to, or result in stormwater and authorized non-stormwater point source discharges, and measures such as the siting, construction timing, and operation of stormwater controls to control, reduce, or prevent pollutants from being discharged. I understand that any new or modified stormwater controls that will have noise or other similar effects, and any disturbances associated with construction of controls, are part of my action area.

True

Determine is ESA-listed species and/or critical habitat are in your site action area.

ESA-listed species and designated critical habitat are under the purview of the NMFS and the USFWS, and in many cases, you will need to acquire species and critical habitat lists from both federal agencies.

National Marine Fisheries Service (NMFS)

For NMFS species and designated critical habitat information, use the following webpage:

- https://www.epa.gov/npdes/construction-general-permit-cgp-threatened-and-endangered-species-eligibility (https://www.epa.gov/npdes/construction-general-permit-cgp-threatened-and-endangered-species-eligibility)

I have checked the webpage listed above and confirmed that:

- (●) There are no NMFS-protected species and/or designated critical habitat in my action area.
- ( ) There are NMFS-protected species and/or designated critical habitat in my action area.

U.S. Fish and Wildlife Service (USFWS)

For USFWS species and critical habitat information, use the following webpage:

- https://www.epa.gov/npdes/construction-general-permit-cgp-threatened-and-endangered-species-eligibility (https://www.epa.gov/npdes/construction-general-permit-cgp-threatened-and-endangered-species-eligibility)

I have checked the webpage listed above and confirmed that:

- (●) There are no FWS-protected species and/or designated critical habitat in my action area.
- ( ) There are FWS-protected species and/or designated critical habitat in my action area.

You are eligible under **Criterion A**.

Identify the USFWS information sources used (Note: state resources are not acceptable):

```
IPAC search
```

Identify the NMFS information sources used (Note: state resources are not acceptable):

```
IPAC Search
```

You must attach:

- Aerial image(s) of the site.
- A printout of the species' list(s) showing no ESA-listed species or designated critical habitat in my action area.

Name	Uploaded Date	Size
Species List_ New England Ecological Services Field Office.pdf (attachment/2046080)	06/05/2025	252.03 KB

Have you attached aerial image(s) of the site? Yes

Have you attached a printout of the species' list(s) showing no ESA-listed species or designated critical habitat in my action area? Yes

Have you provided documentation in your SWPPP supporting your eligibility under Criterion A? Yes

Historic Preservation

Are you installing any stormwater controls as described in Appendix E (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-e-historic-properties.pdf) that require subsurface earth disturbances? (Appendix E (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-e-historic-properties.pdf), Step 1)

Yes

↳ **Have prior surveys or evaluations conducted on the site already determined historic properties do not exist, or that prior disturbances have precluded the existence of historic properties? (Appendix E (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-e-historic-properties.pdf), Step 2):**

Yes

Certification Information

Form has not been certified yet.

Appendix D – Sample SWPPP Inspection Form

Stormwater Inspection Report # SAMPLE
PurposeEnergy – Londonderry, LLC
North Wentworth Avenue
Londonderry, NH

General Information			
Project Name	New Digester Facility		
NPDES Tracking No.	TBD	**Location:**	North Wentworth Avenue Londonderry, NH
Date of Inspection:	M/D/YR		
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications			
Describe present phase of construction			
Type of Inspection: ❑ Regular ❑ Pre-storm event ❑ During storm event ❑ Post-storm event			

Weather Information
Weather since the last inspection? Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in): *Weather Data from Weather Underground Station KMNHLONDO3*
Has there been a storm event since the last inspection? ❑Yes ❑No **If yes, provide:** Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in): *Weather Data from Weather Underground Station KNNHLONDO3*
Weather at time of this inspection? ☒ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds ❑ Other: Temperature: XX °F
Have any discharges occurred since the last inspection? ❑Yes ❑No **If yes, describe:**
Are there any discharges at the time of inspection? ❑Yes ❑No **If yes, describe:**
Comments:

Overall Site Issues

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	☐Yes ❑No	❑Yes ☐No	
2	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	☐Yes ❑No	❑Yes ☐No	
3	Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	☐Yes ❑No	❑Yes ☐No	
4	Are discharge points and receiving waters free of any sediment deposits?	☐Yes ❑No	❑Yes ☐No	
5	Are storm drain inlets properly protected?	☐Yes ❑No	❑Yes ☐No	
6	Is the construction exit preventing sediment from being tracked into the street?	☐Yes ❑No	❑Yes ☐No	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	☐Yes ❑No	❑Yes ☐No	
8	Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	☐Yes ❑No	❑Yes ☐No	
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	☐Yes ❑No	❑Yes ☐No	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	☐Yes ❑No	❑Yes ☐No	
11	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	☐Yes ❑No	❑Yes ☐No	
12	(Other)	☐Yes ❑No	❑Yes ☐No	

Non-Compliance

Describe any incidents of non-compliance not described above:

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

For PurposeEnergy – Londonderry, LLC or their Assigned:

Print name and title: _____

Signature:_____ Date:_____

Representative Photographs

Photo 1

DESCRIPTION

Photo 2

DESCRIPTION

Appendix E – Copy of Corrective Action Form

No.	Description of the Corrective Action	Date of Action	Prepared by [Name(s) and Title]

Appendix F – SWPPP Amendment Log

No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]
1	SWPPP Rev. 0 Initial Draft	06/02/2025	B. Levesque, PE, CPESC
2	Rev.1 Update Active Areas Baumer CGP	12/17/2025	B. Levesque, PE, CPESC
3			
4			
5			
6			

Appendix G – Subcontractor Certifications/Agreements

SUBCONTRACTOR CERTIFICATION
STORMWATER POLLUTION PREVENTION PLAN

Project Number: _____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP.

This certification is hereby signed in reference to the above-named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

_____

_____

Signature: _____

Title: _____

Date: _____

Appendix H – Grading and Stabilization Activities Log

Date Grading Activity Initiated	**Description of Grading Activity**	**Description of Stabilization Measure and Location**	**Date Grading Activity Ceased** (Indicate Temporary or Permanent)	**Date When Stabilization Measures Initiated**
	PLEASE SEE THE DAILY LOGS FOR GRADING & STABILIZATION ACTIVITIES			

Appendix I – SWPPP Training Log

Stormwater Pollution Prevention Training Log

Project Name:

Project Location:

Instructor's Name(s):

Instructor's Title(s):

Course Location: _____ Date: _____

Course Length (hours): _____

Stormwater Training Topic: *(check as appropriate)*

- ❑ **Sediment and Erosion Controls**
- ❑ **Emergency Procedures**
- ❑ **Stabilization Controls**
- ❑ **Inspections/Corrective Actions**
- ❑ **Pollution Prevention Measures**

Specific Training Objective:_____

_____

Attendee Roster: *(attach additional pages as necessary)*

No.	Name of Attendee	Company
1		
2		
3		
4		
5		
6		
7		
8		

Appendix J – Delegation of Authority Form

Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit, at the _____ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans, and all other documents required by the permit.

_____ (name of person or position)
_____ (company)
_____ (address)
_____ (city, state, zip)
_____ (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix I of EPA's Construction General Permit (CGP), and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix I.

I certify under the law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____

Company: _____

Title: _____

Signature: _____

Date: _____

Appendix K – Endangered Species Documentation

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To: 06/03/2025 22:58:18 UTC
Project Code: 2025-0105075
Project Name: PurposeEnergy Londonderry, NH Green Energy Campus

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Updated 4/12/2023 - Please review this letter each time you request an Official Species List, we will continue to update it with additional information and links to websites may change.

About Official Species Lists

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Federal and non-Federal project proponents have responsibilities under the Act to consider effects on listed species.

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested by returning to an existing project's page in IPaC.

Endangered Species Act Project Review

Please visit the "**New England Field Office Endangered Species Project Review and Consultation**" website for step-by-step instructions on how to consider effects on listed

species and prepare and submit a project review package if necessary:

https://www.fws.gov/office/new-england-ecological-services/endangered-species-project-review

NOTE Please do not use the **Consultation Package Builder** tool in IPaC except in specific situations following coordination with our office. Please follow the project review guidance on our website instead and reference your **Project Code** in all correspondence.

Northern Long-eared Bat - (**Updated 4/12/2023**) The Service published a final rule to reclassify the northern long-eared bat (NLEB) as endangered on November 30, 2022. The final rule went into effect on March 31, 2023. You may utilize the **Northern Long-eared Bat Rangewide Determination Key** available in IPaC. More information about this Determination Key and the Interim Consultation Framework are available on the northern long-eared bat species page:

https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis

For projects that previously utilized the 4(d) Determination Key, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective. If your project was not completed by March 31, 2023, and may result in incidental take of NLEB, please reach out to our office at newengland@fws.gov to see if reinitiation is necessary.

Additional Info About Section 7 of the Act
Under section 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether projects may affect threatened and endangered species and/or designated critical habitat. If a Federal agency, or its non-Federal representative, determines that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Federal agency also may need to consider proposed species and proposed critical habitat in the consultation. 50 CFR 402.14(c)(1) specifies the information required for consultation under the Act regardless of the format of the evaluation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/service/section-7-consultations

In addition to consultation requirements under Section 7(a)(2) of the ESA, please note that under sections 7(a)(1) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Please contact NEFO if you would like more information.

Candidate species that appear on the enclosed species list have no current protections under the ESA. The species' occurrence on an official species list does not convey a requirement to

consider impacts to this species as you would a proposed, threatened, or endangered species. The ESA does not provide for interagency consultations on candidate species under section 7, however, the Service recommends that all project proponents incorporate measures into projects to benefit candidate species and their habitats wherever possible.

Migratory Birds

In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see:

https://www.fws.gov/program/migratory-bird-permit

https://www.fws.gov/library/collections/bald-and-golden-eagle-management

Please feel free to contact us at **newengland@fws.gov** with your **Project Code** in the subject line if you need more information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Attachment(s): Official Species List

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

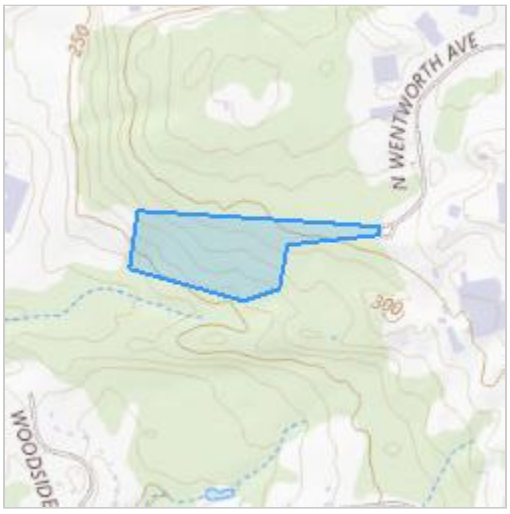
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

PROJECT SUMMARY

Project Code: 2025-0105075
Project Name: PurposeEnergy Londonderry, NH Green Energy Campus
Project Type: Commercial Development
Project Description: Project involves the construction of a biogas production facility to generate methane gas from organic waste that would otherwise be landfilled. The facility will include several digester tanks, systems to hand the reception and depacking wastes to be used in the production process, buildings, paved areas, new site utilities including stormwater, sanitary, gas and electric, lighting and other appurtenances required for the project.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.9054294,-71.43254828257923,14z



Counties: Rockingham County, New Hampshire

ENDANGERED SPECIES ACT SPECIES

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: T.F. Moran, Inc.
Name: b levesque
Address: 48 constitution drive
City: bedford
State: NH
Zip: 03110
Email blevesque@tfmoran.com
Phone: 6034724488

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

To: Jeremy Belanger
48 Consitution Dr
Bedford, NH 03110
jbelanger@tfmoran.com

From: NHB Review
NH Natural Heritage Bureau
Main Contact: Ashley Litwinenko - nhbreview@dncr.nh.gov

cc: NHFG Review

Date: 06/11/2024 (valid until 06/11/2025)
Re: DataCheck Review by NH Natural Heritage Bureau and NH Fish & Game
Permits: MUNICIPAL POR - Londonderry, NHDES - Alteration of Terrain Permit, NHDES - Standard Dredge & Fill - Major, USACE - General Permit, USEPA - Stormwater Pollution Prevention

NHB ID: NHB24-1680

Town: Londonderry
Location: 162 Litchfield Road & North Wentworth Ave

Project Description: The project proposes to construct a receiving station for trucked organic waste that would otherwise be directed to NH landfills. The facility will consist of equipment for de-packaging off-spec organic products that did not meet commercial standards for sale or otherwise have passed sell by dates. This equipment will be fully enclosed, and the structure designed with charcoal filtering for odor control. The facility is best defined as a food processing use. The project will also include accommodations for access, parking, and stormwater management.

Next Steps for Applicant:

NHB's database has been searched for records of rare species and exemplary natural communities. Please carefully read the comments and consultation requirements below.

NHB Comments: Please send NHB proposed plans and representative photos during the growing season of the proposed impact areas.

NHFG Comments: Please refer to NHFG consultation requirements below.

NHB Consultation

If this NHB DataCheck letter includes records of rare plants and/or natural communities/systems, please contact NHB and provide any requested supplementary materials by emailing nhbreview@dncr.nh.gov.

If this NHB DataCheck letter DOES NOT include any records of rare plants and/or natural communities/systems, no further consultation with NHB is required.

NH Fish and Game Department Consultation

If this NHB DataCheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB DataCheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://www.wildlife.nh.gov/wildlife-and-habitat/nongame-and-endangered-species/environmental-review. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB DataCheck results letter number and "Fis 1004 consultation request" in the subject line**.

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule*), coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email NHFGreview@wildlife.nh.gov, and include the NHB DataCheck results letter number and "review request" in the email subject line.
Contact NH Fish & Game at (603) 271-0467 with questions.

NHB Database Records:
The following record(s) have been documented in the vicinity of the proposed project.
Please see the map and detailed information about the record(s) on the following pages.

Plant species	**State[1]**	**Federal**	**Notes**
long-leaved bluet (*Houstonia longifolia*)	E	--	Occurs on talus slopes, sandplains/disturbed openings, and dry forests/thin woods. Threats would include recreational or development activities that would trample the plants or disturb their habitat.

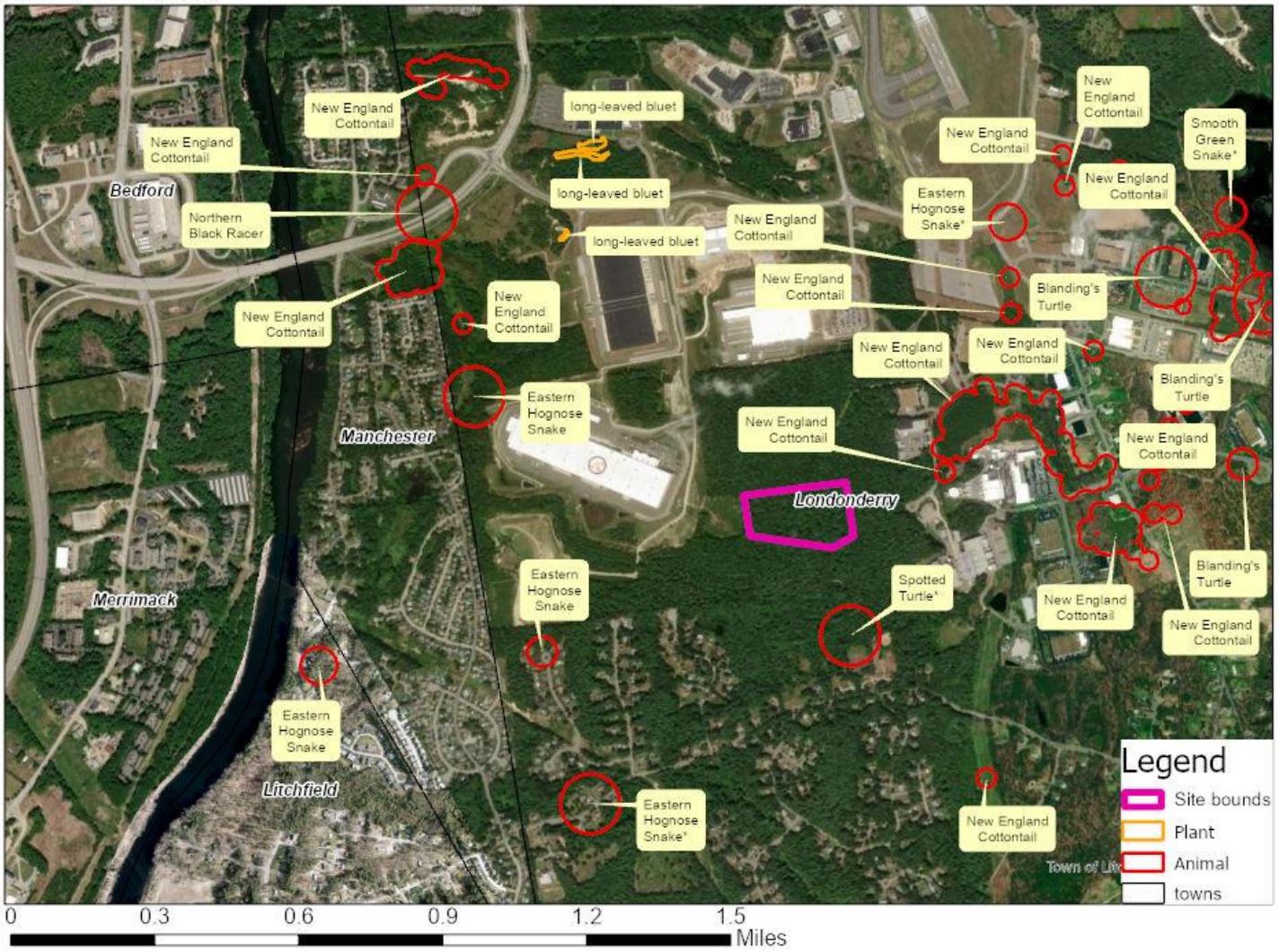
Vertebrate species	**State[1]**	**Federal**	**Notes**
Blanding's Turtle (*Emydoidea blandingii*)	E	--	Contact the NH Fish & Game Dept (see below).
Eastern Hognose Snake (*Heterodon platirhinos*)	E	--	Contact the NH Fish & Game Dept (see above).
New England Cottontail (*Sylvilagus transitionalis*)	E	--	Contact the NH Fish & Game Dept (see above).
Northern Black Racer (*Coluber constrictor constrictor*)	T	--	Contact the NH Fish & Game Dept (see above).
Smooth Green Snake (*Opheodrys vernalis*)*	SC	--	Contact the NH Fish & Game Dept (see above).
Spotted Turtle (*Clemmys guttata*)*	T	--	Contact the NH Fish & Game Dept (see below).

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list.
An asterisk (*) indicates that the most recent report for that occurrence was 20 or more years ago.

For all animal reviews, refer to 'IMPORTANT: NHFG Consultation' section above.

Disclaimer: NHB's database can only tell you of known occurrences that have been reported to NHFG/NHB. Known occurrences are based on information gathered by qualified biologists or members of the public, reported to our offices, and verified by NHB/NHFG.
However, many areas have never been surveyed, or have only been surveyed for certain species.
NHB recommends surveys to determine what species/natural communities are present onsite.

NHB24-1680


New England Cottontail
long-leaved bluet
Smooth Green Snake*
Eastern Hognose Snake*
Bedford
Northern Black Racer
Blanding's Turtle
Manchester
Eastern Hognose Snake
Londonderry
Spotted Turtle*
Merrimack
Litchfield
Legend
Site bounds
Plant
Animal
towns
0
0.3
0.6
0.9
1.2
1.5
Miles

NHB24-1680 EOCODE: PDRUB1T0E0*001*NH

New Hampshire Natural Heritage Bureau - Plant Record

long-leaved bluet (*Houstonia longifolia*)

Legal Status	Conservation Status
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2023: Area 1, northern polygon: over 300 plants in clumps within an area measuring approximately 1,555 m. Some large clumps with 70+ stems; majority of plants with 2-5 stems. 2014: Area 2: Approximately 10-12 plants at three locations. Plants growing in tight clumps. 1999: Several hundred plants in flower, in small patches over ca. one-half acre. No date: Specimen collected. 1902: Specimen 45353 at NHA.

General Area: 2023: Area 1, northern polygon: Plants were located along the sandy drive in mostly open areas and in partial sun. No plants located within forest edge, only up to it. Habitat west of the population very dense with understory vegetation and grass. Associated species include sweet-fern, yarrow (*Achillea millefolium*), oak (*Quercus* sp.), and haircap moss (*Polytrichum commune*). 2014: Area 2: Plants are located at the edge of an old sand pit with a sapling layer of gray birch (*Betula populifolia*) and quaking aspen (*Populus tremuloides*), and a shrub layer of sweet-fern (*Comptonia peregrina*). 1999: Edge habitat between grassy field and encroaching second-growth hardwoods.

General Comments: Original 1902 specimen placed in Manchester. Site discovered in 1999 is in Londonderry, 1.75 km south and 0.5 km east of the Manchester town line.

Management Comments: 2023: Excavator observed parked on plant. Sandy road cutting through area. Site visited for environmental review. 2014: Protection measures were put into place for cutting of the adjacent lot. 1999: Area may have burned not long ago (cinders present), helping to create open to lightly-shaded setting.

Location

Survey Site Name: Manchester Airport, south of
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 1.2 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2023: Area 1: Site is north of Pettengill Road and west of Innovation Way (42.916857, -71.440852). 2014: Area 2: Site is immediately adjacent to recently constructed Pettengill Road.

1999: Travel south on Brown Avenue past its point of divergence with Rte 3A. Stay left and park just before Brown Avenue rejoins 3A in an empty lot at a gate to the entrance of a sandpit. Walk due east to the eastern edge of the sandpit, near the tip of an elongated extension of grassland into the woods.

Dates documented

First reported:	1902-06-30	Last reported:	2023-06-20

NHB24-1680 EOCODE: ARAAD04010*387*NH

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2009: Area 12308: 1 observed.
General Area: 2009: Area 12308: In residential building.
General Comments: --
Management Comments: --

Location

Survey Site Name: Nesenkeag Brook
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2009: Area 12308: 13 Delta Drive, Suite 7, Londonderry.

Dates documented

First reported: 2009-09-23 Last reported: 2009-09-23

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARAAD04010*724*NH

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status	**Conservation Status**
Federal: Not listed	Global: Apparently secure but with cause for concern
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2012: Area 13045: 1 adult observed.
General Area: 2012: Area 13045: Gravel road shoulder near wetland forest.
General Comments: --
Management Comments: --

Location

Survey Site Name: Nesenkeag Brook
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2012: Area 13045: Aviation Park Drive, Londonderry, just before cul-de-sac at end of road.

Dates documented

First reported: 2012-06-07 Last reported: 2012-06-07

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARAAD04010*949*NH

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status	**Conservation Status**
Federal: Not listed	Global: Apparently secure but with cause for concern
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2014: Area 13919: 1 adult observed, sex unknown.
General Area: 2014: Area 13919: Office park just west of Little Cohas Brook
General Comments: --
Management Comments: --

Location

Survey Site Name: Nesenkeag Brook
Managed By:

County: Rockingham
Town(s): Londonderry
Size: .4 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2014: Area 13919: Outside of office building on Delta Drive, Londonderry (42.91197, -71.41648).

Dates documented

First reported: 2014-06-12 Last reported: 2014-06-12

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARAAD04010*139*NH

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2004: Area 9278: 1 turtle.
General Area: --
General Comments: --
Management Comments: --

Location

Survey Site Name: Nesenkeag Brook
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2004: Area 9278: End of Delta Road off of Harvey Road behind the Londonderry Armed Forces Reserve Center.

Dates documented

First reported: 2004-05-15 Last reported: 2004-05-15

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARADB17020*008*NH

New Hampshire Natural Heritage Bureau - Animal Record

Eastern Hognose Snake (*Heterodon platirhinos*)

Legal Status	**Conservation Status**
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2012: Area 13089: 1 adult observed, 18-20" in length. 2008: Area 11548: 1 adult seen. 1984: Area 12169M: 1 observed. 1979: Area 11548a: 1 snake found in garden and killed. 1972: Area 6596: 1 seen. Adult. Area 12169M: 1 individual observed, 16-18 inches long.

General Area: 2012: Area 13089: Residential yard in wooded area. 2008: Area 11548: It was located just to the north and east of the bigger pond on the north end of the parcel. 1979: Area 11548a: Snake found in garden. 1972: Area 12169M: In a small cemetary. Area shaded and grassy.

General Comments: 2003: Area 12169M: Formerly Pettengill Cemetery. Now busy road. NHNHB was contacted on 29 June 1984 by a neighbor of individual who killed the snake.

Management Comments: --

Location

Survey Site Name: Litchfield
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 12.5 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2012: Area 13089: End of Sunflower Lane in Londonderry. The woods in the back border the Manchester town line. 1979: Litchfield. About 4 houses over town line from Manchester on Rte. 3. 1972: Area 6596: Bill Boucher residence, 272 Litchfield Road, 1/2 mile east of Route 3A at the junction of Watts Brook. Area 12169M: Londonderry. Found in a small old cemetary on north side of Pettingill Road which runs west off of Harvey Road. Near Little Cohas Marsh.

Dates documented

First reported: 1972-07-01 Last reported: 2012-09-02

NHB24-1680 EOCODE: ARADB17020*008*NH

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARADB17020*012*NH

New Hampshire Natural Heritage Bureau - Animal Record

Eastern Hognose Snake (*Heterodon platirhinos*)

Legal Status	**Conservation Status**
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 1984: Area 12169M: 1 observed. 1972: Area 12169M: 1 individual observed, 16-18 inches long.
General Area: 1971: Area 12169M: In a small cemetary. Area shaded and grassy.
General Comments: 2003: Area 12169M: Formerly Pettengill Cemetery. Now busy road. More field work needed.
Management Comments: --

Location

Survey Site Name: Londonderry Cemetary
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 2.8 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 1972: Area 12169M: Londonderry. Found in a small old cemetary on north side of Pettingill Road which runs west off of Harvey Road. Near Little Cohas Marsh.

Dates documented

First reported: 1971 Last reported: 1984-07-01

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARADB17020*022*NH

New Hampshire Natural Heritage Bureau - Animal Record

Eastern Hognose Snake (*Heterodon platirhinos*)

Legal Status	**Conservation Status**
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 1972: Area 6596: 1 seen. Adult.
General Area: --
General Comments: --
Management Comments: --

Location

Survey Site Name: Watts Brook
Managed By: The Pathway Common Land

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 1972: Area 6596: Bill Boucher residence, 272 Litchfield Road, 1/2 mile east of Route 3A at the junction of Watts Brook.

Dates documented

First reported: 1972-07-01 Last reported: 1972-07-01

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: AMAEB01110*020*NH

New Hampshire Natural Heritage Bureau - Animal Record

New England Cottontail (*Sylvilagus transitionalis*)

Legal Status	Conservation Status
Federal: Not listed	Global: Rare or uncommon
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2020: Buckthorn: Winter observations at 8 points. Charlotte: Winter observations at 4 points. Pettengill: Winter observations at 5 points. Stonyfield: Winter observations at 9 points. 2019: Buckthorn: Winter observations at 38 points. Charlotte: Winter observations at 2 points. Pettengill: Winter observations at 4 points. Stonyfield: Winter observations at 39 points. 2018: Buckthorn: Winter observations at 32 points. Charlotte: Winter observations at 2 points. Stonyfield: Winter observations at 21 points. 2017: Buckthorn: Winter observations at 5 points. Charlotte: Winter observations at 33 points. Pettengill: Winter observations at 2 points. Stonyfield: Winter observations at 55 points. 2016: Buckthorn: Winter observations at 42 points. Pettengill: Winter observation at 1 point. Stonyfield: Winter observations at 38 points. 2015: Winter observations at 5 points. 2014: Winter observations at 3 points. 2013: Winter observations at 13 points. 2011: Winter observations at 32 points. 2002: 1+ age and sex unknowns (Obs_id 744).
General Area: 2002: Terrestrial: grassland / field (Obs_id 744).
General Comments: 2002: Results of J. Litvaitis Regional NEC Survey - 2003 (Obs_id 744).
Management Comments: --

Location

Survey Site Name: Little Cohas Brook, south of
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 88.6 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2017: Charlotte: [Points on NH DOT property at north end of Charlotte Street, Manchester, south of Raymond Wieczorek Drive.] 2016: Pettengill: [6 Pettengill Road, Manchester]. Buckthorn: [Points east of Manchester Airport and west of Mammoth Road]. Stonyfield:

NHB24-1680 EOCODE: AMAEB01110*020*NH

[Points in the vicinity of the Stonyfield yogurt facility off Burton Drive, Londonderry]. 2002: Stonyfield Farm (Obs_id 744).

Dates documented

First reported:	2002-02-02	Last reported:	2020-02-28

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARADB0701D*019*NH

New Hampshire Natural Heritage Bureau - Animal Record

Northern Black Racer (*Coluber constrictor constrictor*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2004: 1 seen. Adult. (Obs_id 2004.0054).
General Area: 2004: Dirt road next to field with old grass, near beaver pond. Restored gravel pit. Lots of dirt bike/ATV trails. Big housing development nearby. (Obs_id 2004.0054).
General Comments: --
Management Comments: --

Location

Survey Site Name: Manchester Industrial Park, south of
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2004: Rehabilitated gravel pit on west end of Pettingil Road (Obs_id 2004.0054).

Dates documented

First reported: 2004-04-27 Last reported: 2004-04-27

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARADB47010*030*NH

New Hampshire Natural Heritage Bureau - Animal Record

Smooth Green Snake (*Opheodrys vernalis*)

Legal Status	**Conservation Status**
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Special Concern	State: Rare or uncommon

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2003: Area 1044: 1 observed.
General Area: 2003: Area 1044: Marsh.
General Comments: --
Management Comments: --

Location

Survey Site Name: Little Cohas Marsh
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2003: Area 1044: West shore of marsh, 1/4 mile south of the dam, on the perimeter of the Army National Guard detention pond

Dates documented

First reported: 2003-09-17 Last reported: 2003-09-17

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARAAD02010*079*NH

New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: --

Detailed Description: 1997: Area 9260: 1 adult (8-9 years old) turtle observed, 7-8 inches long.
General Area: --
General Comments: 1997: Area 9620: Airport mitigation site review. Land to be an industrial development.
Management Comments: --

Location

Survey Site Name: Watts Brook
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 1997: Area 9260: Small stream running west from Stonyfield Farm Yogurt.

Dates documented

First reported:	1997-05-01	Last reported:	1997-05-01

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

Appendix L – Permits

State of New Hampshire
DEPARTMENT OF NATURAL & CULTURAL RESOURCES
DIVISION OF HISTORICAL RESOURCES

172 Pembroke Road Concord, New Hampshire 03301
Phone: 603-271-3483 Fax: 603-271-3433
TDD Access: Relay NH 1-800-735-2964
nhdhr.dncr.nh.gov

March 27, 2025

TFMoran Bedford

Re: 2025PR00341 - Resource Recovery Center

Dear TFMoran Bedford,

In accordance with state and federal statutes [New Hampshire RSA 227C:9 and Section 106 of the National Historic Preservation Act (16 U.S.C. 470)] and with federal Advisory Council on Historic Preservation regulations, Protection of Historic Properties (36 CFR Part 800), the New Hampshire Division of Historical Resources/State Historic Preservation Office (NHSHPO) has reviewed information regarding the above-referenced project.

Based upon this review, no known historic resources appear to be affected by the project. Therefore, it is the opinion of the NHSHPO that the project will result in ***No Historic Properties Affected*** under 36 CFR Part 800.4(d)(1).

No further consultation is required unless there are any changes in approved plans, the need for additional work is identified, or an unanticipated discovery occurs. If further correspondence is required, please refer to the project review number noted above.

If you have any questions, please email Elizabeth Schneible at: elizabeth.a.schneible@dncr.nh.gov

Thank you for the opportunity to comment.

Sincerely,

Nadine Miller

Nadine Miller
Deputy State Historic Preservation Officer
NH Division of Historical Resources

Appendix M – Project Schedule (to be attached by the Contractor)

Appendix N – NRCS and Project Specific Soils Maps

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Rockingham County, New Hampshire

18252-00 NRCS Soils Report



May 13, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

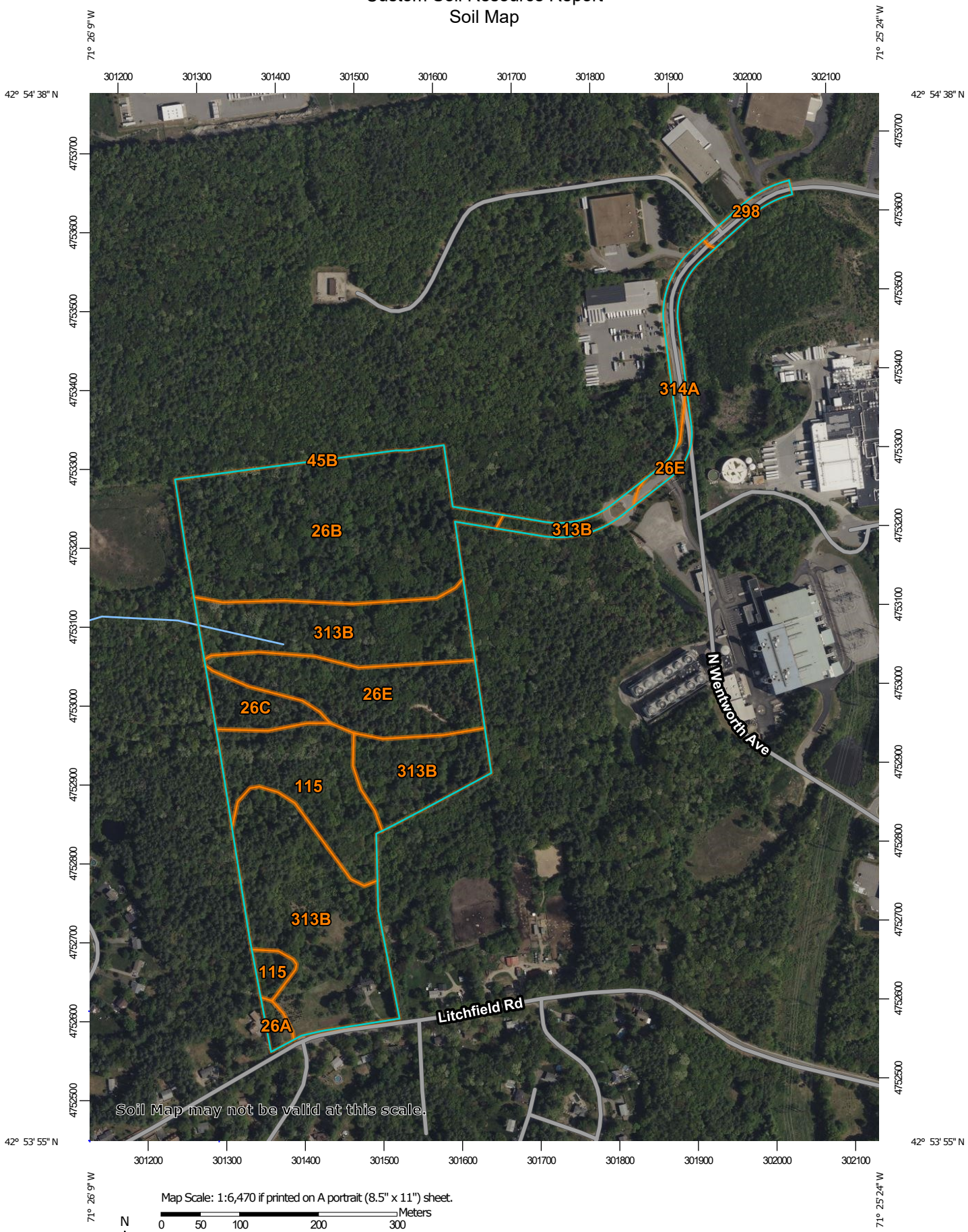
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:6,470 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 27, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
26A	Windsor loamy sand, 0 to 3 percent slopes	0.4	0.7%
26B	Windsor loamy sand, 3 to 8 percent slopes	15.4	29.1%
26C	Windsor loamy sand, 8 to 15 percent slopes	1.7	3.2%
26E	Windsor loamy sand, 15 to 60 percent slopes	6.6	12.5%
45B	Montauk fine sandy loam, 0 to 8 percent slopes, very stony	0.0	0.0%
115	Scarboro muck, coastal lowland, 0 to 3 percent slopes	6.1	11.6%
298	Pits, sand and gravel	0.6	1.1%
313B	Deerfield loamy fine sand, 3 to 8 percent slopes	21.0	39.7%
314A	Pipestone sand, 0 to 5 percent slopes	1.1	2.0%
Totals for Area of Interest		**52.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the

scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Rockingham County, New Hampshire

26A—Windsor loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svkg
Elevation: 0 to 990 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of local importance

Map Unit Composition

Windsor, loamy sand, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor, Loamy Sand

Setting

Landform: Outwash plains, outwash terraces, deltas, dunes
Landform position (three-dimensional): Tread, riser
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

O - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Deerfield, loamy sand

Percent of map unit: 10 percent
Landform: Deltas, terraces, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Hinckley, loamy sand

Percent of map unit: 5 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, crest, side slope, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

26B—Windsor loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svkf
Elevation: 0 to 1,210 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Farmland of local importance

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: Outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or schist and/or gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand

C - 25 to 65 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Eskers
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Deerfield, loamy sand

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

26C—Windsor loamy sand, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2svkq
Elevation: 0 to 1,260 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: — error in exists on —
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, riser
Down-slope shape: Convex
Across-slope shape: Convex, linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
Ap - 1 to 11 inches: loamy sand
Bw - 11 to 31 inches: loamy sand
C - 31 to 65 inches: sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Deerfield

Percent of map unit: 5 percent
Landform: Deltas, terraces, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

26E—Windsor loamy sand, 15 to 60 percent slopes

Map Unit Setting

National map unit symbol: 2w2ws
Elevation: 0 to 760 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: Dunes, deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 15 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Deerfield

Percent of map unit: 5 percent
Landform: Deltas, terraces, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

45B—Montauk fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w80v
Elevation: 0 to 1,070 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of local importance

Map Unit Composition

Montauk, very stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montauk, Very Stony

Setting

Landform: Recessionial moraines, ground moraines, hills, drumlins

Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Scituate, very stony

Percent of map unit: 6 percent
Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Canton, very stony

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, very stony

Percent of map unit: 4 percent

Landform: Depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

115—Scarboro muck, coastal lowland, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svkw
Elevation: 0 to 650 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Scarboro, coastal lowland, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scarboro, Coastal Lowland

Setting

Landform: Depressions, outwash deltas, outwash terraces, drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave, linear
Parent material: Sandy glaciofluvial deposits derived from schist and/or gneiss and/or granite

Typical profile

Oa - 0 to 8 inches: muck
A - 8 to 14 inches: mucky fine sandy loam
Cg1 - 14 to 22 inches: sand
Cg2 - 22 to 65 inches: gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: About 0 to 2 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F144AY031MA - Very Wet Outwash
Hydric soil rating: Yes

Minor Components

Swansea

Percent of map unit: 10 percent
Landform: Bogs, swamps
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Mashpee

Percent of map unit: 5 percent
Landform: Depressions, terraces, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

298—Pits, sand and gravel

Map Unit Composition

Pits: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

313B—Deerfield loamy fine sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2xfg9
Elevation: 0 to 1,190 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Deerfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deerfield

Setting

Landform: Outwash deltas, outwash terraces, outwash plains, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand
Bw - 9 to 25 inches: loamy fine sand
BC - 25 to 33 inches: fine sand
Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: About 15 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 11.0
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 7 percent
Landform: Outwash terraces, outwash plains, kame terraces, outwash deltas
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Wareham

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sudbury

Percent of map unit: 2 percent
Landform: Kame terraces, outwash deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread

Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Ninigret

Percent of map unit: 1 percent
Landform: Outwash plains, outwash terraces, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Convex, concave
Hydric soil rating: No

314A—Pipestone sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 9cn2
Elevation: 0 to 2,100 feet
Mean annual precipitation: 28 to 55 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Pipestone and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pipestone

Setting

Landform: Outwash terraces

Typical profile

H1 - 0 to 6 inches: sand
H2 - 6 to 33 inches: sand
H3 - 33 to 60 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: Yes

Minor Components

Chocorua
Percent of map unit: 5 percent
Landform: Bogs
Hydric soil rating: Yes

Not named wet
Percent of map unit: 5 percent
Landform: Outwash terraces
Hydric soil rating: Yes

Squamscott
Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Scarboro
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Deerfield
Percent of map unit: 5 percent
Hydric soil rating: No

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B A G
LAND CONSULTANTS

January 3, 2025

Nicholas Golan, P.E.
TF Moran Inc.
48 Constitution Drive
Bedford, NH 03110

RE: Purpose Energy Project [Map 14; Lot 39]
162 Litchfield Road, Londonderry, NH (17.0 Ac +/-)

Dear Nick:

Site Specific Soil Survey Technical Letter Report

At your request, we visited the above-referenced property to perform Site-Specific Soil Map (SSSM) services that will assist in the planning / design of a proposed land development project. Below is a summary report that details the standards utilized, mapped soil descriptions, and any limiting soil features encountered on the property.

Standards

The criteria under which the soil map was prepared is the *Site-specific Soil Mapping Standards for New Hampshire and Vermont*, Version 4.0, February 2011. The standards are based on a universally recognized taxonomic system of soil classification and are supported by national soil mapping standards established by the USDA National Cooperative Soil Survey. They allow for the development of multi-purpose soil map products that are carefully controlled and monitored through a state, regional and national quality assessment program. The SSSM's have been developed by the Society of Soil Scientists of Northern New England (SSSNNE) in cooperation with the USDA Natural Resources Conservation Service (NRCS). This map is a special product, intended for submission to NH DES Alteration of Terrain. This map is not a product of the USDA Natural Resource Conservation Service.

The Site-specific Soil Map Units identified on this property come from the *New Hampshire State-wide Numerical Soils Legend*, Issue 10, January 2011. This document represents the latest release of the permanent New Hampshire State-Wide Numerical Soils Legend since originally developed and adopted by the NRCS of NH in 1985.

Base Map

The soil map was developed on a base map of 1"= 100', with contour intervals of two (2') feet, and ground control indicators provided with detail of existing wetland flag locations, existing stonewalls, and recently established survey traverse stations. The highest elevations are

positioned in the extremely northeast section of our study area. The lowest elevation, on the property, is located in the extreme southwest corner of the study area. Topographic & boundary survey information was compiled onto our base map by your office – TF Moran, Inc., Bedford, NH.

Location

The study site has no road frontage and is located north of Litchfield Road, west of Burton Drive and south of North Wentworth Avenue in the Town of Londonderry, NH. There are no abandoned concrete slabs or any evidence of any building structures on the subject parcel. The entire project study area is approximately 17.0 Ac.+/-. All proposed land improvements will be outside of any shoreland protection zone.

Geomorphology

The site is situated in an area of predominant upland glacial outwash parent materials. There is an intermittent stream flowing from east to west and entering our property along the eastern property line. The observed soil had very good deep depth to ledge. This glaciofluvial parent material onsite was deposited when the last glacial ice started receding / melting over 10,000 years ago.

Legend

The following is the soil identification legend for the site-specific soil map units used in the preparation of the map.

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	SOIL TAXONOMIC NAME	HSG CLASS	DRAINAGE CLASS
26	Windsor	A	Well Drained
313	Deerfield	B	Moderately-well Drained
546 /P	Walpole	C	Poorly Drained

Slope

Slope Designation	Percent Slope
B	0 to 8%
C	8 to 15%
D	15 to 25%
E	> 25%

Limiting Soil Features

Most of the upland areas on this property are in natural undisturbed condition. Very little evidence of any prior earth moving excavations or timber clear cutting activities observed. The soils are capable of providing for excellent Gateway Business zone developmental improvements. The majority of soils mapped are **26** – Windsor a well-drained to excessively

well drained glacial outwash with no restrictive layers in the subsoil or substratum horizons below the soil surface. These soils are very deep to ledge and have a high infiltration rate due to their fine to coarse sandy texture, with a single grain structure and loose consistence. The soils would fall into a hydrologic soil group 'A'.

In the slightly lower dry land elevations we mapped moderately-well drained **313** - Deerfield soils. These soil also have no restrictive features in subsoils or substratum horizons. These soils would fall under a hydrologic soil grouping 'B' category. Some of the lowest elevation soil areas are mapped as **546B**/P – Walpole soil series. These poorly drained soils have no restrictive features and still drain. They would have a slow infiltration rate when thoroughly wetted and fall into a HSG "C" category.

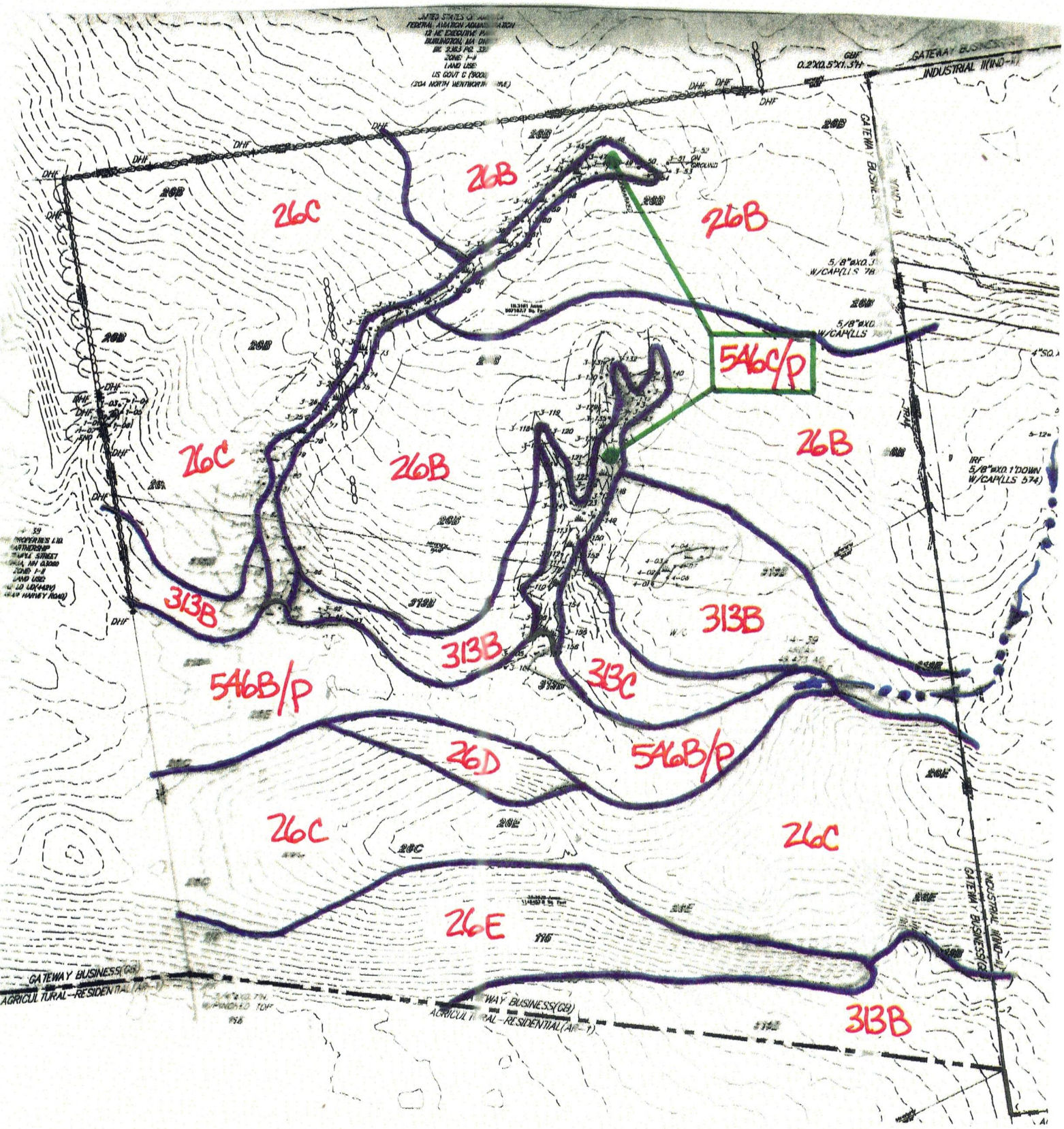
Sincerely,

Bruce A. Gilday

Bruce A. Gilday
Certified Soil Scientist



BAG:35104
Attachment



N.t.s.

BAS # 35104

Appendix O - Completed SWPPP Inspections

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE. LONDONDERRY, NEW HAMPSHIRE

GENERAL INFORMATION

OWNER
MAP 14 LOT 39
CODNER NICHOLAS F TRUST 2012
162 LITCHFIELD ROAD
LONDONDERRY, NH 03053
603-432-1100

APPLICANT
PUPROSEENERGY-LONDONDERRY, LLC
C/O SEAN O'NEIL
25 PELHAM ROAD, SUITE 102
SALEM, NH 03079
6172029156

PREPARED FOR
PUPROSEENERGY-LONDONDERRY, LLC
C/O SEAN O'NEIL
25 PELHAM ROAD, SUITE 102
SALEM, NH 03079
6172029156

RESOURCE LIST
TOWN MANAGER
268B MAMMOTH ROAD
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SHAUN MULHOLLANDI, TOWN MANAGER

PLANNING & ECONOMIC DEVELOPMENT
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 149
KELLIE CARON, ASST. TOWN MANAGER, DIRECTOR OF ECONOMIC DEVELOPMENT

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NICK CODNER, CHIEF BUILDING INSPECTOR
& CODE ENFORCEMENT OFFICER

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PUBLIC WORKS & ENGINEERING
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LONDONDERRY, NH 03053
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DAVE WHOLLEY, DIRECTOR PUBLIC WORKS & MUNICIPAL FACILITIES
JOHN TROTTIER, DIRECTOR OF ENGINEERING & ENVIRONMENTAL SERVICES

HIGHWAY DIVISION
268B MAMMOTH ROAD
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DAVE WHOLLEY, DIRECTOR PUBLIC WORKS & MUNICIPAL FACILITIES

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268A MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1118
KIM ALAN BERNARD, CHIEF OF POLICE

FIRE DEPARTMENT
280 MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1124
PHIL LEBLANC, ACTING CHIEF

NHDES AOT
29 HAZEN DRIVE
CONCORD, NH 03302-0095
(603) 271-2303
AMY CLARK, PE, AOT SUPERVISOR

ASSOCIATED PROFESSIONALS
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104 PLEASANT STREET
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(603) 226-0374
GEORGE C. HOLT, P.G.

TRAFFIC ENGINEER
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48 CONSTITUTION DRIVE
BEDFORD, NH 03110
ROBERT DUVAL, PE, PRINCIPAL

WETLAND SCIENTIST
TFMORAN, INC.
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
CHRISTOPHER K. DANFORTH, CWS

SOIL SCIENTIST
BAG LAND CONSULTANTS
43 ROCKINGHAM STREET
CONCORD, NH 03301
BRUCE A. GILDAY, CSS

ABUTTERS
R014-039-0
NICHOLAS F CODNER TRUST 2012
162 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-047-0
US OF AMERICA FED AVIATION ADMIN
12 NE EXECUTIVE PARK
BURLINGTON, MA 01803

R01-044-38
STATE OF NEW HAMPSHIRE
PO BOX 483, 1 HAZEN DRIVE
CONCORD, NH 03302-0483

R014-44-0
GRANITE RIDGE ENERGY, LLC
21 NORTH WENTWORTH AVE
LONDONDERRY, NH 03053

R014 LOTS 044-3 & 040-0
TRACIE L & BRUCE A LEMIEUX
154 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-039-1
VICTOR D & CECILIA C REIS
158 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-13
RICHARD A BELANGER
149 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-12
NICOLE M THOMAS
151 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-11JUSTIN M QUISH
153 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-10
SHARON B BARTHOLOMEW
155 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-9
SAHIN B DAYIOGLU
157 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-8
ERIC J AND AMBER E POMER
159 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-7
JOHN ALBERT & LISA MARIE KIRCALDIE
51 YELLOWSTONE ROAD
LONDONDERRY, NH 03053-2502

R011-020-6
MICHAEL A ST. PIERRE
163 LITCHFIELD ROAD
LONDONDERRY, NH 03053-7408

R011-020-5
CLARK FAMILY TRUST OF 2011
165 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-015-0
ERICK MENDONSA
167 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-051-0
CLAIRE M KELLY
166 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-050-0
BRUCE ALLAN & CINDY LOUISE GOODWIN
168 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-007-0
MICHAEL W SIRACUSE III
170 LITCHFIELD ROAD
LONDONDERRY, NH 03053

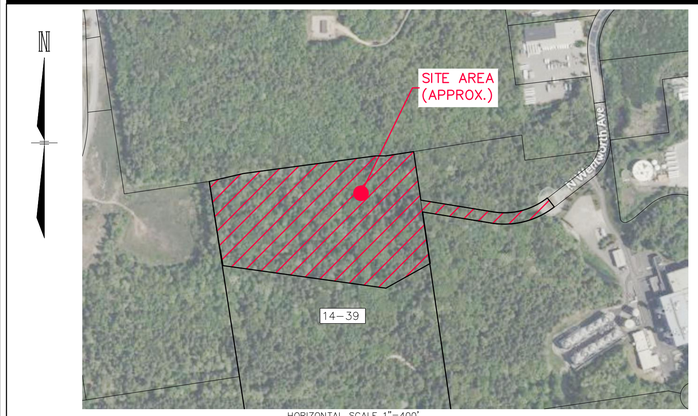
R014-005-0
ARIANNA ONEIL
172 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-048-1
STATE OF NEW HAMPSHIRE
PO BOX 483
CONCORD, NH 03302-0483

R-014-003-26
GYPSUM CONSTRUCTION CORP.
184 ROCKINGHAM ROAD
LONDONDERRY, NH 03053

R014-038-0
TANA PROPERTIES LTD. PARTNERSHIP
40 TEMPLE STREET
NASHUA, NH 03060

LOCATION PLAN



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C-03	NOTES
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C-04	SITE PREPARATION & DEMOLITION PLAN
C-05	OVERALL SITE PLAN
C-06	SITE LAYOUT PLAN
C-07	GRADING & DRAINAGE PLAN
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PERMITS/APPROVALS

	NUMBER	APPROVED	EXPIRES
TOWN PLANNING BOARD SUBDIVISION APPROVAL			
TOWN PLANNING BOARD SITE PLAN REVIEW APPROVAL			
TOWN PLANNING BOARD DRIVEWAY PERMIT			
TOWN PLANNING BOARD CUP (WETLAND BUFFERS)			
TOWN PLANNING BOARD CUP (FRONTAGE)			
TOWN STORMWATER PERMIT			
TOWN SEWER DISCHARGE PERMIT			
TOWN INDUSTRIAL DISCHARGE PERMIT			
TOWN INDUSTRIAL DISCHARGE PERMIT			
US EPA CGP			
NHDES SOLID WASTE PERMIT			
NHDES INDUSTRIAL WASTEWATER DICHARGE PERMIT			
NHDES INDUSTRIAL WASTEWATER DICHARGE PERMIT			
NHDES AOT PERMIT			
NHDES SEWER CONNECTION PERMIT			
NHDES WETLAND PERMIT (MAJOR)			
NH NHB DATA CHECK	NHB24-1680	6/11/24	6/11/25
NH DHR RPR	2025PR00341	3/27/25	
FAA			

NHF&G AOT PERMIT CONDITIONS

1. BLANDING'S TURTLE (STATE ENDANGERED), EASTERN HOGNOSE SNAKE (STATE ENDANGERED), NEW ENGLAND COTTONTAIL (STATE ENDANGERED), SMOOTH GREEN SNAKE (SPECIAL CONCERN), SPOTTED TURTLE (STATE THREATENED), northern BLACK RACER (STATE THREATENED) OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. ALL OPERATORS AND PERSONNEL WORKING ON OR ENTERING THE SITE SHALL BE MADE AWARE OF THE POTENTIAL PRESENCE OF THESE SPECIES AND SHALL BE PROVIDED FLYERS THAT HELP TO IDENTIFY THESE SPECIES, ALONG WITH NHFG CONTACT INFORMATION. SEE FLYERS ON PLAN SHEET D-17.
2. RARE SPECIES INFORMATION (E.G. IDENTIFICATION, OBSERVATION AND REPORTING OF OBSERVATIONS, WHEN TO CONTACT NHFG IMMEDIATELY AND NHFG CONTACT INFORMATION) SHALL BE COMMUNICATED DURING MORNING TAILGATE MEETINGS PRIOR TO WORK COMMENCEMENT WHILE THE PROJECT IS UNDER ACTIVE CONSTRUCTION. SEE FLYERS ON PLAN SHEET D-17.
3. OBSERVATIONS OF EASTERN HOGNOSE SNAKE AND NORTHERN BLACK RACER SHALL BE REPORTED IMMEDIATELY TO NHFG WILDLIFE BIOLOGISTS MELISSA WINTERS (603-479-1129) AND BRENDAN CLIFFORD (603-944-0885) VIA GROUP TEXT. A PHOTOGRAPH WITH THE TEXT WILL BE PROVIDED IF FEASIBLE. IMMEDIATE REPORTING OF OBSERVATIONS IS CRITICAL AS NHFG BIOLOGISTS WILL NEED TO COLLECT DATA ON THE INDIVIDUAL. SEE FLYERS ON PLAN SHEET D-17.
4. NHFG SHALL HAVE THE OPPORTUNITY TO ATTEMPT TO TRAP AND RELOCATE ANY RABBITS THAT MAY BE ON SITE. ENTRAPMENT AND RELOCATION OF RABBITS SHALL BE COORDINATED NO LESS THAN THREE WEEKS IN ADVANCE WITH NHFG BEFORE WORK BEGINS.
5. ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, WITH THE EXCEPTION OF TURF REINFORCEMENT MATS, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN PLASTIC, OR MULTIFILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES. SEE DETAILS ON SHEET D-01 AND D-02.
6. TURTLES MAY BE ATTRACTED TO DISTURBED GROUND DURING NESTING SEASON. TURTLE NESTING SEASON OCCURS APPROXIMATELY MAY 15TH – JULY 30TH. ALL TURTLE SPECIES NESTS AND NORTHERN BLACK RACER NESTS ARE PROTECTED BY NH LAWS. IF A NEST IS OBSERVED OR SUSPECTED, OPERATORS SHALL CONTACT JOSH MEGYESY AT NHFG IMMEDIATELY FOR FURTHER CONSULTATION. THE NEST OR SUSPECTED NEST SHALL BE MARKED (SURROUNDING ROPED OFF OR CONE BUFFER DEPLOYED) AND AVOIDED; THIS SHALL BE COMMUNICATED TO ALL PERSONNEL ONSITE. SITE ACTIVITIES SHALL NOT OCCUR IN THE AREA SURROUNDING THE NEST OR SUSPECTED NEST UNTIL FURTHER GUIDANCE IS PROVIDED BY NHFG.
10. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES ON THE PROJECT SITE SHALL BE REPORTED IMMEDIATELY TO THE NHFG NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV, WITH THE EMAIL SUBJECT LINE: NHB24-1680, DCT25-2647 LONDONDERRY GREEN ENERGY CAMPUS, WILDLIFE SPECIES OBSERVATION.
1. PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHFG IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION, AS FEASIBLE.
11. IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHFG AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHFG.
   A. SITE OPERATORS SHALL BE ALLOWED TO RELOCATE WILDLIFE ENCOUNTERED IF DISCOVERED WITHIN THE ACTIVE WORK ZONE IF IN DIRECT HARM FROM PROJECT ACTIVITIES. WILDLIFE SHALL BE RELOCATED IN CLOSE PROXIMITY TO THE CAPTURE LOCATE BUT OUTSIDE OF THE WORK ZONE AND IN THE DIRECTION THE INDIVIDUAL WAS HEADING. NHFG SHALL BE CONTACTED IMMEDIATELY IF THIS ACTION OCCURS.
12. THE NHFG, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT, ALONG WITH NHFG CONTACT INFORMATION. THE APPLICANT SHOULD NOTIFY NHFG 30 DAYS PRIOR TO STARTING SONSTRUCTION ACTIVITIES. NHFG SHOULD HAVE THE OPPURTUNITY TO ATTEMPT TO TRAP ANDD RELOCATE ANY RABBITS THAT MAY BE ON SITE.
13. SMOOTH GREEN SNAKE (SPECIAL CONCERN) OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. ALL OPERATORS AND PERSONNEL WORKING ON OR ENTERING THE SITE SHOULD BE MADE AWARE OF THE POTENTIAL PRESENCE OF THIS SPECIES AND SHOULD BE PROVIDED FLYERS THAT HELP TO IDENTIFY THIS SPECIES, ALONG WITH NHFG CONTACT INFORMATION. SEE FLYER ON PLAN SHEET D-17.
14. A WILDLIFE EXCLUSIONARY BARRIER SHOULD BE INSTALLED AROUND THE PERIMETER OF THE SITE PRIOR TO APRIL 15TH AND MAINTAINED BETWEEN APRIL 15TH AND OCTOBER 15TH THROUGHOUT THE LIFE OF THE ACTIVE PROJECT/CONSTRUCTION ACTIVITES. THE WILDLIFE EXLUSIONARY BARRIER SHOULD BE BURIED TO A DEPTH OF NO LESS THAN 6-8" AND EXTEND NO LESS THAN 18" ABOVE EXISTING GRADE. THE WILDLIFE EXCULSIONARY BARRIER SHOULD BE INSPECTED DAILY FOR ANY DEFECTS AS WELL AS POSSIBLE TRAPPED WILDLIFE PRIOR TO SITE CONSTRUCTION ACTIVITIES.
15. WETLAND IMPACT SHOULD OCCUR BETWEEN APRIL 15TH AND OCTOBER 15TH TO AVOID IMPACTING OVERWINTERING TURTLES.
16. STAGING OF CONSTRUCTION EQUIPMENT/MATERIAL AND VEHICLE PARKING SHOULD NOT OCCUR IN SHRUB COVER OR WETLANDS AND SHRUB CONVER SHOULD NOT BE REMOVED.
17. CATCH BASINS AND OUTLET CONTROL STRUCTURES SHOULD NOT CONTAIN SUMPS AND SHOULD HAVE GRATE OPENINGS NO LARGER THAN 2" X 2".
18. OUTLET CONTROL STRUCTURES SHOULD BE A MINIMUM OF 12-18" ABOVE GRADE AND SET BACK AT LEAST 3' FROM ADJACENT SLOPES.
19. RIP-RAP SHOULD BE FILLED WITH FINER MATERIAL (NATIVE WETLAND MATERIAL, NATIVE WETLAND SEED MIX, OR GRAVEL IN BETWEEN RIP-RAP) TO CREATE A RELATIVELY SMOOTH SURFACE FOR WILDLIFE TO TRAVERSE.
20. IF HYDROSEEDING IS DEEMED NECESARY, THE MIX SHOULD NOT CONTAIN MICROPLASTICS AND DYES SHOULD BE WATER-SOLUABLE AND ECO-FRIENDLY. HYDROSEEDING SHOULD NOT OCCUR WITHIN 75 FEET OF WETLANDS. SEE PLAN SHEETS C-06.
21. AVOID OR MINIMIZE THE USE OF FERTILIZERS IN UPLAND AREAS OR TRANSITION ZONES. IF FERTILIZERS ARE NECESSARY, USE ORGANIC VERSUS SYNTHETIC FERTILIZER OPTIONS. SYNTHETIC OPTIONS SHOULD BE AVOIDED; HOWEVER, IF CHOSEN, THEY SHOULD BE CONTROLLED-RELEASED/SLO-RELEASED AND AT LOW STRENGTHS. SEE PLAN SHEETS C-06.
22. A NATIVE SEED MIXTURE SHOULD BE APPLIED TO ALL AREAS AFFECTED BY CONSTRUCTION. PLEASE SEE THE MODIFIED NEW ENGLAND CONSERVATION/WETLAND MIX BY NEW ENGLAND WETLAND PLANTS, INC AS A SEED MIXTURE OPTION THAT MAY BE USED IN AREA AFFECTED BY CONSTRUCTION. THE SEED MIXES SHALL NOT CONTAIN INVASIVE SPECIES SUCH AS CROWN VETCH, BIRD'S-FOOT TRFOIL, OXEYE DAISY, ALSIKE CLOVER, AND FLATPEA. SEE PLAN SHEET C-03 OR D-18
23. MITIGATION REQUIREMENTS INCLUDED WITH NHFG'S REVIEW AND RECOMMENDATIONS ARE CONSISTEN WITH AN AGREEMENT BETWEEN THE TOWN OF LONDONDERRY AND NHFG THAT WAS ENTERED INTO EFFECT ON MAY 28, 2019 THAT REQUIRES A MITIGATION FEE FOR EACH INDIVIDUAL PROJECT THAT OCCURS WITHIN A PREDEFINED AREA WITHIN LONDONDERRY. PER RSA 212-A:16, A MITIGATION FEE BASED ON A DISTURBANCE AREA SHOULD BE MADE PAYABLE TO THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT FOR NEGATIVE IMPACTS TO NEW ENGLAND COTTONTAIL, A STATE-ENDANGERED SPECIES. THE MEMO FIELD SHOULD IDENTIFY "NONGAME AND ENDANGERED WILDLIFE PROGRAM, NHB24-1680, DCT25-2647". THIS CHECK SHOULD BE ISSUED AND SUBMITTED TO NHFG FOLLOWING PERMIT APPROVAL AND MUST BE RECEIVED PRIOR TO ANY WORK OCCURRING ON THE SITE.
24. THESE CONSERVATION MEASURES DO NOT CONSTIUTION COMPLIANCE WITH THE FEDERAL ENGANGED SPECIES ACT (ESA). THERE MAY BE OCCURRENCES OF FEDERALLY LISTED SPECIES IN NEW HAMPSHIRE THAT ARE NOT INCLUDED ON THE DATACHECK LETTER. PLEASE VISIT THE US FISH AND WILDLIFE SERVICES'S (USFWS) INFORMATION FOR PLANNING AND CONSULTATION WEBSITE (IPAC; HTTPS://IPAC.ECOSPHERE.FWS.GOV/) FOR AN OFFICIAL LIST OF FEDERALLY LISTED SPECIES THAT MAY BE PRESENT IN YOUR PROJECT AREA. IF A FEDERAL AGENCY IS INVOLVED IN YOUR PROJECT THROUGH FUNDING, PERMIT, OR OTHER AUTHORIZATION, COORDINATE YOUR IPAC RESULTS WITH YOUR POINT OF CONTACT AT THAT AGENCY FOR FURTHER ESA REVIEW. IF THERE IS NO FEDERAL AGENCY NEXUS TO YOUR PROJECT AND YOU DETERMINE THOUGH IPAC, HABITAT EVALUATIONS, ECT. THAT A PROJECT MAY CAUSE TAKE OF FEDERALLY LISTED SPECIES, WE RECOMMENT COORDIANTION WITH THE USFWS' NEW ENGLAND GFIELD OFFICE (NEWENGLAND@FWS.GOV; 603-223-2541)

WAIVERS

THE FOLLOWING WAIVERS FROM THE TOWN OF LONDONDERRY SITE REVIEW REGULATIONS IS REQUESTED FROM THE PLANNING BOARD:

1. TOWN OF LONDONDERRY SITE REVIEW REGULATIONS SECTION 3.09(d)(TABLE B) – TO USE ITE GENERATION MANAUL FOR PARKING CALCULATION.
2. TOWN OF LONDONDERRY SITE REVIEW REGULATIONS SECTION 3.10(g)(1) – TO WAIVE AN INTERIOR PARKING LANDSCAPE AREA.
2. TOWN OF LONDONDERRY SITE REVIEW REGULATIONS SECTION 4.12.c.19.viii – TO WAIVE DELINEATING TREES WITH GREATER THEN 15" DIAMETER

Approved by the Londonderry, NH Planning Board for Phase _____

on Date:_____

Certified by:

_____

_____

OWNER'S SIGNATURE

_____ 12/22/2025

OWNER OR AUTHORIZED AGENT *DATE*

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

COVER SHEET

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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DIG SAFE NH 811 – CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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Bedford, NH 03110
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www.tfmoran.com

FILE		DR		FB	–	
18252-02		CK		CADFILE	18252-02 COVER & DETAILS	C-01

Dec 23, 2025 - 2:14pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 Cover & Details.dwg

LEGEND

PROPOSED

- PROPERTY LINE
- ZONING LINE
- EASEMENT
- BASELINE
- FLOODPLAIN
- EDGE OF WATERBODY
- EDGE OF WETLAND
- SETBACK (WETLAND)
- SETBACK (STRUCTURE)
- SETBACK (PARKING)
- SETBACK (LANDSCAPE)
- GRAVEL ROAD
- EOP — EDGE OF PAVEMENT
- VGC — VERTICAL GRANITE CURB
- SGC — SLOPED GRANITE CURB
- CC — CONCRETE CURB
- ICC — INTEGRATED CONCRETE CURB
- BIT — BITUMINOUS ASPHALT CURB
- CCB — CAPE COD BERM
- SAWCUT
- BUILDING
- BUILDING ROOF OVERHANG
- BUILDING FOUNDATION
- BUILDING ENTRANCE
- OVERHEAD DOOR
- TREE LINE
- FENCE (CHAIN LINK)
- FENCE (WIRE)
- FENCE (STOCKADE)
- GUARDRAIL
- BLANKET SLOPE PROTECTION
- RETAINING WALL
- SILT FENCE
- SILT SOCK
- SOIL BOUNDARY
- LIMIT OF GRADING
- 100 — CONTOUR
- TC100.50 / BC100.00 OR 100.00 — SPOT GRADE
- ## — PARKING COUNT
- DSLY — YELLOW DOUBLE SOLID LINE
- SSLY — YELLOW SINGLE SOLID LINE
- SSLW — WHITE SINGLE SOLID LINE
- SBLW — WHITE SINGLE BROKEN LINE
- STOP — STOP BAR
- CROSSWALK
- ACCESSIBLE PARKING SYMBOL
- PAVEMENT ARROW
- TRAFFIC FLOW ARROW (NOT PAINTED)
- SIGN (SINGLE POST)
- SIGN (DOUBLE POST)
- SIGN (PYLON)
- SIGN (MONUMENT)
- BOLLARD
- D — DUMPSTER PAD

PROPOSED

- CONCRETE
- GRAVEL
- WETLAND IMPACT
- CONSTRUCTION ENTRANCE
- SNOW STORAGE
- RIPRAP
- INLET PROTECTION
- FLOW ARROW
- RIDGE — GRADE BREAK RIDGE
- DRAIN LINE
- DRAINAGE SWALE
- STORMWATER BMP
- S — SEWER LINE
- FM — SEWER FORCE MAIN LINE
- W — WATER LINE
- G — GAS LINE
- OHE — OVERHEAD UTILITY LINE
- UGE — UNDERGROUND UTILITY LINE
- CATCH BASIN
- DRAIN INLET
- OUTLET CONTROL STRUCTURE
- ROOF DRAIN
- DRAIN CLEANOUT
- DRAIN MANHOLE
- FARED END SECTION
- SEWER CLEAN OUT
- SEWER MANHOLE
- SEWER VENT
- DRAIN/SEWER/WATER PLUG OR CAP
- HYDRANT
- FIRE DEPARTMENT CONNECTION
- WATER GATE VALVE
- WATER SHUTOFF
- THRUST BLOCK
- WATER METER
- WATER MANHOLE
- WELL
- GAS GATE VALVE
- GAS SHUT OFF
- GAS METER
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- TRAFFIC CONTROL CABINET
- ELECTRIC HANDHOLE
- ELECTRIC PULL BOX
- ELECTRIC METER
- FLOOD LIGHT
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- T — TRANSFORMER PAD
- B-# — BORING LOCATION
- TP-# — TEST PIT LOCATION
- IT-# — INFILTRATION TEST LOCATION
- MW-# — MONITORING WELL

ABBREVIATIONS

GENERAL

ABAN	ABANDON
AC	ACRES
ADJ	ADJUST
APPROX	APPROXIMATE
BC	BOTTOM OF CURB
BIT	BITUMINOUS
BK/PG	BOOK & PAGE
BLDG	BUILDING
BMP	BEST MANAGEMENT PRACTICE
BS	BOTTOM OF SLOPE
BW	BOTTOM OF WALL
CONC	CONCRETE
COORD	COORDINATE
DIA	DIAMETER
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EXIST	EXISTING
FFE	FINISHED FLOOR ELEVATION
FND	FOUNDATION
HP	HIGH POINT
INV	INVERT ELEVATION
IT	INFILTRATION TEST
L	LENGTH
LF	LINEAR FEET
LSA	LANDSCAPE AREA
MAX	MAXIMUM
MIN	MINIMUM
N/F	NOW OR FORMERLY
NHFG	NEW HAMPSHIRE FISH & GAME
NTS	NOT TO SCALE
OC	ON CENTER
PAVE	PAVEMENT
PERF	PERFORATED
PROP	PROPOSED
R	RADIUS
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
REM	REMOVE
RET	RETAIN
RIM	RIM ELEVATION
ROW	RIGHT OF WAY
S	SLOPE
SF	SQUARE FEET
SW	SIDEWALK
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TP	TEST PIT
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
WCR	ACCESSIBLE WHEELCHAIR RAMP
W/	WITH

UTILITIES

CB	CATCH BASIN
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
COND	CONDUIT
DCB	DOUBLE CATCH BASIN
DIP	DUCTILE IRON PIPE
DMH	DRAIN MANHOLE
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FES	FLARED END SECTION
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
LP	LIGHT POLE
OCS	OUTLET CONTROL STRUCTURE
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
SMH	SEWER MANHOLE
SOS	SEDIMENT OIL SEPARATOR
TSV	TAPPING SLEEVE, VALVE, AND BOX
UP	UTILITY POLE

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GENERAL NOTES

1. THESE PLANS ARE PERMIT DRAWINGS ONLY AND HAVE NOT BEEN DETAILED FOR CONSTRUCTION OR BIDDING.
2. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN, INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
3. ALL IMPROVEMENTS SHOWN ON THE SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE LONDONDERRY PLANNING BOARD.
4. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF LONDONDERRY, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ALL WORK TO CONFORM TO TOWN OF LONDONDERRY DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. ALL WORK WITHIN THE RIGHT-OF-WAY OF THE LONDONDERRY AND/OR STATE SHALL COMPLY WITH APPLICABLE STANDARDS. COORDINATE ALL WORK WITHIN THE RIGHT-OF-WAY WITH APPROPRIATE LONDONDERRY, COUNTY, AND/OR STATE AGENCY.
5. THE SITE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH APPLICABLE SECTIONS OF ENV-WQ 1500. THE SITE CONTRACTOR SHALL NOTIFY THE ENGINEER IN ADVANCE OF CONSTRUCTION OF EACH STORMWATER FACILITY TO COORDINATE REQUIRED INSPECTIONS. THE CONTRACTOR SHALL TAKE PROGRESS PHOTOS DURING CONSTRUCTION OF ALL STORMWATER DRAINAGE COMPONENTS AND SEND TO THE ENGINEER.
6. SEE EXISTING CONDITIONS PLAN FOR THE HORIZONTAL AND VERTICAL DATUM.
7. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
8. CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN THE EASEMENTS.
9. PRIOR TO COMMENCING ANY SITE WORK, ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
10. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
11. TFMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
12. TEMPORARY FENCING SHALL BE PROVIDED AND COVERED WITH A FABRIC MATERIAL TO CONTROL DUST MITIGATION.
13. ALL DEMOLITION SHALL ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKWAYS, AND ANY OTHER ADJACENT OPERATING FACILITIES. PRIOR WRITTEN PERMISSION FROM THE OWNER/DEVELOPER AND LOCAL PERMITTING AUTHORITY IS REQUIRED IF CLOSURE/OBSTRUCTIONS TO ROADS, STREET, WALKWAYS, AND OTHERS IS DEEMED NECESSARY. CONTRACTOR TO PROVIDE ALTERNATE ROUTES AROUND CLOSURES/OBSTRUCTIONS PER LOCAL/STATE/FEDERAL REGULATIONS.
14. REFER TO ARCHITECTURAL PLANS FOR LAYOUT OF BUILDING FOUNDATIONS AND CONCRETE ELEMENTS WHICH ABUT THE BUILDING SUCH AS STAIRS, SIDEWALKS, LOADING DOCK RAMPS, PADS, AND COMPACTOR PADS. DO NOT USE SITE PLANS FOR LAYOUT OF FOUNDATIONS.
15. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
16. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
17. CONTRACTOR'S GENERAL RESPONSIBILITIES:
    - A. BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS, AND STANDARDS AND CONDITIONS OF ALL PROJECT-SPECIFIC PERMITS AND APPROVALS AS LISTED ON THE COVER SHEET TO THESE PLANS OR OTHERWISE REQUIRED.
    - B. NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES OF PROPOSED LAYOUT AND/OR EXISTING FEATURES.
    - C. EMPLOY A LICENSED SURVEYOR TO DETERMINE ALL LINES AND GRADES AND LAYOUT OF SITE ELEMENTS AND BUILDINGS.
    - D. THE CONTRACTOR SHALL BE RESPONSIBLE TO BECOME FAMILIAR WITH THE SITE AND ALL SURROUNDING CONDITIONS. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
    - E. MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
    - F. IN ACCORDANCE WITH RSA 430:53 AND AGR 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.
    - G. COORDINATE WITH ALL UTILITY COMPANIES AND CONTACT DIGSAFE (811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
    - H. PROTECT NEW AND EXISTING BURIED UTILITIES DURING INSTALLATION OF ALL SITE ELEMENTS. DAMAGED UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
    - I. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
    - J. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
    - K. VERIFY LAYOUT OF PROPOSED BUILDING FOUNDATIONS WITH ARCHITECT AND THAT PROPOSED FOUNDATION MEETS PROPERTY LINE AND/OR WETLAND SETBACKS PRIOR TO COMMENCING ANY FOUNDATION CONSTRUCTION.
    - L. PROVIDE AN AS-BUILT PLAN AT THE COMPLETION OF THE PROJECT TO THE TOWN PLANNER AND PER LONDONDERRY REGULATIONS.
    - M. IF ANY DEVIATIONS FROM THE APPROVED PLANS AND SPECIFICATIONS HAVE BEEN MADE, THE SITE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS STAMPED BY A LICENSED SURVEYOR OR QUALIFIED ENGINEER ALONG WITH A LETTER STAMPED BY A QUALIFIED ENGINEER DESCRIBING ALL SUCH DEVIATIONS, AND BEAR ALL COSTS FOR PREPARING AND FILING ANY NEW PERMITS OR PERMIT AMENDMENTS THAT MAY BE REQUIRED.
    - N. AT COMPLETION OF CONSTRUCTION, THE SITE CONTRACTOR SHALL PROVIDE A LETTER CERTIFYING THAT THE PROJECT WAS COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND A LETTER STAMPED BY A QUALIFIED ENGINEER THAT THEY HAVE OBSERVED ALL UNDERGROUND DETENTION SYSTEMS, INFILTRATION SYSTEMS, OR FILTERING SYSTEMS PRIOR TO BACKFILL, AND THAT SUCH SYSTEMS CONFORM TO THE APPROVED PLANS AND SPECIFICATIONS.
    - O. THIS PROJECT IS SUBJECT TO THE AOT PERMIT LISTED ON THE COVER SHEET. THE CONTRACTOR SHALL CONFORM TO ALL CONDITIONS OF THE PERMIT AND PROVIDE THE FOLLOWING DOCUMENTATION TO OWNER AND ENGINEER.
    - – ADVANCE WRITTEN NOTICE AT LEAST ONE WEEK PRIOR TO COMMENCING ANY WORK UNDER THE PERMIT AND NOTIFICATION TO AOT VIA THE START OF CONSTRUCTION FORM.
    - – UPON COMPLETION OF CONSTRUCTION, NOTIFICATION TO AOT VIA THE COMPLETION OF CONSTRUCTION FORM AND WRITTEN CERTIFICATION THAT:
      - A) ALL WORK UNDER THE PERMIT HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATION.
      - B) IF ANY DEVIATION FROM THE APPROVED PLANS WERE MADE, WRITTEN DESCRIPTIONS AND AS-BUILT DRAWINGS OF ALL SUCH DEVIATIONS, STAMPED BY A QUALIFIED ENGINEER, SHALL BE PROVIDED.
    - P. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT DEFICIENCIES EXIST IN THE APPROVED DESIGN DRAWINGS, THE OWNER SHALL BE REQUIRED TO CORRECT THE DEFICIENCIES TO MEET THE REQUIREMENTS OF THE REGULATIONS AT NO EXPENSE TO THE TOWN.
    - Q. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE TOWN.
    - R. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO TOWN OF LONDONDERRY SUBDIVISION REGULATIONS AND THE LATEST EDITION OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
    - S. IN ACCORDANCE WITH SECTION 6.01 OF THE LONDONDERRY SITE PLAN REGULATIONS AND RSA § 676:13, ALL IMPROVEMENTS SPECIFIED ON THESE SITE PLANS SHALL BE CONSTRUCTED, COMPLETED, AND INSPECTED AND APPROVED BY THE TOWN OF LONDONDERRY PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
    - T. IN ACCORDANCE WITH SECTION 6.01 OF THE LONDONDERRY SITE PLAN REGULATIONS AND RSA § 676:12, ALL OFF-SITE IMPROVEMENTS SPECIFIED ON THESE SITE PLANS SHALL BE CONSTRUCTED, COMPELTED, AND INSPECTED AND APPROVED BY THE TOWN OF LONDONDERRY (AND/OR THE NHDOT, IF APPLICABLE) PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

UTILITY NOTES

1. LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
2. ALL PROPOSED UTILITY WORK, INCLUDING MATERIAL, INSTALLATION, TERMINATION, EXCAVATION, BEDDING, BACKFILL, COMPACTION, TESTING, CONNECTIONS, AND CONSTRUCTION SHALL BE COORDINATED WITH AND COMPLETED IN ACCORDANCE WITH THE APPROPRIATE REQUIREMENTS, CODES, AND STANDARDS OF ALL CORRESPONDING UTILITY ENTITIES AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE DIGGING.
4. COORDINATE ALL WORK ADJACENT TO PROPOSED BUILDINGS WITH ARCHITECTURAL BUILDING DRAWINGS. CONFIRM UTILITY PENETRATIONS AND INVERT ELEVATIONS ARE COORDINATED PRIOR TO INSTALLATION.
5. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
6. THE EXACT LOCATION OF NEW UTILITY CONNECTIONS SHALL BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH UTILITY COMPANY, COUNTY AGENCY, AND/OR PRIVATE UTILITY COMPANY.
7. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER THE UTILITY INSTALLATION COMPLETE AND OPERATIONAL.
8. ALL UTILITY COMPANIES REQUIRE INDIVIDUAL CONDUITS. CONTRACTOR TO COORDINATE WITH TELEPHONE, CABLE, AND ELECTRIC COMPANIES REGARDING NUMBER, SIZE, AND TYPE OF CONDUITS REQUIRED PRIOR TO INSTALLATION OF ANY CONDUIT.
9. SANITARY SEWER SHALL BE CONSTRUCTED TO THE TOWN OF LONDONDERRY STANDARDS AND SPECIFICATIONS AS SHOWN ON THESE PLANS. ALL SEWER MAINS AND FITTINGS SHALL BE PVC AND SHALL CONFORM TO ASTM F 679 (SDR 35 MINIMUM). FORCE MAINS AND FITTINGS SHALL CONFORM TO NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. ALL SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. SANITARY MANHOLES SHALL CONFORM TO NHDES WATER DIVISION WASTEWATER ENGINEERING BUREAU STANDARDS AND SPECIFICATIONS SHOWN HEREON.
10. ON-SITE WATER DISTRIBUTION SHALL BE TO MANCHESTER WATER WORKS STANDARDS AND SPECIFICATIONS. WATER MAINS SHALL HAVE A MINIMUM OF 5.5' COVER. WHERE WATER PIPES CROSS SEWER LINES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. HORIZONTAL SEPARATION BETWEEN WATER AND SEWER SHALL BE 10' MINIMUM. WHERE A SANITARY LINE CROSSES A WATER LINE, SEWER LINE MUST BE CONSTRUCTED OF FORCE MAIN MATERIALS (PER ENV-WQ 704.08) FROM BUILDING OR MANHOLE TO MANHOLE, OR SUBSTITUTE RUBBER-GASKETED PRESSURE PIPE FOR THE SAME DISTANCE. WHEN SANITARY LINES PASS BELOW WATER LINES, LAY PIPE SO THAT NO JOINT IN THE SANITARY LINE WILL BE CLOSER THAN 6' HORIZONTALLY TO THE WATER LINE.
11. THRUST BLOCKS SHALL BE PROVIDED AT ALL LOCATIONS WHERE WATER LINE CHANGES DIRECTIONS OR CONNECTS TO ANOTHER WATER LINE.
12. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRING TO ALL SIGNS AND LIGHTS. CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
13. ALL PROPOSED UTILITIES SHALL BE UNDERGROUND. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES.
14. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS, TESTING, AND RELATED SERVICES AND SUBMIT COPIES OF ACCEPTANCE TO THE OWNER, UNLESS OTHERWISE INDICATED.
15. PROVIDE PERMANENT PAVEMENT REPAIR FOR ALL UTILITY TRENCHES IN EXISTING ROAD OR PAVEMENT TO REMAIN. SAW CUT TRENCH, PAVEMENT, AND GRANULAR BASE THICKNESS TO MATCH EXISTING PAVEMENT. OBTAIN ALL PERMITS REQUIRED FOR TRENCHING.
16. UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, CHAMBERS, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.
17. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:

DRAINAGE	PRIVATE
SEWER	MUNICIPAL
WATER	MUNICIPAL
GAS	LIBERTY UTILITIES
ELECTRIC	EVERSOURCE ENERGY
TELECOMM.	COMCAST XFINITY

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

NOTES & LEGEND

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
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Traffic Engineers
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FILE	18252-02	DR		FB	–	C-02
		CK		CADFILE	18252-02 COVER & DETAILS	

Dec 23, 2025 - 2:14pm
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CONSTRUCTION SEQUENCE NOTES

1. TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, CONSTRUCTION SHALL FOLLOW THIS GENERAL CONSTRUCTION SEQUENCE.
2. MODIFICATIONS TO THE SEQUENCE NECESSARY DUE TO THE CONTRACTOR'S SCHEDULE SHALL INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.
3. CONDUCT A PRE-CONSTRUCTION MEETING WITH THE OWNER, CONTRACTOR, TOWN ENGINEER, AND OTHER TOWN DEPARTMENTS. TOWN INSPECTIONS SHALL BE CONDUCTED AT INTERVALS AS REQUIRED BY THE TOWN OF LONDONDERRY PUBLIC WORKS AND ENGINEERING DEPARTMENT.
4. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
5. CUT AND CLEAR TREES WITHIN AREA OF DISTURBANCE UNLESS OTHERWISE NOTED.
6. CONSTRUCT TEMPORARY AND PERMANENT EROSION CONTROL FACILITIES, AND BASINS PRIOR TO ANY ROUGH GRADING.
7. CONSTRUCT PERMANENT SWALES PRIOR TO ANY ROUGH GRADING. SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
8. GRUB & ROUGH GRADE SITE FOR PHASED WORK AREA. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING. ALL DISTURBED AREAS SHALL BE STABILIZED NO LATER THAN 72 HOURS AFTER CONSTRUCTION ACTIVITY CEASES. IF EARTHWORK TEMPORARILY CEASES ON A PORTION OF OR THE ENTIRE SITE, AND WILL NOT RESUME WITHIN 21 DAYS, THE AREA SHALL BE STABILIZED.
9. AN AREA SHALL BE CONSIDERED STABILIZED IF:
   A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED, OR
   D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
10. CONSTRUCT CULVERTS, STORMWATER MANAGEMENT AREAS, AND SWALES. PLACE FLARED END SECTIONS, RIP-RAP AND OTHER DRAINAGE FACILITIES ACCORDING TO PLAN. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND BASINS PRIOR TO DIRECTING FLOW TO THEM.
11. INSTALL ALL UNDERGROUND UTILITIES.
12. CONSTRUCT BUILDINGS AND STRUCTURES.
13. CONSTRUCT PARKING AND FINISH GRADE SITE ACCORDING TO PLAN. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING.
14. THE CONTRACTOR SHALL INSPECT ALL TEMPORARY EROSION CONTROL MEASURES AT LEAST ONCE A WEEK AND WITHIN TWENTY-FOUR (24) HOURS OF THE END OF A STORM WITH RAINFALL AMOUNT GREATER THAN 0.5 INCHES. THE INSPECTIONS SHALL VERIFY THAT THE STRUCTURAL BMPS SHOWN AND DESCRIBED ON THE PLANS ARE IN GOOD CONDITION AND ARE MINIMIZING EROSION. A MAINTENANCE AND INSPECTION REPORT SHALL BE MADE WITH EACH INSPECTION.
15. COMPLETE PERMANENT SEEDING.
16. REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE ALL AREAS ARE STABILIZED WITH A SUITABLE STAND OF GRASS, PAVEMENT OR COMPACTED GRAVELS.
17. REFER TO THE STORMWATER MANAGEMENT PLAN FOR EROSION CONTROL MEASURES AND SPECIFIC INFORMATION.

GENERAL NOTES

1. WHERE DEPTH OF COVER IS LESS THAN 3 FEET CLASS V REINFORCED CONCRETE PIPE SHALL BE USED.
2. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
4. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
5. EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES STANDARDS. THESE DETAILS SERVE AS A GUIDE ONLY.
6. REFER TO THE TOWN STANDARD DETAILS, LATEST REVISION, FOR THE APPLICABLE REGULATIONS AND STANDARDS.
7. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND BASINS PRIOR TO DIRECTING FLOW TO THEM.
8. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. SEE PHASING PLAN FOR ADDITIONAL INFORMATION ON ALLOWABLE AREAS OF DISTURBANCE.

WINTER CONSTRUCTION

IN ADDITION TO THE OTHER NOTES CONTAINED ON THIS PLAN, THE FOLLOWING MUST BE IMPLEMENTED:

1. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED AS SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
2. ANY AREA WITHIN 50 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIER.
3. TEMPORARY MULCH MUST BE APPLIED WITHIN 7 DAYS OF SOIL EXPOSURE OR PRIOR TO ANY STORM EVENT, BUT AFTER EVERY WORKDAY IN AREAS WITHIN 100 FEET FROM A PROTECTED NATURAL RESOURCE.
4. AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE PERMANENTLY MULCHED THE SAME DAY.
5. IN THE EVENT OF A SNOWFALL GREATER THAN 1 INCH (FRESH OR CUMULATIVE), THE SNOW SHALL BE REMOVED FROM THE AREAS DUE TO BE SEEDED AND MULCHED.
6. LOAM SHALL BE FREE OF FROZEN CLUMPS BEFORE IT IS APPLIED.
7. A DITCH THAT WILL BE CONSTRUCTED DURING THE WINTER MUST BE STABILIZED WITH RIPRAP.
8. ALL PROPOSED VEGETATIVE AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
9. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
10. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF GRAVEL PER NHDOT ITEM 304.3.
11. ALL TEMPORARY AND PERMANENT STABILIZATION REQUIREMENTS DENOTED IN ADDITIONAL PLAN NOTES SHALL BE APPLICABLE DURING WINTER CONSTRUCTION.

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EROSION CONTROL NOTES

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED:

1. INSTALLATION OF SILTATION FENCES AND/OR OTHER EROSION CONTROL MEASURES SHALL BE COMPLETED PRIOR TO THE START OF SITE WORK IN ANY GIVEN AREA. PREFABRICATED SILTATION FENCES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. SILTATION FENCES AND/OR OTHER EROSION CONTROL MEASURES SHALL BE KEPT CLEAN DURING CONSTRUCTION AND REMOVED WHEN ALL SLOPES HAVE A VEGETATIVE COVER OF GREATER THAN 85%. EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE A WEEK AND WITHIN TWENTY-FOUR (24) HOURS OF THE END OF A STORM WITH RAINFALL AMOUNT GREATER THAN 0.5 INCHES.
3. EXISTING VEGETATION IS TO REMAIN UNDISTURBED WHEREVER POSSIBLE.
4. THE AREA OF LAND EXPOSED AND THE TIME OF EXPOSURE SHALL BE MINIMIZED. UNLESS A LARGER AREA IS ALLOWED UNDER ENV-WQ 1505.03(c), NO MORE THAN 5 ACRES SHALL BE DISTURBED (NOT STABILIZED) AT ANY TIME. DISTURBED AREAS MUST BE STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 45 DAYS AFTER INTIAL DISTURBANCE. CUT AND FILL SLOPES SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING.
5. ALL DISTURBED AREAS SHALL HAVE A MINIMUM OF 6" OF LOAM. ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

   PARK SEED MIX (NHDOT TYPE 44) MIN. 135 LBS/ACRE:
   33% CREEPING RED FESCUE (MIN. 45 LBS/ACRE)
   42% PERENNIAL RYEGRASS (MIN. 55 LBS/ACRE)
   21% KENTUCKY BLUEGRASS (MIN. 30 LBS/ACRE)
   4% REDTOP (MIN. 5 LBS/ACRE)

   MODIFIED NEW ENGLAND CONSERVATION WILDLIFE MIX (MIN. 25 LBS/ACRE)*
   CONTAINS: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), BLUE VERVAIN (VERBENA HASTATA), BLACK EYED SUSAN (RUDBECKIA HIRTA), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).
   *SEED MIX SHALL NOT CONTAIN INDIAN GRASS (SORGHASTRUM NUTANS), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), OR COMMON SNEEZEWEED (HELENIUM AUTUNALE).

   TEMPORARY LAWN MIX: (MIN. 47 LBS/ACRE)
   100% ANNUAL RYE

   A. PLACING LOAM ON SITE
      a. ALL SUBGRADE ELEVATIONS SHOULD BE UNIFORMLY GRADED TO RECEIVE LOAM AND SHALL BE INSPECTED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO PLACEMENT OF LOAM.
      b. PLACE LOAM TO FORM A MINIMUM DEPTH OF 4" WHEN ROLLED, UNLESS OTHERWISE INDICATED.
      c. ALL DEPRESSIONS EXPOSED DURING THE ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM.

   B. SEED BED PREPARATION
      AFTER FINISH GRADING AND JUST BEFORE SEEDING, THE AREAS TO BE SEEDED SHALL BE LOOSENED TO PROVIDE A ROUGH, FIRM BUT FINELY PULVERIZED SEEDBED. THE INTENT IS A TEXTURE CAPABLE OF RETAINING WATER, SEED AND FERTILIZER WHILE REMAINING STABLE AND ALLOWING SEED TIME TO GERMINATE. SEED SHALL BE APPLIED TO THE CONDITIONED SEEDBED NOT MORE THAN 48 HOURS AFTER THE SEEDBED HAS BEEN PREPARED.
6. LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE SOIL PRIOR TO OR AT THE TIME OF AT THE TIME OF SEEDING. A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS. PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. SEEDING PRACTICES SHALL COMPLY WITH LOCAL USDA SOIL CONSERVATION SERVICES RECOMMENDATIONS.
7. HAY OR STRAW MULCH OR JUTE MATTING SHALL BE USED WHERE INDICATED ON THE PLANS. IF JUTE MATTING IS USED, IT SHALL BE LAID IN THE DIRECTION OF RUNOFF FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
8. MULCHING SHALL COMPLY WITH:
   ENV-WQ 1506.01 EROSION CONTROL METHODS: TEMPORARY AND PERMANENT MULCHING.
   (a) HAY AND STRAW MULCHES SHALL BE ANCHORED WITH MULCH NETTING OR TACKIFIER SO THAT THEY ARE NOT BLOWN AWAY BY WIND OR WASHED AWAY BY FLOWING WATER;
   (b) MULCH MATERIALS SHALL BE SELECTED BASED UPON SOILS, SLOPE, FLOW CONDITIONS, AND TIME OF YEAR;
   (c) HAY OR STRAW MULCH SHALL BE APPLIED AT A RATE OF 1.5 TO 2 TONS PER ACRE, EQUIVALENT TO 70 TO 90 POUNDS PER 1,000 SQUARE FEET.
   ENV-WQ 1506.02 EROSION CONTROL METHODS: VEGETATION. VEGETATING DISTURBED AREAS SHALL BE COMPLETED ONLY AS SPECIFIED BELOW:
   (h) AREAS SEEDED BETWEEN MAY 15TH TO AUGUST 15TH SHALL BE COVERED WITH HAY OR STRAW MULCH MEETING THE CRITERIA OF ENV-WQ 1506.01(a) THROUGH (c).
9. PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. SEEDED AREAS SHALL BE MULCHED AND PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS.
10. WATER SHALL BE USED FOR DUST CONTROL IN APPROPRIATE AREAS.
11. TEMPORARY DIVERSION SWALES, SEDIMENT TRAPS AND/OR BASINS MUST BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL SOILS ARE STABILIZED. TACKIFIER SHALL BE APPLIED IN ALL TEMPORARY STABILIZATION UTILIZING SEEDING. SEE PHASING PLAN, FOR ADDITIONAL INFORMATION.
12. OWNER SHALL MAINTAIN AT LEAST 85% COVERAGE OF VEGETATION IN GOOD CONDITION (EVENLY DISTRIBUTED, WITH NO BARE AREAS) AND REPAIR AREAS OF EROSION.

OVERWINTER STABILIZATION

1. PERMANENT STABILIZATION CONSISTS OF AT LEAST 85% VEGETATION, PAVEMENT/GRAVEL BASE OR RIPRAP.
2. DO NOT EXPOSE SLOPES OR LEAVE SLOPES EXPOSED OVER THE WINTER OR FOR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY PROTECTED WITH MULCH.
3. APPLY HAY MULCH AT TWICE THE STANDARD RATE (150 LBS. PER 1,000 SF). THE MULCH MUST BE THICK ENOUGH SUCH THAT THE GROUND SURFACE WILL NOT BE VISIBLE AND MUST BE ANCHORED.
4. USE MULCH AND MULCH NETTING OR AN EROSION CONTROL MULCH BLANKET OR MIX FOR ALL SLOPES GREATER THAN 8% OR OTHER AREAS EXPOSED TO DIRECT WIND.
5. INSTALL AN EROSION CONTROL BLANKET IN ALL DRAINAGE WAYS (BOTTOM AND SIDES) WITH A SLOPE GREATER THAN 3%.
6. SEE THE VEGETATION MEASURES FOR MORE INFORMATION ON SEEDING DATES AND TYPES.

CONSTRUCTION SEQUENCE NOTES (FOR ALTERATION OF TERRAIN)

1. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO BMP'S DURING ANY STAGE OF CONSTRUCTION.
2. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
3. AFTER INFILTRATION SYSTEMS ARE EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
4. DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
5. DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED, IF NECESSARY, AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

GRADING & DRAINAGE NOTES

1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 AND THE TOWN OF LONDONDERRY AS APPLICABLE.
2. THE CONTRACTOR SHALL PREPARE, MAINTAIN, AND EXECUTE A S.W.P.P.P. IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
5. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEER'S RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE, INCLUDING AND NOT LIMITED TO DEWATERING METHODS, PERIMETER DRAINS AND TIE INTO STORMWATER MANAGEMENT SYSTEM, ETC.
6. COORDINATE WITH GEOTECHNICAL/STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
7. COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILED GRADING AT BUILDING, AND SIZE AND LOCATION OF ALL BUILDING SERVICES.
8. COORDINATE WITH MECHANICAL AND PLUMBING PLANS FOR ROOF DRAIN INFORMATION.
9. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS, AND ALIGNMENTS.
10. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS, AND LOADING AREAS.
11. THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER DEEPER THAN 1/4" FOR A PERIOD OF MORE THAN 15 MINUTES AFTER FLOODING.
12. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
13. ALL SIDEWALK AND OTHER CURB REVEALS SHALL BE 6" WITH A TOLERANCE OF PLUS OR MINUS 3/8". WHERE SIDEWALK IS TO BE FLUSH, THE PAVEMENT REVEAL SHALL BE 1/4" WITH A TOLERANCE OF 1/8".
14. THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
15. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
16. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND SHALL MEET TOWN OF LONDONDERRY STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
17. STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO TOWN OF LONDONDERRY & NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
18. NO FILL SHALL BE PLACED IN ANY WETLAND AREA.
19. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
20. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
21. DENSITY REQUIREMENTS:

MINIMUM DENSITY*	LOCATION
95%	BELOW PAVED OR CONCRETE AREAS
95%	TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL
90%	BELOW LOAM AND SEED AREAS

   *ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM ASTM D-6938 OR EQUIVOLENT METHOD.
22. PER THE GEOTECHNICAL REPORT: STRUCTURAL FILL SHOULD BE USED FOR ENGINEERED FILLS BELOW PROPOSED BUILINGS, BIOREACTORS, TANKS, RETAINING WALLS, AND FOUNDATION BACKFILL.
23. PER THE GEOTECHNICAL REPORT: COMMON FILL SHOULD BE USED FOR ENGINEERED FILLS BELOW ROADWAY, PARKING, AND OTHER NON-STRUCTURAL AREAS.

Type	Sieve Size	% Passing
Structural Fill, NHDOT 304.3 (Crushed Gravel)	3" (75 mm) 2" (50 mm) 1" (25 mm) No. 4 (4.75 mm) No. 200 (75 µm)	100 95-100 55-85 27-52 0-12* (in sand portion)
Common Fill	8" No. 200 (75 µm)	100 0-15 when placed within 3 feet of finished grade in paved areas

SITE PREPARATION NOTES

1. LONDONDERRY EMERGENCY SERVICES (POLICE/FIRE) SHALL HAVE ACCESS TO THE SITE AT ALL TIMES DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
3. THE CONTRACTOR SHALL VERIFY ALL SURVEY INFORMATION IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
4. EXISTING UTILITY SERVICES TO BE DISCONTINUED ARE TO BE CAPPED AS REQUIRED BY THE RESPECTIVE UTILITY COMPANIES.
5. ALL DEMOLITION AND CONSTRUCTION DEBRIS SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
6. IN THAT THE PROJECT WILL DISTURB MORE THAN 5-ACRES AT ONE TIME A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL OR A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE ("MONITOR") SHALL BE EMPLOYED TO INSPECT THE SITE FROM THE START OF ALTERATION OF TERRAIN ACTIVITIES UNTIL THE SITE IS IN FULL COMPLIANCE WITH THE ALTERATION OF TERRAIN PERMIT ("PERMIT").
   A. DURING THIS PERIOD, THE MONITOR SHALL INSPECT THE SUBJECT SITE AT LEAST ONCE A WEEK, AND IF POSSIBLE, DURING ANY ½ INCH OR GREATER RAIN EVENT (I.E. ½ INCH OF PRECIPITATION OR MORE WITHIN A 24 HOUR PERIOD). IF UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THIS EVENT.
   B. THE MONITOR SHALL PROVIDE TECHNICAL ASSISTANCE AND RECOMMENDATION TO THE CONTRACTOR ON THE APPROPRIATE BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROLS REQUIRED TO MEET THE REQUIREMENTS OF RSA 485-A:17 AND ALL APPLICABLE DES PERMIT CONDITIONS.
   C. WITHIN 24 HOURS OF EACH INSPECTION, THE MONITOR SHALL SUBMIT A REPORT TO DES VIA EMAIL (TO KEVIN THATCHER AT KEVIN.D.THATCHER@DES.NH.GOV).
7. CONTRACTOR TO INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE WORK. REFER TO THE STORMWATER MANAGEMENT PLAN FOR SPECIFIC INFORMATION.
8. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN OF LONDONDERRY'S CONSTRUCTION STANDARDS AND DETAILS (LATEST ADDITION), AND THE TOWN STANDARDS SHALL TAKE PRECEDENCE IN CASE OF ANY DETAILS OR PLANS IN CONFLICT.
8. FINAL CONSTRUCTION SEQUENCING SUBJECT TO CONTRACTOR AND OWNER CONFIRMATION.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

NOTES

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/30/25

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3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 COVER & DETAILS	C-03

Dec 23, 2025 - 2:14pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_CSD\PRODUCTION\18252-02 Cover & Details.dwg

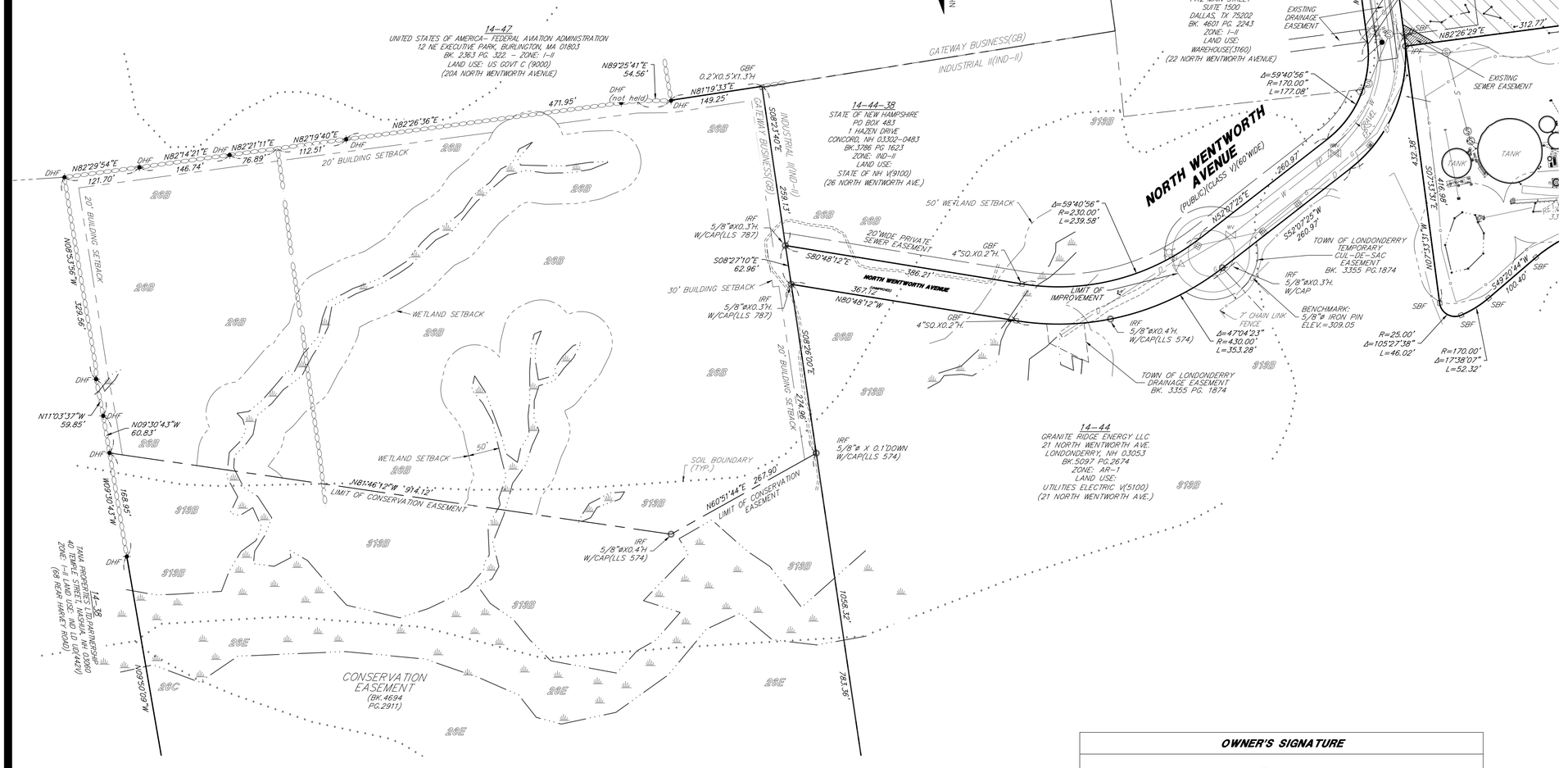
LEGEND

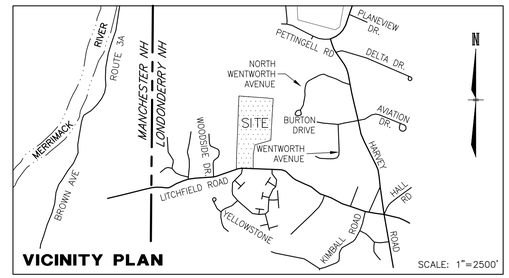
STONE BOUND (FOUND)	SAC	SLOPED ASPHALT CURB	ABUTTING PROPERTY LINE
IRON PIN (FOUND)	OHW	OVERHEAD WIRES	BUILDING SETBACK
DRILL HOLE (FOUND)		STONEWALL	EDGE OF PAVEMENT
UTILITY POLE	302	2' CONTOUR	ZONING DISTRICT BOUNDARY
GUY WIRE		10' CONTOUR	PROPERTY BOUNDARY
BENCHMARK	280	SOILS BOUNDARY	EASEMENT LINE
WATER VALVE	26A	SOILS MAP UNIT SYMBOL	W WATER LINE
HYDRANT		WETLAND DELINEATION	G GAS LINE
CATCH BASIN	5-12	WETLAND FLAG LOCATION	D DRAIN LINE
DIRECTION OF DRAINAGE FLOW		WETLAND SETBACK	S SEWER LINE

N

TFM

NH-SPC 83/86





NOTES

1. OWNER OF RECORD OF MAP 14 LOT 39: CRAIG FOWLER (TRUSTEE)
   NICHOLAS F. CODNER 2012 TRUST
   162 LITCHFIELD ROAD
   LONDONDERRY, NH 03053
   DEED REFERENCE: BK. 5336 PG. 1874
   AREA = 2,155,033 S.F. OR 49.473 ACRES
2. 14-39 INDICATES TAX MAP AND LOT NUMBER.
3. THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS PRESENT ON TAX MAP 14, LOT 39, LOCATED AT 162 LITCHFIELD ROAD AND THE WESTERLY PORTION OF NORTH WENTWORTH AVENUE IN LONDONDERRY, NEW HAMPSHIRE, AS SHOWN HEREON, AND NO OTHER PURPOSE.
4. CURRENT ZONING:
   GATEWAY BUSINESS (GB)
   MINIMUM LOT SIZE: 43,560 S.F./1 ACRE (SUBJECT TO PLANNING BOARD APPROVAL)
   MINIMUM LOT FRONTAGE: 150 FEET
   MAXIMUM BUILDING HEIGHT: 50 FEET
   MINIMUM GREEN SPACE: 25 PERCENT
   MINIMUM BUILDING SETBACKS: FRONT 30 FEET. SIDE & REAR 20 FEET.

   AGRICULTURAL/RESIDENTIAL (AR-1)
   MINIMUM LOT SIZE: (MUNICIPAL WATER & SEWER)
   SINGLE FAMILY (1-2 BEDROOMS): 35,000 S.F.
   SINGLE FAMILY (3 OR MORE BEDROOMS): 40,000 S.F.
   DUPLEX (2-4 BEDROOMS)(BOTH DWELLINGS): 52,500 S.F.
   DUPLEX (5 OR MORE BEDROOMS): 60,000 S.F.
   (NO MUNICIPAL SEWER)
   SINGLE OR TWO FAMILY RESIDENCE: 43,560 S.F./1 ACRE
   MINIMUM LOT FRONTAGE (CLASS V OR BETTER)
   SINGLE FAMILY: 150 FEET
   TWO FAMILY: 200 FEET
   MAXIMUM BUILDING HEIGHT: 35 FEET
   MINIMUM BUILDING SETBACKS: FRONT 40 FEET, SIDE & REAR 15 FEET.

   INDUSTRIAL II (IND-II)
   MINIMUM LOT SIZE: 43,560 S.F. (SUBJECT TO PLANNING BOARD APPROVAL)
   MINIMUM LOT FRONTAGE (CLASS V OR BETTER): 150 FEET
   MAXIMUM BUILDING HEIGHT: 50 FEET
   MINIMUM BUILDING SETBACKS: FRONT 30 FEET, SIDE & REAR 20 FEET.
5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER: 33015C0318E, EFFECTIVE DATE: MAY 17, 2005, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.
6. HORIZONTAL DATUM: NAD 83/86. VERTICAL DATUM: NGVD 29. BENCHMARKS SET: AS NOTED
7. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL MAY DETERMINE.
8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.
9. SEE SHEETS S-03 THROUGH S-09 FOR BENCHMARK INFORMATION.
10. SEE SHEETS S-03 THROUGH S-09 FOR DETAILED UTILITY INFORMATION.

Graphic Scale

100' 50' 0' 100' 200' 300' 400'

1" = 100'

TAX MAP 14 LOT 39

EXISTING CONDITIONS PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
ARCO/MURRAY
113 NORTH MAY STREET, CHICAGO, IL 60607

SCALE: 1" = 100' **JUNE 12, 2024**

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REV.	DATE	DESCRIPTION	DR	CK
2	12-18-25	PER REVIEW COMMENTS FROM TOWN	MRD	MRD
1	11-17-25	REVISE SEWER EASEMENT DEED REFERENCE	MRD	MRD

CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION "IT'S THE LAW"
811 Dig Safe MA-ME-NH-RI-VT

WETLAND SCIENTIST CERTIFICATION

JURISDICTIONAL WETLANDS SHOWN ON THIS PLAN WERE DELINEATED ON AUGUST 16, 2024 BY CHRISTOPHER K. DANFORTH CWS #077. THE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2, JANUARY 2012. DOMINANT HYDRIC SOILS WITHIN THE WETLAND(S) WERE IDENTIFIED USING "FIELD INDICATORS OF HYDRIC SOILS OF THE UNITIED STATES" A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, NRCS, VERSION 8.1, 2017. DOMINANCE OF HYDROPHYTIC VEGETATION WAS DETERMINED USING THE USACE NATIONAL WETLAND PLANT LIST, NWPL 2016 VERSION 3.3 HTTP://WETLAND_PLANTS.USACE.ARMY.MIL.

STATE OF NEW HAMPSHIRE
CHRISTOPHER K. DANFORTH
No. 077
8/28/2024
CERTIFIED WETLAND SCIENTIST

OWNER'S SIGNATURE

OWNER OR AUTHORIZED AGENT — 12/22/2025 DATE

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. FURTHER, THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY MADE BY THIS OFFICE IN MAY OF 2024. SAID SURVEY HAS AN ERROR OF CLOSURE OF NOT LESS ACCURACY THAN ONE PART IN TEN THOUSAND (1:10,000).

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Michael R Dahlberg — 12-22-25
LICENSED LAND SURVEYOR — DATE

STATE OF NEW HAMPSHIRE No. 714 MICHAEL R. DAHLBERG LICENSED LAND SURVEYOR
Michael R Dahlberg SIGNATURE

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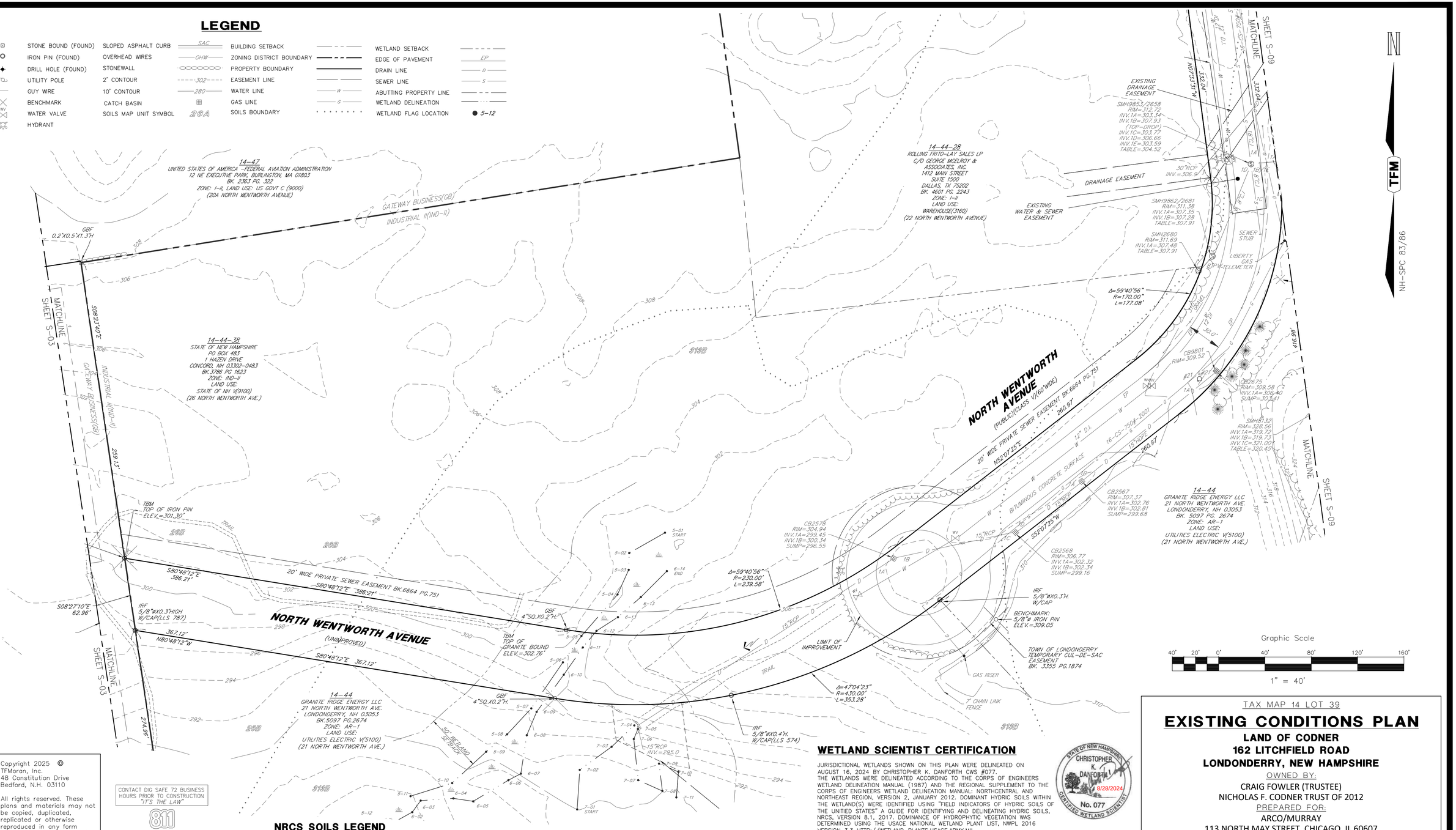
FILE		DR	TNB	FB	2229/2230	
	18252.01	CK	MRD	CADFILE	18252-01 Survey	S-01

LEGEND

STONE BOUND (FOUND)	SLOPED ASPHALT CURB	SAC	BUILDING SETBACK	WETLAND SETBACK	
IRON PIN (FOUND)	OVERHEAD WIRES	OHW	ZONING DISTRICT BOUNDARY	EDGE OF PAVEMENT	EP
DRILL HOLE (FOUND)	STONEWALL		PROPERTY BOUNDARY	DRAIN LINE	D
UTILITY POLE	2' CONTOUR	302	EASEMENT LINE	SEWER LINE	S
GUY WIRE	10' CONTOUR	280	WATER LINE	ABUTTING PROPERTY LINE	
BENCHMARK	CATCH BASIN		GAS LINE	WETLAND DELINEATION	
WATER VALVE	SOILS MAP UNIT SYMBOL	26A	SOILS BOUNDARY	WETLAND FLAG LOCATION	5-12
HYDRANT					



Graphic Scale

40' 20' 0' 40' 80' 120' 160'

1" = 40'

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811 Dig Safe MA-ME-NH-RI-VT

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26E	WINDSOR LOAMY SAND, 15 TO 60 PERCENT SLOPES
45B	MONTAUK FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES, VERY STONY
116	SCARBORO MUCK, COASTAL LOWLAND, 0 TO 3 PERCENT SLOPES
319B	DEERFIELD LOAMY FINE SAND, 3 TO 8 PERCENT SLOPES

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STATE OF NEW HAMPSHIRE · CHRISTOPHER K. DANFORTH · No. 077 · 8/28/2024 · CERTIFIED WETLAND SCIENTIST

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Michael R Dahlberg — 12-22-25
LICENSED LAND SURVEYOR — DATE

STATE OF NEW HAMPSHIRE · LICENSED LAND SURVEYOR · No. 714 · MICHAEL R. DAHLBERG · SIGNATURE

TAX MAP 14 LOT 39

EXISTING CONDITIONS PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
ARCO/MURRAY
113 NORTH MAY STREET, CHICAGO, IL 60607

SCALE: 1" = 40' **JUNE 12, 2024**

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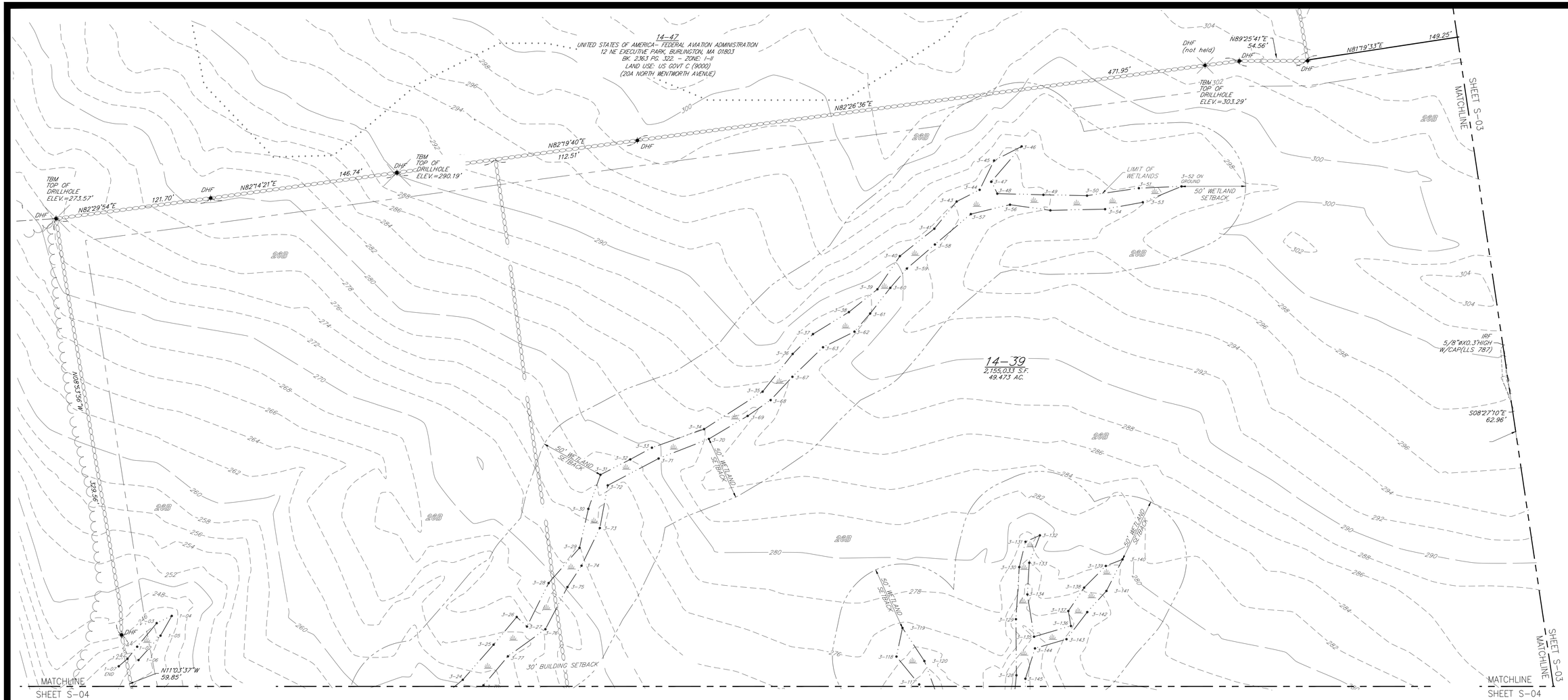
FILE		DR	TNB	FB	2229/2230	
	18252.01	CK	MRD	CADFILE	18252-01 Survey	S-02



LEGEND

STONE BOUND (FOUND)	SLOPED ASPHALT CURB	SAC	BUILDING SETBACK
IRON PIN (FOUND)	OVERHEAD WIRES	OHW	ZONING DISTRICT BOUNDARY
DRILL HOLE (FOUND)	STONEWALL		PROPERTY BOUNDARY
UTILITY POLE	2' CONTOUR	302	EASEMENT LINE
GUY WIRE	10' CONTOUR	280	WATER LINE
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WATER VALVE	SOILS MAP UNIT SYMBOL	26A	DRAIN LINE
HYDRANT	WETLAND DELINEATION		SEWER LINE
CATCH BASIN	WETLAND FLAG LOCATION	5-12	ABUTTING PROPERTY LINE
MAILBOX	WETLAND SETBACK		
EDGE OF PAVEMENT	DIRECTION OF DRAINAGE FLOW		

NRCS SOILS LEGEND

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313B	DEERFIELD LOAMY FINE SAND, 3 TO 8 PERCENT SLOPES

Graphic Scale

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811 Dig Safe MA·ME·NH·RI·VT

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STATE OF NEW HAMPSHIRE CHRISTOPHER K. DANFORTH No. 077 CERTIFIED WETLAND SCIENTIST 8/28/2024

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Michael R Dahlberg 12-22-25
LICENSED LAND SURVEYOR DATE

STATE OF NEW HAMPSHIRE No. 714 MICHAEL R. DAHLBERG LICENSED LAND SURVEYOR
Michael R Dahlberg
SIGNATURE

TAX MAP 14 LOT 39

EXISTING CONDITIONS PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
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NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
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SCALE: 1" = 40' **JUNE 12, 2024**

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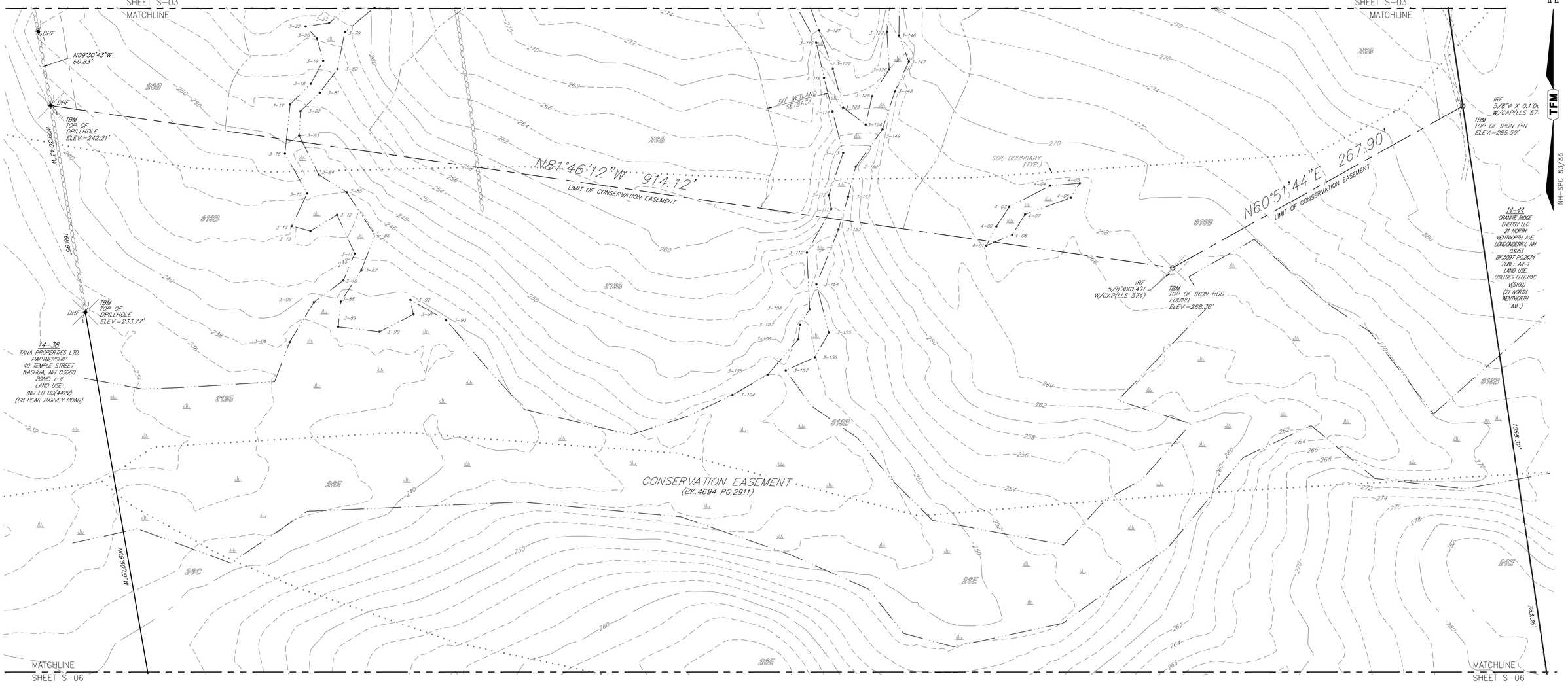
FILE		DR		FB		
18252.01		TNB		2229/2230		S-03
		CK	MRD	CADFILE	18252-01 Survey	



LEGEND

STONE BOUND (FOUND)	SLOPED ASPHALT CURB	SAC	BUILDING SETBACK
IRON PIN (FOUND)	OVERHEAD WIRES	OHW	ZONING DISTRICT BOUNDARY
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40' 20' 0' 40' 80' 120' 160'

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2	12-18-25	PER REVIEW COMMENTS FROM TOWN	MRD	MRD
1	11-17-25	REVISE SEWER EASEMENT DEED REFERENCE	MRD	MRD

WETLAND NOTE

THE WETLANDS DEPICTED ON THIS SHEET AND THOSE LOCATED WITHIN THE EXISTING CONSERVATION EASEMENT WERE DIGITIZED FROM PLANS OF RECORD PREPARED FOR THE STATE OF NEW HAMPSHIRE AND RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAN #

WETLAND SCIENTIST CERTIFICATION

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CHRISTOPHER K. DANFORTH
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Michael R Dahlberg 12-22-25
LICENSED LAND SURVEYOR DATE

STATE OF NEW HAMPSHIRE
No. 714
MICHAEL R. DAHLBERG
LICENSED LAND SURVEYOR
SIGNATURE

TAX MAP 14 LOT 39

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SCALE: 1" = 40' **JUNE 12, 2024**

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FILE		DR	TNB	FB	2229/2230	
	18252.01	CK	MRD	CADFILE	18252-01 Survey	S-04

NOTES

1. SITE PREP. NOTES ON SHEET C-03.
2. SEE GRADING AND DRAIANGE NOTES ON SHEET C-03
3. SEE CONSTRUCTION SEQUENCING AND EROSION CONTROL NOTES ON SHEET C-03
4. SEE STORMWATER MANAGEMENT NOTES ON C-12
5. SEE CONSTRUCTION PHASING NOTES ON SHEET PH-1.
6. THE EDGE OF THE CONSERVATION OVERLAY AND NON-DISTURBANCE (NO-CUT) ZONES SHALL BE APPROPRIATELY DELINEATED IN THE FIELD PRIOR TO CONSTUCTION.

SITE SPECIFIC SOILS LEGEND

SYMBOL	MAP UNIT	DRAINAGE	HSG
26	WINDSOR	WELL	A
313	DEERFIELD	MODERATELY WELL	B
546/P	WALPOLE	VERY POORLY	C

SLOPE DESIGNATION	PERCENT SLOPE
B	0 TO 8%
C	8 TO 15%
D	15 TO 25%
E	>25%

STATE OF NEW HAMPSHIRE
BRUCE A. GILDAY
No. 012
CERTIFIED SOIL SCIENTIST

SOILS CERTIFICATION

THE SITE SPECIFIC SOIL MAPPING WAS PERFORMED DECEMBER 2024 BY BRUCE A. GILDAY, CERTIFIED SOIL SCIENTIST #012, OF BAG LAND CONSULTANTS, IN CONCORD, NH. THIS MAPPING WAS PERFORMED ACCORDING TO THE STANDARDS OF THE "SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE AND VERMONT," VERSION 7.0, JULY 2021. THESE STANDARDS ARE PUBLISHED BY THE SOCIETY OF SOIL SCIENTISTS OF NORTHERN NEW ENGLAND (SSSNNE).

WILDLIFE EXCLUSIONARY FENCING (POSTS INTERIOR TO SITE)

STONEWALL TO BE RELOCATED WITHIN LIMITS OF WORK WHERE PRACTICAL, COORDINATE WITH OWNER (TYP.)

PROPOSED TREELINE

CLEAR AND GRUB

81,954 SF 50' WETLAND BUFFER IMPACT AREA

APPROX. LIMITS OF DISTURBANCE

WETLAND IMPACT AREA
199 SF. TEMPORARY IMPACT
8,132 SF. PERMANENT IMPACT

25,298 SF 50' WETLAND BUFFER IMPACT AREA

WETLAND IMPACT AREA
65 SF. TEMPORARY IMPACT
439 SF. PERMANENT IMPACT

SILT SOCK OR MULCH BERM WITH SILT FENCE WITHIN 50' OF WETLAND BOUNDARY (TYP.)

SILT SOCK OR MULCH BERM (INTERIOR) WITH SILT FENCE (TYP.)

INSTALL CONSERVATION OVERLAY DISTRICT SIGN 50' O.C. (MAX)

PROPOSED TREELINE (TYP.)

INSTALL PERIMETER CONTROL WITH INTERIOR WILDLIFE RAMPS EVERY 75' (SEE DETAIL)

LIMIT OF CONSERVATION EASEMENT

NORTH WENTWORTH AVENUE

MATCHLINE

STABILIZED CONSTRUCTION ENTRANCE

RIGHTS TO BUILD AND MAINTAIN ACCESS, UTILITIES, AND WAYFINDING SIGNAGE TO BE CONVEYED TO TAX MAP 14 LOT 39-2. FINAL FORM OF CONVEYENCE TO BE DETERMINED. AREA =38,7±

20' WIDE PRIVATE SEWER EASEMENT B. 3355 P. 1872

TOWN OF LONDONDERRY TEMPORARY CUL-DE-SAC EASEMENT BOOK 3355, PAGE 1874

AREA OF WETLAND TO BE CLEARED WITH STUMPS LEFT IN PLACE

WETLAND IMAPCT
366 SF. PERMANENT
84 SF. TEMPORARY

4,470 SF 50' WETLAND BUFFER IMPACT AREA
STREAM BED SCOUR PROTECTION

5,488 SF 50' WETLAND BUFFER IMPACT AREA

HORIZONTAL SCALE 1"=50'
50 25 0 50

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SITE PREPARATION & DEMOLITION PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 50' **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
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Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
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Phone (603) 472-4488
Fax (603) 472-9747
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FILE	DR		FB		
18252-02		CK		CADFILE	18252-02 SITE PLAN

C-04

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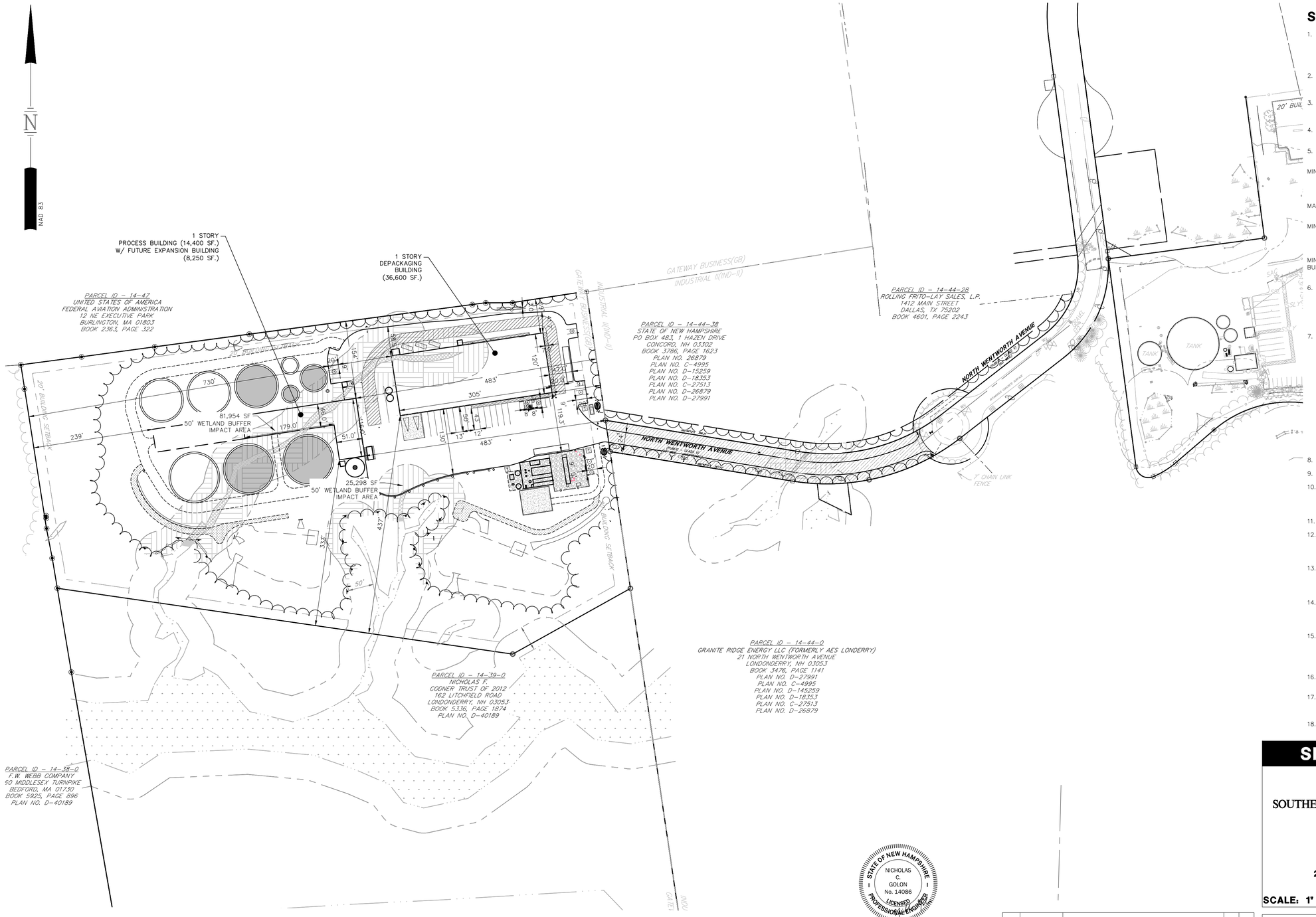
Dec 23, 2025 - 2:15pm
P:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 SITE PLAN.dwg



SITE DATA

1. OWNER OF RECORD OF MAP 14 LOT 39:

   CRAIG FOWLER (TRUSTEE) NICHOLAS F. CODNER TRUST 2012, 162 LITCHFIELD ROAD
   DEED REFERENCE TO PARCEL IS BK 5336 PG 1874
   AREA OF PARCEL = 2,155,033± SF OR 49.473± ACRES

2. ZONED: GATEWAY BUSINESS (GB)
   EXISTING USE: UNDEVELOPED
   PROPOSED USE: ORGANIC WASTE PROCESSING FACILITY

3. THE PURPOSE OF THIS PLAN IS TO CONSTRUCT A RESOURCE RECOVERY CENTER. ASSOCIATED IMPROVEMENTS INCLUDE AND ARE NOT LIMITED TO ACCESS, GRADING, STORMWATER MANAGEMENT SYSTEMS, UTILITIES, LIGHTING, AND LANDSCAPING.

4. TYPICAL HOURS OF OPERATION (OFFICE): 7 AM TO 4 PM MONDAY TO FRIDAY. FACILTY RUNS 24–7 YEAR ROUND WITH EXCEPTIONS FOR MAINTENANCE.

5. DIMENSIONAL REQUIREMENTS (CURRENT ZONING)

	REQUIRED:	PROVIDED:
MINIMUM LOT DIMENSIONS:		
LOT AREA	43,560 SF (1.00± AC)	667,167.7 SF* (15.316± AC)
LOT FRONTAGE	150 FT	60 FT
MAXIMUM STRUCTURE DIMENSIONS:		
STRUCTURE HEIGHT	50 FT	39.5 FT
MINIMUM SETBACKS/BUFFER:		
BUILDING FRONT	30 FT	96.6 FT
BUILDING SIDE	20 FT	69.4 FT
BUILDING REAR	20 FT	351.9 FT
MINIMUM GREEN SPACE	25%	64%%
BUILDING COVERAGE	N/A	

   * UPON FINALIZATION AND RECORDING OF LOT SUBDIVISION

6. PARKING REQUIREMENTS

PARKING SPACES (SEE CALCULATION)	1 PER 800 SF FA	64 SPACES
ACCESSIBLE SPACES (REQ'D BY ADA)	3 FOR 51–75 SPACES	3 SPACES
PARKING SPACE SIZE	9 FT X 20 FT	9 FT X 20 FT
AISLE WIDTH	22 FT	22 FT

7. PARKING CALCULATIONS

   REQUIRED PARKING RATIO:
   RESOURCE RECOVERY CETNER: 1 SPACE PER 800 SF FLOOR AREA

TOTAL REQUIRED = 50,700 SF FA/800 SF	= 64	SPACES
TOTAL	= 64	SPACES

   PARKING PROVIDED PER ITE:

   LAND USE CODE (LUC) 110 – GENERAL LIGHT INDUSTRIAL

   AVG. RATE = 0.76 SPACES/EMPLOYEE

   30 EMPLOYEES x 0.76 SPACES/EMPLOYEES = 23 SPACES

   THE SITE PROVIDES 23 CAR PARKING SPACES AND 6 TRUCK PARKING SPACES.

8. THIS PLANSET IS ON FILE AT THE TOWN OF LONDONDERRY PLANNING DEPARTMENT

9. THE SITE WILL BE SERVICED BY MUNICIPAL SEWER AND WATER.

10. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0318E, EFFECTIVE DATE OF MAY 17, 2005, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.

11. ALL BUILDINGS ON SITE SHALL BE 1 STORY.

12. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEAUSRES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE TOWN.

13. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO TOWN OF LONDONDERRY SUBDIVISION REGULATIONS AND THE LATEST EDITION OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION.

14. IN ACCORDANCE WITH SECTION 6.01 OF THE LONDONDERRY SITE PLAN REGUALTIONS AND RSA 676.13, ALL IMPROVMENTS SPECIFIED ON THESE SITE PLAN SHALL BE CONSTRUCTED, COMPLETED, INSPECTED AND APPROVED BY THE TOWN OF LONDONDERRY PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

15. IN ACCORDANCE WITH SECTION 6.01 OF THE LONDONDERRY SITE PLAN REGULATIONS AND RSA 676:12, ALL OFF–SITE IMPROVEMENTS SPECIFIED ON THESE SITE PLAN SHALL BE CONSTRUCTED, COMPLETED, INSPECTED AND APPROVED BY THE TOWN OF LONDONDERRY (AND/OR THE NHDOT, IF APPLICABLE) PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

16. APPLICANT SHALL COORDINATE TRAINING MEETING WITH LONDONDERRY POLICE & FIRE DEPARTMENTS.

17. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT DEFINCIENCIES EXIST IN THE APPROVED DESIGN DRAWINGS, THE OWNER SHALL BE REQUIRED TO CORRECT THE DEFICIENCIES TO MEET THE REGULATIONS AT NO EXPENSE TO THE TOWN.

18. THIS PLAN SET HAS BEEN PREPARED FOR THE FULL BUILDOUT OF THE FACILITY NOTING A PHASED CONSTRUCTION SCHEDULE.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

OVERALL SITE PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 100' **SEPTEMBER 8, 2025**

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OWNER'S SIGNATURE

OWNER OR AUTHORIZED AGENT — DATE 12/22/2025

Approved by the Londonderry, NH Planning Board for Phase _____

on Date: _____

Certified by:

_____

_____

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=100'
100 50 0 100

REV	DATE	DESCRIPTION	DR	CK
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4	10/24/2025	NHF&G APPROVAL	JD	NG
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FILE 18252-02 | DR | FB | CK | CADFILE 18252-02 SITE PLAN | C-05

Dec 23, 2025 - 2:15pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 SITE PLAN.dwg

14-47
UNITED STATES OF AMERICA- FEDERAL AVIATION ADMINISTRATION
12 NE EXECUTIVE PARK, BURLINGTON, MA 01803
BK. 2363 PG. 322 - ZONE: I-II
LAND USE: US GOVT C (9000)
(20A NORTH WENTWORTH AVENUE)

N
NAD 83

NOTES

1. SEE NOTES ON SHEET C-03.
2. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS NOTED OTHERWISE.
3. LIGHTING, SIGNAGE, LANDSCAPING, AND SCREENING SHALL MEET THE REQUIREMENTS OF THE LONDONDERRY ZONING ORDINANCE AND SITE PLAN REGULATIONS.
4. SNOW SHALL NOT BE STOCKPILED IN STORMWATER BMP'S, WETLAND BUFFERS, OR WETLANDS. SEE SNOW STORAGE LOCATIONS. IN THE EVENT THAT THE SNOW STORAGE AREAS PROVIDED ON THE SITE ARE COMPLETELY UTILIZED, EXCESS SNOW SHALL BE TRANSPORTED OFF SITE FOR DISPOSAL IN ACCORDANCE WITH NHDES REGULATION. IF SNOW IS STORED WITHIN PARKING AREA, KEEP CATCH BASINS CLEAR.

MODULAR BLOCK RETAINING WALL
NATURAL GAS GENERATOR PAD
10,000 GAL LIFT STATION
26' x 32' SCREENING ROOM (RECEIVIING)
DETENTION BASIN #1
20' BUILDING SETBACK
50' NHDES P/T SETBACK
EOG
FUTURE FET
FUTURE 81' TRIBRID-BIOREACTOR
81' TRIBRID-BIOREACTOR
FET 1
FET 2
CB5
CB4
CCB
NO PARKING FIRE ACCESS
50' WETLAND BUFFER
ROLL UP DOOR
DOWN CAST WALL PACK (TYP.)
PFO1B
ODOR CONTROL PAD
DUMPSTER/COMPACTOR AREA
1 STORY DEPACKAGING BUILDING (36,600 SF)
FF=297
H=39.5'
15,000 GAL TANK
6' DIA RE-AERATION TANK
1 STORY PROCESS BUILDING (±14,100 SF)
FF=296
H=24.5'
TIPPING TRUCK GARAGE DOORS (RECEIVING)
LOADING DOCK DOOR (TYP.)
R7-8
R7-8a
(BUILDING MOUNTED)
CONC. WHEEL STOP (TYP.)
ROLL UP DOOR
RECEIVING
ACCESS DRIVE
CONCRETE APRON (SEE DETAILS)
CONCRETE RETAINING WALL (BY OTHERS)
11' X 26' BIOSOLIDS STORAGE BIN (ELEVATED)
BIT. CONC. PAVEMENT (TYP.)
OUTBOUND SCALE
INBOUND SCALE
SNOW STORAGE (TYP.)
18' DOWN CAST LIGHT POLE (TYP.)
INDUSTRIAL PARK DRIVE (PUBLIC)
TRANSFORMER PAD 20'L X 8'W CONC. PAD FOR SEWER PUMP STATION AND BACK UP GENERATOR
RELOCATED STONES
TRANSFORMER P
INTERCONNECTION FACILITY YARD
LOAM AND SEED (TYP.)
FUTURE PROCESS BUILDING (±8,250 SF)
WETLAND IMPACT AREA
199 SF. TEMPORARY IMPACT
8,132 SF. PERMANENT IMPACT
FUTURE 96' TRIBRID-BIOREACTOR
96' TRIBRID-BIOREACTOR
20' GRAVEL DRIVE
BIOGAS WATER KO
ENCLOSED FLARE AND CLEAR RADIUS
GUARDRAIL
BIOGAS UPGRADING YARD
TRANSFORMER PAD
H_2S MEDIA LAYDOWN AREA (CONC. PAD)
12' MAINTENANCE DRIVE
WETLAND IMPACT AREA
65 SF. TEMPORARY IMPACT
439 SF. PERMANENT IMPACT
REINFORCED MODULAR BLOCK RETAINING WALL
FILTRATION BASIN #1 AREA
FILTRATION BASIN #2 AREA
PROPOSED TREELINE (TYP.)
WETLAND CONSERVATION BOUNDARY SIGNS (TYP.)
LIMIT OF CONSERVATION EASEMENT
LIMIT OF CONSERVATION EASEMENT
CONSERVATION EASEMENT (BOOK 4634, PAGE 2911)
20' BUILDING SETBACK

HORIZONTAL SCALE 1"=40'
40 20 0 40

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SITE LAYOUT PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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OWNER OR AUTHORIZED AGENT — DATE 12/22/2025

Approved by the Londonderry, NH Planning Board for Phase _____
on Date:_____
Certified by:
_____
_____

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

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FILE: 18252-02 | DR: | FB: | CK: | CADFILE: 18252-02 SITE PLAN | C-06

Dec 23, 2025 - 2:16pm
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BK. 2363 PG. 322 - ZONE: I-A
LAND USE: US GOVT C (9000)
(20A NORTH WENTWORTH AVENUE)

N
NAD 83

DETENTION BASIN 1
W/ LINER SEE DETAIL
BOTTOM = 294.00
BERM = 296.00
EMERGENCY SPILLWAY = 295.50
3'Wx5'L RIPRAP SPILLWAY
ELEV=295.50

TBM
TOP OF DRILLHOLE
ELEV=290.12'

20' BUILDING SETBACK

50' NHDES P/T SETBACK

81'
TRIBRID-BIOREACTOR

FUTURE 81'
TRIBRID-BIOREACTOR

FUTURE 81'
TRIBRID-BIOREACTOR

FUTURE PROCESS
BUILDING
(±8,250 SF)

INV.O ROOF DRAIN = 289.50

1 STORY
PROCESS
BUILDING
(±14,100 SF)
FF=296
H=24.5'

96'
TRIBRID-BIOREACTOR

96'
TRIBRID-BIOREACTOR

FUTURE 96'
TRIBRID-BIOREACTOR

1 STORY
DEPACKAGING BUILDING
(36,600 SF)
FF=297
H=39.5'

TRENCH DRAIN TD1
RIM = 294.0
INV.O = 289.5

MODULAR BLOCK
RETAINING WALL
TOW=303.0
BOW=300.0

MODULAR BLOCK
RETAINING WALL
TOW=300.0
BOW=297.5

TBM
TOP OF DRILLHOLE
ELEV=303.29'

MATCHLINE (C-13)

RIP RAP PLUNGE POOL
BOT. = 276.00
SEE SHEET D22

HEADWALL #1
INV=277.0

CUTOFF SWALE W/
UNDERDRAINED TRENCH
W=3'
D=0.25'
S=0.065

HEADWALL #2
INV=274.0

10.4'Wx15.6'L
RIPRAP OUTLET
ELEV=276.40

REINFORCED MODULAR
BLOCK RETAINING WALL
TOW=279.0
BOW=262.0

TOW=279
BOW=262

TOW=278
BOW=262

TOW=270
BOW=264

TOW=260
BOW=257

HEADWALL 3
INV.O = 265.75

OS1
RIM=277.30

6'Wx9'L RIPRAP SPILLWAY
ELEV=277.50

FILTRATION BASIN 1
BOTTOM = 273.00
FILTER MEDIA = 271.50
BERM = 278.00
EMERGENCY SPILLWAY = 277.50

LIMIT OF CONSERVATION EASEMENT

FOREBAY 1
BOTTOM = 274.00
BERM = 278.00

HEADWALL 5
INV.O = 277.00

HEADWALL 4
INV.O = 277.00

OS2
RIM=279.00

FILTRATION BASIN 2
BOTTOM = 277.00
FILTER MEDIA = 275.50
BERM = 280.00
EMERGENCY SPILLWAY = 279.50
6'Wx9'L RIPRAP SPILLWAY
ELEV=279.50

RIPRAP
APRON
(TYP.)

FOREBAY 2
6' x 122' BOTTOM = 276.50
BERM = 280.00
21'W x 9'L RIPRAP WEIR
ELEV=278.80

RIPRAP SWALE
W=8'
D=6"
S=0.06 '/'

20' BUILDING SETBACK

CB1, CB2, CB3 5'Ø, CB4, CB5, CB6, CB8A 5'Ø, CB10, CB12, CB13, CB13A 5'Ø, CB14 5'Ø, CB15, CB16, CB17 5'Ø, CB18, CB19, CB20, CB21, CB22, CB23, CB24, CB27, CB28, CB30
DMH1, DMH3, DMH5, DMH5A, DMH6, DMH9 5'Ø, DMH11 5'Ø, DMH23, DMH24, DMH25, DMH 26, DMH RD

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

GRADING & DRAINAGE PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
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SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=40'
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FILE	18252-02	DR		FB		C-07
		CK		CADFILE	18252-02 SITE PLAN	

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Pipe Table				
Pipe Name	SIZE	MATERIAL	Length	Slope
CB10–CB12	15"	HDPE PIPE	169 LF	0.010
DMH1–CB12	15"	HDPE PIPE	65 LF	0.010
CB14–DMH9	24"	HDPE PIPE	81 LF	0.010
CB13–CB14	15"	HDPE PIPE	71 LF	0.012
CB1–CB2	15"	HDPE PIPE	22 LF	0.010
CB2–DMH1	15"	HDPE PIPE	156 LF	0.010
CB12–CB18	15"	HDPE PIPE	60 LF	0.010
CB6–CB8A	24"	HDPE PIPE	153 LF	0.008
CB8A–CB14	18"	HDPE PIPE	131 LF	0.010
DMH9–POND2	30"	HDPE PIPE	24 LF	0.005
CB30–DMH11	24"	HDPE PIPE	92 LF	0.010
DMH11–POND1	24"	HDPE PIPE	46 LF	0.005
CB28–DMH11	15"	HDPE PIPE	25 LF	0.008
CB27–DMH26	15"	HDPE PIPE	28 LF	0.010
CB20–CB21	15"	HDPE PIPE	94 LF	0.025
CB21–CB22	15"	HDPE PIPE	44 LF	0.009
CB22–DMH23	15"	HDPE PIPE	73 LF	0.010
DMH23–DMH24	15"	HDPE PIPE	58 LF	0.010
CB24–DMH25	15"	HDPE PIPE	82 LF	0.011
DMH25–DMH26	15"	HDPE PIPE	113 LF	0.009
DMH26–DMH11	18"	HDPE PIPE	126 LF	0.010
DMH6–CB8A	24"	HDPE PIPE	80 LF	0.010
DMH24–CB23	15"	HDPE PIPE	37 LF	0.009
OS3–DMH5	18"	HDPE PIPE	199 LF	0.010
DMH5–DMH5A	24"	HDPE PIPE	132 LF	0.010

Pipe Table				
Pipe Name	SIZE	MATERIAL	Length	Slope
CB4–DMH5	18"	HDPE PIPE	191 LF	0.010
CB23–CB24	15"	HDPE PIPE	110 LF	0.010
CB13A–CB13	15"	HDPE PIPE	102 LF	0.010
CB17–DMH9	18"	HDPE PIPE	108 LF	0.015
CB5–CB4	15"	HDPE PIPE	14 LF	0.007
TD–CB13A	24"	HDPE PIPE	56 LF	0.010
CB18–CB17	18"	HDPE PIPE	45 LF	0.010
CB19–CB17	15"	HDPE PIPE	50 LF	0.010
CB3–DMH3	15"	HDPE PIPE	90 LF	0.010
DMH3–CB10	15"	HDPE PIPE	82 LF	0.010
OS2–OUT	15"	HDPE PIPE	31 LF	0.016
OS1–OUT	15"	HDPE PIPE	60 LF	0.004
CB16–HW2	15"	HDPE PIPE	61 LF	0.030
CB15–OS3	15"	HDPE PIPE	38 LF	0.009
DMH RD–CB28	15"	HDPE PIPE	39 LF	0.005
PROCESS –DMH RD	15"	CORRUGATED HDPE PIPE	72 LF	0.005
DMH5A–DMH6	24"	CORRUGATED HDPE PIPE	114 LF	0.010

NOTES

1. SEE NOTES ON SHEET C-02.
2. SEE GRADING AND DRAINAGE PLAN ON SHEET C-07

STRUCTURE TABLE		
STRUCTURE NAME	STRUCTURE DETAILS	SUMP
CB1	RIM = 297.43 CB1–CB2 INV OUT = 293.18	0.0
CB2	RIM = 297.43 CB1–CB2 INV IN = 292.96 CB2–DMH1 INV OUT = 292.64	0.0
CB3 5'Ø	RIM = 296.74 CB4–DMH5 INV IN = 289.15 CB3–DMH3 INV OUT = 289.05	0.0
CB4	RIM = 297.46 CB5–CB4 INV IN = 291.16 CB4–DMH5 INV OUT = 291.06	0.0
CB5	RIM = 296.65 CB5–CB4 INV OUT = 291.26	0.0
CB6	RIM = 294.80 CB6–CB8A INV OUT = 288.00	0.0
CB8A 5'Ø	RIM = 293.10 CB6–CB8A INV IN = 286.82 CB8A–CB14 INV IN = 284.69	0.0
CB10	RIM = 296.00 DMH3–CB10 INV IN = 286.15 CB10–CB12 INV OUT = 285.94	0.0
CB12	RIM = 296.75 CB10–CB12 INV IN = 284.25 CB12–CB18 INV OUT = 284.15	0.0
CB13	RIM = 294.50 CB13A–CB13 INV IN = 289.66 CB13–CB14 INV OUT = 288.00	0.0
CB13A 5'Ø	RIM = 294.95 TD–CB13A INV IN = 288.94 CB13A–CB13 INV OUT = 290.70	0.0
CB14 5'Ø	RIM = 293.10 CB13–CB14 INV IN = 287.13 CB8A–CB14 INV OUT = 286.00 CB14–DMH9 INV OUT = 280.06	0.0
CB15	RIM = 296.08 CB15–OS3 INV OUT = 291.94	0.0
CB16	RIM = 281.80 CB16–HW2 INV OUT = 277.55	0.0
CB17 5'Ø	RIM = 298.57 CB18–CB17 INV OUT = 282.45 CB17–DMH9 INV OUT = 279.72 CB19–CB17 INV OUT = 285.00	0.0
CB18	RIM = 298.57 CB18–CB17 INV IN = 282.00 CB12–CB18 INV IN = 283.55	0.0
CB19	RIM = 293.00 CB19–CB17 INV IN = 284.50	0.0
CB20	RIM = 293.44 CB20–CB21 INV OUT = 289.20	0.0
CB21	RIM = 291.69 CB20–CB21 INV IN = 286.90 CB21–CB22 INV OUT = 286.80	0.0
CB22	RIM = 293.45 CB21–CB22 INV IN = 286.41 CB22–DMH23 INV OUT = 286.31	0.0

STRUCTURE TABLE		
STRUCTURE NAME	STRUCTURE DETAILS	SUMP
CB23	RIM = 293.50 DMH24–CB23 INV IN = 284.46 CB23–CB24 INV OUT = 284.31	0.0
CB24	RIM = 293.40 CB23–CB24 INV IN = 283.20 CB24–DMH25 INV OUT = 283.10	0.0
CB27	RIM = 292.34 CB27–DMH26 INV OUT = 288.15	0.0
CB28	RIM = 293.39 DMH RD–CB28 INV IN = 288.85 CB28–DMH11 INV OUT = 288.75	0.0
CB30	RIM = 295.91 DMH6–CB8A INV IN = 285.92 CB30–DMH11 INV OUT = 285.80	0.0
DMH RD	RIM = 294.18 PROCESS –DMH RD INV IN = 289.15 DMH RD–CB28 INV OUT = 289.05	0.0
DMH1	RIM = 300.00 DMH1–CB12 INV IN = 289.30 CB2–DMH1 INV IN = 291.08	0.0
DMH3	RIM = 296.65 CB3–DMH3 INV IN = 288.15 DMH3–CB10 INV OUT = 286.97	0.0
DMH5	RIM = 296.65 OS3–DMH5 INV IN = 289.51 DMH5–DMH5A INV OUT = 289.40	0.0
DMH5A	RIM = 293.04 DMH5–DMH5A INV IN = 288.13 DMH5A–DMH6 INV OUT = 288.00	0.0
DMH6	RIM = 294.50 DMH5A–DMH6 INV IN = 286.82 DMH6–CB8A INV OUT = 286.72	0.0
DMH9 5'Ø	RIM = 292.03 CB17–DMH9 INV IN = 278.10 CB14–DMH9 INV IN = 279.25 DMH9–POND2 INV OUT = 278.12	0.0
DMH11 5'Ø	RIM = 292.73 CB30–DMH11 INV IN = 284.88 CB28–DMH11 INV IN = 288.54 DMH26–DMH11 INV IN = 279.54 DMH11–POND1 INV OUT = 277.23	0.0
DMH23	RIM = 293.73 CB22–DMH23 INV IN = 285.59 DMH23–DMH24 INV OUT = 285.49	0.0
DMH24	RIM = 293.70 DMH23–DMH24 INV IN = 284.91 DMH24–CB23 INV OUT = 284.81	0.0
DMH25	RIM = 293.90 CB24–DMH25 INV IN = 282.23 DMH25–DMH26 INV OUT = 282.10	0.0
DMH26	RIM = 293.70 DMH25–DMH26 INV IN = 281.05 CB27–DMH26 INV IN = 287.87 DMH26–DMH11 INV OUT = 280.80	0.0
OS1	RIM = 277.30 OS1–OUT INV OUT = 266.00	0.0
OS2	RIM = 279.00 OS2–OUT INV OUT = 272.00	0.0
OS3	RIM = 295.90 CB15–OS3 INV IN = 291.60 OS3–DMH5 INV OUT = 291.50	0.0

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DRAINAGE STRUCTURE TABLES

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NONE **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Dec 23, 2025 - 2:16pm
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14-47
UNITED STATES OF AMERICA- FEDERAL AVIATION ADMINISTRATION
12 NE EXECUTIVE PARK, BURLINGTON, MA 01803
BK. 2363 PG. 322 – ZONE: I-A
LAND USE: US GOVT C (9000)
(20A NORTH WENTWORTH AVENUE)

B

N
NAD 83

NOTES

1. SEE NOTES ON SHEET C-02.

HYDRANT
CB5
CB4
CB3 5'Ø
DMH3
OS3
DMH5
CB21
CB15
CB20
CB22
DMH23
DMH24
CB23
81' TRIBRID-BIOREACTOR
FUTURE 81' TRIBRID-BIOREACTOR
FUTURE 81' TRIBRID-BIOREACTOR
HYDRANT
SMH2
SMH1
SANITARY SEWER 8" PVC INV.O=289.33
INDUSTRIAL SEWER 8" PVC INV.O=289.33
DMH5A
1 STORY PROCESS BUILDING (±14,100 SF) FF=296 H=24.5'
FUTURE PROCESS BUILDING (±8,250 SF)
CB6
SMH10
INDUSTRIAL WASTE WATER TANK POINT OF COMPLIANCE RIM=295.6± INV.I = 289.28 INV.O = 289.20
4" STORZ FIRE DEPARTMENT CONNECTION
2" DEOMESTIC SERVICE WITH CURB STOP & BOX
96' TRIBRID-BIOREACTOR
96' TRIBRID-BIOREACTOR
DMH RD
HYDRANT
CB24
FUTURE 96' TRIBRID-BIOREACTOR
CB27
CB28
DMH25
DMH26
DMH11 5'Ø
CB30
DMH6
CB8A 5'Ø
CB14 5'Ø
CB16
1 STORY DEPACKAGING BUILDING (36,600 SF.)
FF=297 H=39.5'
INDUSTRIAL WASTE WATER TANK POINT OF COMPLIANCE RIM=296.4± INV.I = 289.21 INV.O = 289.13
4" STORZ FIRE DEPARTMENT CONNECTION
2" DEOMESTIC SERVICE WITH CURB STOP & BOX
SANITARY SEWER 8" PVC INV.O=289.33
HYDRANT W/ BOLLARD
CB10
6" DI FIRE SERVICE
6"X6"X2" DI MJ TEE
8"X8"X6" DI MJ ANCHOR TEE WITH 6" GATE VALVE
FEEDSTOCK FM SHOWN FOR COORDINATION (DESIGN BY OTHERS)
CB13A 5'Ø
SMH5
SMH3
SMH11
8" DI
8"X8"X6" MJ ANCHOR TEE WITH 6" GATE VALVE
CB12
CB13
CB17 5'Ø
CB18
CB19
DMH9 5'Ø
6" SDR35, PUMP STATION VENT (3-FT TALL)
SEWER PUMP STATION (6'DIA) RIM=298.5 INV IN=294.2
VALVE PIT (8'DIA)
MASTER ELECTRICAL ENCLOSURE (FINAL DESIGN/SELECTION BY OTHERS)
DIESEL EMERGENCY GENERATOR (FINAL DESIGN/SELECTION BY OTHERS)
8"X8"X6" MJ ANCHOR TEE WITH 6" GATE VALVE
HYDRANT
DMH1
OHE
6"X6"X6" MJ ANCHOR TEE WITH 6" GATE VALVE
COORDINATE SIZE AND MATERIALS OF GAS LINE WITH LIBERTY UTILITY
8"X8"X2" MJ ANCHOR TEE WITH 2" GATE VALVE
UGE
UGE/T/C
W
T
LIMIT OF CONSERVATION EASEMENT

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

UTILITY PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=40'
40 20 0 40

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
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1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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C-09

Dec 23, 2025 - 2:17pm
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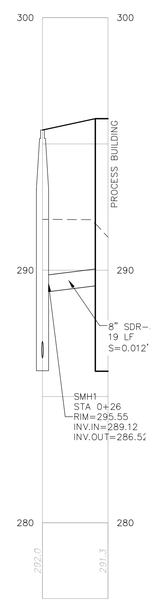
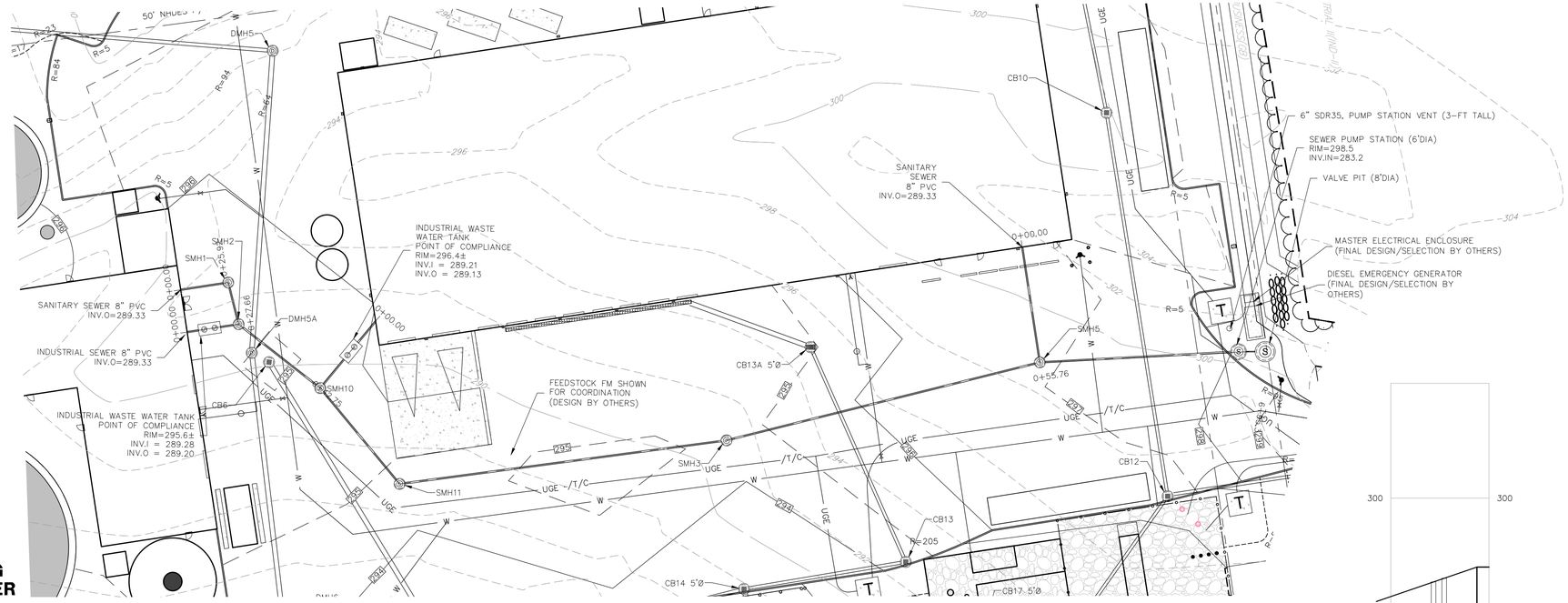
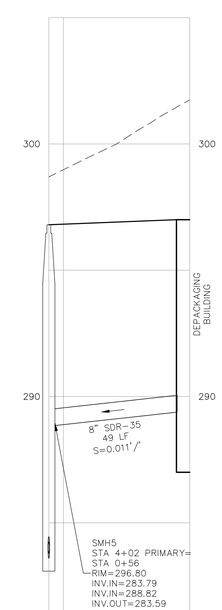
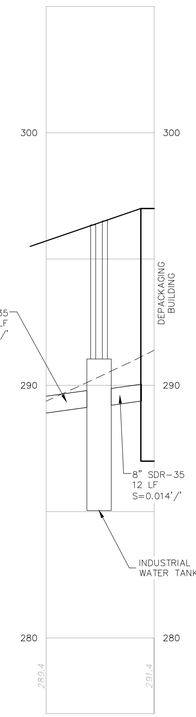


PROCESS BLDG SANITARY SEWER

SCALE: 1"=30'H / 1"=3'V

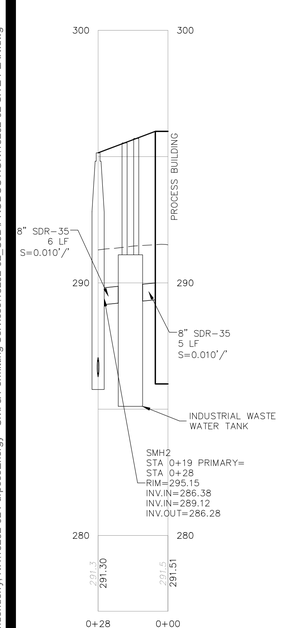






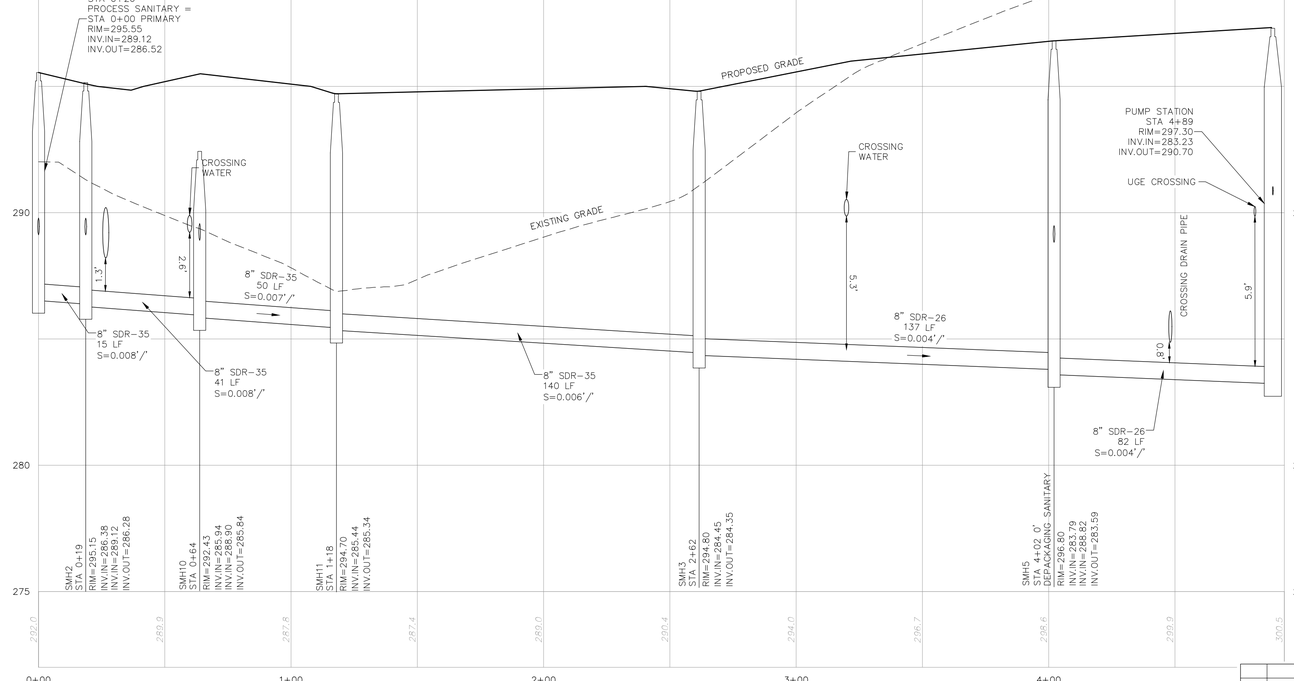
DEPACKING BLDG INDUSTRIAL SEWER

SCALE: 1"=30'H / 1"=3'V



PROCESS BLDG INDUSTRIAL SEWER

SCALE: 1"=30'H / 1"=3'V



PRIMARY SITE SEWER

SCALE: 1"=30'H / 1"=3'V

HORIZONTAL SCALE 1"=30'

VERTICAL SCALE 1"=3'

NOTES

1. SEE NOTES ON SHEET C-02.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SITE SEWERS PLAN AND PROFILE

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.

LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC

25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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PROJ.	18252-02	DR		FB		C-10
		CK		CADFILE	18252-02 SITE PLAN	

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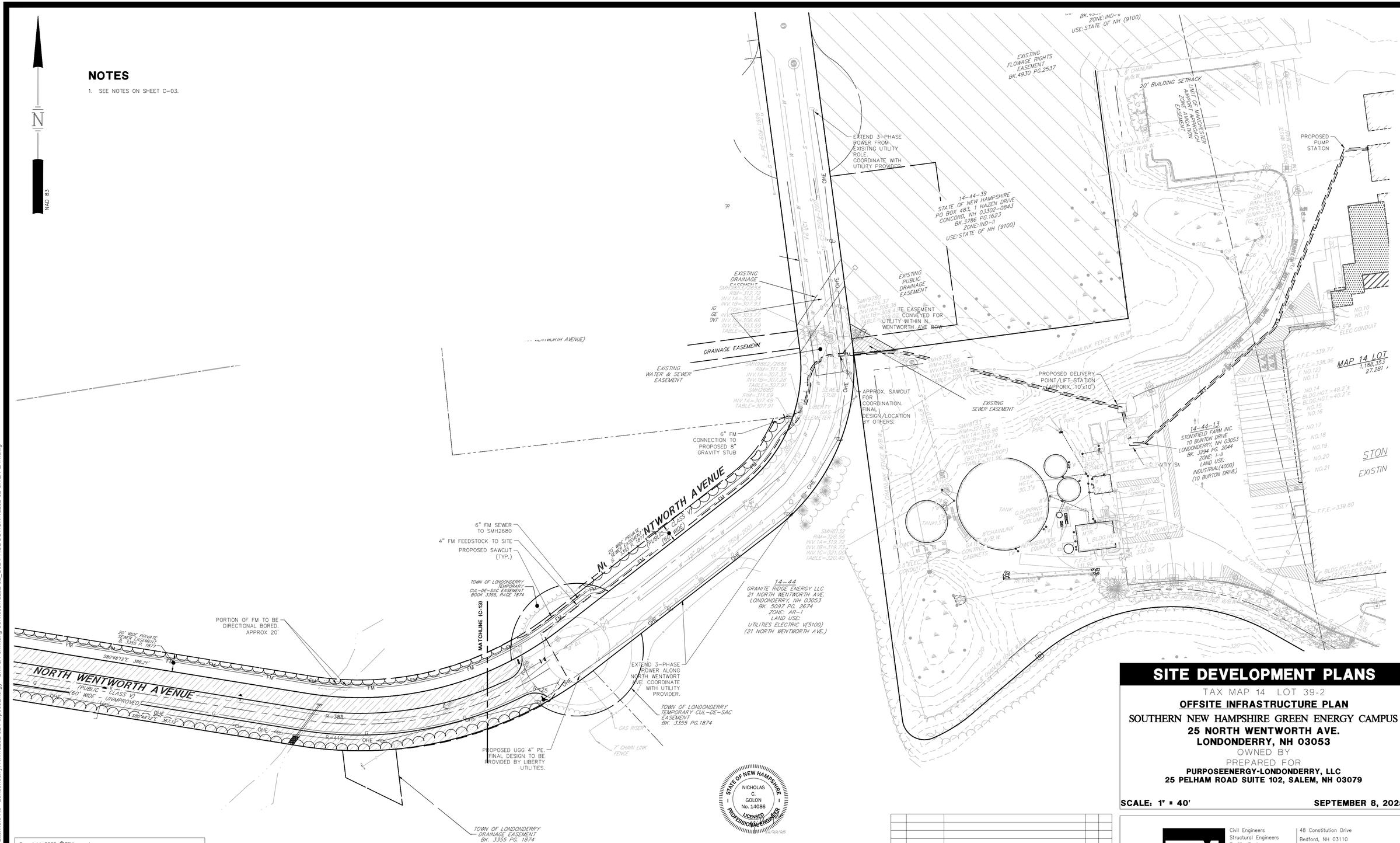
NOTES

1. SEE NOTES ON SHEET C-03.



SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

OFFSITE INFRASTRUCTURE PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.

LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC

25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
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1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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FILE	18252-02	DR		FB		C-11
		CK		CADFILE	18252-02 SITE PLAN	

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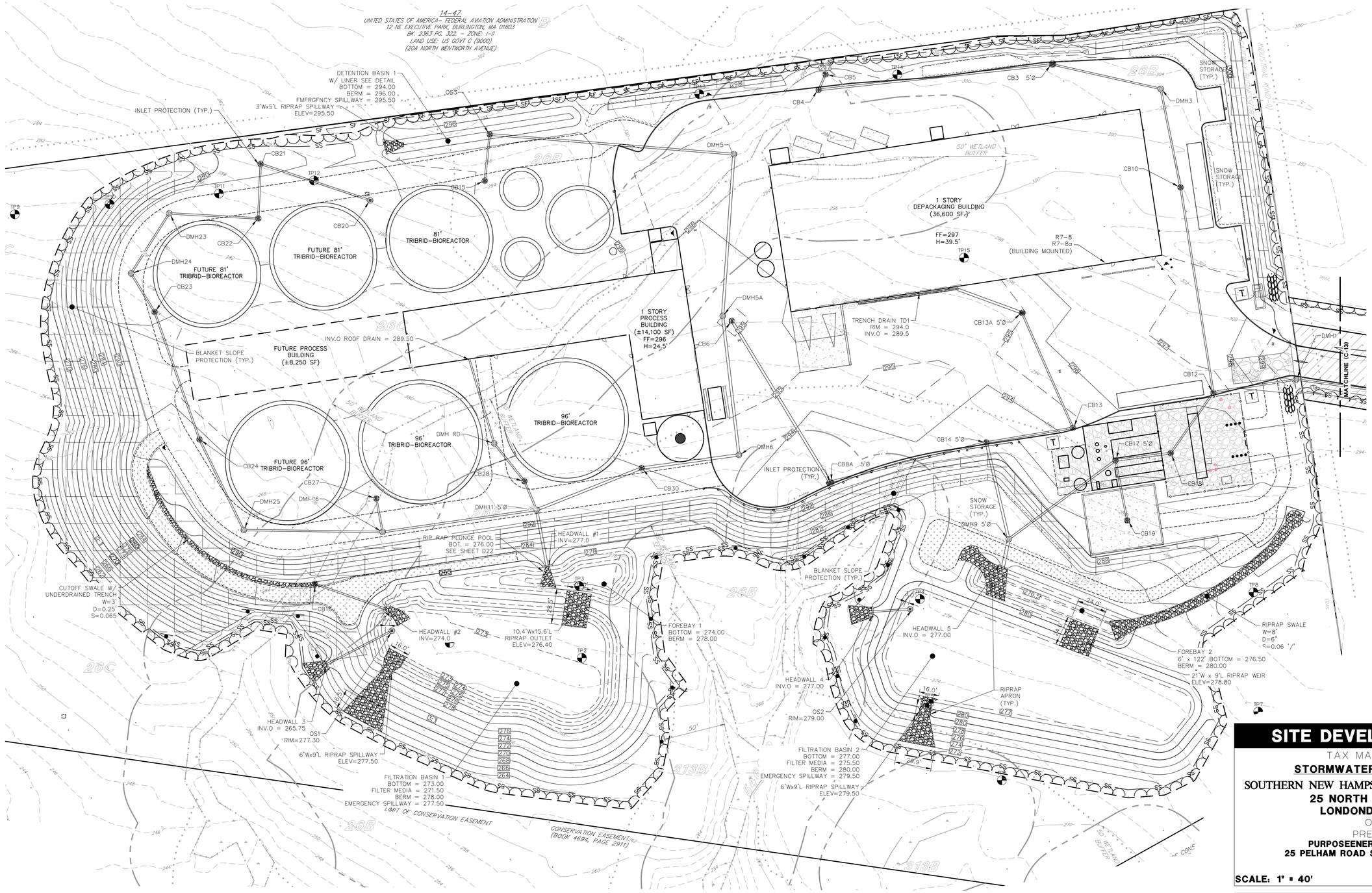

NOTES

1. SEE SHEET D-01 FOR STORMWATER MANAGMENT AND CONSTRUCTION GENERAL PERMIT NOTES.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

STORMWATER MANAGEMENT PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.

LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC

25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=40'
40 20 0 40

REV	DATE	DESCRIPTION	DR	CK
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FILE	DR		FB		
18252-02	CK		CADFILE	18252-02 SITE PLAN	C-12

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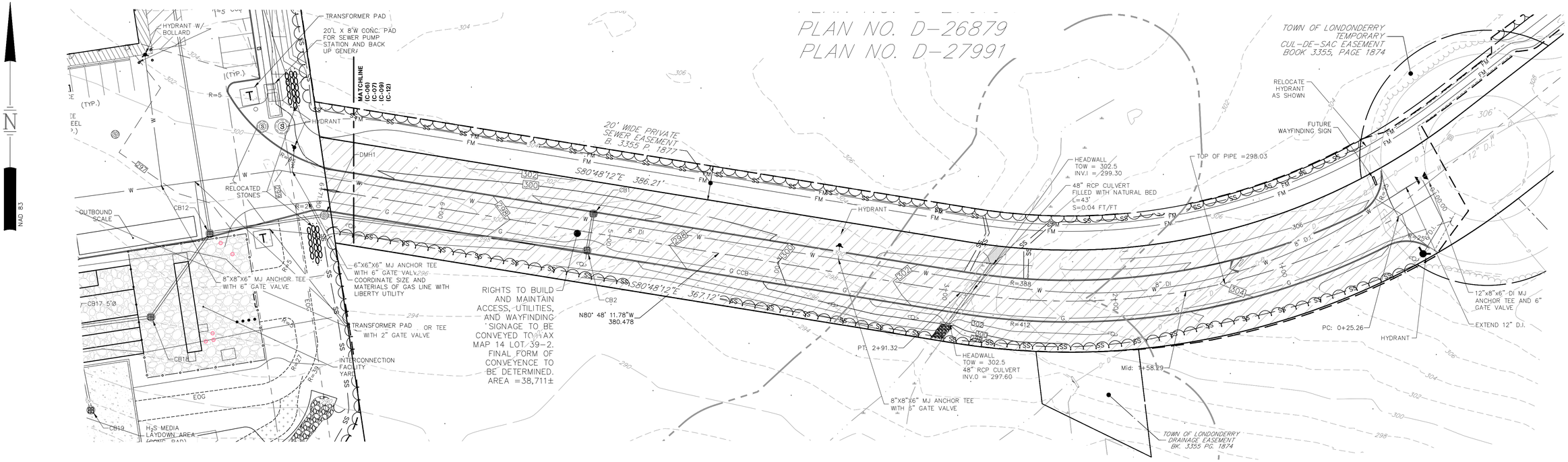

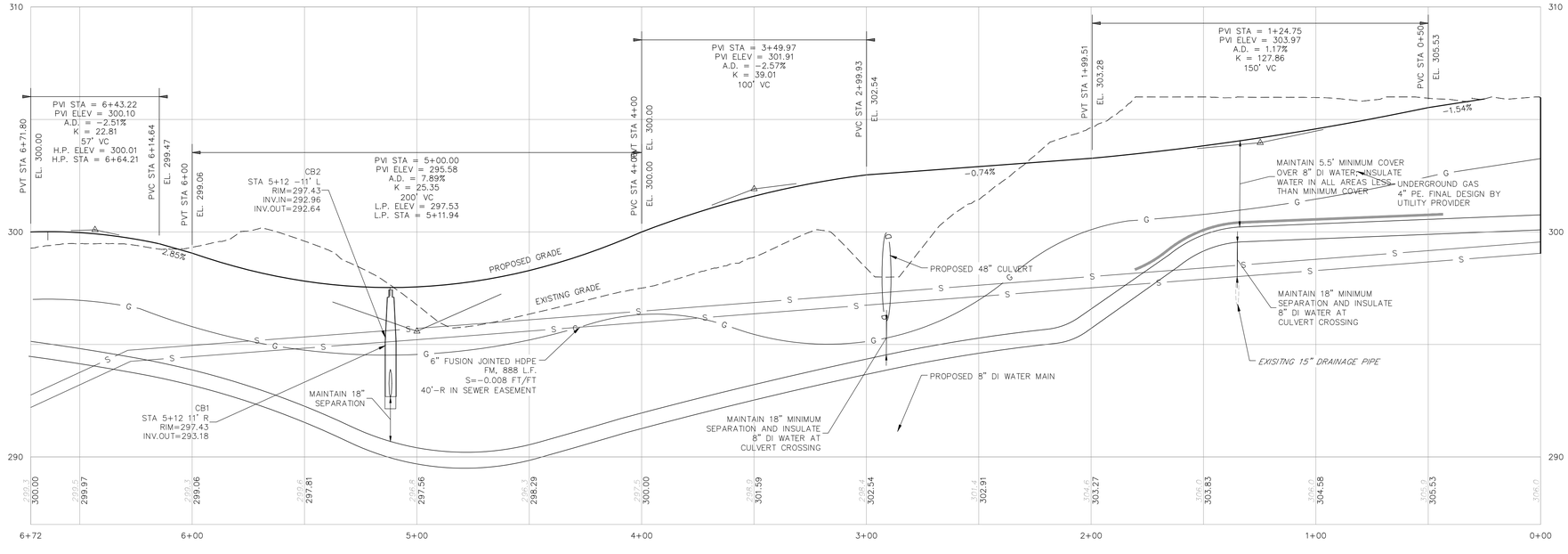

PROPOSED DRIVEWAY

HORIZONTAL SCALE 1"=30'
30 15 0 30
VERTICAL SCALE 1"=3'
3 0 3

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DRIVEWAY PLAN & PROFILE

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OWNED BY
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25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

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FILE 18252-02 | DR | FB | CADFILE 18252-02 SITE PLAN | CK | C-13

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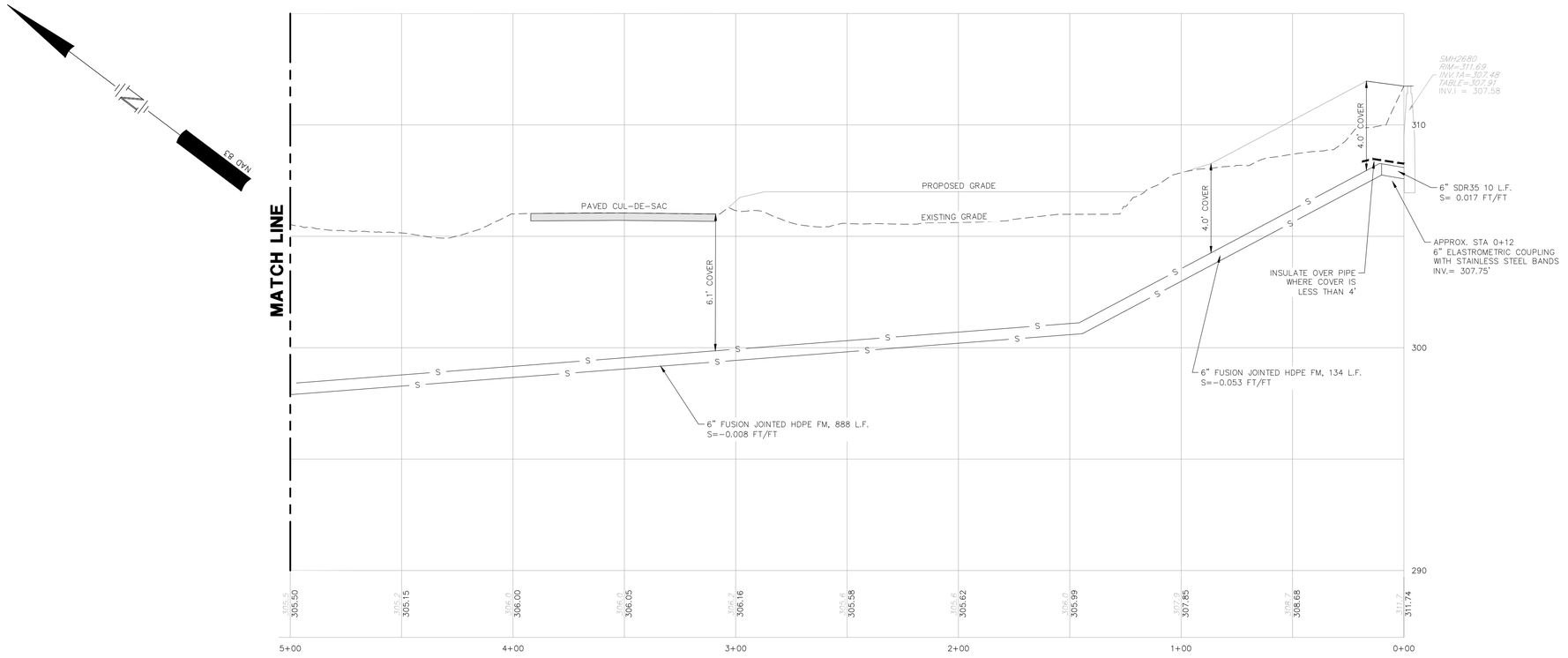
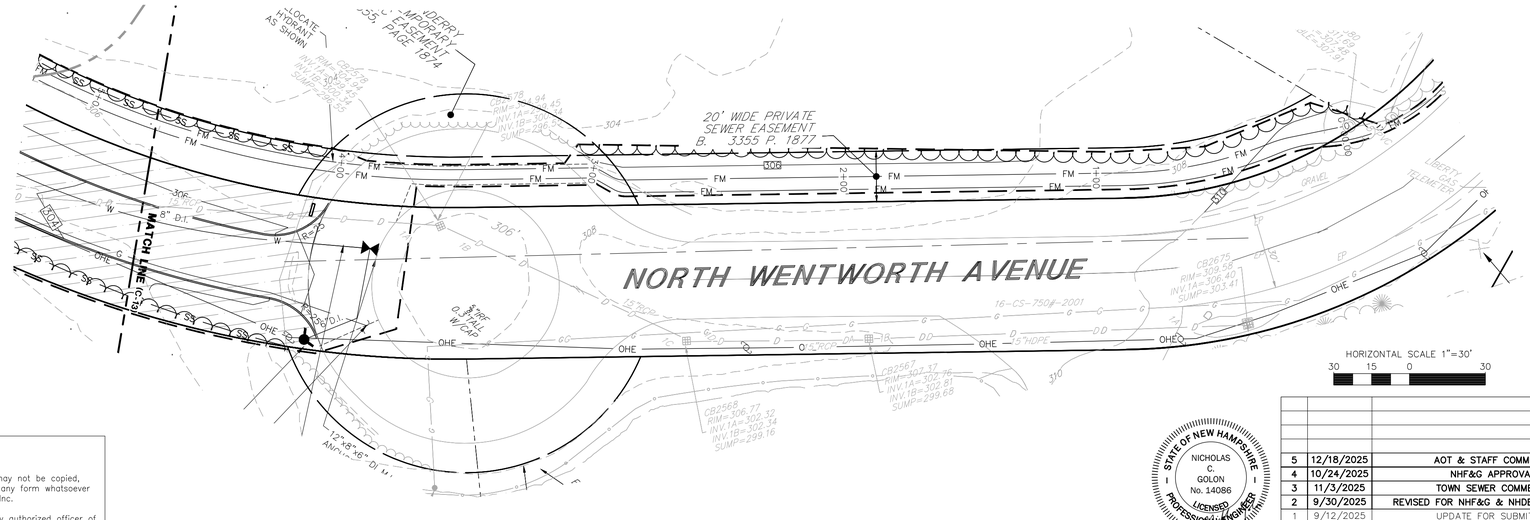
NOTES

1. SEE NOTES ON SHEET C-03.



SEWER FORCEMAIN TO MUNICIPAL SYSTEM

SCALE: 1" = 30' H/1"=3' V



HORIZONTAL SCALE 1"=30'

30 15 0 30

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

FORCEMAIN PLAN AND PROFILE

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Traffic Engineers
Land Surveyors
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Scientists
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Phone (603) 472-4488
Fax (603) 472-9747
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FILE	18252-02	DR		FB		C-14
		CK		CADFILE	18252-02 SITE PLAN	

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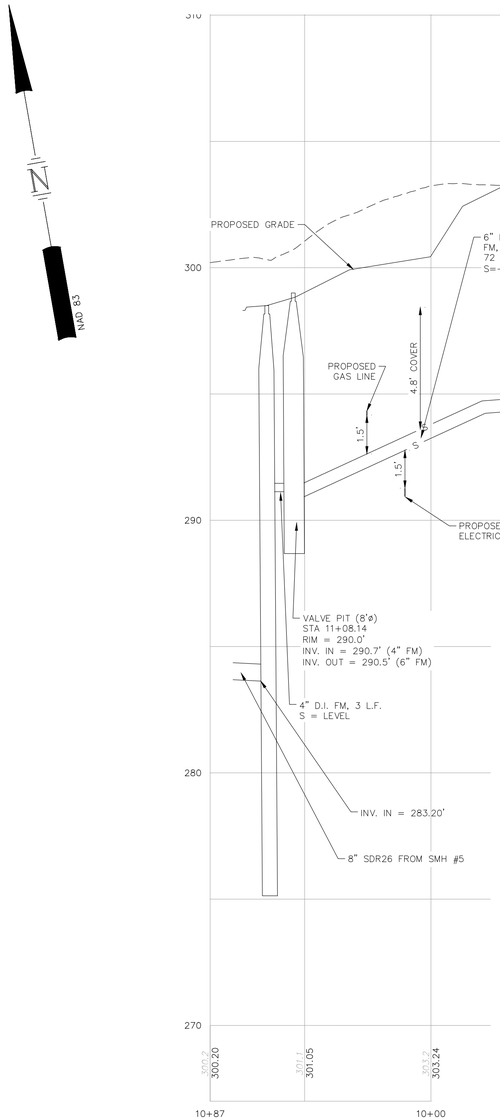

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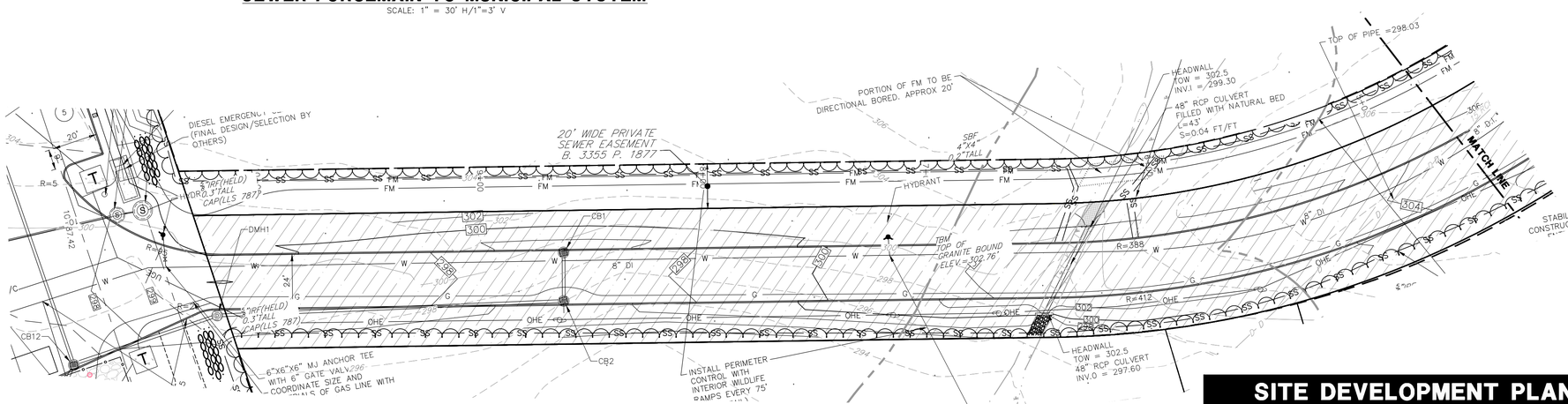

HORIZONTAL SCALE 1"=30'

30 15 0 30

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

FORCEMAIN PLAN AND PROFILE

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

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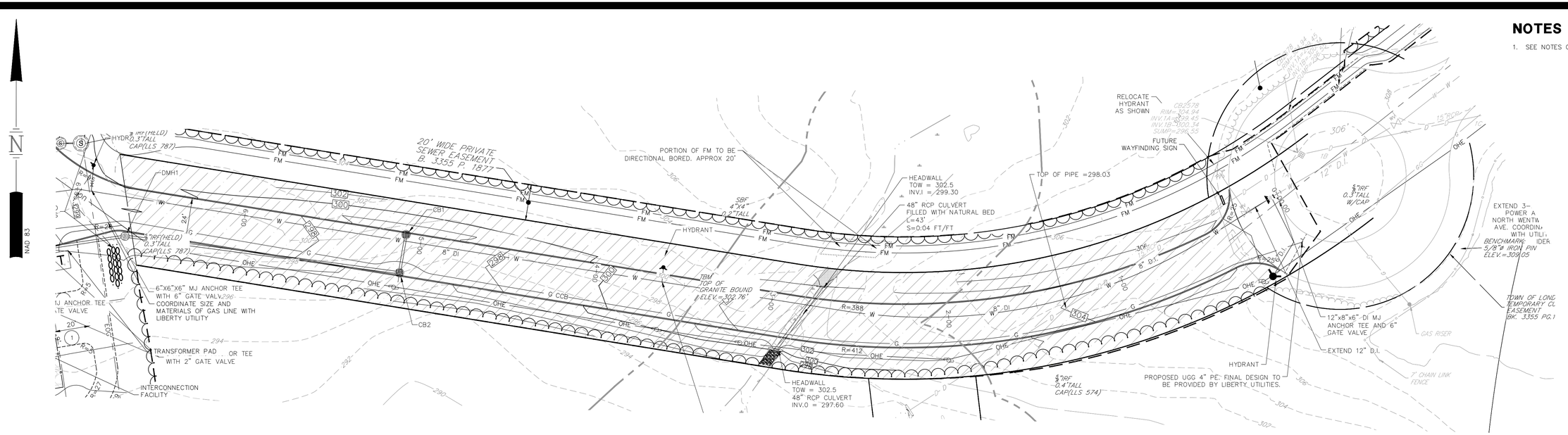

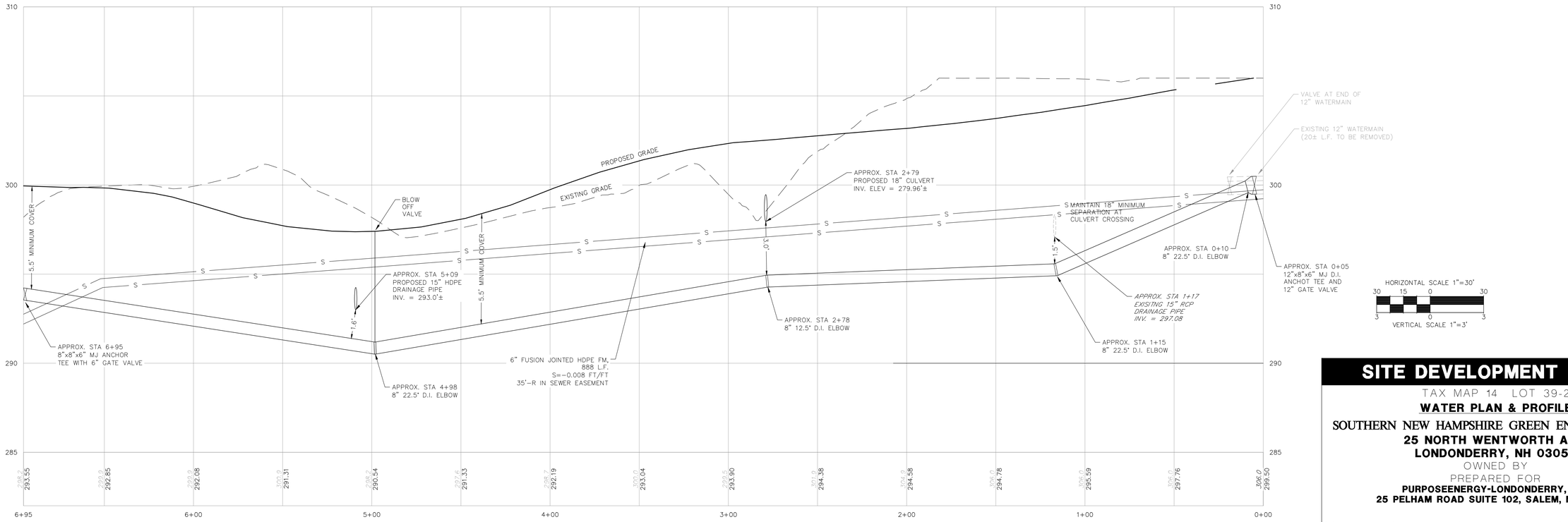

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

WATER PLAN & PROFILE

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

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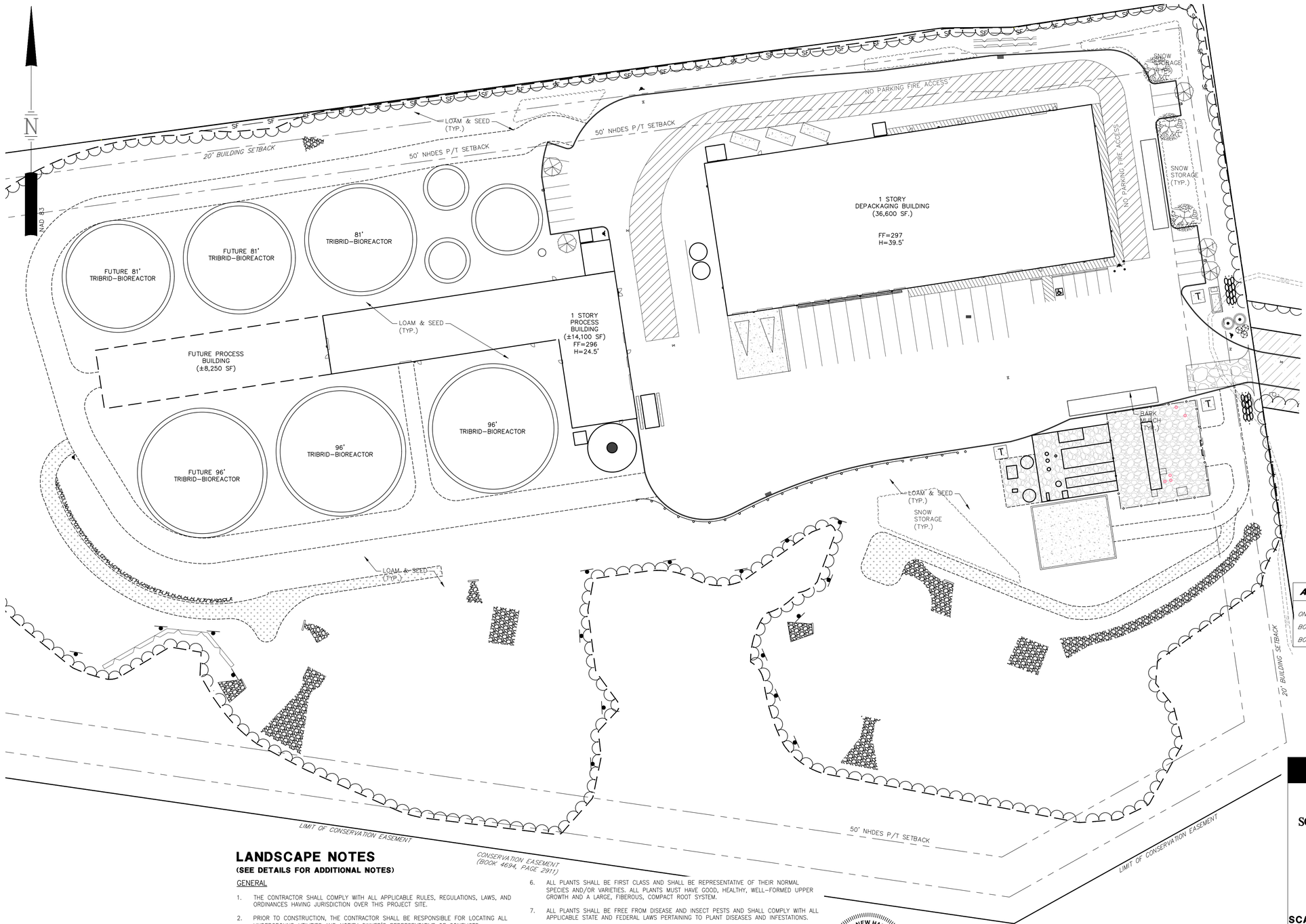

LANDSCAPE LEGEND

SYMBOL	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
	3	QUERCUS RUBRA RED OAK	2 1/2" TO 3" CAL.	B&B
	5	QUERCUS P. 'GREEN PILLAR' GREEN PILLAR PIN OAK	2 1/2" TO 3" CAL.	B&B
	3	JUNIPERUS VIRGINIANA HILLSPIRE' HILLSPIRE EASTERN RED CEDAR	6' TO 7'	B&B
	3	SYRINGA VULGARIS 'NEW AGE LAVENDER' NEW AGE LAVENDER LILAC	5 GAL.	CONT.

LANDSCAPE REQUIREMENTS

GREEN SPACE REQUIREMENT:
REQUIRED: 25%
PROVIDED: 64%

INTERIOR PARKING LANDSCAPE AREA REQUIREMENTS:
(3.10g1. OF SITE PLAN REG.'S) *WAIVER REQUIRED

INTERNAL PARKING LOT LANDSCAPING:
(3.10g3. OF SITE PLAN REG.'S)
1 TREE/15 PARKING SPACES (19 SPACES/15) = 1.2 TREES
TOTAL TREES REQUIRED = 1
TREES PROVIDED = 2 TREES

PARKING LOT PERIMETER LANDSCAPING:
(3.10g5. OF SITE PLAN REG.'S)
1 SHADE TREE/20' OF PARKING PERIMETER = 117 SF/20' = 5.8 SHADE TREES
TOTAL TREES REQUIRED = 6
TREES PROVIDED = 6 TREES

SCREENING FROM PUBLIC RIGHT-OF-WAY:
(3.10g6. OF SITE PLAN REG.'S)
EXISTING VEGETATION TO SATISFY REQUIREMENT.

ACCORDING TO THE USDA PLANT HARDINESS ZONE MAP THE ANNUAL MINIMUM TEMERATURE ZONES FOR SOUTHERN NH ARE BETWEEN ZONE 4 (−30 TO −20 DEGREES) AND ZONE 5 (−20 TO −10 DEGREES). THE PLANT MATERIALS SHOWN ON THIS PLAN HAVE A HARDINESS ZONE TO MEET THAT OF SOUTHERN NH.

THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE THROUGHOUT CONSTRUCTION OF PROTECTIVE TREE FENCING LOCATED 12" INCHES OFF THE THE DRIPLINE OF ALL TREES TO BE PROTECTED. PRIOR TO CONSTRUCTION THE CONTRACTOR IS REQUIRED TO HAVE ALL NO-CUT ZONES DELINEATED IN THE FIELD.

THE CONTRACTOR/APPLICANT IS RESPONSIBLE FOR REPLACEMENT OF "ANY TREES DESIGNATED TO REMAIN, WHICH HAVE BEEN DAMAGED, KILLED OR REMOVED AS A RESULT OF CONSTRUCTION ACTIVITIES". SEE TOWN OF LONDONDERRY "LANDSCAPE DESIGN STANDARDS" SECTION 3.10.D OF THE SITE PLAN REGULATIONS.

THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF ALL LANDSCAPE AREAS ONCE CONSTRUCTION IS COMPLETED AS OUTLINED IN THE TOWN OF LONDONDERRY, "LANDSCAPE DESIGN STANDARDS" SECTION 3.10.F OF THE SITE PLAN REGULATIONS.

APPROVED BY THE TOWN OF LONDONDERRY PLANNING BOARD

ON _____

BOARD MEMBER _____ AND

BOARD MEMBER _____

LANDSCAPE NOTES

(SEE DETAILS FOR ADDITIONAL NOTES)

GENERAL

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES, REGULATIONS, LAWS, AND ORDINANCES HAVING JURISDICTION OVER THIS PROJECT SITE.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
3. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON PLANS BEFORE PRICING THE WORK. ANY DIFFERENCE IN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. LANDSCAPE QUANTITIES SHOWN ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN LANDSCAPE LEGEND.
4. THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT PRIOR TO STARTING WORK AND VERIFY THAT THE PLANS IN THE CONTRACTOR'S POSSESSION ARE THE MOST CURRENT PLANS AVAILABLE AND ARE THE APPROVED PLAN SET FOR USE IN CONSTRUCTION.
5. ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA) [FORMERLY THE AMERICAN ASSOCIATION OF NURSERYMEN] IN THE AMERICAN STANDARD FOR NURSERY STOCK (AS AMENDED) [ANSI Z60.1–1996].
6. ALL PLANTS SHALL BE FIRST CLASS AND SHALL BE REPRESENTATIVE OF THEIR NORMAL SPECIES AND/OR VARIETIES. ALL PLANTS MUST HAVE GOOD, HEALTHY, WELL-FORMED UPPER GROWTH AND A LARGE, FIBEROUS, COMPACT ROOT SYSTEM.
7. ALL PLANTS SHALL BE FREE FROM DISEASE AND INSECT PESTS AND SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS PERTAINING TO PLANT DISEASES AND INFESTATIONS.
8. ALL TREES SHALL BE BALLED AND BURLAPPED (B & B) UNLESS OTHERWISE NOTED OR APPROVED BY LANDSCAPE ARCHITECT.
9. IF APPLICABLE, THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.
10. ALL INVASIVE PLANT SPECIES FROM THE "NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST", TO BE REMOVED SHALL BE DONE SO IN ACCORDANCE WITH THE "INVASIVE SPECIES ACT, HB 1258–FN."
11. LANDSCAPING SHALL NOT CONFLICT WITH SNOW STORAGE, LIGHT FIXTURES, OR SIGHT DISTANCE.

GUARANTEE

1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE WORK FOR A PERIOD OF ONE

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

HORIZONTAL SCALE 1"=40'
40 20 0 40

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SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

LANDSCAPE PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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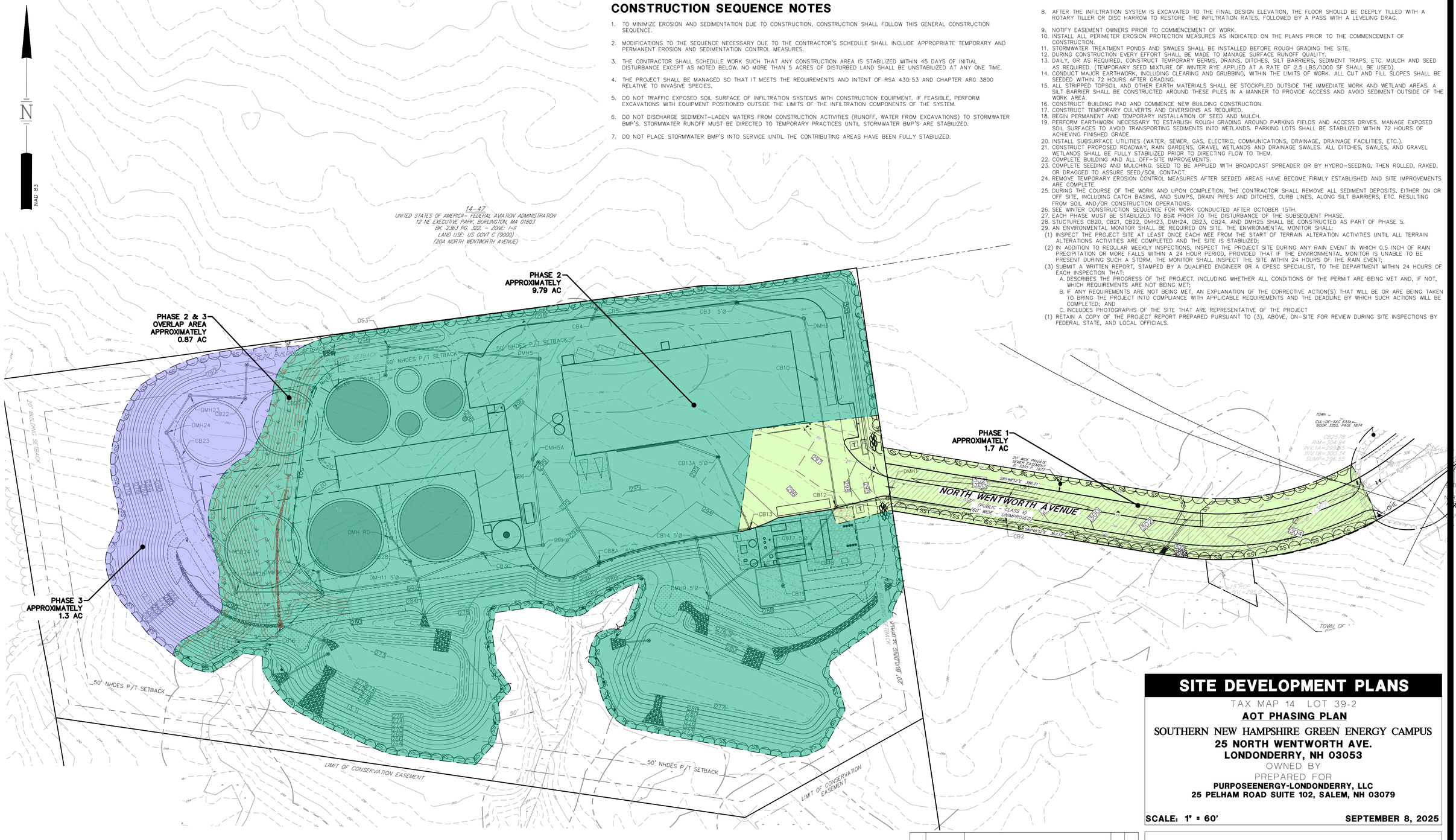
CONSTRUCTION SEQUENCE NOTES

1. TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, CONSTRUCTION SHALL FOLLOW THIS GENERAL CONSTRUCTION SEQUENCE.
2. MODIFICATIONS TO THE SEQUENCE NECESSARY DUE TO THE CONTRACTOR'S SCHEDULE SHALL INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.
3. THE CONTRACTOR SHALL SCHEDULE WORK SUCH THAT ANY CONSTRUCTION AREA IS STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE EXCEPT AS NOTED BELOW. NO MORE THAN 5 ACRES OF DISTURBED LAND SHALL BE UNSTABILIZED AT ANY ONE TIME.
4. THE PROJECT SHALL BE MANAGED SO THAT IT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER ARG 3800 RELATIVE TO INVASIVE SPECIES.
5. DO NOT TRAFFIC EXPOSED SOIL SURFACE OF INFILTRATION SYSTEMS WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
6. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO STORMWATER BMP'S. STORMWATER RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMP'S ARE STABILIZED.
7. DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
8. AFTER THE INFILTRATION SYSTEM IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE THE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
9. NOTIFY EASEMENT OWNERS PRIOR TO COMMENCEMENT OF WORK.
10. INSTALL ALL PERIMETER EROSION PROTECTION MEASURES AS INDICATED ON THE PLANS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
11. STORMWATER TREATMENT PONDS AND SWALES SHALL BE INSTALLED BEFORE ROUGH GRADING THE SITE.
12. DURING CONSTRUCTION EVERY EFFORT SHALL BE MADE TO MANAGE SURFACE RUNOFF QUALITY.
13. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT BARRIERS, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED. (TEMPORARY SEED MIXTURE OF WINTER RYE APPLIED AT A RATE OF 2.5 LBS/1000 SF SHALL BE USED).
14. CONDUCT MAJOR EARTHWORK, INCLUDING CLEARING AND GRUBBING, WITHIN THE LIMITS OF WORK. ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN 72 HOURS AFTER GRADING.
15. ALL STRIPPED TOPSOIL AND OTHER EARTH MATERIALS SHALL BE STOCKPILED OUTSIDE THE IMMEDIATE WORK AND WETLAND AREAS. A SILT BARRIER SHALL BE CONSTRUCTED AROUND THESE PILES IN A MANNER TO PROVIDE ACCESS AND AVOID SEDIMENT OUTSIDE OF THE WORK AREA.
16. CONSTRUCT BUILDING PAD AND COMMENCE NEW BUILDING CONSTRUCTION.
17. CONSTRUCT TEMPORARY CULVERTS AND DIVERSIONS AS REQUIRED.
18. BEGIN PERMANENT AND TEMPORARY INSTALLATION OF SEED AND MULCH.
19. PERFORM EARTHWORK NECESSARY TO ESTABLISH ROUGH GRADING AROUND PARKING FIELDS AND ACCESS DRIVES. MANAGE EXPOSED SOIL SURFACES TO AVOID TRANSPORTING SEDIMENTS INTO WETLANDS. PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
20. INSTALL SUBSURFACE UTILITIES (WATER, SEWER, GAS, ELECTRIC, COMMUNICATIONS, DRAINAGE, DRAINAGE FACILITIES, ETC.).
21. CONSTRUCT PROPOSED ROADWAY, RAIN GARDENS, GRAVEL WETLANDS AND DRAINAGE SWALES. ALL DITCHES, SWALES, AND GRAVEL WETLANDS SHALL BE FULLY STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
22. COMPLETE BUILDING AND ALL OFF-SITE IMPROVEMENTS.
23. COMPLETE SEEDING AND MULCHING. SEED TO BE APPLIED WITH BROADCAST SPREADER OR BY HYDRO-SEEDING, THEN ROLLED, RAKED, OR DRAGGED TO ASSURE SEED/SOIL CONTACT.
24. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDED AREAS HAVE BECOME FIRMLY ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE.
25. DURING THE COURSE OF THE WORK AND UPON COMPLETION, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT DEPOSITS, EITHER ON OR OFF SITE, INCLUDING CATCH BASINS, AND SUMPS, DRAIN PIPES AND DITCHES, CURB LINES, ALONG SILT BARRIERS, ETC. RESULTING FROM SOIL AND/OR CONSTRUCTION OPERATIONS.
26. SEE WINTER CONSTRUCTION SEQUENCE FOR WORK CONDUCTED AFTER OCTOBER 15TH.
27. EACH PHASE MUST BE STABILIZED TO 85% PRIOR TO THE DISTURBANCE OF THE SUBSEQUENT PHASE.
28. STUCTURES CB20, CB21, CB22, DMH23, DMH24, CB23, CB24, AND DMH25 SHALL BE CONSTRUCTED AS PART OF PHASE 5.
29. AN ENVIRONMENTAL MONITOR SHALL BE REQUIRED ON SITE. THE ENVIRONMENTAL MONITOR SHALL:
    (1) INSPECT THE PROJECT SITE AT LEAST ONCE EACH WEE FROM THE START OF TERRAIN ALTERATION ACTIVITIES UNTIL ALL TERRAIN ALTERATIONS ACTIVITIES ARE COMPLETED AND THE SITE IS STABILIZED;
    (2) IN ADDITION TO REGULAR WEEKLY INSPECTIONS, INSPECT THE PROJECT SITE DURING ANY RAIN EVENT IN WHICH 0.5 INCH OF RAIN PRECIPITATION OR MORE FALLS WITHIN A 24 HOUR PERIOD, PROVIDED THAT IF THE ENVIRONMENTAL MONITOR IS UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THE RAIN EVENT;
    (3) SUBMIT A WRITTEN REPORT, STAMPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, TO THE DEPARTMENT WITHIN 24 HOURS OF EACH INSPECTION THAT:
        A. DESCRIBES THE PROGRESS OF THE PROJECT, INCLUDING WHETHER ALL CONDITIONS OF THE PERMIT ARE BEING MET AND, IF NOT, WHICH REQUIREMENTS ARE NOT BEING MET;
        B. IF ANY REQUIREMENTS ARE NOT BEING MET, AN EXPLANATION OF THE CORRECTIVE ACTION(S) THAT WILL BE OR ARE BEING TAKEN TO BRING THE PROJECT INTO COMPLIANCE WITH APPLICABLE REQUIREMENTS AND THE DEADLINE BY WHICH SUCH ACTIONS WILL BE COMPLETED; AND
        C. INCLUDES PHOTOGRAPHS OF THE SITE THAT ARE REPRESENTATIVE OF THE PROJECT
    (1) RETAIN A COPY OF THE PROJECT REPORT PREPARED PURSUANT TO (3), ABOVE, ON-SITE FOR REVIEW DURING SITE INSPECTIONS BY FEDERAL STATE, AND LOCAL OFFICIALS.



SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

AOT PHASING PLAN

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LICENSED PROFESSIONAL ENGINEER
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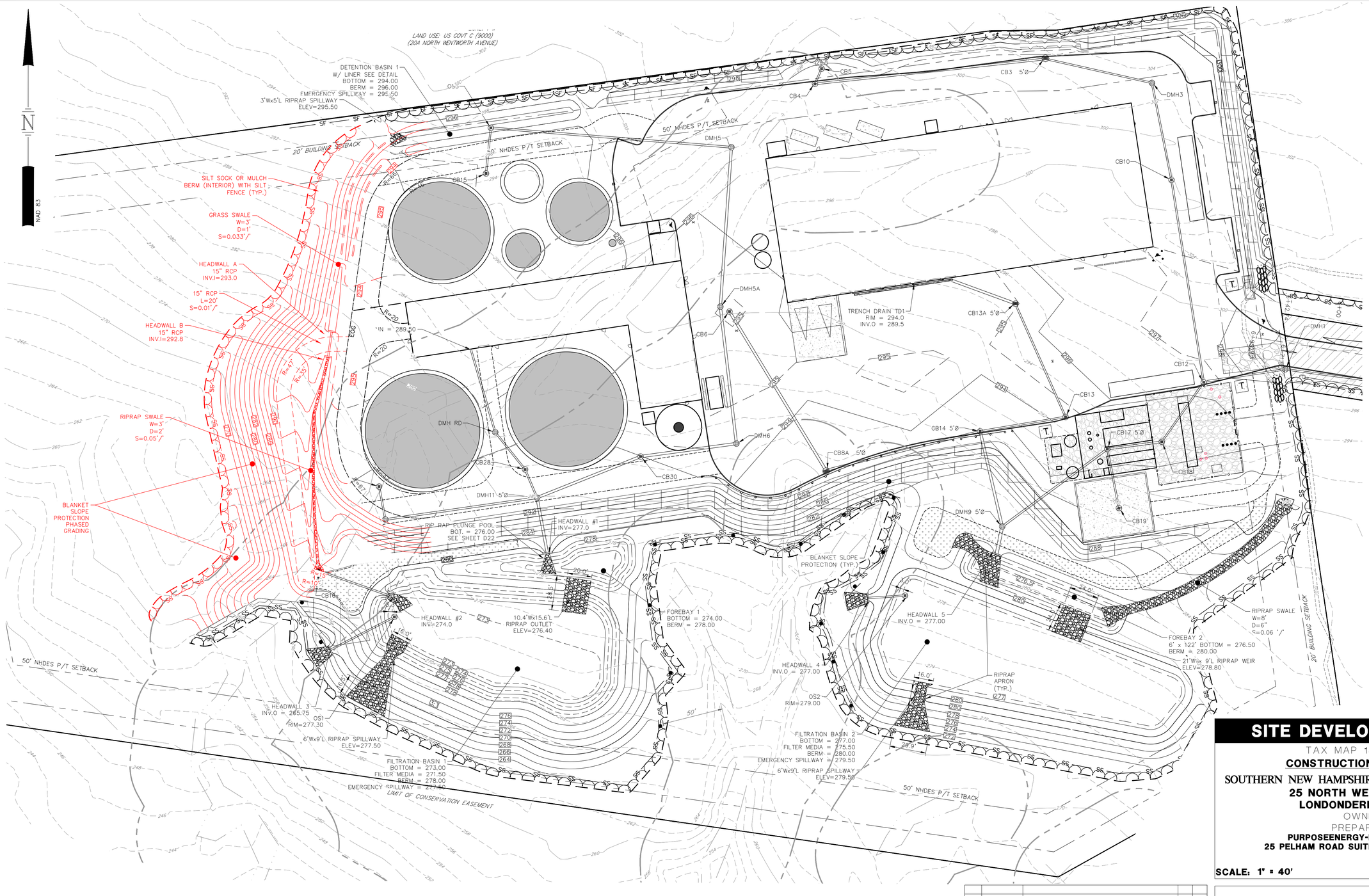

SITE DEVELOPMENT PLANS

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=40'
40 20 0 40

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

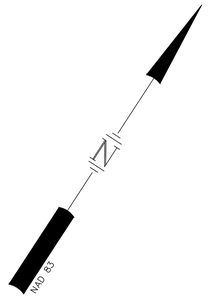
FILE		DR		FB		
	18252-02	CK		CADFILE	18252-02 SITE PLAN	PH-2

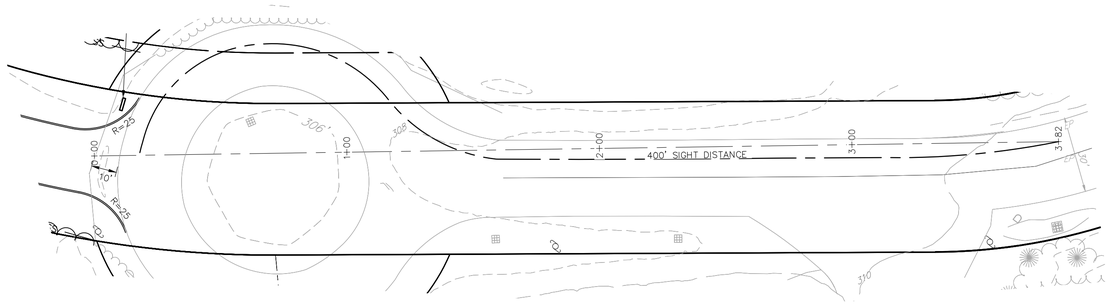
Dec 23, 2025 - 2:23pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 SITE PLAN.dwg

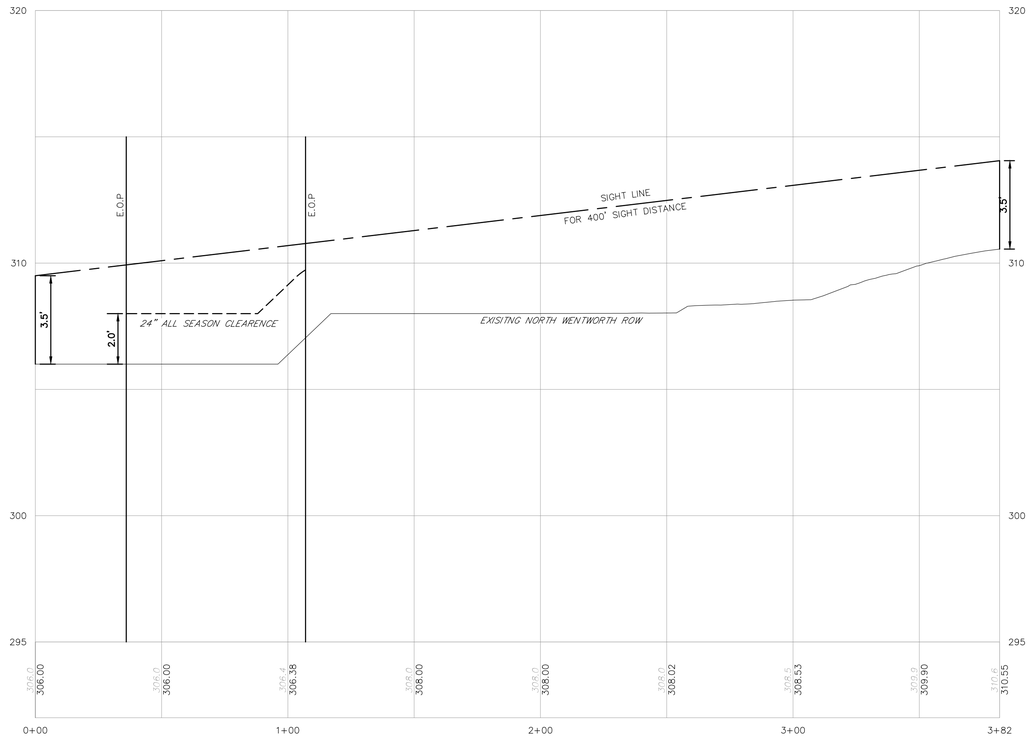
NOTES

1. POSTED SPEED LIMIT ON NORTH WENTWORTH AVE. IS 30 MPH.
2. TOWN OF LONDONDERRY SIGHT DISTANCE CALCULATIONS:

   SUBDIVISION REGULATIONS SECTION 3.09.F.2 & EHXIBIT D3
   MINIMUM ALL SEASON SIGHT DISTANCE = 365–FEET (NON–RESIDNETIAL) WHICH IS EXCEEDED.







SITE DISTANCE

HORIZONTAL SCALE 1"=30'
30 15 0 30
VERTICAL SCALE 1"=3'
3 0 3

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SIGHT DISTANCE

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
12/22/25

REV	DATE	DESCRIPTION	DR	CK
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FILE	18252-02	DR		FB		SD-1
		CK		CADFILE	18252-02 SITE PLAN	

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Dec 23, 2025 - 2:23pm
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CONSTRUCTION GENERAL PERMIT

1. THE OWNER, IN CONJUNCTION WITH THE CONTRACTOR (OPERATORS), MUST OBTAIN A CONSTRUCTION GENERAL PERMIT (CGP) FOR LARGE CONSTRUCTION ACTIVITIES (FIVE OR MORE ACRES) OR SMALL CONSTRUCTION ACTIVITIES (GREATER THAN ONE ACRE BUT LESS THAN FIVE ACRES) FROM THE ENVIRONMENTAL PROTECTION AGENCY (EPA). AS PART OF THE CGP, A STORMWATER NOTICE OF INTENT (NOI) MUST BE SUBMITTED TO THE EPA AT LEAST 7 DAYS PRIOR TO COMMENCING CONSTRUCTION. THE NOI MUST BE SUBMITTED TO STORM WATER NOTICE OF INTENT (4203M), USEPA, 1200 PENNSYLVANIA AVE. NW, WASHINGTON, DC 20460.

2. THE CGP OUTLINES A SET OF PROVISIONS MANDATING THE OWNER AND CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER REGULATIONS, INCLUDING, BUT NOT LIMITED TO, STORM WATER POLLUTION PREVENTION PLANS (SWPPP'S), IMPLEMENTATION OF EROSION AND SEDIMENTATION CONTROLS, EQUIPMENT MAINTENANCE GUIDELINES, ETC. PLEASE CONTACT USEPA OFFICE OF WASTEWATER MANAGEMENT AT 202-564-9545 OR AT WWW.EPA.GOV/NPDES/STORMWATER FOR ADDITIONAL INFORMATION. FOR FURTHER ASSISTANCE, CONTACT ABBY SWAINE OF NEW ENGLAND'S EPA REGION 1 AT 617-918-1841.

NOTES

1. IT IS BEING PROPOSED TO CONSTRUCT AN ORGANIC WASTE PROCESSING FACILITY INCLUDING ACCESS, GRADING, STORMWATER MANAGEMENT SYSTEMS, UTILITIES, AND LANDSCAPING.

TOTAL SITE AREA: 15.3 AC (SITE PARCEL)
TOTAL PROPOSED AREA OF DISTURBANCE: 13.0 AC

SOILS SHOWN WERE PREPARED IN ACCORDANCE WITH THE SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEWHAMPSHIRE AND VERMONT, VERSION 7.0, HULY 2021.
26 – WINDSOR
313 – DEERFIELD
546/P – WALPOLE

2. STORM WATER DRAINAGE SYSTEM IS SHOWN ON THE PLAN. SEE GRADING & DRAINAGE PLAN AND INVERT TABLES FOR RIM, INVERT, PIPE LENGTH, AND SLOPE INFORMATION.
POST-CONSTRUCTION RUNOFF COEFFICIENT: C=0.37
IMPERVIOUS SURFACE AREA: 5.9± AC
*IMPERVIOUS AREA AND POST-DEVELOPMENT RUNOFF COEFFICIENT DO NOT INCLUDE OFFSITE RUN-ON AREAS

3. STABILIZATION PRACTICES FOR EROSION AND SEDIMENTATION CONTROLS:

TEMPORARY STABILIZATION – TOPSOIL STOCKPILES AND DISTURBED AREAS OF THE CONSTRUCTION SITE THAT WILL NOT BE REDISTURBED FOR 14 DAYS OR MORE MUST BE STABILIZED BY THE 14TH DAY AFTER THE LAST DISTURBANCE. THE TEMPORARY SEED SHALL BE ANNUAL RYE APPLIED AT THE RATE OF 1.1 LBS PER 1,000 SF. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY. AREAS OF THE SITE THAT WILL BE PAVED WILL BE TEMPORARILY STABILIZED BY APPLYING GEOTEXTILES AND A STONE SUB-BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED. CALCIUM CHLORIDE SHALL BE USED FOR DUST CONTROL IF NEEDED.

PERMANENT STABILIZATION – DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 3 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. THE PERMANENT SEED MIX SHALL BE AS SPECIFIED BY THE LANDSCAPE PLAN NOTES OR MAY OTHERWISE CONSIST OF 0.45 LBS/1,000 SF TALL FESCUE, 0.20 LBS/1,000 SF CREEPING RED FESCUE, AND 0.20 LBS/1,000 SF BIRDSFOOT TREFOIL. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE IF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY.

4. STRUCTURAL PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

SILT SOCK – WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE DISTURBED AREAS AND WILL DELINEATE THE LIMITS OF WORK FOR THE PROPOSED CONSTRUCTION. THE SILT SOCK WILL BE INSTALLED BY OTHERS. POSTS SHALL BE USED WITH AT LEAST 6" OF THE POST BURIED BELOW THE GROUND SURFACE TO PREVENT THE SILT SOCK FROM FORMING GAPS NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE SILT SOCK WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

SILT FENCE – WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE DISTURBED AREAS AND WILL DELINEATE THE LIMITS OF WORK FOR THE PROPOSED CONSTRUCTION. THE SILT FENCE WILL BE INSTALLED BY STRETCHING REINFORCED FILTER FABRIC BETWEEN POSTS WITH AT LEAST 8" OF THE FABRIC BURIED BELOW THE GROUND SURFACE TO PREVENT GAPS FROM FORMING NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE FILTER FABRIC WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

STABILIZED CONSTRUCTION ENTRANCE – WILL BE INSTALLED IN ACCORDANCE WITH THE DETAIL AT THE ENTRANCE TO THE CONSTRUCTION SITE TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS OFF THE SITE. THE STABILIZED ENTRANCE WILL BE 20'-WIDE AND FLARE AT THE ENTRANCE TO THE PAVED ROAD AND HAVE A DEPTH OF 12" OF STONE. THE STABILIZED ENTRANCE SHALL BE MAINTAINED UNTIL THE REMAINDER OF THE CONSTRUCTION SITE HAS BEEN FULLY STABILIZED. THE PAVED STREET ADJACENT TO THE SITE SHALL BE SWEPT ON A WEEKLY BASIS TO REMOVE EXCESS MUD AND DIRT FROM BEING TRACKED FROM THE SITE. TRUCKS HAULING MATERIAL TO AND/OR FROM THE SITE SHALL BE COVERED WITH A TARPAULIN.

CATCH BASINS – WILL BE CLEANED ON AN ANNUAL BASIS TO REMOVE ALL SEDIMENTS FROM THE CATCH BASIN SUMPS.

CATCH BASIN PROTECTION – WILL BE INSTALLED AT ALL CATCH BASINS WITHIN THE CONSTRUCTION AREA. FILTER FABRIC WILL BE INSTALLED AROUND THE GRATES OF CATCH BASINS THAT ARE LOCATED IN THE TRAVEL WAY AND STONE/FILTER FABRIC PROTECTION WILL BE INSTALLED AT THE CATCH BASINS FOUND WITHIN THE PARKING AREA AND GRASS.

BLANKET SLOPE PROTECTION – SHALL BE INSTALLED ON ALL 2:1 SLOPES OR STEEPER ON SITE. ANCHOR THE TOP OF THE BLANKET BY ANCHORING THE BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING. ROLL THE BLANKET IN THE DIRECTION OF STORM WATER FLOW. WHERE 2 OR MORE STRIPS OF BLANKET ARE REQUIRED, A MINIMUM OF 4" OF OVERLAP SHALL BE PROVIDED.

STONE CHECK DAMS – WILL BE INSTALLED IN EXISTING AND PROPOSED GRASS SWALES TO REDUCE THE VELOCITY OF CONCENTRATED STORM WATER FLOWS AND PREVENT EROSION OF THE SWALE.

5. STORM WATER MANAGEMENT

STORM WATER DRAINAGE FOR DEVELOPED AREAS WILL BE COLLECTED BY A PIPE AND CATCH BASIN CLOSED DRAINAGE SYSTEM. APPROXIMATELY 3.6 ACRES OF THE 15.3 ACRE SITE WILL REMAIN UNTOUCHED AND IN ITS NATURAL STATE. WHEN CONSTRUCTION IS COMPLETE THE FACILITY AND PARKING AREA WILL BE ROUTED TO TWO (2) SURFACE STORMWATER TREATMENT FILTER BASINS.

6. ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURE DUMPSTERS OR APPROVED ENCLOSURE AND REMOVED FROM THE SITE ON A WEEKLY BASIS. NO CONSTRUCTION WASTE SHALL BE BURIED ON SITE. PORTABLE TOILET SANITARY WASTE FACILITIES WILL BE PROVIDED DURING CONSTRUCTION AND MAINTAINED/DISPOSED OF ON A REGULAR BASIS IN ACCORDANCE WITH TOWN AND STATE REGULATIONS.

7. A LIST OF CONSTRUCTION ITEMS AND OTHER PRODUCTS USED ON THIS PROJECT SHALL BE KEPT ON RECORD WITH THIS PLAN ONSITE. ALL CHEMICALS, PETROLEUM PRODUCTS AND OTHER MATERIALS USED DURING CONSTRUCTION SHALL BE STORED IN A SECURE AREA, AND PRECAUTIONS USED TO PREVENT POTENTIAL SOURCES OF CONTAMINATION OR POLLUTION. ANY SPILL OF THESE TYPES OF SUBSTANCES SHALL BE CLEANED UP AND DISPOSED OF IN A LEGAL MANNER AS SPECIFIED BY STATE REGULATIONS AND THE MANUFACTURER. ANY SPILL IN AMOUNTS EQUAL TO OR EXCEEDING REPORTABLE QUANTITY AS DEFINED BY THE EPA SHALL TAKE THE FOLLOWING STEPS:
- NOTIFY THE NATIONAL RESPONSE CENTER IMMEDIATELY AT (888) 424-8802; IN WASHINGTON, D.C., CALL (202) 426-2675.
- WITHIN 14 DAYS, SUBMIT A WRITTEN DESCRIPTION OF THE RELEASE TO THE EPA REGIONAL OFFICE PROVIDING THE DATE AND CIRCUMSTANCES OF THE RELEASE AND THE STEPS TO BE TAKEN TO PREVENT ANOTHER RELEASE.
- MODIFY THE POLLUTION PREVENTION PLAN TO INCLUDE THE INFORMATION LISTED ABOVE.

GOOD HOUSEKEEPING:
THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT.
- AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB;
- ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE;
- PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL;
- SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER;
- WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER;
- MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED;
- TRASH DUMPSTERS SHALL BE GASKETED OR HAVE A SECURE WATERTIGHT LID AND BE PLACED AWAY FROM STORMWATER CONVEYANCES AND DRAINS;
- THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

HAZARDOUS PRODUCTS:
THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
- PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE;
- ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION;
- IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

PRODUCT SPECIFIC PRACTICES:
THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:
PETROLEUM PRODUCTS:
ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS:
FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

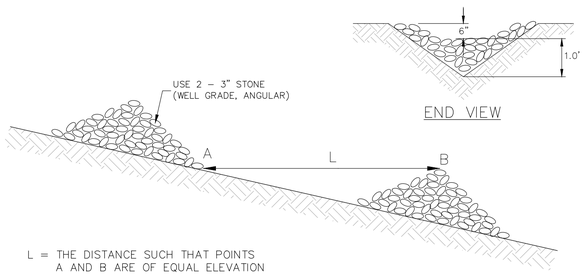
PAINTS:
ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS:
EXCESS CONCRETE SHALL BE USED IN AREAS DESIGNATED BY THE SITE CONTRACTOR. WASH WATER SHALL BE DISPOSED OF USING BEST MANAGEMENT PRACTICES. BUILDING CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL DRUM WASH WATER ASSOCIATED WITH CONCRETE FOR THE BUILDING PAD. SITE CONTRACTOR TO COORDINATE AND PROVIDE BUILDING CONTRACTOR WITH AN AREA FOR DRUM WASH WATER.

SPILL CONTROL PRACTICES:
IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
- MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
- MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
- ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
- THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF SIZE.
- THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
- THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THEY WILL DESIGNATE AT LEAST THREE OTHER SITE PERSONNEL WHO WILL EACH RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.

11. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN RECORDS OF CONSTRUCTION ACTIVITIES, INCLUDING DATES OF MAJOR GRADING ACTIVITIES, DATES WHEN CONSTRUCTION ACTIVITIES HAVE TEMPORARILY CEASED ON A PORTION OF THE SITE, DATES WHEN WORK IS COMPLETED ON A PORTION OF THE SITE, AND DATES WHEN STABILIZATION MEASURES ARE INITIATED ONSITE.

12. THE CONTRACTOR SHALL PERFORM INSPECTIONS OR HAVE A CONSULTING ENGINEER PERFORM INSPECTIONS EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS AFTER A STORM OF 0.5" OR GREATER. INSPECTIONS REPORTS ARE TO BE KEPT ON FILE AT THE SITE WITH THIS PLAN. MAINTENANCE OR MODIFICATION SHALL BE IMPLEMENTED AND ADDED TO THE PLAN AS RECOMMENDED BY THE QUALIFIED INSPECTOR.



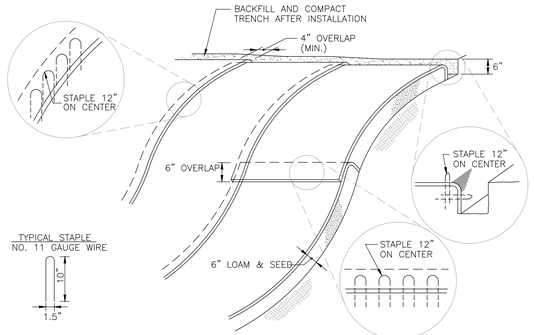
END VIEW

L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

CHECK DAM

STONE CHECK DAM

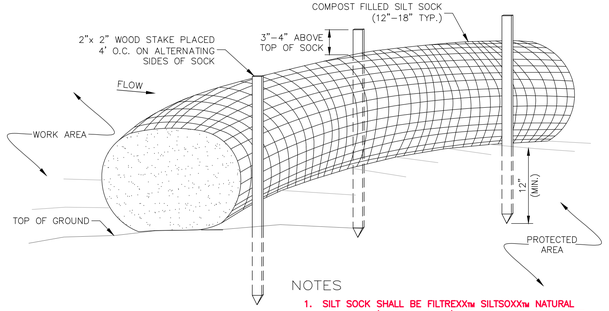
IN SWALE NOT TO SCALE



1. BLANKET SLOPE PROTECTION SHALL MEET REQUIREMENTS OF ENV-WQ 1506.15 MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS.
2. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING.
3. ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
4. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SWALE, PLACE BLANKET END OVER END WITH 6 INCH (MIN.) OVERLAP AND ANCHOR DOWN SLOPE BLANKET IN A 6 INCH DEEP TRENCH.
6. BLANKET SHALL BE NORTH AMERICAN GREEN C125BN, EAST COAST EROSION CONTROL ECC-2B, AMERICAN EXCELSIOR COMPANY CURLEX III FIBRENET, ROLANKA GEONATURAL EROSION & SEDIMENT CONTROL MATTE JUTEMAT OR BIOD-OCF 30, OR APPROVED EQUAL.
7. **BLANKET SHALL NOT CONTAIN WELDED PLASTIC, PLASTIC, MULTI-FILAMENT, OR MONO-FILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8".**

BLANKET SLOPE PROTECTION

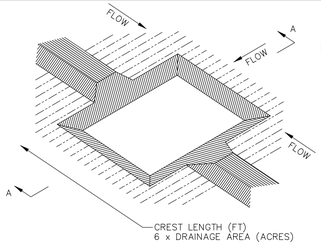
FOR EROSION CONTROL NOT TO SCALE



NOTES
1. **SILT SOCK SHALL BE FILTREXX™ SILTSOXX™ NATURAL ORIGINAL™ (BIODEGRADABLE) OR APPROVED EQUIVALENT.**
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

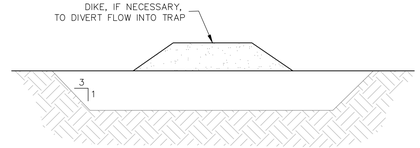
SILT SOCK

NOT TO SCALE



NOTES
1. SEDIMENT TRAP TO BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL BASINS/PONDS ARE STABILIZED. IF IT IS DETERMINED THAT CONSTRUCTION OF A SEDIMENT TRAP IS WARRANTED, CONSULT WITH ENGINEER TO DETERMINE APPROPRIATE NUMBER AND DIMENSIONS.

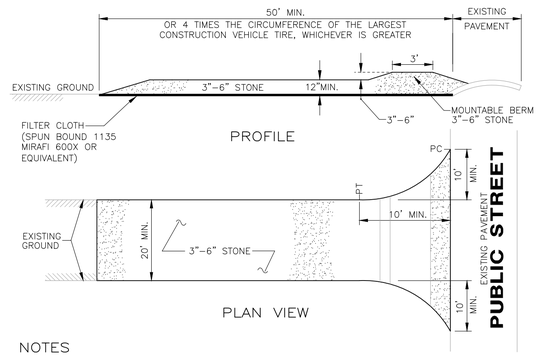
SEDIMENT TRAP – ISOMETRIC VIEW



SECTION A-A

SEDIMENT TRAP

NOT TO SCALE



PROFILE

PLAN VIEW

NOTES
1. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE SURFACE.
2. NO SURFACE WATER SHALL BE DIRECTED TOWARD CONSTRUCTION ENTRANCES.
3. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
4. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
5. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN STORM EVENT.

STABILIZED CONSTRUCTION ENTRANCE

SEE PLAN FOR PROPOSED LOCATION NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

STATE OF NEW HAMPSHIRE – NICHOLAS C. GOLON No. 14086 – LICENSED PROFESSIONAL ENGINEER – 12/22/25

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
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www.tfmoran.com

FILE 18252-02 | DR | | FB | – | D-01
CK | | CADFILE | 18252-02 COVER & DETAILS

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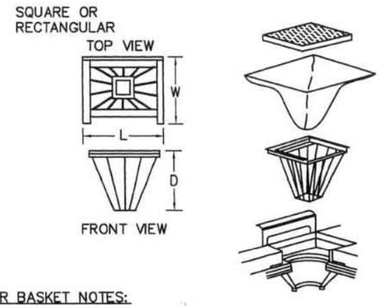
Dec 23, 2025 - 2:23pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_CSD\PRODUCTION\18252-02 Cover & Details.dwg

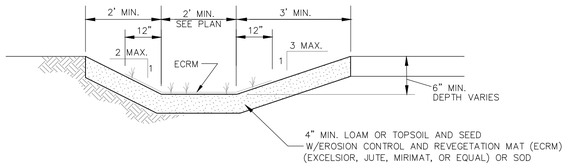


FILTER BASKET NOTES:

1. INLET BASKETS SHALL BE USED ON ALL CATCH BASINS WITHIN THE PROJECT LIMITS WITHIN PAVED AREAS. INLET FILTER BASKETS SHALL BE "SILT SACK®" OR APPROVED EQUAL.
2. FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND EXTEND AT LEAST 6 INCHES PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.
3. THE FILTER FABRIC SHALL BE A GEO-TEXTILE FABRIC: POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:
   GRAB STRENGTH: 300 lb. MINIMUM IN ANY PRINCIPAL DIRECTION (ASTM D-4632).
   MULLEN BURST STRENGTH: MINIMUM 800 psi (ASTM D-3786).
4. THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 40 U.S. STANDARD SIEVE AND MINIMUM PERMEABILITY OF 40 gpm/sq. ft.
5. THE INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM ENTERING THE DRAINAGE PIPING SYSTEM AND/OR CAUSING SURFACE FLOODING.
6. INLET BASKETS SHALL BE MAINTAINED IN PLACE UNTIL ALL PAVING IS COMPLETED AND ALL UNPAVED AREAS HAVE BEEN STABILIZED WITH VEGETATION.

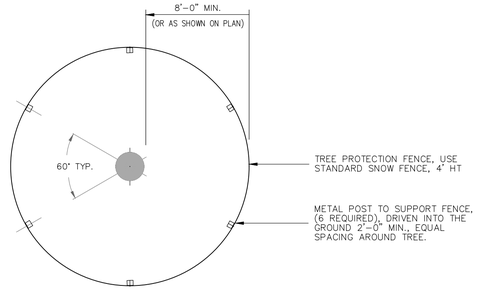
INLET FILTER BASKET

NOT TO SCALE



GRASS LINED SWALE

FOR USE WHERE VELOCITIES ARE 3 FPS OR LESS NOT TO SCALE

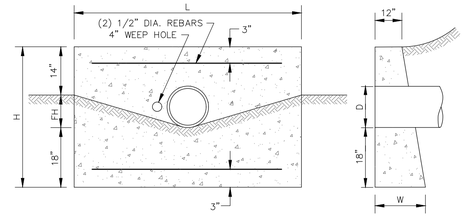


NOTES:
EXCAVATING WITHIN 10 FEET OF EXISTING TREES SHALL BE PERFORMED BY HAND DIGGING, HYDRAULIC, OR PNEUMATIC TOOLS METHODS. THE USE OF HEAVEY EQUIPMENT SHALL BE AVOIDED. NO ROOTS GREATER THAN 2 INCHES IN DIAMETER SHALL BE CUT WITHOUT APPROVAL OF AN ARBORIST. WHEN ROOTS MUST BE CUT, THEY SHALL BE CUT CLEANLY WITH A SHARP SAW TO SOUND WOOD AND FLUSH WITH THE TRENCH SITE. AVOID EXPOSING ROOTS DURING HOT, DRY WEATHER. BACKFILL TRENCHES AS SOON AS POSSIBLE WITH SOIL AND SOAK WITH WATER THE SAME DAY. IF THE TRENCH MUST BE LEFT OPEN FOR AN EXTENDED AMOUNT OF TIME, ALL ROOTS MUST BE KEPT MOIST BY WRAPPING THEM IN PEAT MOSS AND BURLAP.

TREE PROTECTION

NOT TO SCALE

NOMINAL PIPE SIZE D	LENGTH OF BARS	L	H	FH	W
12	3'-2"	3'-6"	3'-6"	0'-10"	1'-10.5"
15	4-2	4-6	3-9	1-1	1-11.25
18	5-2	5-6	4-0	1-4	2-0
24	7-2	7-6	4-6	1-10	2-1.5
30	9-2	9-6	5-0	2-4	2-3
36	11-2	11-6	5-6	2-10	2-4.5
42	13-2	13-6	6-0	3-4	2-6
48	15-2	15-6	6-6	3-10	2-7.5



CONCRETE HEADWALL

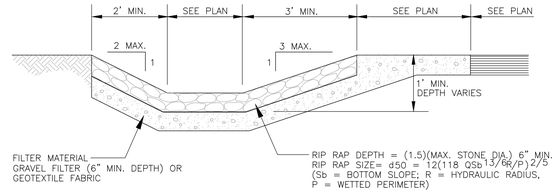
SINGLE PIPE SYSTEM NOT TO SCALE

RIP-RAP GRADATION

STONE SIZE	% FINER BY WEIGHT D 50 = 6"	D50 = 9"	D 50 = 12"	D50 = 18"	D 50 = 24"
2"	0-15%	0%	–	–	–
4"	20-35%	10-20%	0-10%	–	–
6"	35-50%	25-35%	10-25%	0-10%	–
8"	50-65%	30-50%	20-30%	10-20%	0-10%
10"	60-80%	40-60%	30-40%	15-30%	5-15%
12"	75-100%	–	–	–	–
15"	–	70-100%	45-60%	25-40%	20-30%
20"	–	–	70-100%	40-60%	30-45%
30"	–	–	–	70-100%	50-70%
40	–	–	–	–	70-100%

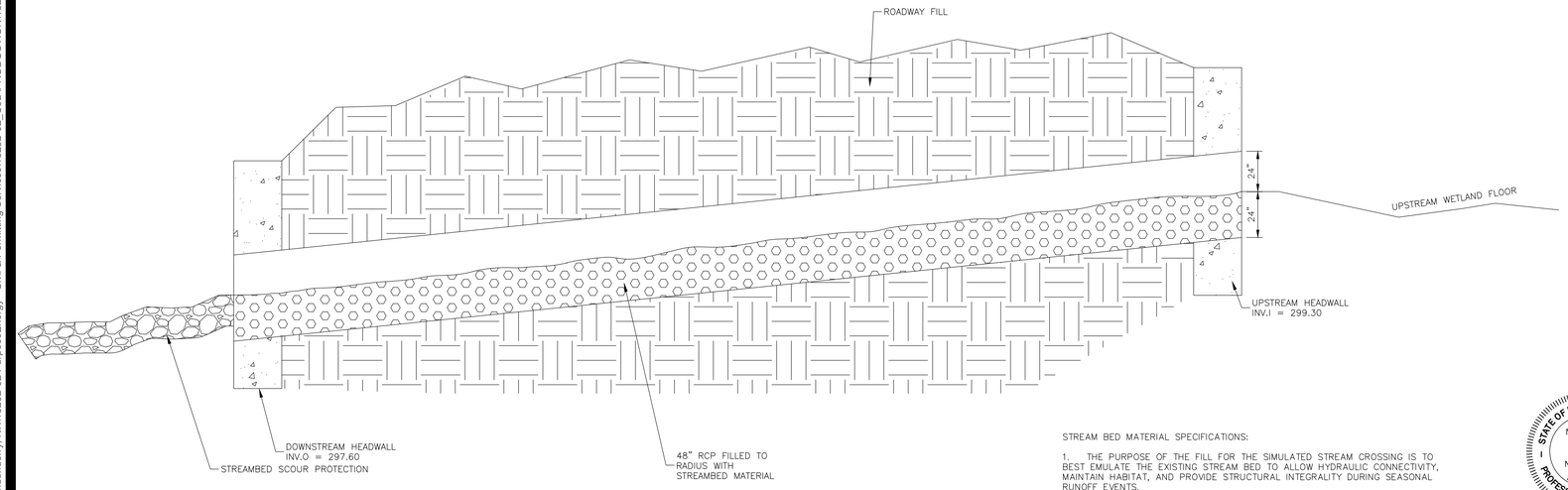
GRAVEL FILTER GRADATION

SIEVE SIZE	% PASSING BY WEIGHT
3½"	100
3"	85-100
1½"	60-90
¾"	40-70
⅜"	20-50
NO. 4	10-40
NO. 200	0-8



RIP RAP SWALE

FOR USE WHERE VELOCITIES EXCEED 3 FPS NOT TO SCALE



STREAM BED MATERIAL SPECIFICATIONS:

1. THE PURPOSE OF THE FILL FOR THE SIMULATED STREAM CROSSING IS TO BEST EMULATE THE EXISTING STREAM BED TO ALLOW HYDRAULIC CONNECTIVITY, MAINTAIN HABITAT, AND PROVIDE STRUCTURAL INTEGRALITY DURING SEASONAL RUNOFF EVENTS.
2. THE STREAMBED MATERIAL SHALL CONSIST OF WELL GRADED, ROUNDED, FLAT BOTTOM, NATURAL RIVER BED MATERIAL. NO ANGULAR ROCK TO BE USED.
3. COBBLES, STONES, AND GRAVELS:

STONE SIZE	PERCENT PASSING BY WEIGHT
8"	50%
4"	40%
2"	10%

CROSS CULVERT SECTION

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

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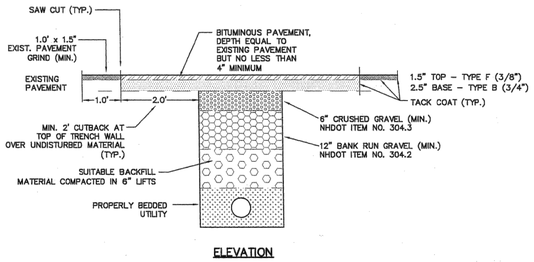
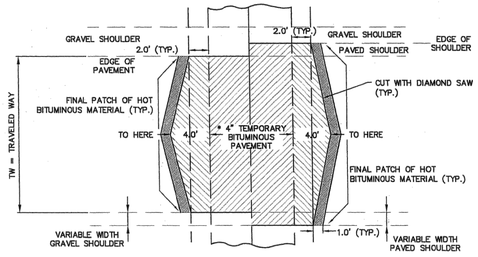


ELEVATION

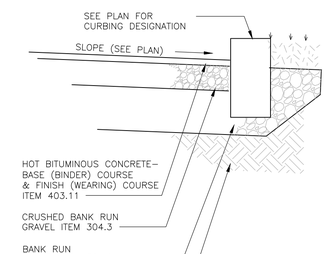


PLAN

* TO BE REMOVED FOR PERMANENT REPAIR

PAVEMENT TRENCH PATCH

FLUSH NOT TO SCALE



LAYER	STANDARD DUTY
TOP	1.5"
BINDER	2.5"
CRUSHED GRAVEL	6"
BANK RUN GRAVEL	12"

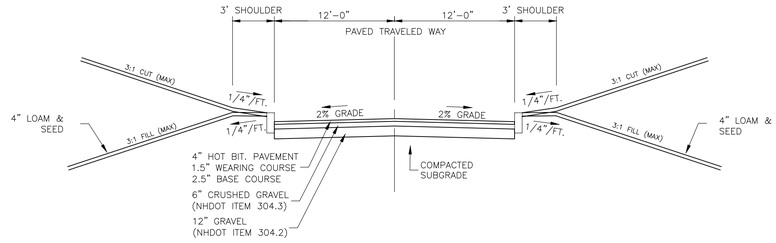
ROAD CONSTRUCTION NOTES

REMOVE ALL LOAM, CLAY, MUCK, STUMPS, AND OTHER IMPROPER PAVEMENT FOUNDATION MATERIAL WITHIN 2' OF SUBGRADE. REPLACE WITH COMPACTED GRANULAR FILL MATERIAL ACCEPTABLE TO APPROVING AGENCY. COMPACTION TO BE AT LEAST 95% OF STANDARD PROCTOR.

ALL PAVEMENT, BASE MATERIALS AND WORKMANSHIP TO BE IN COMPLIANCE WITH N.H.D.O.T. "STANDARDS FOR ROAD AND BRIDGE CONSTRUCTION" LATEST EDITION.

PAVEMENT SECTION

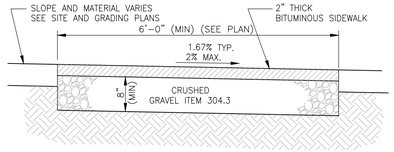
NOT TO SCALE



1. ALL ROADWAY MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE LATEST NHDOT SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. PROVIDE 4" MIN. COMPACTED LOAM AND SEED ON ALL SIDE SLOPES AND DRAINAGE SWALES UNLESS OTHERWISE NOTED.
3. ALL LEDGE SHALL BE REMOVED TO 6" BELOW SUBGRADE.
4. CURBING SHALL BE BITUMINOUS CONCRETE CURB.

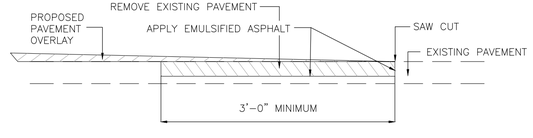
DRIVEWAY SECTION

NOT TO SCALE



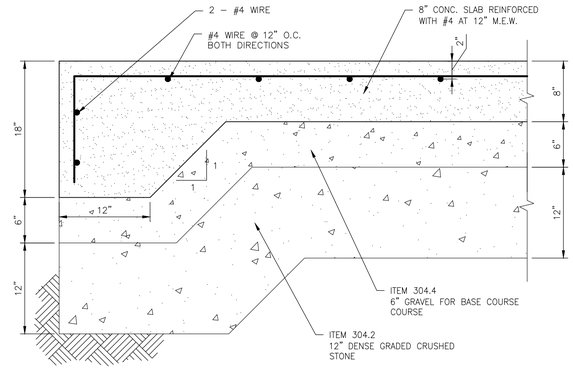
BITUMINOUS SIDEWALK

NOT TO SCALE



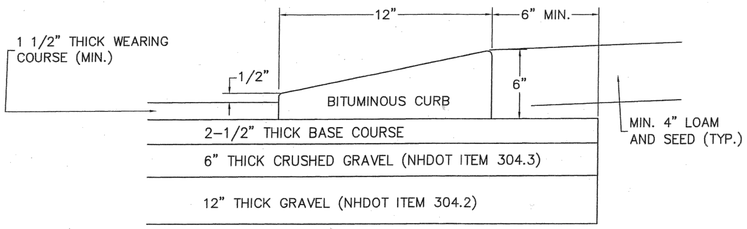
PAVEMENT SAWCUT

NOT TO SCALE



CONCRETE PAD DETAIL

NOT TO SCALE

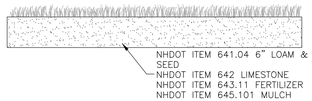


NOTES:

1. APPLY TACK COAT PRIOR TO PLACEMENT OF CURB
2. BITUMINOUS CURB MATERIAL SHALL MEET THE REQUIREMENTS OF NHDOT SECTION 609.
3. CAPE COD BERM DIMENSIONS SHALL MATCH THOSE GIVEN IN THIS DETAIL.

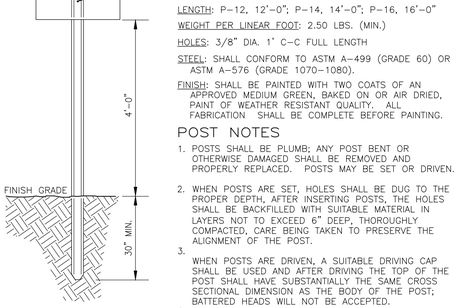
BITUMINOUS CONCRETE CURB

NOT TO SCALE



LOAM & SEED DETAIL

NOT TO SCALE



LENGTH: P-12, 12'-0"; P-14, 14'-0"; P-16, 16'-0"

WEIGHT PER LINEAR FOOT: 2.50 LBS. (MIN.)

HOLES: 3/8" DIA. 1' C-C FULL LENGTH

STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070-1080).

FINISH: SHALL BE PAINTED WITH TWO COATS OF AN APPROVED MEDIUM GREEN, BAKED ON OR AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

POST NOTES

1. POSTS SHALL BE PLUMB; ANY POST BENT OR OTHERWISE DAMAGED SHALL BE REMOVED AND PROPERLY REPLACED. POSTS MAY BE SET OR DRIVEN.
2. WHEN POSTS ARE SET, HOLES SHALL BE DUG TO THE PROPER DEPTH, AFTER INSERTING POSTS, THE HOLES SHALL BE BACKFILLED WITH SUITABLE MATERIAL IN LAYERS NOT TO EXCEED 6" DEEP, THOROUGHLY COMPACTED, CARE BEING TAKEN TO PRESERVE THE ALIGNMENT OF THE POST.
3. WHEN POSTS ARE DRIVEN, A SUITABLE DRIVING CAP SHALL BE USED AND AFTER DRIVING THE TOP OF THE POST SHALL HAVE SUBSTANTIALLY THE SAME CROSS SECTIONAL DIMENSION AS THE BODY OF THE POST; BATTERED HEADS WILL NOT BE ACCEPTED.
4. POSTS SHALL NOT BE DRIVEN WITH THE SIGN ATTACHED TO THE POST.
5. SIGNS SHALL BE ERECTED IN CONFORMANCE WITH THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
6. WHEN SIGN IS IN PLACE NO PART OF POST SHALL EXTEND ABOVE THE SIGN.
7. DIMENSIONS SHOWN ARE NOMINAL.
8. ALTERNATE SECTIONS MUST BE APPROVED PRIOR TO USE.

PROTECTED CONSERVATION AREA

DO NOT DISTURB SOILS OR VEGETATION

VIOLATORS WILL BE PROSECUTED

For Information Or To Report A Violation Call The Code Enforcement Officer At 432-1100 Ext. 125

SIGN NOTE

SIGNS SHALL BE PLACED ON TREES IN BUFFER LINE OR SHALL BE INSTALLED ON SIGN POSTS AS SHOWN. THE MAXIMUM SPACING BETWEEN SIGNS SHALL BE 50 FEET.

CONSERVATION OVERLAY DISTRICT SIGN

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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25 NORTH WENTWORTH AVE.
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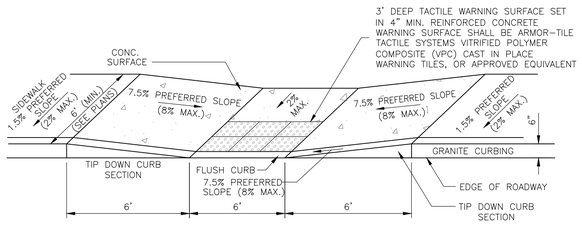
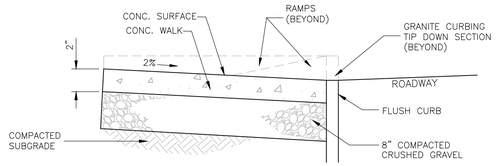
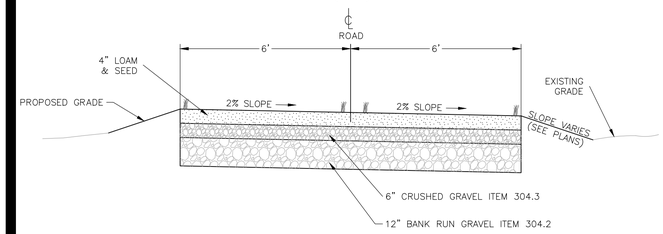




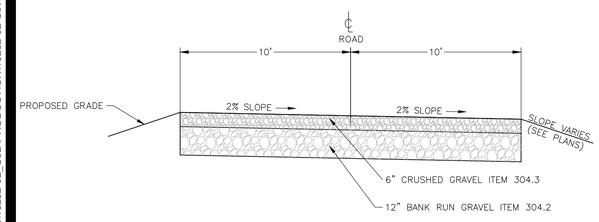
ACCESSIBLE RAMP RECESSED IN WALK

WITH DETECTABLE WARNING SURFACE (VPC) NOT TO SCALE



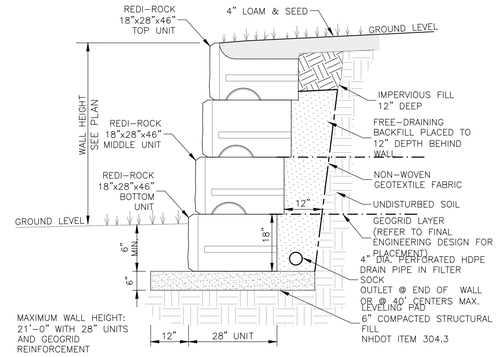
MAINTENANCE DRIVE

STORMWATER MANAGEMENT AREAS NOT TO SCALE



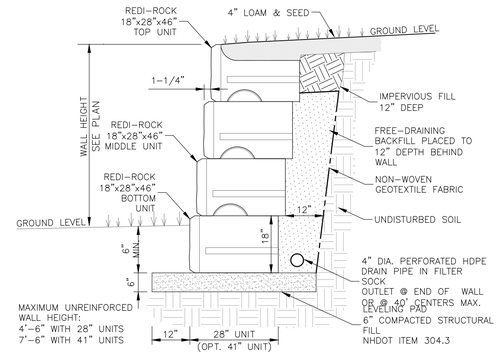
GRAVEL MAINTENANCE DRIVE

PROCESS BUILDING NOT TO SCALE



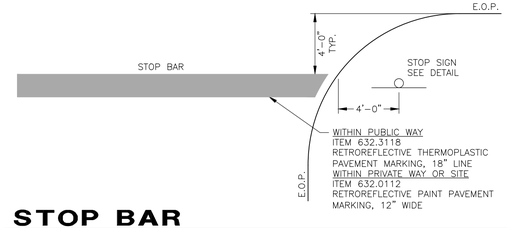
REDI-ROCK RETAINING WALL

REINFORCED WITH GEOGRID SCALE: 1/2"=1'-0"



REDI-ROCK RETAINING WALL

UNREINFORCED SCALE: 1/2"=1'-0"



STOP BAR

NOT TO SCALE

SITE DEVELOPMENT PLANS

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1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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FILE	18252-02	DR		FB	–	D-04
		CK		CADFILE	18252-02 COVER & DETAILS	

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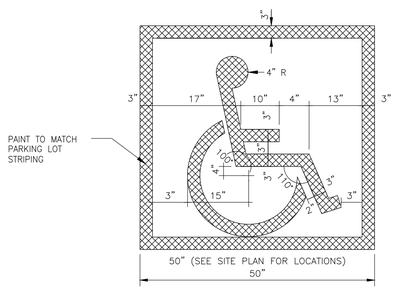

PAINTED ACCESSIBLE SYMBOL

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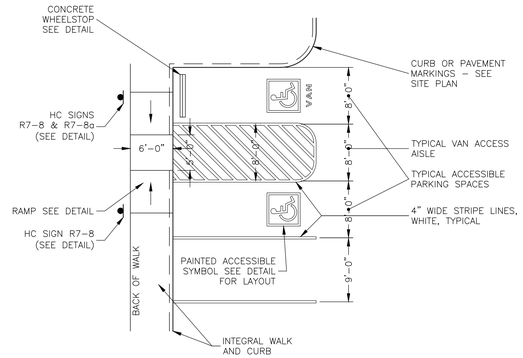

VAN ACCESSIBLE STRIPING LAYOUT

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LADDER CROSSWALK

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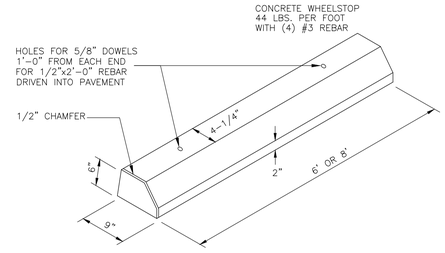

CONCRETE WHEELSTOP

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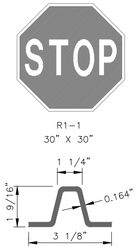
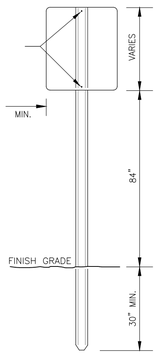




LENGTH: P–12, 12'–0"; P–14, 14'–0"; P–16, 16'–0".

WEIGHT PER LINEAR FOOT: 2.50 LBS. (MIN.)

HOLES: 3/8" DIA. 1' C–C FULL LENGTH

STEEL: SHALL CONFORM TO ASTM A–499 (GRADE 60) OR ASTM A–576 (GRADE 1070–1080).

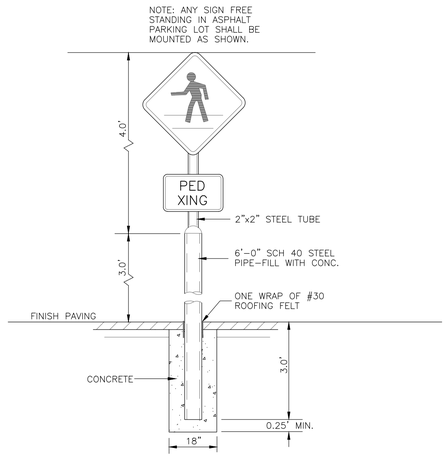
FINISH: SHALL BE PAINTED WITH TWO COATS OF AN APPROVED MEDIUM GREEN, BAKED ON OR AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

NOTES

1. POSTS SHALL BE PLUMB; ANY POST BENT OR OTHERWISE DAMAGED SHALL BE REMOVED AND PROPERLY REPLACED. POSTS MAY BE SET OR DRIVEN.
2. WHEN POSTS ARE SET, HOLES SHALL BE DUG TO THE PROPER DEPTH, AFTER INSERTING POSTS, THE HOLES SHALL BE BACKFILLED WITH SUITABLE MATERIAL IN LAYERS NO TO EXCEED 6" DEEP THOROUGHLY COMPACTED, CARE BEING TAKEN TO PRESERVE THE ALIGNMENT OF THE POST.
3. WHEN POSTS ARE DRIVEN, A SUITABLE DRIVING CAP SHALL BE USED AND AFTER DRIVING THE TOP OF THE POST SHALL HAVE SUBSTANTIALLY THE SAME CROSS–SECTIONAL DIMENSION AS THE BODY OF THE POST; BATTERED HEADS WILL NOT BE ACCEPTED.
4. POSTS SHALL NOT BE DRIVEN WITH THE SIGN ATTACHED TO THE POST.
5. SIGNS SHALL BE ERECTED IN CONFORMANCE WITH THE REQUIEMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
6. WHEN SIGN IS IN PLACE NO PART OF POST SHALL EXTEND ABOVE THE SIGN.
7. DIMENSIONS SHOWN ARE NOMINAL.
8. ALTERNATE SECTIONS MUST BE APPROVED PRIOR TO USE.

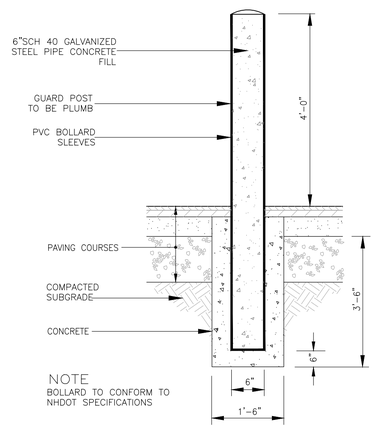
SIGN POST IN GRADE

NOT TO SCALE



SIGN POLE IN PAVEMENT

NOT TO SCALE



GUARD POST (BOLLARD)

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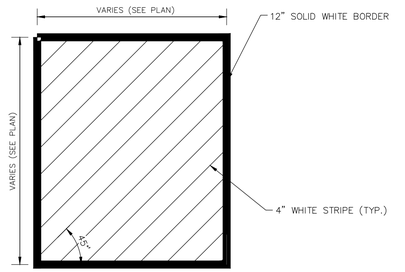

LOADING ZONE PAINT

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
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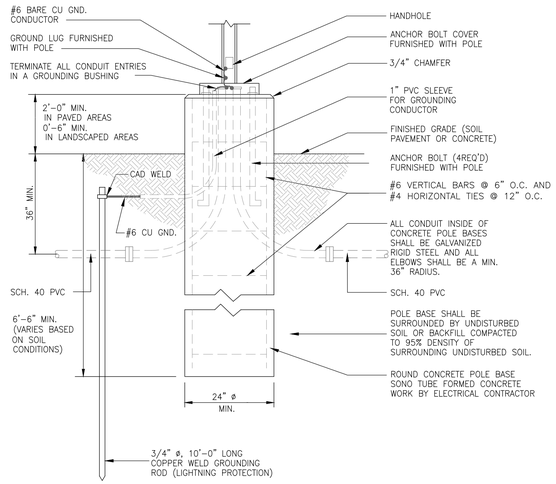
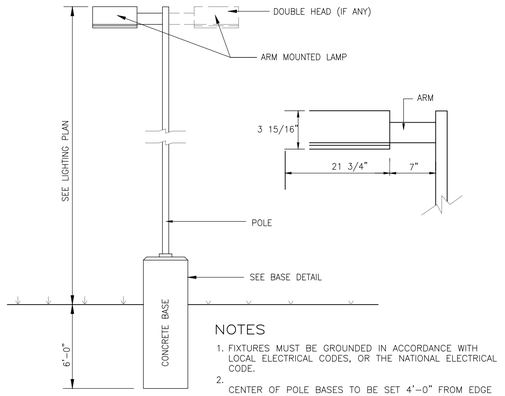


LIGHT POLE BASE

NOT TO SCALE



LIGHT POLE

NOTES

1. FIXTURES MUST BE GROUNDED IN ACCORDANCE WITH LOCAL ELECTRICAL CODES, OR THE NATIONAL ELECTRICAL CODE.
2. CENTER OF POLE BASES TO BE SET 4'-0" FROM EDGE OF PAVEMENT, EXCEPT WHERE OTHERWISE INDICATED ON
3. DRAWING.
   LIGHTING SHOWN HERE IS AREA LIGHTING, SUPPLEMENTAL BUILDING-MOUNTED FIXTURES AT DOORWAYS, ETC. MAY
4. BE REQUIRED.
   SEE LIGHTING PLAN FOR FIXTURE SCHEDULE.

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TAX MAP 14 LOT 39-2

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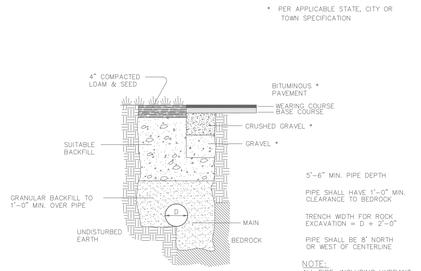

TYPICAL TRENCH DETAIL

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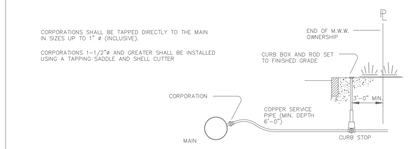
6-22-95

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD1A
	STANDARD DETAIL	

95SD1



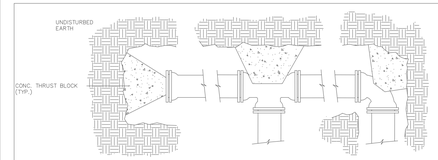
TYPICAL SERVICE CONNECTION

NOT TO SCALE

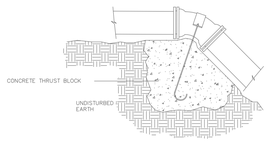
6-22-95

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD2
	STANDARD DETAIL	

95SD2



PLAN – HORIZONTAL BENDS, TEES AND PLUGS



ELEVATION – VERTICAL BENDS

THRUST BLOCK DIMENSIONS TO BE DETERMINED IN FIELD BY ENGINEER BASED ON PIPE SIZE, WATER PRESSURE AND SOIL TYPE.

STONE BACKING MAY BE SUBSTITUTED FOR CONCRETE THRUST BLOCKS PROVIDED THE STONE(S) ARE OF EQUAL SIZE AND BEAR ON UNDISTURBED EARTH.

USE OF JOINT RESTRAINT SYSTEMS SHALL NOT ELIMINATE THRUST BLOCK REQUIREMENTS (WHERE POSSIBLE).

TYPICAL THRUST BLOCKS

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6-22-95

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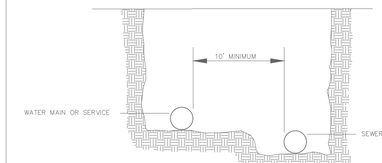
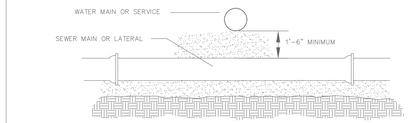
	STANDARD DETAIL	

95SD4



PARALLEL INSTALLATION



MAIN CROSSINGS

WATER MAIN/SEWER MAIN SEPARATION

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6-22-95

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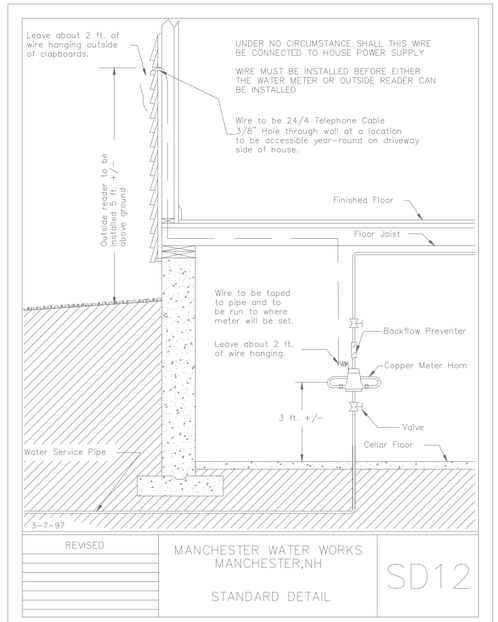
95SD6



3-7-97

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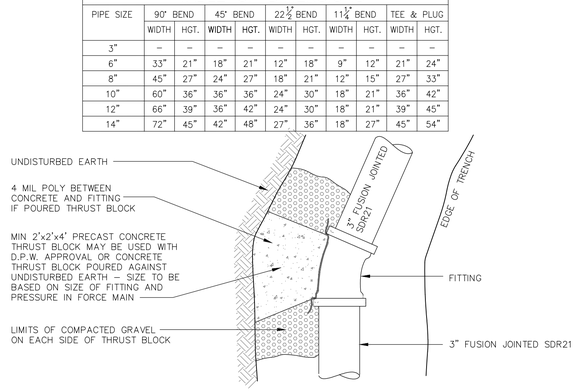

TABLE OF DIMENSIONS										
PIPE SIZE	90° BEND		45° BEND		22½° BEND		11¼° BEND		TEE & PLUG	
	WIDTH	HGT.	WIDTH	HGT.	WIDTH	HGT.	WIDTH	HGT.	WIDTH	HGT.
3"	–	–	–	–	–	–	–	–	–	–
6"	33"	21"	18"	21"	12"	18"	9"	12"	21"	24"
8"	45"	27"	24"	27"	18"	21"	12"	15"	27"	33"
10"	60"	36"	36"	36"	24"	30"	18"	21"	36"	42"
12"	66"	39"	36"	42"	24"	30"	18"	21"	39"	45"
14"	72"	45"	42"	48"	27"	36"	18"	27"	45"	54"

NOTE

1. ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO D.P.W. TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 6' FROM TOP OF PIPE TO FINISH GRADE, UNLESS NOTED OTHERWISE. REFER TO SEWER EXTENSION PROFILE.

THRUST BLOCKING BEHIND FITTINGS INSTALLATION

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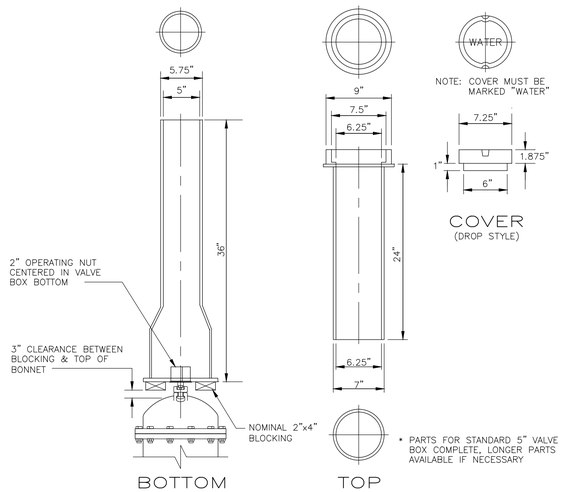

VALVE BOX

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SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE – NICHOLAS C. GOLON No. 14086 – LICENSED PROFESSIONAL ENGINEER – 9/30/25

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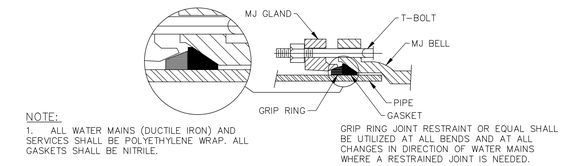


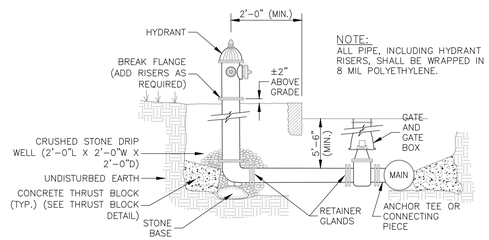
NOTE:

1. ALL WATER MAINS (DUCTILE IRON) AND SERVICES SHALL BE POLYETHYLENE WRAP. ALL GASKETS SHALL BE NITRILE.

GRIP RING JOINT RESTRAINT OR EQUAL SHALL BE UTILIZED AT ALL BENDS AND AT ALL CHANGES IN DIRECTION OF WATER MAINS WHERE A RESTRAINED JOINT IS NEEDED.

GRIP RING JOINT RESTRAINT

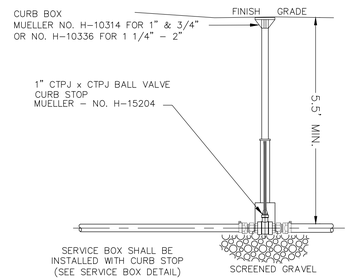
NOT TO SCALE



NOTE:
ALL PIPE, INCLUDING HYDRANT RISERS, SHALL BE WRAPPED IN 8 MIL POLYETHYLENE.

TYPICAL HYDRANT INSTALLATION

MANCHESTER WATER WORKS NOT TO SCALE



CURB STOP

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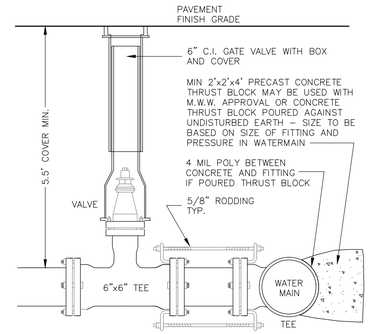
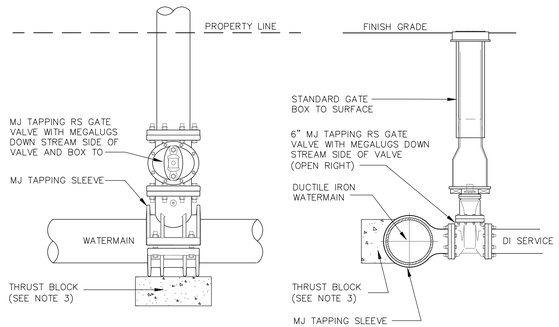


BURIED GATE VALVE

NOT TO SCALE



NOTE

1. ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO M.W.W. TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTHS OF 5'-6" FROM TOP OF PIPE TO FINISH GRADE.
3. MIN 2'x2'x4' PRECAST CONCRETE THRUST BLOCK MAY BE USED WITH M.W.W. APPROVAL OR CONCRETE THRUST BLOCK POURED AGAINST UNDISTURBED EARTH - SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATERMAIN.

WET TAP TEE INSTALLATION

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SEWER SERVICE NOTES

1) MINIMUM SIZE PIPE FOR SEWER SERVICE SHALL BE FOUR INCHES.

2) PIPE AND JOINT MATERIALS:
   A. PLASTIC SEWER PIPE
      1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 TO T-3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
D2680	*ABS (COMPOSITES WALL)	8" THROUGH 15"

*PVC: POLY VINYL CHLORIDE
*ABS: ACRYLONITRILE-BUTADIENE-STYRENE

      2. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.

      ABS TRUSS PIPE AND FITTINGS SHALL CONFORM TO ASTM D-2680, POLYMER COMPOUNDING SHALL BE TO ASTM D-1788 (CLASS 322).

      JOINTS FOR ABS TRUSS PIPE SHALL BE CHEMICAL WELDED COUPLINGS TYPE SC IN ACCORDANCE WITH ASTM D-2680, FORMING A CHEMICAL WELDED JOINT.

   B. DUCTILE-IRON PIPE, FITTINGS AND JOINTS.

      1. DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
         A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.
         A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.
      2. JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:
         A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS

3) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

4) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER-TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATIOI WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5) TEES AND WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURERS' INSTRUCTIONS USING A BOLTED, CLAMPED OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 15" DIAMETER.

6) SEWER SERVICE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 6 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.

   THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN 1/4" INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

7) TESTING: THE COMPLETED SEWER SERVICE SHALL BE SUBJECTED TO A THIRD PARTY LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS: (PRIOR TO BACKFILLING)

   A. ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.

      LOW PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:

         ASTM F1417-92(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR".

         UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW PRESSURE AIR TESTING OF INSTALLED SEWER PIPE".

   LEAKAGE OBSERVED IN ANY ONE OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER TIGHTNESS.

8) ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.

9) WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE.

10) BEDDING: CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67.

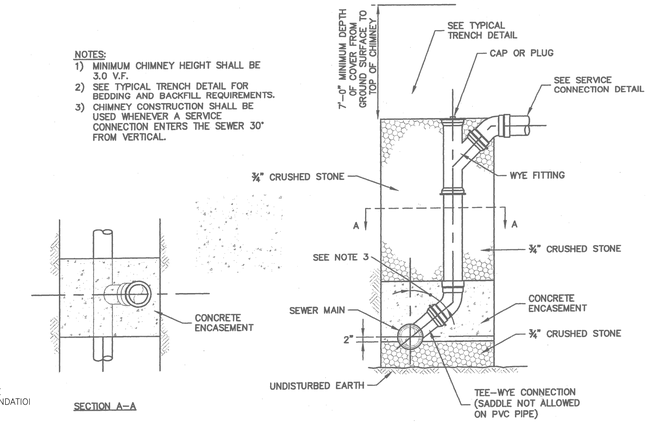
100% PASSING	1 INCH SCREEN
90%-100% PASSING	3/4 INCH SCREEN
20%-55% PASSING	3/8 INCH SCREEN
0%-10% PASSING	#4 SIEVE
0%-5% PASSING	#8 SIEVE

   WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, CRUSHED STONE 1/2 INCH TO 1 1/ INCH SHALL BE USED.

11) LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.

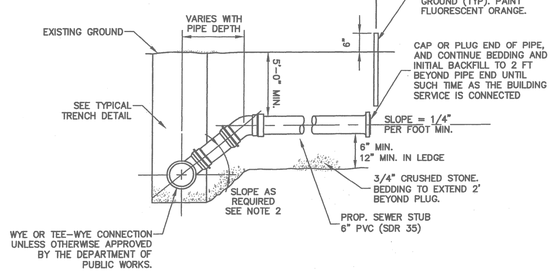
12) CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE SEWER CONNECTION. CHIMNEY INSTALLATION AS RECOMMENDED BY THE PIPE MANUFACTURER MAY BE USED IF APPROVED BY THE ENGINEER.

SEWER SERVICE DETAILS



CHIMNEY (SEE NOTE 12)

NOT TO SCALE



NOTES:
1. ALL SERVICE CONNECTIONS TO BE 6" MINIMUM UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. USE CHIMNEY DETAIL WHERE SERVICE CONNECTION ENTERS SEWER AT GREATER THAN 60° TO THE HORIZONTAL.

SEWER SERVICE

NOT TO SCALE

GRAVITY SEWER NOTES

1. MINIMUM SIZE PIPE FOR GRAVITY SEWER SHALL BE 8-INCHES.
2. PIPE AND JOINT MATERIALS FOR PLASTIC SEWER PIPE SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034-04a	* PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679-03	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F794-03	PVC (RIBBED WALL)	8" THROUGH 36"
F1760-01(2005)e1	PVC, RECYCLED	ALL DIAMETERS

*PVC: POLY VINYL CHLORIDE

3. PLASTIC SEWER PIPE SHALL HAVE A PIPE STIFFNESS RATING OF AT LEAST 46 POUNDS PER SQUARE INCH AT 5 PERCENT PIPE DIAMETER DEFLECTION, AS MEASURED IN ACCORDANCE WITH ASTM D2412-02 DURING MANUFACTURE.
4. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212-96(a)(2003)e1 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.
5. DUCTILE-IRON PIPE, FITTINGS AND JOINTS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION (AWWA).

   AWWA C150/A21.50 FOR THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A536 FOR DUCTILE IRON CASTINGS.

   AWWA C151/A21.51 FOR DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL- OR SAND-LINED MOLDS FOR WATER, WASTEWATER, AND RECLAIMED WATER SYSTEMS.

   JOINTS SHALL BE OF THE MECHANICAL TYPE, PUSH-ON TYPE, OR BALL- AND SOCKET TYPE AS APPROPRIATE FOR THE SPECIFIC APPLICATION. JOINTS AND GASKETS SHALL CONFORM TO AWWA C151/A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS.
6. CONCRETE PIPE SHALL CONFORM TO AWWA C302-04.
7. PRESTRESSED CONCRETE CYLINDER PIPE AND FITTINGS SHALL CONFORM TO AWWA C301-99.
8. JOINTS SEALS FOR CONCRETE CYLINDER PIPE SHALL BE OIL RESISTANT ELASTOMERIC MATERIAL CONFORMING TO ASWWA C301-99 SPECIFICATIONS.
9. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
10. GRAVITY SEWER PIPE TESTING SHALL BE AS FOLLOWS:

    ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.

    LOW PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:

       ASTM F1417-92(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR".

       UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW PRESSURE AIR TESTING OF INSTALLED SEWER PIPE".
11. ALL NEW GRAVITY SEWERS SHALL BE CLEANED AND VISUALLY INSPECTED AND SHALL BE TRUE TO LINE AND GRADE FOLLOWING INSTALLATION AND PRIOR TO USE.
12. ALL PLASTIC SEWER PIPE SHALL BE DEFLECTION TESTED NOT LESS THAN 30 DAYS FOLLOWING INSTALLATION.
13. THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5 PERCENT OF THE AVERAGE INSIDE DIAMETER.
14. TRENCH CONSTRUCTION SHALL CONFORM TO THE FOLLOWING:

    SEWERS SHALL BE BURIED TO A MINIMUM DEPTH OF 6' BELOW GRADE IN ALL ROADWAY LOCATIONS AND TO A MINIMUM DEPTH OF 4 FEET BELOW GRADE IN ALL CROSS COUNTRY LOCATIONS.

    WHERE SEWER LINES CROSS WATER PIPES, A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. AT SEWER/WATER INTERSECTIONS, A MINIMUM OF 6 FEET SHALL BE PROVIDED FROM THE WATER LINE TO THE SEWER PIPE JOINT. 12" SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE REQUIRED BETWEEN SEWER LINES AND ALL OTHER PIPES.

    TRENCH DIMENSIONS FOR SEWER PIPE LESS THAN 15 INCHES IN DIAMETER, THE ALLOWABLE TRENCH WIDTH AT A PLANE 12 INCHES ABOVE THE PIPE SHALL BE NO MORE THAN 36 INCHES AND FOR PIPE 15 INCHES AND LARGER, THE ALLOWABLE WIDTH SHALL BE EQUAL TO THE PIPES OUTSIDE DIAMETER PLUS 24 INCHES.

    PIPE TRENCH BEDDING MATERIAL AND FILL MATERIAL FOR EXCAVATION BELOW GRADE SHALL BE CRUSHED STONE TO ASTM C33-03 STONE SIZE NO. 67. THE PIPE SAND BLANKET MATERIAL SHALL BE GRADED SAND FREE FROM ANY ORGANIC MATERIALS, GRADED SUCH THAT 100 PERCENT PASSED THE 1/2-INCH SIEVE AND A MAXIMUM OF 15 PERCENT PASSES A #200 SIEVE. IN LIEU OF A SAND BLANKET, A STONE ENVELOPE 6 INCHES THICK COMPLETELY AROUND THE PIPE USING 3/4-INCH STONE MAY BE USED.

    PIPE BEDDING MATERIAL SHALL EXTEND FROM A HORIZONTAL PLANE THROUGH THE PIPE AXIS TO 6-INCHES BELOW THE BOTTOM OF THE OUTSIDE SURFACE OF THE PIPE.

    PIPE SAND BLANKET MATERIAL SHALL COVER THE PIPE A MINIMUM OF 12 INCHES ABOVE THE CROWN OF THE OUTSIDE SURFACE.

    COMPACTION SHALL BE IN 12-INCH LAYERS FOR BEDDING AND BLANKET MATERIALS.

    BACKFILL MATERIAL SHALL BE IN 3-FOOT LAYERS TO THE GROUND SURFACE EXCEPT FOR ROAD CONSTRUCTION WHERE THE FINAL 3-FEET SHALL BE COMPACTED IN 12-INCH LAYERS TO THE ROAD BASE SURFACE.

    TRENCH BACKFILL MATERIAL IN ROADWAY LOCATIONS SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION, EXCLUDING DEBRIS, PAVEMENT PIECES, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT, CLAY, EXCAVATED LEDGE, ROCKS OVER 6 INCHES IN THE LARGEST DIMENSION, OR ANY OTHER UNSUITABLE MATERIAL NOT APPROVED BY THE ENGINEER.

    TRENCH BACKFILL AT CROSS-COUNTRY LOCATIONS SHALL BE AS DESCRIBED ABOVE EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLE RECONSTRUCTION, WHEN NECESSARY WILL BE PRESERVED. BACKFILL SHALL BE MOUNDED 6-INCHES ABOVE ORIGINAL GROUND.

    BASE COURSE MATERIALS FOR TRENCH REPAIRS SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.

    WHERE SHEETING IS PLACED ALONG SIDE OF THE PIPE AND EXTENDS BELOW MID-DIAMETER, THE SHEETING SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN ONE FOOT ABOVE THE TOP OF THE PIPE AND AT LEAST 3 FEET BELOW FINISH GRADE.

    TRENCHES FOR SEWER PIPES WITH SLOPES OVER 0.08 FEET PER FOOT AND TRENCHES FOR SEWER PIPES BELOW THE SEASONAL HIGH GROUND WATER LEVEL SHALL HAVE IMPERVIOUS TRENCH DAMS CONSTRUCTED EVERY 300 FEET TO PREVENT POTENTIAL DISTURBANCE TO PIPE BEDDING AND BLANKET MATERIALS.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Traffic Engineers
Land Surveyors
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18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-09

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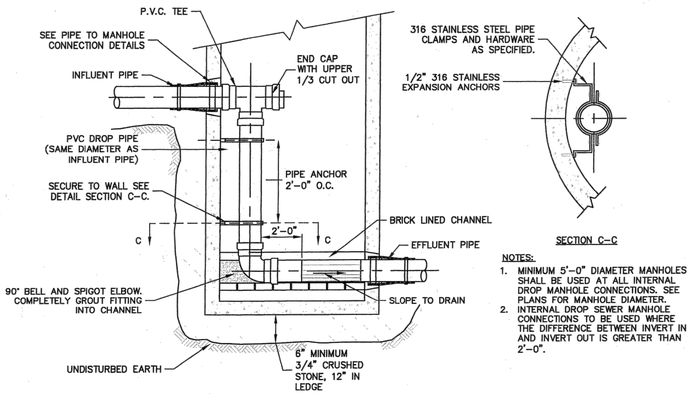
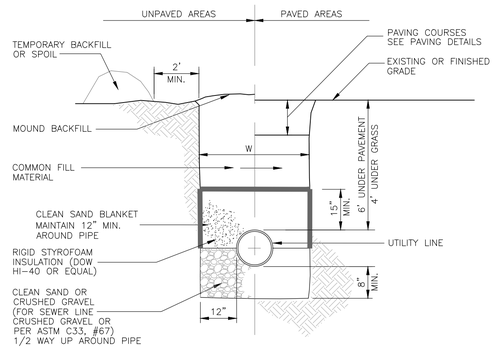


NOTES:
1. MINIMUM 5'-0" DIAMETER MANHOLES SHALL BE USED AT ALL INTERNAL DROP MANHOLE CONNECTIONS. SEE PLANS FOR MANHOLE DIAMETER.
2. INTERNAL DROP SEWER MANHOLE CONNECTIONS TO BE USED WHERE THE DIFFERENCE BETWEEN INVERT IN AND INVERT OUT IS GREATER THAN 2'-0".

TYPICAL SEWER MANHOLE
WITH INTERNAL DROP CONNECTION

NOT TO SCALE



NOTE

W=MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.

PIPE INSULATION

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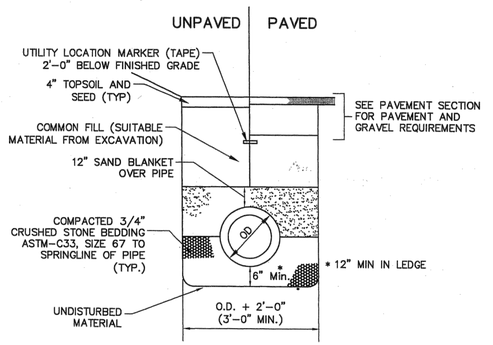

TYPICAL SEWER PIPE TRENCH

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
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2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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Land Surveyors
Landscape Architects
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GENERAL NOTES

1. ALL SEWER CONSTRUCTION STANDARDS AND DETAILS SHALL ADHERE TO ENV-WQ 700, EFFECTIVE DATE JULY 1, 2025.
2. IT IS THE INTENTION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES SHALL BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT AND ADEQUATE JOINTING. THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND HS-20-44 LOADING INCLUDING THE FRAME AND COVER.
3. SEWER MANHOLE DIAMETER SHALL BE AS INDICATED ON THE PLANS.
4. LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN OF LONDONDERRY AND NHDES REQUIREMENTS. INVERT AND SHELF TO BE PLACED AFTER PASSING THE LEAKAGE TEST.
   (a) ALL MANHOLES SHALL BE TESTED FOR LEAKAGE USING A VACUUM TEST IN ACCORDANCE WITH THE ASTM C1244 STANDARD IN EFFECT WHEN THE TESTING IS PERFORMED.
   (b) THE MANHOLE VACUUM TEST SHALL CONFORM TO THE FOLLOWING:
      1. THE INITIAL VACUUM GAUGE TEST PRESSURE SHALL BE 10 INCHES Hg.
      2. THE MINIMUM ACCEPTABLE TEST HOLD TIME FOR 1-INCH Hg PRESSURE DROP TO 9 INCHES SHALL BE:
         A. NOT LESS THAN 2 MINUTES FOR MANHOLES LESS THAN 10 FEET DEEP.
         B. NOT LESS THAN 2.5 MINUTES FOR MANHOLES 10 TO 15 FEET DEEP.
         C. NOT LESS THAN 3 MINUTES FOR MANHOLES MORE THAN 15 FEET DEEP.
   (c) THE MANHOLE SHALL BE REPAIRED AND RETESTED IF THE TEST HOLD TIMES FAIL TO ACHIEVE THE ACCEPTANCE LIMITS SPECIFIED IN (b) ABOVE.
   (d) INVERTS AND SHELVES SHALL NOT BE INSTALLED UNTIL AFTER SUCCESSFUL TESTING IS COMPLETE.
   (e) FOLLOWING COMPLETION OF THE LEAKAGE TEST, THE FRAME AND COVER SHALL BE PLACED ON TOP OF THE MANHOLE OR SOME OTHER MEANS USED TO PREVENT ACCIDENTAL ENTRY BY UNAUTHORIZED PERSONS, CHILDREN OR ANIMALS, UNTIL THE CONTRACTOR IS READY TO MAKE FINAL ADJUSTMENT TO GRADE.
5. CARE SHALL BE TAKEN TO ENSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE. BASE SECTION TO BE FULL.
6. MANHOLE CHANNELS REQUIRING CHANGE IN ALIGNMENT ARE TO BE BUILD ON A SMOOTH RADIUS.
7. IN CROSS COUNTRY AREAS BEYOND ROADWAY RIGHT-OF-WAYS, THE MANHOLE FRAME ELEVATION SHALL BE A MINIMUM OF 6" ABOVE FINISHED GRADE. GRADE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE MANHOLE.
8. FRAMES AND COVERS: MANHOLES FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. 3-INCH (MINIMUM HEIGHT) LETTERS WITH THE WORD "SEWER" SHALL BE PLAINLY CAST INTO THE CENTER OF EACH MANHOLE COVER.
9. BARRELS, CONE SECTIONS AND CONCRETE GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE AND SHALL CONFORM ENV-WQ 704.12 & 704.13.
10. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478-06.
11. BASE SECTIONS SHALL BE OF MONOLITHIC CONSTRUCTION TO A POINT AT LEAST 6 INCHES ABOVE THE CROWN OF THE INCOMING PIPE.
12. MANHOLE CONE SECTIONS SHALL BE ECCENTRIC IN SHAPE.
13. ALL PRECAST SECTIONS AND BASES SHALL HAVE THE DATE OF MANUFACTURE AND THE NAME OR TRADEMARK OF THE MANUFACTURER IMPRESSED OR INDELIBLY MARKED ON THE INSIDE WALL.
14. ALL PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING.
15. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H-20 LOADS.
16. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATERTIGHTNESS USING A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT. APPROVED ELASTOMERIC SEALANTS ARE:
   (a) SIKAFLEX-12-SL; OR
   (b) SONNEBORN BUILDING PRODUCTS-SONOLASTIC SL-1
17. THE MINIMUM INTERNAL DIAMETER OF MANHOLES SHALL BE 48 INCHES. FOR SEWERS LARGER THAN 24-INCH DIAMETER. MANHOLE DIAMETERS SHALL BE INCREASED SO AS TO PROVIDE AT LEAST 12-INCHES OF SHELF ON EACH SIDE OF THE SEWER.
18. LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE TO ENV-WQ 704.17.
19. BRICK MASONRY FOR SHELF, INVERT AND GRADE ADJUSTMENT SHALL COMPLY WITH ASTM C32-05, CLAY OR SHALE, FOR GRADE SS HARD BRICK.
20. MORTAR SHALL BE COMPOSED OF PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION. PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE:
   (a) 4.5 PARTS SAND AND 1.5 PARTS CEMENT; OR
   (b) 4.5 PARTS SAND, 1 PART CEMENT AND 0.5 PART HYDRATED LIME
21. CEMENT SHALL BE TYPE II PORTLAND CEMENT CONFORMING TO ASTM C150-05. HYDRATED LIME SHALL BE TYPE S CONFORMING TO ASTM C207-06 "STANDARD SPECIFICATIONS FOR HYDRATED LIME FOR MASONRY PURPOSES". SAND SHALL CONSIST OF INERT NATURAL SAND CONFORMING TO ASTM C33-03 "STANDARD SPECIFICATIONS FOR CONCRETE, FINE AGGREGATES".
22. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED OR PRECAST CONCRETE SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF THE PIPE AND FLOW. AT CHANGES IN DIRECTIONS, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.
23. FRAMES AND COVERS: MANHOLES FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN, CLASS 30, CONFORMING TO ASTM A48/48M AND PROVIDE A 30-INCH CLEAR OPENING. 3-INCH WORD (MINIMUM HEIGHT) LETTERS "SEWER" SHALL BE PLAINLY CAST INTO THE TOP SURFACE. THE CASTING SHALL BE OF EVEN GRAINED CAST IRON, SMOOTH, AND FREE FROM SCALE, LUMPS, BLISTERS, SAND HOLES AND DEFECTS. CONTACT SURFACES OF COVERS AND FRAMES SHALL BE MACHINED AT THE FOUNDRY TO PREVENT ROCKING OF COVERS IN ANY ORIENTATION.
24. BEDDING: PRECAST BASES SHALL BE PLACED ON A 6-INCH (12-INCH IN LEDGE) LAYER OF COMPACTED BEDDING MATERIAL THAT CONFORMS TO ASTM C33-03 NO. 67 STONE AND FREE FROM CLAY, LOAM AND ORGANIC MATTER. THE EXCAVATION SHALL BE PROPERLY DEWATERED WHILE PLACING BEDDING MATERIAL AND SETTING OF THE BASE OR POURING CONCRETE. WATER-STOPS SHALL BE USED AT THE HORIZONTAL JOINT OF THE CAST-IN-PLACE MANHOLES.

100% PASSING	1" SCREEN
90-100% PASSING	3/4" SCREEN
20-55% PASSING	3/8" SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE

25. FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES FROM ANY MANHOLE CONNECTION: (a) WITHIN 48 INCHES FOR REINFORCED CONCRETE PIPE (RCP). (b) WITHIN 60 INCHES FOR PVC PIPE LARGER THAN 15" DIAMETER.
26. NO FLEXIBLE JOINT SHALL BE REQUIRED FOR DUCTILE IRON PIPE OR PVC PIPE UP THROUGH 15-INCH DIAMETER.
27. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS FOLLOWS:
   A. ELASTOMERIC, RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND PIPE SURFACES.
   B. CAST INTO WALL OR SECURED WITH STAINLESS STEEL CLAMPS.
   C. ELASTOMERIC SEALING RING CAST IN THE MANHOLE OPENING WITH THE SEAL FORMED ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING.

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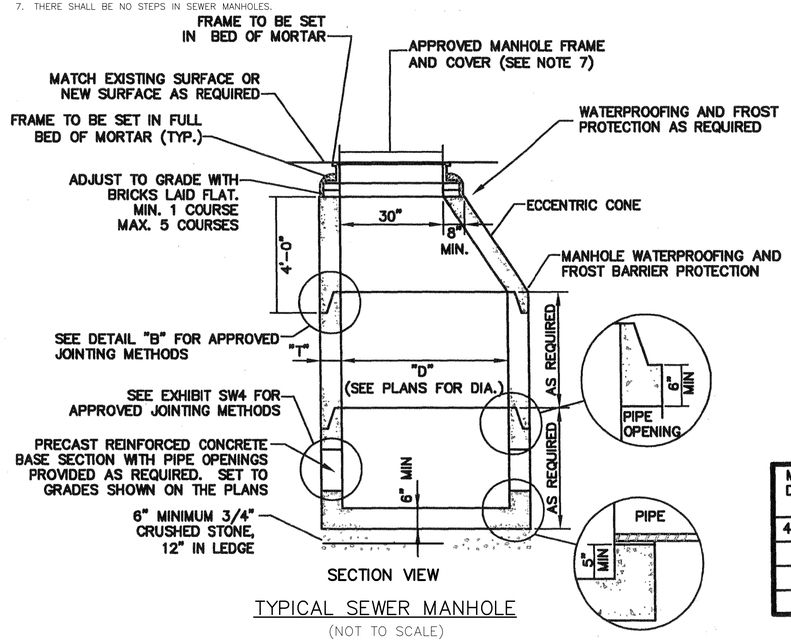
1. IN CROSS COUNTRY AREAS BEYOND ROADWAY RIGHT-OF-WAYS, THE MANHOLE FRAME ELEVATION SHALL BE A MINIMUM OF 6" ABOVE FINISHED GRADE. GRADE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE MANHOLE
2. THE INVERT OF THE INCOMING PIPE SHALL BE NO MORE THAN 6 INCHES ABOVE THE OUTGOING PIPE UNLESS A DROP ENTRY IS USED.
3. THE SEWER CONNECTIONS SHALL BE INSPECTED BY AUTHORIZED TOWN OF LONDONDERRY PUBLIC WORKS AND ENGINEERING DEPARTMENT PERSONNEL BEFORE ANY BACKFILLING. INSPECTION HOURS ARE BETWEEN 9:00AM AND 4:30PM, MONDAY-FRIDAY, WITH AT LEAST 2 DAYS OF ADVANCE NOTICE.
4. THE SEWER SERVICE MANHOLE SHALL BE VACUUM TESTED AND THE PVC PIPING PRESSURE TESTED WITH AUTHORIZED TOWN OF LONDONDERRY PUBLIC WORKS AND ENGINEERING DEPARTMENT PERSONNEL PRESENT ON SITE WITH A WITNESS.
5. ALL SEWER CONSTRUCTION AND USE SHALL CONFORM TO THE STATE OF NEW HAMPSHIRE STANDARD SEWER CONSTRUCTION SPECIFICATION AND THE TOWN OF LONDONDERRY SEWER USE ORDINANCE.
6. A MANDATORY PRECONSTRUCTION MEETING SHALL BE HELD WITH THE TOWN, CONTRACTOR, OWNER AND ALL UTILITY REPRESENTATIVES PRIOR TO ANY CONSTRUCTION. NO WORK SHALL BEGIN UNTIL APPROVAL BY THE DEPARTMENT OF PUBLIC WORKS HAS BEEN OBTAINED.
7. THERE SHALL BE NO STEPS IN SEWER MANHOLES.

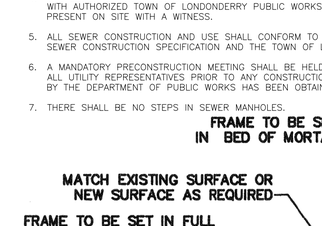


SECTION VIEW

TYPICAL SEWER MANHOLE

(NOT TO SCALE)

MANHOLE DIAMETER "D"	MAX. PIPE DIAMETER STRAIGHT THROUGH TO 45° DEFLECTION	"T" (WALL THICKNESS)
48" (MIN.)	30" OD MAX.	5" (MIN.)
60"	44" OD MAX.	6"
72"	51" OD MAX.	7"
96"	72" OD MAX.	9"



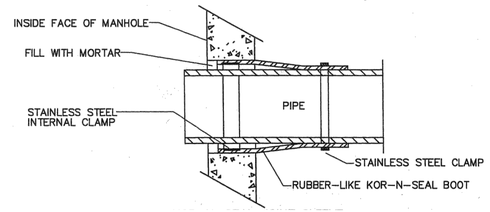
ELASTOMERIC SEALANT

NOTE:
ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS

DETAIL "B" HORIZONTAL JOINTS

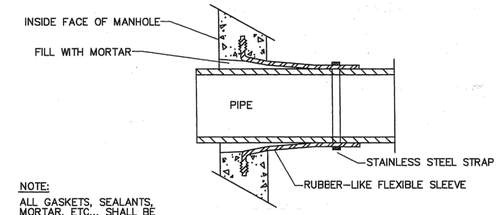
SECTION "A-A"

SECTION "B-B"



KOR-N-SEAL JOINT SLEEVE

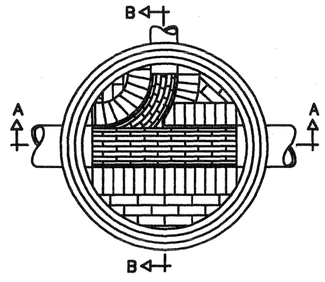
(OR ACCEPTABLE SUBSTITUTE)



NOTE:
ALL GASKETS, SEALANTS, MORTAR, ETC... SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS

LOCK-JOINT FLEXIBLE MANHOLE SLEEVE

(OR ACCEPTABLE SUBSTITUTE)



PLAN VIEW

TYPICAL MANHOLE - PLAN VIEW

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
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3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-11

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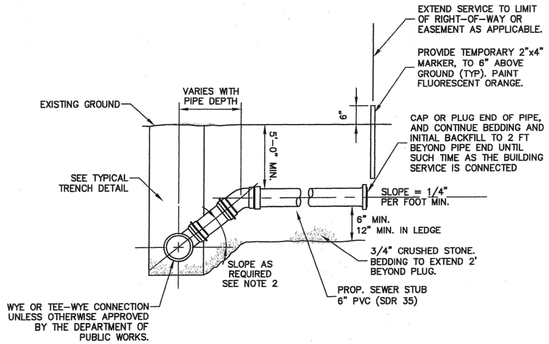
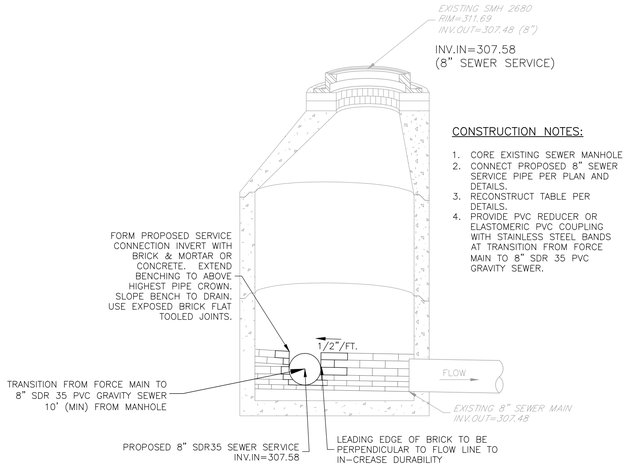


NOTES:
1. ALL SERVICE CONNECTIONS TO BE 6" MINIMUM UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. USE CHIMNEY DETAIL WHERE SERVICE CONNECTION ENTERS SEWER AT GREATER THAN 60° TO THE HORIZONTAL.

SEWER SERVICE CONNECTION

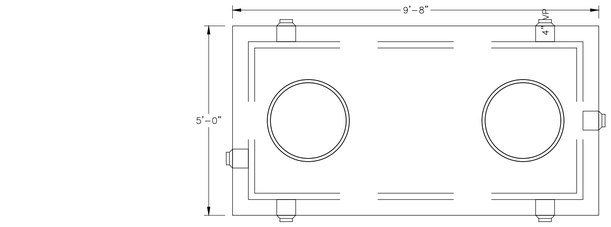


CONSTRUCTION NOTES:
1. CORE EXISTING SEWER MANHOLE
2. CONNECT PROPOSED 8" SEWER SERVICE PIPE PER PLAN AND DETAILS.
3. RECONSTRUCT TABLE PER DETAILS.
4. PROVIDE PVC REDUCER OR ELASTOMERIC PVC COUPLING WITH STAINLESS STEEL BANDS AT TRANSITION FROM FORCE MAIN TO 8" SDR 35 PVC GRAVITY SEWER.

MORTAR SHALL CONSIST OF: 1 PART BY VOLUME PORTLAND CEMENT, 2 PARTS BY VOLUME, DAMP WASHED COARSE SAND AND POTABLE WATER TO PRODUCE A CONSISTENCY OF STIFF PASTE. SEAL ALL PRECAST JOINTS WITH MORTAR.

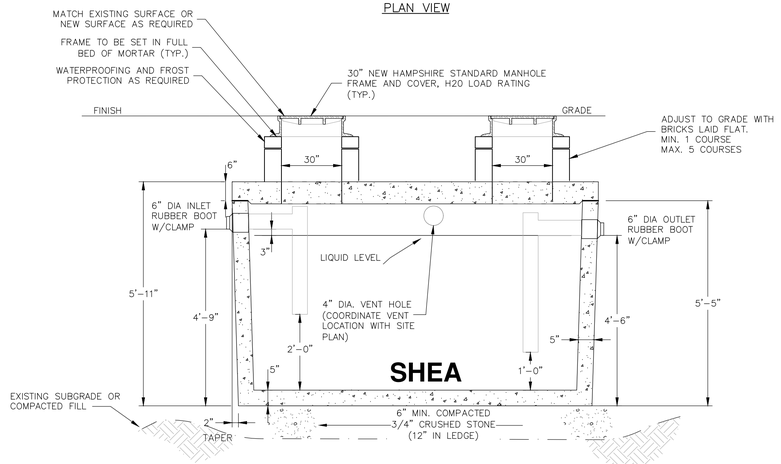
SEWER SERVICE CONNECTION

EX. SMH2680 NOT TO SCALE



PLAN VIEW

NOTES
1. TANK, WHETHER A SINGLE UNIT OR MULTIPLE SECTIONS, SHALL BE SEALED SO AS TO MEET N.H.D.E.S. WATERTIGHT SPECIFICATIONS.
2. SEE TYPICAL SEWER MANHOLE DETAIL AND AND JOINT DETAILS FOR ADDITIONAL DETAILS.



SECTION VIEW

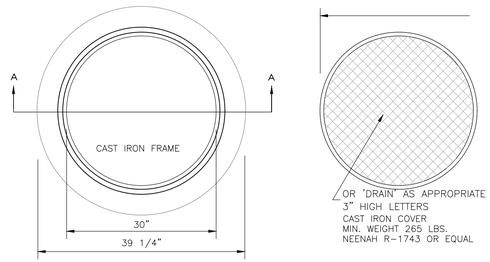
ITEM NO.	M1000H	H-20 (6" TOP)
	M1000HT10	H-20 (10" TOP)

WEIGHT:
BOTTOM = 11,250#
10" TOP = 5,960#
6" TOP = 3,575#

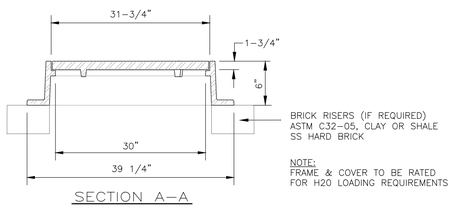
NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. ALL REINFORCEMENT PER ASTM C1227.
3. TEES AND BAFFLES SOLD SEPARATELY.
4. TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN.
5. DESIGNED FOR AASHTO HS-20 LOADING, 1 TO 5 FT COVER.

INDUSTRIAL TANK DETAIL

SHEA CONCRETE 1,000 GALLON SEPTIC TANK (OR APPROVED EQUAL) NOT TO SCALE



PLAN VIEW

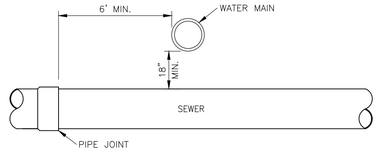


SECTION A-A

NOTE:
FRAME & COVER TO BE RATED FOR H20 LOADING REQUIREMENTS

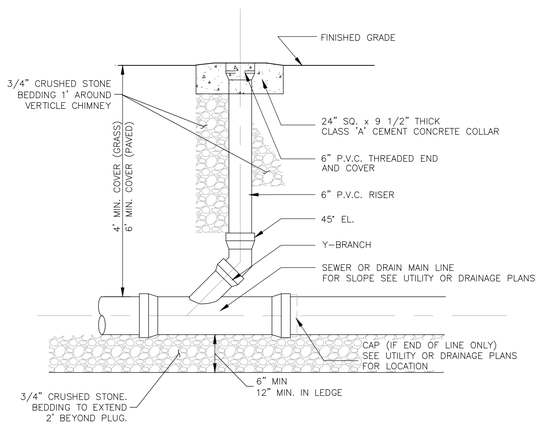
MANHOLE FRAME & COVER

HEAVY DUTY



SEWER / WATER INTERSECTIONS

ELEVATION VIEW NOT TO SCALE



SEWER CLEAN OUT

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
3	12/18/2025	AOT & STAFF COMMENTS	JD	NG
2	**10/22/2025**	**TOWN SEWER COMMENTS**	**JD**	**NG**
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 10/22/25

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
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FILE	18252-02	DR		FB	–	D-12
		CK		CADFILE	18252-02 COVER & DETAILS	

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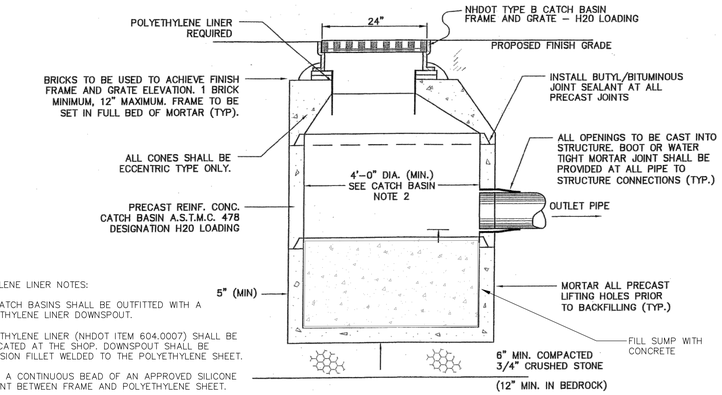


POLYETHYLENE LINER NOTES:

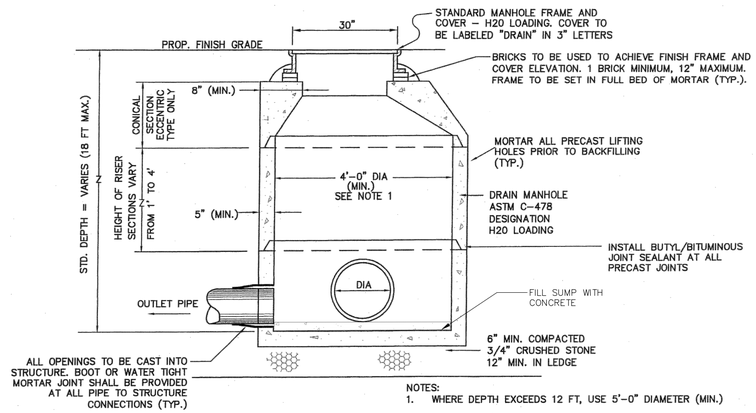
1. ALL CATCH BASINS SHALL BE OUTFITTED WITH A POLYETHYLENE LINER DOWNSPOUT.
2. POLYETHYLENE LINER (NHDOT ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
3. PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT BETWEEN FRAME AND POLYETHYLENE SHEET.
4. PLACE A CLASS AA CONCRETE TO 2" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE).
5. TRIM POLYETHYLENE SHEET A MAXIMUM OF 4" OUTSIDE THE FLANGE ON THE FRAME FOR THE CATCH BASIN BEFORE PLACING CONCRETE (EXCEPT AS SHOWN WHEN USED WITH CURB).
6. THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 3" FROM THE CENTER OF THE DOWNSPOUT IN ANY DIRECTION.

CATCH BASIN NOTES:

1. WHERE DEPTH EXCEEDS 12 FT, USE 5'–0" DIAMETER (MIN.)
2. MINIMUM PIPE DROP (INLET TO OUTLET) SHALL BE 3" UNLESS OTHERWISE APPROVED BY THE TOWN OF LONDONDERRY DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.
3. ALL BOOTS, GASKETS, AND SEALANTS, SHALL BE IN ACCORDANCE WITH MANUFACTURES WRITTEN INSTRUCTIONS.
4. ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C–478 DESIGNAT ION H20 LOADING.

CATCH BASIN

NOT TO SCALE



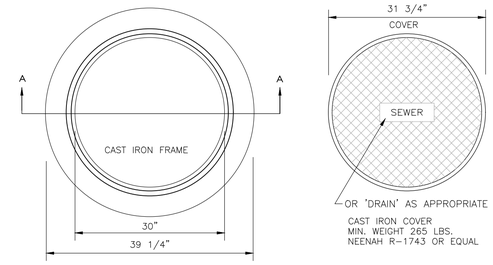
NOTES:

1. WHERE DEPTH EXCEEDS 12 FT, USE 5'–0" DIAMETER (MIN.)
2. MINIMUM PIPE DROP (INLET TO OUTLET) SHALL BE 3" UNLESS OTHERWISE APPROVED BY THE DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.
3. ALL BOOTS, GASKETS AND SEALANTS SHALL BE IN ACCORDANCE WITH MANUFACTURES WRITTEN INSTRUCTIONS

DRAIN MANHOLE

ECCENTRIC CONE

NOT TO SCALE

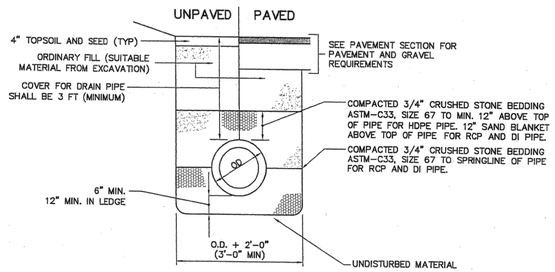


NOTE:
FRAME & COVER TO BE RATED FOR H20 LOADING REQUIREMENTS

MANHOLE FRAME & COVER

HEAVY DUTY

NOT TO SCALE



NOTE:

DRAIN PIPE SHALL BE 15" DIAMETER MIN.

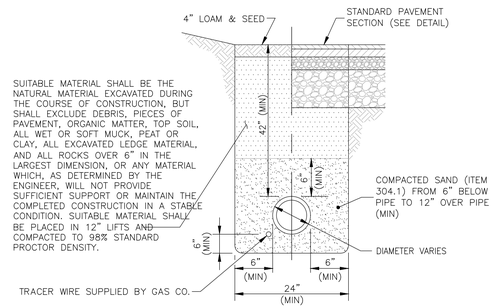
PLASTIC DRAIN PIPE (HDPE) SHALL BE ADS N–12 (CORRUGATED EXTERIOR/SMOOTH INTERIOR) OR EQUAL MEETING AASHTO M–252 AND H–20 LOADING.

DI DRAIN PIPE SHALL BE CL. 50.

RC DRAIN PIPE SHALL BE CLASS III UNLESS OTHERWISE NOTED.

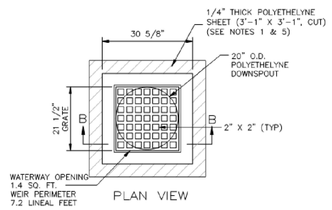
STORM DRAIN TRENCH

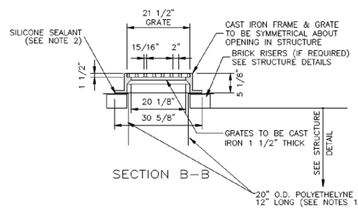
NOT TO SCALE



GAS MAIN TRENCH

NOT TO SCALE





1. POLYETHYLENE LINER (ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
2. PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT (SUBSIDIARY TO ITEM 604.0007) BETWEEN FRAME AND POLYETHYLENE SHEET (SEE SECTION A–A, PLATE 4).
3. PLACE CLASS AA CONCRETE TO 2" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE). USE ON DRAINAGE STRUCTURES 4' MIN. DIAMETER ONLY.
4. TRIM POLYETHYLENE SHEET A MAXIMUM OF 4" OUTSIDE THE FLANGE ON THE FRAME FOR THE CATCH BASIN BEFORE PLACING CONCRETE (EXCEPT AS SHOWN WHEN USED WITH 3–FLANGE FRAME AND CURB)
5. THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 6" FROM THE CENTER OF THE DOWNSPOUT IN AS SHOWN WHEN USED WITH 3–FLANGE FRAME AND CURB).
6. PLACED ONLY IN DRAINAGE STRUCTURES IN PAVEMENT. ANY DIRECTION.

CATCH BASIN FRAME AND GRATE

NEENAH R–3404 OR EQUIVALENT

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

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SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

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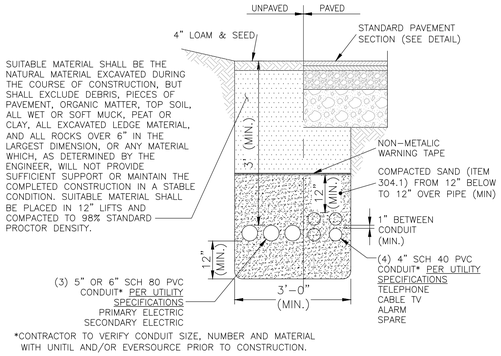
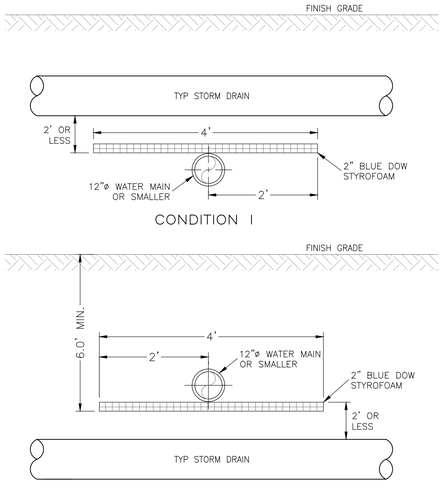


UTILITY TRENCH

NOT TO SCALE

NOTES

1. ALL CONDUITS SHALL BE 6" GRAY, ELECTRICAL GRADE, SCHEDULE 80 PVC CONDUIT WITH THE EXCEPTION OF THE SWEEPS AT RISER POLE AND THE FIRST HORIZONTAL AND VERTICAL CONDUIT SECTIONS AT EACH RISER POLE WHICH SHALL BE 6" HOT-DIPPED, GALVANIZED RIGID STEEL.
   a. THE STEEL TO PVC CONDUIT TRANSITIONS SHALL BE MADE WITH PVC THREADED ADAPTORS.
2. CONDUITS SHALL BE INSTALLED IN STRAIGHT LINES.
   a. NO SWEEPS SHALL BE USED IN THE CONDUIT SYSTEM EXCEPT AT RISER POLES AND EQUIPMENT PADS.
   b. THE MAXIMUM CHANGE IN CONDUIT DIRECTION BETWEEN TO CONTIGUOUS LENGTH OF CONDUIT SHALL BE LIMITED TO 2.5 DEGREES.
   c. ALL HORIZONTAL AND/OR VERTICAL CONDUIT BEND/CHANGES IN DIRECTION, NO MATTER HOW SMALL, SHALL BE REVIEWED AND APPROVED BY UNITIL.
3. ALL CONDUIT RUNS SHALL BE CLEANED BY PULLING A PLUG OR MANDREL (NO SMALLER THAN ¼" LESS THAN THE CONDUIT) THROUGH EACH CONDUIT.
4. ALL CONDUITS SHALL HAVE A 2,500# FLAT, WOVEN, POLYESTER PULLING LINE INSTALLED.
5. TEMPORARY CAPS SHALL BE INSTALLED ON THE END OF CONDUITS UNTIL CABLES ARE INSTALLED.
6. THE CONDUIT DUCT BANK INSTALLATION SHALL BE INSPECTED AND ACCEPTED BY UNITIL PRIOR TO BACKFILL.

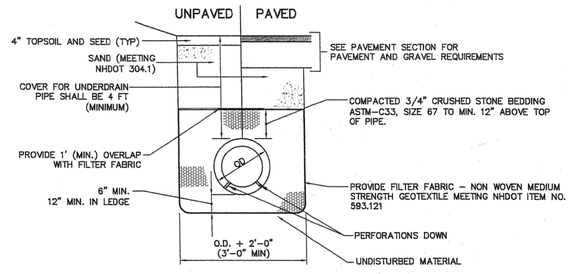


NOTES

1. INSULATION REQUIREMENTS MAY BE MODIFIED BY WATER DEPT. BASED ON FIELD CONDITIONS, ETC.
2. THE LENGTH OR WIDTH OF INSULATION SHALL EXTEND 1 STORM DRAIN PIPE DIAMETER BEYOND THE EDGE OF STORM DRAIN PIPE IN EACH DIRECTION OR A MINIMUM OF 2' BEYOND THE CENTERLINE OF THE STORM DRAIN PIPE, WHICHEVER IS GREATER.
3. ALL BUTT JOINT SEAMS TO BE OVERLAPPED WITH A 1' PIECE OF INSULATION CENTERED OVER SEAM.

STORM DRAIN / WATER MAIN INTERSECTING RUNS

ELEVATION VIEW NOT TO SCALE



NOTE:

PLASTIC UNDERDRAIN PIPE (HDPE) SHALL BE 6" DIAMETER (MIN.) ADS N-12 (CORRUGATED EXTERIOR/SMOOTH INTERIOR) OR EQUAL MEETING AASHTO M-252 AND H-20 LOADING.

UNDERDRAIN TRENCH

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
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3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-14

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PUMP STATION DESIGN NOTES

Env–Wq 704.07 FORCE MAINS:

1. FORCE MAINS FOR CONSTANT SPEED PUMPS SHALL BE SIZED TO YIELD A CLEANSING VELOCITY OF 3 FEET PER SECOND OR GREATER AT DESIGN PUMP CAPACITY.
2. FORCE MAINS FOR VARIABLE SPEED PUMPS SHALL BE SIZED TO YIELD A VELOCITY OF 2 FEET PER SECOND OR GREATER AT AVERAGE DAILY DESIGN FLOW.
3. SEWER FORCE MAIN SHALL BE 6" INCHES IN NOMINAL DIAMETER FOR THE SEWER FROM THE SITE.
4. FORCE MAINS SHALL BE PROVIDED WITH AUTOMATIC AIR RELIEF VALVE(S) AT HIGH POINTS TO PREVENT AIR LOCKING.
5. FORCE MAINS SHALL ENTER THE GRAVITY SEWER SYSTEM AT THE FLOW LINE OF THE RECEIVING MANHOLE.
6. FORCE MAINS SHALL BE PROVIDED WITH DRAINAGE BLOW–OFFS, PROPERLY VALVED, AT LOW POINTS. SPACE SHALL BE AVAILABLE AT SUCH LOCATIONS FOR HANDLING THE DISPLACED WASTE WITHOUT DANGER OF POLLUTION OR HEALTH HAZARD.
7. FORCE MAINS SHALL BE DESIGNED IN ACCORDANCE WITH Env–Wq 704.07, CONSTRUCTED WITH MATERIALS AS SPECIFIED IN Env–Wq 704.08, AND TESTED AS SPECIFIED IN Env–Wq 704.09.
8. THRUST BLOCKS MADE FROM INORGANIC, CORROSION–RESISTANT MATERIAL SHALL BE PLACED AT ALL BENDS, ELBOWS, TEES AND JUNCTIONS.
9. FORCE MAINS SHALL BE DESIGNED TO WITHSTAND HYDROSTATIC PRESSURES OF AT LEAST 2.5 TIMES THE DESIGN TOTAL DYNAMIC HEAD.

Env–Wq 704.09 FORCE MAIN AND PRESSURE SEWER TESTING:

1. FORCE MAINS AND PRESSURE SEWERS AND FORCE MAINS AND PRESSURE SEWERS SHALL BE TESTED IN ACCORDANCE WITH SECTION 5 OF THE AWWA C600, "INSTALLATION OF CAST IRON WATER MAINS AND THEIR APPURTENANCES" STANDARD IN EFFECT WHEN THE TEST IS CONDUCTED, AVAILABLE AS NOTED IN APPENDIX D, AT A PRESSURE EQUAL TO THE GREATER OF 150 PERCENT OF THE DESIGN OPERATING TOTAL DYNAMIC HEAD OR AT LEAST 100 PSI.

Env–Wq 705.04 PUMP STATION ACCESS:

1. DRY WELL SHALL PROVIDE ACCESSIBILITY FOR THE REPAIR AND REMOVAL OF PUMPS, MOTORS, AND OTHER ITEMS OF EQUIPMENT THAT ARE ESSENTIAL TO THE SEWAGE PUMPING PROCESS.
2. SEPARATE EXTERIOR ENTRANCES SHALL BE PROVIDED TO BOTH WET WELLS AND DRY WELLS OF SEWAGE PUMPING STATIONS.
3. FOR BUILT–IN–PLACE SEWAGE PUMPING STATIONS, ACCESS TO LOWER LEVELS SHALL BE BY STAIRWAYS WITH HANDRAILS.
4. PREFABRICATED STATIONS MAY HAVE LADDERS WITH LESS THAN OR EQUAL TO A 75° SLOPE OR SPIRAL STAIRS.
5. VERTICAL DISTANCES BETWEEN FLOORS OR REST LANDINGS SHALL NOT EXCEED 12 FEET.
6. SAFETY BARRIERS TO PREVENT FALLING SHALL BE PROVIDED AT LANDINGS.
7. POWER ELEVATORS PROPOSED FOR ALL DEEP STATIONS SHALL HAVE A CAPACITY LIMIT OF NOT LESS THAN 600 POUNDS.
8. LIFTING EQUIPMENT SHALL BE PROVIDED FOR SUBMERSIBLE PUMP REMOVAL.
9. LIFTING CHAINS SHALL BE STAINLESS STEEL OR OTHER CORROSION RESISTANT MATERIAL.

Env–Wq 705.07 ELECTRICAL REQUIREMENTS:

1. SUBMERSIBLE PUMPS FOR SEWAGE PUMPING STATIONS SHALL CONFORM TO THE NEC REQUIREMENTS ADOPTED BY REFERENCE IN THE STATE BUILDING CODE PURSUANT TO RSA 155–A:1, IV, FOR INSTALLATION IN AREAS CLASSIFIED BY THE NEC AS CLASS I, DIVISION I.
2. ELECTRICAL SYSTEMS AND COMPONENTS INCLUDING MOTORS, LIGHTS, CABLE, CONDUITS, SWITCH BOXES AND CONTROL CIRCUITS SHALL BE PROTECTED FROM FLOODING IN ACCORDANCE WITH Env–Wq 705.01.
3. ELECTRICAL SYSTEMS AND COMPONENTS INCLUDING MOTORS, LIGHTS, CABLES, CONDUITS, SWITCH BOES AND CONTROL CIRCUITS IN ENCLOSED OR PARTIALLY ENCLOSED SPACES WHERE FLAMMABLE MIXTURES OCCASIONALLY MAY BE PRESENT, INCLUDING RAW SEWAGE WET WELLS, SHALL BE CERTIFIED BY THE MANUFACTURER AS:
   A. COMPLYING WITH THE NEC REQUIREMENTS ADOPTED BY REFERENCE IN THE STATE BUILDING CODE PURSUANT TO RSA 155–A:1, IV, FOR CLASS 1, DIVISION 1 LOCATIONS; OR
   B. BEING RATED FOR CLASS I DIVISION 2 REQUIREMENTS WHERE MECHANICAL VENTILATION IS PROVIDED IN ACCORDANCE WITH THE NFPA AS ADOPTED BY REFERENCE IN THE STATE FIRE CODE IN SAF–C 6000.
4. ALL ELECTRICAL EQUIPMENT AND WORK SHALL COMPLY WITH THE REQUIREMENTS OF NEC AS ADOPTED BY REFERENCE IN THE STATE BUILDING CODE PURSUANT TO RSA 155–A:1, IV, AND NFPA AS ADOPTED BY REFERENCE IN THE STATE FIRE CODE IN SAF–C 6000 IN EFFECT AT THE TIME OF INSTALLATION.

Env–Wq 705.08 VENTILATION REQUIREMENTS:

1. MECHANICAL VENTILATION FOR PERSONNEL AND EQUIPMENT SHALL BE PROVIDED FOR ALL OCCUPIED SPACES WITHIN SEWAGE PUMPING STATION IN ACCORDANCE WITH THE NFPA AS INCORPORATED BY REFERENCE IN THE STATE FIRE CODE IN SAF–C 6000.
2. MECHANICAL VENTILATION FOR BELOW–GRADE DRY WELLS SHALL BE PROVIDED, SO ARRANGED AS TO INDEPENDENTLY VENTILATE THE DRY WELL AND THE WET WELL.
3. THERE SHALL BE NO INTERCONNECTION BETWEEN THE WET WELL AND DRY WELL VENTILATION SYSTEMS.
4. SWITCHES FOR OPERATION OF VENTILATION EQUIPMENT SHALL BE MARKED AND LOCATED CONVENIENTLY.
5. DEHUMIDIFICATION SHALL BE PROVIDED IN BELOW–GROUND DRY WELLS.
6. VENTILATION OF WET WELLS SHALL PROVIDE AT LEAST 30 AIR CHANGES PER HOUR IF THE VENTILATION SYSTEM IS OPERATED INTERMITTENTLY, OR AT LEAST 12 AIR CHANGES PER HOUR IF THE VENTILATION SYSTEM IS OPERATED CONTINUOUSLY.
7. FANS INSTALLED WITHIN THE WET WELL STRUCTURE SHALL BE SUITABLE FOR A CLASS I, DIVISION I, GROUP C OR D ENVIRONMENT.
8. VENTILATION OF SUBMERSIBLE PUMP CHAMBERS OR SUCTION LIFE WET WELLS WHERE THERE IS NO OCCUPANCY FOR REGULAR MAINTENANCE PURPOSES MAY BE BY GRAVITY VENTILATION.
9. VENTILATION EXHAUST FROM WET WELLS SHALL NOT CAUSE AN ODOR NUISANCE TO THE PUBLIC OR SURROUNDING OCCUPIED BUILDINGS.
10. ACCESS DOORS TO WET WELLS SHALL HAVE WARNING SIGNS ON THE UNDERSIDE WHICH READ, "WARNING – HAZARDOUS AREA, ENTER ONLY WITH PROPER EQUIPMENT" OR "CONFINED SPACE, ENTRY BY PERMIT ONLY", AS APPROPRIATE.
11. THE ALARM SHALL INCLUDE A LOCAL AUDIBLE ENUNCIATOR AND LIGHT.

PUMP STATION OPERATIONAL INSTRUCTIONS

1. THE FOLLOWING MAINTENANCE SHALL BE DONE ON A MONTHLY BASIS (AT A MINIMUM):
2. PUMP STATION SHALL BE VISUALLY INSPECTED TO ENSURE THAT PUMPS AND APPURTENANCES ARE FUNCTIONING, PIPE SUPPORTS ARE SECURELY FIXED TO THE MANHOLE, STAINLESS STEEL LIFTING CHAINS ARE SAFELY STORED WITHIN THE PUMP STATION. IF ANY OF THE ABOVE PARTS ARE NOT FUNCTIONING AS DESIGNED THEY SHALL BE REPAIRED IMMEDIATELY.
3. PUMP STATION AND VALVE MANHOLE ACCESS HATCHES ARE WORKING PROPERLY. IF THE ACCESS HATCHES ARE NOT FUNCTIONING PER THE MANUFACTURER'S RECOMMENDATIONS, THEY SHALL BE REPAIRED IMMEDIATELY.
4. ELECTRIC CONTROL PANEL SHALL BE INSPECTED TO CONFIRM ELAPSED TIME METER, HIGH WATER ALARM, LOW LEVEL ALARM, LOSS OF ONE OR MORE PHASES OF POWER SUPPLY OR VOLTAGE DROP ALARM, LOSS OF ALARM TRANSMISSION LINE, AND STANDBY GENERATOR APPLICATION ALARM. IF ANY OF THE ALARMS ARE NOT FUNCTIONING AS DESIGNED, THEY SHALL BE REPAIRED IMMEDIATELY.
5. THE BACK–UP GENERATOR SHALL BE INSPECTED ON A MONTHLY BASIS (AT A MINIMUM, UNLESS OTHERWISE NOTED):
6. ALL RECOMMENDATIONS FROM THE MANUFACTURER AND OPERATOR'S MANUAL SHALL BE STRICTLY FOLLOWED.
7. THE GENERATOR SHALL BE PRIMED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
8. ALL FLUIDS SHALL BE CHECKED ON A DAILY BASIS AND ADDED ON AN AS NEEDED BASIS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
9. ALL PARTS SHALL BE CHECKED ON A DAILY BASIS AND SHALL BE FIXED IMMEDIATELY WHEN NOT FUNCTIONING PROPERLY.
10. PUMP STATION OPERATION & MAINTENANCE (O&M) MANUAL SHALL BE SUBMITTED TO NHDES WASTEWATER BUREAU WITHIN 60 DAYS FOLLOWING COMPLETION OF PUMP STATION CONSTRUCTION.

Env–Wq 705.09 ALARM SYSTEMS:

1. ALARM SYSTEMS SHALL BE PROVIDED FOR ALL SEWAGE PUMPING STATIONS.
2. THE ALARM SIGNAL SHALL BE ACTIVATED IN ONE OF THE FOLLOWING CASES:
   A. HIGH WATER IN THE WET WELL.
   B. LOW WATER IN THE WET WELL.
   C. LOSS OF ONE OR MORE PHASES OF POWER SUPPLY OR SEVERE VOLTAGE DROP.
   D. HIGH WATER LEVEL IN THE PUMP ROOM SUMP.
   E. LOSS OF ALARM TRANSMISSION CAPABILITY.
   F. STANDBY GENERATOR APPLICATION.
   G. PUMP MALFUNCTION, INCLUDING SHAFT SEAL FAILURE.
   H. LOSS OF AIR PRESSURE IN A BUBBLER TUBE SYSTEM.
   I. LEVEL SENSING MALFUNCTION OR FAILURE.
   J. LOSS OF VENTILATION IN AREAS CLASSIFIED AS CLASS 1 DIVISION 2 AND USING MECHANICAL VENTILATION PER THE NFPA AS INCORPORATED BY REFERENCE IN THE STATE FIRE CODE IN SAF–C 6000.
   K. INTRUSION.
   L. TEMPERATURE OUTSIDE NORMAL OPERATING RANGES.
3. THE HIGH WATER ALARM AND LOW WATER ALARM TRIGGERS SHALL BE SEPARATE DEVICES, INDEPENDENT OF THE PUMP WET WELL LEVEL CONTROL SYSTEM AND SET AT ELEVATIONS ABOVE AND BELOW THE LAG PUMP ON AND OFF ELEVATIONS.
4. SATISFACTORY OPERATION OF THE ALARM SYSTEM SHALL BE INDICATED ON A PANEL WITH A LIGHT WHICH LIGHTS UP UPON FAILURE OF THE ALARM SYSTEM.
5. THE POWER SOURCE FOR THE ALARM SYSTEM SHALL BE:
   A. AN INDEPENDENT BATTERY WITH A CONTINUOUS CHARGE OR;
   B. MAIN LINE POWER WITH A BACK–UP BATTERY SYSTEM, WHICH SHALL BE CONNECTED AUTOMATICALLY SHOULD MAIN POWER FAIL.
6. THE ALARM SIGNAL SHALL BE TRANSMITTED THROUGH A 24 HOUR PER DAY, 7 DAY PER WEEK NOTIFICATION SYSTEM TO THE APPROPRIATE UTILITY OPERATOR.
7. THE ALARM SHALL INCLUDE A LOCAL AUDIBLE ENUNCIATOR AND LIGHT.
8. PROVISION SHALL BE MADE TO PERMIT SILENCING OF THE AUDIBLE ENUNCIATOR MANUALLY, AFTER THE ALARM HAS BEEN SOUNDED, BUT THE LIGHT SHALL CONTINUE UNTIL THE ALARM CONDITION HAS BEEN RECTIFIED.
9. ALARM SIGNALS FOR PRIVATELY–OPERATED SEWER PUMPING STATIONS SHALL BE TRANSMITTED TO THE RESPONSIBLE MAINTENANCE PERSON DIRECTLY OR VIA AN ANSWERING SERVICE.
10. IF A CENTRAL SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SYSTEM EXISTS AT THE WWTP, THE PUMPING STATION ALARMS SHALL BE CONNECTED TO THE SCADA SYSTEM USING PROGRAMMABLE LOGIC CONTROLLER (PLC) TECHNOLOGY.

Env–Wq 705.10 INSTRUCTION AND EQUIPMENT:

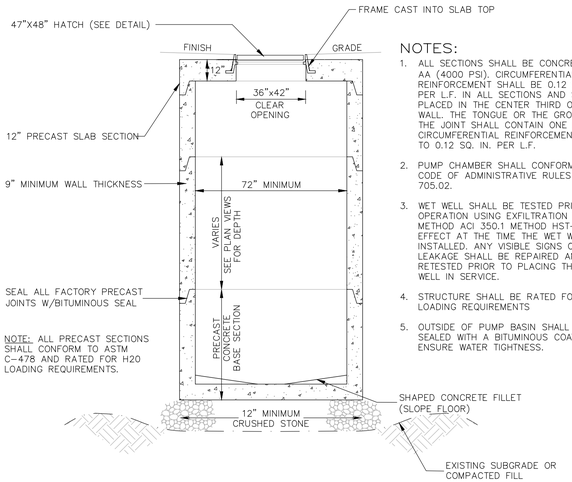
1. THE OWNER SHALL OBTAIN AN OPERATION AND MAINTENANCE MANUAL THAT PROVIDES INFORMATION AND GUIDANCE FOR DAY–TO–DAY OPERATION OF THE SEWAGE PUMPING STATION AND PROVIDE A COPY TO NHDES.

Env–Wq 705.11 EMERGENCY OPERATION:

1. THE ENGINEER SHALL RECOMMEND EMERGENCY OPERATION PROCEDURES TO PREVENT THE BACK–UP, OVERFLOW, OR OTHER UNPERMITTED DISCHARGE OF WASTEWATER FROM THE SEWAGE PUMPING STATION.
2. AN INDEPENDENT ENGINE–GENERATOR TYPE SOURCE OF ELECTRIC POWER SHALL BE PROVIDED FOR ELECTRICALLY–DRIVEN PUMPS. THIS SOURCE SHALL BE AUTOMATICALLY ACTIVATED BY FAILURE OF ANY PHASE OF POWER SUPPLY OR UPON ANY FLUCTUATION IN VOLTAGE, THE AMOUNT OR DURATION OF WHICH WOULD CAUSE DAMAGE TO THE MOTORS. INSTALLATIONS SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE AND THE STATE FIRE CODE IN SAF–C 6000.
3. THE EMERGENCY POWER GENERATOR SHALL BE PERMANENTLY SECURED IN PLACE, WITH PROVISIONS FOR REMOVAL TO FACILITATE GENERATOR REPAIR OR REPLACEMENT.
4. PROVISIONS SHALL BE MADE FOR AUTOMATIC AND MANUAL START–UP AND CUT–IN. THE CONTROLS SHALL BE SUCH THAT UPON AUTOMATIC START–UP UNDER EMERGENCY CONDITIONS, SHUT–DOWN SHALL BE ACCOMPLISHED AUTOMATICALLY ON RESTORATION OF UTILITY POWER WITH CONTROLLED SHUT–DOWN OF THE UNIT. MANUAL SHUT–DOWN SHALL ALSO BE PROVIDED. PROVISION SHALL BE MADE TO ALLOW PUMPS TO RUN DOWN BEFORE RE–ENERGIZING ON TRANSFER OF POWER.
5. THE EMERGENCY POWER GENERATOR SHALL BE SIZED TO SEQUENTIALLY START AND OPERATE ALL PUMPS NEEDED TO HANDLE DESIGN MAXIMUM WASTE FLOWS, PLUS LIGHTING, VENTILATION, CONTROLS, AND GRINDING OR SCREENING.
6. THE EMERGENCY POWER GENERATOR SHALL BE LOCATED ABOVE GRADE WITH VENTILATION OF EXHAUST GASES.
7. ALL EMERGENCY POWER GENERATION EQUIPMENT SHALL BE PROVIDED WITH INSTRUCTIONS FOR ROUTINE EXERCISING, LOAD TESTING AND MAINTENANCE.
8. THE GENERATOR ENGINE CONTROLS SHALL BE EQUIPPED WITH AN AUTOMATIC EXERCISER WHICH CAN BE SET ON ANY SELECTED SCHEDULE TO START THE GENERATOR, RUN THE GENERATOR UNDER NO LOAD OR LOAD CONDITIONS BY SELECTION AND SHUT THE GENERATOR OFF WITHOUT ACTUATING THE ALARM SYSTEM.
9. THE OWNER SHALL PROVIDE EACH EMERGENCY GENERATOR WITH ENOUGH FUEL FOR THE GENERATOR TO RUN UNDER FULL LOAD OR PEAK STATION FLOW FOR AT LEAST 46 HOURS OR UNDER NORMAL OPERATING CONDITIONS FOR AT LEAST 96 HOURS, WHICHEVER REQUIRES THE GREATER AMOUNT OF FUEL.
10. NO SEWAGE PUMPING STATION BY–PASSES ALLOWING THE DISCHARGE OF RAW SEWAGE EITHER OVERLAND OR TO ANY WATER COURSE SHALL BE PERMITTED.

GENERATOR STANDARD SPECIFICATIONS

1. GENERAC STANDBY GENERATOR, MODEL SD015T
   - 1.1. RATED MAXIMUM POWER CAPACITY: 15,000 WATTS
   - 1.2. RATED VOLTAGE: 240
   - 1.3. PHASE: 3
   - 1.4. TYPE OF ENGINE: PERKINS 2.2L
   - 1.5. OPERATING RPM: 1,800
   - 1.6. FUEL CONSUMPTION: HALF LOAD: 1.0 GAL/HR; FULL LOAD: 1.3 GAL/HR
2. INSTALLATIONS SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE NEC AND THE STATE FIRE CODE IN SAF–C 6000.
3. EMERGENCY GENERATOR SHALL HAVE ENOUGH FUEL TO OPERATE FOR EITHER 48–HRS UNDER FULL LOAD OR 96–HRS UNDER NORMAL OPERATING CONDITIONS, WHICHEVER REQUIRES MORE FUEL.
   - 3.1. HALF LOAD: 1.0 GAL/HR X 96–HRS = 96.0 GALLONS
   - 3.2. FULL LOAD: 1.3 GAL/HR X 48–HRS = 62.4 GALLONS
4. A 130–GALLON DIESEL FUEL TANK IS INCORPORATED INTO THE GENERATOR ASSEMBLY.
5. SEE PLANS FOR GENERATOR, VENT PIPE, AND ENCLOSURE LOCATIONS.
6. FINAL GENERATOR SELECTION SHALL CONFORM TO THESE MINIMUM STANDARDS. COORDINATE WITH OWNER, CONTRACTOR AND ELECTRICAL CONSULTANT.

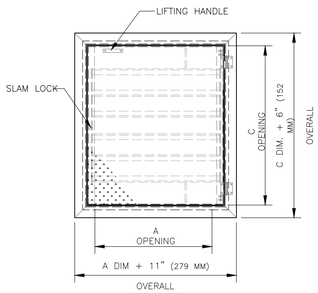


NOTES:

1. ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 PSI). CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER L.F. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.
2. PUMP CHAMBER SHALL CONFORM TO NH CODE OF ADMINISTRATIVE RULES Env–Wq 705.02.
3. WET WELL SHALL BE TESTED PRIOR TO OPERATION USING EXFILTRATION TESTING METHOD ACI 350.1 METHOD HST–NML IN EFFECT AT THE TIME THE WET WELL IS INSTALLED. ANY VISIBLE SIGNS OF LEAKAGE SHALL BE REPAIRED AND RETESTED PRIOR TO PLACING THE WET WELL IN SERVICE.
4. STRUCTURE SHALL BE RATED FOR H20 LOADING REQUIREMENTS
5. OUTSIDE OF PUMP BASIN SHALL BE SEALED WITH A BITUMINOUS COATING TO ENSURE WATER TIGHTNESS.

PUMP CHAMBER MANHOLE

SLAB TOP — NOT TO SCALE



SERIES H1R ACCESS DOOR

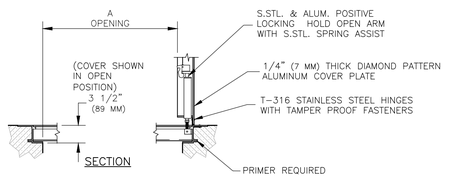
STANDARD FEATURES:

- AUTO–LOCK T–316 STAINLESS STEEL HOLD OPEN ARM WITH RELEASE HANDLE
- T–316 STAINLESS STEEL HINGES AND ATTACHING HARDWARE
- T–316 STAINLESS STEEL SLAM LOCK WITH REMOVABLE KEY
- STAINLESS STEEL COMPRESSION SPRING ASSIST
- SINGLE LEAF CONSTRUCTION
- H20 LOAD RATING (SEE NOTES)
- EXTRUDED ALUMINUM FRAME
- RECESSED LIFTING HANDLE
- LIFETIME GUARANTEE

NOTES:

1) SUITABLE FOR USE IN OFF STREET LOCATION WHERE NOT SUBJECTED TO HIGH DENSITY TRAFFIC.

2) PROVIDE A FULL BED OF CLASS "A" CONCRETE UNDER FRAME AND SUPPORT ANGLES.



PUMP CHAMBER HATCH

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SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 12/22/25

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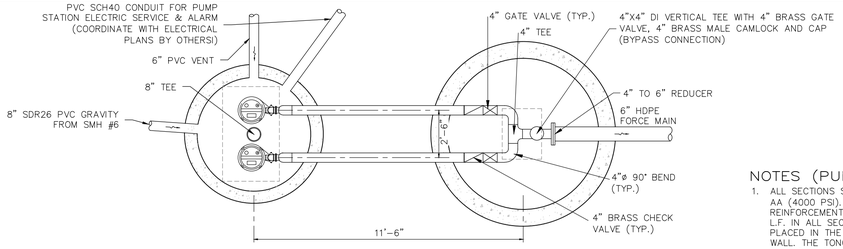


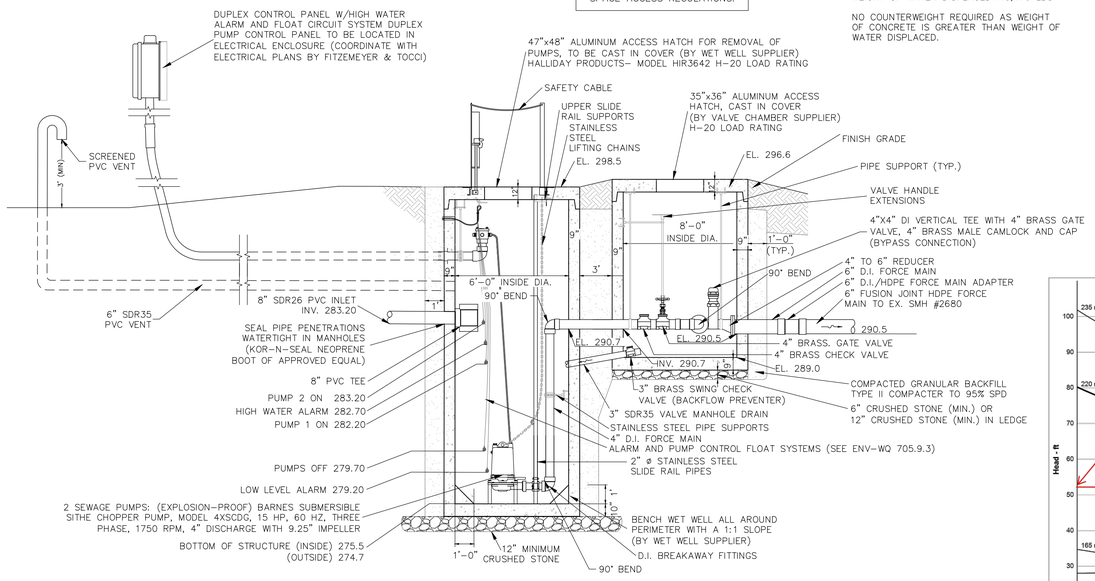
NOTES (PUMP STATION MANHOLE):

1. ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 PSI). CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER L.F. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.
2. PUMP CHAMBER SHALL CONFORM TO NH CODE OF ADMINISTRATIVE RULES Env-Wq 705.02.
3. BUOYANCY CALCULATIONS:
   WEIGHT OF CONCRETE=56,019 LBS
   WEIGHT OF WATER DISPLACED=40,476 LBS

   NO COUNTERWEIGHT REQUIRED AS WEIGHT OF CONCRETE IS GREATER THAN WEIGHT OF WATER DISPLACED.

CAUTION

THIS IS A CONFINED SPACE. DO NOT ENTER WITHOUT FOLLOWING OSHA CONFINED SPACE ACCESS REGULATIONS.



WASTEWATER FLOW INFORMATION

AVERAGE DAILY FLOW:	120,440 GPD (84 GPM)
PEAK DAILY FLOW:	650,376 GPD (452 GPM)

PUMP INFORMATION (AT PEAK DAILY FLOW RATE)

STATIC HEAD:	28'
FRICTION HEAD:	24'
TOTAL DYNAMIC HEAD:	52'

WET WELL STORAGE

VOLUME OF WET WELL:	211 GAL/VERTICAL FT
AVAIL. VERT STORAGE: (INV. TO PUMP OFF)	3.5 FT
VOLUME AVAILABLE:	740 GALLONS

PUMP STATION NOTES:

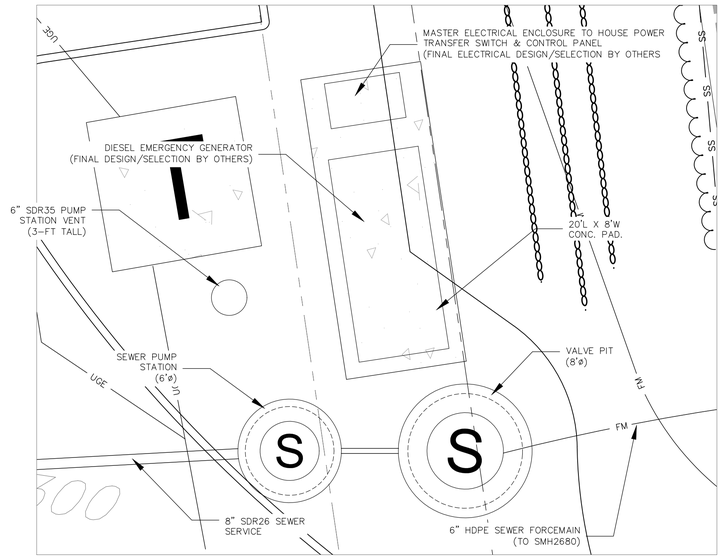
ALL PIPE AND FITTINGS TO BE PRODUCED BY A SINGLE MANUFACTURER AND TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS. BURIED PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM F 1668. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564. PRIMER SHALL CONFORM TO ASTM F 656.

NOTES:

1. STRUCTURES AND HATCHES TO BE H-20 LOADING. SUBMERSIBLE PUMPS AND ALL ELECTRICAL COMPONENTS SHALL BE SUITABLE FOR USE IN CLASS 1 DIVISION 1 HAZARDOUS LOCATIONS.
2. DUPLEX AUTOMATIC CONTROL PANEL AND ALARM PANEL TO BE PLACED IN ENCLOSURE. SYSTEM SHALL INCLUDE BOTH AUDIBLE AND VISUAL ALARMS. COORDINATE LOCATION WITH ARCHITECT.
3. USE 2 DUPLEX (EXPLOSION-PROOF) BARNES SUBMERSIBLE SITHE CHOPPER PUMP, MODEL 4XSCDG, 15 HP, 60 HZ, THREE PHASE, 1750 RPM, 4" DISCHARGE WITH 9.25" IMPELLER, OR APPROVED EQUAL.
4. OUTSIDE OF PUMP BASIN SHALL BE SEALED WITH A BITUMINOUS COATING TO ENSURE WATER TIGHTNESS.
5. ALL JOINTS SHALL BE SEALED WITH A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT.
6. CONTROL PANEL TO BE WIRED TO ALTERNATE OPERATION OF PUMPS. PUMP CONTROLS SHALL PROVIDE AUTOSTART OF LAG PUMP SHOULD LEAD PUMP FAIL TO START.
7. SEPARATE ELECTRICAL CIRCUITS SHALL BE PROVIDED FOR THE PUMPS AND ALARM SYSTEMS.
8. AN ADDITIONAL RECEPTACLE SHALL BE PROVIDED FOR CONNECTION OF GENERATOR IN THE EVENT OF POWER OUTAGE.
9. ALL PIPE AND FITTINGS TO BE PRODUCED BY A SINGLE MANUFACTURER AND TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS. BURIED PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM F 1668. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564. PRIMER SHALL CONFORM TO ASTM F 656.
10. PUMP STATIONS SHALL BE OUTFITTED WITH AUDIBLE ALARM, FLASHING WARNING LIGHT AND DISCONNECT TO BE MOUNTED ADJACENT TO EACH PUMP STATION.
11. PUMP STATION SHALL RECORD PUMP RUN TIMES AND HAVE CONTINUOUS FLOW RECORDING.
12. AN OPERATION AND MAINTENANCE MANUAL IS REQUIRED AND SHALL BE PROVIDED TO THE OWNER/OPERATOR PURSUANT TO ENV-WQ 705.10(a).
13. VALVE PIT SHALL BE EQUIPPED WITH A BYPASS CONNECTION TO ALLOW FOR CONNECTION OF A PUMP AROUND WET WELL FOR MAINTENANCE, REPAIRS AND CONSTRUCTION PURSUANT TO ENV-WQ 705.02(e)(2).

PUMP STATION / VALVE MANHOLE DETAIL

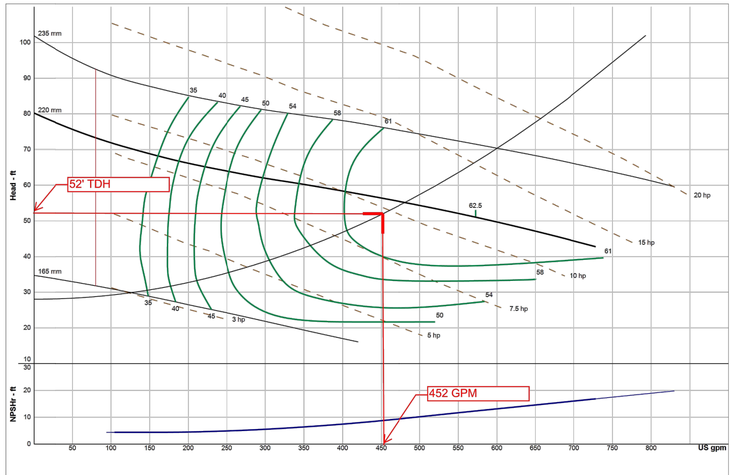
NOT TO SCALE



SEWER PUMP STATION PLAN VIEW

SCALE: 1"=5'

NOTES:
1. SYSTEM COMPONENTS (ELECTRICAL, CONTROLS, EMERGENCY GENERATOR, ETC.) SHOWN FOR COORDINATION PURPOSES ONLY.
2. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL PLANS (BY OTHERS) FOR CONSTRUCTION DETAILS.



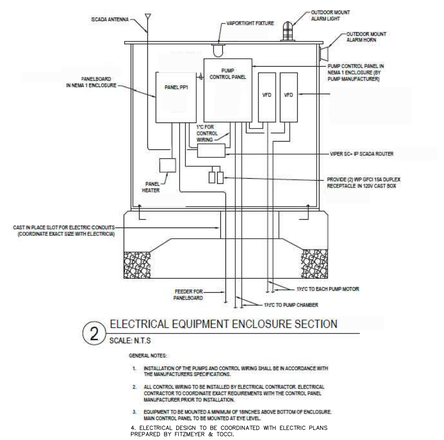
Company:	Crane Barnes.60	Size:	4ESCDG / 4XESCDG
Name:	Catalog: Barnes.60, Vers 4/23/20	Speed:	1750 rpm
Date: 06/05/2025	envie ESC 4" Chopper - 1800 rpm	Dia:	220 mm
	Design Point: 452 US gpm, 52 ft	Curve:	---
	Static Head: 28.05 ft		

BARNES

PUMP CURVE DATA

BARNES SUBMERSIBLE CHOPPER PUMP

NOT TO SCALE



2 ELECTRICAL EQUIPMENT ENCLOSURE SECTION

SCALE: N.T.S

GENERAL NOTES:
1. INSTALLATION OF THE PUMPS AND CONTROL WIRING SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
2. ALL CONTROL WIRING TO BE INSTALLED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO COORDINATE EXACT REQUIREMENTS WITH THE CONTROL PANEL MANUFACTURER PRIOR TO INSTALLATION.
3. EQUIPMENT TO BE MOUNTED A MINIMUM OF 18INCHES ABOVE BOTTOM OF ENCLOSURE. MAIN CONTROL PANEL TO BE MOUNTED AT EYE LEVEL.
4. ELECTRICAL DESIGN TO BE COORDINATED WITH ELECTRIC PLANS PREPARED BY FITZMEYER & TOCCI.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 10/22/25

TFM — Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists
48 Constitution Drive, Bedford, NH 03110, Phone (603) 472-4488, Fax (603) 472-9747, www.tfmoran.com

FILE	18252-02	DR		FB	–	D-16
		CK		CADFILE	18252-02 COVER & DETAILS	

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NEW HAMPSHIRE
STATE ENDANGERED

BLANDING'S TURTLE

Report Sightings: Contact Wildlife Biologist Josh Megyesy at (603) 271 – 1125 or the Wildlife Division at (603) 271 – 2461. Observation reports can be sent to RAARP@wildlife.nh.gov. Photographs and exact locations are strongly encouraged.



Specific Information:

- Adults are 7 – 9 inches long.
- Shell is highly domed with light speckles.
- Distinct yellow throat and chin.
- Uses variety of wetlands and moves extensively over land.
- Turtles are frequently concealed by leaves and undergrowth and may not be easily visible.
- Turtles are most active from April 15 – October 15.
- During nesting season (May 15 – July 15) turtles are attracted to disturbed ground.





This species is protected under RSA 212-A and Fis 1000. Thank you for reporting any observations.

PLEASE DO NOT DISTURB OR HANDLE WILDLIFE

New England Cottontail *(Sylvilagus transitionalis)*

(New Hampshire State-Endangered)



- Adults are 15-17" in length
- Brown and gray coat that does NOT change color with the seasons.
- Black spot between the years is sometimes visible but not always present.
- Can be mistaken for non-native Eastern cottontails.

Please report sightings to NH Fish and Game at RAARP@wildlife.nh.gov or at 603-271-2461. Photo documentation, location, and date/time of observation is helpful.

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REPORT OBSERVATIONS
Smooth Green Snake
(Species of Special Concern)

Report sightings to NHFG Wildlife Division at NHFGReview@wildlife.nh.gov

Reference NHB# and project name if applicable.
Please report promptly, noting specific location and date.
Photographs strongly encouraged.



- Thin, bright green snake
- 10-20 inches long
- White or pale yellow underside
- Found in open or lightly forested habitats such as grassy fields, meadows, blueberry barrens, and forest openings
- Dead individuals turn blue





Northern Black Racer

(New Hampshire state threatened species)



- Solid black with a white throat and chin
- Slender with glossy scales, 3-6 ft. long
- Hatchlings are very small and patterned



Immediately report sightings to NH Fish and Game
Melissa Winters (603-479-1129) or
Brendan Clifford (603-944-0885)
Please report promptly, noting specific location and date
Photographs strongly encouraged

EASTERN HOGNOSE SNAKE

(New Hampshire state endangered species)

*Egg laying occurs **June 1 - July 15th**,*
*Young emerge in **August - September**.*



Identifying traits

- Black, gray or patterned appearance
- Upturned snout
- Adults are 2-3 ft. long
- May spread neck out or hiss
- May play dead if they feel threatened.
- Rarely bite – display is a defense strategy



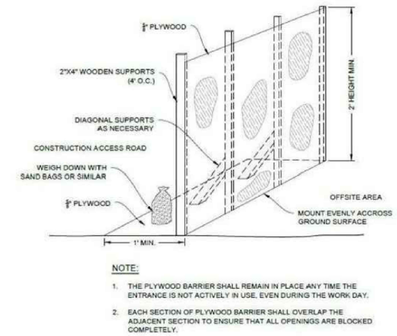
Habitat Use

- Can be found in a variety of habitats throughout the season



Immediately report sightings to NH Fish & Game
Melissa Winters (603-479-1129) or
Brendan Clifford (603-944-0885)
Please report promptly, noting specific location and date.
Photographs strongly encouraged.

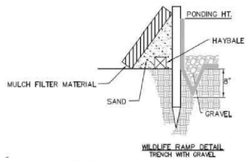
State Laws Pertaining to this Species
RSA 212-A:7, FIS 804.05, Fis 1401.03 (a)



NOTE:
1. THE PLYWOOD BARRIER SHALL REMAIN IN PLACE ANY TIME THE ENTRANCE IS NOT ACTIVELY IN USE, EVEN DURING THE WORK DAY.
2. EACH SECTION OF PLYWOOD BARRIER SHALL OVERLAP THE ADJACENT SECTION TO ENSURE THAT ALL OPENINGS ARE BLOCKED COMPLETELY.

WILDLIFE EXCLUSIONARY BARRIER GATE

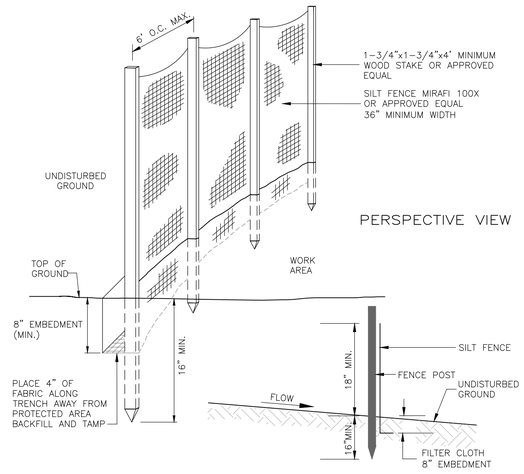
NOT TO SCALE



WILDLIFE RAMP DETAIL
TRENCH WITH GRAVEL

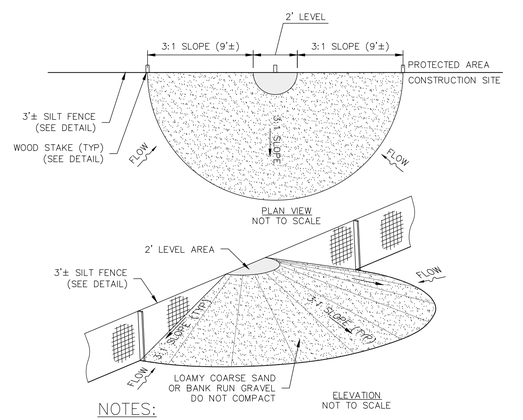
WILDLIFE RAMP

NOT TO SCALE



SILT FENCE

NOT TO SCALE



NOTES:

1. RAMP TO BE ON SIDE OF FENCE WHERE CONSTRUCTION ACTIVITIES OCCUR.
2. REFER TO SILT FENCE DETAIL FOR FENCE INSTALLATION.
3. SPACE AT 75'.

SILTATION FENCE WILDLIFE RAMP

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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		CK		CADFILE	18252-02 COVER & DETAILS	

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LANDSCAPE NOTES

SITE AND SOIL PREPARATION

1. WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR LEDGE, NOTIFY LANDSCAPE ARCHITECT/ENGINEER BEFORE PLANTING.

2. ALL DISTURBED AREAS & PLANTING AREAS, INCLUDING AREAS TO BE SODDED, SHALL RECEIVE THE FOLLOWING SOIL PREPARATION PRIOR TO PLANTING: A MINIMUM OF 6 INCHES OF LIGHTLY COMPACTED TOPSOIL SHALL BE INSTALLED OVER THE SUBSOIL IF TOPSOIL HAS BEEN REMOVED OR IS NOT PRESENT.

3. LOAM SHALL CONSIST OF LOOSE FRIABLE TOPSOIL WITH NO ADMIXTURE OF REFUSE OR MATERIAL TOXIC TO PLANT GROWTH. LOAM SHALL BE FREE FROM STONES, LUMPS, STUMPS, OR SIMILAR OBJECTS LARGER THAN TWO INCHES (2") IN GREATEST DIAMETER, SUBSOIL, ROOTS, AND WEEDS. THE MINIMUM AND MAXIMUM PH VALUE SHALL BE FROM 5.5 TO 7.0. LOAM SHALL CONTAIN A MINIMUM OF TWO PERCENT (2%) AND A MAXIMUM OF FIVE PERCENT (5%) ORGANIC MATTER AS DETERMINED BY LOSS BY IGNITION. SOIL TEXTURE SHALL BE SANDY CLAY LOAM OR SANDY LOAM WITH CLAY CONTENT BETWEEN 15 AND 25%, AND A COMBINED CLAY/SILT CONTENT OF NO MORE THAN 55%. NOT MORE THAN SIXTY-FIVE PERCENT (65%) SHALL PASS A NO. 200 SIEVE AS DETERMINED BY THE WASH TEST IN ACCORDANCE WITH ASTM D1140. IN NO INSTANCE SHALL MORE THAN 20% OF THAT MATERIAL PASSING THE #4 SIEVE CONSIST OF CLAY SIZE PARTICLES.

4. NATURAL TOPSOIL NOT CONFORMING TO THE PARAGRAPH ABOVE OR CONTAINING EXCESSIVE AMOUNTS OF CLAY OR SAND SHALL BE TREATED BY THE CONTRACTOR TO MEET THOSE REQUIREMENTS.

5. SUBMIT TEST RESULTS OBTAINED FROM SOURCE TO ENGINEER/LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL, PRIOR TO SPREADING OPERATIONS.

6. APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT TO USE THE TOPSOIL WILL DEPEND UPON THE RESULTS OF THE SOIL TESTS.

7. THE BURDEN OF PROOF OF SOIL AMENDMENT INSTALLATION RESTS WITH THE CONTRACTOR. SOIL TESTS MAY BE REQUIRED AT THE CONTRACTOR'S EXPENSE IN ORDER TO CONFIRM AMENDMENT INSTALLATION.

SEEDING

1. ROUGH GRADING SHALL BE COMPLETED PRIOR TO THE START OF PLANTING IN ANY GIVEN AREA OF THE PROJECT SITE.

2. SEEDING SHALL BE DONE BETWEEN APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 15, EXCEPT FOR RESEEDING OF BARE SPOTS AND MAINTENANCE. ALL DISTURBED AREAS NOT COVERED BY BUILDINGS, PAVING OR AREAS THAT HAVE NOT BEEN OTHERWISE DEVELOPED SHALL BE SEEDED OR SODDED. SLOPES GREATER THAN 3:1 SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET. AFTER OCTOBER 15 DISTURBED SOILS SHALL BE PROTECTED IN ACCORDANCE WITH THE WINTER CONSTRUCTION NOTES.

ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

PARK SEED MIX (NHDOT TYPE 44) MIN. 135 LBS/ACRE:
- 33% CREEPING RED FESCUE (MIN. 45 LBS/ACRE)
- 42% PERENNIAL RYEGRASS (MIN. 55 LBS/ACRE)
- 21% KENTUCKY BLUEGRASS (MIN. 30 LBS/ACRE)
- 4% REDTOP (MIN. 5 LBS/ACRE)

MODIFIED NEW ENGLAND CONSERVATION WILDLIFE MIX (MIN. 25 LBS/ACRE)*
CONTAINS: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), BLUE VERVAIN (VERBENA HASTATA), BLACK EYED SUSAN (RUDBECKIA HIRTA), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).
*SEED MIX SHALL NOT CONTAIN INDIAN GRASS (SORGHASTRUM NUTANS), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), OR COMMON SNEEZEWEED (HELENIUM AUTUNALE).

TEMPORARY LAWN MIX: (MIN. 47 LBS/ACRE)
100% ANNUAL RYE

*SEED MIX SHALL NOT CONTAIN INDIAN GRASS (SORGHASTRUM NUTANS), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), OR COMMON SNEEZEWEED (HELENIUM AUTUNALE).

PLANTING

1. EXCAVATE PITS, PLANTERS, BEDS AND TRENCHES WITH VERTICAL SIDES AND WITH BOTTOM OF EXCAVATION SLIGHTLY RAISED AT CENTER TO PROVIDE PROPER DRAINAGE. LOOSEN HARD SUBSOIL IN BOTTOM OF EXCAVATION.

2. ANY LEDGE OR RUBBLE MATERIAL SHALL BE FRACTURED TO A DEPTH OF 3 FEET AND EXCAVATED TO A DEPTH OF 30 INCHES FOR TREE POCKETS AND 18 INCHES FOR SHRUB BEDS. THIS PROCEDURE SHALL BE HANDLED BY THE SITE CONTRACTOR. SITE TOPSOIL SHALL BE DEPOSITED IN ALL EXCAVATED POCKETS.

3. DISPOSE OF SUBSOIL REMOVED FROM PLANTING EXCAVATIONS. DO NOT MIX WITH PLANTING SOIL OR USE AS BACKFILL.

4. FILL EXCAVATIONS FOR TREES AND SHRUBS WITH WATER AND ALLOW TO PERCOLATE OUT BEFORE PLANTING.

5. DISH TOP OF BACKFILL TO ALLOW FOR MULCH – PLANT SAUCERS SHALL BE AS SHOWN ON DETAIL SHEETS; 6' DIAMETER FOR ALL DECIDUOUS TREES, AND FOR EVERGREEN TREES A RADIUS 2' BEYOND THE OUTER MOST BRANCHES.

6. MULCH TREES, SHRUBS, PLANTERS AND BEDS. PROVIDE NOT LESS THAN 3" THICKNESS OF BARK MULCH, 3/8"–2" OF WIDTH, AND WORK INTO TOP OF BACKFILL. FINISH LEVEL WITH ADJACENT FINISH GRADES AS DIRECTED IN THE FIELD.

7. TREEGATOR WATERING SYSTEM OR APPROVED EQUAL SHALL BE INSTALLED FOR ALL DECIDUOUS TREES AT TIME OF PLANTING AND REMOVED BEFORE FROST. WATERING RATE TO BE APPLIED PER MANUFACTURER'S SPECIFICATIONS.

8. ALL PLANT MATERIALS SHALL HAVE DEAD OR DAMAGED BRANCHES REMOVED AT TIME OF PLANTING. ALL TAGS AND RIBBONS SHALL BE REMOVED AT THIS TIME.

9. THE CONTRACTOR SHALL REQUEST A FINAL OBSERVATION BY THE OWNER'S REPRESENTATIVE UPON COMPLETION OF INSTALLATION.

10. AVOID OR MINIMIZE THE USE OF FERTILIZERS IN UPLAND AREAS OR TRANSITION ZONES. IF FERTILIZERS ARE NECESSARY, USE ORGANIC VERSUS SYNTHETIC FERTILIZERS OPTIONS. SYNTHETIC OPTIONS SHOULD BE AVOIDED; HOWEVER, IF CHOSEN, THEY SHOULD BE CONTROLLED-RELEASE/SLOW-RELEASE AND AT LOW STRENGTHS.

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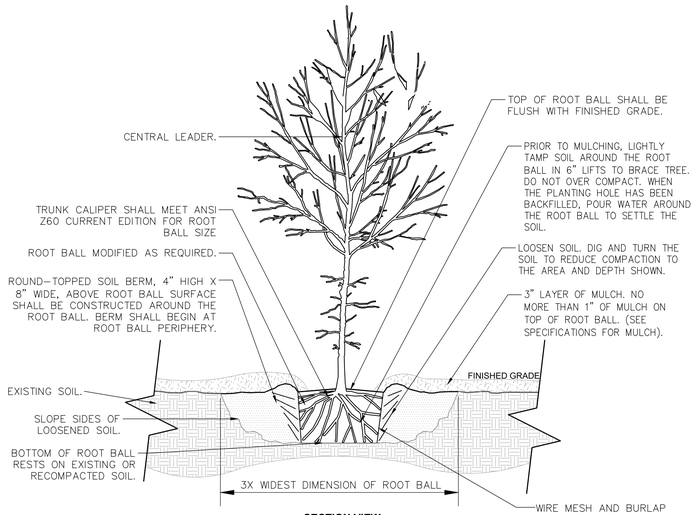
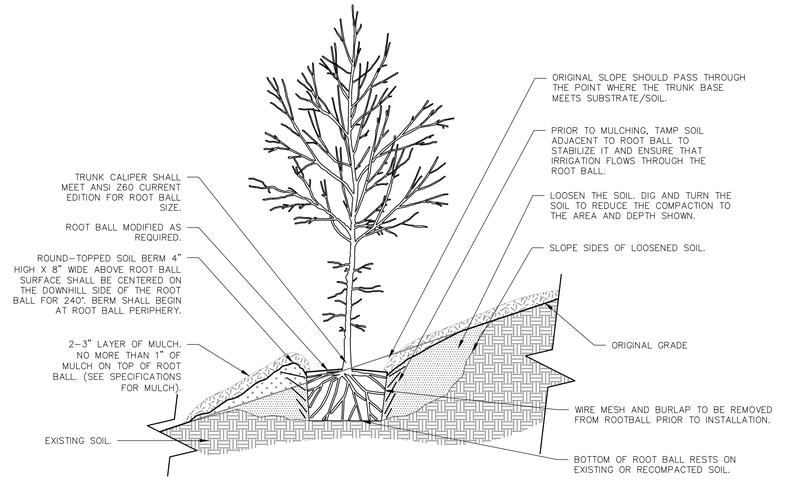


SECTION VIEW

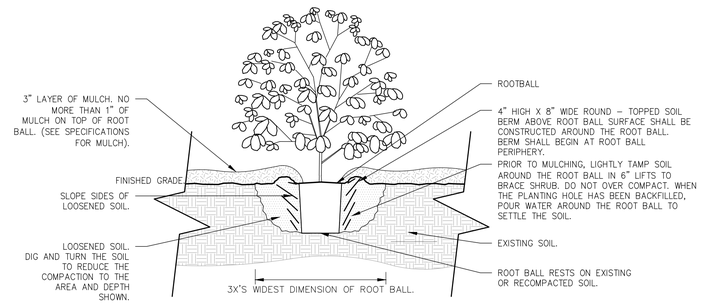
TREE WITH MULCH BERM

NOT TO SCALE



TREE ON SLOPE 5% (20:1) TO 50% (2:1)

NOT TO SCALE



SECTION VIEW

SHRUB PLANTING

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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STORMWATER MANAGEMENT INSPECTION & MAINTENANCE MANUAL

COPIES OF THE I&M REPORTS SHALL BE FILED WITH THE TOWN ON AN ANNUAL BASIS.

Inspection & Maintenance Manual

PurposeEnergy-Londonderry, LLC
Southern New Hampshire Green Energy Campus
North Wentworth Avenue, Londonderry, NH
September 12, 2025
Revised December 18, 2025

Table of Contents

Description of Project

Responsible Party

Stormwater Practices – Schedule of Maintenance

Stormwater Practices – Maintenance Guidelines

- Treatment Practices
  - Filtration/Detention Basins
- Pretreatment Practices
  - Sediment Forebays
- Conveyance Practices
  - Culvert
  - Catch Basin
  - Flared End Sections
  - Riprap Aprons/Plunge Pool
  - Swales
- System Components
  - Access Driveway (North Wentworth Ave ROW):
  - Driveway, Sidewalk, and Parking Areas
  - Lawns and Landscaping Areas
  - Invasive Species

Control of Invasive Plants

Deicing Plan
- Best Management Practices and Salt-Use Minimization Efforts in Chloride-Impaired Watersheds of New Hampshire
  - Attachment A – Developing a Salt Minimization Plan
  - Attachment B – Smart Salting Practices Checklist
- NHDES Green SnowPro Information
- NHDES Best Management Practices Guidance Document
- Plan & Deicing Log

Inspection & Maintenance Log

Deicing Data Form

Inspection Checklist and Inspection & Maintenance Plan

Description of Project

The Southern New Hampshire Green Energy Campus will reduce the waste management burden on New Hampshire by tackling the food waste problem. It will feature two connected resource recovery facilities.

- The first, RecycleWorks, will receive food waste that normally goes to landfill, including food that has passed its sell by date or is out of specification but is wrapped in glass, plastic, or metal packaging. RecycleWorks will remove the organic waste from that packaging and send it to the second facility on the campus,
- PurposeEnergy – Londonderry. PurposeEnergy will pump the food waste into tanks that digest it in a process similar to a human stomach. The tanks will also receive dairy waste directly by pipe from a local business, Stonyfield Yogurt. The digester tanks will produce renewable biogas that will be cleaned to pipeline quality and injected into the local natural gas network.

The Green Energy Campus is not a landfill; all of the material that comes to the campus will leave it either as recyclable material, renewable biogas, clean water, or biosolids (the residuals from digestion which will be sent to a compost facility for use as fertilizer). The net impact of the Southern New Hampshire Green Energy Campus is to

- divert 90% of solid waste away from New Hampshire landfills;
- reduce the escape of environmentally damaging methane gas resulting from decomposition of organic matter;
- support local business in the cost-effective and environmentally beneficial management of food manufacturing waste.

The site consists of the following major elements:

- 36,600 sf Depackaging Facility (RecycleWorks)
- A 14,100 sf Process Building, with future expansion of 9,800 sf (PurposeEnergy)
- tribrid bio-reactors
- 3 flow equalization tanks
- 26' x 32' screening room building
- A biogas upgrading yard
- An interconnection facility yard
- Truck scales
- Parking and trucking interconnection

An open and closed drainage system is proposed to attenuate, convey, and treat runoff from the proposed development. A series of catchbasins, sediment forebays, two (2) filtration basins and one (1) detention basin, strategically located though the site will provide pretreatment/treatment and manage runoff.

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
North Wentworth Ave.
Londonderry, NH 03053

Responsible Party

Operator: PurposeEnergy-Londonderry, LLC

Address: PurposeEnergy-Londonderry, LLC

Contact: Sean O'Neill, oneail@purposeenergy.com, (917).776.6155

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
North Wentworth Ave.
Londonderry, NH 03053

Stormwater Practices – Schedule of Maintenance

The following practices shall be inspected twice annually, once following snowmelt (spring) and once following leaf-drop (fall):

- Sediment Forebays
- Filtration/Detention Basins
- Catch Basin

The following practices shall be inspected annually following snowmelt (spring):

- Culvert
- Catch Basin
- Headwalls
- Riprap Aprons
- Swales

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
North Wentworth Ave.
Londonderry, NH 03053

Stormwater Practices – Maintenance Guidelines

Treatment Practices
(Inspected twice a year)

Filtration/Detention Basin
Maintenance Requirements:
- To be inspected twice annually, once following snowmelt (spring) and once following leaf-drop (fall);
- Removal of debris from inlet and outlet structures;
- Removal of accumulated sediment;
- Periodic mowing of embankments;
- Removal of woody vegetation from embankments;
- Inspection and repair of embankments; and
- If an infiltration system does not drain within 72-hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore infiltration function, including but not limiting to removal of accumulated sediments or reconstruction of the infiltration trench.

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
North Wentworth Ave.
Londonderry, NH 03053

Pretreatment Practices
(Inspected twice a year)

Sediment Forebay
Maintenance Requirements:
- To be inspected at least twice annually, once following snowmelt and once following leaf-drop and cleaned as indicated by inspection;
- Conduct periodic mowing of embankments (two times per year) to control growth of woody vegetation on embankments;
- Remove debris from outlet structure;
- Remove and dispose of accumulated sediment; and
- Install and maintain a staff gage or other measuring device to indicate depth of sediment accumulation and level at which clean-out is required. It shall be cleaned out when sediment fills half the sump depth (minimum sump depth is 2 feet when clear).

Conveyance Practices
(Inspections As Noted)

Culvert
Maintenance Requirements:
- To be inspected at least twice annually, once following snow-melt (spring) and once following leaf drop (fall), and cleaned as indicated by inspection.
- Inspect culvert inlet, outlet, and structure.
- Remove accumulated sediments greater than 2 inches in depth and debris at the inlet, at the outlet, and within the conduit.
- Repair any erosion damage at the culvert's inlet and outlet.

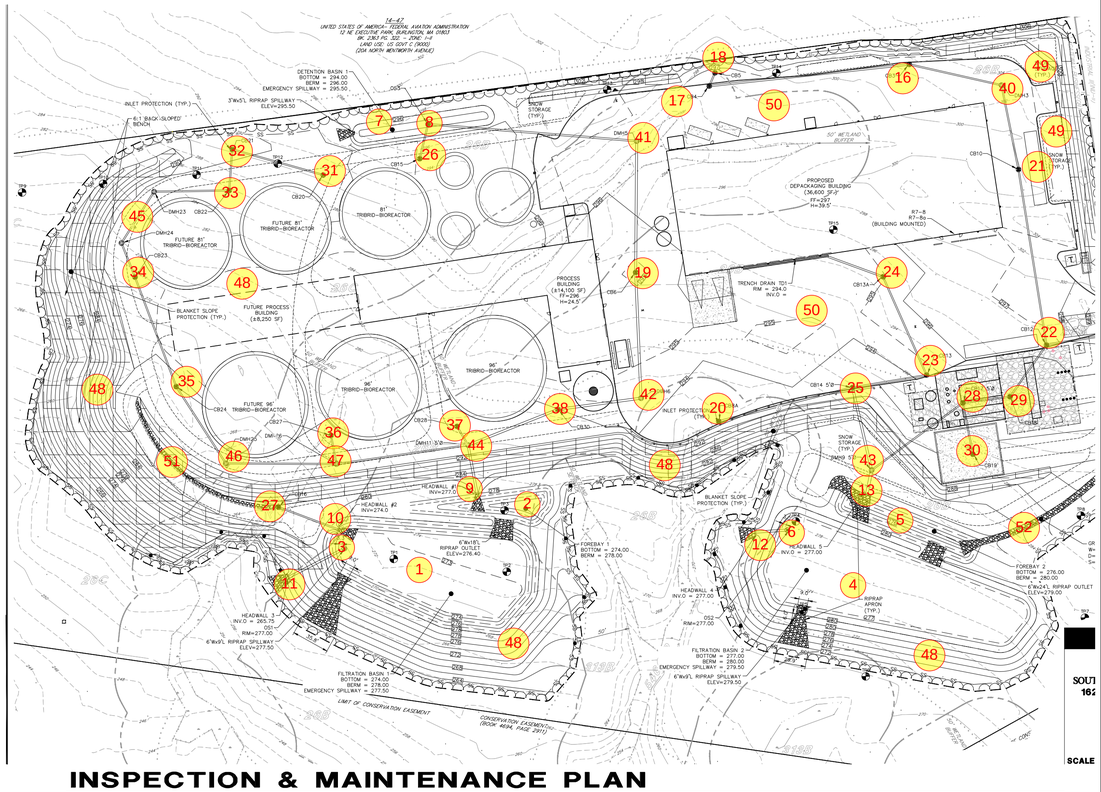
Catch Basin
Maintenance Requirements:
- To be inspection a least twice annually, once following snow-melt and once following leaf-drop and cleaned as indicated by inspection;
- Sediment should be removed annually and when it approaches half the sump depth; and
- If floating hydrocarbons are observed during an inspection, the material should be removed immediately by skimming, absorbent materials, or other method and disposed of in conformance with applicable state and federal regulations.

Headwalls
Maintenance Requirements:
- Inspect at least once annually for accumulation of sediment and debris and for signs of erosion along embankments;
- Remove debris whenever observed during inspection; and
- Remove sediment when accumulation exceeds 25% of channel depth.

Riprap Apron/Plunge Pool
Maintenance Requirements:
- Inspect at least once annually for damage and deterioration; and
- Repair damages immediately.

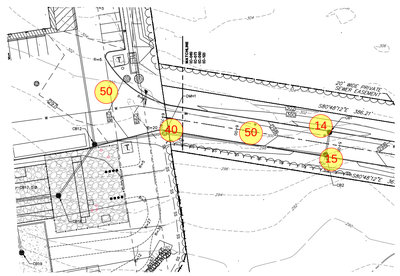
Riprap Swales
Maintenance Requirements:
- Inspect at least once annually for damage and deterioration
- Remove lodged debris

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
North Wentworth Ave.
Londonderry, NH 03053



INSPECTION & MAINTENANCE PLAN

NOT TO SCALE



STORMWATER MANAGEMENT INSPECTION & MAINTENANCE MANUAL

COPIES OF THE I&M REPORTS SHALL BE FILED WITH THE TOWN ON AN ANNUAL BASIS.

- Repair damages immediately.

System Components

Access Driveway (North Wentworth Ave ROW):
Maintenance Requirements (only for section constructed by this site plan):

- Sediments and debris should be removed and disposed of from impervious areas by power-broom sweeping.
- Sweep at least two (2) times per year and on a more frequent basis depending on sanding operations.
- All resulting sweepings shall be collected and properly disposed of off-site in accordance with NHDES and other applicable requirements.

Driveway, Sidewalk, and Parking Areas:
Maintenance Requirements:

- Sediments and debris should be removed and disposed of from impervious areas by power-broom sweeping.
- Sweep at least two (2) times per year and on a more frequent basis depending on sanding operations.
- All resulting sweepings shall be collected and properly disposed of off-site in accordance with NHDES and other applicable requirements.

Lawns and Landscaping Areas:
Maintenance Requirements:

- Inspect, maintain, and repair as necessary development area lawns and landscaped areas to ensure a stabilized surface.
- Maintain lawn areas with healthy turf. Take steps to necessary to restore distressed turf to good health.
- Ensure that landscape mulch materials are refreshed as necessary and does not wash onto sidewalks or other adjacent surfaces.

Control of Invasive Plans

During maintenance activities, check for the presence of invasive plants. If invasive plants are found, they shall be controlled and removed in a safe manner as described on the following pages.

Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as "hitchhikers" among shipments of other plants, seeds, packing materials or fresh produce. Invasive plants can cause harm by:

- Becoming weedy and overgrown;
- Killing established shade trees;
- Obstructing pipes and drainage systems
- Forming dense beds in water
- Lowering water levels in lakes, streams, and wetlands
- Destroying natural communities
- Promoting erosion on stream banks and hillsides
- Resisting control except by hazardous chemicals.

Inspection & Maintenance Log

Date	Inspector	BMPs checked	Maintenance Required

Deicing Plan

The project Chloride Management Plan is described in the following pages. Also attached is a Deicing log to be used to document maintenance procedures, and the current NHDES Fact Sheet.

Beaver Brook has been declared an impacted watershed in need of corrective action due to Chloride loading, most notably resulting from winter maintenance activities. Londonderry has a Salt Reduction Plan (SRP) that provides a procedural framework for the Town of Londonderry to continuously strive to improve winter maintenance operations while effectively and efficiently using road salt during the snow and ice removal operations. Londonderry will provide winter maintenance to town roadways, parking lots, and sidewalks in accordance with Londonderry's Winter Maintenance Snow and Ice Control Policy while striving to minimize adverse impacts to the environment by:

- Adhering to the procedures contained within the SRP;
- Committing to ongoing winter maintenance staff training and education;
- Reporting fiscal year salt usage to New Hampshire Department of Environmental Services (NHDES);
- Re-evaluating the effectiveness of the SRP as needed to incorporate new technologies or changes in procedures.

Under the existing SRP, the Town has identified four strategies to help meet the Total Maximum Demand Load allocation within the Little Cohas Brook / Cohas Brook Watershed. The current load is estimated at 854.47 tons/year imported to the watershed. The town's reduction goals are 6% for year one, 12% for year two, and 18% for year three to be achieved from the following strategies:

- Equipment upgrade pilot project;
- Improved calibration;
- Private sector outreach;
- Improved weather system monitoring.

NHDES will monitor the progress made by each community impacting the Little Cohas Brook / Cohas Brook watershed and may require modifications to each plan. In recognition of the Little Cohas Brook / Cohas Brook Watershed chloride reduction plan for Londonderry, and that approximately 40% of the chloride impact is a result of winter operations on private roadways and parking lots, the PurposeEnergy-Londonderry, LLC will be guided by the following actions:

- Private Maintenance Contracting Equipment Upgrades and Training
  All snow removal contactors shall be NH Certified Green SnowPro contractors who have been trained and are knowledgeable of Best Management Practices (BMP) for snow removal with reduced salt application. These practices are published and are updated though the UNH – Technology Transfer (T2) program. All private contractors employed by PurposeEnergy-Londonderry, LLC roadway maintenance will use only pre-approved methods for spreading abrasives on private roadways and parking lots. When salt is applied, it will be applied only in accordance with best management practices and will include pre-treatment and ground speed-controlled spreaders.
- Improved Weather System Monitoring
  PurposeEnergy-Londonderry, LLC will coordinate weather information gathered by both the town and NHDOT for use by maintenance contractors. In doing so, contractors will be able to make more informed decisions as to when and to what extent chloride is applied to roadways, sidewalks, and parking lots;
- Increased Mechanical/Removal Capabilities
  PurposeEnergy-Londonderry, LLC will endeavor to use mechanical removal means on a more frequent basis using more manpower and equipment than traditionally used to shorten plowing intervals and reduce the need for salting to break up hard packed snow. Shortened maintenance routes with shorter service intervals will be used to stay ahead of snowfall, thus reducing the need to sand and salt after snow and ice packing has already occurred.
- Public Awareness Campaign
  PurposeEnergy-Londonderry, LLC will inform all future developers, grantees, and tenants of the need to reduce salt application on roadways, parking lots, and sidewalks.

The manual, as with the Town's Salt Reduction Plan, is intended to be a dynamic document, modified as required based on knowledge gained from past practices and technological advancement to reflect chloride best management practices.

Deicing Data Form

Note: The operator shall report annual salt usage within the municipal boundaries to NHDES's New Hampshire Salt Management System Database at: https://www.nhmed.des.nh.gov/salt-resources/winter-maintenance/

Location: Southern New Hampshire Green Energy Campus North Wentworth Ave. Londonderry, NH 03053				
Date:				
Air Temperature	**Pavement Temperature**	**Relative Humidity**	**Dew Point**	**Sky**
Reason for applying:				
Area of Application:				
Chemical:				
Application Time:				
Application Amount:				
Observation (first day):				
Observation (after event):				
Observation (before next application):				

Name:

*__New Hampshire Certified Green SnowPro__ Applicator shall be employed for winter snow and ice management activities

Inspection Checklist

Date:	**Project Name: Southern New Hampshire Green Energy Campus**
Inspector's Name/Title:	
Inspector's Contact Information:	
☐ 1st Yearly Inspection	BMP's to be inspected: All
☐ 2nd Yearly Inspection	BMP's to be inspected: Treatment and Pretreatment Practices

BMP* **Refer to following Inspection & Maintenance Plan for BMP location**		Maintenance Required	Corrective Action Needed and Notes
1	Filtration Basin 1	☐ Yes ☐ No	
2	Forebay 1	☐ Yes ☐ No	
3	Outlet Structure 1	☐ Yes ☐ No	
4	Filtration Basin 2	☐ Yes ☐ No	
5	Forebay 2	☐ Yes ☐ No	
6	Outlet Structure 2	☐ Yes ☐ No	
7	Detention Basin 1	☐ Yes ☐ No	
8	Outlet Structure 3	☐ Yes ☐ No	
9	Headwall 1	☐ Yes ☐ No	
10	Headwall 2	☐ Yes ☐ No	
11	Headwall 3	☐ Yes ☐ No	
12	Headwall 4	☐ Yes ☐ No	

13	Headwall 5	☐ Yes ☐ No	
14	CB1	☐ Yes ☐ No	
15	CB2	☐ Yes ☐ No	
16	CB3	☐ Yes ☐ No	
17	CB4	☐ Yes ☐ No	
18	CB5	☐ Yes ☐ No	
19	CB6	☐ Yes ☐ No	
20	CB8A	☐ Yes ☐ No	
21	CB10	☐ Yes ☐ No	
22	CB12	☐ Yes ☐ No	
23	CB13	☐ Yes ☐ No	
24	CB13A	☐ Yes ☐ No	
25	CB14	☐ Yes ☐ No	
26	CB15	☐ Yes ☐ No	
27	CB16	☐ Yes ☐ No	
28	CB17	☐ Yes ☐ No	
29	CB18	☐ Yes ☐ No	
30	CB19	☐ Yes ☐ No	
31	CB20	☐ Yes ☐ No	
32	CB21	☐ Yes ☐ No	
33	CB22	☐ Yes ☐ No	
34	CB23	☐ Yes ☐ No	
35	CB24	☐ Yes ☐ No	

36	CB27	☐ Yes ☐ No	
37	CB28	☐ Yes ☐ No	
38	CB30	☐ Yes ☐ No	
39	DMH1	☐ Yes ☐ No	
40	DMH3A	☐ Yes ☐ No	
41	DMH5	☐ Yes ☐ No	
42	DMH6	☐ Yes ☐ No	
43	DMH9	☐ Yes ☐ No	
44	DMH11	☐ Yes ☐ No	
45	DMH24	☐ Yes ☐ No	
46	DMH25	☐ Yes ☐ No	
47	DMH26	☐ Yes ☐ No	
48	Development Area Lawns (Typ.)	☐ Yes ☐ No	
49	Development Area Landscaping (Typ.)	☐ Yes ☐ No	
50	Parking Lot & Driveway Sweeping (Typ.)	☐ Yes ☐ No	
51	Swale R1		
52	Swale R2		
	Other	☐ Yes ☐ No	
52			

*Best Management Practices
**Photographs of BMPs shall be included as part of the required Inspections
***Copies of Inspection & Maintenance Records shall be provided to the Town of Londonderry on an annual basis and the NHDES AoT Bureau upon request
**** SWPPP reports shall be provided via e-mail to the Town of Londonderry at the same time they are provide to the Contractor and Owner

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	18252-02	DR		FB	–	D-20
		CK		CADFILE	18252-02 COVER & DETAILS	

Dec 23, 2025 - 2:25pm
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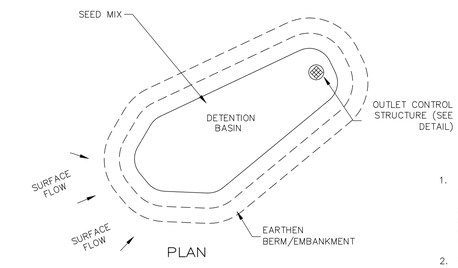
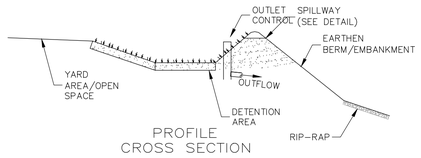
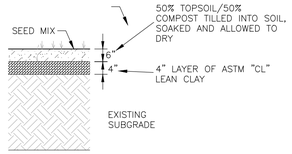


PLAN



PROFILE
CROSS SECTION

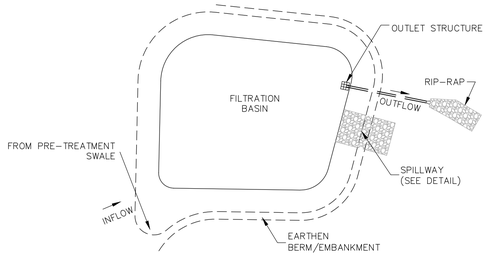


BASIN BOTTOM

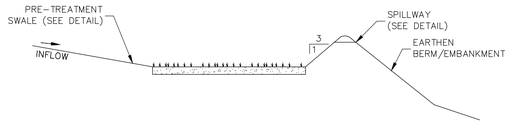
1. THE INSTALLER SHALL NOT ALLOW ANY VEHICULAR OR CONSTRUCTION EQUIPMENT TRAVEL TO OCCUR ACROSS THE PROPOSED BASIN AREA AT ANY TIME EXCEPT DURING EXCAVATION OF TOPSOIL, SUBSOIL AND OTHER MATERIALS NOT SUITABLE FOR BED BOTTOM CONDITIONS.
2. CAUTION SHOULD BE EXERCISED DURING SITE PREPARATION TO AVOID COMPACTION OF THE INFILTRATIVE SURFACE.
3. SEED MIX
   NEW ENGLAND ROADSIDE MATRIX WET MEADOW SEED MIX (MIN. 35 LBS/ACRE)
4. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE BASIN.
5. VEGETATION SHOULD BE ESTABLISHED IMMEDIATELY.
6. DO NOT PLACE SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

DETENTION BASIN

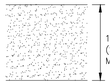
NOT TO SCALE



PLAN



PROFILE



BASIN BOTTOM

FILTER MEDIA NOTES

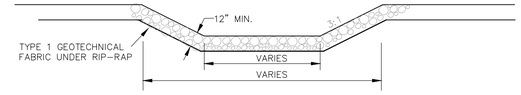
1. ASTM C-33 CONCRETE SAND (50%-55% BY VOLUME)
2. LOAMY SAND TOPSOIL WITH 15%-25% FINES PASSING THE NO. 200 SIEVE (20%-30% BY VOLUME)
3. MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH WITH LESS THAN 5% PASSING THE NO. 200 SIEVE (20%-30% BY VOLUME)

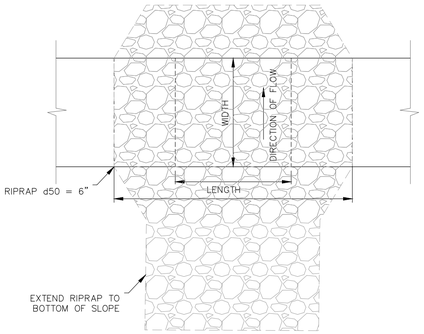
FILTRATION BASIN NOTES

1. THE INSTALLER SHALL NOT ALLOW ANY VEHICULAR OR CONSTRUCTION EQUIPMENT TRAVEL TO OCCUR ACROSS THE PROPOSED BASIN AREA AT ANY TIME EXCEPT DURING EXCAVATION OF TOPSOIL, SUBSOIL AND OTHER MATERIALS NOT SUITABLE FOR BED BOTTOM CONDITIONS.
2. CAUTION SHOULD BE EXERCISED DURING SITE PREPARATION TO AVOID COMPACTION OF THE INFILTRATIVE SURFACE.
3. SEED MIX
   NEW ENGLAND ROADSIDE MATRIX WET MEADOW SEED MIX (MIN. 35 LBS/ACRE)
4. FILTER MEDIA SOIL SAMPLE TO BE PROVIDED TO THE ENGINEER PRIOR TO PLACEMENT. ON SITE MIXING OF MANUFACTURED SOIL MAY BE ACCEPTABLE PENDING ENGINEER APPROVAL.
5. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE BASIN.
6. AFTER THE BASIN IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
7. VEGETATION SHOULD BE ESTABLISHED IMMEDIATELY.
8. DO NOT PLACE FILTRATION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
9. FILTRATION MEDIA SHALL BE INSTALLED ALONG INTERIOR SIDE SLOPES TO ELEVATION EQUAL TO OUTLET STRUCTURE RIM OR WEIR ELEVATION, WHICHEVER IS LOWER.
10. FILL TO BRING EMBANKMENT AREAS TO GRADE SHALL BE EXISTING SIDE MATERIALS OR IMPORTED MATERIAL CONSISTENT WITH THE GEOTECHNICAL REPORT RECOMMENDATIONS FOR COMMON FILL (SEE NOTE 21 AND 22 ON SHEET C-02).

FILTRATION BASIN

NOT TO SCALE





WEIR	TOP OF BASIN BERM EL.	WEIR INV.	LENGTH	WIDTH
SEDIMENT FOREBAY #1	278.0	276.40	10.4'	15.6'
SEDIMENT FOREBAY #2	280.0	278.90	21.0'	9.0'

BROAD CRESTED WEIR

FROM FOREBAYS

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

PREPARE BEDDING:

BACKFILL MATERIAL AROUND THE END SECTION MAY BE THE SAME AS THE MATERIAL AROUND THE PIPE, PLACE A FEW INCHES OF BACKFILL MATERIAL IN THE TRENCH OR DITCH WHERE THE END SECTION WILL BE PLACED. COMPACT AND CONTOUR THIS BEDDING MATERIAL TO GENERALLY MATCH THE END SECTION, EXCAVATE AN AREA IN THE BEDDING WHERE TOE TROUGH WILL SEAT SO THAT THE END SECTION WILL BE LEVEL WITH THE BOTTOM OF THE TRENCH OR DITCH IN THE FINISHED INSTALLATION.

PLACE END SECTION OF PIPE:

OPEN THE END SECTION COLLAR AND SEAT IT OVER THE TWO PIPE CONNECTIONS. ONCE THE END SECTION IS POSITIONED, CHECK TO MAKE SURE THAT THE INVERT OF THE END SECTION MATCHES THE INVERT OF THE PIPE AND THAT THE END SECTION IS LEVEL WITH THE TRENCH OR DITCH BOTTOM.

SECURE THE END SECTION:

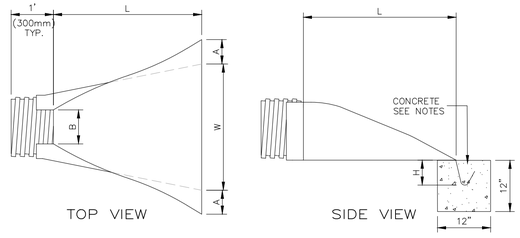
SLIP THE STAINLESS STEEL ROD THROUGH THE PRE-DRILLED HOLES AT THE TOP OF THE COLLAR. THE ROD SHOULD BE BETWEEN THE CROWNS OF THE TWO PIPE CONNECTIONS. PLACE A WASHER ON EITHER END OF THE ROD. PLACE A NUT ON EITHER END OF THE ROD AND TIGHTEN WITH A WRENCH.

SECURE THE TOE TROUGH:

TO PREVENT WASHOUTS FROM HIGH VELOCITY FLOW, IT IS RECOMMENDED THAT THE TROUGH BE SECURED WITH CONCRETE. POUR CONCRETE IN THE TROUGH UP TO THE LEVEL OF THE TRENCH OR DITCH BOTTOM AND ALONG THE ENTIRE LENGTH OF THE TROUGH.

FINISH BACKFILL:

SHOVEL BACKFILL AROUND THE END SECTION IN 6 TO 9 INCH LAYERS EQUALLY ON BOTH SIDES, KNIFING IT TO ELIMINATE VOIDS. TAMP WITH A SMALL-FACED COMPACTOR OR OTHER EQUIPMENT SUITABLE FOR SMALL AREAS. CONTINUE PLACING, KNIFING, AND COMPACTING BACKFILL LAYERS TO THE TOP OF THE END SECTION TO SEAT IT WELL INTO THE BACKFILL.



	DIMENSIONS, INCHES (mm)					
PIPE DIAMETER	PART NO.	A, ±1 (25)	B MAX	H, ±1 (25)	L, ±1/2 (13)	W, ±2 (50)
12", 15" (300,375)	1210 NP	6.5 (165)	10 (254)	6.5 (165)	25 (635)	29 (736)
18" (450)	1810 NP	7.5 (190)	15 (380)	6.5 (168)	32 (812)	35 (890)
24" (600)	2410 NP	7.5 (190)	18 (450)	6.5 (165)	36 (900)	45 (1140)
30" (750)	3010 NP	10.5 (266)	NA	7.0 (178)	53 (1346)	68 (1725)
36" (900)	3610 NP	10.5 (266)	NA	7.0 (178)	53 (1346)	68 (1725)

FLARED END SECTION

HIGH DENSITY POLYETHYLENE (HDPE)

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SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
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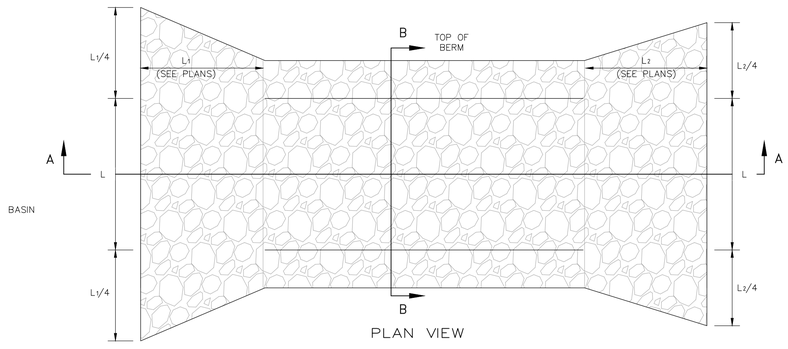
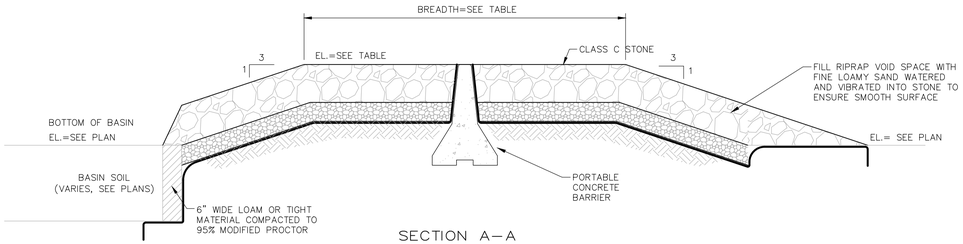
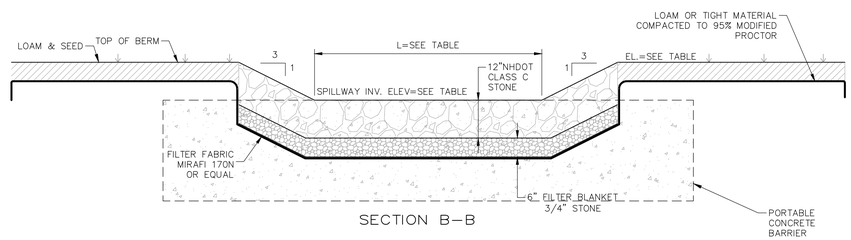
RIP-RAP GRADATION

	% FINER BY WEIGHT				
STONE SIZE	D 50 = 6"	D50 = 9"	D 50 = 12"	D50 = 18"	D50 = 24"
2"	0-15%	0%	–	–	–
4"	20-35%	10-20%	0-10%	–	–
6"	35-50%	25-35%	10-25%	0-10%	–
8"	50-65%	30-50%	20-30%	10-20%	0-10%
10"	60-80%	40-60%	30-40%	15-30%	5-15%
12"	75-100%	–	–	–	–
15"	–	70-100%	45-60%	25-40%	20-30%
20"	–	–	70-100%	40-60%	30-45%
30"	–	–	–	70-100%	50-70%
40	–	–	–	–	70-100%





SECTION A-A

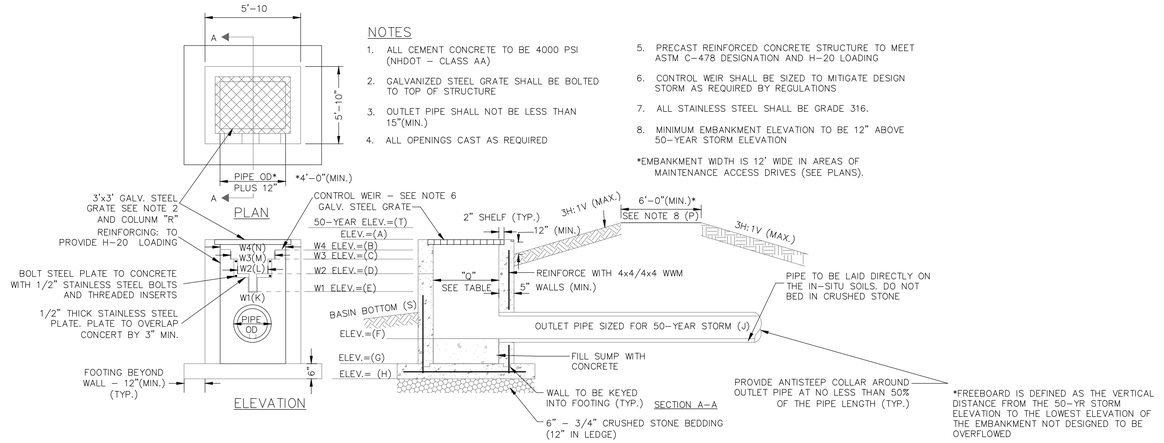


SECTION B-B

SYSTEM	TOP OF BASIN BERM EL.	SPILLWAY INV.	LENGTH (L)	BREADTH
FILTRATION BASIN #1	278.0	277.5	6'	9'
FILTRATION BASIN #2	280.0	279.5	6'	9'
DETENTION BASIN #1	296.0	295.5	3'	5'

SPILLWAY

FROM BASINS NOT TO SCALE



NOTES

1. ALL CEMENT CONCRETE TO BE 4000 PSI (NHDOT - CLASS AA)
2. GALVANIZED STEEL GRATE SHALL BE BOLTED TO TOP OF STRUCTURE
3. OUTLET PIPE SHALL NOT BE LESS THAN 15"(MIN.)
4. ALL OPENINGS CAST AS REQUIRED
5. PRECAST REINFORCED CONCRETE STRUCTURE TO MEET ASTM C-478 DESIGNATION AND H-20 LOADING
6. CONTROL WEIR SHALL BE SIZED TO MITIGATE DESIGN STORM AS REQUIRED BY REGULATIONS
7. ALL STAINLESS STEEL SHALL BE GRADE 316.
8. MINIMUM EMBANKMENT ELEVATION TO BE 12" ABOVE 50-YEAR STORM ELEVATION

*EMBANKMENT WIDTH IS 12' WIDE IN AREAS OF MAINTENANCE ACCESS DRIVES (SEE PLANS).

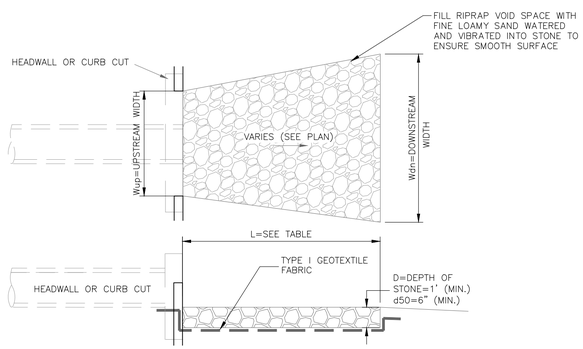
*FREEBOARD IS DEFINED AS THE VERTICAL DISTANCE FROM THE 50-YR STORM ELEVATION TO THE LOWEST ELEVATION OF THE EMBANKMENT NOT DESIGNED TO BE OVERFLOWED

	ELEVATIONS/DIMENSIONS																	
OUTLET STRUCTURE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	FREEBOARD (A-T)
FILTRATION BASIN #1	277.30	296.65	295.95	274.55	273.95	266.00	265.50	265.00	15"	1.2"	2.4"	6.0"	14.4"	278.00	4.00'x4.00'	4.50'x4.50'	273.00	277.00	1.00'
FILTRATION BASIN #2	279.00	–	278.65	278.35	277.75	272.00	271.50	271.00	15"	1.2"	6.0"	30.0"	–	280.00	4.00'x4.00'	4.50'x4.50'	277.00	278.97	1.03'
RETENTION BASIN #1	294.50	–	–	–	294.00	290.00	289.50	289.00	18"	9.0"	–	–	–	296.00	5.00'x5.00'	5.50'x5.50'	294.00	294.50	1.50'

OUTLET STRUCTURE AT STORMWATER BASINS

NOT TO SCALE

OUTLET	Do (ft.)	Q25 (cfs)	Tw (ft.)	La (ft.)	Wup (ft.)	Wdn (ft.)	d50 (in.)*
Headwall1(DMH11)	2.00	10.3	1.8	24.9	6.0	16.0	6.0
Headwall2 (CB16)	1.25	0.1	0.1	8.9	3.8	12.6	6.0
Headwall3 (OS1)	1.25	2.3	0.1	11.7	3.8	15.5	6.0
Headwall4 (OS2)	1.25	0.3	0.1	9.1	3.8	12.9	6.0
Headwall5 (DMH9)	2.50	16.9	2.0	30.3	7.5	19.6	6.0

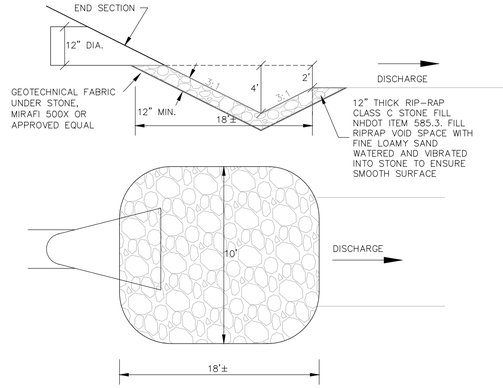


CONSTRUCTION SPECIFICATIONS:

1. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIP-RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK USED FOR RIP-RAP SHALL CONFORM TO THE SPECIFIED GRADATION (D50=6" (MIN)).
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP-RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP-RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

OUTLET APRON

NOT TO SCALE



RIP RAP PLUNGE POOL

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

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18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-22

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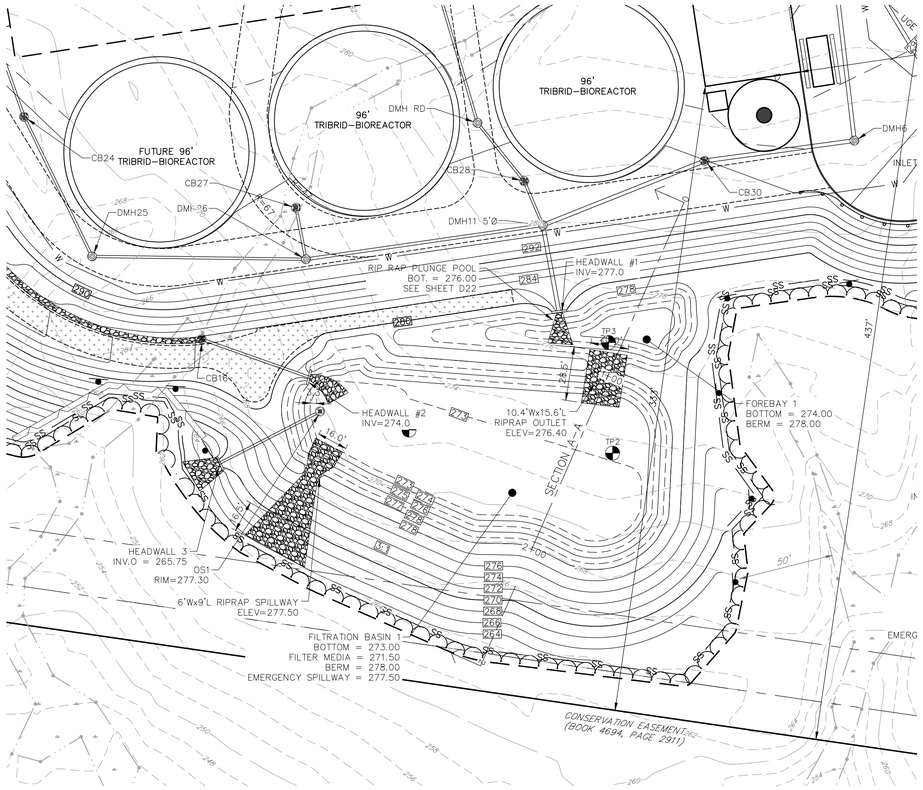
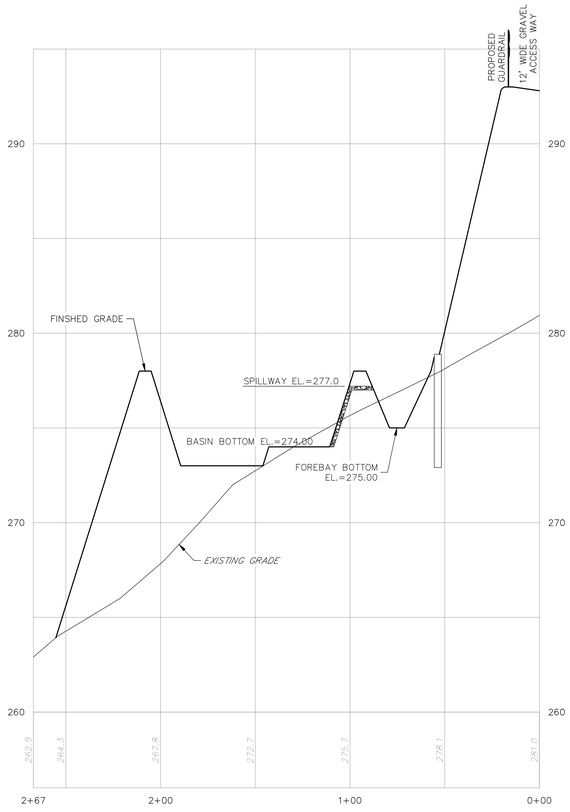


FILTRATION BASIN #1 PLAN VIEW

SCALE: 1"=40'



FILTRATION BASIN #1 SECTION A-A

SCALE: 1"=40' H/1"=4' V

GRADING & DRAINAGE NOTES

1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV–WQ 1500 AS APPLICABLE.
2. THE CONTRACTOR SHALL PREPARE, MAINTAIN, AND EXECUTE A S.W.P.P.P. IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
5. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEER'S RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE, INCLUDING AND NOT LIMITED TO DEWATERING METHODS, PERIMETER DRAINS AND TIE INTO STORMWATER MANAGEMENT SYSTEM, ETC.
6. COORDINATE WITH GEOTECHNICAL REPORT FOR SITE PREPARATION AND OTHER PERTINENT INFORMATION.
7. COORDINATE WITH ELECTRICAL DESIGN PLANS FOR DETAILED GRADING AT ELECTRICAL STRUCTURES, AND SIZE AND LOCATION OF ALL ELECTRICAL SERVICES.
8. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, DRIVES, ROADS, AND ALIGNMENTS.
10. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS, AND LOADING AREAS.
11. THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER DEEPER THAN 1/4" FOR A PERIOD OF MORE THAN 15 MINUTES AFTER FLOODING.
12. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
13. ALL SIDEWALK AND OTHER CURB REVEALS SHALL BE 6" WITH A TOLERANCE OF PLUS OR MINUS 3/8". WHERE SIDEWALK IS TO BE FLUSH, THE PAVEMENT REVEAL SHALL BE 1/4" WITH A TOLERANCE OF 1/8".
14. THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
15. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
16. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND SHALL MEET LOCAL STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
17. STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
18. NO FILL SHALL BE PLACED IN ANY WETLAND AREA.
19. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
20. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
21. DENSITY REQUIREMENTS:

MINIMUM DENSITY*	LOCATION
95%	BELOW PAVED OR CONCRETE AREAS
95%	TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL
90%	BELOW LOAM AND SEED AREA
90%	EMBANKMENTS/PERIMETER SLOPES ASSOCIATED WITH STORMWATER MANAGEMENT AREAS
70%	STORMWATER MANAGEMENT AREAS BASIN BOTTOMS, INCLUDING SUBGRADE

*ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D–1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D–1556 OR ASTM D–6938.

22. COMMON FILL GRADATION REQUIREMENTS *PER GEOTECHNICAL REPORT SPECIFICATIONS

SIEVE SIZE	PERCENT FINER BY WEIGHT
8 INCH	100
NO. 4	25 – 70
NO.200	0 – 12 (TOTAL)

23. SWALES ARE TO BE VEGETATED OR STONE LINED PRIOR TO DIRECTING RUNOFF TO THEM.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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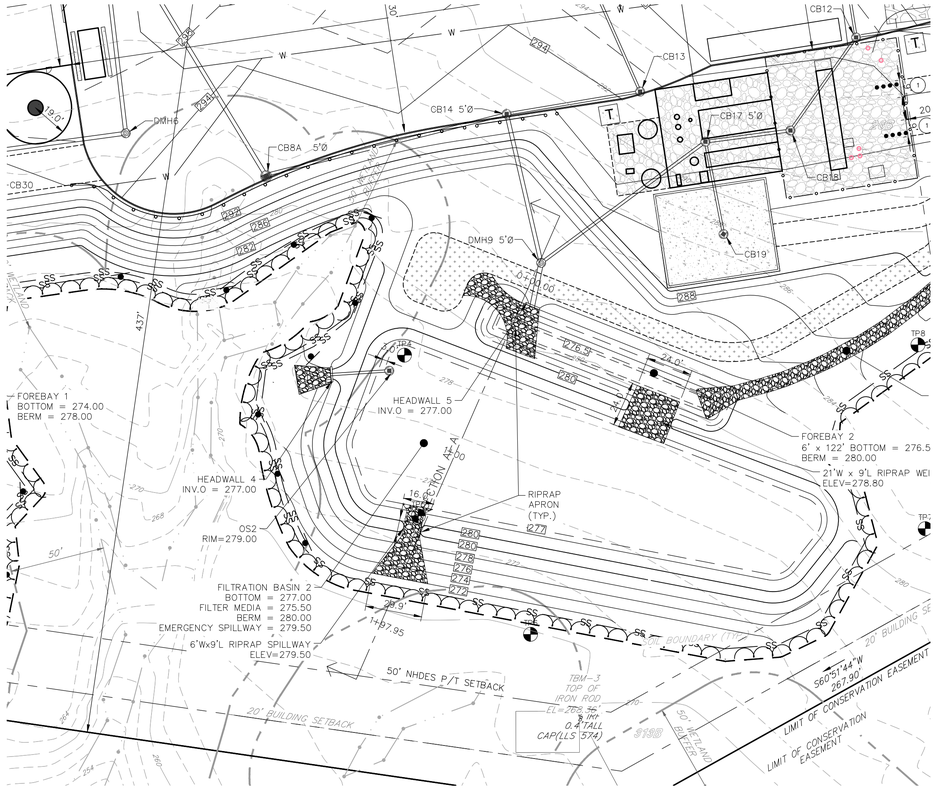
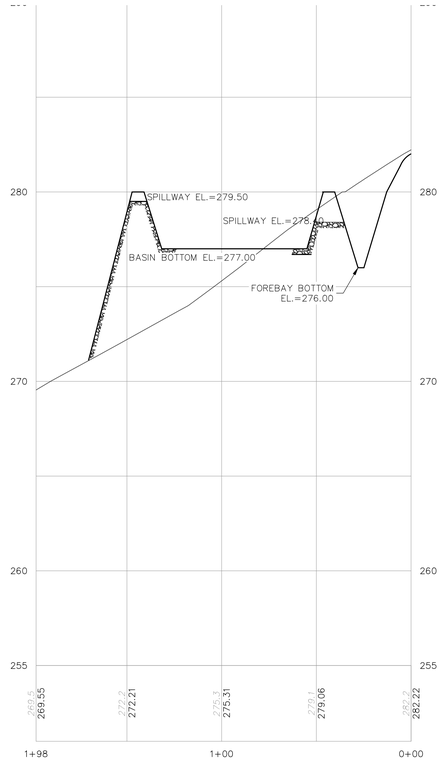
GRADING & DRAINAGE NOTES

1. SEE NOTES ON SHEET D-23.





FILTRATION BASIN #2

FILTRATION BASIN #2 PLAN VIEW

SCALE: 1"=40'

FILTRATION BASIN #2 SECTION A-A

SCALE: 1"=40' H/1"=4' V

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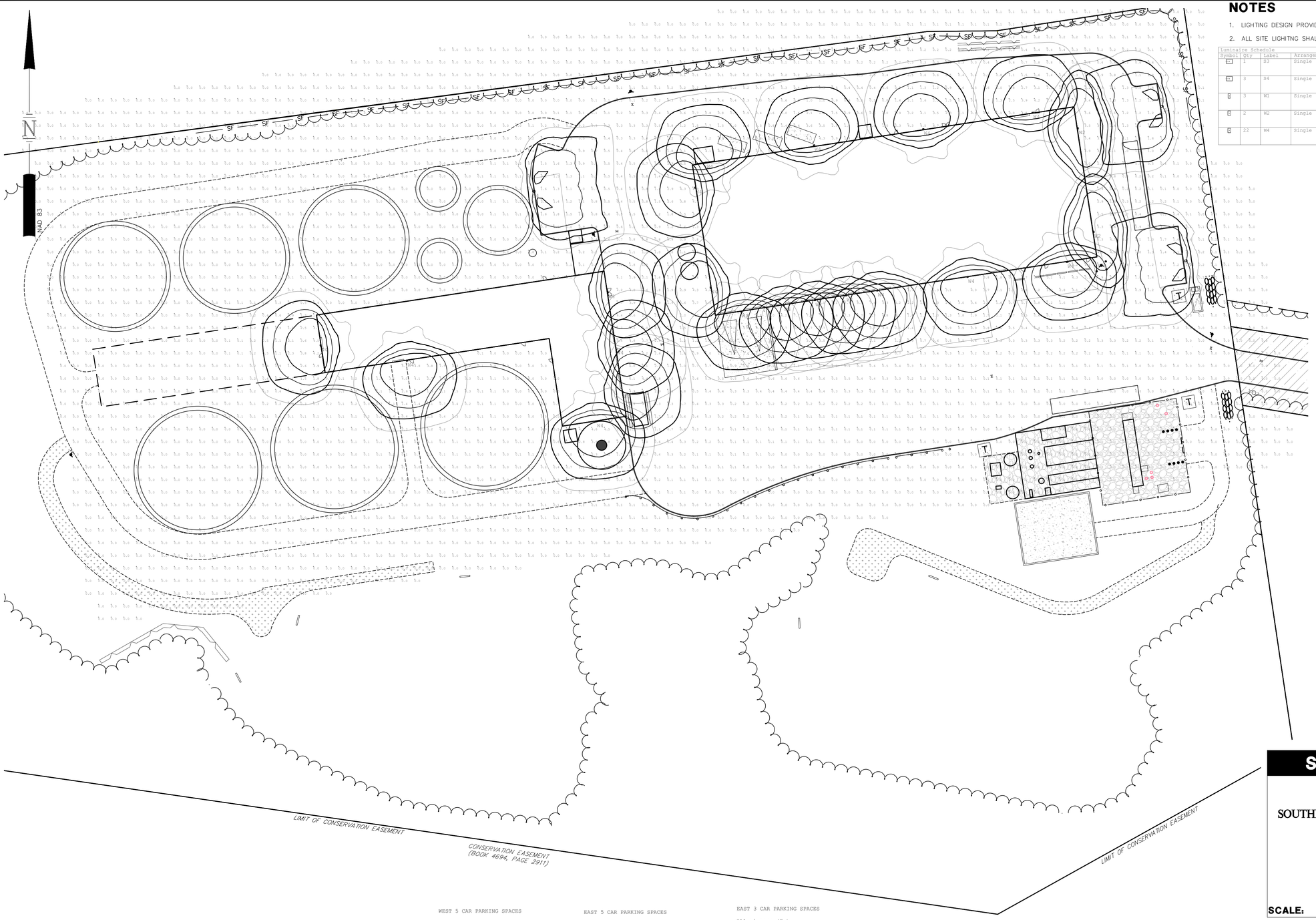

NOTES

1. LIGHTING DESIGN PROVIDED BY EXPOSURE INCORPORATED.
2. ALL SITE LIGHITNG SHALL BE FULL CUTOFF, DOWNCAST FIXTURE TYPES.

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Description	[MANUFAC]	Tag
	1	S3	Single	VALS-09L-5W-UNV-30K8-CXX-SA-IMSBTL1 / 4SQ B3 S1LG16 S CXX AB 48C	LSI INDUSTRIES, INC.	16' POLE ON 2' BASE
	3	S4	Single	VALS-09L-4P-30K8-CXX-SA-IMSBTL1 / 4SQ B3 S1LG16 S CXX AB 48C	LSI INDUSTRIES, INC.	16' POLE ON 2' BASE
	3	W1	Single	XWS-LED-3L-FTW-UNV-DIM-30-80CRI-IMSBTIL-CXX	LSI INDUSTRIES, INC.	WALL MOUNTED 8' AFG
	2	W2	Single	XWM-2-LED-8L-30K8-UE-CXX-IMSBTIL	LSI INDUSTRIES, INC.	WALL MOUNTED 16' AFG
	22	W4	Single	XWM-4-LED-8L-30K8-UE-CXX-IMSBTIL	LSI INDUSTRIES, INC.	WALL MOUNTED 16' AFG

DOCK AREAS
Illuminance (Fc)
Average = 4.62
Maximum = 9.3
Minimum = 0.9
Avg/Min Ratio = 5.13
Max/Min Ratio = 10.33

PARKING AT BACK OF BLDG
Illuminance (Fc)
Average = 3.76
Maximum = 6.4
Minimum = 2.2
Avg/Min Ratio = 1.71
Max/Min Ratio = 2.91

TRUCK PKG AT BACK OF BLDG
Illuminance (Fc)
Average = 1.92
Maximum = 5.1
Minimum = 0.4
Avg/Min Ratio = 4.80
Max/Min Ratio = 12.75

PARKING IN FRONT OF BLDG
Illuminance (Fc)
Average = 2.51
Maximum = 4.1
Minimum = 1.1
Avg/Min Ratio = 2.28
Max/Min Ratio = 3.73



POLE MOUNTED FIXTURE
V-LOCITY SMALL VALS (S3 & S4)



WALL MOUNTED FIXTURE
MIRADA MEDIUM WALL SCONCE XWM (W2 & W4)



WALL MOUNTED FIXTURE
MIRADA SMALL WALL SCONCE XWS VC (W1)

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

LIGHTING PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: **SEPTEMBER 8, 2025**

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48 Constitution Drive, Bedford, N.H. 03110

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

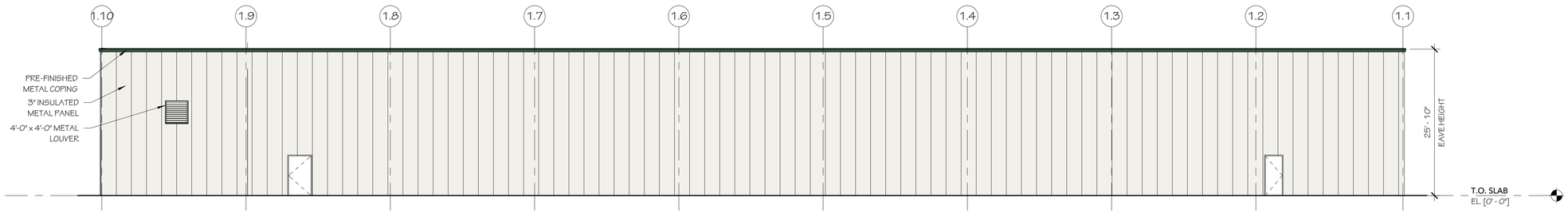
HORIZONTAL SCALE 1"=20'
20 10 0 20

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

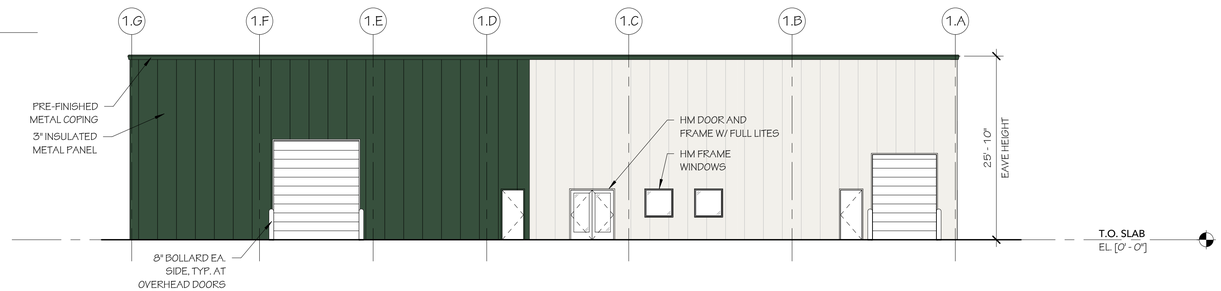
FILE		DR		FB		
	18252-02	CK		CADFILE	18252-02 SITE PLAN	L-01

Dec 23, 2025 - 2:26pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 SITE PLAN.dwg



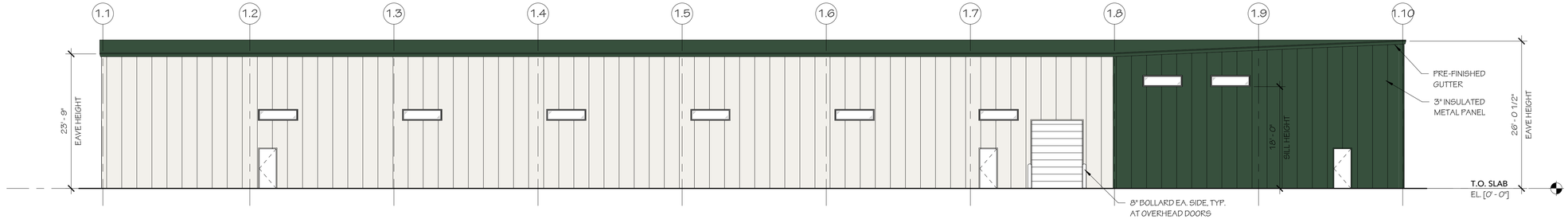
4 NORTH ELEVATION

3/32" = 1'-0" PROCESS BUILDING



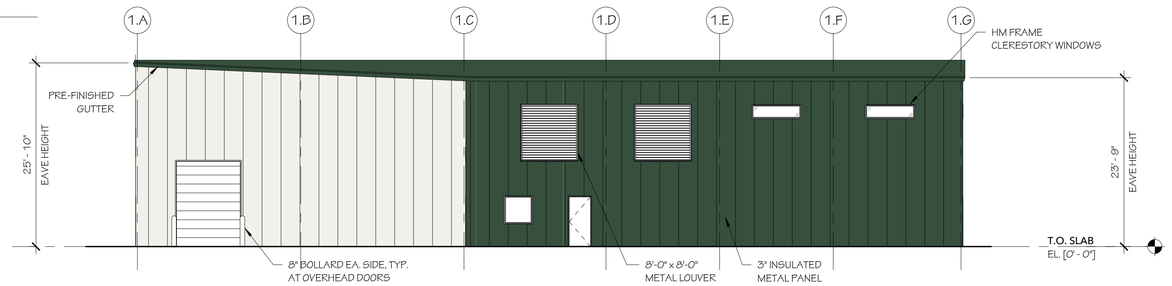
3 EAST ELEVATION

3/32" = 1'-0" PROCESS BUILDING



2 SOUTH ELEVATION

3/32" = 1'-0" DEPACK BUILDING



1 WEST ELEVATION

3/32" = 1'-0" PROCESS BUILDING

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-1

BUILDING ELEVATIONS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY
PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

3/32" = 1'-0" SEPTEMBER 8, 2025

REV	DATE	DESCRIPTION	DR	CK
1	12/08/25	REVISION #1	JQ	MQ

285 SOUTH OHIO STREET
P.O. BOX 3
MINSTER, OHIO 45865
(419) 628-3364
www.baumerconstruction.com

JOB #	DR	JQ	SCALE	3/32" = 1'-0"	A-1
25.02	CK	MQ	DATE	12/08/2025	

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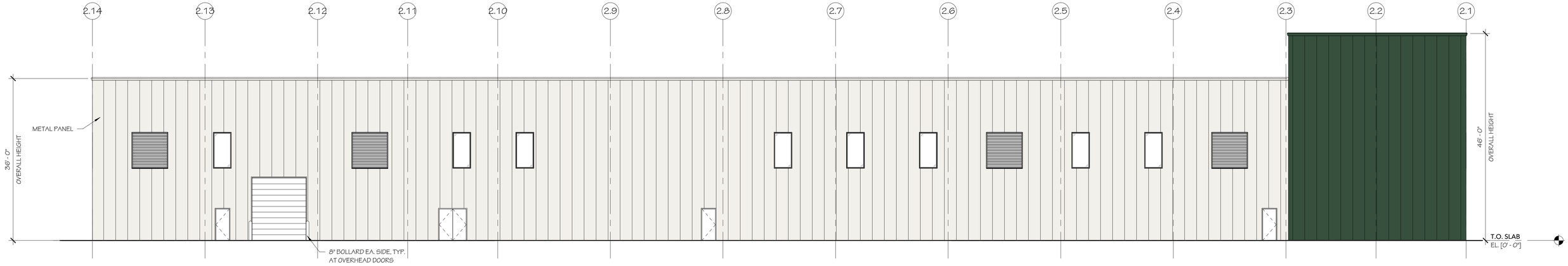
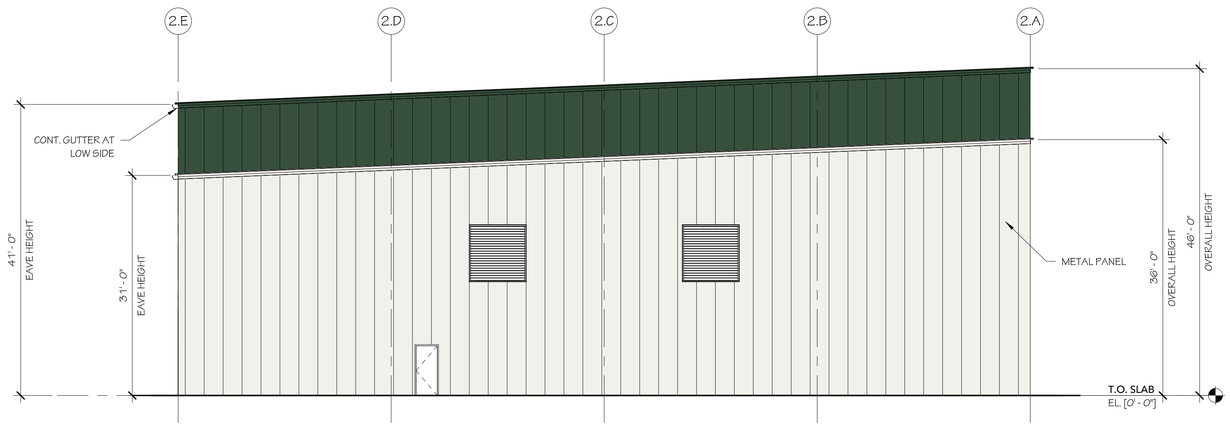
12/9/2025 8:33:40 PM



2 NORTH ELEVATION

3/32" = 1'-0" DEPACK BUILDING



1 EAST ELEVATION

3/32" = 1'-0" DEPACK BUILDING

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-1

BUILDING ELEVATIONS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY
PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

3/32" = 1'-0" SEPTEMBER 8, 2025

REV	DATE	DESCRIPTION	DR	CK
1	12/08/25	REVISION #1	JQ	MQ

BAUMER CONSTRUCTION INC.
285 SOUTH OHIO STREET
P.O. BOX 3
MINSTER, OHIO 45865
(419) 628-3364
www.baumerconstruction.com

JOB #		DR	JQ	SCALE	3/32" = 1'-0"	A-2
	25.02	CK	MQ	DATE	12/08/2025	

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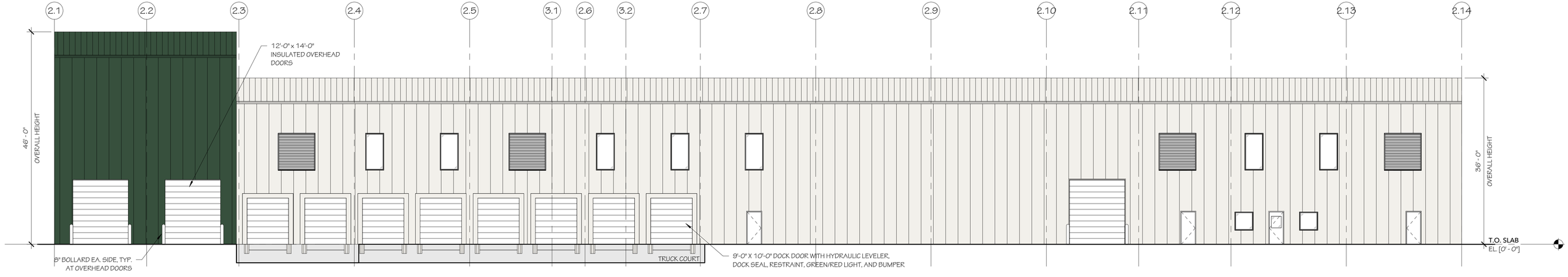
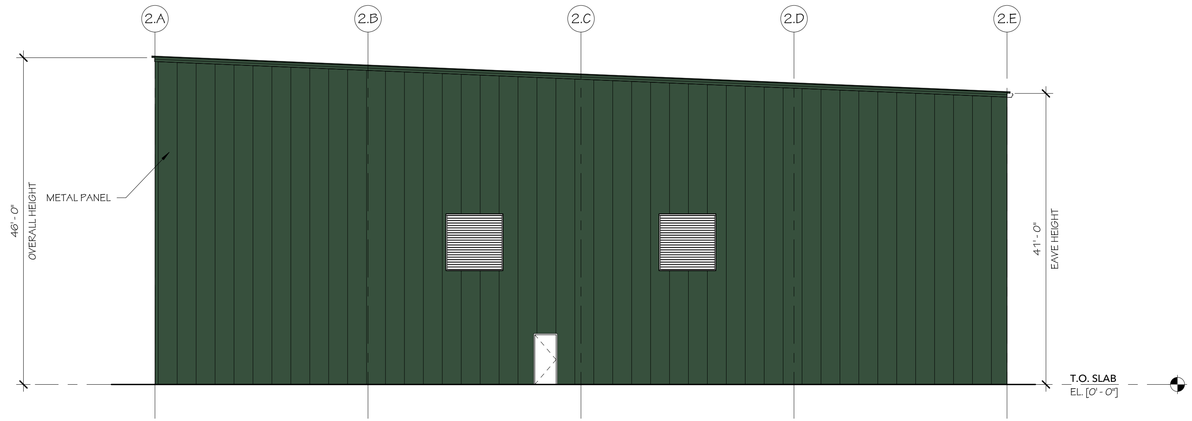


4 SOUTH ELEVATION

3/32" = 1'-0" | DEPACK BUILDING



3 WEST ELEVATION

3/32" = 1'-0" | DEPACK BUILDING

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-1

BUILDING ELEVATIONS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY
PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

3/32" = 1'-0" SEPTEMBER 8, 2025

REV	DATE	DESCRIPTION	DR	CK
1	12/08/25	REVISION #1	JQ	MQ

BAUMER CONSTRUCTION INC.
285 SOUTH OHIO STREET
P.O. BOX 3
MINSTER, OHIO 45865
(419) 628-3364
www.baumerconstruction.com

JOB #					
25.02	DR	JQ	SCALE	3/32" = 1'-0"	A-3
	CK	MQ	DATE	12/08/2025	

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12/19/2025 1:47:14 PM

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

SUBDIVISION PLANS

162 LITCHFIELD ROAD, LONDONDERRY, NEW HAMPSHIRE

GENERAL INFORMATION

OWNER
MAP 14 LOT 39
CODNER NICHOLAS F TRUST 2012
162 LITCHFIELD ROAD
LONDONDERRY, NH 03053
603-432-1100

APPLICANT
PUPROSEENERGY-LONDONDERRY, LLC
C/O SEAN O'NEIL
25 PELHAM ROAD, SUITE 102
SALEM, NH 03079
6172029156

PREPARED FOR
PUPROSEENERGY-LONDONDERRY, LLC
C/O SEAN O'NEIL
25 PELHAM ROAD, SUITE 102
SALEM, NH 03079
6172029156

RESOURCE LIST

TOWN MANAGER
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 151
SHAUN MULHOLLANDI, TOWN MANAGER

PLANNING & ECONOMIC DEVELOPMENT
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 149
KELLIE CARON, ASST. TOWN MANAGER,
DIRECTOR OF ECONOMIC DEVELOPMENT

BUILDING, HEALTH, ZONING AND CODE ENFORCEMENT
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 161
NICK CODNER, CHIEF BUILDING INSPECTOR
& CODE ENFORCEMENT OFFICER

HEALTH DIVISION
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 151

PUBLIC WORKS & ENGINEERING
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 139
DAVE WHOLLEY, DIRECTOR PUBLIC WORKS &
MUNICIPAL FACILITIES
JOHN TROTTIER, DIRECTOR OF ENGINEERING &
ENVIRONMENTAL SERVICES

HIGHWAY DIVISION
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 152
DAVE WHOLLEY, DIRECTOR PUBLIC WORKS &
MUNICIPAL FACILITIES

POLICE DEPARTMENT
28A MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1118
KIM ALAN BERNARD, CHIEF OF POLICE

FIRE DEPARTMENT
28O MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1124
PHIL LEBLANC, ACTING FIRE CHIEF

NHDES AOT
29 HAZEN DRIVE
CONCORD, NH 03302-0095
(603) 271-2303
AMY CLARK, PE, AOT SUPERVISOR

ASSOCIATED PROFESSIONALS

ARCHITECT
RANDALL-PAULSON ARCHITECTS
MILLYARD ECHNOLOGY PARK, 82 TECHNOLOGY
WAY SUITE 3W2A NASHUA, NH 03060
603-617-3706
TIMOTHY ENGELBERT AICP

GEOTECHNICAL SERVICES
ARIES ENGINEERING
104 PLEASANT STREET
CONCORD, NH 03301
(603) 226-0374
GEORGE C. HOLT, P.G.

TRAFFIC ENGINEER
TFMORAN, INC.
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
ROBERT DUVAL, PE, PRINCIPAL

WETLAND SCIENTIST
TFMORAN, INC.
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
CHRISTOPHER K. DANFORTH, CWS

SOIL SCIENTIST
BAG LAND CONSULTANTS
43 ROCKINGHAM STREET
CONCORD, NH 03301
BRUCE A. GILDAY, CSS

ABUTTERS

R014-039-0
NICHOLAS F CODNER TRUST 2012
162 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-047-0
US OF AMERICA FED AVIATION ADMIN
12 NE EXECUTIVE PARK
BURLINGTON, MA 01803

R01-044-38
STATE OF NEW HAMPSHIRE
PO BOX 483, 1 HAZEN DRIVE
CONCORD, NH 03302-0483

R014-44-0
GRANITE RIDGE ENERGY, LLC
21 NORTH WENTWORTH AVE
LONDONDERRY, NH 03053

R014 LOTS 044-3 & 040-0
TRACIE L & BRUCE A LEMIEUX
154 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-039-1
VICTOR D & CECILIA C REIS
158 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-13
RICHARD A BELANGER
149 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-12
NICOLE M THOMAS
151 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-11JUSTIN M QUISH
153 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-10
SHARON B BARTHOLOMEW
155 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-9
SAHIN B DAYIOGLU
157 LITCHFIELD ROAD
LONDONDERRY, NH 03053

ABUTTERS (CONT)

R011-020-8
ERIC J AND AMBER E POMER
159 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-7
JOHN ALBERT & LISA MARIE KIRCALDIE
51 YELLOWSTONE ROAD
LONDONDERRY, NH 03053-2502

R011-020-6
MICHAEL A ST. PIERRE
163 LITCHFIELD ROAD
LONDONDERRY, NH 03053-7408

R011-020-5
CLARK FAMILY TRUST OF 2011
165 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-015-0
ERICK MENDONSA
167 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-051-0
CLAIRE M KELLY
164 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-050-0
BRUCE ALLAN & CINDY LOUISE GOODWIN
168 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-007-0
MICHAEL W SIRACUSE III
170 LITCHFIELD ROAD
LONDONDERRY, NH 03053

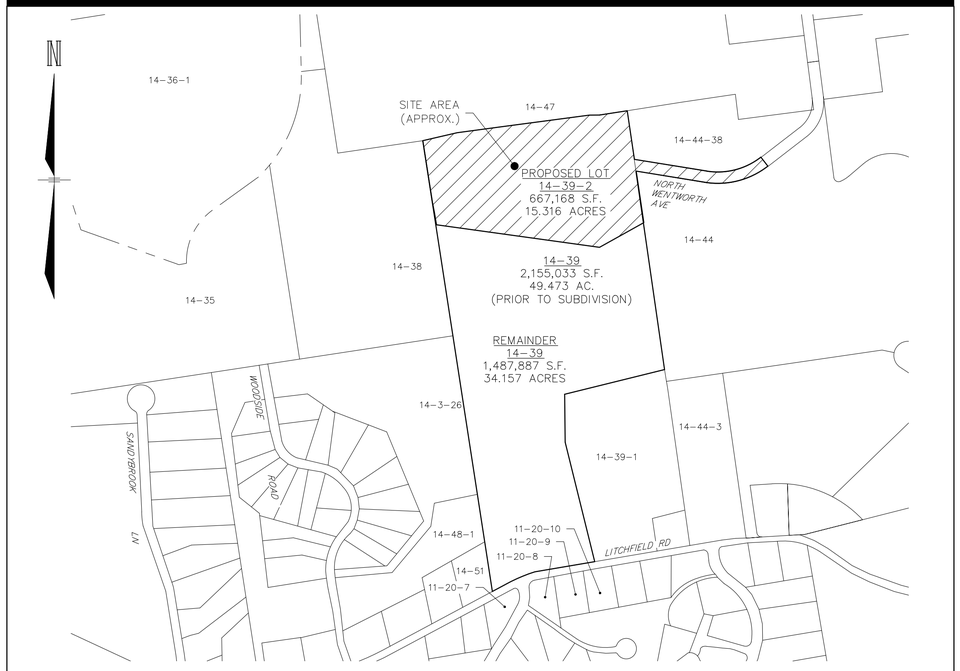
R014-005-0
ARIANNA O'NEIL
172 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-048-1
STATE OF NEW HAMPSHIRE
PO BOX 483
CONCORD, NH 03302-0483

R-014-003-26
GYPSUM CONSTRUCTION CORP.
184 ROCKINGHAM ROAD
LONDONDERRY, NH 03053

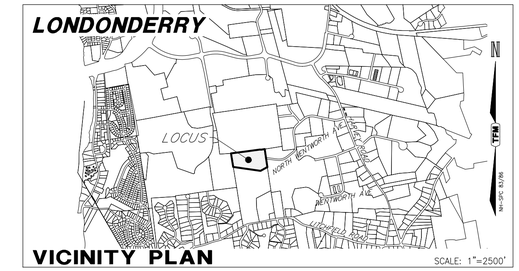
R014-038-0
TANA PROPERTIES LTD. PARTNERSHIP
40 TEMPLE STREET
NASHUA, NH 03060

TAX MAP SKETCH



LOT AREAS TABLE

LOT	AREA (SF)	AREA (ACRES)
14-39 (EXIST)	2,155,133 SF	49.473 AC
14-39 (REMAINDER)	1,487,887 SF	34.157 AC
14-39-2 (PROPOSED)	667,168 SF	15.316 AC



VICINITY PLAN — SCALE: 1"=2500'

NOTES

1. OWNER OF RECORD: NICHOLAS F. CODNER TRUST OF 2012
   162 LITCHFIELD ROAD
   LONDONDERRY, NEW HAMPSHIRE
   DEED REFERENCE: BOOK 5336, PAGE 1874
   PROPOSED LOT AREA: 667,167.7 S.F. OR 15.3161 ACRES
   EXISTING LOT AREA: 2,155,033 S.F. OR 49.473 ACRES
2. 14-39-0 INDICATES TAX MAP AND LOT NUMBER.
3. THE PURPOSE OF THIS SUBDIVISION PLAN IS TO SHOW THE EXISTING CONDITIONS PRESENT AT THE TIME OF THE FIELD SURVEY FOR ASSESSORS MAP 14 LOT 39, SITUATED ON THE WESTERLY TERMINUS OF NORTH WENTWORTH AVENUE IN THE TOWN OF LONDONDERRY, NEW HAMPSHIRE AS SHOWN HEREON AND TO SUBDIVIDE MAP 14 LOT 39 INTO ONE NEW LOT AND ONE REMAINDER LOT AS SHOWN:

LOT	AREA (SF)	AREA (AC)
14-39 (EXIST)	2,155,133 SF	49.473 AC
14-39 (REMAINDER)	1,487,887 SF	34.157 AC
14-39-1 (PROPOSED)	667,168 SF	15.316 AC

4. CURRENT ZONING IS: GATEWAY BUSINESS (GB) AND AGRICULTURAL RESIDENTIAL (AR-1)
   EXISTING USE: RESIDENTIAL
   PROPOSED USE 14-39: RESIDENTIAL (AR-1)
   PROPOSED USE 14-39-2: ORGANIC WASTE PROCESSING FACILITY (GB)

ZONE:	(GB)	(AR-1, SINGLE FAMILY, SEPTIC & WELL)
MINIMUM LOT SIZE:	1 ACRE	1 ACRE
MINIMUM LOT FRONTAGE:	150 FEET (CLASS V OR BETTER ROAD)	150 FEET (CLASS V OR BETTER ROAD)
MINIMUM FRONT BUILDING SETBACKS:	30 FEET	40 FEET
MINIMUM SIDE BUILDING SETBACKS:	20 FEET	15 FEET
MINIMUM REAR BUILDING SETBACKS:	20 FEET	15 FEET
MAXIMUM BUILDING HEIGHT:	50 FEET	35 FEET
MINIMUM OPEN SPACE:	25%	40%

5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0318E, EFFECTIVE DATE OF MAY 17, 2005, INDICATES THAT THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FLOOD HAZARD AREA.
6. CONTOURS DEPICTED ON THIS PLAN ARE AT 2 FOOT INTERVALS.
7. HORIZONTAL DATUM: NH-SPC NAD83/2011
   VERTICAL DATUM: NGVD29
   BENCHMARKS SET: TBM-1: TOP OF DRILL HOLE FOUND AT THE CORNER OF A STONE WALL LOCATED AT THE NORTHWESTERLY CORNER OF PROPOSED LOT 14-39-0, AS SHOWN HEREON. EL= 273.57'
   TBM-2: TOP OF DRILL HOLE FOUND IN STONE WALL LOCATED AT THE SOUTHWESTERLY CORNER OF PROPOSED LOT 14-39-0, AS SHOWN HEREON. EL= 242.21'
   TBM-3: TOP OF IRON ROD LOCATED AT THE SOUTHERLY CORNER OF PROPOSED LOT 14-39-0, AS SHOWN HEREON. EL= 268.36'
   TBM-4: TOP OF DRILL HOLE FOUND IN STONE WALL LOCATED ON THE NORTHERLY PROPERTY LINE, APPROXIMATELY 230 FEET FROM THE NORTHEASTERLY CORNER OF PROPOSED LOT 14-39-0, AS SHOWN HEREON. EL= 303.29'
   DATUM WAS OBTAINED BY SURVEY GRADE GPS UNIT ON MAY 21, 2024.
8. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL MAY DETERMINE.
9. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. T.F.MORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 811.
10. THE INFORMATION SHOW HEREON IS FROM AN ACTUAL SURVEY PREFORMED BY THIS OFFICE FROM MAY THROUGH JUNE 2024.
11. SHEETS SUB-1 & SUB-2 SHALL BE RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. A FULL SET OF PLANS (C-1, S-1 SUB-1 THROUGH SUB-9) SHALL BE ON FILE WITH THE TOWN OF LONDONDERRY PLANNING DEPARTMENT.
13. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT DEFICIENCIES EXIST IN THE APPROVED DESIGN DRAWINGS, THE OWNER SHALL BE REQUIRED TO CORRECT THE DEFICIENCIES TO MEET THE REQUIREMENTS OF THE REGULATIONS AT NO EXPENSE TO THE TOWN.
14. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE TOWN.
15. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO TOWN OF LONDONDERRY SUBDIVISION REGULATIONS AND THE LATEST EDITION OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION.

INDEX OF SHEETS

SHEET	SHEET TITLE
COVER	COVER SHEET
S-01 TO S-08	SUBSIVISION PLANS
C-13	DRIVEWAY PLAN AND PROFILE
SD-1	SIGHT DISTANCE PLAN

PERMITS/APPROVALS

	NUMBER	APPROVED	EXPIRES
TOWN PLANNING BOARD SUBDIVISION APPROVAL			
TOWN PLANNING BOARD CUP (FRONTAGE)			
NHDES WETLAND DREDGE AND FILL PERMIT			

WAIVERS

THE FOLLOWING WAIVERS FROM THE TOWN OF LONDONDERRY SITE REVIEW REGULATIONS IS REQUESTED FROM THE PLANNING BOARD:

1. TOWN OF LONDONDERRY SUBDIVISION REVIEW REGULATIONS SECTION 3.10, 4.17 & CHECKLIST ITEM X1 –
   TO PROVIDE SITE SPECIFIC SOIL MAPPING IN LIEU OF HISS MAPPING REQUIREMENTS.
2. TOWN OF LONDONDERRY SUBDIVISION REVIEW REGULATIONS SECTION 3.02.C, 4.12.C.14 & CHECKLIST ITEM V.14 –
   TO LIMIT CO SIGNAGE TO LOT 14-39-02 (DEVELOPMENT LOT).
4. TOWN OF LONDONDERRY SUBDIVISION REVIEW REGULATIONS SECTION 3.05, 3.06, 3.07, 3.08, 4.16, & CHECKLIST ITEMS X.3, VIII.13-18 & EXHIBIT D2 –
   TO PROVIDE ALL TECHNICAL UTILITY DESIGN ELEMENTS AND IMPROVMENT PLANS WITHIN THE CORRESPONDING SITE PLAN APPLICATION

OWNER'S SIGNATURE

OWNER OR REPRESENTATIVE — DATE 12/22/2025

Approved by the Londonderry, NH Planning Board for Phase _____
on Date: _____
Certified by:
_____
_____

REV	DATE	DESCRIPTION	DR	CK
2	12/18/2025	REVISED PER TOWN REVIEW COMMENTS	JD	MRD
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

SUBDIVISION PLANS

TAX MAP 14 LOT 39-2 AND 39

SUBDIVISION COVER

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

NOT TO SCALE **SEPTEMBER 8, 2025**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 SUBDIVISION PLAN	COVER

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Dec 23, 2025 - 2:01pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\Carlson Survey\Dwgs\18252-02 SUBDIVISION PLAN.dwg

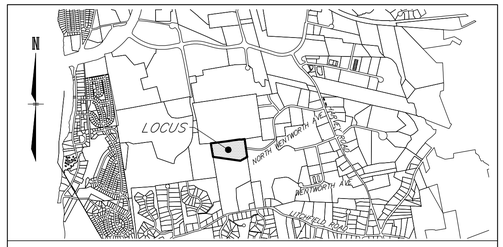
LEGEND

- STONE BOUND (FOUND)
- IRON PIN (FOUND)
- DRILL HOLE (FOUND)
- UTILITY POLE
- GUY WIRE
- BENCHMARK
- WATER VALVE
- HYDRANT
- CATCH BASIN
- DIRECTION OF DRAINAGE FLOW
- G.BND T.B.S. GRANITE BOUND TO BE SET
- SAC SLOPED ASPHALT CURB
- OHW OVERHEAD WIRES
- STONEWALL
- 302 2' CONTOUR
- 10' CONTOUR
- 280 SOILS BOUNDARY
- SOILS MAP UNIT SYMBOL
- WETLAND DELINEATION
- 5-12 WETLAND FLAG LOCATION
- WETLAND SETBACK
- ABUTTING PROPERTY LINE
- BUILDING SETBACK
- EP EDGE OF PAVEMENT
- ZONING DISTRICT BOUNDARY
- PROPERTY BOUNDARY
- EASEMENT LINE
- W WATER LINE
- G GAS LINE
- D DRAIN LINE
- S SEWER LINE

N

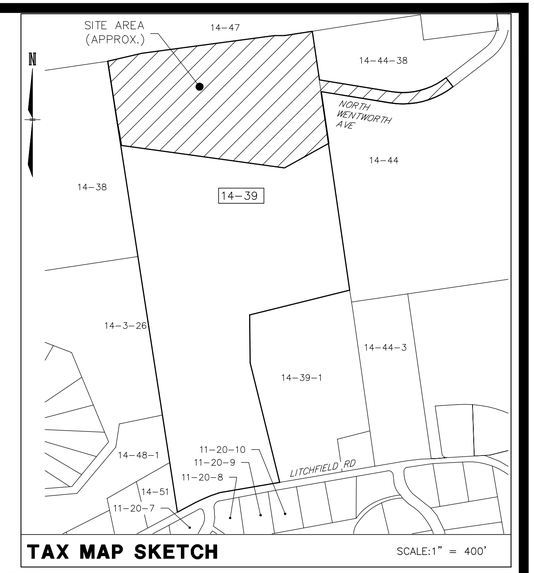
TFM

NH-SPC 83/86



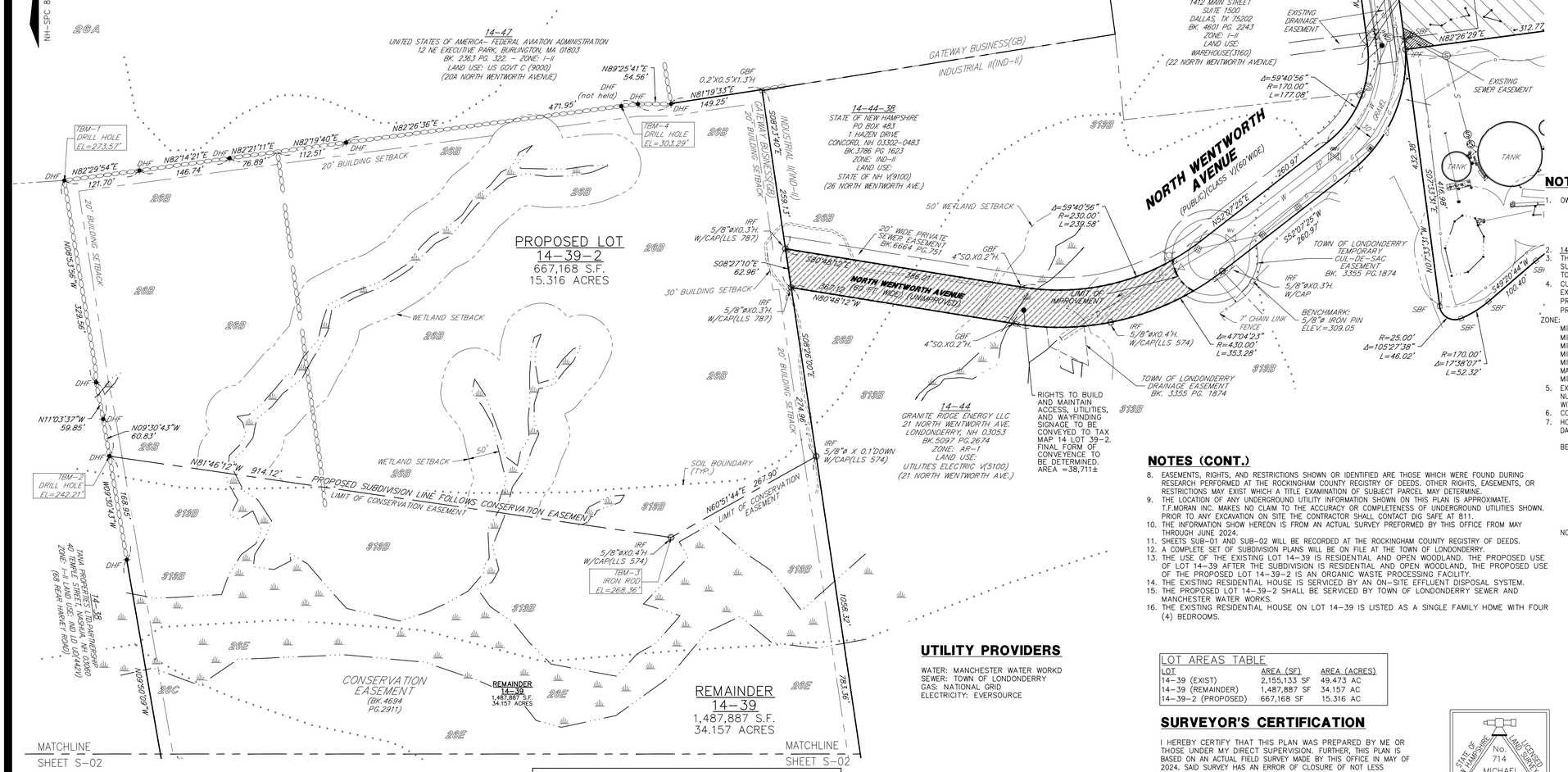
VICINITY PLAN

SCALE: 1"=2,500'±



TAX MAP SKETCH

SCALE:1" = 400'



NOTES

1. OWNER OF RECORD: NICHOLAS F. CODNER TRUST OF 2012
   162 LITCHFIELD ROAD
   LONDONDERRY, NEW HAMPSHIRE
   DEED REFERENCE: BOOK 5336, PAGE 1874
   PROPOSED LOT AREA: 667,167.7 S.F. OR 15.3161 ACRES
   EXISTING LOT AREA: 2,155,033 S.F. OR 49.473 ACRES
2. 14-39-2 INDICATES TAX MAP AND LOT NUMBER.
3. THE PURPOSE OF THIS SUBDIVISION PLAN IS TO SHOW THE EXISTING CONDITIONS PRESENT AT THE TIME OF THE FIELD SURVEY FOR ASSESSORS MAP 14 LOT 39, SITUATED ON THE WESTERLY TERMINUS OF NORTH WENTWORTH AVENUE IN THE TOWN OF LONDONDERRY, NEW HAMPSHIRE AS SHOWN HEREON AND NO OTHER PURPOSE.
4. CURRENT ZONING IS: GATEWAY BUSINESS (GB) AND AGRICULTURAL RESIDENTIAL (AR-1)
   EXISTING USE: RESIDENTIAL
   PROPOSED USE 14-39: RESIDENTIAL (AR-1)
   PROPOSED USE 14-39-2: ORGANIC WASTE PROCESSING FACILITY (GB)

ZONE:	(GB)	(AR-1, SINGLE FAMILY, SEPTIC & WELL)
MINIMUM LOT SIZE:	1 ACRE	1 ACRE
MINIMUM LOT FRONTAGE:	150 FEET (CLASS V OR BETTER ROAD)	150 FEET (CLASS V OR BETTER ROAD)
MINIMUM FRONT BUILDING SETBACKS:	30 FEET	40 FEET
MINIMUM SIDE BUILDING SETBACKS:	20 FEET	15 FEET
MINIMUM REAR BUILDING SETBACKS:	20 FEET	15 FEET
MAXIMUM BUILDING HEIGHT:	50 FEET	35 FEET
MINIMUM OPEN SPACE:	25%	40%

5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0318E, EFFECTIVE DATE OF MAY 17, 2005, INDICATES THAT THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FLOOD HAZARD AREA.
6. CONTOURS DEPICTED ON THIS PLAN ARE AT 2 FOOT INTERVALS.
7. HORIZONTAL DATUM: NH-SPC NAD83/2011. VERTICAL DATUM: NGVD29
   DATUMS WERE OBTAINED BY SURVEY GRADE GPS UNIT ON MAY 21, 2024

BENCHMARKS SET:
- TBM-1: TOP OF DRILL HOLE FOUND AT THE CORNER OF A STONE WALL LOCATED AT THE NORTHWESTERLY CORNER OF PROPOSED LOT 14-39-0, AS SHOWN HEREON. EL= 273.57'
- TBM-2: TOP OF DRILL HOLE FOUND IN STONE WALL LOCATED AT THE SOUTHWESTERLY CORNER OF PROPOSED LOT 14-39-0, AS SHOWN HEREON. EL= 242.21'
- TBM-3: TOP OF IRON ROD LOCATED AT THE SOUTHERLY CORNER OF PROPOSED LOT 14-39-0, AS SHOWN HEREON. EL= 268.36'
- TBM-4: TOP OF DRILL HOLE FOUND IN STONE WALL LOCATED ON THE NORTHERLY PROPERTY LINE, APPROXIMATELY 230 FEET FROM THE NORTHEASTERLY CORNER OF PROPOSED LOT 14-39-0, AS SHOWN HEREON. EL= 303.29'

NOTES (CONT.)

8. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL MAY DETERMINE.
9. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. T.F.MORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 811.
10. THE INFORMATION SHOW HEREON IS FROM AN ACTUAL SURVEY PREFORMED BY THIS OFFICE FROM MAY THROUGH JUNE 2024.
11. SHEETS SUB-01 AND SUB-02 WILL BE RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
12. A COMPLETE SET OF SUBDIVISION PLANS WILL BE ON FILE AT THE TOWN OF LONDONDERRY.
13. THE USE OF THE EXISTING LOT 14-39 IS RESIDENTIAL AND OPEN WOODLAND. THE PROPOSED USE OF LOT 14-39 AFTER THE SUBDIVISION IS RESIDENTIAL AND OPEN WOODLAND, THE PROPOSED USE OF THE PROPOSED LOT 14-39-2 IS AN ORGANIC WASTE PROCESSING FACILITY.
14. THE EXISTING RESIDENTIAL HOUSE IS SERVICED BY AN ON-SITE EFFLUENT DISPOSAL SYSTEM.
15. THE PROPOSED LOT 14-39-2 SHALL BE SERVICED BY TOWN OF LONDONDERRY SEWER AND MANCHESTER WATER WORKS.
16. THE EXISTING RESIDENTIAL HOUSE ON LOT 14-39 IS LISTED AS A SINGLE FAMILY HOME WITH FOUR (4) BEDROOMS.

Graphic Scale

100' 50' 0' 100' 200' 300' 400'

1" = 100'

UTILITY PROVIDERS

WATER: MANCHESTER WATER WORKD
SEWER: TOWN OF LONDONDERRY
GAS: NATIONAL GRID
ELECTRICITY: EVERSOURCE

LOT AREAS TABLE		
LOT	AREA (SF)	AREA (ACRES)
14-39 (EXIST)	2,155,133 SF	49.473 AC
14-39 (REMAINDER)	1,487,887 SF	34.157 AC
14-39-2 (PROPOSED)	667,168 SF	15.316 AC

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. FURTHER, THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY MADE BY THIS OFFICE IN MAY OF 2024. SAID SURVEY HAS AN ERROR OF CLOSURE OF NOT LESS ACCURACY THAN ONE PART IN TEN THOUSAND (1:10,000).

STATE OF NEW HAMPSHIRE — No. 714 MICHAEL R. DAHLBERG — LICENSED LAND SURVEYOR

Michael R Dahlberg 12/22/2025
LICENSED LAND SURVEYOR DATE

Michael R Dahlberg
SIGNATURE

OWNER'S SIGNATURE

OWNER OR REPRESENTATIVE 12/22/2025 DATE

Approved by the Londonderry, NH Planning Board for Phase _____
on Date: _____
Certified by: _____

TAX MAP 14 LOT 39-2 AND 39

SUBDIVISION PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
PURPOPURPOSEENERGY-LONDONDERRY, LLC
PO BOX 4345, WINDHAM, NH 03087

SCALE: 1" = 100' **SEPTEMBER 8, 2025**

TFM Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists
48 Constitution Drive, Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE		DR	TNB	FB	2229/2230	
	18252.01	CK	MRD	CADFILE	18252-01 Survey	SUB-1 OF 8

SEE SHEETS SUB-3 OF 8 THROUGH SUB-8 OF 8 FOR 40 SCALE DETAIL OF ENTIRE SITE.
SHEETS SUB-1 OF 8 THROUGH SUB-8 OF 8 WILL BE ON FILE AT THE PLANNING & ECONOMIC DEVELOPMENT DEPARTMENT OF THE TOWN OF LONDONDERRY

WETLAND SCIENTIST CERTIFICATION

JURISDICTIONAL WETLANDS SHOWN ON THIS PLAN WERE DELINEATED ON AUGUST 16, 2024 BY CHRISTOPHER K. DANFORTH CWS #077. THE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2, JANUARY 2012. DOMINANT HYDRIC SOILS WITHIN THE WETLAND(S) WERE IDENTIFIED USING "FIELD INDICATORS OF HYDRIC SOILS OF THE UNITED STATES" A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, NRCS, VERSION 8.1, 2017. DOMINANCE OF HYDROPHYTIC VEGETATION WAS DETERMINED USING THE USACE NATIONAL WETLAND PLANT LIST, NWPL 2016 VERSION 3.3 HTTP://WETLAND_PLANTS.USACE.ARMY.MIL.

STATE OF NEW HAMPSHIRE — CHRISTOPHER K. DANFORTH — No. 077 — CERTIFIED WETLAND SCIENTIST — 8/28/2024

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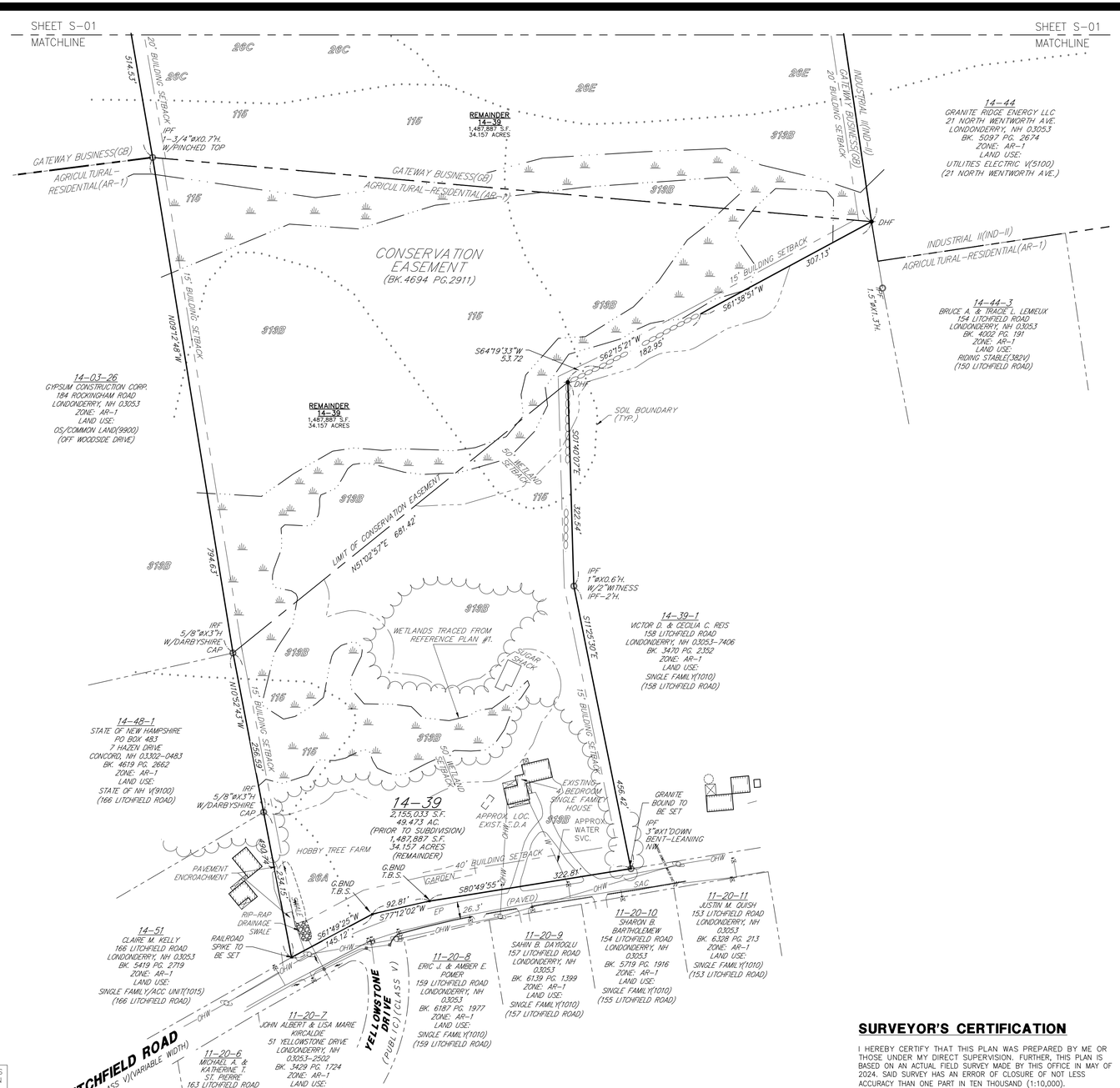
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION "IT'S THE LAW"
811 Dig Safe MA-ME-NH-RI-VT

REV.	DATE	DESCRIPTION	DR	CK
2	12-18-25	REVISED PER TOWN REVIEW COMMENTS	JD	MRD
1	11-24-25	ADDITIONS PER REVIEW COMMENTS	MRD	MRD

Dec 23, 2025 - 2:34pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\Carlson Survey\Dwgs\18252-02 SUBDIVISION PLAN.dwg

LEGEND

- G.BND / T.B.S. — GRANITE BOUND TO BE SET
- GRANITE BOUND (FOUND)
- IRON PIN (FOUND)
- DRILL HOLE (FOUND)
- UTILITY POLE
- GUY WIRE
- BENCHMARK
- WV — WATER VALVE
- HYDRANT
- CATCH BASIN
- DIRECTION OF DRAINAGE FLOW
- EP — EDGE OF PAVEMENT
- SAC — SLOPED ASPHALT CURB
- OHW — OVERHEAD WIRES
- STONEWALL
- 302 — 2' CONTOUR
- 280 — 10' CONTOUR
- SOILS BOUNDARY
- 26A — SOILS MAP UNIT SYMBOL
- WETLAND DELINEATION
- 5-12 — WETLAND FLAG LOCATION
- WETLAND SETBACK
- BUILDING SETBACK
- ZONING DISTRICT BOUNDARY
- PROPERTY BOUNDARY
- EASEMENT LINE
- W — WATER LINE
- G — GAS LINE
- D — DRAIN LINE
- S — SEWER LINE
- ABUTTING PROPERTY LINE



REFERENCE PLANS

1. STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, BEDFORD-MANCHESTER-LONDONDERRY-LITCHFIELD-MERRIMACK 11512, NHDOT PARCEL 1051, TAX MAP 14, LOT 39, PLAN OF WETLAND IMPACT MITIGATION SITES FOR STATE OF NEW HAMPSHIRE, LITCHFIELD ROAD, LONDONDERRY, N.H. SCALE: 1"=100', DATED: OCTOBER 25, 2007, PREPARED BY PAUL M. DARBYSHIRE ASSOCIATES. R.C.R.D. PLAN NO. 35156, PAGE 26.
2. SUBDIVISION PLAN OF LAND, WEBCO DEVELOPMENT CORP., LONDONDERRY, N.H., SCALE: 1"=200', DATED: MARCH 4, 1975, PREPARED BY THOMAS F. MORAN, INC. R.C.R.D. PLAN NO. D-5114.
3. FEDERAL AVIATION ADMINISTRATION, LONDONDERRY, N.H., MANCHESTER MUNICIPAL AIRPORT, ASR, PROPERTY PLAN RECORD, SCALE: 1"=100', DATED: MARCH 11, 1980, PREPARED BY DAVIS, BENOIT & TESSIER, INC. R.C.R.D. PLAN NO. D-9464.
4. FINAL SUBDIVISION PLAN, TAX MAP 11, LOT 12, COURTLAND ESTATES, SCALE: 1"=50', DATED: MARCH 27, 1985, PREPARED BY RONALD R. BURD, INC. R.C.R.D. PLAN NO. D-13547.
5. ECOLOGICAL INDUSTRIAL PARK, WENTWORTH AVENUE, LONDONDERRY, NEW HAMPSHIRE, SCALE: AS SHOWN, DATED: OCTOBER 20, 1999, PREPARED BY TF MORAN, INC. R.C.R.D. PLAN NO. D-27991.

SEE SHEETS SUB-3 OF 8 THROUGH SUB-8 OF 8 FOR 40 SCALE DETAIL OF ENTIRE SITE.
SHEETS SUB-1 OF 8 THROUGH SUB-8 OF 8 WILL BE ON FILE AT THE PLANNING & ECONOMIC DEVELOPMENT DEPARTMENT OF THE TOWN OF LONDONDERRY

Graphic Scale

100' 50' 0' 100' 200' 300' 400'

1" = 100'

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CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION "IT'S THE LAW"

811 Dig Safe MA-ME-NH-RI-VT

REV.	DATE	DESCRIPTION	DR	CK
1	12-18-25	REVISED PER TOWN REVIEW COMMENTS	JD	MRD

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STATE OF NEW HAMPSHIRE — CHRISTOPHER K. DANFORTH — 8/28/2024 — No. 077 — CERTIFIED WETLAND SCIENTIST

SURVEYOR'S CERTIFICATION

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Michael R Dahlberg — 12-22-2025
LICENSED LAND SURVEYOR — DATE

STATE OF NEW HAMPSHIRE — No. 714 — MICHAEL R. DAHLBERG — LICENSED LAND SURVEYOR — SIGNATURE

OWNER'S SIGNATURE

12/22/2025
OWNER OR REPRESENTATIVE — DATE

Approved by the Londonderry, NH Planning Board for Phase _____
on Date: _____
Certified by:
_____
_____

TAX MAP 14 LOT 39-2 AND 39

SUBDIVISION PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
PURPOSEENERGY-LONDONDERRY, LLC
PO BOX 4345, WINDHAM, NH 03087

SCALE: 1" = 100' **SEPTEMBER 8, 2025**

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Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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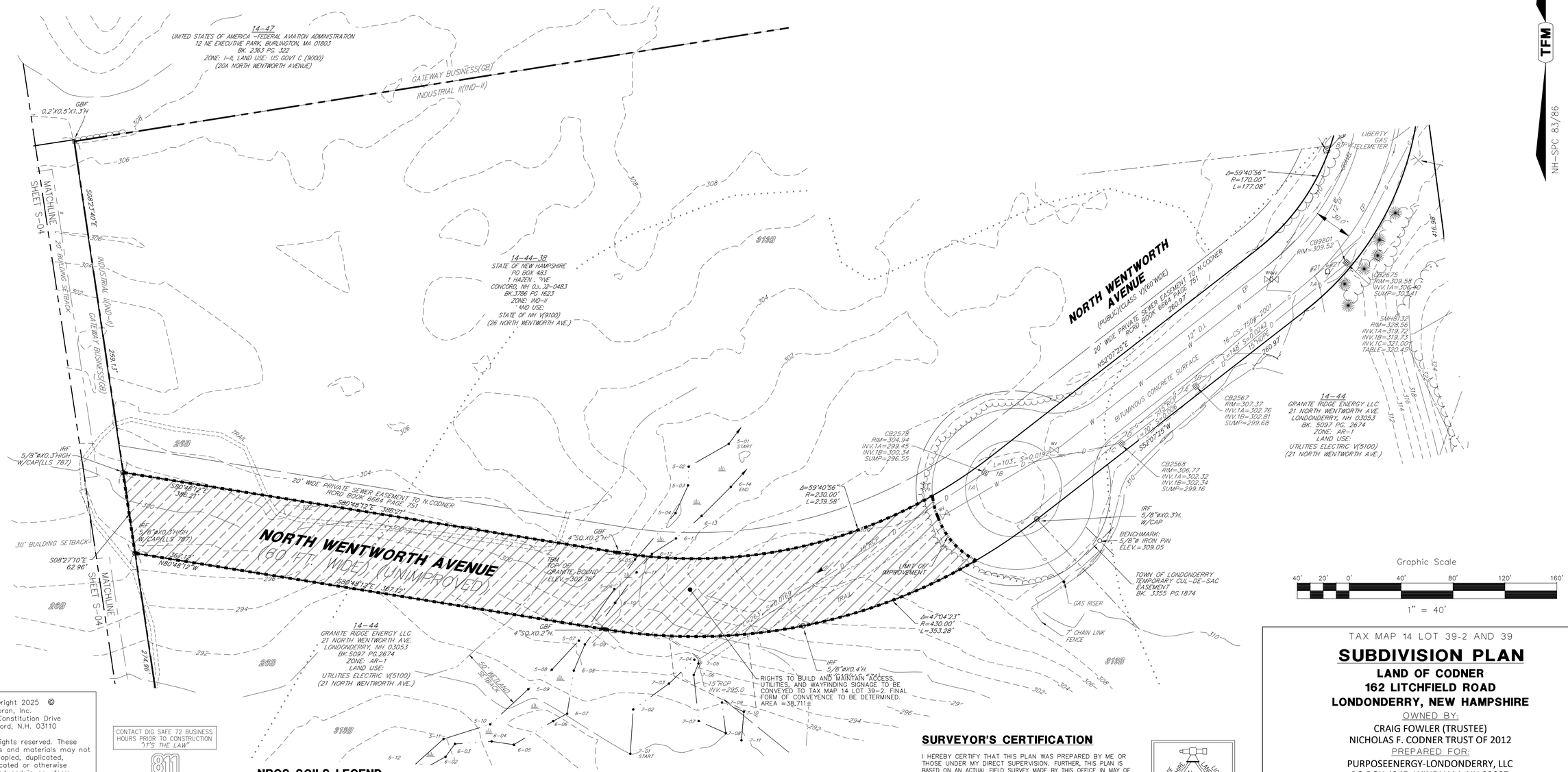
FILE	18252.01	DR	TNB	FB	2229/2230	SUB-2 OF 8
		CK	MRD	CADFILE	18252-01 Survey	

Dec 23, 2025 - 2:01pm
F:\TFM Projects\18252\ Litchfield Rd - Londonderry, NH\Carlson Survey\Dwgs\18252-02 SUBDIVISION PLAN.dwg

LEGEND

STONE BOUND (FOUND)	SLOPED ASPHALT CURB SAC	BUILDING SETBACK		WETLAND SETBACK	
IRON PIN (FOUND)	OVERHEAD WIRES OHW	ZONING DISTRICT BOUNDARY		EDGE OF PAVEMENT EP	
DRILL HOLE (FOUND)	STONEWALL	PROPERTY BOUNDARY		DRAIN LINE D	
UTILITY POLE	2' CONTOUR 302	EASEMENT LINE		SEWER LINE S	
GUY WIRE	10' CONTOUR 250	WATER LINE W		ABUTTING PROPERTY LINE	
BENCHMARK	CATCH BASIN	GAS LINE G		WETLAND DELINEATION	
WATER VALVE WV	SOILS MAP UNIT SYMBOL 26A	SOILS BOUNDARY		WETLAND FLAG LOCATION 5-12	
HYDRANT					



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REV.	DATE	DESCRIPTION	DR	CK
1	12-22-25	REVISED PER TOWN REVIEW COMMENTS	JD	MRD

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SOILS INFORMATION SHOWN HEREON IS GRAPHICALLY REPRODUCED FROM THE USDA NATURAL RESOURCES CONSERVATION SERVICE, NATIONAL COOPERATIVE SOIL SURVEY OF ROCKINGHAM COUNTY, NEW HAMPSHIRE.

26A	WINDSOR LOAMY SAND, 0 TO 3 PERCENT SLOPES
26B	WINDSOR LOAMY SAND, 3 TO 8 PERCENT SLOPES
26C	WINDSOR LOAMY SAND, 8 TO 15 PERCENT SLOPES
26E	WINDSOR LOAMY SAND, 15 TO 60 PERCENT SLOPES
45B	MONTAUK FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES, VERY STONY
115	SCARBORO MUCK, COASTAL LOWLAND, 0 TO 3 PERCENT SLOPES
313B	DEERFIELD LOAMY FINE SAND, 3 TO 8 PERCENT SLOPES

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Michael R Dahlberg 12-22-2025
LICENSED LAND SURVEYOR DATE

STATE OF NEW HAMPSHIRE No. 714 MICHAEL R. DAHLBERG LICENSED LAND SURVEYOR Michael R Dahlberg SIGNATURE

OWNER'S SIGNATURE

OWNER OR REPRESENTATIVE DATE 12/22/2025

TAX MAP 14 LOT 39-2 AND 39

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LAND OF CODNER
162 LITCHFIELD ROAD
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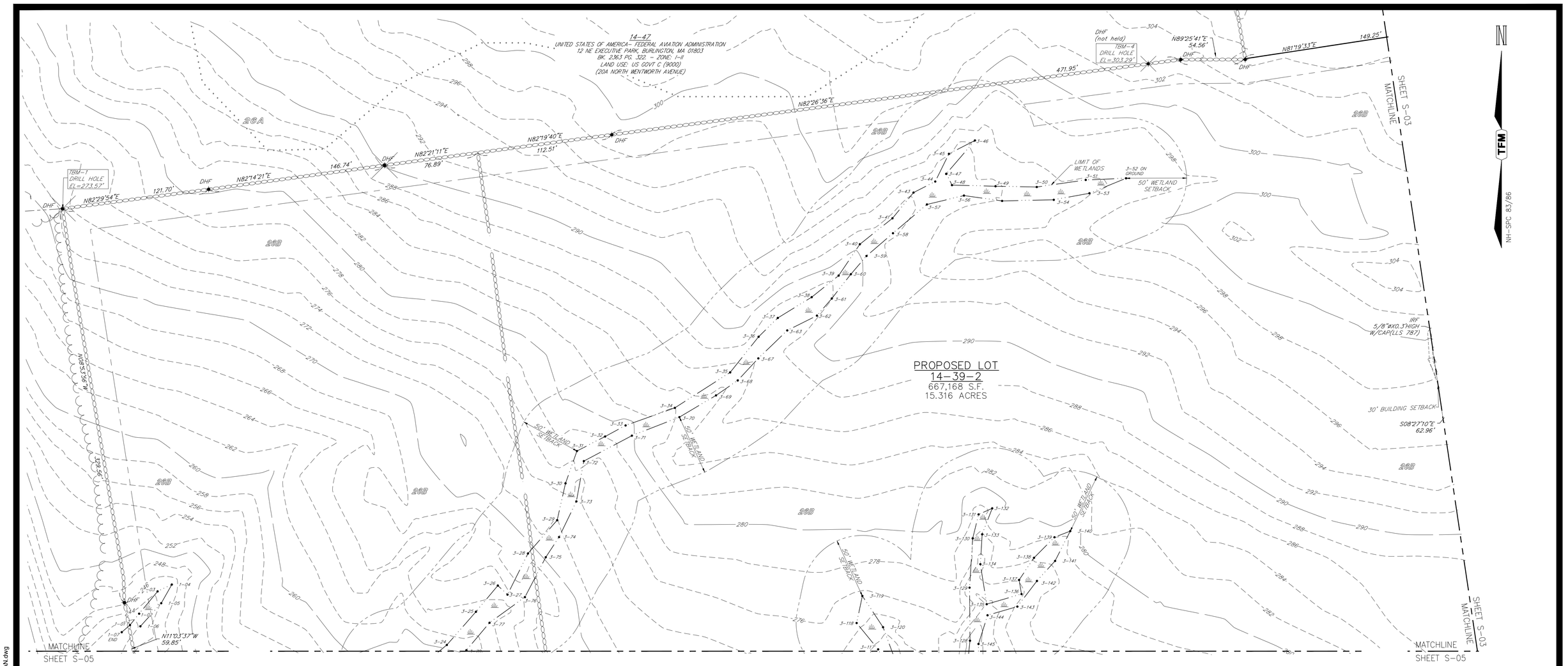
FILE	DR	FB		
18252.01	TNB	2229/2230	SUB-3 OF 8	
	CK MRD	CADFILE 18252-01 Survey		

Dec 23, 2025 - 2:02pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\Carlson Survey\Dwgs\18252-02 SUBDIVISION PLAN.dwg



LEGEND

STONE BOUND (FOUND)	SLOPED ASPHALT CURB	SAC	BUILDING SETBACK
IRON PIN (FOUND)	OVERHEAD WIRES	OHW	ZONING DISTRICT BOUNDARY
DRILL HOLE (FOUND)	STONEWALL		PROPERTY BOUNDARY
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WATER VALVE	SOILS MAP UNIT SYMBOL		DRAIN LINE D
HYDRANT	WETLAND DELINEATION		SEWER LINE S
CATCH BASIN	WETLAND FLAG LOCATION	5-12	ABUTTING PROPERTY LINE
MAILBOX	WETLAND SETBACK		
EDGE OF PAVEMENT	DIRECTION OF DRAINAGE FLOW		

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STATE OF NEW HAMPSHIRE CHRISTOPHER K. DANFORTH WETLAND SCIENTIST No. 077 8/28/2024 CERTIFIED WETLAND SCIENTIST

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. FURTHER, THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY MADE BY THIS OFFICE IN MAY OF 2024. SAID SURVEY HAS AN ERROR OF CLOSURE OF NOT LESS ACCURACY THAN ONE PART IN TEN THOUSAND (1:10,000).

Michael R Dahlberg — 12-22-2025
LICENSED LAND SURVEYOR — DATE

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 714 MICHAEL R. DAHLBERG SIGNATURE

OWNER'S SIGNATURE — 12/22/2025
OWNER OR REPRESENTATIVE — DATE

TAX MAP 14 LOT 39-2 AND 39

SUBDIVISION PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
PURPOSEENERGY-LONDONDERRY, LLC
PO BOX 4345, WINDHAM, NH 03087

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

TFM Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR	FB		
18252.01	TNB	2229/2230	SUB-4 OF 8	
	CK MRD	CADFILE 18252-01 Survey		

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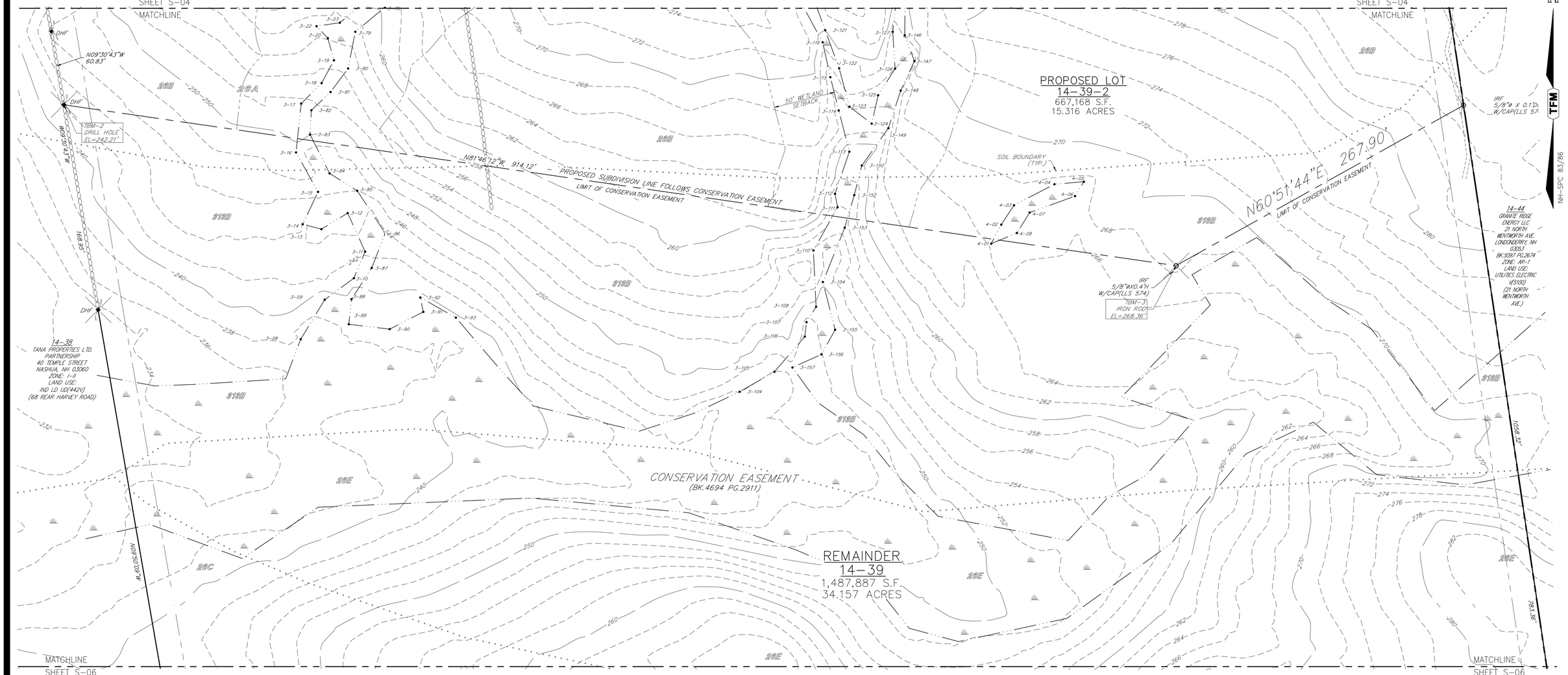

LEGEND

STONE BOUND (FOUND)	SLOPED ASPHALT CURB	SAC	BUILDING SETBACK
IRON PIN (FOUND)	OVERHEAD WIRES	OHW	ZONING DISTRICT BOUNDARY
DRILL HOLE (FOUND)	STONEWALL		PROPERTY BOUNDARY
UTILITY POLE	2' CONTOUR	302	EASEMENT LINE
GUY WIRE	10' CONTOUR	280	WATER LINE
BENCHMARK	SOILS BOUNDARY		GAS LINE
WATER VALVE	SOILS MAP UNIT SYMBOL		DRAIN LINE
HYDRANT	WETLAND DELINEATION		SEWER LINE
CATCH BASIN	WETLAND FLAG LOCATION	5-12	ABUTTING PROPERTY LINE
MAILBOX	WETLAND SETBACK		
EDGE OF PAVEMENT	DIRECTION OF DRAINAGE FLOW		

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REV.	DATE	DESCRIPTION	DR	CK
1	12-22-25	REVISED PER TOWN REVIEW COMMENTS	JD	MRD

Graphic Scale

40' 20' 0' 40' 80' 120' 160'

1" = 40'

NRCS SOILS LEGEND

SOILS INFORMATION SHOWN HEREON IS GRAPHICALLY REPRODUCED FROM THE USDA NATURAL RESOURCES CONSERVATION SERVICE, NATIONAL COOPERATIVE SOIL SURVEY OF ROCKINGHAM COUNTY, NEW HAMPSHIRE.

26A	WINDSOR LOAMY SAND, 0 TO 3 PERCENT SLOPES
26B	WINDSOR LOAMY SAND, 3 TO 8 PERCENT SLOPES
26C	WINDSOR LOAMY SAND, 8 TO 15 PERCENT SLOPES
26E	WINDSOR LOAMY SAND, 15 TO 60 PERCENT SLOPES
45B	MONTAUK FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES, VERY STONY
115	SCARBORO MUCK, COASTAL LOWLAND, 0 TO 3 PERCENT SLOPES
313B	DEERFIELD LOAMY FINE SAND, 3 TO 8 PERCENT SLOPES

WETLAND NOTE

THE WETLANDS DEPICTED SOUTH OF THE PROPOSED LOT LINE WITHIN THE EXISTING CONSERVATION EASEMENT WERE DIGITIZED FROM PLANS OF RECORD PREPARED FOR THE STATE OF NEW HAMPSHIRE AND RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAN #35156 SHEET 26.

WETLAND SCIENTIST CERTIFICATION

JURISDICTIONAL WETLANDS SHOWN ON THIS PLAN WERE DELINEATED ON AUGUST 16, 2024 BY CHRISTOPHER K. DANFORTH CWS #077. THE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2, JANUARY 2012. DOMINANT HYDRIC SOILS WITHIN THE WETLAND(S) WERE IDENTIFIED USING "FIELD INDICATORS OF HYDRIC SOILS OF THE UNITIED STATES" A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, NRCS, VERSION 8.1, 2017. DOMINANCE OF HYDROPHYTIC VEGETATION WAS DETERMINED USING THE USACE NATIONAL WETLAND PLANT LIST, NWPL 2016 VERSION 3.3 HTTP://WETLAND_PLANTS.USACE.ARMY.MIL.

STATE OF NEW HAMPSHIRE · CHRISTOPHER K. DANFORTH · 8/28/2024 · No. 077 · CERTIFIED WETLAND SCIENTIST

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Michael R Dahlberg 12-22-2025
LICENSED LAND SURVEYOR DATE

STATE OF NEW HAMPSHIRE · LICENSED LAND SURVEYOR · No. 714 · MICHAEL R. DAHLBERG · SIGNATURE

OWNER'S SIGNATURE

OWNER OR REPRESENTATIVE 12-22-2025 DATE

TAX MAP 14 LOT 39-2 AND 39

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162 LITCHFIELD ROAD
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OWNED BY:
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SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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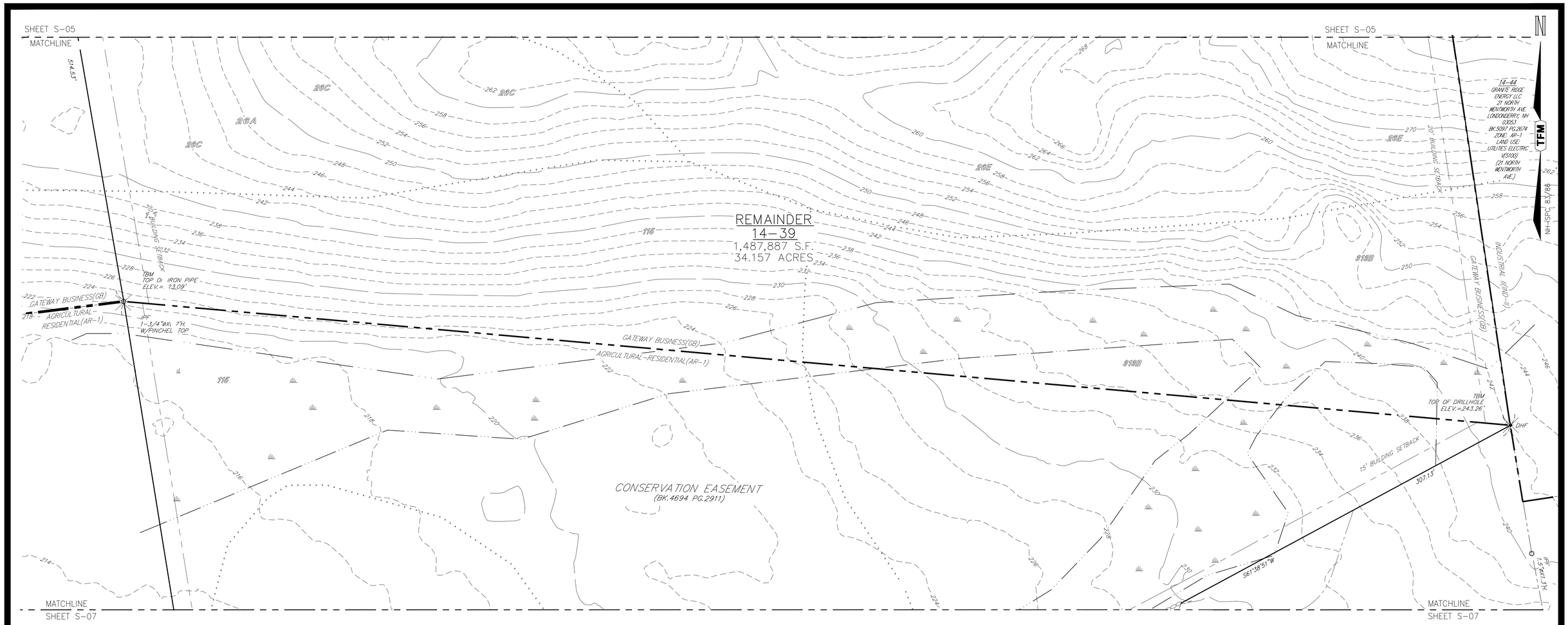

LEGEND

STONE BOUND (FOUND)	SLOPED ASPHALT CURB	SAC	BUILDING SETBACK
IRON PIN (FOUND)	OVERHEAD WIRES	OHW	ZONING DISTRICT BOUNDARY
DRILL HOLE (FOUND)	STONEWALL		PROPERTY BOUNDARY
UTILITY POLE	2' CONTOUR	302	EASEMENT LINE
GUY WIRE	10' CONTOUR	280	WATER LINE W
BENCHMARK	SOILS BOUNDARY		GAS LINE G
WATER VALVE	SOILS MAP UNIT SYMBOL		DRAIN LINE D
HYDRANT	WETLAND DELINEATION		SEWER LINE S
CATCH BASIN	WETLAND FLAG LOCATION	5-12	ABUTTING PROPERTY LINE
MAILBOX	WETLAND SETBACK		
EDGE OF PAVEMENT	DIRECTION OF DRAINAGE FLOW		

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115	SCARBORO MUCK, COASTAL LOWLAND, 0 TO 3 PERCENT SLOPES
313B	DEERFIELD LOAMY FINE SAND, 3 TO 8 PERCENT SLOPES

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811 Dig Safe
MA-ME-NH-RI-VT

REV.	DATE	DESCRIPTION	DR	CK
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Michael R Dahlberg 12-22-2025
LICENSED LAND SURVEYOR DATE

STATE OF NEW HAMPSHIRE — No. 714 — MICHAEL R. DAHLBERG — LICENSED LAND SURVEYOR
Michael R Dahlberg
SIGNATURE

OWNER'S SIGNATURE

OWNER OR REPRESENTATIVE 12-22-2025 DATE

TAX MAP 14 LOT 39-2 AND 39

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SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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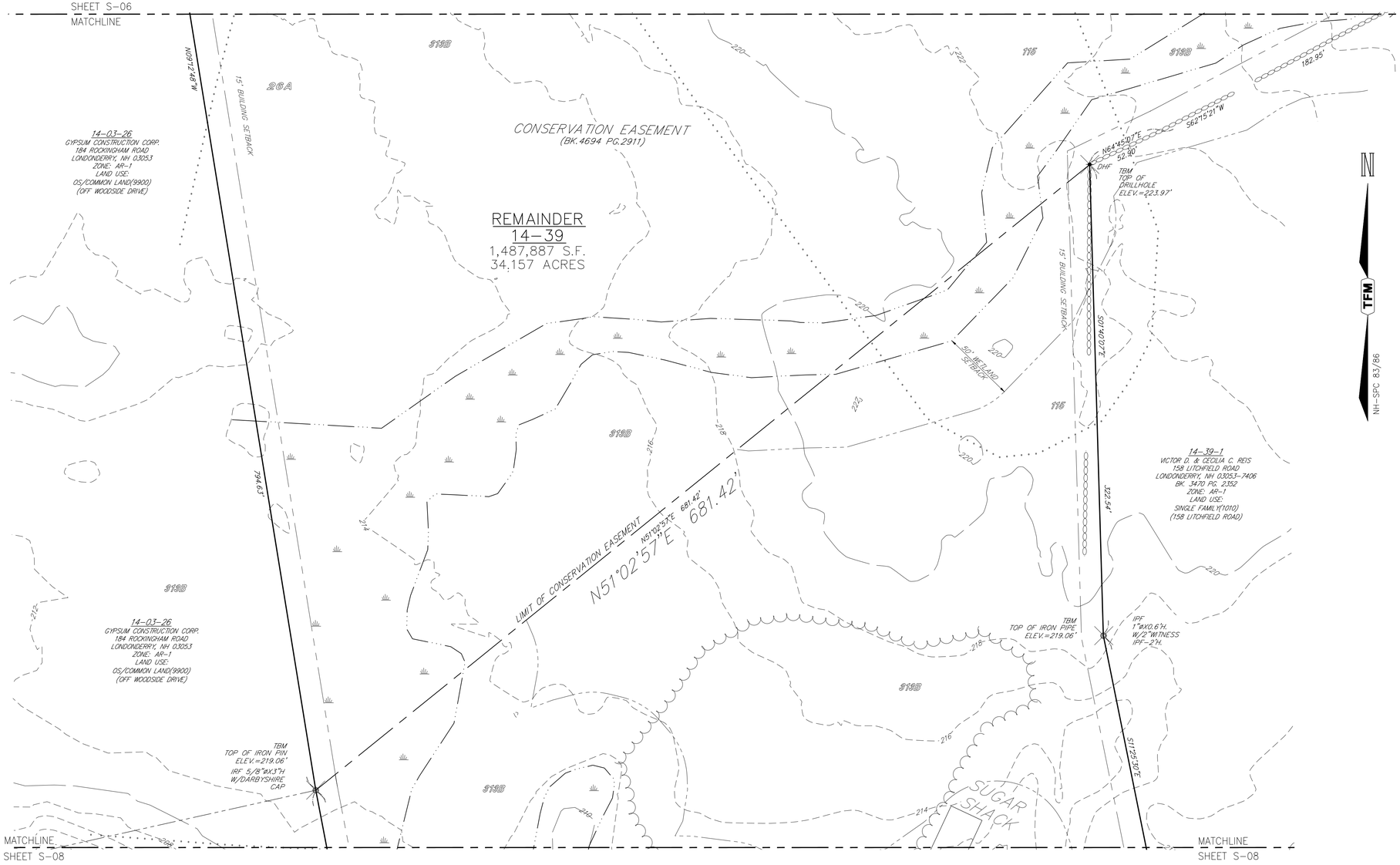

LEGEND

- STONE BOUND (FOUND)
- IRON PIN (FOUND)
- DRILL HOLE (FOUND)
- UTILITY POLE
- GUY WIRE
- BENCHMARK
- WATER VALVE
- HYDRANT
- CATCH BASIN
- MAIL BOX
- DIRECTION OF DRAINAGE FLOW
- EP — EDGE OF PAVEMENT
- SAC — SLOPED ASPHALT CURB
- OHW — OVERHEAD WIRES
- STONEWALL
- 302 — 2' CONTOUR
- 280 — 10' CONTOUR
- SOILS BOUNDARY
- SOILS MAP UNIT SYMBOL
- WETLAND DELINEATION
- 5-12 — WETLAND FLAG LOCATION
- WETLAND SETBACK
- BUILDING SETBACK
- ZONING DISTRICT BOUNDARY
- PROPERTY BOUNDARY
- EASEMENT LINE
- W — WATER LINE
- G — GAS LINE
- D — DRAIN LINE
- S — SEWER LINE
- ABUTTING PROPERTY LINE

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319B	DEERFIELD LOAMY FINE SAND, 3 TO 8 PERCENT SLOPES

Graphic Scale

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1" = 40'

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Michael R Dahlberg
SIGNATURE

OWNER'S SIGNATURE

OWNER OR REPRESENTATIVE 12-22-2025
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TAX MAP 14 LOT 39-2 AND 39

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NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
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PO BOX 4345, WINDHAM, NH 03087

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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	18252.01	CK	MRD	CADFILE	18252-01 Survey	SUB-7 OF 8

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LEGEND

G.BND — GRANITE BOUND TO BE SET
T.B.S. — GRANITE BOUND (FOUND)
IRON PIN (FOUND)
DRILL HOLE (FOUND)
UTILITY POLE
GUY WIRE
BENCHMARK
WATER VALVE
HYDRANT
CATCH BASIN
MAIL BOX
DIRECTION OF DRAINAGE FLOW
EP — EDGE OF PAVEMENT
SAC — SLOPED ASPHALT CURB
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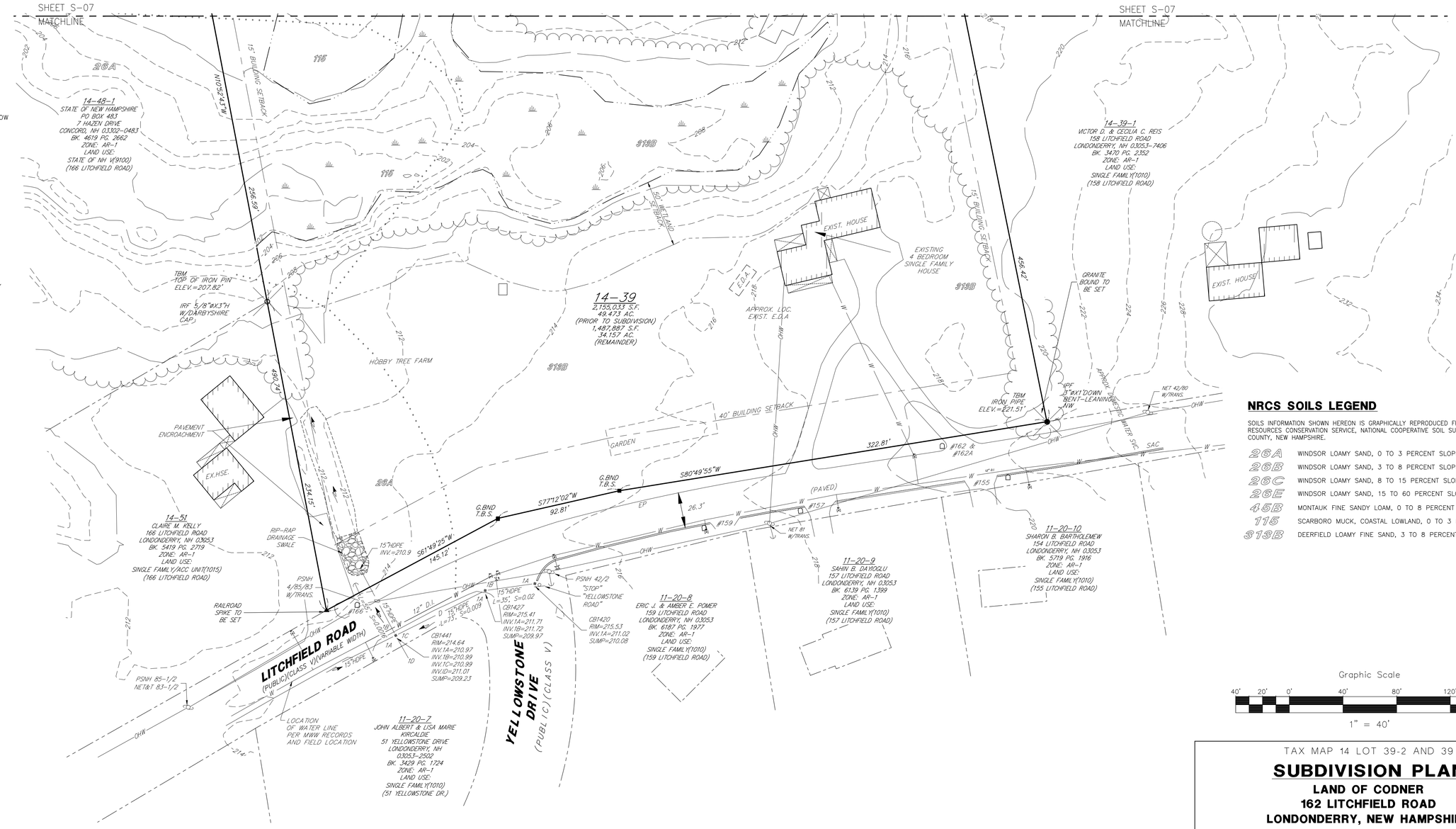

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$19B	DEERFIELD LOAMY FINE SAND, 3 TO 8 PERCENT SLOPES

Graphic Scale
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1" = 40'

N
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NH-SPC 83/86

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REV.	DATE	DESCRIPTION	DR	CK
1	12-22-25	REVISED PER TOWN REVIEW COMMENTS	JD	MRD

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STATE OF NEW HAMPSHIRE — No. 714 — MICHAEL R DAHLBERG — LICENSED LAND SURVEYOR
Michael R Dahlberg
SIGNATURE

OWNER'S SIGNATURE — 12/22/2025
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TAX MAP 14 LOT 39-2 AND 39

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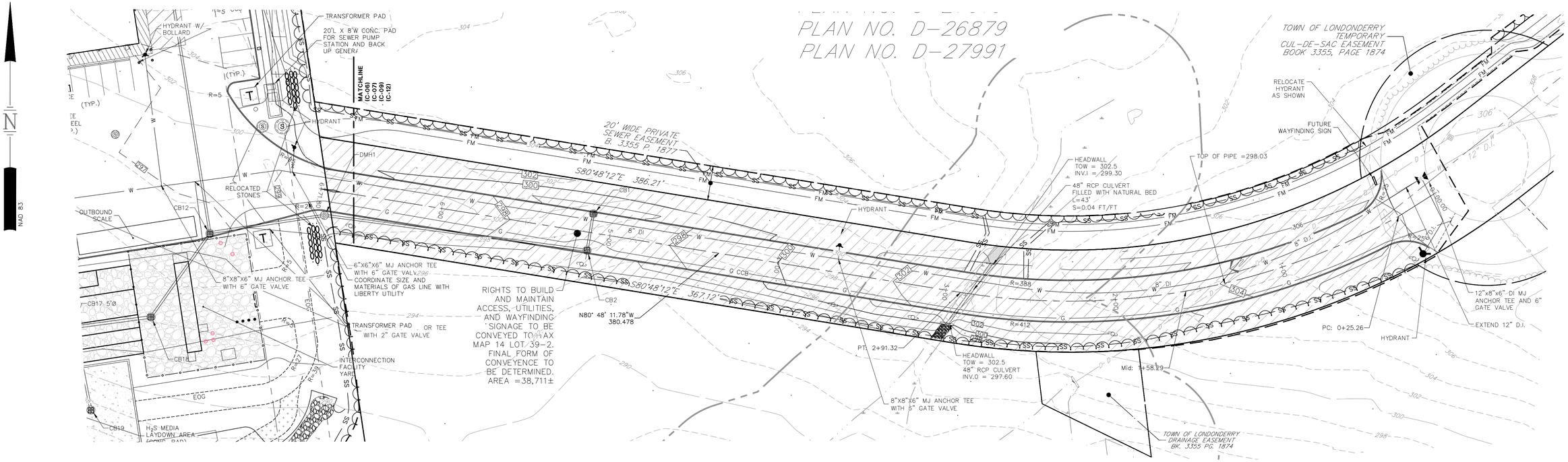

PROPOSED DRIVEWAY

HORIZONTAL SCALE 1"=30'
30 15 0 30
VERTICAL SCALE 1"=3'
3 0 3

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DRIVEWAY PLAN & PROFILE

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON No. 14086
LICENSED PROFESSIONAL ENGINEER
12/18/25

REV	DATE	DESCRIPTION	DR	CK
2	11/3/2025	TOWN SEWER COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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FILE 18252-02 | DR | FB | CADFILE: 18252-02 SITE PLAN | CK | C-13

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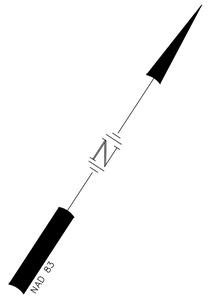
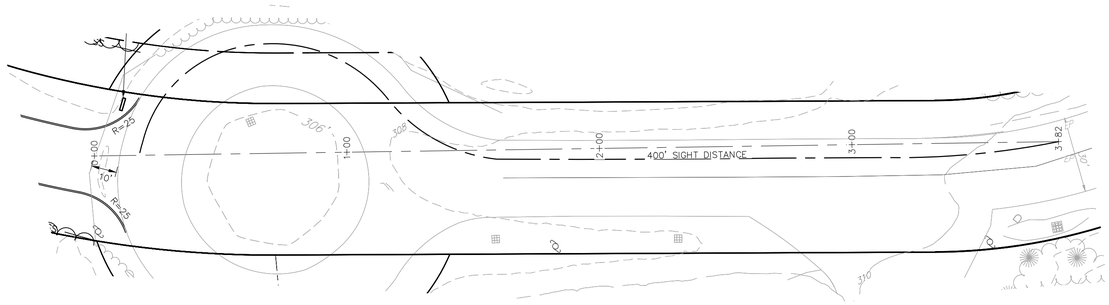
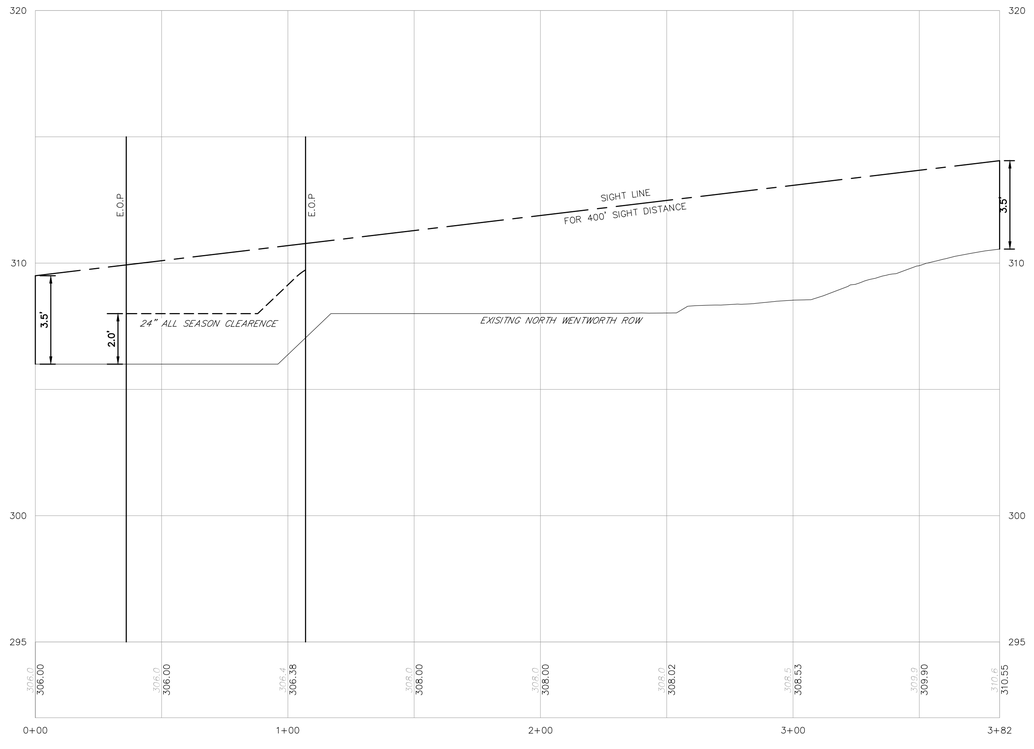
NOTES

1. POSTED SPEED LIMIT ON NORTH WENTWORTH AVE. IS 30 MPH.
2. TOWN OF LONDONDERRY SIGHT DISTANCE CALCULATIONS:

   SUBDIVISION REGULATIONS SECTION 3.09.F.2 & EHXIBIT D3
   MINIMUM ALL SEASON SIGHT DISTANCE = 365–FEET (NON–RESIDNETIAL) WHICH IS EXCEEDED.







SITE DISTANCE

HORIZONTAL SCALE 1"=30'
30 15 0 30
VERTICAL SCALE 1"=3'
3 0 3

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SIGHT DISTANCE

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25 PELHAM ROAD SUITE 102, SALEM, NH 03079

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REV	DATE	DESCRIPTION	DR	CK
2	11/3/2025	TOWN SEWER COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472–4488
Fax (603) 472–9747
www.tfmoran.com

FILE	DR		FB		
18252–02	CK		CADFILE	18252–02 SITE PLAN	SD–1

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

Dec 23, 2025 - 2:23pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry , NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02 CSD\PRODUCTION\18252-02 SITE PLAN.dwg

STORMWATER MANAGEMENT REPORT

Southern New Hampshire Green Energy Campus

Tax Map 14, Lot 39
North Wentworth Avenue
Londonderry, NH

Prepared On:

September 12th, 2025

Revised September 16th, 2025

Revised December 18, 2025

Prepared for:

PurposeEnergy-Londonderry, LLC
25 Pelham Road, Suite 102
Salem, NH 03053

TFM Job Number:
18252-02

Prepared by:

TFM®
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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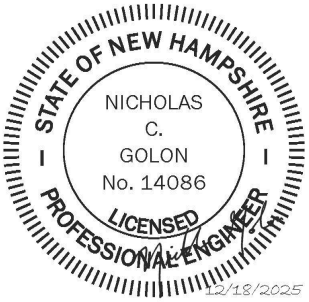

ALTERATION OF TERRAIN PERMIT APPLICATION

Water Division / Land Resources Management

Check the status of your application

RSA / Rule: RSA 485-A:17, Env-Wq 1500

Administrative Use Only	Administrative Use Only	Administrative Use Only	File Number:
			Check No.
			Amount:
			Initials:

1. APPLICANT INFORMATION (INTENDED PERMIT HOLDER)			
Applicant Name: PurposeEnergy-Londonderry, LLC	Contact Name: Sean O'Neill		
Email: oneill@purposeenergy.com	Daytime Telephone: 617.202.9156		
Mailing Address: P.O. Box 4345			
Town/City: Windham	State: NH	ZIP Code: 03087	
2. APPLICANT'S AGENT INFORMATION If none, check here: ☐			
Agent's Name: TFMoran, Inc.	Contact Name: Nicholas Golon		
Email: ngolon@tfmoran.com	Daytime Telephone: 603.472.4488		
Address: 48 Constitution Dr			
Town/City: Bedford	State: NH	ZIP Code: 03110	
3. PROPERTY OWNER INFORMATION (IF DIFFERENT FROM APPLICANT) Check here if more than one property owner, and attach additional sheets as necessary: ☐			
Owner's Name: Codner Nicholas F Trust 2012	Contact Name: Nicholas F. Codner		
Email: ncodner@londonderrynh.org	Daytime Telephone: (603) 432-1100 ext.161		
Mailing Address: 162 Litchfield Road			
Town/City: Londonderry	State: NH	ZIP Code: 03079	
4. PROPERTY OWNER'S AGENT INFORMATION If none, check here: ☐			
Business Name: PurposeEnergy-Londonderry, LLC	Contact Name: Sean O'Neill		
Email: oneill@purposeenergy.com	Daytime Telephone: 617.202.9156		
Address: P.O. Box 4345			
Town/City: Windham	State: NH	ZIP Code: 03087	
5. CONSULTANT INFORMATION If none, check here: ☐			
Engineering Firm: TFMoran, Inc	Contact Name: Nicholas Golon		
Email: ngolon@tfmoran.com	Daytime Telephone: 603.472.4488		
Address: 48 Constitution Dr			
Town/City: Bedford	State: NH	ZIP Code: 03110	

6. PROJECT TYPE

☐ Excavation Only ☐ Residential ■ Commercial ☐ Golf Course ☐ School ☐ Municipal
☐ Agricultural ☐ Land Conversion ☐ Other:

7. PROJECT LOCATION INFORMATION

Project Name: Southern New Hampshire Green Energy Campus

Street/Road Address: 162 Litchfield Road

Town/City: Londonderry	County: Rockingham

Tax Map: 14	Block:	Lot Number: 39	Unit:

Post-development, will the proposed project withdraw from or directly discharge to any of the following? If yes, identify the purpose.

1. Stream or Wetland Purpose:	■ Yes ☐ No	☐ Withdrawal	■ Discharge
2. Artificial pond created by impounding a stream or wetland Purpose:	☐ Yes ■ No	☐ Withdrawal	☐ Discharge
3. Unlined pond dug into the water table Purpose:	☐ Yes ■ No	☐ Withdrawal	☐ Discharge

Post-development, will the proposed project discharge to:

- Within one-quarter mile of a surface water impaired for phosphorus and/or nitrogen? ■ No ☐ **Yes**
- Within one-quarter mile of a Class A surface water or within the watershed area of an Outstanding Resource Water?
  ■ No ☐ **Yes**
- Within one-quarter mile of a lake or pond not covered previously? ■ No ☐ **Yes**

Is the project a High Load area? ☐ Yes ■ No
If yes, specify the type of high load land use or activity:

Is the project within a Water Supply Intake Protection Area (WSIPA)? ☐ Yes ☐ No
Is the project within a Groundwater Protection Area (GPA)? ☐ Yes ☐ No
Will the well setbacks identified in Env-Wq 1508.02 be met? ■ Yes ☐ No
For more details on the restrictions in these areas, read Chapter 3.1 in Volume 2 of the NH Stormwater Manual.

Is any part of the property within the 100-year floodplain? ☐ Yes ☐ No
If yes: Cut volume: cubic feet within the 100-year floodplain.
Fill volume: cubic feet within the 100-year floodplain.

☐ Project *is* within **¼ mile of a designated river** Name of River:
■ Project *is not* within ¼ mile of a designated river.

☐ Project *is* within a Coastal/Great Bay Region community.
■ Project *is not* within a Coastal/Great Bay Region community.

8. BRIEF PROJECT DESCRIPTION (PLEASE DO NOT REPLY "SEE ATTACHED")

The construction of a organic waste processing facility on a wooded lot with access from North Wentworth Avenue in Londonderry, NH.

lrm@des.nh.gov or (603) 271-2147
PO Box 95, Concord, NH 03303-0095
des.nh.gov

9. IF APPLICABLE, DESCRIBE ANY WORK STARTED PRIOR TO RECEIVING PERMIT.

N/A

10. ADDITIONAL REQUIRED INFORMATION

A. Date a copy of the application was sent to the municipality, as required by Env-Wq 1503.05(e) (Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the governing body of each municipality in which the project is proposed): 09/12/2025

(Attach proof of delivery)

B. Date a copy of the application was sent to the local river advisory committee, if required by Env-Wq 1503.05(e) (Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the Local River Advisory Committee, if the project is within ¼ mile of a designated river):

(Attach proof of delivery)

C. Type of plan required: ☐ Land Conversion ■ Detailed Development ☐ Excavation, Grading and Reclamation ☐ Steep Slope

D. Additional plans required: ■ Stormwater Drainage and Hydrologic Soil Groups ☐ Source Control ■ Chloride Management

E. Total area of disturbance, in square feet 568,650sf

F. Additional impervious cover as a result of the project, in square feet (use "-"to indicate a net reduction in impervious coverage).

Total final impervious cover, in square feet 256,118

G. Total undisturbed cover, in square feet 156,816

H. Number of lots proposed: 2

I. Total length of roadway, in linear feet: 600

J. Name(s) of receiving water(s): Merrimack River via unnamed wetland

K. Identify all other NHDES permits required for the project. For each, indicate whether an application has been filed and is pending. If the required approval has been issued, provide the permit number, registration date, or approval letter number, as applicable.

Type of Approval	Application Filed?	Pending?	If Issued
1. Water Supply Approval	☐ Yes ☐ No ☐ N/A	☐	Permit number:
2. Wetlands Permit	■ Yes ☐ No ☐ N/A	☑	Permit number:
3. Shoreland Permit	☐ Yes ☐ No ☐ N/A	☐	Registration date:
4. UIC Registration	☐ Yes ☐ No ☐ N/A	☐	Approval letter date:
5. Large/Small Community Well Approval	☐ Yes ☐ No ☐ N/A	☐	Permit number:
6. Large Groundwater Withdrawal Permit	☐ Yes ☐ No ☐ N/A	☐	Permit number:
7. Other:	☐ Yes ☐ No	Solid Waste	

L. List all species identified by the Natural Heritage Bureau as threatened or endangered or of concern:

Eastern Hognose Snake, Blanding's Turtle, New England Cottontail, Northern Black Racer, Smooth Green Snake, Spotted Turtle, Long Leaved Bluet

M. Using the NHDES OneStop Data Mapper with the Surface Water Impairment layer turned on, list the impairments identified for each receiving water. If no pollutants are listed, enter "N/A."

NA

N. Did the applicant or applicant's agent have a pre-application meeting with Alteration of Terrain Bureau staff?

☒ Yes ☐ No If yes, name of staff member: Kevin Thatcher

O. Will blasting of bedrock be required? ☐ Yes ☒ No If yes, estimated quantity of blast rock in cubic yards:
If yes, standard blasting Best Management Practices notes must be placed on the plans.

NOTE: If greater than 5,000 cubic yards of blast rock will be generated, a groundwater monitoring program must be developed and submitted to NHDES. Contact Alteration of Terrain Bureau staff for additional detail.

lrm@des.nh.gov or (603) 271-2147
PO Box 95, Concord, NH 03303-0095
des.nh.gov

11. CHECK ALL APPLICATION ATTACHMENTS THAT APPLY (SUBMIT WITH APPLICATION IN THE ORDER LISTED BELOW)

LOOSE:

- ■ Signed application form, with attached proof(s) of delivery.
- ■ Check for the application fee, calculated using the fee schedule available on the NHDES Land Development page.
- ■ Color copy of a USGS map with the property boundaries outlined (1" = 2,000' scale).
- ■ If the applicant is not the property owner, proof that the applicant will have a legal right to undertake the project on the property if a permit is issued to the applicant.

BOUND, IN A REPORT, IN THE FOLLOWING ORDER:

- ■ Copy of the signed application form and application checklist.
- ■ Copy of the check.
- ■ Copy of the USGS map with the property boundaries outlined (1" = 2,000' scale).
- ■ Narrative of the project with a summary table of the peak discharge rate for the off-site discharge points.
- ■ Printout of NHDES OneStop Mapper with "Surface Water Impairments" layer turned on.
- ■ Printout of NHDES OneStop Mapper with Alteration of Terrain screening layers turned on.
- ■ Printout of Natural Heritage Bureau DataCheck Tool letter and any relevant correspondence with New Hampshire Fish and Game.
- ■ USDA Web Soil Survey Map with project's watershed outlined.
- ■ Aerial photograph (1" = 2,000' scale with the site boundaries outlined).
- ■ Photographs representative of the site.
- ■ Groundwater recharge volume calculations (include one Best Management Practices worksheet per permit application).
- ■ Drainage analysis, stamped by a professional engineer (see "Application Checklist" at the end of this document).
- ■ Riprap apron or other energy dissipation or stability calculations.
- ■ Site Specific Soil Survey report, stamped and with a certification note prepared by the soil scientist that the survey was done in accordance with the Site Specific Soil Mapping standards of the Society of Soil Scientists of Northern New England.
- ■ Infiltration Feasibility Report (example online) [Env-Wq 1503.08(f)(3)].
- ☐ Registration and Notification Form for Stormwater Infiltration to Groundwater (UIC Registration-for underground systems only, including drywells and trenches).
- ■ Inspection and maintenance manual with, if applicable, long term maintenance agreements [Env-Wq 1503.08(g)].
- ☐ Source control plan.

PLANS:

- ■ One set of design plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details).
- ■ Pre- and post-development color-coded soil plans on 11" x 17" (see Application Checklist for details).
- ■ Pre- and post-construction drainage area plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details).

100-YEAR FLOODPLAIN REPORT:

- ☐ All information required in Env-Wq 1503.09, submitted as a separate report.

ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE

- ☐ See Application Checklist (Attachment A) for details.

- ■ **REVIEW APPLICATION FOR COMPLETENESS. CONFIRM INFORMATION LISTED ON THE APPLICATION IS INCLUDED WITH SUBMITTAL.**

12. REQUIRED SIGNATURES

By signing below, I certify that:

- The information contained in or otherwise submitted with this application is true, complete, and not misleading to the best of my knowledge and belief;
- I understand that the submission of false, incomplete, or misleading information constitutes grounds for the department to deny the application, revoke any permit that is granted based on the information, and/or refer the matter to the board of professional engineers established by RSA 310-A:3 if I am a professional engineer; and
- I understand that I am subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641:3.

☒ **APPLICANT** ☐ **APPLICANT'S AGENT**:

Signature: S O'Neill Date: 6/11/2025

Name (print or type): Sean O'Neill Title:

☐ PROPERTY OWNER ☒ PROPERTY OWNER'S AGENT:

Signature: S O'Neill Date: Sean O'Neill

Name (print or type): Sean O'Neill Title: Agent

ALTERATION OF TERRAIN PERMIT ATTACHMENT A: APPLICATION CHECKLIST

Check each box to indicate the item has been provided, or indicate why it does not apply.

DESIGN PLANS

- ☒ Plans printed on 34 - 36" by 22 - 24" white paper.
- ☒ Professional Engineer stamp.
- ☒ Wetland delineation.
- ☒ Temporary erosion control measures.
- ☒ Treatment for all stormwater runoff from impervious surfaces such as roadways (including gravel roadways), parking areas, and nonresidential roof runoff. Guidance on treatment BMPs can be found in Volume 2, Chapter 4 of the New Hampshire Stormwater Management Manual.
- ☒ Pre-existing 2-foot contours.
- ☒ Proposed 2-foot contours.
- ☒ Drainage easements protecting the drainage/treatment structures.
- ☒ Compliance with state statute governing fill and dredge in wetlands, RSA 482- A. Note that artificial detention in wetlands is prohibited.
- ☐ Compliance with the New Hampshire Shoreland Protection Act, RSA 483-B.
- ☒ Benching – needed if you have more than 20 feet change in elevation on a 2:1 slope, 30 feet change in elevation on a 3:1 slope, 40 feet change in elevation on a 4:1 slope.
- ☒ Check to see if any proposed ponds require state dam permits.

DETAILS

- ☒ Typical roadway cross-section.
- ☒ Detention basin with inverts noted on the outlet structure.
- ☒ Stone berm level spreader.
- ☒ Outlet protection – riprap aprons.
- ☒ A general installation detail for an erosion control blanket.
- ☒ Silt fences or mulch berm.
- ☒ Storm drain inlet protection. Note that since hay bales must be embedded 4 inches into the ground, they are not to be used on hard surfaces such as pavement.
- ☐ Hay bale barriers.
- ☒ Stone check dams.
- ☒ Gravel construction exit.
- ☒ Temporary sediment trap.
- ☒ The treatment BMPs proposed.
- ☐ Any innovative BMPs proposed.

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CONSTRUCTION SEQUENCE / EROSION CONTROL

■ Note that the project must be managed to meet the requirements and intent of RSA 430:53 and Agr 3800 relative to invasive species.

■ Note that perimeter controls shall be installed prior to earth moving operations.

■ Note that temporary water diversion (swales, basins, etc.) must be used as necessary until areas are stabilized.

■ Note that ponds and swales shall be installed early on in the construction sequence (before rough grading the site).

■ Note that all ditches and swales shall be stabilized prior to directing runoff to them.

■ Note that all roadways and parking lots shall be stabilized within 72 hours of achieving finished grade.

■ Note that all cut and fill slopes shall be seeded or loamed within 72 hours of achieving finished grade

■ Note that all erosion controls shall be inspected weekly AND after every half-inch of rainfall.

■ Note the limits on the open area allowed, see Env-Wq 1505.02 for detailed information.

Example note: The smallest practical area shall be disturbed during construction, but in no case shall exceed 5 acres at any one time before disturbed areas are stabilized.

■ Note the definition of the word “stable.”

Example note: An area shall be considered stable if one of the following has occurred:

- Base course gravels have been installed in areas to be paved.
- A minimum of 85 percent vegetated growth has been established.
- A minimum of 3 inches of non-erosive material such stone or riprap has been installed.
- Or, erosion control blankets have been properly installed.

■ Note the limit of time an area may be exposed.

Example note: All areas shall be stabilized within 45 days of initial disturbance.

■ Provide temporary and permanent seeding specifications. Note that although reed canary grass is listed in the Green Book; it is a problematic species according to the Wetlands Bureau and therefore should not be specified.

■ Provide winter construction notes that meet or exceed our standards.

Standard Winter Notes:

- All proposed vegetated areas that do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting, elsewhere. The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melt events.
- All ditches or swales which do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions.
- After October 15, incomplete road or parking surfaces where work has stopped for the winter season shall be protected with a minimum of 3 inches of crushed gravel per NHDOT item 304.3.

☐ Note at the end of the construction sequence that “Lot disturbance, other than that shown on the approved plans, shall not commence until after the roadway has the base course to design elevation and the associated drainage is complete and stable.” – This note is applicable to single/duplex family subdivisions, when lot development is not part of the permit.

DRAINAGE ANALYSES

Please provide double-side 8 ½" × 11" sheets where possible but, **do not** reduce the text such that more than one page fits on one side.

☐ Professional Engineer stamp.

☐ Rainfall amount obtained from the Northeast Regional Climate Center. Include extreme precipitation table as obtained from this source.

☐ Drainage analyses, in the following order:

- Pre-development analysis: Drainage diagram.
- Pre-development analysis: Area Listing and Soil Listing.
- Pre-development analysis: Node listing 1-year (if applicable), 2-year, 10-year and 50-year.
- Pre-development analysis: Full summary of the 10-year storm.
- Post-development analysis: Drainage diagram.
- Post-development analysis: Area Listing and Soil Listing.
- Post-development analysis: Node listing for the 2-year, 10-year and 50-year.
- Post-development analysis: Full summary of the 10-year storm.

☐ Review the Area Listing and Soil Listing reports

- Hydrologic Soil Groups (HSG) match the HSGs on the soil maps provided.
- There is the same or less HSG A soil area after development (check for each HSG).
- There is the same or less "woods" cover in the post-development.
- Undeveloped land was assumed to be in "good" condition.
- The amount of impervious cover in the analyses is correct.

Note: A good check is to subtract the total impervious area used in the pre-analysis from the total impervious area used in the post-analysis. For residential projects without demolition occurring, a good check is to take this change in impervious area, subtract out the roadway and divide the remaining by the number of houses or units proposed. Do these numbers make sense?

☐ Check the storage input used to model the ponds.

☐ Check to see if the artificial berms pass the 50-year storm, i.e., make sure the constructed berms on ponds are not overtopped.

☐ Check the outlet structure proposed and make sure it matches that modeled.

☐ Check to see if the total areas in the pre and post analyses are same.

☐ Confirm the correct NRCS storm type was modeled (Coos, Carroll and Grafton counties are Type II, all others Type III).

PRE- AND POST-CONSTRUCTION DRAINAGE AREA PLANS

☐ Plans printed on 34 - 36" by 22 - 24" on white paper.

☐ Submit these plans separate from the soil plans.

☐ A north arrow.

☐ A scale.

☐ Labeled subcatchments, reaches and ponds.

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- ■ Tc lines.
- ■ A clear delineation of the subcatchment boundaries.
- ■ Roadway station numbers.
- ■ Culverts and other conveyance structures.

PRE- AND POST-CONSTRUCTION COLOR-CODED SOIL PLANS

- ■ 11” × 17” sheets suitable, as long as it is readable.
- ■ Submit these plans separate from the drainage area plans.
- ■ A north arrow.
- ■ A scale.
- ■ Name of the soil scientist who performed the survey and date the soil survey took place.
- ■ 2-foot contours (5-foot contours if application is for a gravel pit) as well as other surveyed features.
- ■ Delineation of the soil boundaries and wetland boundaries.
- ■ Delineation of the subcatchment boundaries.
- ■ Soil series symbols (e.g., 26).
- ■ A key or legend identifying each soil series symbol and its associated soil series name (for example: 26 = Windsor).
- ■ The hydrologic soil group color coding (A = Green, B = yellow, C= orange, D=red, Water=blue, and Impervious = gray).

Please note that excavation projects (including gravel pits) have similar requirements to those above, with the following common exceptions or additions:

- ☐ Drainage report is not needed if site does not have off-site flow.
- ☐ 5-foot contours are allowed rather than 2-foot.
- ☐ No Professional Engineer stamp is needed on the plans.
- ☐ Add a note to the plans that the applicant must provide NHDES a written update of the project and revised plans documenting the project status every five years from the date of the Alteration of Terrain permit.
- ☐ Add reclamation notes.
- ☐ A description of the subsurface conditions to the planned depth of excavation, including the elevation of the location of the Seasonal High Water Table (SHWT), as observed and described by a certified soil scientist, or an individual holding a valid permit as a permitted designer as issued by the department’s Subsurface Systems Bureau.

For more resources, refer to the Natural Resources Conservation Service’s Vegetating New Hampshire Sand and Gravel Pits publication.

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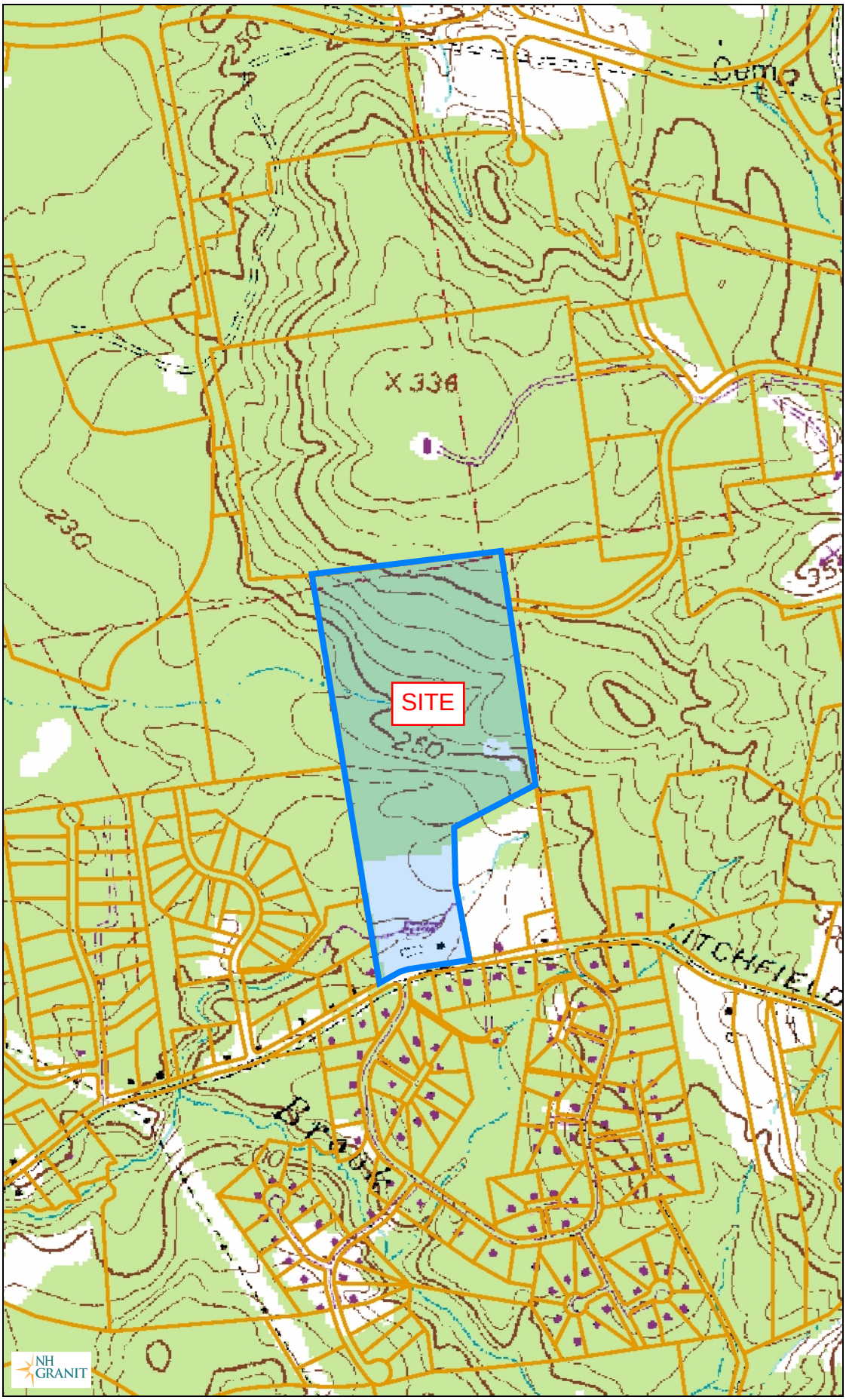
Map by NH GRANIT



Legend

- Parcels
- State
- County
- City/Town

Map Scale

1: 10,000

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Map Generated: 4/2/2025

Notes

7.5 min USGS Topo



Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

September 12, 2025

Town of Londonderry
Planning Office
268B Mammoth Road
Londonderry, NH 033053

New Hampshire Department of Environmental Services
29 Hazen Drive
PO Box 95
Concord, New Hampshire 03301-0095

RE: Certification Statement
Southern NH Green Energy Campus
North Wentworth Ave, Londonderry, NH 03053
Tax Map 14, Lot 39

To whom it may concern;

I hereby certify that the attached transmittal was delivered by hand and electronic format to the Town of Londonderry on September 12, 2025.

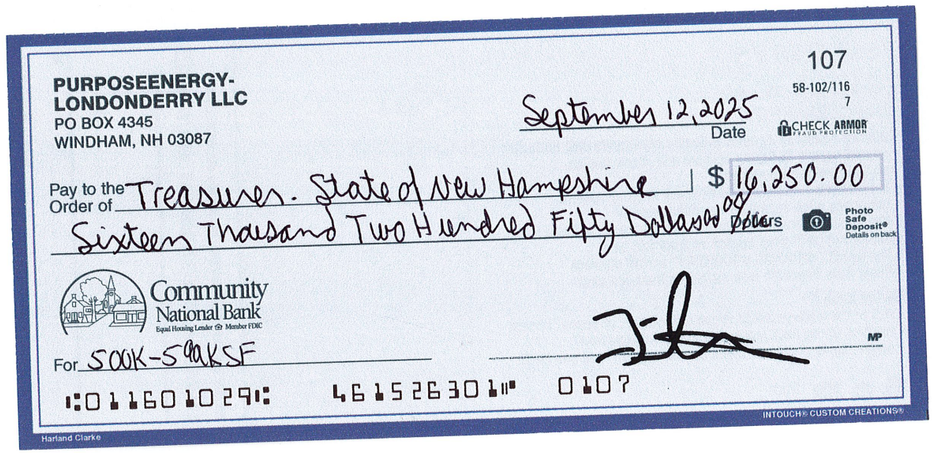
Sincerely,

Nick Golon, PE
TFMoran, Inc.

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

107

58-102/116
7



PURPOSEENERGY-
LONDONDERRY LLC
PO BOX 4345
WINDHAM, NH 03087

September 12, 2025
Date

CHECK ARMOR FRAUD PROTECTION

Pay to the Order of Treasurer. State of New Hampshire $ 16,250.00

Sixteen Thousand Two Hundred Fifty Dollars and 00/100 Dollars

Photo Safe Deposit® Details on back

Community National Bank
Equal Housing Lender Member FDIC

For 500K-599KSF

MP

⑆011601029⑆ 461526301⑈ 0107

Harland Clarke

INTOUCH® CUSTOM CREATIONS®

Southern New Hampshire Green Energy Campus

North Wentworth Ave, Londonderry, NH
Tax Map 14 Lot 39
September 12, 2025
Revised September 16, 2025
Revised December 18, 2025

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- NHDES AoT Application & Checklist
- Copy of Check
- USGS Locus Map (Figure 1)
- Certification of Delivery to Municipality

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- Description of Project
- Storm Water Methodology
  - Pre-development & Post-development
  - Stormwater Treatment
- Erosion Control Measures
- Conclusion
  - Peak Rate Flows
  - Treatment

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- Aerial Map
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Part 4 Pre-development Drainage Analysis

Pre-development HydroCAD Calculations
- Diagram
- Area & Soil Listings
- Node Listing: 2-yr, 10-yr, 25-yr, and 50-yr
- Full Summary: 10-yr, 25-yr, and 50-yr

Part 5 Post-Development Drainage Analysis

Post-development HydroCAD Calculations
- Diagram
- Area & Soil Listings
- Node Listing: 2-yr, 10-yr, 25-yr, and 50-yr
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- Basin Nodes: 50-yr (no infiltration)

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Riprap Calculations
Londonderry Pipes Tables (25-year)

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Infiltration Feasibility Report

Part 8 Inspection and Maintenance Manual

Inspection & Maintenance Manual
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Part 9 Drainage Plans

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Color Coded Soils Plan (11”x17”)
- Pre-development – DA-5
- Post-development – DA-6 & DA-7

Pre-development & Post-development Drainage Plans (Full size in pocket)

PART 1

Executive Summary

Southern New Hampshire Green Energy Capus will be the new home of an organic waste processing facility in the Town of Londonderry, NH. It will feature two connected resource recovery facilities. The first, RecycleWorks, will receive food waste that normally goes to landfill, including food that has passed its sell by date or is out of specification but is wrapped in glass, plastic, or metal packaging. RecycleWorks will remove the organic waste from that packaging and send it to the second facility on the campus, PurposeEnergy-Londonderry. PurposeEnergy will pump the food waste into tanks that digest it in a process similar to a human stomach. The tanks will also receive dairy waste directly by pipe from a local business, Stonyfield Yogurt. The digester tanks will produce renewable biogas that will be cleaned to pipeline quality and injected into the local natural gas network.

- The subject parcel is located at 162 Litchfield Road, Tax Map 14, Lot 39 in the Town of Londonderry, NH. This existing parcel is 47.3 acres. a 15.3-acre portion of the parcel will be subdivided off, “the site,” for the purpose of this campus and will be accessed via North Wentworth Avenue. The area of site disturbance will be approximately 12.8 acres.
- The site is currently vacant and wooded. The site is in the Gateway Business Zone (GB) and within the Londonderry Eco-Industrial Zone and has been planned for development.
- There are wetlands on site and wetland impacts proposed by this project.
- An open and closed drainage system is proposed to attenuate, convey, and treat runoff from the proposed development. A series of catchbasins, sediment forebays, two filtration basin, one detention basin will provide pretreatment/treatment and manage runoff for this phase of the project.
- The systems have been designed to maintain peak flows and volumes during all storm conditions up to and including the 50-year storm event.
- Best Management Practices are proposed to manage stormwater from the development and provide treatment, groundwater recharge and maintain existing flow rates leaving the site.
    - Two (2) surface filtration basin system will collect and recharge stormwater from proposed impervious surfaces on the site. These basins are required to have pre-treatment prior to stormwater entering the main cell of the basin. The forebay allows sediment to settle out of the stormwater. Filtration basins remove pollutants, reduce the peak rates of flow, and flow volume by allowing evaporation and infiltration of the stormwater. The stormwater receives treatment as it percolates through the 18 inches of filter media as specified by Env-Wq 1508.08(k)(4). Infiltration below the filter media also provides groundwater recharge.

    - One surface retention basin will be used to attenuate flow entering the site from the North. The basin will have a standard outlet control structure that is linked to downstream stormwater treatment practices.

- The Water Quality Volume (WQV) has been met by providing the required storage below the lowest outlet orifice of the stormwater management areas.

Description of Project

Londonderry's new Southern New Hampshire Green Energy Campus will keep waste out of New Hampshire's landfills by turning it into renewable energy. About 30% of the U.S. food supply, over 30 million tons, goes to landfills every year. It is the single largest contributor to landfill waste. Meanwhile, New Hampshire's landfills are projected to exhaust their capacity in the next decade. As capacity declines, local communities could be forced to pay more for waste management, and state taxpayers could incur the high cost of landfill closure and new landfill development. New landfills are likely to be built in rural areas where they may have significant environmental impacts.

The Southern New Hampshire Green Energy Campus will reduce the waste management burden on New Hampshire by tackling the food waste problem. It will feature two connected resource recovery facilities.

- The first, RecycleWorks, will receive food waste that normally goes to landfill, including food that has passed its sell by date or is out of specification but is wrapped in glass, plastic, or metal packaging. RecycleWorks will remove the organic waste from that packaging and send it to the second facility on the campus,
- PurposeEnergy – Londonderry. PurposeEnergy will pump the food waste into tanks that digest it in a process similar to a human stomach. The tanks will also receive dairy waste directly by pipe from a local business, Stonyfield Yogurt. The digester tanks will produce renewable biogas that will be cleaned to pipeline quality and injected into the local natural gas network.

Left in its packaging, this waste would not only add dramatically to the tonnage of waste reaching New Hampshire landfills, but the decomposition of the organic material in a landfill would release methane, one of the most harmful greenhouse gases, into the atmosphere.

The Green Energy Campus is not a landfill; all of the material that comes to the campus will leave it either as recyclable material, renewable biogas, clean water, or biosolids (the residuals from digestion which will be sent to a compost facility for use as fertilizer). The net impact of the Southern New Hampshire Green Energy Campus is to

- divert 90% of solid waste away from New Hampshire landfills;
- reduce the escape of environmentally damaging methane gas resulting from decomposition of organic matter;
- support local business in the cost-effective and environmentally beneficial management of food manufacturing waste.

<u>The Londonderry Site</u>

PurposeEnergy took care to select a site already designated for industrial development, but where protections for the local environment were also in place. The site at the end of N Wentworth Avenue in Londonderry is zoned as part of the Greater Business

District. In the south, a permanent easement establishes a Wildlife Corridor protecting local species and ensuring their ability to traverse east and west. The corridor also contains the bulk of the wetlands. In the north, federal ownership ensures additional protection. PurposeEnergy's project is consistent with other area business and industrial land uses east (Granite Ridge Power Plant) and west (FW Webb).

The subject site is located at 162 Litchfield Road, and Tax Map 14, 39, in the Town of Londonderry, NH. Underlying zoning designation is the Gateway-Business Zone, where the use is permitted. The site is regulated by the Town of Londonderry Zoning, Subdivision, and Site Plan Regulations and applicable State and Federal regulations.

The site consists of the following major elements:

- 36,600 sf Depackaging Facility (RecycleWorks)
- A 14,100 sf Process Building, with future expansion of 9,800 sf (PurposeEnergy)
- Tribrid bio-reactors
- 3 flow equalization tanks
- 26' x 32' screening room building
- A biogas upgrading yard
- An interconnection facility yard
- Truck scales
- Parking and trucking interconnection

Provided for this infrastructure, an open and closed drainage systems will convey, attenuate, and provide treatment/groundwater recharge of stormwater associated with the development. Stormwater management areas are dispersed throughout the site, but the primary management feature will be located along the southern (down slope) portion of the property, mimicking the existing drainage flow paths associated with the project site.

For this phase of the project, stormwater management systems have been located adjacent to the proposed uses and will function both independently and in series.

Existing drainage discharge points will be maintained throughout the site. The proposed filtration basins with sediment forebays and surface detention basin will be utilized to maintain peak runoff flows and volume in post-development conditions.

The existing lot is a total of 47.3± acres of which approximately 12.8± acres will be disturbed as part of the proposed Southern New Hampshire Green Energy Campus.

A NHDES Alteration of Terrain (AoT) Permit, NHDES Standard Dredge and Fill Permit, 2 (two) NHDES Solids Waste permits, NHDES Sewer Connection Permit, NHB Data-Check, and local approval will be required for the site development project.

The objectives for the post-development drainage design are to use best management practices to attenuate flows, provide pretreatment and treatment to collected stormwater runoff and maintain groundwater recharge.

The intent of this report is: 1) to analyze the rate of runoff from the site for the pre- and post-development conditions. The drainage system will be designed to maintain the current peak rate of runoff from the site, and 2) to provide stormwater treatment and recharge for the runoff from the development prior to discharging runoff from the site in accordance with the requirements of NHDES Alteration of Terrain and The Town Of Londonderry.

Storm Water Methodology

Pre-Development Conditions

The existing lot is a total of 47.3± acres of which, approximately 15.2 acres will be subdivided for this site, of which 11.1± acres will be disturbed.

The site is abutted by undeveloped industrial uses to the north (GB), developed Industrial uses (IND-1) and developed and undeveloped residential uses to the south and west(GB & AR-1). A large conservation easement is located on site; however, it will not be on the subdivided parcel for this project. The site can be accessed by an existing Town of Londonderry unimproved ROW off the cul-da-sac at North Wentworth Avenue.

Existing topography on the site increases from southwest to northeast beginning at approximate elevation 254 along the southern property line and reaching a maximum elevation of approximately 306 along the northeastern property line. From the high point in the northeast, existing topography contains a series of forested channels and knolls where water has drained to form wetlands.

There is climbing topography offsite to the north which flows onto the project parcel along the northern property line.

Several wetland complexes exist onsite with the largest bisecting the central portion of the parcel east to west. On the northern portion of the site the topography forms two main wetlands, see sheet S-04 of the existing conditions plan. These complexes will be impacted as part of the project

Evaluation points (Point-of-Interest, POI) have been defined by abutting parcels and Right-of-Ways (ROW), and future property lines with HydroCAD Links as follows:

- POI-D: Future Abutting Parcel Lot 14-39-0;
- POI-F: Abutting Parcel Lot 14-38-0;
- POI-E: Abutting Parcel Lot 14-44-0;

Due to the existing topography and the proposed subdivision of the subject parcel, stormwater runoff from the property does not discharge to Lots 47, 44-38, or 44-13. As such, there is no change to existing runoff at these parcels, and they have been excluded from the drainage analysis.

A Site-Specific Soil (SSS) Survey was conducted by a Certified Soil Scientist to determine on-site soil types in accordance with the New Hampshire Supplement of the Site-Specific Soil Mapping Standards for New Hampshire and Vermont, Version 7.0, dated July 2021, Special Publication #3 of the Society of Soil Scientist of Northern New England. This mapping resulted in hydrologic soils group (HSG) type A, B, C, and D soils. The SSS survey has been supplemented with NRCS soils for areas on the subject parcel but outside the area of development.

To model the site drainage, the HydroCAD Version 10.20-5c program has been used. The software is based on the SCS TR-20 technique used for modeling the hydrology and hydraulics of storm water runoff. The 2-year, 10-year, 25-year, and 50-year storm-events are included per the requirements of the NHDES AoT and Town Of Londonderry.

Rainfall amounts were obtained from the Northeast Regional Climate Center and NRCS Storm Type-III was utilized for the HydroCAD Analysis. An Extreme Precipitation Table has been provided in Section 2 of this Report.

Post-Development Conditions

Southern New Hampshire Green Energy Campus will be the new home of an organic waste processing facility in the Town of Londonderry, NH. It will feature two connected resource recovery facilities. The first, RecycleWorks, will receive food waste that normally goes to landfill, including food that has passed its sell by date or is out of specification but is wrapped in glass, plastic, or metal packaging. RecycleWorks will remove the organic waste from that packaging and send it to the second facility on the campus, PurposeEnergy-Londonderry. PurposeEnergy will pump the food waste into tanks that digest it in a process similar to a human stomach. The tanks will also receive dairy waste directly by pipe from a local business, Stonyfield Yogurt. The digester tanks will produce renewable biogas that will be cleaned to pipeline quality and injected into the local natural gas network.

An open and closed drainage system is proposed to attenuate, convey, and treat runoff from the proposed development. A series of catchbasins, sediment forebays, two (2) filtration basins and one (1) surface detention basin will provide pretreatment/treatment and manage runoff for this phase of the project.

As shown in the volume output of the forebay nodes, the available storage is 0 cf. This is further confirmed by the 0.0% voids identified for the storage area. No storage is accounted for within the forebays.

All pre-development evaluation points have been analyzed in the post-development conditions. The post-development drainage model represents the site divided into multiple subcatchments based on the layout of the proposed stormwater collection systems. There is no proposed increase in discharge from the site up to and including the 50-year storm event.

Groundwater Recharge

The required GRV for the HSG A, B, and C soils, which have been replaced by impervious cover per AoT regulations has been provided within the proposed filtration systems. Supporting calculations have been provided on the GRV and Best Management Practices (BMP) Worksheet, Section 3 of this Report.

Stormwater Treatment

Best Management Practices are proposed to manage the stormwater from the development and provide treatment, groundwater recharge and maintain existing flow rates leaving the site.

The proposed filtration systems are designed to maintain existing recharge rates and to preserve groundwater levels. Pollutant removal is achieved as stormwater percolates through the existing subsurface material of the filtration basins. Pretreatment will be

provided prior to stormwater entering the main cell of the basin by sediment forebays, which allow sediment to settle out of the stormwater.

The Water Quality Volume (WQV) is fully detained within the proposed filtration basins/subsurface system providing the storm water treatment.

Test pits and infiltration testing were performed as part of the project design to identify Estimated Seasonal High-Water Table (ESHWT) and subgrade Infiltration Rates. The infiltration rates used in these calculations are based on those values obtained, with a factor of safety.

A Site-Specific Soil Survey (SSS) was conducted by a Certified Soil Scientist at BAG Land Consultants to determine on-site soil types within proposed development areas in accordance with the Site-Specific Soil Mapping Standards for New Hampshire and Vermont, Version 7.0, dated July 2021 of the Society of Soil Scientist of Northern New England. SSS Mapping was utilized to determine the on-site soil characteristics, which in turn, were used to specify CN and Tc values in both the Pre- and Post- development subcatchment analysis.

Erosion Control Measures

Erosion Control Measures are found on the Site Preparation and Demolition Plan within the plan set. The erosion control and construction sequence notes on the Notes Sheets contain specifications for stabilizing disturbed areas and limiting the length of time these areas are exposed.

Temporary Erosion Control Measures

Silt sock and/or mulch berms are proposed along the edges and downslope of site work to prevent sediment from discharging from the project area. A stabilized construction entrance is proposed to prevent sediment from being tracked onto the streets during construction.

Permanent Erosion Control Measures

A combination of open and closed drainage systems is proposed on the site to capture stormwater runoff from the project. Areas of concentrated flow will be stabilized with riprap and discharged to centralized stable discharge points. Areas disturbed during construction which will not be impervious or stabilized with riprap in post-development conditions will be loamed and seeded to restore the areas upon completion of construction.

Flood Protection

Examination of the Flood Insurance Rate Map for Rockingham County New Hampshire (All Jurisdictions), Map Numbered 33015C0316E, Effective Date: May 17, 2005, indicates that the proposed work is not located within the floodplain.

Conclusion

Peak Rate Flows

There is no increase in the peak rate of runoff at the discharge points from this project site.

FLOW (CFS)									
POI	DESCRIPTOR	2-YR		10-YR		25-YR		50-YR	
		PRE	POST	PRE	POST	PRE	POST	PRE	POST
A	14-44-38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B	14-47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	Future abutting lot 14-39-0	0.0	0.0	1.0	0.9	3.5	3.4	7.1	7.5
E	14-44-0	5.7	5.7	8.2	8.2	12.1	12.1	15.5	15.5
F	14-38-0	0.4	0.4	2.1	1.9	4.0	3.5	6.2	5.2

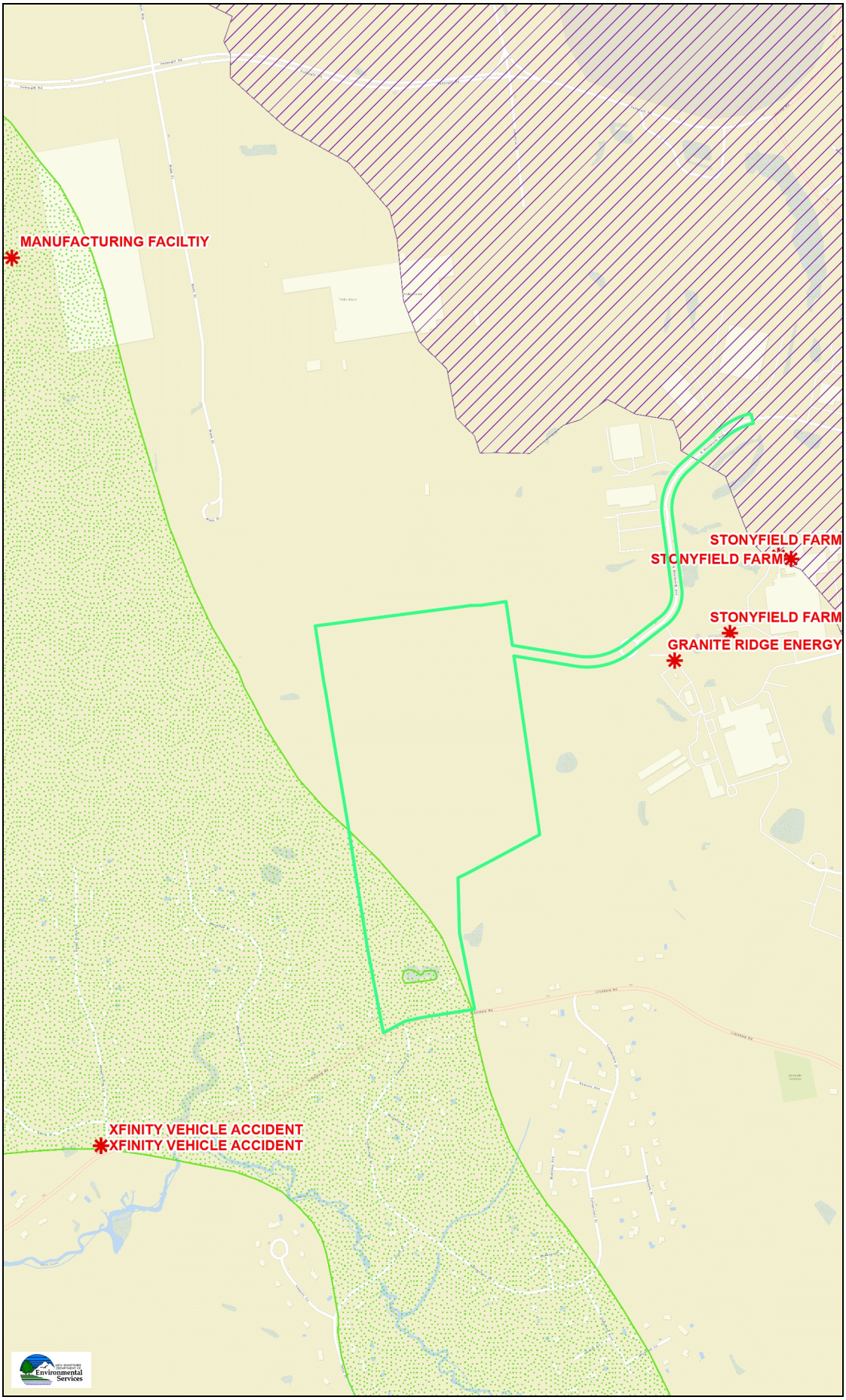
VOLUME (CF)									
POI	DESCRIPTOR	2-YR		10-YR		25-YR		50-YR	
		PRE	POST	PRE	POST	PRE	POST	PRE	POST
A	14-44-38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B	14-47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	Future abutting lot 14-39-0	1,201	494	21,092	24,058	50,611	56,833	86,224	104,477
E	14-44-0	20,738	20,736	29,702	29,965	43,694	44,490	56,433	57,636
F	14-38-0	7,690	7,242	27,066	23,391	47,643	40,076	69,532	57,599

Treatment

The proposed filtration systems have been designed to provide adequate treatment for stormwater runoff.

PART 2

AoT Screening Layers



Legend

- Remediation Sites
- Coastal and Great Bay Regi Communities
- Designated Rivers Quarterm Buffer
- Public Water Supply Wells
- Groundwater Classification / GA1
- Groundwater Classification / GA2
- Water Supply Intake Protect Areas
- Wellhead Protection Areas
- Class A Lakes with a Quarte Buffer
- Class A - All Features
- All Lakes, with a Quarter Mil Buffer
- Outstanding Resource Wate Watersheds
- Surface Waters with Impairm with Quarter Mile Buffer
- Watersheds with Chloride Impairments

Map Scale

1: 10,000

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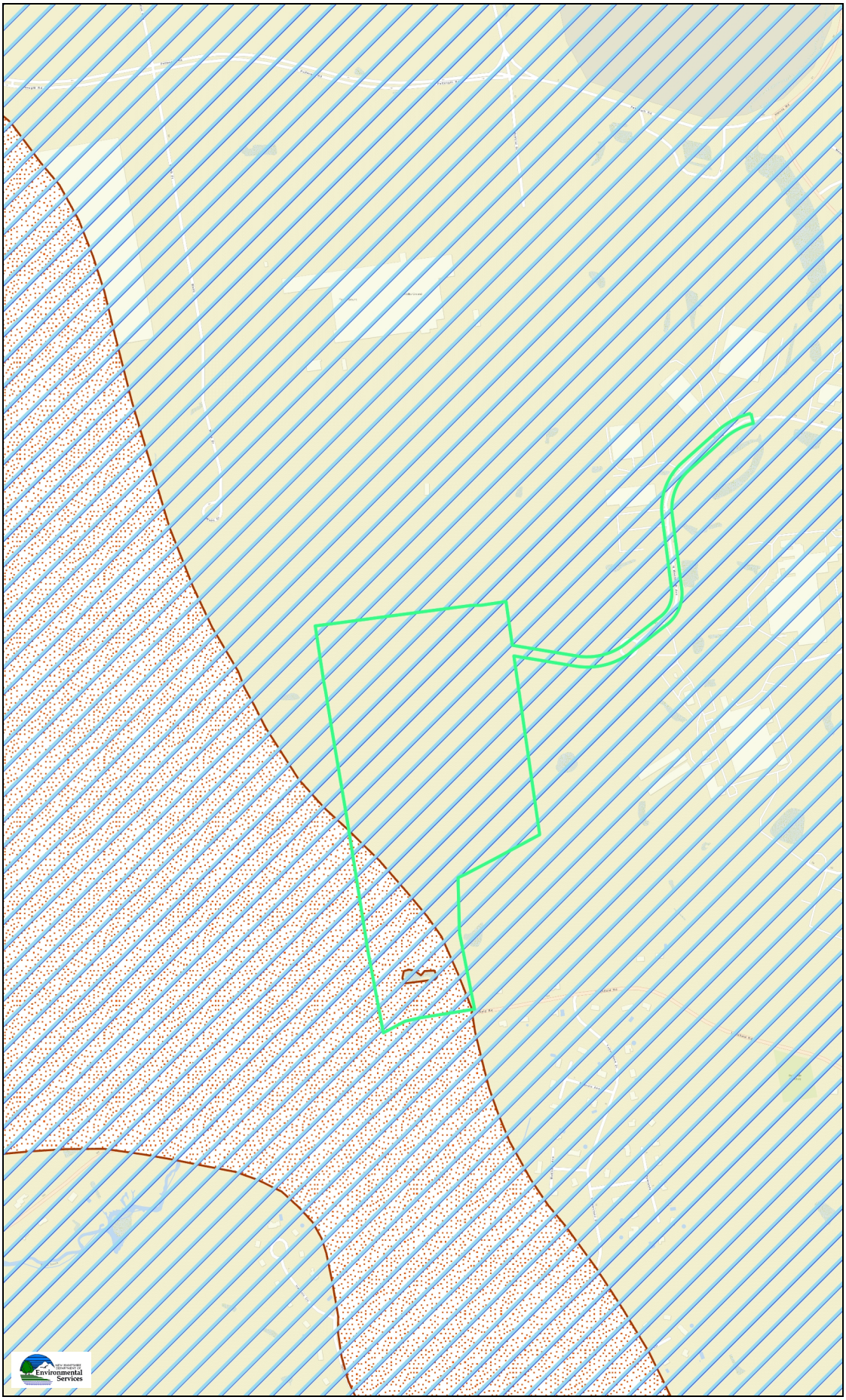
Map Generated: 5/21/2025

Notes

Prepared by: TFMoran, Inc.

Drinking & Groundwater Screening Layers



Legend

- Wellhead Protection Areas
- Hydrologic Areas of Concern
- GA2 High-Yield Stratified-Dr Aquifer

Map Scale

1: 10,000

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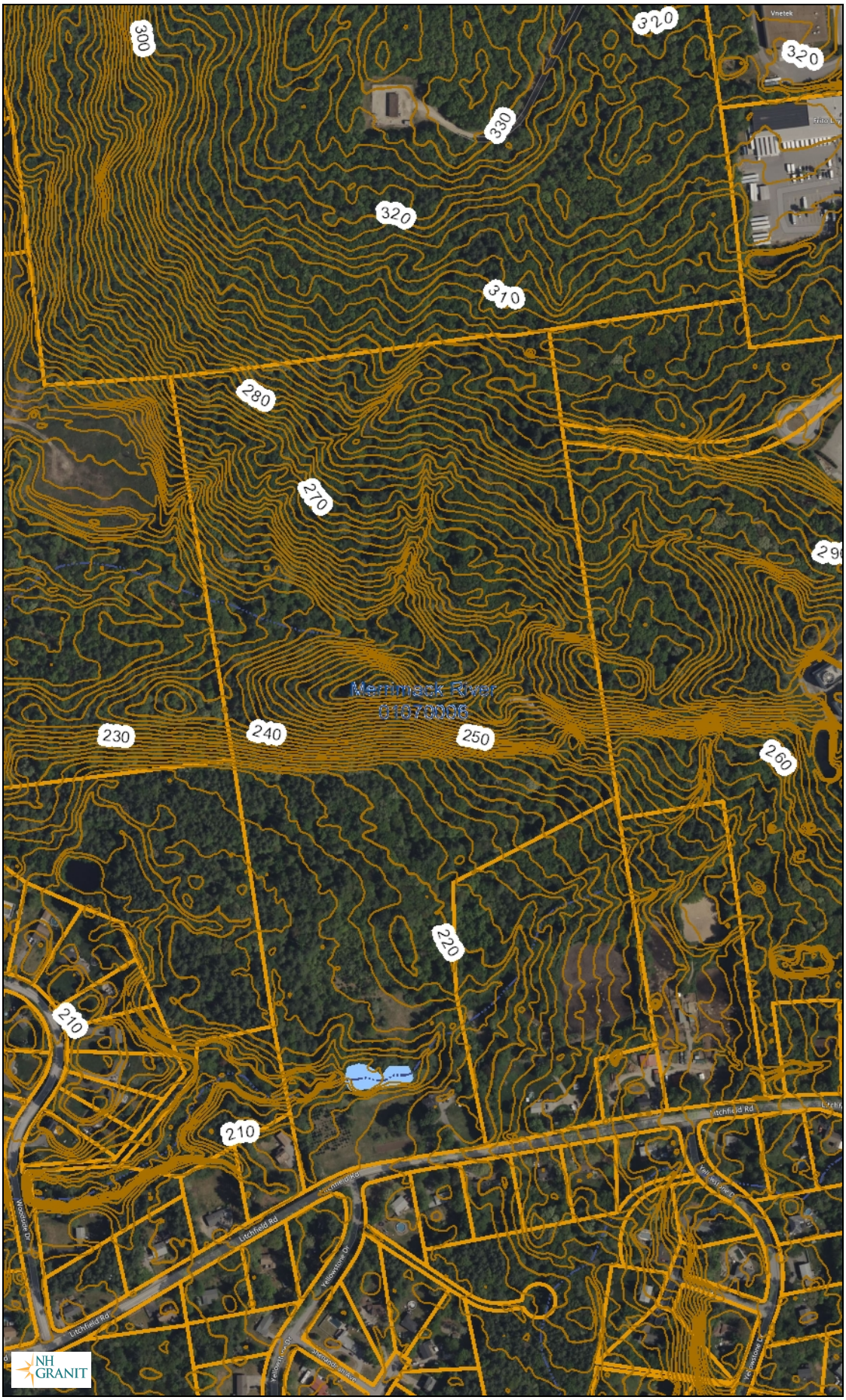
Map Generated: 5/21/2025

Notes

Prepared by: TFMoran, Inc.

Map by NH GRANIT



Legend

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Map Scale

1: 5,000

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Map Generated: 4/2/2025

Notes

Aerial Overview Map
Map 14/Lot 39
Londonderry, NH



B A G
LAND CONSULTANTS

January 3, 2025

Nicholas Golan, P.E.
TF Moran Inc.
48 Constitution Drive
Bedford, NH 03110

RE: Purpose Energy Project [Map 14; Lot 39]
162 Litchfield Road, Londonderry, NH (17.0 Ac +/-)

Dear Nick:

Site Specific Soil Survey Technical Letter Report

At your request, we visited the above-referenced property to perform Site-Specific Soil Map (SSSM) services that will assist in the planning / design of a proposed land development project. Below is a summary report that details the standards utilized, mapped soil descriptions, and any limiting soil features encountered on the property.

Standards

The criteria under which the soil map was prepared is the *Site-specific Soil Mapping Standards for New Hampshire and Vermont*, Version 4.0, February 2011. The standards are based on a universally recognized taxonomic system of soil classification and are supported by national soil mapping standards established by the USDA National Cooperative Soil Survey. They allow for the development of multi-purpose soil map products that are carefully controlled and monitored through a state, regional and national quality assessment program. The SSSM's have been developed by the Society of Soil Scientists of Northern New England (SSSNNE) in cooperation with the USDA Natural Resources Conservation Service (NRCS). This map is a special product, intended for submission to NH DES Alteration of Terrain. This map is not a product of the USDA Natural Resource Conservation Service.

The Site-specific Soil Map Units identified on this property come from the *New Hampshire State-wide Numerical Soils Legend*, Issue 10, January 2011. This document represents the latest release of the permanent New Hampshire State-Wide Numerical Soils Legend since originally developed and adopted by the NRCS of NH in 1985.

Base Map

The soil map was developed on a base map of 1"= 100', with contour intervals of two (2') feet, and ground control indicators provided with detail of existing wetland flag locations, existing stonewalls, and recently established survey traverse stations. The highest elevations are

positioned in the extremely northeast section of our study area. The lowest elevation, on the property, is located in the extreme southwest corner of the study area. Topographic & boundary survey information was compiled onto our base map by your office – TF Moran, Inc., Bedford, NH.

Location

The study site has no road frontage and is located north of Litchfield Road, west of Burton Drive and south of North Wentworth Avenue in the Town of Londonderry, NH. There are no abandoned concrete slabs or any evidence of any building structures on the subject parcel. The entire project study area is approximately 17.0 Ac.+/-. All proposed land improvements will be outside of any shoreland protection zone.

Geomorphology

The site is situated in an area of predominant upland glacial outwash parent materials. There is an intermittent stream flowing from east to west and entering our property along the eastern property line. The observed soil had very good deep depth to ledge. This glaciofluvial parent material onsite was deposited when the last glacial ice started receding / melting over 10,000 years ago.

Legend

The following is the soil identification legend for the site-specific soil map units used in the preparation of the map.

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	SOIL TAXONOMIC NAME	HSG CLASS	DRAINAGE CLASS
26	Windsor	A	Well Drained
313	Deerfield	B	Moderately-well Drained
546 /P	Walpole	C	Poorly Drained

Slope

Slope Designation	Percent Slope
B	0 to 8%
C	8 to 15%
D	15 to 25%
E	> 25%

Limiting Soil Features

Most of the upland areas on this property are in natural undisturbed condition. Very little evidence of any prior earth moving excavations or timber clear cutting activities observed. The soils are capable of providing for excellent Gateway Business zone developmental improvements. The majority of soils mapped are **26** – Windsor a well-drained to excessively

well drained glacial outwash with no restrictive layers in the subsoil or substratum horizons below the soil surface. These soils are very deep to ledge and have a high infiltration rate due to their fine to coarse sandy texture, with a single grain structure and loose consistence. The soils would fall into a hydrologic soil group 'A'.

In the slightly lower dry land elevations we mapped moderately-well drained **313** - Deerfield soils. These soil also have no restrictive features in subsoils or substratum horizons. These soils would fall under a hydrologic soil grouping 'B' category. Some of the lowest elevation soil areas are mapped as **546B**/P – Walpole soil series. These poorly drained soils have no restrictive features and still drain. They would have a slow infiltration rate when thoroughly wetted and fall into a HSG "C" category.

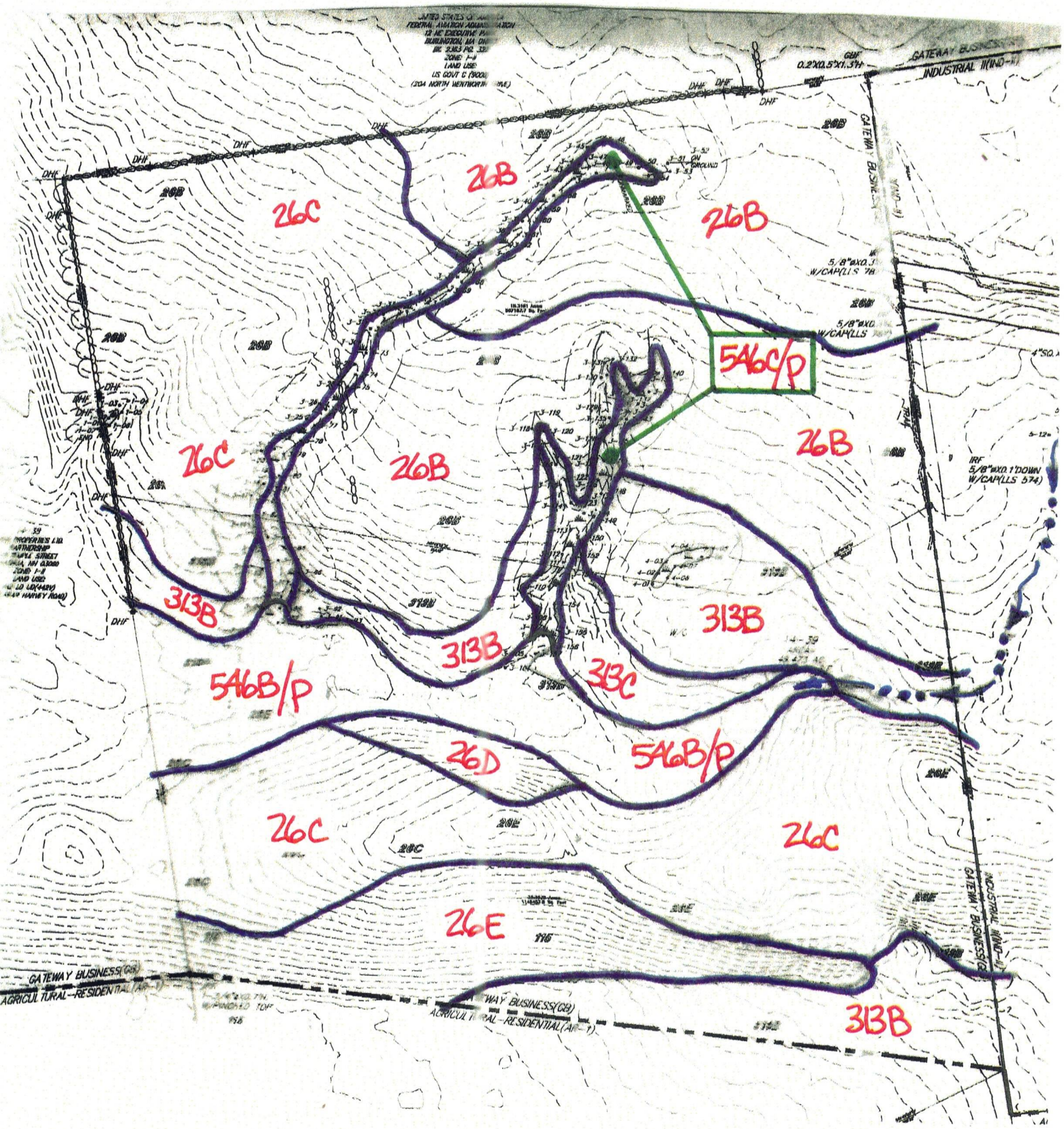
Sincerely,

Bruce A. Gilday

Bruce A. Gilday
Certified Soil Scientist



BAG:35104
Attachment



N.t.s.

BAS # 35104

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Rockingham County, New Hampshire



March 24, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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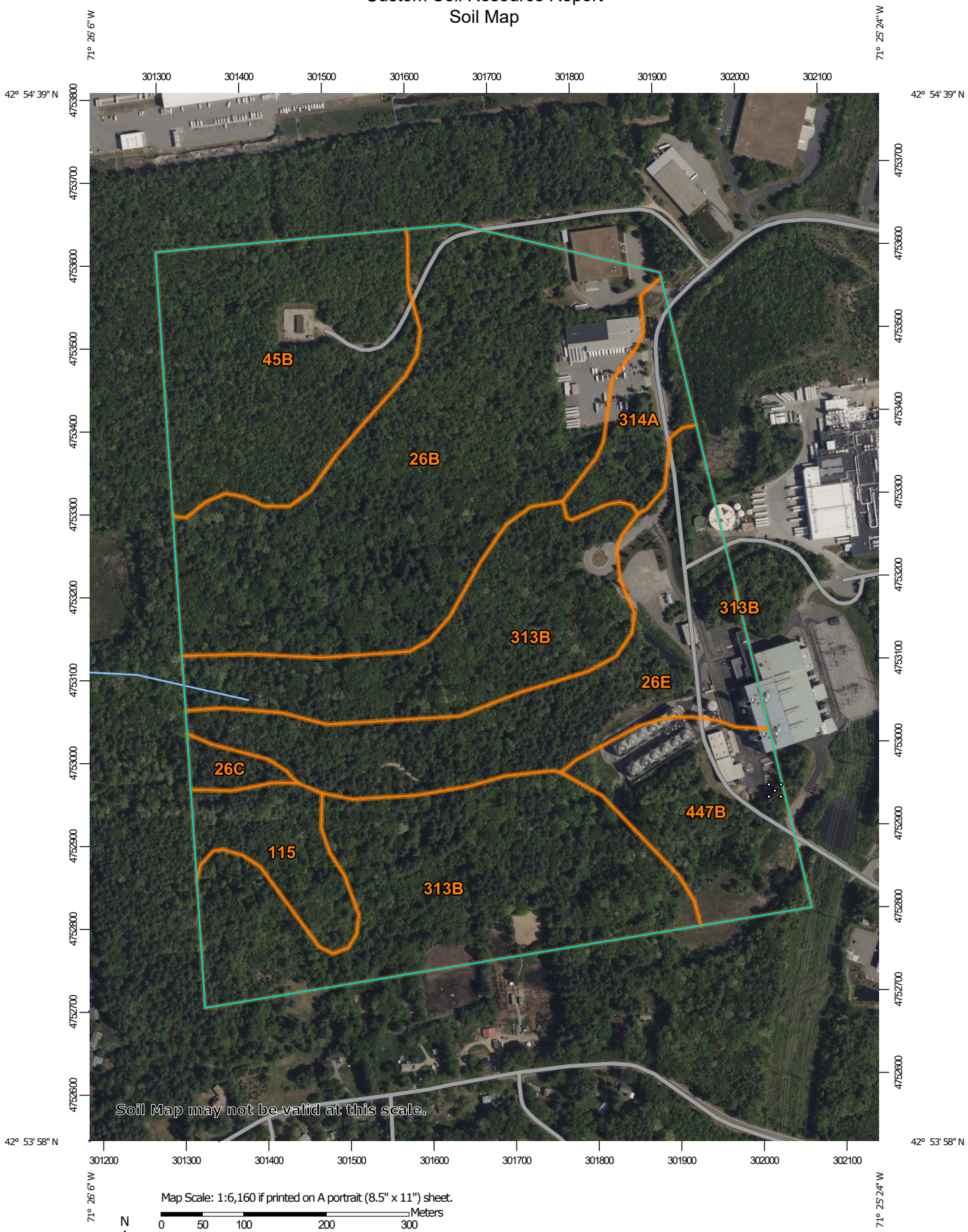
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:6,160 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 27, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
26B	Windsor loamy sand, 3 to 8 percent slopes	38.6	26.6%
26C	Windsor loamy sand, 8 to 15 percent slopes	1.3	0.9%
26E	Windsor loamy sand, 15 to 60 percent slopes	21.2	14.6%
45B	Montauk fine sandy loam, 0 to 8 percent slopes, very stony	20.9	14.4%
115	Scarboro muck, coastal lowland, 0 to 3 percent slopes	5.4	3.7%
313B	Deerfield loamy fine sand, 3 to 8 percent slopes	41.5	28.6%
314A	Pipestone sand, 0 to 5 percent slopes	5.1	3.5%
447B	Scituate-Newfields complex, 3 to 8 percent slopes, very stony	11.1	7.6%
Totals for Area of Interest		**145.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas

are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Rockingham County, New Hampshire

26B—Windsor loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svkf
Elevation: 0 to 1,210 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Farmland of local importance

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: Outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or schist and/or gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Eskers
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Deerfield, loamy sand

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

26C—Windsor loamy sand, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2svkq
Elevation: 0 to 1,260 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: — error in exists on —
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, riser
Down-slope shape: Convex
Across-slope shape: Convex, linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
Ap - 1 to 11 inches: loamy sand

Bw - 11 to 31 inches: loamy sand
C - 31 to 65 inches: sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Deerfield

Percent of map unit: 5 percent
Landform: Deltas, terraces, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

26E—Windsor loamy sand, 15 to 60 percent slopes

Map Unit Setting

National map unit symbol: 2w2ws
Elevation: 0 to 760 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: Dunes, deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 15 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Deerfield

Percent of map unit: 5 percent
Landform: Deltas, terraces, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

45B—Montauk fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w80v
Elevation: 0 to 1,070 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of local importance

Map Unit Composition

Montauk, very stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montauk, Very Stony

Setting

Landform: Recessionial moraines, ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)

Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Scituate, very stony

Percent of map unit: 6 percent
Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Canton, very stony

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, very stony

Percent of map unit: 4 percent
Landform: Depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

115—Scarboro muck, coastal lowland, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svkw
Elevation: 0 to 650 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Scarboro, coastal lowland, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scarboro, Coastal Lowland

Setting

Landform: Depressions, outwash deltas, outwash terraces, drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave, linear
Parent material: Sandy glaciofluvial deposits derived from schist and/or gneiss and/or granite

Typical profile

Oa - 0 to 8 inches: muck
A - 8 to 14 inches: mucky fine sandy loam
Cg1 - 14 to 22 inches: sand
Cg2 - 22 to 65 inches: gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: About 0 to 2 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F144AY031MA - Very Wet Outwash
Hydric soil rating: Yes

Minor Components

Swansea

Percent of map unit: 10 percent
Landform: Bogs, swamps
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Mashpee

Percent of map unit: 5 percent
Landform: Depressions, terraces, drainageways
Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

313B—Deerfield loamy fine sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2xfg9
Elevation: 0 to 1,190 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Deerfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deerfield

Setting

Landform: Outwash deltas, outwash terraces, outwash plains, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand
Bw - 9 to 25 inches: loamy fine sand
BC - 25 to 33 inches: fine sand
Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: About 15 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 11.0
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

Minor Components

Windsor
Percent of map unit: 7 percent
Landform: Outwash terraces, outwash plains, kame terraces, outwash deltas
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Wareham
Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sudbury
Percent of map unit: 2 percent
Landform: Kame terraces, outwash deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Ninigret
Percent of map unit: 1 percent
Landform: Outwash plains, outwash terraces, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Convex, concave
Hydric soil rating: No

314A—Pipestone sand, 0 to 5 percent slopes

Map Unit Setting
National map unit symbol: 9cn2
Elevation: 0 to 2,100 feet
Mean annual precipitation: 28 to 55 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Pipestone and similar soils: 75 percent
Minor components: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pipestone

Setting

Landform: Outwash terraces

Typical profile

H1 - 0 to 6 inches: sand
H2 - 6 to 33 inches: sand
H3 - 33 to 60 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: Yes

Minor Components

Chocorua

Percent of map unit: 5 percent
Landform: Bogs
Hydric soil rating: Yes

Not named wet

Percent of map unit: 5 percent
Landform: Outwash terraces
Hydric soil rating: Yes

Squamscott

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Scarboro

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Deerfield

Percent of map unit: 5 percent
Hydric soil rating: No

447B—Scituate-Newfields complex, 3 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 9cnr
Elevation: 0 to 1,000 feet
Mean annual precipitation: 35 to 56 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 120 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Scituate and similar soils: 50 percent
Newfields and similar soils: 25 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scituate

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 32 inches: cobbly fine sandy loam
H3 - 32 to 60 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Description of Newfields

Setting

Parent material: Till

Typical profile

H1 - 0 to 9 inches: fine sandy loam

H2 - 9 to 35 inches: fine sandy loam
H3 - 35 to 64 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY008CT - Moist Till Uplands
Hydric soil rating: No

Minor Components

Walpole

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Canton

Percent of map unit: 5 percent
Hydric soil rating: No

Not named

Percent of map unit: 5 percent
Hydric soil rating: No

Ridgebury

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Montauk

Percent of map unit: 5 percent
Hydric soil rating: No

State of New Hampshire
DEPARTMENT OF NATURAL & CULTURAL RESOURCES
DIVISION OF HISTORICAL RESOURCES

172 Pembroke Road Concord, New Hampshire 03301
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TDD Access: Relay NH 1-800-735-2964
nhdhr.dncr.nh.gov

March 27, 2025

TFMoran Bedford

Re: 2025PR00341 - Resource Recovery Center

Dear TFMoran Bedford,

In accordance with state and federal statutes [New Hampshire RSA 227C:9 and Section 106 of the National Historic Preservation Act (16 U.S.C. 470)] and with federal Advisory Council on Historic Preservation regulations, Protection of Historic Properties (36 CFR Part 800), the New Hampshire Division of Historical Resources/State Historic Preservation Office (NHSHPO) has reviewed information regarding the above-referenced project.

Based upon this review, no known historic resources appear to be affected by the project. Therefore, it is the opinion of the NHSHPO that the project will result in ***No Historic Properties Affected*** under 36 CFR Part 800.4(d)(1).

No further consultation is required unless there are any changes in approved plans, the need for additional work is identified, or an unanticipated discovery occurs. If further correspondence is required, please refer to the project review number noted above.

If you have any questions, please email Elizabeth Schneible at: elizabeth.a.schneible@dncr.nh.gov

Thank you for the opportunity to comment.

Sincerely,

Nadine Miller

Nadine Miller
Deputy State Historic Preservation Officer
NH Division of Historical Resources

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point

Smoothing	Yes
State	New Hampshire
Location	New Hampshire, United States
Latitude	42.905 degrees North
Longitude	71.43 degrees West
Elevation	80 feet
Date/Time	Fri Jun 06 2025 13:10:42 GMT-0400 (Eastern Daylight Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day
1yr	0.27	0.41	0.51	0.67	0.84	1.05	**1yr**	0.72	1.00	1.22	1.53	1.93	2.44	2.67	**1yr**	2.16	2.57
2yr	0.33	0.50	0.62	0.82	1.03	1.30	**2yr**	0.89	1.19	1.50	1.87	2.33	2.90	3.22	**2yr**	2.57	3.10
5yr	0.39	0.60	0.75	1.01	1.29	1.63	**5yr**	1.11	1.49	1.89	2.37	2.95	3.66	4.11	**5yr**	3.24	3.95
10yr	0.43	0.68	0.86	1.17	1.52	1.95	**10yr**	1.31	1.76	2.27	2.84	3.53	4.37	4.93	**10yr**	3.87	4.75
25yr	0.51	0.82	1.04	1.43	1.90	2.45	**25yr**	1.64	2.20	2.87	3.60	4.48	5.53	6.30	**25yr**	4.89	6.06
50yr	0.58	0.93	1.19	1.67	2.25	2.94	**50yr**	1.94	2.60	3.44	4.33	5.38	6.60	7.58	**50yr**	5.84	7.29
100yr	0.66	1.07	1.38	1.96	2.67	3.51	**100yr**	2.30	3.09	4.11	5.18	6.43	7.89	9.13	**100yr**	6.98	8.78
200yr	0.75	1.23	1.60	2.29	3.17	4.19	**200yr**	2.73	3.66	4.93	6.21	7.70	9.43	11.00	**200yr**	8.35	10.5
500yr	0.91	1.50	1.96	2.84	3.97	5.28	**500yr**	3.43	4.59	6.23	7.87	9.76	11.96	14.09	**500yr**	10.58	13.5

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day
1yr	0.22	0.34	0.42	0.56	0.69	0.83	**1yr**	0.60	0.81	1.06	1.32	1.64	2.30	2.54	**1yr**	2.03	2.44
2	0.31	0.48	0.59	0.80	0.98	1.18	**2**	0.85	1.15	1.34	1.76	2.26	2.82	3.14	**2**	2.50	3.02

National Flood Hazard Layer FIRMette

FEMA

71°26'12"W 42°54'31"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

71°25'34"W 42°54'5"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/6/2025 at 5:16 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

To: Jeremy Belanger
48 Consitution Dr
Bedford, NH 03110
jbelanger@tfmoran.com

From: NHB Review
NH Natural Heritage Bureau
Main Contact: Ashley Litwinenko - nhbreview@dncr.nh.gov

cc: NHFG Review

Date: 06/11/2024 (valid until 06/11/2025)
Re: DataCheck Review by NH Natural Heritage Bureau and NH Fish & Game
Permits: MUNICIPAL POR - Londonderry, NHDES - Alteration of Terrain Permit, NHDES - Standard Dredge & Fill - Major, USACE - General Permit, USEPA - Stormwater Pollution Prevention

NHB ID: NHB24-1680

Town: Londonderry
Location: 162 Litchfield Road & North Wentworth Ave

Project Description: The project proposes to construct a receiving station for trucked organic waste that would otherwise be directed to NH landfills. The facility will consist of equipment for de-packaging off-spec organic products that did not meet commercial standards for sale or otherwise have passed sell by dates. This equipment will be fully enclosed, and the structure designed with charcoal filtering for odor control. The facility is best defined as a food processing use. The project will also include accommodations for access, parking, and stormwater management.

Next Steps for Applicant:

NHB's database has been searched for records of rare species and exemplary natural communities. Please carefully read the comments and consultation requirements below.

NHB Comments: Please send NHB proposed plans and representative photos during the growing season of the proposed impact areas.

NHFG Comments: Please refer to NHFG consultation requirements below.

NHB Consultation

If this NHB DataCheck letter includes records of rare plants and/or natural communities/systems, please contact NHB and provide any requested supplementary materials by emailing nhbreview@dncr.nh.gov.

If this NHB DataCheck letter DOES NOT include any records of rare plants and/or natural communities/systems, no further consultation with NHB is required.

NH Fish and Game Department Consultation

If this NHB DataCheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB DataCheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://www.wildlife.nh.gov/wildlife-and-habitat/nongame-and-endangered-species/environmental-review. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB DataCheck results letter number and "Fis 1004 consultation request" in the subject line**.

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule*), coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email NHFGreview@wildlife.nh.gov, and include the NHB DataCheck results letter number and "review request" in the email subject line.
Contact NH Fish & Game at (603) 271-0467 with questions.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB Database Records:
The following record(s) have been documented in the vicinity of the proposed project.
Please see the map and detailed information about the record(s) on the following pages.

Plant species	State[1]	Federal	Notes
long-leaved bluet (*Houstonia longifolia*)	E	--	Occurs on talus slopes, sandplains/disturbed openings, and dry forests/thin woods. Threats would include recreational or development activities that would trample the plants or disturb their habitat.

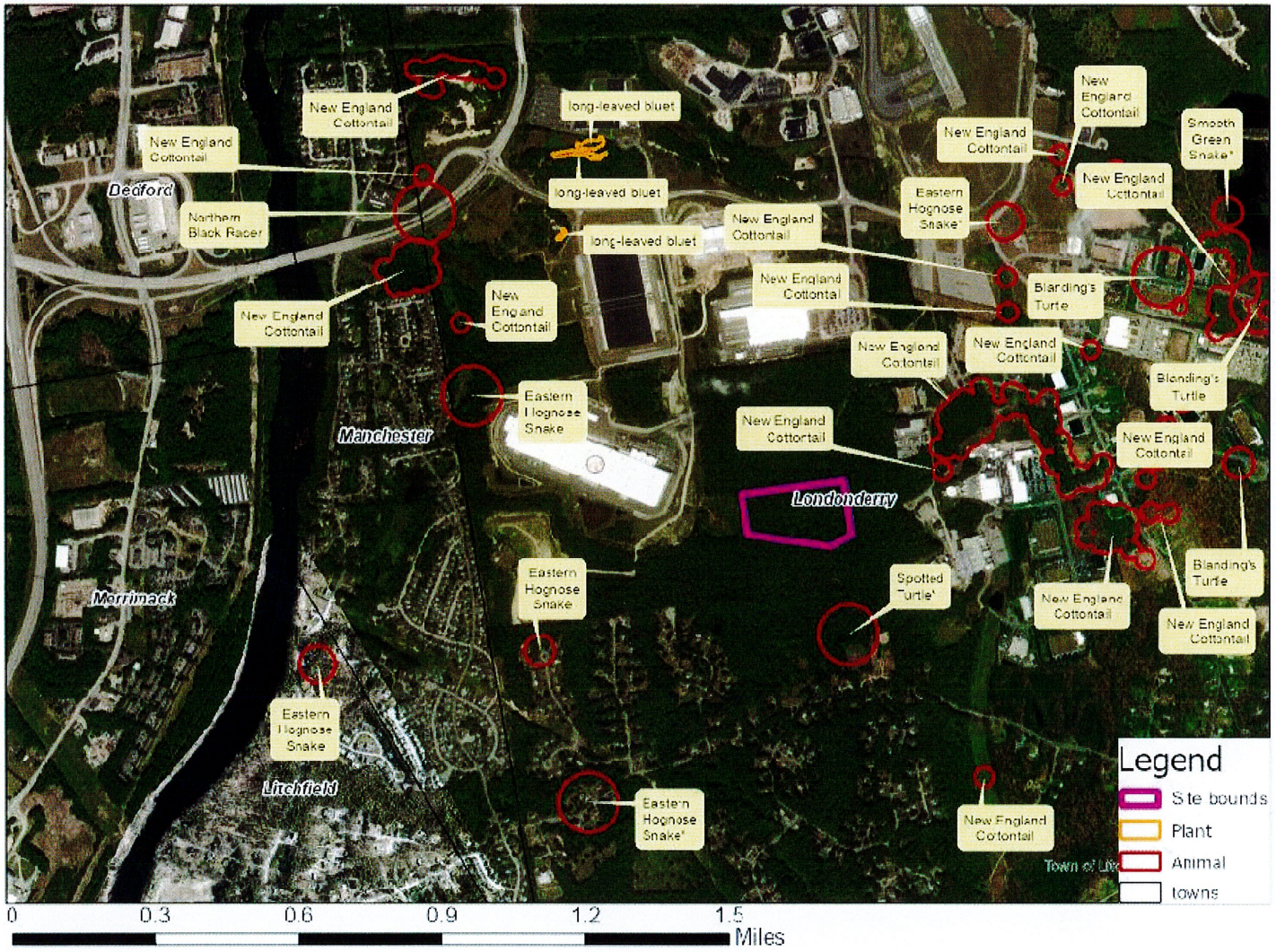
Vertebrate species	State[1]	Federal	Notes
Blanding's Turtle (*Emydoidea blandingii*)	E	--	Contact the NH Fish & Game Dept (see below).
Eastern Hognose Snake (*Heterodon platirhinos*)	E	--	Contact the NH Fish & Game Dept (see above).
New England Cottontail (*Sylvilagus transitionalis*)	E	--	Contact the NH Fish & Game Dept (see above).
Northern Black Racer (*Coluber constrictor constrictor*)	T	--	Contact the NH Fish & Game Dept (see above).
Smooth Green Snake (*Opheodrys vernalis*)*	SC	--	Contact the NH Fish & Game Dept (see above).
Spotted Turtle (*Clemmys guttata*)*	T	--	Contact the NH Fish & Game Dept (see below).

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list.
An asterisk (*) indicates that the most recent report for that occurrence was 20 or more years ago.

For all animal reviews, refer to 'IMPORTANT: NHFG Consultation' section above.

Disclaimer: NHB's database can only tell you of known occurrences that have been reported to NHFG/NHB. Known occurrences are based on information gathered by qualified biologists or members of the public, reported to our offices, and verified by NHB/NHFG.
However, many areas have never been surveyed, or have only been surveyed for certain species.
NHB recommends surveys to determine what species/natural communities are present onsite.

NHB24-1680


New England Cottontail
long-leaved bluet
Smooth Green Snake*
Eastern Hognose Snake*
Northern Black Racer
Blanding's Turtle
Spotted Turtle*
Bedford
Manchester
Londonderry
Merrimack
Litchfield
Legend
Site bounds
Plant
Animal
towns
0
0.3
0.6
0.9
1.2
1.5
Miles

NHB24-1680 EOCODE: PDRUB1T0E0*001*NH

New Hampshire Natural Heritage Bureau - Plant Record

long-leaved bluet (*Houstonia longifolia*)

Legal Status	Conservation Status
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2023: Area 1, northern polygon: over 300 plants in clumps within an area measuring approximately 1,555 m. Some large clumps with 70+ stems; majority of plants with 2-5 stems. 2014: Area 2: Approximately 10-12 plants at three locations. Plants growing in tight clumps. 1999: Several hundred plants in flower, in small patches over ca. one-half acre. No date: Specimen collected. 1902: Specimen 45353 at NHA.

General Area: 2023: Area 1, northern polygon: Plants were located along the sandy drive in mostly open areas and in partial sun. No plants located within forest edge, only up to it. Habitat west of the population very dense with understory vegetation and grass. Associated species include sweet-fern, yarrow (*Achillea millefolium*), oak (*Quercus* sp.), and haircap moss (*Polytrichum commune*). 2014: Area 2: Plants are located at the edge of an old sand pit with a sapling layer of gray birch (*Betula populifolia*) and quaking aspen (*Populus tremuloides*), and a shrub layer of sweet-fern (*Comptonia peregrina*). 1999: Edge habitat between grassy field and encroaching second-growth hardwoods.

General Comments: Original 1902 specimen placed in Manchester. Site discovered in 1999 is in Londonderry, 1.75 km south and 0.5 km east of the Manchester town line.

Management Comments: 2023: Excavator observed parked on plant. Sandy road cutting through area. Site visited for environmental review. 2014: Protection measures were put into place for cutting of the adjacent lot. 1999: Area may have burned not long ago (cinders present), helping to create open to lightly-shaded setting.

Location

Survey Site Name: Manchester Airport, south of
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 1.2 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2023: Area 1: Site is north of Pettengill Road and west of Innovation Way (42.916857, -71.440852). 2014: Area 2: Site is immediately adjacent to recently constructed Pettengill Road.

NHB24-1680 EOCODE: PDRUB1T0E0*001*NH

1999: Travel south on Brown Avenue past its point of divergence with Rte 3A. Stay left and park just before Brown Avenue rejoins 3A in an empty lot at a gate to the entrance of a sandpit. Walk due east to the eastern edge of the sandpit, near the tip of an elongated extension of grassland into the woods.

Dates documented

First reported: 1902-06-30 Last reported: 2023-06-20

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARAAD04010*387*NH

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2009: Area 12308: 1 observed.
General Area: 2009: Area 12308: In residential building.
General Comments: --
Management Comments: --

Location

Survey Site Name: Nesenkeag Brook
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2009: Area 12308: 13 Delta Drive, Suite 7, Londonderry.

Dates documented

First reported: 2009-09-23 Last reported: 2009-09-23

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARAAD04010*724*NH

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status	Conservation Status
Federal: Not listed	Global: Apparently secure but with cause for concern
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2012: Area 13045: 1 adult observed.
General Area: 2012: Area 13045: Gravel road shoulder near wetland forest.
General Comments: --
Management Comments: --

Location

Survey Site Name: Nesenkeag Brook
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2012: Area 13045: Aviation Park Drive, Londonderry, just before cul-de-sac at end of road.

Dates documented

First reported: 2012-06-07 Last reported: 2012-06-07

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARAAD04010*949*NH

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2014: Area 13919: 1 adult observed, sex unknown.
General Area: 2014: Area 13919: Office park just west of Little Cohas Brook
General Comments: --
Management Comments: --

Location

Survey Site Name: Nesenkeag Brook
Managed By:

County: Rockingham
Town(s): Londonderry
Size: .4 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2014: Area 13919: Outside of office building on Delta Drive, Londonderry (42.91197, -71.41648).

Dates documented

First reported: 2014-06-12 Last reported: 2014-06-12

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARAAD04010*139*NH

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status	Conservation Status
Federal: Not listed	Global: Apparently secure but with cause for concern
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2004: Area 9278: 1 turtle.
General Area: --
General Comments: --
Management Comments: --

Location

Survey Site Name: Nesenkeag Brook
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2004: Area 9278: End of Delta Road off of Harvey Road behind the Londonderry Armed Forces Reserve Center.

Dates documented

First reported: 2004-05-15 Last reported: 2004-05-15

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARADB17020*008*NH

New Hampshire Natural Heritage Bureau - Animal Record

Eastern Hognose Snake (*Heterodon platirhinos*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2012: Area 13089: 1 adult observed, 18-20" in length. 2008: Area 11548: 1 adult seen. 1984: Area 12169M: 1 observed. 1979: Area 11548a: 1 snake found in garden and killed. 1972: Area 6596: 1 seen. Adult. Area 12169M: 1 individual observed, 16-18 inches long.

General Area: 2012: Area 13089: Residential yard in wooded area. 2008: Area 11548: It was located just to the north and east of the bigger pond on the north end of the parcel. 1979: Area 11548a: Snake found in garden. 1972: Area 12169M: In a small cemetary. Area shaded and grassy.

General Comments: 2003: Area 12169M: Formerly Pettengill Cemetery. Now busy road. NHNHB was contacted on 29 June 1984 by a neighbor of individual who killed the snake.

Management Comments: --

Location

Survey Site Name: Litchfield
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 12.5 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2012: Area 13089: End of Sunflower Lane in Londonderry. The woods in the back border the Manchester town line. 1979: Litchfield. About 4 houses over town line from Manchester on Rte. 3. 1972: Area 6596: Bill Boucher residence, 272 Litchfield Road, 1/2 mile east of Route 3A at the junction of Watts Brook. Area 12169M: Londonderry. Found in a small old cemetary on north side of Pettingill Road which runs west off of Harvey Road. Near Little Cohas Marsh.

Dates documented

First reported: 1972-07-01 Last reported: 2012-09-02

NHB24-1680 EOCODE: ARADB17020*008*NH

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARADB17020*012*NH

New Hampshire Natural Heritage Bureau - Animal Record

Eastern Hognose Snake (*Heterodon platirhinos*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 1984: Area 12169M: 1 observed. 1972: Area 12169M: 1 individual observed, 16-18 inches long.
General Area: 1971: Area 12169M: In a small cemetary. Area shaded and grassy.
General Comments: 2003: Area 12169M: Formerly Pettengill Cemetery. Now busy road. More field work needed.
Management Comments: --

Location

Survey Site Name: Londonderry Cemetary
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 2.8 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 1972: Area 12169M: Londonderry. Found in a small old cemetary on north side of Pettingill Road which runs west off of Harvey Road. Near Little Cohas Marsh.

Dates documented

First reported: 1971 Last reported: 1984-07-01

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARADB17020*022*NH

New Hampshire Natural Heritage Bureau - Animal Record

Eastern Hognose Snake (*Heterodon platirhinos*)

Legal Status	Conservation Status
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 1972: Area 6596: 1 seen. Adult.
General Area: --
General Comments: --
Management Comments: --

Location

Survey Site Name: Watts Brook
Managed By: The Pathway Common Land

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 1972: Area 6596: Bill Boucher residence, 272 Litchfield Road, 1/2 mile east of Route 3A at the junction of Watts Brook.

Dates documented

First reported: 1972-07-01 Last reported: 1972-07-01

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: AMAEB01110*020*NH

New Hampshire Natural Heritage Bureau - Animal Record

New England Cottontail (*Sylvilagus transitionalis*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Rare or uncommon
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2020: Buckthorn: Winter observations at 8 points. Charlotte: Winter observations at 4 points. Pettengill: Winter observations at 5 points. Stonyfield: Winter observations at 9 points. 2019: Buckthorn: Winter observations at 38 points. Charlotte: Winter observations at 2 points. Pettengill: Winter observations at 4 points. Stonyfield: Winter observations at 39 points. 2018: Buckthorn: Winter observations at 32 points. Charlotte: Winter observations at 2 points. Stonyfield: Winter observations at 21 points. 2017: Buckthorn: Winter observations at 5 points. Charlotte: Winter observations at 33 points. Pettengill: Winter observations at 2 points. Stonyfield: Winter observations at 55 points. 2016: Buckthorn: Winter observations at 42 points. Pettengill: Winter observation at 1 point. Stonyfield: Winter observations at 38 points. 2015: Winter observations at 5 points. 2014: Winter observations at 3 points. 2013: Winter observations at 13 points. 2011: Winter observations at 32 points. 2002: 1+ age and sex unknowns (Obs_id 744).
General Area: 2002: Terrestrial: grassland / field (Obs_id 744).
General Comments: 2002: Results of J. Litvaitis Regional NEC Survey - 2003 (Obs_id 744).
Management Comments: --

Location

Survey Site Name: Little Cohas Brook, south of
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 88.6 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2017: Charlotte: [Points on NH DOT property at north end of Charlotte Street, Manchester, south of Raymond Wieczorek Drive.] 2016: Pettengill: [6 Pettengill Road, Manchester]. Buckthorn: [Points east of Manchester Airport and west of Mammoth Road]. Stonyfield:

NHB24-1680 EOCODE: AMAEB01110*020*NH

[Points in the vicinity of the Stonyfield yogurt facility off Burton Drive, Londonderry]. 2002: Stonyfield Farm (Obs_id 744).

Dates documented

First reported: 2002-02-02 Last reported: 2020-02-28

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARADB0701D*019*NH

New Hampshire Natural Heritage Bureau - Animal Record

Northern Black Racer (*Coluber constrictor constrictor*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2004: 1 seen. Adult. (Obs_id 2004.0054).
General Area: 2004: Dirt road next to field with old grass, near beaver pond. Restored gravel pit. Lots of dirt bike/ATV trails. Big housing development nearby. (Obs_id 2004.0054).
General Comments: --
Management Comments: --

Location

Survey Site Name: Manchester Industrial Park, south of
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2004: Rehabilitated gravel pit on west end of Pettingil Road (Obs_id 2004.0054).

Dates documented

First reported: 2004-04-27 Last reported: 2004-04-27

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NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARADB47010*030*NH

New Hampshire Natural Heritage Bureau - Animal Record

Smooth Green Snake (*Opheodrys vernalis*)

Legal Status	Conservation Status
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Special Concern	State: Rare or uncommon

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2003: Area 1044: 1 observed.
General Area: 2003: Area 1044: Marsh.
General Comments: --
Management Comments: --

Location

Survey Site Name: Little Cohas Marsh
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2003: Area 1044: West shore of marsh, 1/4 mile south of the dam, on the perimeter of the Army National Guard detention pond

Dates documented

First reported: 2003-09-17 Last reported: 2003-09-17

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NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARAAD02010*079*NH

New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)

Legal Status	Conservation Status
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Threatened	State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: --

Detailed Description: 1997: Area 9260: 1 adult (8-9 years old) turtle observed, 7-8 inches long.
General Area: --
General Comments: 1997: Area 9620: Airport mitigation site review. Land to be an industrial development.
Management Comments: --

Location

Survey Site Name: Watts Brook
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 1997: Area 9260: Small stream running west from Stonyfield Farm Yogurt.

Dates documented

First reported: 1997-05-01 Last reported: 1997-05-01

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists



Photo #1: North Wentworth Ave. right of way crossing of Tier 1 intermittent stream looking southeast



Photo #2: North Wentworth Ave. stream crossing looking upstream to the northeast

TFMoran, Inc.

48 Constitution Drive, Bedford, NH 03110

T(603) 472-4488 | www.tfmoran.com

TFMoran, Inc. Seacoast Division

170 Commerce Way–Suite 102 Portsmouth,NH 03801

T(603) 431-2222 | www.tfmoran.com

Civil Engineers
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Photo #3: Wetland 4 is a small, isolated depression located in the center of the site, looking northeast



Photo#4 Uplands adjacent to Wetland 3 and Wetland 4 looking north from WF3-148

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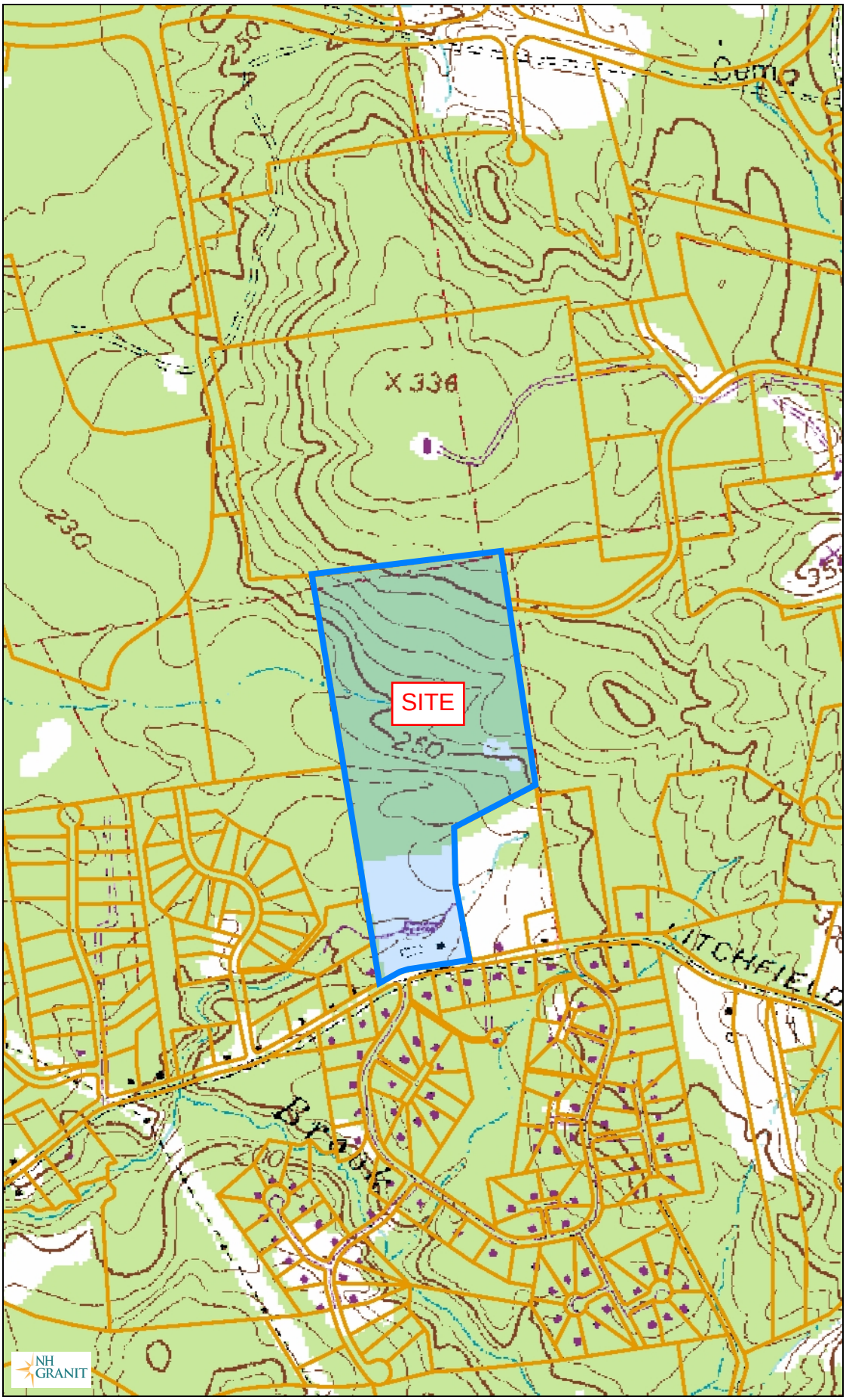
Photo#5: Junction of two gullies within proposed construction area looking north from WF3-112



Photo#6: Narrow wetland gully at WF3-150 looking south

Map by NH GRANIT



Legend

- Parcels
- State
- County
- City/Town

Map Scale

1: 10,000

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Map Generated: 4/2/2025

Notes

7.5 min USGS Topo



PART 3

GROUNDWATER RECHARGE VOLULME (GRV) CALCULATION (Env-Wq 1507.04)

5.81	ac	Area of HSG A soil that was replaced by impervious cover	0.40"
-	ac	Area of HSG B soil that was replaced by impervious cover	0.25"
0.18	ac	Area of HSG C soil that was replaced by impervious cover	0.10"
-	ac	Area of HSG D soil or impervious cover that was replaced by impervious cover	0.0"
0.39	inches	Rd = Weighted groundwater recharge depth	
2.3438	ac-in	GRV = AI * Rd	
8,508	cf	GRV conversion (ac-in x 43,560 sf/ac x 1ft/12”)	

Provide calculations below showing that the project meets the groundwater recharge requirements (Env-Wq 1507.04):

Filtration Basin #1 = 13,348 cf

Filtration Basin #2 = 21,187 cf

Total = 34535 cf

Calculated by J. Devine, EIT 12/18/2025

FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.07)

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

Type/Node Name: **Filtration Basin 1**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

YES		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
10.52	ac	A = Area draining to the practice	
3.02	ac	A_I = Impervious area draining to the practice	
0.29	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.31	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
3.24	ac-in	WQV= 1" x Rv x A	
11,779	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
2,945	cf	25% x WQV (check calc for sediment forebay volume)	
8,834	cf	75% x WQV (check calc for surface sand filter volume)	
Sediment forebay		Method of Pretreatment? (not required for clean or roof runoff)	
3,260	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
7,027	sf	A_{SA} = Surface area of the practice	
1.25	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]	
		If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
	Yes/No	(Use the calculations below)	
16.1	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
-	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
271.50	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
-	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
269.83	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
266.50	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
271.50	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
5.00	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
1.67	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
277.00	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
278.00	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	**← yes**
If a surface sand filter or underground sand filter is proposed:			
NO	ac	Drainage Area check.	**< 10 ac**
-	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 75%WQV**
	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification.	
	Yes/No	Access grate provided?	**← yes**

If a bioretention area is proposed:			
NO	ac	Drainage Area no larger than 5 ac?	**← yes**
13,348	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ WQV**
18.0	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet	D-21	Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	**≥ 3:1**
Sheet	D-21	Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A_{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet		Note what sheet in the plan set contains the filter course spec.	

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

ESHWT = TP #1 = 272.5 - 32" = 269.83

Infiltration Rate = Average IT #1 & IT #2 = (0.33 + 4.68)/2 x FS = 1.3 in/hr

Impervious area calc includes gravel surfaces

forebay volume based on below lowest outlet to FB1

Calculated by J. Devine EIT 12/18/25

FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.07)

Type/Node Name: **Filtration Basin 2**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

YES		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
11.79	ac	A = Area draining to the practice	
4.00	ac	A_I = Impervious area draining to the practice	
0.34	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.36	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
4.19	ac-in	WQV= 1" x Rv x A	
15,215	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
3,804	cf	25% x WQV (check calc for sediment forebay volume)	
11,412	cf	75% x WQV (check calc for surface sand filter volume)	
Sediment forebay		Method of Pretreatment? (not required for clean or roof runoff)	
3,861	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
15,250	sf	A_{SA} = Surface area of the practice	
3.82	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]	
		If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
	Yes/No	(Use the calculations below)	
3.1	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
-	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
275.50	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
-	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
274.23	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
271.90	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
275.50	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
3.60	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
1.27	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
278.97	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
280.00	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	**← yes**
If a surface sand filter or underground sand filter is proposed:			
NO	ac	Drainage Area check.	**< 10 ac**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 75%WQV**
	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification.	
Yes	Yes/No	Access grate provided?	**← yes**

If a bioretention area is proposed:			
NO	ac	Drainage Area no larger than 5 ac?	**← yes**
21,187	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ WQV**
18.0	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet	D-21	Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	**≥ 3:1**
Sheet	D-21	Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A_{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet		Note what sheet in the plan set contains the filter course spec.	

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

ESHWT = TP #4 = 276.9 - 32" = 274.23

Infiltration Rate = IT #4, IT #5 = (6.73 + 8.45)/2 x FS = 3.818 in/hr

Calculated by J. Devine EIT 12/18/2025

Stage-Area-Storage for Pond FB1: FILT. BASIN #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
271.50	7,427	0
271.60	7,427	297
271.70	7,427	594
271.80	7,427	891
271.90	7,427	1,188
272.00	7,427	1,485
272.10	7,427	1,782
272.20	7,427	2,080
272.30	7,427	2,377
272.40	7,427	2,674
272.50	7,427	2,971
272.60	7,427	3,268
272.70	7,427	3,565
272.80	7,427	3,862
272.90	7,427	4,159
273.00	7,427	4,501
273.10	7,822	5,263
273.20	8,216	6,065
273.30	8,611	6,906
273.40	9,005	7,787
273.50	9,400	8,707
273.60	9,794	9,667
273.70	10,188	10,666
273.80	10,583	11,705
273.90	10,977	12,783
274.00	11,372	13,900
274.10	11,513	15,045
274.20	11,654	16,203
274.30	11,795	17,375
274.40	11,936	18,562
274.50	12,078	19,763
274.60	12,219	20,977
274.70	12,360	22,206
274.80	12,501	23,449
274.90	12,642	24,707
275.00	12,783	25,978
275.10	12,930	27,263
275.20	13,076	28,564
275.30	13,223	29,879
275.40	13,370	31,208
275.50	13,517	32,553
275.60	13,663	33,912
275.70	13,810	35,285
275.80	13,957	36,674
275.90	14,103	38,077
276.00	14,250	39,494
276.10	14,402	40,927
276.20	14,555	42,375
276.30	14,707	43,838
276.40	14,860	45,316
276.50	15,012	46,810
276.60	15,164	48,319
276.70	15,317	49,843
276.80	15,469	51,382
276.90	15,622	52,936
277.00	15,774	54,506
277.10	15,932	56,092
277.20	16,090	57,693
277.30	16,248	59,310
277.40	16,406	60,942
277.50	16,564	62,591
277.60	16,722	64,255
277.70	16,880	65,935
277.80	17,038	67,631
277.90	17,196	69,343
278.00	17,354	71,070
278.10	17,900	72,833
278.20	18,445	74,650
278.30	**18,991**	**76,522**

Stage-Area-Storage for Pond FB2: FILT. BASIN #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
275.50	15,250	0
275.55	15,250	305
275.60	15,250	610
275.65	15,250	915
275.70	15,250	1,220
275.75	15,250	1,525
275.80	15,250	1,830
275.85	15,250	2,135
275.90	15,250	2,440
275.95	15,250	2,745
276.00	15,250	3,050
276.05	15,250	3,355
276.10	15,250	3,660
276.15	15,250	3,965
276.20	15,250	4,270
276.25	15,250	4,575
276.30	15,250	4,880
276.35	15,250	5,185
276.40	15,250	5,490
276.45	15,250	5,795
276.50	15,250	6,100
276.55	15,250	6,405
276.60	15,250	6,710
276.65	15,250	7,015
276.70	15,250	7,320
276.75	15,250	7,625
276.80	15,250	7,930
276.85	15,250	8,235
276.90	15,250	8,540
276.95	15,250	8,845
277.00	15,250	9,241
277.05	15,340	10,006
277.10	15,430	10,776
277.15	15,520	11,549
277.20	15,610	12,327
277.25	15,700	13,110
277.30	15,790	13,898
277.35	15,880	14,689
277.40	15,970	15,485
277.45	16,060	16,286
277.50	16,150	17,091
277.55	16,240	17,901
277.60	16,330	18,716
277.65	16,420	19,534
277.70	16,510	20,357
277.75	16,600	21,185
277.80	16,690	22,018
277.85	16,780	22,854
277.90	16,870	23,695
277.95	16,960	24,541
278.00	17,050	25,391
278.05	17,143	26,246
278.10	17,236	27,106
278.15	17,329	27,970
278.20	17,421	28,839
278.25	17,514	29,712
278.30	17,607	30,590
278.35	17,700	31,473
278.40	17,793	32,360
278.45	17,886	33,252
278.50	17,979	34,149
278.55	18,071	35,050
278.60	18,164	35,956
278.65	18,257	36,866
278.70	18,350	37,781
278.75	18,443	38,701
278.80	18,536	39,626
278.85	18,628	40,555
278.90	18,721	41,489
278.95	18,814	42,427
279.00	18,907	43,370
279.05	19,003	44,318
279.10	19,098	45,270
279.15	19,194	46,228
279.20	19,290	47,190
279.25	19,385	48,157
279.30	19,481	49,128
279.35	19,577	50,105
279.40	19,672	51,086
279.45	19,768	52,072
279.50	19,864	53,063
279.55	19,959	54,058
279.60	20,055	55,059
279.65	20,150	56,064
279.70	20,246	57,074
279.75	20,342	58,088
279.80	20,437	59,108
279.85	20,533	60,132
279.90	20,629	61,161
279.95	20,724	62,195
280.00	**20,820**	**63,233**

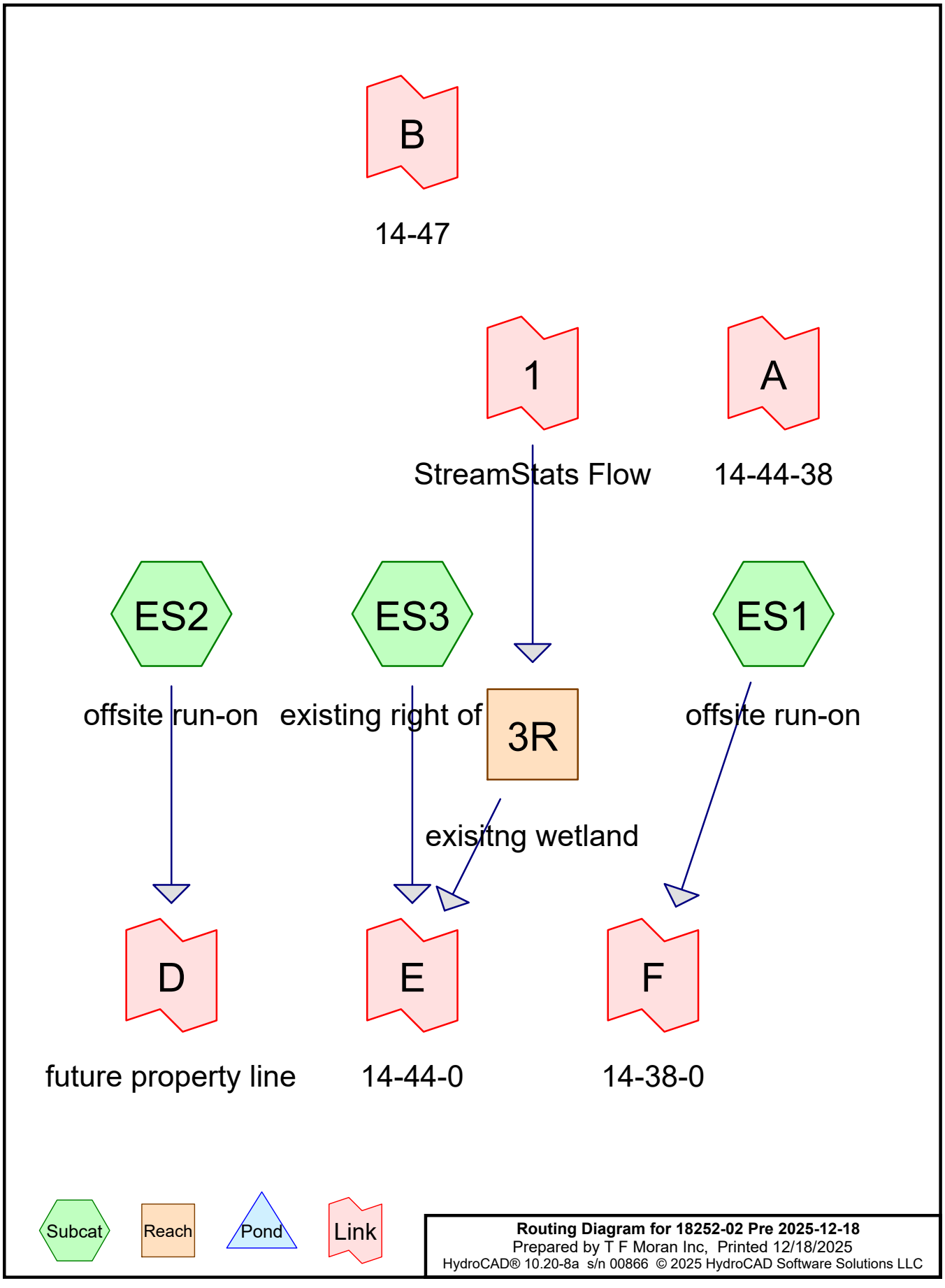
Stage-Area-Storage for Pond SFB1: FOREBAY #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
274.00	628	0
274.05	654	32
274.10	680	65
274.15	705	100
274.20	731	136
274.25	757	173
274.30	783	212
274.35	809	251
274.40	834	292
274.45	860	335
274.50	886	379
274.55	912	423
274.60	938	470
274.65	963	517
274.70	989	566
274.75	1,015	616
274.80	1,041	668
274.85	1,067	720
274.90	1,092	774
274.95	1,118	829
275.00	1,144	886
275.05	1,183	944
275.10	1,221	1,004
275.15	1,260	1,066
275.20	1,298	1,130
275.25	1,337	1,196
275.30	1,375	1,264
275.35	1,414	1,334
275.40	1,452	1,405
275.45	1,491	1,479
275.50	1,530	1,554
275.55	1,568	1,632
275.60	1,607	1,711
275.65	1,645	1,792
275.70	1,684	1,876
275.75	1,722	1,961
275.80	1,761	2,048
275.85	1,799	2,137
275.90	1,838	2,228
275.95	1,876	2,321
276.00	1,915	2,416
276.05	1,964	2,512
276.10	2,014	2,612
276.15	2,063	2,714
276.20	2,112	2,818
276.25	2,161	2,925
276.30	2,211	3,034
276.35	2,260	3,146
276.40	2,309	3,260
276.45	2,358	3,377
276.50	2,408	3,496
276.55	2,457	3,618
276.60	2,506	3,742
276.65	2,555	3,868
276.70	2,604	3,997
276.75	2,654	4,129
276.80	2,703	4,263
276.85	2,752	4,399
276.90	2,801	4,538
276.95	2,851	4,679
277.00	2,900	4,823
277.05	2,956	4,969
277.10	3,011	5,119
277.15	3,067	5,271
277.20	3,123	5,425
277.25	3,179	5,583
277.30	3,234	5,743
277.35	3,290	5,906
277.40	3,346	6,072
277.45	3,401	6,241
277.50	3,457	6,412
277.55	3,513	6,586
277.60	3,568	6,764
277.65	3,624	6,943
277.70	3,680	7,126
277.75	3,736	7,311
277.80	3,791	7,499
277.85	3,847	7,690
277.90	3,903	7,884
277.95	3,958	8,081
278.00	**4,014**	**8,280**

Stage-Area-Storage for Pond SFB2: FOREBAY #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
276.50	741	0
276.55	780	38
276.60	819	78
276.65	858	120
276.70	897	164
276.75	937	210
276.80	976	257
276.85	1,015	307
276.90	1,054	359
276.95	1,093	413
277.00	1,132	468
277.05	1,173	526
277.10	1,215	586
277.15	1,256	647
277.20	1,297	711
277.25	1,339	777
277.30	1,380	845
277.35	1,421	915
277.40	1,462	987
277.45	1,504	1,061
277.50	1,545	1,138
277.55	1,586	1,216
277.60	1,628	1,296
277.65	1,669	1,379
277.70	1,710	1,463
277.75	1,752	1,550
277.80	1,793	1,638
277.85	1,834	1,729
277.90	1,875	1,822
277.95	1,917	1,916
278.00	1,958	2,013
278.05	2,002	2,112
278.10	2,046	2,213
278.15	2,090	2,317
278.20	2,134	2,422
278.25	2,178	2,530
278.30	2,222	2,640
278.35	2,266	2,752
278.40	2,310	2,867
278.45	2,354	2,983
278.50	2,398	3,102
278.55	2,441	3,223
278.60	2,485	3,346
278.65	2,529	3,472
278.70	2,573	3,599
278.75	2,617	3,729
278.80	2,661	3,861
278.85	2,705	3,995
278.90	2,749	4,131
278.95	2,793	4,270
279.00	2,837	4,411
279.05	2,884	4,554
279.10	2,931	4,699
279.15	2,978	4,847
279.20	3,024	4,997
279.25	3,071	5,149
279.30	3,118	5,304
279.35	3,165	5,461
279.40	3,212	5,621
279.45	3,259	5,782
279.50	3,306	5,946
279.55	3,352	6,113
279.60	3,399	6,282
279.65	3,446	6,453
279.70	3,493	6,626
279.75	3,540	6,802
279.80	3,587	6,980
279.85	3,633	7,161
279.90	3,680	7,344
279.95	3,727	7,529
280.00	**3,774**	**7,716**

PART 4



Routing Diagram for 18252-02 Pre 2025-12-18
Prepared by T F Moran Inc, Printed 12/18/2025
HydroCAD® 10.20-8a s/n 00866 © 2025 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-YR	Type III 24-hr		Default	24.00	1	2.90	2
2	10-YR	Type III 24-hr		Default	24.00	1	4.37	2
3	25-YR	Type III 24-hr		Default	24.00	1	5.53	2
4	50-YR	Type III 24-hr		Default	24.00	1	6.60	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
26,715	96	Gravel surface, HSG C (ES2)
2,123	98	Roofs, HSG C (ES2)
820,890	30	Woods, Good, HSG A (ES1, ES2, ES3)
38,440	55	Woods, Good, HSG B (ES2)
575,414	70	Woods, Good, HSG C (ES1, ES2)
1,463,582	**48**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
820,890	HSG A	ES1, ES2, ES3
38,440	HSG B	ES2
604,252	HSG C	ES1, ES2
0	HSG D	
0	Other	
1,463,582		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Subcatchment Numbers
0	0	26,715	0	0	26,715	Gravel surface	ES2
0	0	2,123	0	0	2,123	Roofs	ES2
820,890	38,440	575,414	0	0	1,434,744	Woods, Good	ES1, ES2, ES3
820,890	**38,440**	**604,252**	**0**	**0**	**1,463,582**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES1: offsite run-on Runoff Area=401,005 sf 0.00% Impervious Runoff Depth>0.23"
Flow Length=1,975' Tc=97.1 min CN=58 Runoff=0.4 cfs 7,690 cf

Subcatchment ES2: offsite run-on Runoff Area=1,011,351 sf 0.21% Impervious Runoff Depth>0.01"
Flow Length=1,293' Tc=76.6 min CN=45 Runoff=0.0 cfs 1,201 cf

Subcatchment ES3: existing right of way Runoff Area=51,226 sf 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=30 Runoff=0.0 cfs 0 cf

Reach 3R: exisitng wetland Avg. Flow Depth=0.27' Max Vel=4.98 fps Inflow=5.8 cfs 20,736 cf
n=0.030 L=60.0' S=0.0667 '/' Capacity=268.4 cfs Outflow=5.7 cfs 20,738 cf

Link 1: StreamStats Flow Manual Hydrograph Inflow=5.8 cfs 20,736 cf
Area= 1,951,488 sf Primary=5.8 cfs 20,736 cf

Link A: 14-44-38
Primary=0.0 cfs 0 cf

Link B: 14-47
Primary=0.0 cfs 0 cf

Link D: future property line Inflow=0.0 cfs 1,201 cf
Primary=0.0 cfs 1,201 cf

Link E: 14-44-0 Inflow=5.7 cfs 20,738 cf
Primary=5.7 cfs 20,738 cf

Link F: 14-38-0 Inflow=0.4 cfs 7,690 cf
Primary=0.4 cfs 7,690 cf

Total Runoff Area = 1,463,582 sf Runoff Volume = 8,892 cf Average Runoff Depth = 0.07"
99.85% Pervious = 1,461,459 sf 0.15% Impervious = 2,123 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES1: offsite run-on Runoff Area=401,005 sf 0.00% Impervious Runoff Depth>0.81"
Flow Length=1,975' Tc=97.1 min CN=58 Runoff=2.1 cfs 27,066 cf

Subcatchment ES2: offsite run-on Runoff Area=1,011,351 sf 0.21% Impervious Runoff Depth>0.25"
Flow Length=1,293' Tc=76.6 min CN=45 Runoff=1.0 cfs 21,092 cf

Subcatchment ES3: existing right of way Runoff Area=51,226 sf 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=30 Runoff=0.0 cfs 0 cf

Reach 3R: exisitng wetland Avg. Flow Depth=0.34' Max Vel=5.66 fps Inflow=8.3 cfs 29,700 cf
n=0.030 L=60.0' S=0.0667 '/' Capacity=268.4 cfs Outflow=8.2 cfs 29,702 cf

Link 1: StreamStats Flow Manual Hydrograph Inflow=8.3 cfs 29,700 cf
Area= 1,951,488 sf Primary=8.3 cfs 29,700 cf

Link A: 14-44-38
Primary=0.0 cfs 0 cf

Link B: 14-47
Primary=0.0 cfs 0 cf

Link D: future property line Inflow=1.0 cfs 21,092 cf
Primary=1.0 cfs 21,092 cf

Link E: 14-44-0 Inflow=8.2 cfs 29,702 cf
Primary=8.2 cfs 29,702 cf

Link F: 14-38-0 Inflow=2.1 cfs 27,066 cf
Primary=2.1 cfs 27,066 cf

Total Runoff Area = 1,463,582 sf Runoff Volume = 48,158 cf Average Runoff Depth = 0.39"
99.85% Pervious = 1,461,459 sf 0.15% Impervious = 2,123 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES1: offsite run-on Runoff Area=401,005 sf 0.00% Impervious Runoff Depth>1.43"
Flow Length=1,975' Tc=97.1 min CN=58 Runoff=4.0 cfs 47,643 cf

Subcatchment ES2: offsite run-on Runoff Area=1,011,351 sf 0.21% Impervious Runoff Depth>0.60"
Flow Length=1,293' Tc=76.6 min CN=45 Runoff=3.5 cfs 50,611 cf

Subcatchment ES3: existing right of way Runoff Area=51,226 sf 0.00% Impervious Runoff Depth>0.03"
Tc=6.0 min CN=30 Runoff=0.0 cfs 131 cf

Reach 3R: exisitng wetland Avg. Flow Depth=0.42' Max Vel=6.47 fps Inflow=12.1 cfs 43,560 cf
n=0.030 L=60.0' S=0.0667 '/' Capacity=268.4 cfs Outflow=12.1 cfs 43,563 cf

Link 1: StreamStats Flow Manual Hydrograph Inflow=12.1 cfs 43,560 cf
Area= 1,951,488 sf Primary=12.1 cfs 43,560 cf

Link A: 14-44-38
Primary=0.0 cfs 0 cf

Link B: 14-47
Primary=0.0 cfs 0 cf

Link D: future property line Inflow=3.5 cfs 50,611 cf
Primary=3.5 cfs 50,611 cf

Link E: 14-44-0 Inflow=12.1 cfs 43,694 cf
Primary=12.1 cfs 43,694 cf

Link F: 14-38-0 Inflow=4.0 cfs 47,643 cf
Primary=4.0 cfs 47,643 cf

Total Runoff Area = 1,463,582 sf Runoff Volume = 98,384 cf Average Runoff Depth = 0.81"
99.85% Pervious = 1,461,459 sf 0.15% Impervious = 2,123 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES1: offsite run-on Runoff Area=401,005 sf 0.00% Impervious Runoff Depth>2.08"
Flow Length=1,975' Tc=97.1 min CN=58 Runoff=6.2 cfs 69,532 cf

Subcatchment ES2: offsite run-on Runoff Area=1,011,351 sf 0.21% Impervious Runoff Depth>1.02"
Flow Length=1,293' Tc=76.6 min CN=45 Runoff=7.1 cfs 86,224 cf

Subcatchment ES3: existing right of way Runoff Area=51,226 sf 0.00% Impervious Runoff Depth>0.15"
Tc=6.0 min CN=30 Runoff=0.0 cfs 629 cf

Reach 3R: exisitng wetland Avg. Flow Depth=0.49' Max Vel=7.04 fps Inflow=15.5 cfs 55,800 cf
n=0.030 L=60.0' S=0.0667 '/' Capacity=268.4 cfs Outflow=15.5 cfs 55,804 cf

Link 1: StreamStats Flow Manual Hydrograph Inflow=15.5 cfs 55,800 cf
Area= 1,951,488 sf Primary=15.5 cfs 55,800 cf

Link A: 14-44-38
Primary=0.0 cfs 0 cf

Link B: 14-47
Primary=0.0 cfs 0 cf

Link D: future property line Inflow=7.1 cfs 86,224 cf
Primary=7.1 cfs 86,224 cf

Link E: 14-44-0 Inflow=15.5 cfs 56,433 cf
Primary=15.5 cfs 56,433 cf

Link F: 14-38-0 Inflow=6.2 cfs 69,532 cf
Primary=6.2 cfs 69,532 cf

Total Runoff Area = 1,463,582 sf Runoff Volume = 156,385 cf Average Runoff Depth = 1.28"
99.85% Pervious = 1,461,459 sf 0.15% Impervious = 2,123 sf

Summary for Subcatchment ES1: offsite run-on

Runoff = 2.1 cfs @ 13.50 hrs, Volume= 27,066 cf, Depth> 0.81"
Routed to Link F : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
277,626	70	Woods, Good, HSG C
0	98	Roofs, HSG C
0	96	Gravel surface, HSG C
123,379	30	Woods, Good, HSG A
0	30	Woods, Good, HSG A
401,005	58	Weighted Average
401,005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.3	100	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
23.9	508	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.2	706	0.0600	0.61		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	661	0.0900	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
97.1	1,975	Total			

Summary for Subcatchment ES2: offsite run-on

Runoff = 1.0 cfs @ 13.68 hrs, Volume= 21,092 cf, Depth> 0.25"
Routed to Link D : future property line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
297,788	70	Woods, Good, HSG C
646,285	30	Woods, Good, HSG A
26,715	96	Gravel surface, HSG C
38,440	55	Woods, Good, HSG B
2,123	98	Roofs, HSG C
1,011,351	45	Weighted Average
1,009,228		99.79% Pervious Area
2,123		0.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.5	100	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
24.4	517	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.2	444	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.5	232	0.0800	0.71		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
76.6	1,293	Total			

Summary for Subcatchment ES3: existing right of way

[45] Hint: Runoff=Zero

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Link E : 14-44-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
38,710	30	Woods, Good, HSG A
12,516	30	Woods, Good, HSG A
51,226	30	Weighted Average
51,226		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Reach 3R: exisitng wetland

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.18" for 10-YR event
Inflow = 8.3 cfs @ 12.00 hrs, Volume= 29,700 cf
Outflow = 8.2 cfs @ 12.00 hrs, Volume= 29,702 cf, Atten= 0%, Lag= 0.1 min
Routed to Link E : 14-44-0

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.66 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 4.15 fps, Avg. Travel Time= 0.2 min

Peak Storage= 87 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.34' , Surface Width= 4.67'
Bank-Full Depth= 2.50' Flow Area= 16.3 sf, Capacity= 268.4 cfs

4.00' x 2.50' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 1.0 '/' Top Width= 9.00'
Length= 60.0' Slope= 0.0667 '/'
Inlet Invert= 300.00', Outlet Invert= 296.00'



Summary for Link 1: StreamStats Flow

Peak flow rates from Pea-Plow Statistics Floew Report [Peak Flow Statewide SIR2008 5206]

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.18" for 10-YR event
Inflow = 8.3 cfs @ 12.00 hrs, Volume= 29,700 cf
Primary = 8.3 cfs @ 12.00 hrs, Volume= 29,700 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 3R : exisitng wetland

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

10-YR 25 Point manual hydrograph, To= 0.00 hrs, dt= 1.00 hrs, Area= 1,951,488 sf, cfs =

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	8.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00					

Summary for Link A: 14-44-38

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: 14-47

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: future property line

Inflow Area = 1,011,351 sf, 0.21% Impervious, Inflow Depth > 0.25" for 10-YR event
Inflow = 1.0 cfs @ 13.68 hrs, Volume= 21,092 cf
Primary = 1.0 cfs @ 13.68 hrs, Volume= 21,092 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: 14-44-0

Inflow Area = 2,002,714 sf, 0.00% Impervious, Inflow Depth = 0.18" for 10-YR event
Inflow = 8.2 cfs @ 12.00 hrs, Volume= 29,702 cf
Primary = 8.2 cfs @ 12.00 hrs, Volume= 29,702 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link F: 14-38-0

Inflow Area = 401,005 sf, 0.00% Impervious, Inflow Depth > 0.81" for 10-YR event
Inflow = 2.1 cfs @ 13.50 hrs, Volume= 27,066 cf
Primary = 2.1 cfs @ 13.50 hrs, Volume= 27,066 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Subcatchment ES1: offsite run-on

Runoff = 4.0 cfs @ 13.43 hrs, Volume= 47,643 cf, Depth> 1.43"
Routed to Link F : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
277,626	70	Woods, Good, HSG C
0	98	Roofs, HSG C
0	96	Gravel surface, HSG C
123,379	30	Woods, Good, HSG A
0	30	Woods, Good, HSG A
401,005	58	Weighted Average
401,005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.3	100	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
23.9	508	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.2	706	0.0600	0.61		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	661	0.0900	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
97.1	1,975	Total			

Summary for Subcatchment ES2: offsite run-on

Runoff = 3.5 cfs @ 13.34 hrs, Volume= 50,611 cf, Depth> 0.60"
Routed to Link D : future property line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
297,788	70	Woods, Good, HSG C
646,285	30	Woods, Good, HSG A
26,715	96	Gravel surface, HSG C
38,440	55	Woods, Good, HSG B
2,123	98	Roofs, HSG C
1,011,351	45	Weighted Average
1,009,228		99.79% Pervious Area
2,123		0.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.5	100	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
24.4	517	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.2	444	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.5	232	0.0800	0.71		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
76.6	1,293	Total			

Summary for Subcatchment ES3: existing right of way

Runoff = 0.0 cfs @ 20.96 hrs, Volume= 131 cf, Depth> 0.03"
Routed to Link E : 14-44-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
38,710	30	Woods, Good, HSG A
12,516	30	Woods, Good, HSG A
51,226	30	Weighted Average
51,226		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Reach 3R: exisitng wetland

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.27" for 25-YR event
Inflow = 12.1 cfs @ 12.00 hrs, Volume= 43,560 cf
Outflow = 12.1 cfs @ 12.00 hrs, Volume= 43,563 cf, Atten= 0%, Lag= 0.1 min
Routed to Link E : 14-44-0

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.47 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 4.76 fps, Avg. Travel Time= 0.2 min

Peak Storage= 112 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.42' , Surface Width= 4.84'
Bank-Full Depth= 2.50' Flow Area= 16.3 sf, Capacity= 268.4 cfs

4.00' x 2.50' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 1.0 '/' Top Width= 9.00'
Length= 60.0' Slope= 0.0667 '/'
Inlet Invert= 300.00', Outlet Invert= 296.00'



Summary for Link 1: StreamStats Flow

Peak flow rates from Pea-Plow Statistics Floew Report [Peak Flow Statewide SIR2008 5206]

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.27" for 25-YR event
Inflow = 12.1 cfs @ 12.00 hrs, Volume= 43,560 cf
Primary = 12.1 cfs @ 12.00 hrs, Volume= 43,560 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 3R : exisitng wetland

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

25-YR 25 Point manual hydrograph, To= 0.00 hrs, dt= 1.00 hrs, Area= 1,951,488 sf, cfs =

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	12.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00					

Summary for Link A: 14-44-38

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: 14-47

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: future property line

Inflow Area = 1,011,351 sf, 0.21% Impervious, Inflow Depth > 0.60" for 25-YR event
Inflow = 3.5 cfs @ 13.34 hrs, Volume= 50,611 cf
Primary = 3.5 cfs @ 13.34 hrs, Volume= 50,611 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: 14-44-0

Inflow Area = 2,002,714 sf, 0.00% Impervious, Inflow Depth > 0.26" for 25-YR event
Inflow = 12.1 cfs @ 12.00 hrs, Volume= 43,694 cf
Primary = 12.1 cfs @ 12.00 hrs, Volume= 43,694 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link F: 14-38-0

Inflow Area = 401,005 sf, 0.00% Impervious, Inflow Depth > 1.43" for 25-YR event
Inflow = 4.0 cfs @ 13.43 hrs, Volume= 47,643 cf
Primary = 4.0 cfs @ 13.43 hrs, Volume= 47,643 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Subcatchment ES1: offsite run-on

Runoff = 6.2 cfs @ 13.38 hrs, Volume= 69,532 cf, Depth> 2.08"
Routed to Link F : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
277,626	70	Woods, Good, HSG C
0	98	Roofs, HSG C
0	96	Gravel surface, HSG C
123,379	30	Woods, Good, HSG A
0	30	Woods, Good, HSG A
401,005	58	Weighted Average
401,005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.3	100	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
23.9	508	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.2	706	0.0600	0.61		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	661	0.0900	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
97.1	1,975	Total			

Summary for Subcatchment ES2: offsite run-on

Runoff = 7.1 cfs @ 13.23 hrs, Volume= 86,224 cf, Depth> 1.02"
Routed to Link D : future property line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
297,788	70	Woods, Good, HSG C
646,285	30	Woods, Good, HSG A
26,715	96	Gravel surface, HSG C
38,440	55	Woods, Good, HSG B
2,123	98	Roofs, HSG C
1,011,351	45	Weighted Average
1,009,228		99.79% Pervious Area
2,123		0.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.5	100	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
24.4	517	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.2	444	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.5	232	0.0800	0.71		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
76.6	1,293	Total			

Summary for Subcatchment ES3: existing right of way

Runoff = 0.0 cfs @ 14.81 hrs, Volume= 629 cf, Depth> 0.15"
Routed to Link E : 14-44-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
38,710	30	Woods, Good, HSG A
12,516	30	Woods, Good, HSG A
51,226	30	Weighted Average
51,226		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Reach 3R: exisitng wetland

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.34" for 50-YR event
Inflow = 15.5 cfs @ 12.00 hrs, Volume= 55,800 cf
Outflow = 15.5 cfs @ 12.00 hrs, Volume= 55,804 cf, Atten= 0%, Lag= 0.1 min
Routed to Link E : 14-44-0

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.04 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 5.20 fps, Avg. Travel Time= 0.2 min

Peak Storage= 132 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.49' , Surface Width= 4.98'
Bank-Full Depth= 2.50' Flow Area= 16.3 sf, Capacity= 268.4 cfs

4.00' x 2.50' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 1.0 '/' Top Width= 9.00'
Length= 60.0' Slope= 0.0667 '/'
Inlet Invert= 300.00', Outlet Invert= 296.00'



Summary for Link 1: StreamStats Flow

Peak flow rates from Pea-Plow Statistics Floew Report [Peak Flow Statewide SIR2008 5206]

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.34" for 50-YR event
Inflow = 15.5 cfs @ 12.00 hrs, Volume= 55,800 cf
Primary = 15.5 cfs @ 12.00 hrs, Volume= 55,800 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 3R : exisitng wetland

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

50-YR 25 Point manual hydrograph, To= 0.00 hrs, dt= 1.00 hrs, Area= 1,951,488 sf, cfs =

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00					

Summary for Link A: 14-44-38

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: 14-47

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: future property line

Inflow Area = 1,011,351 sf, 0.21% Impervious, Inflow Depth > 1.02" for 50-YR event
Inflow = 7.1 cfs @ 13.23 hrs, Volume= 86,224 cf
Primary = 7.1 cfs @ 13.23 hrs, Volume= 86,224 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: 14-44-0

Inflow Area = 2,002,714 sf, 0.00% Impervious, Inflow Depth > 0.34" for 50-YR event
Inflow = 15.5 cfs @ 12.00 hrs, Volume= 56,433 cf
Primary = 15.5 cfs @ 12.00 hrs, Volume= 56,433 cf, Atten= 0%, Lag= 0.0 min

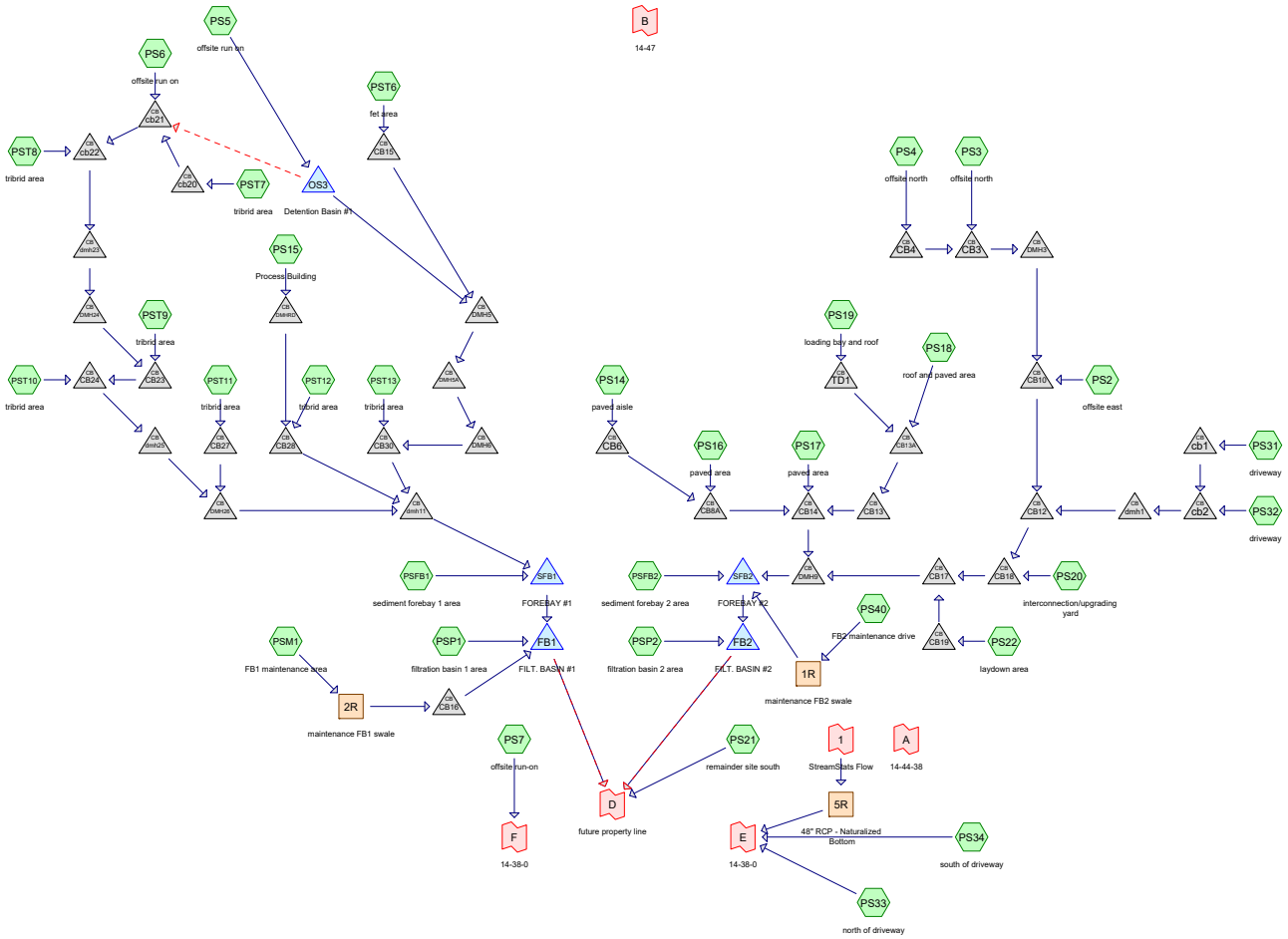
Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link F: 14-38-0

Inflow Area = 401,005 sf, 0.00% Impervious, Inflow Depth > 2.08" for 50-YR event
Inflow = 6.2 cfs @ 13.38 hrs, Volume= 69,532 cf
Primary = 6.2 cfs @ 13.38 hrs, Volume= 69,532 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

PART 5



Subcat Reach Pond Link

Routing Diagram for 18252-02 Post 2025-12-18
Prepared by T F Moran Inc, Printed 12/19/2025
HydroCAD® 10.20-8a s/n 00866 © 2025 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-YR	Type III 24-hr		Default	24.00	1	2.90	2
2	10-YR	Type III 24-hr		Default	24.00	1	4.37	2
3	25-YR	Type III 24-hr		Default	24.00	1	5.53	2
4	50-YR	Type III 24-hr		Default	24.00	1	6.60	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
294,439	39	>75% Grass cover, Good, HSG A (PS14, PS2, PS20, PS21, PS3, PS33, PS34, PS4, PS40, PS5, PS6, PS7, PSFB1, PSFB2, PSM1, PSP1, PSP2, PST10, PST11, PST12, PST13, PST6, PST7, PST8, PST9)
2,587	61	>75% Grass cover, Good, HSG B (PS21)
3,965	74	>75% Grass cover, Good, HSG C (PS14, PS21, PSM1, PSP1, PST11, PST12, PST13)
32,741	96	Gravel surface, HSG A (PS20, PS40, PST10, PST11, PST12, PST13, PST6, PST7, PST8, PST9)
27,033	96	Gravel surface, HSG C (PS4, PS5, PST11, PST12)
101,422	98	Paved parking, HSG A (PS14, PS16, PS17, PS18, PS19, PS2, PS21, PS22, PS3, PS4)
1,508	98	Paved parking, HSG C (PS14, PS4)
16,279	98	Paved roads w/curbs & sewers, HSG A (PS31, PS32)
102,915	98	Roofs, HSG A (PS14, PS15, PS16, PS18, PS19, PST10, PST11, PST12, PST13, PST6, PST7, PST8, PST9)
5,981	98	Roofs, HSG C (PS14, PS15, PS19, PS5, PST11, PST12)
273,094	30	Woods, Good, HSG A (PS2, PS21, PS3, PS4, PS7)
35,853	55	Woods, Good, HSG B (PS21)
565,765	70	Woods, Good, HSG C (PS21, PS3, PS4, PS5, PS6, PS7)
1,463,582	**61**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
820,890	HSG A	PS14, PS15, PS16, PS17, PS18, PS19, PS2, PS20, PS21, PS22, PS3, PS31, PS32, PS33, PS34, PS4, PS40, PS5, PS6, PS7, PSFB1, PSFB2, PSM1, PSP1, PSP2, PST10, PST11, PST12, PST13, PST6, PST7, PST8, PST9
38,440	HSG B	PS21
604,252	HSG C	PS14, PS15, PS19, PS21, PS3, PS4, PS5, PS6, PS7, PSM1, PSP1, PST11, PST12, PST13
0	HSG D	
0	Other	
1,463,582		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
294,439	2,587	3,965	0	0	300,991	>75% Grass cover, Good
32,741	0	27,033	0	0	59,774	Gravel surface
101,422	0	1,508	0	0	102,930	Paved parking
16,279	0	0	0	0	16,279	Paved roads w/curbs & sewers
102,915	0	5,981	0	0	108,896	Roofs
273,094	35,853	565,765	0	0	874,712	Woods, Good
820,890	**38,440**	**604,252**	**0**	**0**	**1,463,582**	**TOTAL AREA**

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	5R	298.60	297.80	48.0	0.0167	0.040	48.0	24.0	0.0	
2	cb1	293.18	292.96	21.8	0.0101	0.013	0.0	15.0	0.0	
3	CB10	285.94	284.25	169.0	0.0100	0.013	0.0	15.0	0.0	
4	CB12	284.15	283.55	60.0	0.0100	0.013	0.0	15.0	0.0	
5	CB13	288.00	287.13	71.4	0.0122	0.013	0.0	18.0	0.0	
6	CB13A	290.70	289.66	102.3	0.0102	0.013	0.0	18.0	0.0	
7	CB14	280.06	279.25	80.7	0.0100	0.013	0.0	30.0	0.0	
8	CB15	291.94	291.60	34.0	0.0100	0.013	0.0	15.0	0.0	
9	CB16	277.55	275.75	62.0	0.0290	0.013	0.0	15.0	0.0	
10	CB17	279.72	278.10	108.0	0.0150	0.013	0.0	18.0	0.0	
11	CB18	282.45	282.00	45.2	0.0100	0.013	0.0	18.0	0.0	
12	CB19	285.00	284.50	50.0	0.0100	0.013	0.0	15.0	0.0	
13	cb2	292.64	291.33	155.0	0.0085	0.013	0.0	15.0	0.0	
14	cb20	289.20	286.90	94.0	0.0245	0.013	0.0	15.0	0.0	
15	cb21	286.80	286.41	44.0	0.0089	0.013	0.0	15.0	0.0	
16	cb22	286.31	285.59	73.0	0.0099	0.013	0.0	15.0	0.0	
17	CB23	284.31	283.20	110.0	0.0101	0.013	0.0	15.0	0.0	
18	CB24	283.10	282.23	82.0	0.0106	0.013	0.0	15.0	0.0	
19	CB27	288.15	287.87	27.7	0.0101	0.013	0.0	15.0	0.0	
20	CB28	288.75	288.54	20.7	0.0101	0.013	0.0	18.0	0.0	
21	CB3	289.05	288.15	90.0	0.0100	0.013	0.0	15.0	0.0	
22	CB30	285.80	284.88	92.0	0.0100	0.013	0.0	24.0	0.0	
23	CB4	291.06	289.15	191.0	0.0100	0.013	0.0	15.0	0.0	
24	CB6	288.00	286.82	118.0	0.0100	0.013	0.0	24.0	0.0	
25	CB8A	286.00	284.69	131.3	0.0100	0.013	0.0	15.0	0.0	
26	dmh1	289.95	289.30	65.3	0.0100	0.013	0.0	15.0	0.0	
27	dmh11	277.23	277.00	41.0	0.0056	0.013	0.0	24.0	0.0	
28	dmh23	285.49	284.91	57.8	0.0100	0.013	0.0	15.0	0.0	
29	DMH24	284.81	284.46	37.0	0.0095	0.013	0.0	15.0	0.0	
30	dmh25	282.10	281.05	113.0	0.0093	0.013	0.0	15.0	0.0	
31	DMH26	280.80	279.54	126.4	0.0100	0.013	0.0	18.0	0.0	
32	DMH3	286.97	286.15	82.0	0.0100	0.013	0.0	15.0	0.0	
33	DMH5	289.40	288.13	126.7	0.0100	0.013	0.0	24.0	0.0	
34	DMH5A	288.00	286.82	118.0	0.0100	0.013	0.0	24.0	0.0	
35	DMH6	286.72	285.92	79.0	0.0101	0.013	0.0	24.0	0.0	
36	DMH9	278.12	278.00	24.0	0.0050	0.013	0.0	30.0	0.0	
37	DMHRD	289.10	288.85	28.0	0.0089	0.013	0.0	18.0	0.0	
38	FB1	266.00	265.75	40.0	0.0063	0.013	0.0	15.0	0.0	
39	FB2	272.00	271.50	51.0	0.0098	0.013	0.0	15.0	0.0	
40	OS3	290.00	289.00	100.0	0.0100	0.013	0.0	18.0	0.0	
41	TD1	290.70	289.66	102.3	0.0102	0.013	0.0	24.0	0.0	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS14: paved aisle Runoff Area=19,691 sf 94.87% Impervious Runoff Depth>2.35"
Flow Length=229' Tc=16.3 min CN=95 Runoff=0.9 cfs 3,850 cf

Subcatchment PS15: Process Building Runoff Area=22,384 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=1.4 cfs 4,975 cf

Subcatchment PS16: paved area Runoff Area=17,826 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=1.1 cfs 3,962 cf

Subcatchment PS17: paved area Runoff Area=16,650 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=1.0 cfs 3,700 cf

Subcatchment PS18: roof and paved area Runoff Area=21,424 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=1.3 cfs 4,762 cf

Subcatchment PS19: loading bay and roof Runoff Area=36,281 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=2.3 cfs 8,064 cf

Subcatchment PS2: offsite east Runoff Area=54,682 sf 17.50% Impervious Runoff Depth>0.01"
Flow Length=267' Tc=22.9 min CN=44 Runoff=0.0 cfs 42 cf

Subcatchment PS20: Runoff Area=11,390 sf 0.00% Impervious Runoff Depth>2.07"
Tc=6.0 min CN=92 Runoff=0.6 cfs 1,960 cf

Subcatchment PS21: remainder site south Runoff Area=167,886 sf 0.00% Impervious Runoff Depth>0.00"
Flow Length=332' Tc=28.4 min CN=41 Runoff=0.0 cfs 0 cf

Subcatchment PS22: laydown area Runoff Area=2,752 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=0.2 cfs 612 cf

Subcatchment PS3: offsite north Runoff Area=92,068 sf 7.96% Impervious Runoff Depth>0.00"
Flow Length=716' Tc=23.7 min CN=41 Runoff=0.0 cfs 0 cf

Subcatchment PS31: driveway Runoff Area=8,080 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=0.5 cfs 1,796 cf

Subcatchment PS32: driveway Runoff Area=8,199 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=0.5 cfs 1,822 cf

Subcatchment PS33: north of driveway Runoff Area=23,596 sf 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=39 Runoff=0.0 cfs 0 cf

Subcatchment PS34: south of driveway Runoff Area=11,351 sf 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=39 Runoff=0.0 cfs 0 cf

Subcatchment PS4: offsite north Runoff Area=161,914 sf 6.35% Impervious Runoff Depth>0.24"
Flow Length=778' Tc=28.6 min CN=58 Runoff=0.3 cfs 3,227 cf

Subcatchment PS40: FB2 maintenance drive Runoff Area=14,933 sf 0.00% Impervious Runoff Depth>0.06"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=49 Runoff=0.0 cfs 73 cf

Subcatchment PS5: offsite run on Runoff Area=217,984 sf 0.97% Impervious Runoff Depth>0.73"
Flow Length=1,113' Tc=74.8 min CN=72 Runoff=1.3 cfs 13,290 cf

Subcatchment PS6: offsite run on Runoff Area=51,321 sf 0.00% Impervious Runoff Depth>0.53"
Flow Length=482' Tc=20.7 min CN=67 Runoff=0.4 cfs 2,277 cf

Subcatchment PS7: offsite run-on Runoff Area=305,720 sf 0.00% Impervious Runoff Depth>0.28"
Flow Length=1,975' Tc=97.1 min CN=60 Runoff=0.4 cfs 7,242 cf

Subcatchment PSFB1: sediment forebay 1 Runoff Area=12,045 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=39 Runoff=0.0 cfs 0 cf

Subcatchment PSFB2: sediment forebay 2 Runoff Area=17,093 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=39 Runoff=0.0 cfs 0 cf

Subcatchment PSM1: FB1 maintenance area Runoff Area=7,267 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=40 Runoff=0.0 cfs 0 cf

Subcatchment PSP1: filtration basin 1 area Runoff Area=23,524 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=40 Runoff=0.0 cfs 0 cf

Subcatchment PSP2: filtration basin 2 area Runoff Area=30,454 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=39 Runoff=0.0 cfs 0 cf

Subcatchment PST10: tribrid area Runoff Area=11,547 sf 34.69% Impervious Runoff Depth>1.11"
Flow Length=124' Slope=0.0100 '/' Tc=20.4 min CN=79 Runoff=0.2 cfs 1,069 cf

Subcatchment PST11: tribrid area Runoff Area=14,447 sf 55.46% Impervious Runoff Depth>1.11"
Flow Length=135' Tc=14.7 min CN=79 Runoff=0.3 cfs 1,339 cf

Subcatchment PST12: tribrid area Runoff Area=15,957 sf 50.21% Impervious Runoff Depth>1.23"
Flow Length=140' Slope=0.0180 '/' Tc=16.4 min CN=81 Runoff=0.4 cfs 1,639 cf

Subcatchment PST13: tribrid area Runoff Area=11,389 sf 36.49% Impervious Runoff Depth>0.61"
Flow Length=142' Slope=0.0230 '/' Tc=14.9 min CN=69 Runoff=0.1 cfs 583 cf

Subcatchment PST6: fet area Runoff Area=20,776 sf 35.46% Impervious Runoff Depth>0.66"
Flow Length=226' Slope=0.0100 '/' Tc=16.6 min CN=70 Runoff=0.2 cfs 1,136 cf

Subcatchment PST7: tribrid area Runoff Area=11,860 sf 50.51% Impervious Runoff Depth>0.79"
Flow Length=120' Tc=17.2 min CN=73 Runoff=0.2 cfs 784 cf

Subcatchment PST8: tribrid area Runoff Area=11,680 sf 51.21% Impervious Runoff Depth>0.94"
Flow Length=128' Tc=20.3 min CN=76 Runoff=0.2 cfs 918 cf

Subcatchment PST9: tribrid area Runoff Area=9,411 sf 31.82% Impervious Runoff Depth>1.00"
Flow Length=116' Slope=0.0100 '/' Tc=20.2 min CN=77 Runoff=0.2 cfs 782 cf

Reach 1R: maintenance FB2 swale Avg. Flow Depth=0.00' Max Vel=0.15 fps Inflow=0.0 cfs 73 cf
n=0.069 L=165.0' S=0.0606 '/' Capacity=14.2 cfs Outflow=0.0 cfs 71 cf

Reach 2R: maintenance FB1 swale Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.0 cfs 0 cf
n=0.041 L=178.0' S=0.0573 '/' Capacity=2.8 cfs Outflow=0.0 cfs 0 cf

Reach 5R: 48" RCP - Naturalized Bottom Avg. Flow Depth=0.54' Max Vel=2.69 fps Inflow=5.8 cfs 20,736 cf
48.0" x 24.0", R=24.0" Arch Pipe n=0.040 L=48.0' S=0.0167 '/' Capacity=21.7 cfs Outflow=5.7 cfs 20,736 cf

Pond cb1: Peak Elev=293.53' Inflow=0.5 cfs 1,796 cf
15.0" Round Culvert n=0.013 L=21.8' S=0.0101 '/' Outflow=0.5 cfs 1,796 cf

Pond CB10: Peak Elev=286.19' Inflow=0.3 cfs 3,269 cf
15.0" Round Culvert n=0.013 L=169.0' S=0.0100 '/' Outflow=0.3 cfs 3,269 cf

Pond CB12: Peak Elev=284.64' Inflow=1.0 cfs 6,887 cf
15.0" Round Culvert n=0.013 L=60.0' S=0.0100 '/' Outflow=1.0 cfs 6,887 cf

Pond CB13: Peak Elev=288.91' Inflow=3.6 cfs 12,825 cf
18.0" Round Culvert n=0.013 L=71.4' S=0.0122 '/' Outflow=3.6 cfs 12,825 cf

Pond CB13A: Peak Elev=291.61' Inflow=3.6 cfs 12,825 cf
18.0" Round Culvert n=0.013 L=102.3' S=0.0102 '/' Outflow=3.6 cfs 12,825 cf

Pond CB14: Peak Elev=281.08' Inflow=6.4 cfs 24,337 cf
30.0" Round Culvert n=0.013 L=80.7' S=0.0100 '/' Outflow=6.4 cfs 24,337 cf

Pond CB15: Peak Elev=292.16' Inflow=0.2 cfs 1,136 cf
15.0" Round Culvert n=0.013 L=34.0' S=0.0100 '/' Outflow=0.2 cfs 1,136 cf

Pond CB16: Peak Elev=277.55' Inflow=0.0 cfs 0 cf
15.0" Round Culvert n=0.013 L=62.0' S=0.0290 '/' Outflow=0.0 cfs 0 cf

Pond CB17: Peak Elev=280.39' Inflow=1.8 cfs 9,459 cf
18.0" Round Culvert n=0.013 L=108.0' S=0.0150 '/' Outflow=1.8 cfs 9,459 cf

Pond CB18: Peak Elev=283.05' Inflow=1.6 cfs 8,848 cf
18.0" Round Culvert n=0.013 L=45.2' S=0.0100 '/' Outflow=1.6 cfs 8,848 cf

Pond CB19: Peak Elev=285.19' Inflow=0.2 cfs 612 cf
15.0" Round Culvert n=0.013 L=50.0' S=0.0100 '/' Outflow=0.2 cfs 612 cf

Pond cb2: Peak Elev=293.12' Inflow=1.0 cfs 3,618 cf
15.0" Round Culvert n=0.013 L=155.0' S=0.0085 '/' Outflow=1.0 cfs 3,618 cf

Pond cb20: Peak Elev=289.38' Inflow=0.2 cfs 784 cf
15.0" Round Culvert n=0.013 L=94.0' S=0.0245 '/' Outflow=0.2 cfs 784 cf

Pond cb21: Peak Elev=287.16' Inflow=0.5 cfs 3,061 cf
15.0" Round Culvert n=0.013 L=44.0' S=0.0089 '/' Outflow=0.5 cfs 3,061 cf

Pond cb22: Peak Elev=286.71' Inflow=0.7 cfs 3,979 cf
15.0" Round Culvert n=0.013 L=73.0' S=0.0099 '/' Outflow=0.7 cfs 3,979 cf

Pond CB23: Peak Elev=284.75' Inflow=0.9 cfs 4,762 cf
15.0" Round Culvert n=0.013 L=110.0' S=0.0101 '/' Outflow=0.9 cfs 4,762 cf

Pond CB24: Peak Elev=283.60' Inflow=1.1 cfs 5,830 cf
15.0" Round Culvert n=0.013 L=82.0' S=0.0106 '/' Outflow=1.1 cfs 5,830 cf

Pond CB27: Peak Elev=288.42' Inflow=0.3 cfs 1,339 cf
15.0" Round Culvert n=0.013 L=27.7' S=0.0101 '/' Outflow=0.3 cfs 1,339 cf

Pond CB28: Peak Elev=289.39' Inflow=1.6 cfs 6,614 cf
18.0" Round Culvert n=0.013 L=20.7' S=0.0101 '/' Outflow=1.6 cfs 6,614 cf

Pond CB3: Peak Elev=289.30' Inflow=0.3 cfs 3,227 cf
15.0" Round Culvert n=0.013 L=90.0' S=0.0100 '/' Outflow=0.3 cfs 3,227 cf

Pond CB30: Peak Elev=286.31' Inflow=1.6 cfs 14,923 cf
24.0" Round Culvert n=0.013 L=92.0' S=0.0100 '/' Outflow=1.6 cfs 14,923 cf

Pond CB4: Peak Elev=291.31' Inflow=0.3 cfs 3,227 cf
15.0" Round Culvert n=0.013 L=191.0' S=0.0100 '/' Outflow=0.3 cfs 3,227 cf

Pond CB6: Peak Elev=288.38' Inflow=0.9 cfs 3,850 cf
24.0" Round Culvert n=0.013 L=118.0' S=0.0100 '/' Outflow=0.9 cfs 3,850 cf

Pond CB8A: Peak Elev=286.65' Inflow=1.8 cfs 7,812 cf
15.0" Round Culvert n=0.013 L=131.3' S=0.0100 '/' Outflow=1.8 cfs 7,812 cf

Pond dmh1: Peak Elev=290.43' Inflow=1.0 cfs 3,618 cf
15.0" Round Culvert n=0.013 L=65.3' S=0.0100 '/' Outflow=1.0 cfs 3,618 cf

Pond dmh11: Peak Elev=278.04' Inflow=2.8 cfs 28,706 cf
24.0" Round Culvert n=0.013 L=41.0' S=0.0056 '/' Outflow=2.8 cfs 28,706 cf

Pond dmh23: Peak Elev=285.89' Inflow=0.7 cfs 3,979 cf
15.0" Round Culvert n=0.013 L=57.8' S=0.0100 '/' Outflow=0.7 cfs 3,979 cf

Pond DMH24: Peak Elev=285.23' Inflow=0.7 cfs 3,979 cf
15.0" Round Culvert n=0.013 L=37.0' S=0.0095 '/' Outflow=0.7 cfs 3,979 cf

Pond dmh25: Peak Elev=282.60' Inflow=1.1 cfs 5,830 cf
15.0" Round Culvert n=0.013 L=113.0' S=0.0093 '/' Outflow=1.1 cfs 5,830 cf

Pond DMH26: Peak Elev=281.33' Inflow=1.4 cfs 7,169 cf
18.0" Round Culvert n=0.013 L=126.4' S=0.0100 '/' Outflow=1.4 cfs 7,169 cf

Pond DMH3: Peak Elev=287.22' Inflow=0.3 cfs 3,227 cf
15.0" Round Culvert n=0.013 L=82.0' S=0.0100 '/' Outflow=0.3 cfs 3,227 cf

Pond DMH5: Peak Elev=289.91' Inflow=1.5 cfs 14,340 cf
24.0" Round Culvert n=0.013 L=126.7' S=0.0100 '/' Outflow=1.5 cfs 14,340 cf

Pond DMH5A: Peak Elev=288.51' Inflow=1.5 cfs 14,340 cf
24.0" Round Culvert n=0.013 L=118.0' S=0.0100 '/' Outflow=1.5 cfs 14,340 cf

Pond DMH6: Peak Elev=287.23' Inflow=1.5 cfs 14,340 cf
24.0" Round Culvert n=0.013 L=79.0' S=0.0101 '/' Outflow=1.5 cfs 14,340 cf

Pond DMH9: Peak Elev=279.55' Inflow=8.2 cfs 33,797 cf
30.0" Round Culvert n=0.013 L=24.0' S=0.0050 '/' Outflow=8.2 cfs 33,797 cf

Pond DMHRD: Peak Elev=289.72' Inflow=1.4 cfs 4,975 cf
18.0" Round Culvert n=0.013 L=28.0' S=0.0089 '/' Outflow=1.4 cfs 4,975 cf

Pond FB1: FILT. BASIN #1 Peak Elev=274.15' Storage=15,610 cf Inflow=2.8 cfs 28,706 cf
Discarded=0.3 cfs 15,481 cf Primary=0.0 cfs 494 cf Secondary=0.0 cfs 0 cf Outflow=0.4 cfs 15,975 cf

Pond FB2: FILT. BASIN #2 Peak Elev=276.92' Storage=8,663 cf Inflow=8.2 cfs 33,868 cf
Discarded=1.3 cfs 33,905 cf Primary=0.0 cfs 0 cf Secondary=0.0 cfs 0 cf Outflow=1.3 cfs 33,905 cf

Pond OS3: Detention Basin #1 Peak Elev=294.50' Storage=480 cf Inflow=1.3 cfs 13,290 cf
Primary=1.5 cfs 13,204 cf Secondary=0.0 cfs 0 cf Outflow=1.5 cfs 13,204 cf

Pond SFB1: FOREBAY #1 Peak Elev=277.32' Storage=0 cf Inflow=2.8 cfs 28,706 cf
Outflow=2.8 cfs 28,706 cf

Pond SFB2: FOREBAY #2 Peak Elev=279.09' Storage=0 cf Inflow=8.2 cfs 33,868 cf
Outflow=8.2 cfs 33,868 cf

Pond TD1: Peak Elev=291.78' Inflow=2.3 cfs 8,064 cf
24.0" Round Culvert n=0.013 L=102.3' S=0.0102 '/' Outflow=2.3 cfs 8,064 cf

Link 1: StreamStats Flow Manual Hydrograph Inflow=5.8 cfs 20,736 cf
Area= 1,951,488 sf Primary=5.8 cfs 20,736 cf

Link A: 14-44-38
Primary=0.0 cfs 0 cf

Link B: 14-47
Primary=0.0 cfs 0 cf

Link D: future property line Inflow=0.0 cfs 494 cf
Primary=0.0 cfs 494 cf

Link E: 14-38-0 Inflow=5.7 cfs 20,736 cf
Primary=5.7 cfs 20,736 cf

Link F: 14-38-0 Inflow=0.4 cfs 7,242 cf
Primary=0.4 cfs 7,242 cf

Total Runoff Area = 1,463,582 sf Runoff Volume = 69,904 cf Average Runoff Depth = 0.57"
84.41% Pervious = 1,235,477 sf 15.59% Impervious = 228,105 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS14: paved aisle Runoff Area=19,691 sf 94.87% Impervious Runoff Depth>3.79"
Flow Length=229' Tc=16.3 min CN=95 Runoff=1.4 cfs 6,215 cf

Subcatchment PS15: Process Building Runoff Area=22,384 sf 100.00% Impervious Runoff Depth>4.13"
Tc=6.0 min CN=98 Runoff=2.1 cfs 7,707 cf

Subcatchment PS16: paved area Runoff Area=17,826 sf 100.00% Impervious Runoff Depth>4.13"
Tc=6.0 min CN=98 Runoff=1.7 cfs 6,138 cf

Subcatchment PS17: paved area Runoff Area=16,650 sf 100.00% Impervious Runoff Depth>4.13"
Tc=6.0 min CN=98 Runoff=1.6 cfs 5,733 cf

Subcatchment PS18: roof and paved area Runoff Area=21,424 sf 100.00% Impervious Runoff Depth>4.13"
Tc=6.0 min CN=98 Runoff=2.0 cfs 7,377 cf

Subcatchment PS19: loading bay and roof Runoff Area=36,281 sf 100.00% Impervious Runoff Depth>4.13"
Tc=6.0 min CN=98 Runoff=3.5 cfs 12,492 cf

Subcatchment PS2: offsite east Runoff Area=54,682 sf 17.50% Impervious Runoff Depth>0.23"
Flow Length=267' Tc=22.9 min CN=44 Runoff=0.1 cfs 1,029 cf

Subcatchment PS20: Runoff Area=11,390 sf 0.00% Impervious Runoff Depth>3.47"
Tc=6.0 min CN=92 Runoff=1.0 cfs 3,297 cf

Subcatchment PS21: remainder site south Runoff Area=167,886 sf 0.00% Impervious Runoff Depth>0.14"
Flow Length=332' Tc=28.4 min CN=41 Runoff=0.1 cfs 1,921 cf

Subcatchment PS22: laydown area Runoff Area=2,752 sf 100.00% Impervious Runoff Depth>4.13"
Tc=6.0 min CN=98 Runoff=0.3 cfs 948 cf

Subcatchment PS3: offsite north Runoff Area=92,068 sf 7.96% Impervious Runoff Depth>0.14"
Flow Length=716' Tc=23.7 min CN=41 Runoff=0.0 cfs 1,057 cf

Subcatchment PS31: driveway Runoff Area=8,080 sf 100.00% Impervious Runoff Depth>4.13"
Tc=6.0 min CN=98 Runoff=0.8 cfs 2,782 cf

Subcatchment PS32: driveway Runoff Area=8,199 sf 100.00% Impervious Runoff Depth>4.13"
Tc=6.0 min CN=98 Runoff=0.8 cfs 2,823 cf

Subcatchment PS33: north of driveway Runoff Area=23,596 sf 0.00% Impervious Runoff Depth>0.09"
Tc=6.0 min CN=39 Runoff=0.0 cfs 179 cf

Subcatchment PS34: south of driveway Runoff Area=11,351 sf 0.00% Impervious Runoff Depth>0.09"
Tc=6.0 min CN=39 Runoff=0.0 cfs 86 cf

Subcatchment PS4: offsite north Runoff Area=161,914 sf 6.35% Impervious Runoff Depth>0.83"
Flow Length=778' Tc=28.6 min CN=58 Runoff=1.7 cfs 11,227 cf

Subcatchment PS40: FB2 maintenance drive Runoff Area=14,933 sf 0.00% Impervious Runoff Depth>0.41"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=49 Runoff=0.1 cfs 508 cf

Subcatchment PS5: offsite run on Runoff Area=217,984 sf 0.97% Impervious Runoff Depth>1.69"
Flow Length=1,113' Tc=74.8 min CN=72 Runoff=3.4 cfs 30,726 cf

Subcatchment PS6: offsite run on Runoff Area=51,321 sf 0.00% Impervious Runoff Depth>1.37"
Flow Length=482' Tc=20.7 min CN=67 Runoff=1.2 cfs 5,865 cf

Subcatchment PS7: offsite run-on Runoff Area=305,720 sf 0.00% Impervious Runoff Depth>0.92"
Flow Length=1,975' Tc=97.1 min CN=60 Runoff=1.9 cfs 23,391 cf

Subcatchment PSFB1: sediment forebay 1 Runoff Area=12,045 sf 0.00% Impervious Runoff Depth>0.09"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=39 Runoff=0.0 cfs 91 cf

Subcatchment PSFB2: sediment forebay 2 Runoff Area=17,093 sf 0.00% Impervious Runoff Depth>0.09"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=39 Runoff=0.0 cfs 127 cf

Subcatchment PSM1: FB1 maintenance area Runoff Area=7,267 sf 0.00% Impervious Runoff Depth>0.11"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=40 Runoff=0.0 cfs 69 cf

Subcatchment PSP1: filtration basin 1 area Runoff Area=23,524 sf 0.00% Impervious Runoff Depth>0.11"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=40 Runoff=0.0 cfs 224 cf

Subcatchment PSP2: filtration basin 2 area Runoff Area=30,454 sf 0.00% Impervious Runoff Depth>0.09"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=39 Runoff=0.0 cfs 227 cf

Subcatchment PST10: tribrid area Runoff Area=11,547 sf 34.69% Impervious Runoff Depth>2.26"
Flow Length=124' Slope=0.0100 '/' Tc=20.4 min CN=79 Runoff=0.5 cfs 2,173 cf

Subcatchment PST11: tribrid area Runoff Area=14,447 sf 55.46% Impervious Runoff Depth>2.26"
Flow Length=135' Tc=14.7 min CN=79 Runoff=0.7 cfs 2,723 cf

Subcatchment PST12: tribrid area Runoff Area=15,957 sf 50.21% Impervious Runoff Depth>2.43"
Flow Length=140' Slope=0.0180 '/' Tc=16.4 min CN=81 Runoff=0.8 cfs 3,229 cf

Subcatchment PST13: tribrid area Runoff Area=11,389 sf 36.49% Impervious Runoff Depth>1.51"
Flow Length=142' Slope=0.0230 '/' Tc=14.9 min CN=69 Runoff=0.3 cfs 1,431 cf

Subcatchment PST6: fet area Runoff Area=20,776 sf 35.46% Impervious Runoff Depth>1.58"
Flow Length=226' Slope=0.0100 '/' Tc=16.6 min CN=70 Runoff=0.6 cfs 2,729 cf

Subcatchment PST7: tribrid area Runoff Area=11,860 sf 50.51% Impervious Runoff Depth>1.79"
Flow Length=120' Tc=17.2 min CN=73 Runoff=0.4 cfs 1,771 cf

Subcatchment PST8: tribrid area Runoff Area=11,680 sf 51.21% Impervious Runoff Depth>2.02"
Flow Length=128' Tc=20.3 min CN=76 Runoff=0.4 cfs 1,964 cf

Subcatchment PST9: tribrid area Runoff Area=9,411 sf 31.82% Impervious Runoff Depth>2.10"
Flow Length=116' Slope=0.0100 '/' Tc=20.2 min CN=77 Runoff=0.4 cfs 1,644 cf

Reach 1R: maintenance FB2 swale Avg. Flow Depth=0.02' Max Vel=0.36 fps Inflow=0.1 cfs 508 cf
n=0.069 L=165.0' S=0.0606 '/' Capacity=14.2 cfs Outflow=0.1 cfs 503 cf

Reach 2R: maintenance FB1 swale Avg. Flow Depth=0.00' Max Vel=0.22 fps Inflow=0.0 cfs 69 cf
n=0.041 L=178.0' S=0.0573 '/' Capacity=2.8 cfs Outflow=0.0 cfs 68 cf

Reach 5R: 48" RCP - Naturalized Bottom Avg. Flow Depth=0.69' Max Vel=3.03 fps Inflow=8.3 cfs 29,700 cf
48.0" x 24.0", R=24.0" Arch Pipe n=0.040 L=48.0' S=0.0167 '/' Capacity=21.7 cfs Outflow=8.2 cfs 29,700 cf

Pond cb1: Peak Elev=293.62' Inflow=0.8 cfs 2,782 cf
15.0" Round Culvert n=0.013 L=21.8' S=0.0101 '/' Outflow=0.8 cfs 2,782 cf

Pond CB10: Peak Elev=286.58' Inflow=1.7 cfs 13,314 cf
15.0" Round Culvert n=0.013 L=169.0' S=0.0100 '/' Outflow=1.7 cfs 13,314 cf

Pond CB12: Peak Elev=284.88' Inflow=2.1 cfs 18,919 cf
15.0" Round Culvert n=0.013 L=60.0' S=0.0100 '/' Outflow=2.1 cfs 18,919 cf

Pond CB13: Peak Elev=289.18' Inflow=5.5 cfs 19,869 cf
18.0" Round Culvert n=0.013 L=71.4' S=0.0122 '/' Outflow=5.5 cfs 19,869 cf

Pond CB13A: Peak Elev=291.88' Inflow=5.5 cfs 19,869 cf
18.0" Round Culvert n=0.013 L=102.3' S=0.0102 '/' Outflow=5.5 cfs 19,869 cf

Pond CB14: Peak Elev=281.37' Inflow=9.8 cfs 37,955 cf
30.0" Round Culvert n=0.013 L=80.7' S=0.0100 '/' Outflow=9.8 cfs 37,955 cf

Pond CB15: Peak Elev=292.32' Inflow=0.6 cfs 2,729 cf
15.0" Round Culvert n=0.013 L=34.0' S=0.0100 '/' Outflow=0.6 cfs 2,729 cf

Pond CB16: Peak Elev=277.57' Inflow=0.0 cfs 68 cf
15.0" Round Culvert n=0.013 L=62.0' S=0.0290 '/' Outflow=0.0 cfs 68 cf

Pond CB17: Peak Elev=280.68' Inflow=3.1 cfs 23,163 cf
18.0" Round Culvert n=0.013 L=108.0' S=0.0150 '/' Outflow=3.1 cfs 23,163 cf

Pond CB18: Peak Elev=283.27' Inflow=2.8 cfs 22,215 cf
18.0" Round Culvert n=0.013 L=45.2' S=0.0100 '/' Outflow=2.8 cfs 22,215 cf

Pond CB19: Peak Elev=285.24' Inflow=0.3 cfs 948 cf
15.0" Round Culvert n=0.013 L=50.0' S=0.0100 '/' Outflow=0.3 cfs 948 cf

Pond cb2: Peak Elev=293.25' Inflow=1.6 cfs 5,605 cf
15.0" Round Culvert n=0.013 L=155.0' S=0.0085 '/' Outflow=1.6 cfs 5,605 cf

Pond cb20: Peak Elev=289.49' Inflow=0.4 cfs 1,771 cf
15.0" Round Culvert n=0.013 L=94.0' S=0.0245 '/' Outflow=0.4 cfs 1,771 cf

Pond cb21: Peak Elev=287.49' Inflow=1.6 cfs 7,636 cf
15.0" Round Culvert n=0.013 L=44.0' S=0.0089 '/' Outflow=1.6 cfs 7,636 cf

Pond cb22: Peak Elev=287.03' Inflow=2.0 cfs 9,600 cf
15.0" Round Culvert n=0.013 L=73.0' S=0.0099 '/' Outflow=2.0 cfs 9,600 cf

Pond CB23: Peak Elev=285.09' Inflow=2.3 cfs 11,244 cf
15.0" Round Culvert n=0.013 L=110.0' S=0.0101 '/' Outflow=2.3 cfs 11,244 cf

Pond CB24: Peak Elev=283.96' Inflow=2.8 cfs 13,418 cf
15.0" Round Culvert n=0.013 L=82.0' S=0.0106 '/' Outflow=2.8 cfs 13,418 cf

Pond CB27: Peak Elev=288.55' Inflow=0.7 cfs 2,723 cf
15.0" Round Culvert n=0.013 L=27.7' S=0.0101 '/' Outflow=0.7 cfs 2,723 cf

Pond CB28: Peak Elev=289.59' Inflow=2.6 cfs 10,937 cf
18.0" Round Culvert n=0.013 L=20.7' S=0.0101 '/' Outflow=2.6 cfs 10,937 cf

Pond CB3: Peak Elev=289.68' Inflow=1.7 cfs 12,284 cf
15.0" Round Culvert n=0.013 L=90.0' S=0.0100 '/' Outflow=1.7 cfs 12,284 cf

Pond CB30: Peak Elev=286.62' Inflow=3.7 cfs 34,753 cf
24.0" Round Culvert n=0.013 L=92.0' S=0.0100 '/' Outflow=3.7 cfs 34,753 cf

Pond CB4: Peak Elev=291.69' Inflow=1.7 cfs 11,227 cf
15.0" Round Culvert n=0.013 L=191.0' S=0.0100 '/' Outflow=1.7 cfs 11,227 cf

Pond CB6: Peak Elev=288.48' Inflow=1.4 cfs 6,215 cf
24.0" Round Culvert n=0.013 L=118.0' S=0.0100 '/' Outflow=1.4 cfs 6,215 cf

Pond CB8A: Peak Elev=286.84' Inflow=2.7 cfs 12,353 cf
15.0" Round Culvert n=0.013 L=131.3' S=0.0100 '/' Outflow=2.7 cfs 12,353 cf

Pond dmh1: Peak Elev=290.56' Inflow=1.6 cfs 5,605 cf
15.0" Round Culvert n=0.013 L=65.3' S=0.0100 '/' Outflow=1.6 cfs 5,605 cf

Pond dmh11: Peak Elev=278.55' Inflow=6.6 cfs 61,830 cf
24.0" Round Culvert n=0.013 L=41.0' S=0.0056 '/' Outflow=6.6 cfs 61,830 cf

Pond dmh23: Peak Elev=286.23' Inflow=2.0 cfs 9,600 cf
15.0" Round Culvert n=0.013 L=57.8' S=0.0100 '/' Outflow=2.0 cfs 9,600 cf

Pond DMH24: Peak Elev=285.58' Inflow=2.0 cfs 9,600 cf
15.0" Round Culvert n=0.013 L=37.0' S=0.0095 '/' Outflow=2.0 cfs 9,600 cf

Pond dmh25: Peak Elev=282.95' Inflow=2.8 cfs 13,418 cf
15.0" Round Culvert n=0.013 L=113.0' S=0.0093 '/' Outflow=2.8 cfs 13,418 cf

Pond DMH26: Peak Elev=281.68' Inflow=3.4 cfs 16,140 cf
18.0" Round Culvert n=0.013 L=126.4' S=0.0100 '/' Outflow=3.4 cfs 16,140 cf

Pond DMH3: Peak Elev=287.60' Inflow=1.7 cfs 12,284 cf
15.0" Round Culvert n=0.013 L=82.0' S=0.0100 '/' Outflow=1.7 cfs 12,284 cf

Pond DMH5: Peak Elev=290.21' Inflow=3.7 cfs 33,322 cf
24.0" Round Culvert n=0.013 L=126.7' S=0.0100 '/' Outflow=3.7 cfs 33,322 cf

Pond DMH5A: Peak Elev=288.81' Inflow=3.7 cfs 33,322 cf
24.0" Round Culvert n=0.013 L=118.0' S=0.0100 '/' Outflow=3.7 cfs 33,322 cf

Pond DMH6: Peak Elev=287.55' Inflow=3.7 cfs 33,322 cf
24.0" Round Culvert n=0.013 L=79.0' S=0.0101 '/' Outflow=3.7 cfs 33,322 cf

Pond DMH9: Peak Elev=279.95' Inflow=12.8 cfs 61,117 cf
30.0" Round Culvert n=0.013 L=24.0' S=0.0050 '/' Outflow=12.8 cfs 61,117 cf

Pond DMHRD: Peak Elev=289.92' Inflow=2.1 cfs 7,707 cf
18.0" Round Culvert n=0.013 L=28.0' S=0.0089 '/' Outflow=2.1 cfs 7,707 cf

Pond FB1: FILT. BASIN #1 Peak Elev=275.47' Storage=32,147 cf Inflow=6.6 cfs 62,213 cf
Discarded=0.4 cfs 18,665 cf Primary=0.9 cfs 22,137 cf Secondary=0.0 cfs 0 cf Outflow=1.3 cfs 40,802 cf

Pond FB2: FILT. BASIN #2 Peak Elev=277.70' Storage=20,330 cf Inflow=12.8 cfs 61,975 cf
Discarded=1.5 cfs 61,958 cf Primary=0.0 cfs 0 cf Secondary=0.0 cfs 0 cf Outflow=1.5 cfs 61,958 cf

Pond OS3: Detention Basin #1 Peak Elev=294.50' Storage=480 cf Inflow=3.4 cfs 30,726 cf
Primary=3.6 cfs 30,593 cf Secondary=0.0 cfs 0 cf Outflow=3.6 cfs 30,593 cf

Pond SFB1: FOREBAY #1 Peak Elev=277.48' Storage=0 cf Inflow=6.6 cfs 61,921 cf
Outflow=6.6 cfs 61,921 cf

Pond SFB2: FOREBAY #2 Peak Elev=279.19' Storage=0 cf Inflow=12.8 cfs 61,748 cf
Outflow=12.8 cfs 61,748 cf

Pond TD1: Peak Elev=292.07' Inflow=3.5 cfs 12,492 cf
24.0" Round Culvert n=0.013 L=102.3' S=0.0102 '/' Outflow=3.5 cfs 12,492 cf

Link 1: StreamStats Flow Manual Hydrograph Inflow=8.3 cfs 29,700 cf
Area= 1,951,488 sf Primary=8.3 cfs 29,700 cf

Link A: 14-44-38
Primary=0.0 cfs 0 cf

Link B: 14-47
Primary=0.0 cfs 0 cf

Link D: future property line Inflow=1.0 cfs 24,058 cf
Primary=1.0 cfs 24,058 cf

Link E: 14-38-0 Inflow=8.2 cfs 29,965 cf
Primary=8.2 cfs 29,965 cf

Link F: 14-38-0 Inflow=1.9 cfs 23,391 cf
Primary=1.9 cfs 23,391 cf

Total Runoff Area = 1,463,582 sf Runoff Volume = 149,904 cf Average Runoff Depth = 1.23"
84.41% Pervious = 1,235,477 sf 15.59% Impervious = 228,105 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS14: paved aisle Runoff Area=19,691 sf 94.87% Impervious Runoff Depth>4.93"
Flow Length=229' Tc=16.3 min CN=95 Runoff=1.8 cfs 8,097 cf

Subcatchment PS15: Process Building Runoff Area=22,384 sf 100.00% Impervious Runoff Depth>5.29"
Tc=6.0 min CN=98 Runoff=2.7 cfs 9,866 cf

Subcatchment PS16: paved area Runoff Area=17,826 sf 100.00% Impervious Runoff Depth>5.29"
Tc=6.0 min CN=98 Runoff=2.2 cfs 7,857 cf

Subcatchment PS17: paved area Runoff Area=16,650 sf 100.00% Impervious Runoff Depth>5.29"
Tc=6.0 min CN=98 Runoff=2.0 cfs 7,339 cf

Subcatchment PS18: roof and paved area Runoff Area=21,424 sf 100.00% Impervious Runoff Depth>5.29"
Tc=6.0 min CN=98 Runoff=2.6 cfs 9,443 cf

Subcatchment PS19: loading bay and roof Runoff Area=36,281 sf 100.00% Impervious Runoff Depth>5.29"
Tc=6.0 min CN=98 Runoff=4.4 cfs 15,992 cf

Subcatchment PS2: offsite east Runoff Area=54,682 sf 17.50% Impervious Runoff Depth>0.56"
Flow Length=267' Tc=22.9 min CN=44 Runoff=0.3 cfs 2,559 cf

Subcatchment PS20: Runoff Area=11,390 sf 0.00% Impervious Runoff Depth>4.60"
Tc=6.0 min CN=92 Runoff=1.3 cfs 4,371 cf

Subcatchment PS21: remainder site south Runoff Area=167,886 sf 0.00% Impervious Runoff Depth>0.41"
Flow Length=332' Tc=28.4 min CN=41 Runoff=0.5 cfs 5,693 cf

Subcatchment PS22: laydown area Runoff Area=2,752 sf 100.00% Impervious Runoff Depth>5.29"
Tc=6.0 min CN=98 Runoff=0.3 cfs 1,213 cf

Subcatchment PS3: offsite north Runoff Area=92,068 sf 7.96% Impervious Runoff Depth>0.41"
Flow Length=716' Tc=23.7 min CN=41 Runoff=0.3 cfs 3,130 cf

Subcatchment PS31: driveway Runoff Area=8,080 sf 100.00% Impervious Runoff Depth>5.29"
Tc=6.0 min CN=98 Runoff=1.0 cfs 3,561 cf

Subcatchment PS32: driveway Runoff Area=8,199 sf 100.00% Impervious Runoff Depth>5.29"
Tc=6.0 min CN=98 Runoff=1.0 cfs 3,614 cf

Subcatchment PS33: north of driveway Runoff Area=23,596 sf 0.00% Impervious Runoff Depth>0.32"
Tc=6.0 min CN=39 Runoff=0.1 cfs 627 cf

Subcatchment PS34: south of driveway Runoff Area=11,351 sf 0.00% Impervious Runoff Depth>0.32"
Tc=6.0 min CN=39 Runoff=0.0 cfs 302 cf

Subcatchment PS4: offsite north Runoff Area=161,914 sf 6.35% Impervious Runoff Depth>1.46"
Flow Length=778' Tc=28.6 min CN=58 Runoff=3.3 cfs 19,691 cf

Subcatchment PS40: FB2 maintenance drive Runoff Area=14,933 sf 0.00% Impervious Runoff Depth>0.85"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=49 Runoff=0.2 cfs 1,059 cf

Subcatchment PS5: offsite run on Runoff Area=217,984 sf 0.97% Impervious Runoff Depth>2.57"
Flow Length=1,113' Tc=74.8 min CN=72 Runoff=5.2 cfs 46,635 cf

Subcatchment PS6: offsite run on Runoff Area=51,321 sf 0.00% Impervious Runoff Depth>2.17"
Flow Length=482' Tc=20.7 min CN=67 Runoff=1.9 cfs 9,284 cf

Subcatchment PS7: offsite run-on Runoff Area=305,720 sf 0.00% Impervious Runoff Depth>1.57"
Flow Length=1,975' Tc=97.1 min CN=60 Runoff=3.5 cfs 40,076 cf

Subcatchment PSFB1: sediment forebay 1 Runoff Area=12,045 sf 0.00% Impervious Runoff Depth>0.32"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=39 Runoff=0.0 cfs 320 cf

Subcatchment PSFB2: sediment forebay 2 Runoff Area=17,093 sf 0.00% Impervious Runoff Depth>0.32"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=39 Runoff=0.0 cfs 449 cf

Subcatchment PSM1: FB1 maintenance area Runoff Area=7,267 sf 0.00% Impervious Runoff Depth>0.36"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=40 Runoff=0.0 cfs 221 cf

Subcatchment PSP1: filtration basin 1 area Runoff Area=23,524 sf 0.00% Impervious Runoff Depth>0.36"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=40 Runoff=0.1 cfs 714 cf

Subcatchment PSP2: filtration basin 2 area Runoff Area=30,454 sf 0.00% Impervious Runoff Depth>0.32"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=39 Runoff=0.1 cfs 800 cf

Subcatchment PST10: tribrid area Runoff Area=11,547 sf 34.69% Impervious Runoff Depth>3.25"
Flow Length=124' Slope=0.0100 '/' Tc=20.4 min CN=79 Runoff=0.7 cfs 3,128 cf

Subcatchment PST11: tribrid area Runoff Area=14,447 sf 55.46% Impervious Runoff Depth>3.25"
Flow Length=135' Tc=14.7 min CN=79 Runoff=1.0 cfs 3,918 cf

Subcatchment PST12: tribrid area Runoff Area=15,957 sf 50.21% Impervious Runoff Depth>3.45"
Flow Length=140' Slope=0.0180 '/' Tc=16.4 min CN=81 Runoff=1.1 cfs 4,585 cf

Subcatchment PST13: tribrid area Runoff Area=11,389 sf 36.49% Impervious Runoff Depth>2.34"
Flow Length=142' Slope=0.0230 '/' Tc=14.9 min CN=69 Runoff=0.5 cfs 2,224 cf

Subcatchment PST6: fet area Runoff Area=20,776 sf 35.46% Impervious Runoff Depth>2.43"
Flow Length=226' Slope=0.0100 '/' Tc=16.6 min CN=70 Runoff=1.0 cfs 4,205 cf

Subcatchment PST7: tribrid area Runoff Area=11,860 sf 50.51% Impervious Runoff Depth>2.69"
Flow Length=120' Tc=17.2 min CN=73 Runoff=0.6 cfs 2,662 cf

Subcatchment PST8: tribrid area Runoff Area=11,680 sf 51.21% Impervious Runoff Depth>2.97"
Flow Length=128' Tc=20.3 min CN=76 Runoff=0.6 cfs 2,887 cf

Subcatchment PST9: tribrid area Runoff Area=9,411 sf 31.82% Impervious Runoff Depth>3.06"
Flow Length=116' Slope=0.0100 '/' Tc=20.2 min CN=77 Runoff=0.5 cfs 2,400 cf

Reach 1R: maintenance FB2 swale Avg. Flow Depth=0.03' Max Vel=0.55 fps Inflow=0.2 cfs 1,059 cf
n=0.069 L=165.0' S=0.0606 '/' Capacity=14.2 cfs Outflow=0.1 cfs 1,051 cf

Reach 2R: maintenance FB1 swale Avg. Flow Depth=0.01' Max Vel=0.49 fps Inflow=0.0 cfs 221 cf
n=0.041 L=178.0' S=0.0573 '/' Capacity=2.8 cfs Outflow=0.0 cfs 219 cf

Reach 5R: 48" RCP - Naturalized Avg. Flow Depth=0.92' Max Vel=3.41 fps Inflow=12.1 cfs 43,560 cf
48.0" x 24.0", R=24.0" Arch Pipe n=0.040 L=48.0' S=0.0167 '/' Capacity=21.7 cfs Outflow=12.1 cfs 43,562 cf

Pond cb1: Peak Elev=293.69' Inflow=1.0 cfs 3,561 cf
15.0" Round Culvert n=0.013 L=21.8' S=0.0101 '/' Outflow=1.0 cfs 3,561 cf

Pond CB10: Peak Elev=286.99' Inflow=3.8 cfs 25,380 cf
15.0" Round Culvert n=0.013 L=169.0' S=0.0100 '/' Outflow=3.8 cfs 25,380 cf

Pond CB12: Peak Elev=285.33' Inflow=4.3 cfs 32,555 cf
15.0" Round Culvert n=0.013 L=60.0' S=0.0100 '/' Outflow=4.3 cfs 32,555 cf

Pond CB13: Peak Elev=289.41' Inflow=7.0 cfs 25,435 cf
18.0" Round Culvert n=0.013 L=71.4' S=0.0122 '/' Outflow=7.0 cfs 25,435 cf

Pond CB13A: Peak Elev=292.11' Inflow=7.0 cfs 25,435 cf
18.0" Round Culvert n=0.013 L=102.3' S=0.0102 '/' Outflow=7.0 cfs 25,435 cf

Pond CB14: Peak Elev=281.57' Inflow=12.4 cfs 48,727 cf
30.0" Round Culvert n=0.013 L=80.7' S=0.0100 '/' Outflow=12.4 cfs 48,727 cf

Pond CB15: Peak Elev=292.43' Inflow=1.0 cfs 4,205 cf
15.0" Round Culvert n=0.013 L=34.0' S=0.0100 '/' Outflow=1.0 cfs 4,205 cf

Pond CB16: Peak Elev=277.61' Inflow=0.0 cfs 219 cf
15.0" Round Culvert n=0.013 L=62.0' S=0.0290 '/' Outflow=0.0 cfs 219 cf

Pond CB17: Peak Elev=280.99' Inflow=4.8 cfs 38,139 cf
18.0" Round Culvert n=0.013 L=108.0' S=0.0150 '/' Outflow=4.8 cfs 38,139 cf

Pond CB18: Peak Elev=283.58' Inflow=4.7 cfs 36,926 cf
18.0" Round Culvert n=0.013 L=45.2' S=0.0100 '/' Outflow=4.7 cfs 36,926 cf

Pond CB19: Peak Elev=285.27' Inflow=0.3 cfs 1,213 cf
15.0" Round Culvert n=0.013 L=50.0' S=0.0100 '/' Outflow=0.3 cfs 1,213 cf

Pond cb2: Peak Elev=293.34' Inflow=2.0 cfs 7,175 cf
15.0" Round Culvert n=0.013 L=155.0' S=0.0085 '/' Outflow=2.0 cfs 7,175 cf

Pond cb20: Peak Elev=289.56' Inflow=0.6 cfs 2,662 cf
15.0" Round Culvert n=0.013 L=94.0' S=0.0245 '/' Outflow=0.6 cfs 2,662 cf

Pond cb21: Peak Elev=287.76' Inflow=2.5 cfs 11,946 cf
15.0" Round Culvert n=0.013 L=44.0' S=0.0089 '/' Outflow=2.5 cfs 11,946 cf

Pond cb22: Peak Elev=287.31' Inflow=3.2 cfs 14,834 cf
15.0" Round Culvert n=0.013 L=73.0' S=0.0099 '/' Outflow=3.2 cfs 14,834 cf

Pond CB23: Peak Elev=285.38' Inflow=3.7 cfs 17,234 cf
15.0" Round Culvert n=0.013 L=110.0' S=0.0101 '/' Outflow=3.7 cfs 17,234 cf

Pond CB24: Peak Elev=284.28' Inflow=4.3 cfs 20,362 cf
15.0" Round Culvert n=0.013 L=82.0' S=0.0106 '/' Outflow=4.3 cfs 20,362 cf

Pond CB27: Peak Elev=288.64' Inflow=1.0 cfs 3,918 cf
15.0" Round Culvert n=0.013 L=27.7' S=0.0101 '/' Outflow=1.0 cfs 3,918 cf

Pond CB28: Peak Elev=289.74' Inflow=3.4 cfs 14,451 cf
18.0" Round Culvert n=0.013 L=20.7' S=0.0101 '/' Outflow=3.4 cfs 14,451 cf

Pond CB3: Peak Elev=290.04' Inflow=3.6 cfs 22,821 cf
15.0" Round Culvert n=0.013 L=90.0' S=0.0100 '/' Outflow=3.6 cfs 22,821 cf

Pond CB30: Peak Elev=286.81' Inflow=5.5 cfs 52,898 cf
24.0" Round Culvert n=0.013 L=92.0' S=0.0100 '/' Outflow=5.5 cfs 52,898 cf

Pond CB4: Peak Elev=292.01' Inflow=3.3 cfs 19,691 cf
15.0" Round Culvert n=0.013 L=191.0' S=0.0100 '/' Outflow=3.3 cfs 19,691 cf

Pond CB6: Peak Elev=288.55' Inflow=1.8 cfs 8,097 cf
24.0" Round Culvert n=0.013 L=118.0' S=0.0100 '/' Outflow=1.8 cfs 8,097 cf

Pond CB8A: Peak Elev=286.98' Inflow=3.5 cfs 15,954 cf
15.0" Round Culvert n=0.013 L=131.3' S=0.0100 '/' Outflow=3.5 cfs 15,954 cf

Pond dmh1: Peak Elev=290.65' Inflow=2.0 cfs 7,175 cf
15.0" Round Culvert n=0.013 L=65.3' S=0.0100 '/' Outflow=2.0 cfs 7,175 cf

Pond dmh11: Peak Elev=278.98' Inflow=10.3 cfs 91,629 cf
24.0" Round Culvert n=0.013 L=41.0' S=0.0056 '/' Outflow=10.3 cfs 91,629 cf

Pond dmh23: Peak Elev=286.52' Inflow=3.2 cfs 14,834 cf
15.0" Round Culvert n=0.013 L=57.8' S=0.0100 '/' Outflow=3.2 cfs 14,834 cf

Pond DMH24: Peak Elev=285.88' Inflow=3.2 cfs 14,834 cf
15.0" Round Culvert n=0.013 L=37.0' S=0.0095 '/' Outflow=3.2 cfs 14,834 cf

Pond dmh25: Peak Elev=283.26' Inflow=4.3 cfs 20,362 cf
15.0" Round Culvert n=0.013 L=113.0' S=0.0093 '/' Outflow=4.3 cfs 20,362 cf

Pond DMH26: Peak Elev=281.94' Inflow=5.2 cfs 24,280 cf
18.0" Round Culvert n=0.013 L=126.4' S=0.0100 '/' Outflow=5.2 cfs 24,280 cf

Pond DMH3: Peak Elev=287.99' Inflow=3.6 cfs 22,821 cf
15.0" Round Culvert n=0.013 L=82.0' S=0.0100 '/' Outflow=3.6 cfs 22,821 cf

Pond DMH5: Peak Elev=290.40' Inflow=5.4 cfs 50,673 cf
24.0" Round Culvert n=0.013 L=126.7' S=0.0100 '/' Outflow=5.4 cfs 50,673 cf

Pond DMH5A: Peak Elev=289.02' Inflow=5.4 cfs 50,673 cf
24.0" Round Culvert n=0.013 L=118.0' S=0.0100 '/' Outflow=5.4 cfs 50,673 cf

Pond DMH6: Peak Elev=287.76' Inflow=5.4 cfs 50,673 cf
24.0" Round Culvert n=0.013 L=79.0' S=0.0101 '/' Outflow=5.4 cfs 50,673 cf

Pond DMH9: Peak Elev=280.28' Inflow=16.9 cfs 86,866 cf
30.0" Round Culvert n=0.013 L=24.0' S=0.0050 '/' Outflow=16.9 cfs 86,866 cf

Pond DMHRD: Peak Elev=290.06' Inflow=2.7 cfs 9,866 cf
18.0" Round Culvert n=0.013 L=28.0' S=0.0089 '/' Outflow=2.7 cfs 9,866 cf

Pond FB1: FILT. BASIN #1 Peak Elev=276.36' Storage=44,651 cf Inflow=10.4 cfs 92,882 cf
Discarded=0.4 cfs 20,423 cf Primary=2.3 cfs 47,896 cf Secondary=0.0 cfs 0 cf Outflow=2.7 cfs 68,319 cf

Pond FB2: FILT. BASIN #2 Peak Elev=278.47' Storage=33,697 cf Inflow=16.9 cfs 89,167 cf
Discarded=1.6 cfs 81,281 cf Primary=0.3 cfs 3,244 cf Secondary=0.0 cfs 0 cf Outflow=1.8 cfs 84,524 cf

Pond OS3: Detention Basin #1 Peak Elev=294.50' Storage=481 cf Inflow=5.2 cfs 46,635 cf
Primary=5.2 cfs 46,468 cf Secondary=0.0 cfs 0 cf Outflow=5.2 cfs 46,468 cf

Pond SFB1: FOREBAY #1 Peak Elev=277.61' Storage=0 cf Inflow=10.4 cfs 91,949 cf
Outflow=10.4 cfs 91,949 cf

Pond SFB2: FOREBAY #2 Peak Elev=279.26' Storage=0 cf Inflow=16.9 cfs 88,367 cf
Outflow=16.9 cfs 88,367 cf

Pond TD1: Peak Elev=292.31' Inflow=4.4 cfs 15,992 cf
24.0" Round Culvert n=0.013 L=102.3' S=0.0102 '/' Outflow=4.4 cfs 15,992 cf

Link 1: StreamStats Flow Manual Hydrograph Inflow=12.1 cfs 43,560 cf
Area= 1,951,488 sf Primary=12.1 cfs 43,560 cf

Link A: 14-44-38
Primary=0.0 cfs 0 cf

Link B: 14-47
Primary=0.0 cfs 0 cf

Link D: future property line Inflow=2.7 cfs 56,832 cf
Primary=2.7 cfs 56,832 cf

Link E: 14-38-0 Inflow=12.1 cfs 44,490 cf
Primary=12.1 cfs 44,490 cf

Link F: 14-38-0 Inflow=3.5 cfs 40,076 cf
Primary=3.5 cfs 40,076 cf

Total Runoff Area = 1,463,582 sf Runoff Volume = 228,923 cf Average Runoff Depth = 1.88"
84.41% Pervious = 1,235,477 sf 15.59% Impervious = 228,105 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS14: paved aisle Runoff Area=19,691 sf 94.87% Impervious Runoff Depth>5.99"
Flow Length=229' Tc=16.3 min CN=95 Runoff=2.1 cfs 9,837 cf

Subcatchment PS15: Process Building Runoff Area=22,384 sf 100.00% Impervious Runoff Depth>6.36"
Tc=6.0 min CN=98 Runoff=3.2 cfs 11,859 cf

Subcatchment PS16: paved area Runoff Area=17,826 sf 100.00% Impervious Runoff Depth>6.36"
Tc=6.0 min CN=98 Runoff=2.6 cfs 9,444 cf

Subcatchment PS17: paved area Runoff Area=16,650 sf 100.00% Impervious Runoff Depth>6.36"
Tc=6.0 min CN=98 Runoff=2.4 cfs 8,821 cf

Subcatchment PS18: roof and paved area Runoff Area=21,424 sf 100.00% Impervious Runoff Depth>6.36"
Tc=6.0 min CN=98 Runoff=3.1 cfs 11,350 cf

Subcatchment PS19: loading bay and roof Runoff Area=36,281 sf 100.00% Impervious Runoff Depth>6.36"
Tc=6.0 min CN=98 Runoff=5.3 cfs 19,221 cf

Subcatchment PS2: offsite east Runoff Area=54,682 sf 17.50% Impervious Runoff Depth>0.97"
Flow Length=267' Tc=22.9 min CN=44 Runoff=0.6 cfs 4,427 cf

Subcatchment PS20: Runoff Area=11,390 sf 0.00% Impervious Runoff Depth>5.66"
Tc=6.0 min CN=92 Runoff=1.6 cfs 5,369 cf

Subcatchment PS21: remainder site south Runoff Area=167,886 sf 0.00% Impervious Runoff Depth>0.76"
Flow Length=332' Tc=28.4 min CN=41 Runoff=1.2 cfs 10,577 cf

Subcatchment PS22: laydown area Runoff Area=2,752 sf 100.00% Impervious Runoff Depth>6.36"
Tc=6.0 min CN=98 Runoff=0.4 cfs 1,458 cf

Subcatchment PS3: offsite north Runoff Area=92,068 sf 7.96% Impervious Runoff Depth>0.76"
Flow Length=716' Tc=23.7 min CN=41 Runoff=0.7 cfs 5,813 cf

Subcatchment PS31: driveway Runoff Area=8,080 sf 100.00% Impervious Runoff Depth>6.36"
Tc=6.0 min CN=98 Runoff=1.2 cfs 4,281 cf

Subcatchment PS32: driveway Runoff Area=8,199 sf 100.00% Impervious Runoff Depth>6.36"
Tc=6.0 min CN=98 Runoff=1.2 cfs 4,344 cf

Subcatchment PS33: north of driveway Runoff Area=23,596 sf 0.00% Impervious Runoff Depth>0.63"
Tc=6.0 min CN=39 Runoff=0.2 cfs 1,238 cf

Subcatchment PS34: south of driveway Runoff Area=11,351 sf 0.00% Impervious Runoff Depth>0.63"
Tc=6.0 min CN=39 Runoff=0.1 cfs 595 cf

Subcatchment PS4: offsite north Runoff Area=161,914 sf 6.35% Impervious Runoff Depth>2.13"
Flow Length=778' Tc=28.6 min CN=58 Runoff=5.1 cfs 28,681 cf

Subcatchment PS40: FB2 maintenance drive Runoff Area=14,933 sf 0.00% Impervious Runoff Depth>1.36"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=49 Runoff=0.3 cfs 1,689 cf

Subcatchment PS5: offsite run on Runoff Area=217,984 sf 0.97% Impervious Runoff Depth>3.43"
Flow Length=1,113' Tc=74.8 min CN=72 Runoff=7.0 cfs 62,353 cf

Subcatchment PS6: offsite run on Runoff Area=51,321 sf 0.00% Impervious Runoff Depth>2.98"
Flow Length=482' Tc=20.7 min CN=67 Runoff=2.7 cfs 12,736 cf

Subcatchment PS7: offsite run-on Runoff Area=305,720 sf 0.00% Impervious Runoff Depth>2.26"
Flow Length=1,975' Tc=97.1 min CN=60 Runoff=5.2 cfs 57,599 cf

Subcatchment PSFB1: sediment forebay 1 Runoff Area=12,045 sf 0.00% Impervious Runoff Depth>0.63"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=39 Runoff=0.1 cfs 632 cf

Subcatchment PSFB2: sediment forebay 2 Runoff Area=17,093 sf 0.00% Impervious Runoff Depth>0.62"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=39 Runoff=0.1 cfs 889 cf

Subcatchment PSM1: FB1 maintenance area Runoff Area=7,267 sf 0.00% Impervious Runoff Depth>0.70"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=40 Runoff=0.1 cfs 421 cf

Subcatchment PSP1: filtration basin 1 area Runoff Area=23,524 sf 0.00% Impervious Runoff Depth>0.70"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=40 Runoff=0.2 cfs 1,363 cf

Subcatchment PSP2: filtration basin 2 area Runoff Area=30,454 sf 0.00% Impervious Runoff Depth>0.62"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=39 Runoff=0.2 cfs 1,583 cf

Subcatchment PST10: tribrid area Runoff Area=11,547 sf 34.69% Impervious Runoff Depth>4.20"
Flow Length=124' Slope=0.0100 '/' Tc=20.4 min CN=79 Runoff=0.9 cfs 4,046 cf

Subcatchment PST11: tribrid area Runoff Area=14,447 sf 55.46% Impervious Runoff Depth>4.21"
Flow Length=135' Tc=14.7 min CN=79 Runoff=1.2 cfs 5,068 cf

Subcatchment PST12: tribrid area Runoff Area=15,957 sf 50.21% Impervious Runoff Depth>4.42"
Flow Length=140' Slope=0.0180 '/' Tc=16.4 min CN=81 Runoff=1.4 cfs 5,880 cf

Subcatchment PST13: tribrid area Runoff Area=11,389 sf 36.49% Impervious Runoff Depth>3.18"
Flow Length=142' Slope=0.0230 '/' Tc=14.9 min CN=69 Runoff=0.7 cfs 3,017 cf

Subcatchment PST6: fet area Runoff Area=20,776 sf 35.46% Impervious Runoff Depth>3.28"
Flow Length=226' Slope=0.0100 '/' Tc=16.6 min CN=70 Runoff=1.3 cfs 5,675 cf

Subcatchment PST7: tribrid area Runoff Area=11,860 sf 50.51% Impervious Runoff Depth>3.58"
Flow Length=120' Tc=17.2 min CN=73 Runoff=0.8 cfs 3,539 cf

Subcatchment PST8: tribrid area Runoff Area=11,680 sf 51.21% Impervious Runoff Depth>3.89"
Flow Length=128' Tc=20.3 min CN=76 Runoff=0.8 cfs 3,785 cf

Subcatchment PST9: tribrid area Runoff Area=9,411 sf 31.82% Impervious Runoff Depth>3.99"
Flow Length=116' Slope=0.0100 '/' Tc=20.2 min CN=77 Runoff=0.7 cfs 3,132 cf

Reach 1R: maintenance FB2 swale Avg. Flow Depth=0.05' Max Vel=0.70 fps Inflow=0.3 cfs 1,689 cf
n=0.069 L=165.0' S=0.0606 '/' Capacity=14.2 cfs Outflow=0.3 cfs 1,680 cf

Reach 2R: maintenance FB1 swale Avg. Flow Depth=0.03' Max Vel=0.74 fps Inflow=0.1 cfs 421 cf
n=0.041 L=178.0' S=0.0573 '/' Capacity=2.8 cfs Outflow=0.1 cfs 419 cf

Reach 5R: 48" RCP - Naturalized Avg. Flow Depth=1.12' Max Vel=3.65 fps Inflow=15.5 cfs 55,800 cf
48.0" x 24.0", R=24.0" Arch Pipe n=0.040 L=48.0' S=0.0167 '/' Capacity=21.7 cfs Outflow=15.5 cfs 55,803 cf

Pond cb1: Peak Elev=293.75' Inflow=1.2 cfs 4,281 cf
15.0" Round Culvert n=0.013 L=21.8' S=0.0101 '/' Outflow=1.2 cfs 4,281 cf

Pond CB10: Peak Elev=288.58' Inflow=6.4 cfs 38,920 cf
15.0" Round Culvert n=0.013 L=169.0' S=0.0100 '/' Outflow=6.4 cfs 38,920 cf

Pond CB12: Peak Elev=286.29' Inflow=7.1 cfs 47,545 cf
15.0" Round Culvert n=0.013 L=60.0' S=0.0100 '/' Outflow=7.1 cfs 47,545 cf

Pond CB13: Peak Elev=289.72' Inflow=8.4 cfs 30,571 cf
18.0" Round Culvert n=0.013 L=71.4' S=0.0122 '/' Outflow=8.4 cfs 30,571 cf

Pond CB13A: Peak Elev=292.42' Inflow=8.4 cfs 30,571 cf
18.0" Round Culvert n=0.013 L=102.3' S=0.0102 '/' Outflow=8.4 cfs 30,571 cf

Pond CB14: Peak Elev=281.78' Inflow=14.9 cfs 58,673 cf
30.0" Round Culvert n=0.013 L=80.7' S=0.0100 '/' Outflow=14.9 cfs 58,673 cf

Pond CB15: Peak Elev=292.52' Inflow=1.3 cfs 5,675 cf
15.0" Round Culvert n=0.013 L=34.0' S=0.0100 '/' Outflow=1.3 cfs 5,675 cf

Pond CB16: Peak Elev=277.66' Inflow=0.1 cfs 419 cf
15.0" Round Culvert n=0.013 L=62.0' S=0.0290 '/' Outflow=0.1 cfs 419 cf

Pond CB17: Peak Elev=281.35' Inflow=7.6 cfs 54,371 cf
18.0" Round Culvert n=0.013 L=108.0' S=0.0150 '/' Outflow=7.6 cfs 54,371 cf

Pond CB18: Peak Elev=284.02' Inflow=7.5 cfs 52,914 cf
18.0" Round Culvert n=0.013 L=45.2' S=0.0100 '/' Outflow=7.5 cfs 52,914 cf

Pond CB19: Peak Elev=285.30' Inflow=0.4 cfs 1,458 cf
15.0" Round Culvert n=0.013 L=50.0' S=0.0100 '/' Outflow=0.4 cfs 1,458 cf

Pond cb2: Peak Elev=293.41' Inflow=2.4 cfs 8,624 cf
15.0" Round Culvert n=0.013 L=155.0' S=0.0085 '/' Outflow=2.4 cfs 8,624 cf

Pond cb20: Peak Elev=289.63' Inflow=0.8 cfs 3,539 cf
15.0" Round Culvert n=0.013 L=94.0' S=0.0245 '/' Outflow=0.8 cfs 3,539 cf

Pond cb21: Peak Elev=288.06' Inflow=3.5 cfs 16,275 cf
15.0" Round Culvert n=0.013 L=44.0' S=0.0089 '/' Outflow=3.5 cfs 16,275 cf

Pond cb22: Peak Elev=287.65' Inflow=4.3 cfs 20,060 cf
15.0" Round Culvert n=0.013 L=73.0' S=0.0099 '/' Outflow=4.3 cfs 20,060 cf

Pond CB23: Peak Elev=285.88' Inflow=5.0 cfs 23,192 cf
15.0" Round Culvert n=0.013 L=110.0' S=0.0101 '/' Outflow=5.0 cfs 23,192 cf

Pond CB24: Peak Elev=284.92' Inflow=5.9 cfs 27,238 cf
15.0" Round Culvert n=0.013 L=82.0' S=0.0106 '/' Outflow=5.9 cfs 27,238 cf

Pond CB27: Peak Elev=288.72' Inflow=1.2 cfs 5,068 cf
15.0" Round Culvert n=0.013 L=27.7' S=0.0101 '/' Outflow=1.2 cfs 5,068 cf

Pond CB28: Peak Elev=289.87' Inflow=4.2 cfs 17,739 cf
18.0" Round Culvert n=0.013 L=20.7' S=0.0101 '/' Outflow=4.2 cfs 17,739 cf

Pond CB3: Peak Elev=290.98' Inflow=5.8 cfs 34,493 cf
15.0" Round Culvert n=0.013 L=90.0' S=0.0100 '/' Outflow=5.8 cfs 34,493 cf

Pond CB30: Peak Elev=287.01' Inflow=7.4 cfs 70,848 cf
24.0" Round Culvert n=0.013 L=92.0' S=0.0100 '/' Outflow=7.4 cfs 70,848 cf

Pond CB4: Peak Elev=292.50' Inflow=5.1 cfs 28,681 cf
15.0" Round Culvert n=0.013 L=191.0' S=0.0100 '/' Outflow=5.1 cfs 28,681 cf

Pond CB6: Peak Elev=288.60' Inflow=2.1 cfs 9,837 cf
24.0" Round Culvert n=0.013 L=118.0' S=0.0100 '/' Outflow=2.1 cfs 9,837 cf

Pond CB8A: Peak Elev=287.12' Inflow=4.2 cfs 19,281 cf
15.0" Round Culvert n=0.013 L=131.3' S=0.0100 '/' Outflow=4.2 cfs 19,281 cf

Pond dmh1: Peak Elev=290.73' Inflow=2.4 cfs 8,624 cf
15.0" Round Culvert n=0.013 L=65.3' S=0.0100 '/' Outflow=2.4 cfs 8,624 cf

Pond dmh11: Peak Elev=279.36' Inflow=13.7 cfs 120,893 cf
24.0" Round Culvert n=0.013 L=41.0' S=0.0056 '/' Outflow=13.7 cfs 120,893 cf

Pond dmh23: Peak Elev=286.94' Inflow=4.3 cfs 20,060 cf
15.0" Round Culvert n=0.013 L=57.8' S=0.0100 '/' Outflow=4.3 cfs 20,060 cf

Pond DMH24: Peak Elev=286.39' Inflow=4.3 cfs 20,060 cf
15.0" Round Culvert n=0.013 L=37.0' S=0.0095 '/' Outflow=4.3 cfs 20,060 cf

Pond dmh25: Peak Elev=283.71' Inflow=5.9 cfs 27,238 cf
15.0" Round Culvert n=0.013 L=113.0' S=0.0093 '/' Outflow=5.9 cfs 27,238 cf

Pond DMH26: Peak Elev=282.21' Inflow=7.0 cfs 32,305 cf
18.0" Round Culvert n=0.013 L=126.4' S=0.0100 '/' Outflow=7.0 cfs 32,305 cf

Pond DMH3: Peak Elev=289.75' Inflow=5.8 cfs 34,493 cf
15.0" Round Culvert n=0.013 L=82.0' S=0.0100 '/' Outflow=5.8 cfs 34,493 cf

Pond DMH5: Peak Elev=290.61' Inflow=7.3 cfs 67,831 cf
24.0" Round Culvert n=0.013 L=126.7' S=0.0100 '/' Outflow=7.3 cfs 67,831 cf

Pond DMH5A: Peak Elev=289.24' Inflow=7.3 cfs 67,831 cf
24.0" Round Culvert n=0.013 L=118.0' S=0.0100 '/' Outflow=7.3 cfs 67,831 cf

Pond DMH6: Peak Elev=287.99' Inflow=7.3 cfs 67,831 cf
24.0" Round Culvert n=0.013 L=79.0' S=0.0101 '/' Outflow=7.3 cfs 67,831 cf

Pond DMH9: Peak Elev=280.61' Inflow=21.0 cfs 113,045 cf
30.0" Round Culvert n=0.013 L=24.0' S=0.0050 '/' Outflow=21.0 cfs 113,045 cf

Pond DMHRD: Peak Elev=290.20' Inflow=3.2 cfs 11,859 cf
18.0" Round Culvert n=0.013 L=28.0' S=0.0089 '/' Outflow=3.2 cfs 11,859 cf

Pond FB1: FILT. BASIN #1 Peak Elev=277.00' Storage=54,459 cf Inflow=14.0 cfs 123,306 cf
Discarded=0.5 cfs 21,655 cf Primary=4.5 cfs 75,029 cf Secondary=0.0 cfs 0 cf Outflow=5.0 cfs 96,684 cf

Pond FB2: FILT. BASIN #2 Peak Elev=278.97' Storage=42,889 cf Inflow=21.0 cfs 117,197 cf
Discarded=1.7 cfs 86,750 cf Primary=2.3 cfs 18,869 cf Secondary=0.0 cfs 0 cf Outflow=4.0 cfs 105,619 cf

Pond OS3: Detention Basin #1 Peak Elev=294.50' Storage=483 cf Inflow=7.0 cfs 62,353 cf
Primary=7.1 cfs 62,156 cf Secondary=0.0 cfs 0 cf Outflow=7.1 cfs 62,156 cf

Pond SFB1: FOREBAY #1 Peak Elev=277.72' Storage=0 cf Inflow=13.8 cfs 121,525 cf
Outflow=13.8 cfs 121,525 cf

Pond SFB2: FOREBAY #2 Peak Elev=279.32' Storage=0 cf Inflow=21.0 cfs 115,614 cf
Outflow=21.0 cfs 115,614 cf

Pond TD1: Peak Elev=292.60' Inflow=5.3 cfs 19,221 cf
24.0" Round Culvert n=0.013 L=102.3' S=0.0102 '/' Outflow=5.3 cfs 19,221 cf

Link 1: StreamStats Flow Manual Hydrograph Inflow=15.5 cfs 55,800 cf
Area= 1,951,488 sf Primary=15.5 cfs 55,800 cf

Link A: 14-44-38
Primary=0.0 cfs 0 cf

Link B: 14-47
Primary=0.0 cfs 0 cf

Link D: future property line Inflow=6.8 cfs 104,474 cf
Primary=6.8 cfs 104,474 cf

Link E: 14-38-0 Inflow=15.5 cfs 57,636 cf
Primary=15.5 cfs 57,636 cf

Link F: 14-38-0 Inflow=5.2 cfs 57,599 cf
Primary=5.2 cfs 57,599 cf

Total Runoff Area = 1,463,582 sf Runoff Volume = 310,720 cf Average Runoff Depth = 2.55"
84.41% Pervious = 1,235,477 sf 15.59% Impervious = 228,105 sf

Summary for Subcatchment PS14: paved aisle

Runoff = 1.4 cfs @ 12.22 hrs, Volume= 6,215 cf, Depth> 3.79"
Routed to Pond CB6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
799	98	Roofs, HSG A
176	98	Roofs, HSG C
1,186	98	Paved parking, HSG C
16,520	98	Paved parking, HSG A
751	39	>75% Grass cover, Good, HSG A
259	74	>75% Grass cover, Good, HSG C
19,691	95	Weighted Average
1,010		5.13% Pervious Area
18,681		94.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	36	0.0280	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
0.1	23	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	170	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.3	229	Total			

Summary for Subcatchment PS15: Process Building

Runoff = 2.1 cfs @ 12.09 hrs, Volume= 7,707 cf, Depth> 4.13"
Routed to Pond DMHRD :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
21,262	98	Roofs, HSG A
1,122	98	Roofs, HSG C
22,384	98	Weighted Average
22,384		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS16: paved area

Runoff = 1.7 cfs @ 12.09 hrs, Volume= 6,138 cf, Depth> 4.13"
Routed to Pond CB8A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
286	98	Roofs, HSG A
17,540	98	Paved parking, HSG A
17,826	98	Weighted Average
17,826		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS17: paved area

Runoff = 1.6 cfs @ 12.09 hrs, Volume= 5,733 cf, Depth> 4.13"
Routed to Pond CB14 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
16,650	98	Paved parking, HSG A
16,650		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS18: roof and paved area

Runoff = 2.0 cfs @ 12.09 hrs, Volume= 7,377 cf, Depth> 4.13"
Routed to Pond CB13A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
10,840	98	Paved parking, HSG A
10,584	98	Roofs, HSG A
21,424	98	Weighted Average
21,424		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS19: loading bay and roof

Runoff = 3.5 cfs @ 12.09 hrs, Volume= 12,492 cf, Depth> 4.13"
Routed to Pond TD1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
10,257	98	Paved parking, HSG A
24,660	98	Roofs, HSG A
1,364	98	Roofs, HSG C
36,281	98	Weighted Average
36,281		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS2: offsite east

Runoff = 0.1 cfs @ 12.68 hrs, Volume= 1,029 cf, Depth> 0.23"
Routed to Pond CB10 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
9,567	98	Paved parking, HSG A
33,691	30	Woods, Good, HSG A
11,424	39	>75% Grass cover, Good, HSG A
54,682	44	Weighted Average
45,115		82.50% Pervious Area
9,567		17.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.1	92	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	49	0.1100	2.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	26	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
22.9	267	Total			

Summary for Subcatchment PS20: interconnection/upgrading yard

Runoff = 1.0 cfs @ 12.09 hrs, Volume= 3,297 cf, Depth> 3.47"
Routed to Pond CB18 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
820	39	>75% Grass cover, Good, HSG A
10,570	96	Gravel surface, HSG A
11,390	92	Weighted Average
11,390		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS21: remainder site south

area 7 is a head wall

Runoff = 0.1 cfs @ 14.06 hrs, Volume= 1,921 cf, Depth> 0.14"
Routed to Link D : future property line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
58,550	30	Woods, Good, HSG A
35,853	55	Woods, Good, HSG B
7,591	70	Woods, Good, HSG C
61,491	39	>75% Grass cover, Good, HSG A
1,806	74	>75% Grass cover, Good, HSG C
2,587	61	>75% Grass cover, Good, HSG B
8	98	Paved parking, HSG A
167,886	41	Weighted Average
167,878		100.00% Pervious Area
8		0.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	100	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
5.8	232	0.0700	0.66		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
28.4	332	Total			

Summary for Subcatchment PS22: laydown area

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 948 cf, Depth> 4.13"
Routed to Pond CB19 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
2,752	98	Paved parking, HSG A
2,752		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS3: offsite north

Runoff = 0.0 cfs @ 13.99 hrs, Volume= 1,057 cf, Depth> 0.14"
Routed to Pond CB3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
7,328	98	Paved parking, HSG A
11,458	70	Woods, Good, HSG C
69,043	30	Woods, Good, HSG A
4,239	39	>75% Grass cover, Good, HSG A
92,068	41	Weighted Average
84,740		92.04% Pervious Area
7,328		7.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
4.7	245	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
4.7	283	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	26	0.3500	4.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	62	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
23.7	716	Total			

Summary for Subcatchment PS31: driveway

Runoff = 0.8 cfs @ 12.09 hrs, Volume= 2,782 cf, Depth> 4.13"
Routed to Pond cb1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
8,080	98	Paved roads w/curbs & sewers, HSG A
8,080		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS32: driveway

Runoff = 0.8 cfs @ 12.09 hrs, Volume= 2,823 cf, Depth> 4.13"
Routed to Pond cb2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
8,199	98	Paved roads w/curbs & sewers, HSG A
8,199		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS33: north of driveway

Runoff = 0.0 cfs @ 14.89 hrs, Volume= 179 cf, Depth> 0.09"
Routed to Link E : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
11,080	39	>75% Grass cover, Good, HSG A
12,516	39	>75% Grass cover, Good, HSG A
23,596	39	Weighted Average
23,596		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS34: south of driveway

Runoff = 0.0 cfs @ 14.89 hrs, Volume= 86 cf, Depth> 0.09"
Routed to Link E : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
11,351	39	>75% Grass cover, Good, HSG A
11,351		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS4: offsite north

Runoff = 1.7 cfs @ 12.49 hrs, Volume= 11,227 cf, Depth> 0.83"
Routed to Pond CB4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
9,960	98	Paved parking, HSG A
83,865	70	Woods, Good, HSG C
56,653	30	Woods, Good, HSG A
4,399	39	>75% Grass cover, Good, HSG A
322	98	Paved parking, HSG C
6,715	96	Gravel surface, HSG C
161,914	58	Weighted Average
151,632		93.65% Pervious Area
10,282		6.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
8.8	589	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	23	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	66	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
28.6	778	Total			

Summary for Subcatchment PS40: FB2 maintenance drive

Runoff = 0.1 cfs @ 12.57 hrs, Volume= 508 cf, Depth> 0.41"
Routed to Reach 1R : maintenance FB2 swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
12,263	39	>75% Grass cover, Good, HSG A
2,670	96	Gravel surface, HSG A
14,933	49	Weighted Average
14,933		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PS5: offsite run on

Runoff = 3.4 cfs @ 13.05 hrs, Volume= 30,726 cf, Depth> 1.69"
Routed to Pond OS3 : Detention Basin #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
188,914	70	Woods, Good, HSG C
6,947	39	>75% Grass cover, Good, HSG A
2,123	98	Roofs, HSG C
20,000	96	Gravel surface, HSG C
217,984	72	Weighted Average
215,861		99.03% Pervious Area
2,123		0.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.5	100	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
5.4	81	0.0100	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	201	0.0100	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
9.5	248	0.0300	0.43		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.1	405	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.9	78	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
74.8	1,113	Total			

Summary for Subcatchment PS6: offsite run on

Runoff = 1.2 cfs @ 12.31 hrs, Volume= 5,865 cf, Depth> 1.37"
Routed to Pond cb21 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
46,969	70	Woods, Good, HSG C
4,352	39	>75% Grass cover, Good, HSG A
51,321	67	Weighted Average
51,321		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	100	0.0500	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.9	289	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	93	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.7	482	Total			

Summary for Subcatchment PS7: offsite run-on

Runoff = 1.9 cfs @ 13.48 hrs, Volume= 23,391 cf, Depth> 0.92"
Routed to Link F : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
226,968	70	Woods, Good, HSG C
55,157	30	Woods, Good, HSG A
23,595	39	>75% Grass cover, Good, HSG A
305,720	60	Weighted Average
305,720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.3	100	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
23.9	508	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.2	706	0.0600	0.61		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	661	0.0900	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
97.1	1,975	Total			

Summary for Subcatchment PSFB1: sediment forebay 1 area

Runoff = 0.0 cfs @ 14.90 hrs, Volume= 91 cf, Depth> 0.09"
Routed to Pond SFB1 : FOREBAY #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
12,045	39	>75% Grass cover, Good, HSG A
12,045		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSFB2: sediment forebay 2 area

Runoff = 0.0 cfs @ 15.19 hrs, Volume= 127 cf, Depth> 0.09"
Routed to Pond SFB2 : FOREBAY #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
17,093	39	>75% Grass cover, Good, HSG A
17,093		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PSM1: FB1 maintenance area

Runoff = 0.0 cfs @ 14.65 hrs, Volume= 69 cf, Depth> 0.11"
Routed to Reach 2R : maintenance FB1 swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
7,015	39	>75% Grass cover, Good, HSG A
252	74	>75% Grass cover, Good, HSG C
7,267	40	Weighted Average
7,267		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSP1: filtration basin 1 area

Runoff = 0.0 cfs @ 14.65 hrs, Volume= 224 cf, Depth> 0.11"
Routed to Pond FB1 : FILT. BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
22,768	39	>75% Grass cover, Good, HSG A
756	74	>75% Grass cover, Good, HSG C
23,524	40	Weighted Average
23,524		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSP2: filtration basin 2 area

Runoff = 0.0 cfs @ 15.19 hrs, Volume= 227 cf, Depth> 0.09"
Routed to Pond FB2 : FILT. BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
30,454	39	>75% Grass cover, Good, HSG A
30,454		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PST10: tribrid area

Runoff = 0.5 cfs @ 12.29 hrs, Volume= 2,173 cf, Depth> 2.26"
Routed to Pond CB24 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
4,006	98	Roofs, HSG A
3,911	96	Gravel surface, HSG A
3,630	39	>75% Grass cover, Good, HSG A
11,547	79	Weighted Average
7,541		65.31% Pervious Area
4,006		34.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.6	24	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.4	124	Total			

Summary for Subcatchment PST11: tribrid area

Runoff = 0.7 cfs @ 12.21 hrs, Volume= 2,723 cf, Depth> 2.26"
Routed to Pond CB27 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
7,342	98	Roofs, HSG A
1,387	96	Gravel surface, HSG A
4,531	39	>75% Grass cover, Good, HSG A
670	98	Roofs, HSG C
209	96	Gravel surface, HSG C
308	74	>75% Grass cover, Good, HSG C
14,447	79	Weighted Average
6,435		44.54% Pervious Area
8,012		55.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0230	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.5	35	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.7	135	Total			

Summary for Subcatchment PST12: tribrid area

Runoff = 0.8 cfs @ 12.23 hrs, Volume= 3,229 cf, Depth> 2.43"
Routed to Pond CB28 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
7,486	98	Roofs, HSG A
3,088	96	Gravel surface, HSG A
4,198	39	>75% Grass cover, Good, HSG A
526	98	Roofs, HSG C
109	96	Gravel surface, HSG C
550	74	>75% Grass cover, Good, HSG C
15,957	81	Weighted Average
7,945		49.79% Pervious Area
8,012		50.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	100	0.0180	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.7	40	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.4	140	Total			

Summary for Subcatchment PST13: tribrid area

Runoff = 0.3 cfs @ 12.22 hrs, Volume= 1,431 cf, Depth> 1.51"
Routed to Pond CB30 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
4,156	98	Roofs, HSG A
1,698	96	Gravel surface, HSG A
5,501	39	>75% Grass cover, Good, HSG A
34	74	>75% Grass cover, Good, HSG C
11,389	69	Weighted Average
7,233		63.51% Pervious Area
4,156		36.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0230	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.7	42	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.9	142	Total			

Summary for Subcatchment PST6: fet area

Runoff = 0.6 cfs @ 12.25 hrs, Volume= 2,729 cf, Depth> 1.58"
Routed to Pond CB15 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
7,368	98	Roofs, HSG A
3,784	96	Gravel surface, HSG A
9,624	39	>75% Grass cover, Good, HSG A
20,776	70	Weighted Average
13,408		64.54% Pervious Area
7,368		35.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
3.0	126	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.6	226	Total			

Summary for Subcatchment PST7: tribrid area

Runoff = 0.4 cfs @ 12.25 hrs, Volume= 1,771 cf, Depth> 1.79"
Routed to Pond cb20 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
5,990	98	Roofs, HSG A
974	96	Gravel surface, HSG A
4,896	39	>75% Grass cover, Good, HSG A
11,860	73	Weighted Average
5,870		49.49% Pervious Area
5,990		50.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0150	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.4	20	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.2	120	Total			

Summary for Subcatchment PST8: tribrid area

Runoff = 0.4 cfs @ 12.29 hrs, Volume= 1,964 cf, Depth> 2.02"
Routed to Pond cb22 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
5,981	98	Roofs, HSG A
1,487	96	Gravel surface, HSG A
4,212	39	>75% Grass cover, Good, HSG A
11,680	76	Weighted Average
5,699		48.79% Pervious Area
5,981		51.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.5	28	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.3	128	Total			

Summary for Subcatchment PST9: tribrid area

Runoff = 0.4 cfs @ 12.29 hrs, Volume= 1,644 cf, Depth> 2.10"
Routed to Pond CB23 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
2,995	98	Roofs, HSG A
3,172	96	Gravel surface, HSG A
3,244	39	>75% Grass cover, Good, HSG A
9,411	77	Weighted Average
6,416		68.18% Pervious Area
2,995		31.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.4	16	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.2	116	Total			

Summary for Reach 1R: maintenance FB2 swale

Inflow Area = 14,933 sf, 0.00% Impervious, Inflow Depth > 0.41" for 10-YR event
Inflow = 0.1 cfs @ 12.57 hrs, Volume= 508 cf
Outflow = 0.1 cfs @ 12.67 hrs, Volume= 503 cf, Atten= 5%, Lag= 5.8 min
Routed to Pond SFB2 : FOREBAY #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.36 fps, Min. Travel Time= 7.7 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 14.1 min

Peak Storage= 23 cf @ 12.67 hrs
Average Depth at Peak Storage= 0.02' , Surface Width= 8.10'
Bank-Full Depth= 0.50' Flow Area= 4.8 sf, Capacity= 14.2 cfs

8.00' x 0.50' deep channel, n= 0.069 Riprap, 6-inch
Side Slope Z-value= 3.0 '/' Top Width= 11.00'
Length= 165.0' Slope= 0.0606 '/'
Inlet Invert= 290.00', Outlet Invert= 280.00'



‡

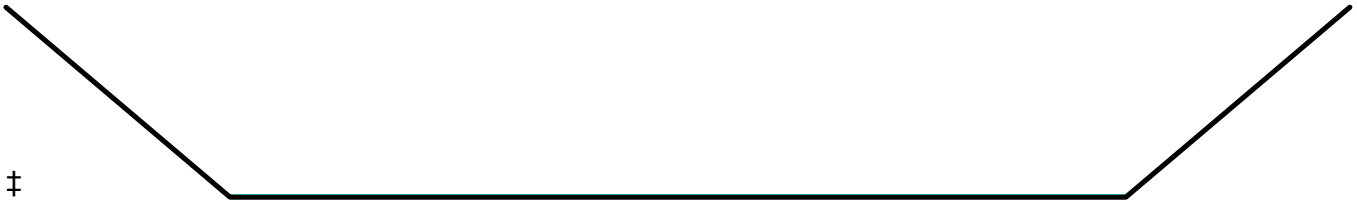
Summary for Reach 2R: maintenance FB1 swale

Inflow Area = 7,267 sf, 0.00% Impervious, Inflow Depth > 0.11" for 10-YR event
Inflow = 0.0 cfs @ 14.65 hrs, Volume= 69 cf
Outflow = 0.0 cfs @ 14.78 hrs, Volume= 68 cf, Atten= 0%, Lag= 8.1 min
Routed to Pond CB16 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.22 fps, Min. Travel Time= 13.3 min
Avg. Velocity = 0.18 fps, Avg. Travel Time= 16.1 min

Peak Storage= 2 cf @ 14.78 hrs
Average Depth at Peak Storage= 0.00' , Surface Width= 3.02'
Bank-Full Depth= 0.25' Flow Area= 0.9 sf, Capacity= 2.8 cfs

3.00' x 0.25' deep channel, n= 0.041 Riprap, 2-inch
Side Slope Z-value= 3.0 '/' Top Width= 4.50'
Length= 178.0' Slope= 0.0573 '/'
Inlet Invert= 292.00', Outlet Invert= 281.80'



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Summary for Reach 5R: 48" RCP - Naturalized Bottom

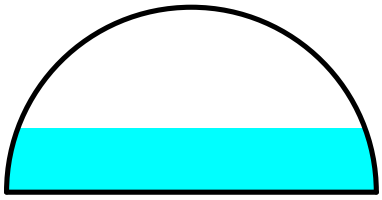
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.18" for 10-YR event
Inflow = 8.3 cfs @ 12.00 hrs, Volume= 29,700 cf
Outflow = 8.2 cfs @ 12.00 hrs, Volume= 29,700 cf, Atten= 0%, Lag= 0.2 min
Routed to Link E : 14-38-0

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 3.03 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.25 fps, Avg. Travel Time= 0.4 min

Peak Storage= 130 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.69' , Surface Width= 3.75'
Bank-Full Depth= 2.00' Flow Area= 6.3 sf, Capacity= 21.7 cfs

48.0" W x 24.0" H, R=24.0" Arch Pipe
n= 0.040 Earth, cobble bottom, clean sides
Length= 48.0' Slope= 0.0167 '/'
Inlet Invert= 298.60', Outlet Invert= 297.80'



Summary for Pond cb1:

Inflow Area = 8,080 sf,100.00% Impervious, Inflow Depth > 4.13" for 10-YR event
Inflow = 0.8 cfs @ 12.09 hrs, Volume= 2,782 cf
Outflow = 0.8 cfs @ 12.09 hrs, Volume= 2,782 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.8 cfs @ 12.09 hrs, Volume= 2,782 cf
Routed to Pond cb2 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 293.62' @ 12.09 hrs
Flood Elev= 297.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	293.18'	**15.0" Round Culvert** L= 21.8' Ke= 0.500 Inlet / Outlet Invert= 293.18' / 292.96' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.8 cfs @ 12.09 hrs HW=293.62' TW=293.24' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.8 cfs @ 2.93 fps)

Summary for Pond CB10:

Inflow Area = 308,664 sf, 8.80% Impervious, Inflow Depth > 0.52" for 10-YR event
Inflow = 1.7 cfs @ 12.50 hrs, Volume= 13,314 cf
Outflow = 1.7 cfs @ 12.50 hrs, Volume= 13,314 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.50 hrs, Volume= 13,314 cf
Routed to Pond CB12 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 286.58' @ 12.50 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.94'	**15.0" Round Culvert** L= 169.0' Ke= 0.500 Inlet / Outlet Invert= 285.94' / 284.25' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.7 cfs @ 12.50 hrs HW=286.58' TW=284.87' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.7 cfs @ 2.73 fps)

Summary for Pond CB12:

Inflow Area = 324,943 sf, 13.37% Impervious, Inflow Depth > 0.70" for 10-YR event
Inflow = 2.1 cfs @ 12.44 hrs, Volume= 18,919 cf
Outflow = 2.1 cfs @ 12.44 hrs, Volume= 18,919 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.44 hrs, Volume= 18,919 cf
Routed to Pond CB18 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 284.88' @ 12.44 hrs
Flood Elev= 296.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.15'	**15.0" Round Culvert** L= 60.0' Ke= 0.500 Inlet / Outlet Invert= 284.15' / 283.55' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.1 cfs @ 12.44 hrs HW=284.88' TW=283.19' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.1 cfs @ 4.05 fps)

Summary for Pond CB13:

Inflow Area = 57,705 sf,100.00% Impervious, Inflow Depth > 4.13" for 10-YR event
Inflow = 5.5 cfs @ 12.09 hrs, Volume= 19,869 cf
Outflow = 5.5 cfs @ 12.09 hrs, Volume= 19,869 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.5 cfs @ 12.09 hrs, Volume= 19,869 cf
Routed to Pond CB14 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.18' @ 12.09 hrs
Flood Elev= 294.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**18.0" Round Culvert** L= 71.4' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 287.13' S= 0.0122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.4 cfs @ 12.09 hrs HW=289.16' TW=281.35' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.4 cfs @ 3.67 fps)

Summary for Pond CB13A:

Inflow Area = 57,705 sf,100.00% Impervious, Inflow Depth > 4.13" for 10-YR event
Inflow = 5.5 cfs @ 12.09 hrs, Volume= 19,869 cf
Outflow = 5.5 cfs @ 12.09 hrs, Volume= 19,869 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.5 cfs @ 12.09 hrs, Volume= 19,869 cf
Routed to Pond CB13 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 291.88' @ 12.09 hrs
Flood Elev= 294.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	290.70'	**18.0" Round Culvert** L= 102.3' Ke= 0.500 Inlet / Outlet Invert= 290.70' / 289.66' S= 0.0102 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.4 cfs @ 12.09 hrs HW=291.86' TW=289.16' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.4 cfs @ 3.67 fps)

Summary for Pond CB14:

Inflow Area = 111,872 sf, 99.10% Impervious, Inflow Depth > 4.07" for 10-YR event
Inflow = 9.8 cfs @ 12.09 hrs, Volume= 37,955 cf
Outflow = 9.8 cfs @ 12.09 hrs, Volume= 37,955 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.8 cfs @ 12.09 hrs, Volume= 37,955 cf
Routed to Pond DMH9 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 281.37' @ 12.09 hrs
Flood Elev= 293.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	280.06'	**30.0" Round Culvert** L= 80.7' Ke= 0.500 Inlet / Outlet Invert= 280.06' / 279.25' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=9.6 cfs @ 12.09 hrs HW=281.35' TW=279.93' (Dynamic Tailwater)
1=Culvert (Barrel Controls 9.6 cfs @ 5.46 fps)

Summary for Pond CB15:

Inflow Area = 20,776 sf, 35.46% Impervious, Inflow Depth > 1.58" for 10-YR event
Inflow = 0.6 cfs @ 12.25 hrs, Volume= 2,729 cf
Outflow = 0.6 cfs @ 12.25 hrs, Volume= 2,729 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.6 cfs @ 12.25 hrs, Volume= 2,729 cf
Routed to Pond DMH5 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 292.32' @ 12.25 hrs
Flood Elev= 296.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.94'	**15.0" Round Culvert** L= 34.0' Ke= 0.500 Inlet / Outlet Invert= 291.94' / 291.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.6 cfs @ 12.25 hrs HW=292.32' TW=289.83' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.6 cfs @ 2.91 fps)

Summary for Pond CB16:

Inflow Area = 7,267 sf, 0.00% Impervious, Inflow Depth > 0.11" for 10-YR event
Inflow = 0.0 cfs @ 14.78 hrs, Volume= 68 cf
Outflow = 0.0 cfs @ 14.79 hrs, Volume= 68 cf, Atten= 0%, Lag= 0.4 min
Primary = 0.0 cfs @ 14.79 hrs, Volume= 68 cf
Routed to Pond FB1 : FILT. BASIN #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.57' @ 14.79 hrs
Flood Elev= 281.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.55'	**15.0" Round Culvert** L= 62.0' Ke= 0.500 Inlet / Outlet Invert= 277.55' / 275.75' S= 0.0290 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 14.79 hrs HW=277.57' TW=275.45' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.0 cfs @ 0.51 fps)

Summary for Pond CB17:

Inflow Area = 339,085 sf, 13.63% Impervious, Inflow Depth > 0.82" for 10-YR event
Inflow = 3.1 cfs @ 12.10 hrs, Volume= 23,163 cf
Outflow = 3.1 cfs @ 12.10 hrs, Volume= 23,163 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.1 cfs @ 12.10 hrs, Volume= 23,163 cf
Routed to Pond DMH9 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 280.68' @ 12.10 hrs
Flood Elev= 293.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	279.72'	**18.0" Round Culvert** L= 108.0' Ke= 0.500 Inlet / Outlet Invert= 279.72' / 278.10' S= 0.0150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.0 cfs @ 12.10 hrs HW=280.67' TW=279.94' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.0 cfs @ 3.65 fps)

Summary for Pond CB18:

Inflow Area = 336,333 sf, 12.92% Impervious, Inflow Depth > 0.79" for 10-YR event
Inflow = 2.8 cfs @ 12.10 hrs, Volume= 22,215 cf
Outflow = 2.8 cfs @ 12.10 hrs, Volume= 22,215 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.8 cfs @ 12.10 hrs, Volume= 22,215 cf
Routed to Pond CB17 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 283.27' @ 12.10 hrs
Flood Elev= 293.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	282.45'	**18.0" Round Culvert** L= 45.2' Ke= 0.500 Inlet / Outlet Invert= 282.45' / 282.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.8 cfs @ 12.10 hrs HW=283.27' TW=280.68' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.8 cfs @ 4.11 fps)

Summary for Pond CB19:

Inflow Area = 2,752 sf,100.00% Impervious, Inflow Depth > 4.13" for 10-YR event
Inflow = 0.3 cfs @ 12.09 hrs, Volume= 948 cf
Outflow = 0.3 cfs @ 12.09 hrs, Volume= 948 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.3 cfs @ 12.09 hrs, Volume= 948 cf
Routed to Pond CB17 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.24' @ 12.09 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**15.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 285.00' / 284.50' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.3 cfs @ 12.09 hrs HW=285.24' TW=280.66' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.3 cfs @ 2.41 fps)

Summary for Pond cb2:

Inflow Area = 16,279 sf,100.00% Impervious, Inflow Depth > 4.13" for 10-YR event
Inflow = 1.6 cfs @ 12.09 hrs, Volume= 5,605 cf
Outflow = 1.6 cfs @ 12.09 hrs, Volume= 5,605 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.6 cfs @ 12.09 hrs, Volume= 5,605 cf
Routed to Pond dmh1 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 293.25' @ 12.09 hrs
Flood Elev= 297.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.64'	**15.0" Round Culvert** L= 155.0' Ke= 0.500 Inlet / Outlet Invert= 292.64' / 291.33' S= 0.0085 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.5 cfs @ 12.09 hrs HW=293.24' TW=290.55' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 1.5 cfs @ 3.82 fps)

Summary for Pond cb20:

Inflow Area = 11,860 sf, 50.51% Impervious, Inflow Depth > 1.79" for 10-YR event
Inflow = 0.4 cfs @ 12.25 hrs, Volume= 1,771 cf
Outflow = 0.4 cfs @ 12.25 hrs, Volume= 1,771 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.25 hrs, Volume= 1,771 cf
Routed to Pond cb21 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.49' @ 12.25 hrs
Flood Elev= 292.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.20'	**15.0" Round Culvert** L= 94.0' Ke= 0.500 Inlet / Outlet Invert= 289.20' / 286.90' S= 0.0245 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.4 cfs @ 12.25 hrs HW=289.49' TW=287.48' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.4 cfs @ 1.84 fps)

Summary for Pond cb21:

Inflow Area = 63,181 sf, 9.48% Impervious, Inflow Depth > 1.45" for 10-YR event
Inflow = 1.6 cfs @ 12.30 hrs, Volume= 7,636 cf
Outflow = 1.6 cfs @ 12.30 hrs, Volume= 7,636 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.6 cfs @ 12.30 hrs, Volume= 7,636 cf
Routed to Pond cb22 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.49' @ 12.30 hrs
Flood Elev= 292.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.80'	**15.0" Round Culvert** L= 44.0' Ke= 0.500 Inlet / Outlet Invert= 286.80' / 286.41' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.6 cfs @ 12.30 hrs HW=287.49' TW=287.03' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.6 cfs @ 3.27 fps)

Summary for Pond cb22:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 1.54" for 10-YR event
Inflow = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf
Outflow = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf
Routed to Pond dmh23 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.03' @ 12.30 hrs
Flood Elev= 291.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.31'	**15.0" Round Culvert** L= 73.0' Ke= 0.500 Inlet / Outlet Invert= 286.31' / 285.59' S= 0.0099 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.0 cfs @ 12.30 hrs HW=287.03' TW=286.23' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.0 cfs @ 3.88 fps)

Summary for Pond CB23:

Inflow Area = 84,272 sf, 17.76% Impervious, Inflow Depth > 1.60" for 10-YR event
Inflow = 2.3 cfs @ 12.29 hrs, Volume= 11,244 cf
Outflow = 2.3 cfs @ 12.29 hrs, Volume= 11,244 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.3 cfs @ 12.29 hrs, Volume= 11,244 cf
Routed to Pond CB24 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.09' @ 12.29 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.31'	**15.0" Round Culvert** L= 110.0' Ke= 0.500 Inlet / Outlet Invert= 284.31' / 283.20' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.3 cfs @ 12.29 hrs HW=285.09' TW=283.96' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.3 cfs @ 4.15 fps)

Summary for Pond CB24:

Inflow Area = 95,819 sf, 19.80% Impervious, Inflow Depth > 1.68" for 10-YR event
Inflow = 2.8 cfs @ 12.29 hrs, Volume= 13,418 cf
Outflow = 2.8 cfs @ 12.29 hrs, Volume= 13,418 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.8 cfs @ 12.29 hrs, Volume= 13,418 cf
Routed to Pond dmh25 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 283.96' @ 12.29 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	283.10'	**15.0" Round Culvert** L= 82.0' Ke= 0.500 Inlet / Outlet Invert= 283.10' / 282.23' S= 0.0106 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.8 cfs @ 12.29 hrs HW=283.96' TW=282.95' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.8 cfs @ 4.39 fps)

Summary for Pond CB27:

Inflow Area = 14,447 sf, 55.46% Impervious, Inflow Depth > 2.26" for 10-YR event
Inflow = 0.7 cfs @ 12.21 hrs, Volume= 2,723 cf
Outflow = 0.7 cfs @ 12.21 hrs, Volume= 2,723 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.21 hrs, Volume= 2,723 cf
Routed to Pond DMH26 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.55' @ 12.21 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.15'	**15.0" Round Culvert** L= 27.7' Ke= 0.500 Inlet / Outlet Invert= 288.15' / 287.87' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.7 cfs @ 12.21 hrs HW=288.55' TW=281.64' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.7 cfs @ 2.92 fps)

Summary for Pond CB28:

Inflow Area = 38,341 sf, 79.28% Impervious, Inflow Depth > 3.42" for 10-YR event
Inflow = 2.6 cfs @ 12.10 hrs, Volume= 10,937 cf
Outflow = 2.6 cfs @ 12.10 hrs, Volume= 10,937 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.6 cfs @ 12.10 hrs, Volume= 10,937 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.59' @ 12.10 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.75'	**18.0" Round Culvert** L= 20.7' Ke= 0.500 Inlet / Outlet Invert= 288.75' / 288.54' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.6 cfs @ 12.10 hrs HW=289.59' TW=278.42' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.6 cfs @ 3.73 fps)

Summary for Pond CB3:

Inflow Area = 253,982 sf, 6.93% Impervious, Inflow Depth > 0.58" for 10-YR event
Inflow = 1.7 cfs @ 12.49 hrs, Volume= 12,284 cf
Outflow = 1.7 cfs @ 12.49 hrs, Volume= 12,284 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.49 hrs, Volume= 12,284 cf
Routed to Pond DMH3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.68' @ 12.49 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.05'	**15.0" Round Culvert** L= 90.0' Ke= 0.500 Inlet / Outlet Invert= 289.05' / 288.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.7 cfs @ 12.49 hrs HW=289.68' TW=287.60' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.7 cfs @ 2.71 fps)

Summary for Pond CB30:

Inflow Area = 250,149 sf, 5.46% Impervious, Inflow Depth > 1.67" for 10-YR event
Inflow = 3.7 cfs @ 13.05 hrs, Volume= 34,753 cf
Outflow = 3.7 cfs @ 13.05 hrs, Volume= 34,753 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.7 cfs @ 13.05 hrs, Volume= 34,753 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 286.62' @ 13.05 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.80'	**24.0" Round Culvert** L= 92.0' Ke= 0.500 Inlet / Outlet Invert= 285.80' / 284.88' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.7 cfs @ 13.05 hrs HW=286.62' TW=278.32' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.7 cfs @ 3.08 fps)

Summary for Pond CB4:

Inflow Area = 161,914 sf, 6.35% Impervious, Inflow Depth > 0.83" for 10-YR event
Inflow = 1.7 cfs @ 12.49 hrs, Volume= 11,227 cf
Outflow = 1.7 cfs @ 12.49 hrs, Volume= 11,227 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.49 hrs, Volume= 11,227 cf
Routed to Pond CB3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 291.69' @ 12.49 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.06'	**15.0" Round Culvert** L= 191.0' Ke= 0.500 Inlet / Outlet Invert= 291.06' / 289.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.7 cfs @ 12.49 hrs HW=291.69' TW=289.68' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.7 cfs @ 2.71 fps)

Summary for Pond CB6:

Inflow Area = 19,691 sf, 94.87% Impervious, Inflow Depth > 3.79" for 10-YR event
Inflow = 1.4 cfs @ 12.22 hrs, Volume= 6,215 cf
Outflow = 1.4 cfs @ 12.22 hrs, Volume= 6,215 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.4 cfs @ 12.22 hrs, Volume= 6,215 cf
Routed to Pond CB8A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.48' @ 12.22 hrs
Flood Elev= 294.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**24.0" Round Culvert** L= 118.0' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 286.82' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.4 cfs @ 12.22 hrs HW=288.48' TW=286.75' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.4 cfs @ 2.35 fps)

Summary for Pond CB8A:

Inflow Area = 37,517 sf, 97.31% Impervious, Inflow Depth > 3.95" for 10-YR event
Inflow = 2.7 cfs @ 12.11 hrs, Volume= 12,353 cf
Outflow = 2.7 cfs @ 12.11 hrs, Volume= 12,353 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.7 cfs @ 12.11 hrs, Volume= 12,353 cf
Routed to Pond CB14 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 286.84' @ 12.11 hrs
Flood Elev= 293.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.00'	**15.0" Round Culvert** L= 131.3' Ke= 0.500 Inlet / Outlet Invert= 286.00' / 284.69' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.7 cfs @ 12.11 hrs HW=286.83' TW=281.34' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.7 cfs @ 3.10 fps)

Summary for Pond dmh1:

Inflow Area = 16,279 sf,100.00% Impervious, Inflow Depth > 4.13" for 10-YR event
Inflow = 1.6 cfs @ 12.09 hrs, Volume= 5,605 cf
Outflow = 1.6 cfs @ 12.09 hrs, Volume= 5,605 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.6 cfs @ 12.09 hrs, Volume= 5,605 cf
Routed to Pond CB12 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 290.56' @ 12.09 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.95'	**15.0" Round Culvert** L= 65.3' Ke= 0.500 Inlet / Outlet Invert= 289.95' / 289.30' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.5 cfs @ 12.09 hrs HW=290.55' TW=284.81' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.5 cfs @ 3.80 fps)

Summary for Pond dmh11:

Inflow Area = 398,756 sf, 17.81% Impervious, Inflow Depth > 1.86" for 10-YR event
Inflow = 6.6 cfs @ 12.25 hrs, Volume= 61,830 cf
Outflow = 6.6 cfs @ 12.25 hrs, Volume= 61,830 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.6 cfs @ 12.25 hrs, Volume= 61,830 cf
Routed to Pond SFB1 : FOREBAY #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 278.55' @ 12.25 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.23'	**24.0" Round Culvert** L= 41.0' Ke= 0.500 Inlet / Outlet Invert= 277.23' / 277.00' S= 0.0056 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=6.6 cfs @ 12.25 hrs HW=278.55' TW=277.48' (Dynamic Tailwater)
1=Culvert (Barrel Controls 6.6 cfs @ 4.23 fps)

Summary for Pond dmh23:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 1.54" for 10-YR event
Inflow = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf
Outflow = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf
Routed to Pond DMH24 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 286.23' @ 12.30 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.49'	**15.0" Round Culvert** L= 57.8' Ke= 0.500 Inlet / Outlet Invert= 285.49' / 284.91' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.0 cfs @ 12.30 hrs HW=286.23' TW=285.58' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.0 cfs @ 3.75 fps)

Summary for Pond DMH24:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 1.54" for 10-YR event
Inflow = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf
Outflow = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf
Routed to Pond CB23 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.58' @ 12.30 hrs
Flood Elev= 292.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.81'	**15.0" Round Culvert** L= 37.0' Ke= 0.500 Inlet / Outlet Invert= 284.81' / 284.46' S= 0.0095 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.0 cfs @ 12.30 hrs HW=285.58' TW=285.09' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.0 cfs @ 3.59 fps)

Summary for Pond dmh25:

Inflow Area = 95,819 sf, 19.80% Impervious, Inflow Depth > 1.68" for 10-YR event
Inflow = 2.8 cfs @ 12.29 hrs, Volume= 13,418 cf
Outflow = 2.8 cfs @ 12.29 hrs, Volume= 13,418 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.8 cfs @ 12.29 hrs, Volume= 13,418 cf
Routed to Pond DMH26 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 282.95' @ 12.29 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	282.10'	**15.0" Round Culvert** L= 113.0' Ke= 0.500 Inlet / Outlet Invert= 282.10' / 281.05' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.8 cfs @ 12.29 hrs HW=282.95' TW=281.67' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.8 cfs @ 3.14 fps)

Summary for Pond DMH26:

Inflow Area = 110,266 sf, 24.47% Impervious, Inflow Depth > 1.76" for 10-YR event
Inflow = 3.4 cfs @ 12.27 hrs, Volume= 16,140 cf
Outflow = 3.4 cfs @ 12.27 hrs, Volume= 16,140 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.4 cfs @ 12.27 hrs, Volume= 16,140 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 281.68' @ 12.27 hrs
Flood Elev= 292.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	280.80'	**18.0" Round Culvert** L= 126.4' Ke= 0.500 Inlet / Outlet Invert= 280.80' / 279.54' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.4 cfs @ 12.27 hrs HW=281.67' TW=278.54' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.4 cfs @ 3.18 fps)

Summary for Pond DMH3:

Inflow Area = 253,982 sf, 6.93% Impervious, Inflow Depth > 0.58" for 10-YR event
Inflow = 1.7 cfs @ 12.49 hrs, Volume= 12,284 cf
Outflow = 1.7 cfs @ 12.49 hrs, Volume= 12,284 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.49 hrs, Volume= 12,284 cf
Routed to Pond CB10 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.60' @ 12.49 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.97'	**15.0" Round Culvert** L= 82.0' Ke= 0.500 Inlet / Outlet Invert= 286.97' / 286.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.7 cfs @ 12.49 hrs HW=287.60' TW=286.58' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.7 cfs @ 2.71 fps)

Summary for Pond DMH5:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 1.67" for 10-YR event
Inflow = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf
Outflow = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf
Routed to Pond DMH5A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 290.21' @ 13.05 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.40'	**24.0" Round Culvert** L= 126.7' Ke= 0.500 Inlet / Outlet Invert= 289.40' / 288.13' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.7 cfs @ 13.05 hrs HW=290.21' TW=288.81' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.7 cfs @ 3.07 fps)

Summary for Pond DMH5A:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 1.67" for 10-YR event
Inflow = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf
Outflow = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf
Routed to Pond DMH6 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.81' @ 13.05 hrs
Flood Elev= 294.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**24.0" Round Culvert** L= 118.0' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 286.82' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.7 cfs @ 13.05 hrs HW=288.81' TW=287.55' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.7 cfs @ 3.07 fps)

Summary for Pond DMH6:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 1.67" for 10-YR event
Inflow = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf
Outflow = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf
Routed to Pond CB30 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.55' @ 13.05 hrs
Flood Elev= 294.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.72'	**24.0" Round Culvert** L= 79.0' Ke= 0.500 Inlet / Outlet Invert= 286.72' / 285.92' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.7 cfs @ 13.05 hrs HW=287.55' TW=286.62' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.7 cfs @ 4.42 fps)

Summary for Pond DMH9:

Inflow Area = 450,957 sf, 34.83% Impervious, Inflow Depth > 1.63" for 10-YR event
Inflow = 12.8 cfs @ 12.09 hrs, Volume= 61,117 cf
Outflow = 12.8 cfs @ 12.09 hrs, Volume= 61,117 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.8 cfs @ 12.09 hrs, Volume= 61,117 cf
Routed to Pond SFB2 : FOREBAY #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 279.95' @ 12.09 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.12'	**30.0" Round Culvert** L= 24.0' Ke= 0.500 Inlet / Outlet Invert= 278.12' / 278.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=12.6 cfs @ 12.09 hrs HW=279.93' TW=279.18' (Dynamic Tailwater)
1=Culvert (Barrel Controls 12.6 cfs @ 4.65 fps)

Summary for Pond DMHRD:

Inflow Area = 22,384 sf,100.00% Impervious, Inflow Depth > 4.13" for 10-YR event
Inflow = 2.1 cfs @ 12.09 hrs, Volume= 7,707 cf
Outflow = 2.1 cfs @ 12.09 hrs, Volume= 7,707 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.09 hrs, Volume= 7,707 cf
Routed to Pond CB28 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.92' @ 12.09 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.10'	**18.0" Round Culvert** L= 28.0' Ke= 0.500 Inlet / Outlet Invert= 289.10' / 288.85' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.1 cfs @ 12.09 hrs HW=289.90' TW=289.58' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.1 cfs @ 3.14 fps)

Summary for Pond FB1: FILT. BASIN #1

Inflow Area = 441,592 sf, 16.08% Impervious, Inflow Depth > 1.69" for 10-YR event
Inflow = 6.6 cfs @ 12.25 hrs, Volume= 62,213 cf
Outflow = 1.3 cfs @ 15.31 hrs, Volume= 40,802 cf, Atten= 80%, Lag= 184.0 min
Discarded = 0.4 cfs @ 15.31 hrs, Volume= 18,665 cf
Primary = 0.9 cfs @ 15.31 hrs, Volume= 22,137 cf
Routed to Link D : future property line
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 275.47' @ 15.31 hrs Surf.Area= 13,472 sf Storage= 32,147 cf
Flood Elev= 278.00' Surf.Area= 17,354 sf Storage= 71,070 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 160.1 min (1,028.4 - 868.2)

Volume	Invert	Avail.Storage	Storage Description
#1	271.50'	76,522 cf	**FILT. BASIN #1 (18" FILTER MEDIA) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
271.50	7,427	0.0	0	0
271.51	7,427	40.0	30	30
272.99	7,427	40.0	4,397	4,426
273.00	7,427	100.0	74	4,501
274.00	11,372	100.0	9,400	13,900
275.00	12,783	100.0	12,078	25,978
276.00	14,250	100.0	13,517	39,494
277.00	15,774	100.0	15,012	54,506
278.00	17,354	100.0	16,564	71,070
278.30	18,991	100.0	5,452	76,522

Device	Routing	Invert	Outlet Devices
#1	Discarded	271.50'	**1.253 in/hr Exfiltration over Surface area**
#2	Secondary	277.50'	**6.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69
#3	Primary	266.00'	**15.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 266.00' / 265.75' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#4	Device 3	277.30'	**48.0" x 48.0" Horiz. OS1 Conc. Horz. Rim** C= 0.600
#5	Device 3	273.95'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.60 0.60 2.00 2.00 2.70 2.70 3.35 Width (feet) 0.10 0.10 0.20 0.20 0.50 0.50 1.20 1.20

Discarded OutFlow Max=0.4 cfs @ 15.31 hrs HW=275.47' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.4 cfs)

Primary OutFlow Max=0.9 cfs @ 15.31 hrs HW=275.47' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Passes 0.9 cfs of 17.6 cfs potential flow)
  ├**4=OS1 Conc. Horz. Rim** (Controls 0.0 cfs)
  └**5=Custom Weir/Orifice** (Weir Controls 0.9 cfs @ 3.70 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=271.50' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond FB2: FILT. BASIN #2

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=28)

Inflow Area = 513,437 sf, 30.59% Impervious, Inflow Depth > 1.45" for 10-YR event
Inflow = 12.8 cfs @ 12.09 hrs, Volume= 61,975 cf
Outflow = 1.5 cfs @ 13.54 hrs, Volume= 61,958 cf, Atten= 89%, Lag= 87.1 min
Discarded = 1.5 cfs @ 13.54 hrs, Volume= 61,958 cf
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.70' @ 13.54 hrs Surf.Area= 16,507 sf Storage= 20,330 cf
Flood Elev= 280.00' Surf.Area= 20,820 sf Storage= 63,233 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 112.6 min (909.1 - 796.5)

Volume	Invert	Avail.Storage	Storage Description
#1	275.50'	63,233 cf	**FILT. BASIN #2 (18" FILTER MEDIA) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
275.50	15,250	0.0	0	0
275.51	15,250	40.0	61	61
276.99	15,250	40.0	9,028	9,089
277.00	15,250	100.0	152	9,241
278.00	17,050	100.0	16,150	25,391
279.00	18,907	100.0	17,979	43,370
280.00	20,820	100.0	19,864	63,233

Device	Routing	Invert	Outlet Devices
#1	Secondary	279.50'	**6.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69
#2	Discarded	275.50'	**3.818 in/hr Exfiltration over Surface area**
#3	Device 5	277.75'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.60 0.60 0.90 0.90 1.25 Width (feet) 0.10 0.10 0.50 0.50 2.50 2.50
#4	Device 5	279.00'	**48.0" x 48.0" Horiz. OS2 Conc. Horz. Rim** C= 0.600 Limited to weir flow at low heads
#5	Primary	272.00'	**15.0" Round Culvert** L= 51.0' Ke= 0.500 Inlet / Outlet Invert= 272.00' / 271.50' S= 0.0098 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Discarded OutFlow Max=1.5 cfs @ 13.54 hrs HW=277.70' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 1.5 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=275.50' TW=0.00' (Dynamic Tailwater)
└**5=Culvert** (Passes 0.0 cfs of 10.0 cfs potential flow)
  └**3=Custom Weir/Orifice** (Controls 0.0 cfs)
  └**4=OS2 Conc. Horz. Rim** (Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=275.50' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond OS3: Detention Basin #1

[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=23)

Inflow Area = 217,984 sf, 0.97% Impervious, Inflow Depth > 1.69" for 10-YR event
Inflow = 3.4 cfs @ 13.05 hrs, Volume= 30,726 cf
Outflow = 3.6 cfs @ 13.05 hrs, Volume= 30,593 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.6 cfs @ 13.05 hrs, Volume= 30,593 cf
  Routed to Pond DMH5 :
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
  Routed to Pond cb21 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 294.50' @ 13.05 hrs Surf.Area= 1,188 sf Storage= 480 cf
Flood Elev= 296.00' Surf.Area= 2,642 sf Storage= 3,352 cf

Plug-Flow detention time= 6.7 min calculated for 30,530 cf (99% of inflow)
Center-of-Mass det. time= 4.5 min (906.8 - 902.3)

Volume	Invert	Avail.Storage	Storage Description
#1	293.99'	3,352 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
293.99	693	0	0
296.00	2,642	3,352	3,352

Device	Routing	Invert	Outlet Devices
#1	Primary	290.00'	**18.0" Round Culvert** L= 100.0' Ke= 0.500 Inlet / Outlet Invert= 290.00' / 289.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	294.50'	**60.0" x 60.0" Horiz. OS3 Conc. Horz. Rim** C= 0.600
#3	Device 1	294.00'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.50 Width (feet) 0.75 0.75
#4	Secondary	295.50'	**3.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65

2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=3.6 cfs @ 13.05 hrs HW=294.50' TW=290.21' (Dynamic Tailwater)
↑**1=Culvert** (Passes 3.6 cfs of 15.5 cfs potential flow)
↑**2=OS3 Conc. Horz. Rim** (Orifice Controls 2.7 cfs @ 0.11 fps)
3=Custom Weir/Orifice (Orifice Controls 0.9 cfs @ 2.32 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=293.99' TW=286.80' (Dynamic Tailwater)
↑**4=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond SFB1: FOREBAY #1

Inflow Area = 410,801 sf, 17.29% Impervious, Inflow Depth > 1.81" for 10-YR event
Inflow = 6.6 cfs @ 12.25 hrs, Volume= 61,921 cf
Outflow = 6.6 cfs @ 12.25 hrs, Volume= 61,921 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.6 cfs @ 12.25 hrs, Volume= 61,921 cf
Routed to Pond FB1 : FILT. BASIN #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.48' @ 12.25 hrs Surf.Area= 3,434 sf Storage= 0 cf
Flood Elev= 278.00' Surf.Area= 4,014 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	274.00'	0 cf	**FOREBAY #1 (0% Voids) (Prismatic)** Listed below (Recalc) 8,280 cf Overall x 0.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
274.00	628	0	0
275.00	1,144	886	886
276.00	1,915	1,530	2,416
277.00	2,900	2,408	4,823
278.00	4,014	3,457	8,280

Device	Routing	Invert	Outlet Devices
#1	Primary	277.10'	**10.4' long x 15.6' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=6.6 cfs @ 12.25 hrs HW=277.48' TW=273.36' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 6.6 cfs @ 1.66 fps)

Summary for Pond SFB2: FOREBAY #2

[80] Warning: Exceeded Pond DMH9 by 0.17' @ 0.85 hrs (0.1 cfs 654 cf)

Inflow Area = 482,983 sf, 32.52% Impervious, Inflow Depth > 1.53" for 10-YR event
Inflow = 12.8 cfs @ 12.09 hrs, Volume= 61,748 cf
Outflow = 12.8 cfs @ 12.09 hrs, Volume= 61,748 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.8 cfs @ 12.09 hrs, Volume= 61,748 cf
Routed to Pond FB2 : FILT. BASIN #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 279.19' @ 12.09 hrs Surf.Area= 3,012 sf Storage= 0 cf
Flood Elev= 280.00' Surf.Area= 3,774 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	276.50'	0 cf	**FOREBAY #2 (0% VOIDS) (Prismatic)** Listed below (Recalc) 7,716 cf Overall x 0.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
276.50	741	0	0
277.00	1,132	468	468
278.00	1,958	1,545	2,013
279.00	2,837	2,398	4,411
280.00	3,774	3,306	7,716

Device	Routing	Invert	Outlet Devices
#1	Primary	278.80'	**21.0' long + 0.1 '/' SideZ x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Primary OutFlow Max=12.6 cfs @ 12.09 hrs HW=279.18' TW=276.72' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 12.6 cfs @ 1.57 fps)

Summary for Pond TD1:

Inflow Area = 36,281 sf,100.00% Impervious, Inflow Depth > 4.13" for 10-YR event
Inflow = 3.5 cfs @ 12.09 hrs, Volume= 12,492 cf
Outflow = 3.5 cfs @ 12.09 hrs, Volume= 12,492 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.5 cfs @ 12.09 hrs, Volume= 12,492 cf
Routed to Pond CB13A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 292.07' @ 12.09 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	290.70'	**24.0" Round Culvert** L= 102.3' Ke= 0.500 Inlet / Outlet Invert= 290.70' / 289.66' S= 0.0102 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.4 cfs @ 12.09 hrs HW=292.05' TW=291.86' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 3.4 cfs @ 2.11 fps)

Summary for Link 1: StreamStats Flow

Peak flow rates from Pea-Plow Statistics Floew Report [Peak Flow Statewide SIR2008 5206]

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.18" for 10-YR event
Inflow = 8.3 cfs @ 12.00 hrs, Volume= 29,700 cf
Primary = 8.3 cfs @ 12.00 hrs, Volume= 29,700 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 5R : 48" RCP - Naturalized Bottom

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

10-YR 25 Point manual hydrograph, To= 0.00 hrs, dt= 1.00 hrs, Area= 1,951,488 sf, cfs =

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	8.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00					

Summary for Link A: 14-44-38

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: 14-47

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: future property line

Inflow Area = 1,122,915 sf, 20.31% Impervious, Inflow Depth > 0.26" for 10-YR event
Inflow = 1.0 cfs @ 15.26 hrs, Volume= 24,058 cf
Primary = 1.0 cfs @ 15.26 hrs, Volume= 24,058 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node R1

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: 14-38-0

Inflow Area = 1,986,435 sf, 0.00% Impervious, Inflow Depth > 0.18" for 10-YR event
Inflow = 8.2 cfs @ 12.00 hrs, Volume= 29,965 cf
Primary = 8.2 cfs @ 12.00 hrs, Volume= 29,965 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link F: 14-38-0

Inflow Area = 305,720 sf, 0.00% Impervious, Inflow Depth > 0.92" for 10-YR event
Inflow = 1.9 cfs @ 13.48 hrs, Volume= 23,391 cf
Primary = 1.9 cfs @ 13.48 hrs, Volume= 23,391 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Subcatchment PS14: paved aisle

Runoff = 1.8 cfs @ 12.21 hrs, Volume= 8,097 cf, Depth> 4.93"
Routed to Pond CB6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
799	98	Roofs, HSG A
176	98	Roofs, HSG C
1,186	98	Paved parking, HSG C
16,520	98	Paved parking, HSG A
751	39	>75% Grass cover, Good, HSG A
259	74	>75% Grass cover, Good, HSG C
19,691	95	Weighted Average
1,010		5.13% Pervious Area
18,681		94.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	36	0.0280	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
0.1	23	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	170	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.3	229	Total			

Summary for Subcatchment PS15: Process Building

Runoff = 2.7 cfs @ 12.09 hrs, Volume= 9,866 cf, Depth> 5.29"
Routed to Pond DMHRD :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
21,262	98	Roofs, HSG A
1,122	98	Roofs, HSG C
22,384	98	Weighted Average
22,384		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS16: paved area

Runoff = 2.2 cfs @ 12.09 hrs, Volume= 7,857 cf, Depth> 5.29"
Routed to Pond CB8A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
286	98	Roofs, HSG A
17,540	98	Paved parking, HSG A
17,826	98	Weighted Average
17,826		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS17: paved area

Runoff = 2.0 cfs @ 12.09 hrs, Volume= 7,339 cf, Depth> 5.29"
Routed to Pond CB14 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
16,650	98	Paved parking, HSG A
16,650		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS18: roof and paved area

Runoff = 2.6 cfs @ 12.09 hrs, Volume= 9,443 cf, Depth> 5.29"
Routed to Pond CB13A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
10,840	98	Paved parking, HSG A
10,584	98	Roofs, HSG A
21,424	98	Weighted Average
21,424		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS19: loading bay and roof

Runoff = 4.4 cfs @ 12.09 hrs, Volume= 15,992 cf, Depth> 5.29"
Routed to Pond TD1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
10,257	98	Paved parking, HSG A
24,660	98	Roofs, HSG A
1,364	98	Roofs, HSG C
36,281	98	Weighted Average
36,281		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS2: offsite east

Runoff = 0.3 cfs @ 12.53 hrs, Volume= 2,559 cf, Depth> 0.56"
Routed to Pond CB10 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
9,567	98	Paved parking, HSG A
33,691	30	Woods, Good, HSG A
11,424	39	>75% Grass cover, Good, HSG A
54,682	44	Weighted Average
45,115		82.50% Pervious Area
9,567		17.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.1	92	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	49	0.1100	2.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	26	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
22.9	267	Total			

Summary for Subcatchment PS20: interconnection/upgrading yard

Runoff = 1.3 cfs @ 12.09 hrs, Volume= 4,371 cf, Depth> 4.60"
Routed to Pond CB18 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
820	39	>75% Grass cover, Good, HSG A
10,570	96	Gravel surface, HSG A
11,390	92	Weighted Average
11,390		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS21: remainder site south

area 7 is a head wall

Runoff = 0.5 cfs @ 12.67 hrs, Volume= 5,693 cf, Depth> 0.41"
Routed to Link D : future property line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
58,550	30	Woods, Good, HSG A
35,853	55	Woods, Good, HSG B
7,591	70	Woods, Good, HSG C
61,491	39	>75% Grass cover, Good, HSG A
1,806	74	>75% Grass cover, Good, HSG C
2,587	61	>75% Grass cover, Good, HSG B
8	98	Paved parking, HSG A
167,886	41	Weighted Average
167,878		100.00% Pervious Area
8		0.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	100	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
5.8	232	0.0700	0.66		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
28.4	332	Total			

Summary for Subcatchment PS22: laydown area

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 1,213 cf, Depth> 5.29"
Routed to Pond CB19 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
2,752	98	Paved parking, HSG A
2,752		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS3: offsite north

Runoff = 0.3 cfs @ 12.61 hrs, Volume= 3,130 cf, Depth> 0.41"
Routed to Pond CB3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
7,328	98	Paved parking, HSG A
11,458	70	Woods, Good, HSG C
69,043	30	Woods, Good, HSG A
4,239	39	>75% Grass cover, Good, HSG A
92,068	41	Weighted Average
84,740		92.04% Pervious Area
7,328		7.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
4.7	245	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
4.7	283	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	26	0.3500	4.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	62	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
23.7	716	Total			

Summary for Subcatchment PS31: driveway

Runoff = 1.0 cfs @ 12.09 hrs, Volume= 3,561 cf, Depth> 5.29"
Routed to Pond cb1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
8,080	98	Paved roads w/curbs & sewers, HSG A
8,080		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS32: driveway

Runoff = 1.0 cfs @ 12.09 hrs, Volume= 3,614 cf, Depth> 5.29"
Routed to Pond cb2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
8,199	98	Paved roads w/curbs & sewers, HSG A
8,199		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS33: north of driveway

Runoff = 0.1 cfs @ 12.40 hrs, Volume= 627 cf, Depth> 0.32"
Routed to Link E : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
11,080	39	>75% Grass cover, Good, HSG A
12,516	39	>75% Grass cover, Good, HSG A
23,596	39	Weighted Average
23,596		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS34: south of driveway

Runoff = 0.0 cfs @ 12.40 hrs, Volume= 302 cf, Depth> 0.32"
Routed to Link E : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
11,351	39	>75% Grass cover, Good, HSG A
11,351		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS4: offsite north

Runoff = 3.3 cfs @ 12.45 hrs, Volume= 19,691 cf, Depth> 1.46"
Routed to Pond CB4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
9,960	98	Paved parking, HSG A
83,865	70	Woods, Good, HSG C
56,653	30	Woods, Good, HSG A
4,399	39	>75% Grass cover, Good, HSG A
322	98	Paved parking, HSG C
6,715	96	Gravel surface, HSG C
161,914	58	Weighted Average
151,632		93.65% Pervious Area
10,282		6.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
8.8	589	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	23	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	66	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
28.6	778	Total			

Summary for Subcatchment PS40: FB2 maintenance drive

Runoff = 0.2 cfs @ 12.46 hrs, Volume= 1,059 cf, Depth> 0.85"
Routed to Reach 1R : maintenance FB2 swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
12,263	39	>75% Grass cover, Good, HSG A
2,670	96	Gravel surface, HSG A
14,933	49	Weighted Average
14,933		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PS5: offsite run on

Runoff = 5.2 cfs @ 13.04 hrs, Volume= 46,635 cf, Depth> 2.57"
Routed to Pond OS3 : Detention Basin #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
188,914	70	Woods, Good, HSG C
6,947	39	>75% Grass cover, Good, HSG A
2,123	98	Roofs, HSG C
20,000	96	Gravel surface, HSG C
217,984	72	Weighted Average
215,861		99.03% Pervious Area
2,123		0.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.5	100	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
5.4	81	0.0100	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	201	0.0100	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
9.5	248	0.0300	0.43		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.1	405	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.9	78	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
74.8	1,113	Total			

Summary for Subcatchment PS6: offsite run on

Runoff = 1.9 cfs @ 12.30 hrs, Volume= 9,284 cf, Depth> 2.17"
Routed to Pond cb21 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
46,969	70	Woods, Good, HSG C
4,352	39	>75% Grass cover, Good, HSG A
51,321	67	Weighted Average
51,321		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	100	0.0500	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.9	289	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	93	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.7	482	Total			

Summary for Subcatchment PS7: offsite run-on

Runoff = 3.5 cfs @ 13.41 hrs, Volume= 40,076 cf, Depth> 1.57"
Routed to Link F : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
226,968	70	Woods, Good, HSG C
55,157	30	Woods, Good, HSG A
23,595	39	>75% Grass cover, Good, HSG A
305,720	60	Weighted Average
305,720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.3	100	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
23.9	508	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.2	706	0.0600	0.61		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	661	0.0900	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
97.1	1,975	Total			

Summary for Subcatchment PSFB1: sediment forebay 1 area

Runoff = 0.0 cfs @ 12.41 hrs, Volume= 320 cf, Depth> 0.32"
Routed to Pond SFB1 : FOREBAY #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
12,045	39	>75% Grass cover, Good, HSG A
12,045		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSFB2: sediment forebay 2 area

Runoff = 0.0 cfs @ 12.68 hrs, Volume= 449 cf, Depth> 0.32"
Routed to Pond SFB2 : FOREBAY #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
17,093	39	>75% Grass cover, Good, HSG A
17,093		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PSM1: FB1 maintenance area

Runoff = 0.0 cfs @ 12.38 hrs, Volume= 221 cf, Depth> 0.36"
Routed to Reach 2R : maintenance FB1 swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
7,015	39	>75% Grass cover, Good, HSG A
252	74	>75% Grass cover, Good, HSG C
7,267	40	Weighted Average
7,267		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSP1: filtration basin 1 area

Runoff = 0.1 cfs @ 12.38 hrs, Volume= 714 cf, Depth> 0.36"
Routed to Pond FB1 : FILT. BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
22,768	39	>75% Grass cover, Good, HSG A
756	74	>75% Grass cover, Good, HSG C
23,524	40	Weighted Average
23,524		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSP2: filtration basin 2 area

Runoff = 0.1 cfs @ 12.68 hrs, Volume= 800 cf, Depth> 0.32"
Routed to Pond FB2 : FILT. BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
30,454	39	>75% Grass cover, Good, HSG A
30,454		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PST10: tribrid area

Runoff = 0.7 cfs @ 12.28 hrs, Volume= 3,128 cf, Depth> 3.25"
Routed to Pond CB24 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
4,006	98	Roofs, HSG A
3,911	96	Gravel surface, HSG A
3,630	39	>75% Grass cover, Good, HSG A
11,547	79	Weighted Average
7,541		65.31% Pervious Area
4,006		34.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.6	24	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.4	124	Total			

Summary for Subcatchment PST11: tribrid area

Runoff = 1.0 cfs @ 12.20 hrs, Volume= 3,918 cf, Depth> 3.25"
Routed to Pond CB27 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
7,342	98	Roofs, HSG A
1,387	96	Gravel surface, HSG A
4,531	39	>75% Grass cover, Good, HSG A
670	98	Roofs, HSG C
209	96	Gravel surface, HSG C
308	74	>75% Grass cover, Good, HSG C
14,447	79	Weighted Average
6,435		44.54% Pervious Area
8,012		55.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0230	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.5	35	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.7	135	Total			

Summary for Subcatchment PST12: tribrid area

Runoff = 1.1 cfs @ 12.22 hrs, Volume= 4,585 cf, Depth> 3.45"
Routed to Pond CB28 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
7,486	98	Roofs, HSG A
3,088	96	Gravel surface, HSG A
4,198	39	>75% Grass cover, Good, HSG A
526	98	Roofs, HSG C
109	96	Gravel surface, HSG C
550	74	>75% Grass cover, Good, HSG C
15,957	81	Weighted Average
7,945		49.79% Pervious Area
8,012		50.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	100	0.0180	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.7	40	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.4	140	Total			

Summary for Subcatchment PST13: tribrid area

Runoff = 0.5 cfs @ 12.21 hrs, Volume= 2,224 cf, Depth> 2.34"
Routed to Pond CB30 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
4,156	98	Roofs, HSG A
1,698	96	Gravel surface, HSG A
5,501	39	>75% Grass cover, Good, HSG A
34	74	>75% Grass cover, Good, HSG C
11,389	69	Weighted Average
7,233		63.51% Pervious Area
4,156		36.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0230	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.7	42	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.9	142	Total			

Summary for Subcatchment PST6: fet area

Runoff = 1.0 cfs @ 12.24 hrs, Volume= 4,205 cf, Depth> 2.43"
Routed to Pond CB15 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
7,368	98	Roofs, HSG A
3,784	96	Gravel surface, HSG A
9,624	39	>75% Grass cover, Good, HSG A
20,776	70	Weighted Average
13,408		64.54% Pervious Area
7,368		35.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
3.0	126	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.6	226	Total			

Summary for Subcatchment PST7: tribrid area

Runoff = 0.6 cfs @ 12.24 hrs, Volume= 2,662 cf, Depth> 2.69"
Routed to Pond cb20 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
5,990	98	Roofs, HSG A
974	96	Gravel surface, HSG A
4,896	39	>75% Grass cover, Good, HSG A
11,860	73	Weighted Average
5,870		49.49% Pervious Area
5,990		50.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0150	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.4	20	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.2	120	Total			

Summary for Subcatchment PST8: tribrid area

Runoff = 0.6 cfs @ 12.28 hrs, Volume= 2,887 cf, Depth> 2.97"
Routed to Pond cb22 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
5,981	98	Roofs, HSG A
1,487	96	Gravel surface, HSG A
4,212	39	>75% Grass cover, Good, HSG A
11,680	76	Weighted Average
5,699		48.79% Pervious Area
5,981		51.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.5	28	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.3	128	Total			

Summary for Subcatchment PST9: tribrid area

Runoff = 0.5 cfs @ 12.28 hrs, Volume= 2,400 cf, Depth> 3.06"
Routed to Pond CB23 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
2,995	98	Roofs, HSG A
3,172	96	Gravel surface, HSG A
3,244	39	>75% Grass cover, Good, HSG A
9,411	77	Weighted Average
6,416		68.18% Pervious Area
2,995		31.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.4	16	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.2	116	Total			

Summary for Reach 1R: maintenance FB2 swale

Inflow Area = 14,933 sf, 0.00% Impervious, Inflow Depth > 0.85" for 25-YR event
Inflow = 0.2 cfs @ 12.46 hrs, Volume= 1,059 cf
Outflow = 0.1 cfs @ 12.52 hrs, Volume= 1,051 cf, Atten= 2%, Lag= 3.7 min
Routed to Pond SFB2 : FOREBAY #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.55 fps, Min. Travel Time= 5.0 min
Avg. Velocity = 0.25 fps, Avg. Travel Time= 11.1 min

Peak Storage= 45 cf @ 12.52 hrs
Average Depth at Peak Storage= 0.03' , Surface Width= 8.20'
Bank-Full Depth= 0.50' Flow Area= 4.8 sf, Capacity= 14.2 cfs

8.00' x 0.50' deep channel, n= 0.069 Riprap, 6-inch
Side Slope Z-value= 3.0 '/' Top Width= 11.00'
Length= 165.0' Slope= 0.0606 '/'
Inlet Invert= 290.00', Outlet Invert= 280.00'



‡

Summary for Reach 2R: maintenance FB1 swale

Inflow Area = 7,267 sf, 0.00% Impervious, Inflow Depth > 0.36" for 25-YR event
Inflow = 0.0 cfs @ 12.38 hrs, Volume= 221 cf
Outflow = 0.0 cfs @ 12.45 hrs, Volume= 219 cf, Atten= 6%, Lag= 4.6 min
Routed to Pond CB16 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.49 fps, Min. Travel Time= 6.0 min
Avg. Velocity = 0.28 fps, Avg. Travel Time= 10.7 min

Peak Storage= 7 cf @ 12.45 hrs
Average Depth at Peak Storage= 0.01' , Surface Width= 3.08'
Bank-Full Depth= 0.25' Flow Area= 0.9 sf, Capacity= 2.8 cfs

3.00' x 0.25' deep channel, n= 0.041 Riprap, 2-inch
Side Slope Z-value= 3.0 '/' Top Width= 4.50'
Length= 178.0' Slope= 0.0573 '/'
Inlet Invert= 292.00', Outlet Invert= 281.80'



‡

Summary for Reach 5R: 48" RCP - Naturalized Bottom

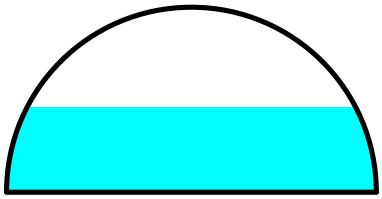
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.27" for 25-YR event
Inflow = 12.1 cfs @ 12.00 hrs, Volume= 43,560 cf
Outflow = 12.1 cfs @ 12.00 hrs, Volume= 43,562 cf, Atten= 0%, Lag= 0.2 min
Routed to Link E : 14-38-0

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 3.41 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.56 fps, Avg. Travel Time= 0.3 min

Peak Storage= 170 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.92' , Surface Width= 3.55'
Bank-Full Depth= 2.00' Flow Area= 6.3 sf, Capacity= 21.7 cfs

48.0" W x 24.0" H, R=24.0" Arch Pipe
n= 0.040 Earth, cobble bottom, clean sides
Length= 48.0' Slope= 0.0167 '/'
Inlet Invert= 298.60', Outlet Invert= 297.80'



Summary for Pond cb1:

Inflow Area = 8,080 sf,100.00% Impervious, Inflow Depth > 5.29" for 25-YR event
Inflow = 1.0 cfs @ 12.09 hrs, Volume= 3,561 cf
Outflow = 1.0 cfs @ 12.09 hrs, Volume= 3,561 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.09 hrs, Volume= 3,561 cf
Routed to Pond cb2 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 293.69' @ 12.09 hrs
Flood Elev= 297.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	293.18'	**15.0" Round Culvert** L= 21.8' Ke= 0.500 Inlet / Outlet Invert= 293.18' / 292.96' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.0 cfs @ 12.09 hrs HW=293.68' TW=293.32' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.0 cfs @ 3.08 fps)

Summary for Pond CB10:

Inflow Area = 308,664 sf, 8.80% Impervious, Inflow Depth > 0.99" for 25-YR event
Inflow = 3.8 cfs @ 12.47 hrs, Volume= 25,380 cf
Outflow = 3.8 cfs @ 12.47 hrs, Volume= 25,380 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.8 cfs @ 12.47 hrs, Volume= 25,380 cf
Routed to Pond CB12 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 286.99' @ 12.47 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.94'	**15.0" Round Culvert** L= 169.0' Ke= 0.500 Inlet / Outlet Invert= 285.94' / 284.25' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.8 cfs @ 12.47 hrs HW=286.99' TW=285.32' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.8 cfs @ 3.48 fps)

Summary for Pond CB12:

Inflow Area = 324,943 sf, 13.37% Impervious, Inflow Depth > 1.20" for 25-YR event
Inflow = 4.3 cfs @ 12.44 hrs, Volume= 32,555 cf
Outflow = 4.3 cfs @ 12.44 hrs, Volume= 32,555 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.3 cfs @ 12.44 hrs, Volume= 32,555 cf
Routed to Pond CB18 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.33' @ 12.44 hrs
Flood Elev= 296.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.15'	**15.0" Round Culvert** L= 60.0' Ke= 0.500 Inlet / Outlet Invert= 284.15' / 283.55' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.3 cfs @ 12.44 hrs HW=285.32' TW=283.58' (Dynamic Tailwater)
1=Culvert (Barrel Controls 4.3 cfs @ 4.69 fps)

Summary for Pond CB13:

Inflow Area = 57,705 sf,100.00% Impervious, Inflow Depth > 5.29" for 25-YR event
Inflow = 7.0 cfs @ 12.09 hrs, Volume= 25,435 cf
Outflow = 7.0 cfs @ 12.09 hrs, Volume= 25,435 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.0 cfs @ 12.09 hrs, Volume= 25,435 cf
Routed to Pond CB14 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.41' @ 12.09 hrs
Flood Elev= 294.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**18.0" Round Culvert** L= 71.4' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 287.13' S= 0.0122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=6.8 cfs @ 12.09 hrs HW=289.38' TW=281.55' (Dynamic Tailwater)
1=Culvert (Inlet Controls 6.8 cfs @ 4.00 fps)

Summary for Pond CB13A:

Inflow Area = 57,705 sf,100.00% Impervious, Inflow Depth > 5.29" for 25-YR event
Inflow = 7.0 cfs @ 12.09 hrs, Volume= 25,435 cf
Outflow = 7.0 cfs @ 12.09 hrs, Volume= 25,435 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.0 cfs @ 12.09 hrs, Volume= 25,435 cf
Routed to Pond CB13 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 292.11' @ 12.09 hrs
Flood Elev= 294.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	290.70'	**18.0" Round Culvert** L= 102.3' Ke= 0.500 Inlet / Outlet Invert= 290.70' / 289.66' S= 0.0102 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=6.8 cfs @ 12.09 hrs HW=292.08' TW=289.38' (Dynamic Tailwater)
1=Culvert (Inlet Controls 6.8 cfs @ 4.00 fps)

Summary for Pond CB14:

Inflow Area = 111,872 sf, 99.10% Impervious, Inflow Depth > 5.23" for 25-YR event
Inflow = 12.4 cfs @ 12.09 hrs, Volume= 48,727 cf
Outflow = 12.4 cfs @ 12.09 hrs, Volume= 48,727 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.4 cfs @ 12.09 hrs, Volume= 48,727 cf
Routed to Pond DMH9 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 281.57' @ 12.09 hrs
Flood Elev= 293.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	280.06'	**30.0" Round Culvert** L= 80.7' Ke= 0.500 Inlet / Outlet Invert= 280.06' / 279.25' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=12.2 cfs @ 12.09 hrs HW=281.55' TW=280.26' (Dynamic Tailwater)
1=Culvert (Barrel Controls 12.2 cfs @ 5.73 fps)

Summary for Pond CB15:

Inflow Area = 20,776 sf, 35.46% Impervious, Inflow Depth > 2.43" for 25-YR event
Inflow = 1.0 cfs @ 12.24 hrs, Volume= 4,205 cf
Outflow = 1.0 cfs @ 12.24 hrs, Volume= 4,205 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.24 hrs, Volume= 4,205 cf
Routed to Pond DMH5 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 292.43' @ 12.24 hrs
Flood Elev= 296.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.94'	**15.0" Round Culvert** L= 34.0' Ke= 0.500 Inlet / Outlet Invert= 291.94' / 291.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.0 cfs @ 12.24 hrs HW=292.43' TW=290.01' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.0 cfs @ 3.23 fps)

Summary for Pond CB16:

Inflow Area = 7,267 sf, 0.00% Impervious, Inflow Depth > 0.36" for 25-YR event
Inflow = 0.0 cfs @ 12.45 hrs, Volume= 219 cf
Outflow = 0.0 cfs @ 12.45 hrs, Volume= 219 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.45 hrs, Volume= 219 cf
Routed to Pond FB1 : FILT. BASIN #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.61' @ 12.45 hrs
Flood Elev= 281.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.55'	**15.0" Round Culvert** L= 62.0' Ke= 0.500 Inlet / Outlet Invert= 277.55' / 275.75' S= 0.0290 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.45 hrs HW=277.61' TW=274.53' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.0 cfs @ 0.86 fps)

Summary for Pond CB17:

Inflow Area = 339,085 sf, 13.63% Impervious, Inflow Depth > 1.35" for 25-YR event
Inflow = 4.8 cfs @ 12.41 hrs, Volume= 38,139 cf
Outflow = 4.8 cfs @ 12.41 hrs, Volume= 38,139 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.8 cfs @ 12.41 hrs, Volume= 38,139 cf
Routed to Pond DMH9 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 280.99' @ 12.10 hrs
Flood Elev= 293.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	279.72'	**18.0" Round Culvert** L= 108.0' Ke= 0.500 Inlet / Outlet Invert= 279.72' / 278.10' S= 0.0150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.8 cfs @ 12.41 hrs HW=280.82' TW=279.63' (Dynamic Tailwater)
1=Culvert (Outlet Controls 4.8 cfs @ 4.81 fps)

Summary for Pond CB18:

Inflow Area = 336,333 sf, 12.92% Impervious, Inflow Depth > 1.32" for 25-YR event
Inflow = 4.7 cfs @ 12.41 hrs, Volume= 36,926 cf
Outflow = 4.7 cfs @ 12.41 hrs, Volume= 36,926 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.7 cfs @ 12.41 hrs, Volume= 36,926 cf
Routed to Pond CB17 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 283.58' @ 12.41 hrs
Flood Elev= 293.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	282.45'	**18.0" Round Culvert** L= 45.2' Ke= 0.500 Inlet / Outlet Invert= 282.45' / 282.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.7 cfs @ 12.41 hrs HW=283.58' TW=280.82' (Dynamic Tailwater)
1=Culvert (Barrel Controls 4.7 cfs @ 4.58 fps)

Summary for Pond CB19:

Inflow Area = 2,752 sf,100.00% Impervious, Inflow Depth > 5.29" for 25-YR event
Inflow = 0.3 cfs @ 12.09 hrs, Volume= 1,213 cf
Outflow = 0.3 cfs @ 12.09 hrs, Volume= 1,213 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.3 cfs @ 12.09 hrs, Volume= 1,213 cf
Routed to Pond CB17 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.27' @ 12.09 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**15.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 285.00' / 284.50' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.3 cfs @ 12.09 hrs HW=285.27' TW=280.96' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.3 cfs @ 2.57 fps)

Summary for Pond cb2:

Inflow Area = 16,279 sf,100.00% Impervious, Inflow Depth > 5.29" for 25-YR event
Inflow = 2.0 cfs @ 12.09 hrs, Volume= 7,175 cf
Outflow = 2.0 cfs @ 12.09 hrs, Volume= 7,175 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 12.09 hrs, Volume= 7,175 cf
Routed to Pond dmh1 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 293.34' @ 12.09 hrs
Flood Elev= 297.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.64'	**15.0" Round Culvert** L= 155.0' Ke= 0.500 Inlet / Outlet Invert= 292.64' / 291.33' S= 0.0085 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.9 cfs @ 12.09 hrs HW=293.32' TW=290.64' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.9 cfs @ 4.05 fps)

Summary for Pond cb20:

Inflow Area = 11,860 sf, 50.51% Impervious, Inflow Depth > 2.69" for 25-YR event
Inflow = 0.6 cfs @ 12.24 hrs, Volume= 2,662 cf
Outflow = 0.6 cfs @ 12.24 hrs, Volume= 2,662 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.6 cfs @ 12.24 hrs, Volume= 2,662 cf
Routed to Pond cb21 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.56' @ 12.24 hrs
Flood Elev= 292.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.20'	**15.0" Round Culvert** L= 94.0' Ke= 0.500 Inlet / Outlet Invert= 289.20' / 286.90' S= 0.0245 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.6 cfs @ 12.24 hrs HW=289.56' TW=287.74' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.6 cfs @ 2.05 fps)

Summary for Pond cb21:

Inflow Area = 63,181 sf, 9.48% Impervious, Inflow Depth > 2.27" for 25-YR event
Inflow = 2.5 cfs @ 12.29 hrs, Volume= 11,946 cf
Outflow = 2.5 cfs @ 12.29 hrs, Volume= 11,946 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.5 cfs @ 12.29 hrs, Volume= 11,946 cf
Routed to Pond cb22 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.76' @ 12.29 hrs
Flood Elev= 292.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.80'	**15.0" Round Culvert** L= 44.0' Ke= 0.500 Inlet / Outlet Invert= 286.80' / 286.41' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.5 cfs @ 12.29 hrs HW=287.75' TW=287.30' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.5 cfs @ 3.46 fps)

Summary for Pond cb22:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 2.38" for 25-YR event
Inflow = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf
Outflow = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf
Routed to Pond dmh23 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.31' @ 12.29 hrs
Flood Elev= 291.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.31'	**15.0" Round Culvert** L= 73.0' Ke= 0.500 Inlet / Outlet Invert= 286.31' / 285.59' S= 0.0099 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.1 cfs @ 12.29 hrs HW=287.30' TW=286.52' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.1 cfs @ 4.11 fps)

Summary for Pond CB23:

Inflow Area = 84,272 sf, 17.76% Impervious, Inflow Depth > 2.45" for 25-YR event
Inflow = 3.7 cfs @ 12.29 hrs, Volume= 17,234 cf
Outflow = 3.7 cfs @ 12.29 hrs, Volume= 17,234 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.7 cfs @ 12.29 hrs, Volume= 17,234 cf
Routed to Pond CB24 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.38' @ 12.29 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.31'	**15.0" Round Culvert** L= 110.0' Ke= 0.500 Inlet / Outlet Invert= 284.31' / 283.20' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.7 cfs @ 12.29 hrs HW=285.38' TW=284.28' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.7 cfs @ 4.41 fps)

Summary for Pond CB24:

Inflow Area = 95,819 sf, 19.80% Impervious, Inflow Depth > 2.55" for 25-YR event
Inflow = 4.3 cfs @ 12.29 hrs, Volume= 20,362 cf
Outflow = 4.3 cfs @ 12.29 hrs, Volume= 20,362 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.3 cfs @ 12.29 hrs, Volume= 20,362 cf
Routed to Pond dmh25 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 284.28' @ 12.29 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	283.10'	**15.0" Round Culvert** L= 82.0' Ke= 0.500 Inlet / Outlet Invert= 283.10' / 282.23' S= 0.0106 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.3 cfs @ 12.29 hrs HW=284.28' TW=283.25' (Dynamic Tailwater)
1=Culvert (Outlet Controls 4.3 cfs @ 4.67 fps)

Summary for Pond CB27:

Inflow Area = 14,447 sf, 55.46% Impervious, Inflow Depth > 3.25" for 25-YR event
Inflow = 1.0 cfs @ 12.20 hrs, Volume= 3,918 cf
Outflow = 1.0 cfs @ 12.20 hrs, Volume= 3,918 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.20 hrs, Volume= 3,918 cf
Routed to Pond DMH26 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.64' @ 12.20 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.15'	**15.0" Round Culvert** L= 27.7' Ke= 0.500 Inlet / Outlet Invert= 288.15' / 287.87' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.0 cfs @ 12.20 hrs HW=288.64' TW=281.89' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.0 cfs @ 3.16 fps)

Summary for Pond CB28:

Inflow Area = 38,341 sf, 79.28% Impervious, Inflow Depth > 4.52" for 25-YR event
Inflow = 3.4 cfs @ 12.10 hrs, Volume= 14,451 cf
Outflow = 3.4 cfs @ 12.10 hrs, Volume= 14,451 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.4 cfs @ 12.10 hrs, Volume= 14,451 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.74' @ 12.10 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.75'	**18.0" Round Culvert** L= 20.7' Ke= 0.500 Inlet / Outlet Invert= 288.75' / 288.54' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.4 cfs @ 12.10 hrs HW=289.74' TW=278.75' (Dynamic Tailwater)
1=Culvert (Barrel Controls 3.4 cfs @ 3.95 fps)

Summary for Pond CB3:

Inflow Area = 253,982 sf, 6.93% Impervious, Inflow Depth > 1.08" for 25-YR event
Inflow = 3.6 cfs @ 12.47 hrs, Volume= 22,821 cf
Outflow = 3.6 cfs @ 12.47 hrs, Volume= 22,821 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.6 cfs @ 12.47 hrs, Volume= 22,821 cf
Routed to Pond DMH3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 290.04' @ 12.47 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.05'	**15.0" Round Culvert** L= 90.0' Ke= 0.500 Inlet / Outlet Invert= 289.05' / 288.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.5 cfs @ 12.47 hrs HW=290.04' TW=287.99' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.5 cfs @ 3.39 fps)

Summary for Pond CB30:

Inflow Area = 250,149 sf, 5.46% Impervious, Inflow Depth > 2.54" for 25-YR event
Inflow = 5.5 cfs @ 13.03 hrs, Volume= 52,898 cf
Outflow = 5.5 cfs @ 13.03 hrs, Volume= 52,898 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.5 cfs @ 13.03 hrs, Volume= 52,898 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 286.81' @ 13.03 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.80'	**24.0" Round Culvert** L= 92.0' Ke= 0.500 Inlet / Outlet Invert= 285.80' / 284.88' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.5 cfs @ 13.03 hrs HW=286.81' TW=278.59' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.5 cfs @ 3.43 fps)

Summary for Pond CB4:

Inflow Area = 161,914 sf, 6.35% Impervious, Inflow Depth > 1.46" for 25-YR event
Inflow = 3.3 cfs @ 12.45 hrs, Volume= 19,691 cf
Outflow = 3.3 cfs @ 12.45 hrs, Volume= 19,691 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.3 cfs @ 12.45 hrs, Volume= 19,691 cf
Routed to Pond CB3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 292.01' @ 12.45 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.06'	**15.0" Round Culvert** L= 191.0' Ke= 0.500 Inlet / Outlet Invert= 291.06' / 289.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.3 cfs @ 12.45 hrs HW=292.01' TW=290.04' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.3 cfs @ 3.32 fps)

Summary for Pond CB6:

Inflow Area = 19,691 sf, 94.87% Impervious, Inflow Depth > 4.93" for 25-YR event
Inflow = 1.8 cfs @ 12.21 hrs, Volume= 8,097 cf
Outflow = 1.8 cfs @ 12.21 hrs, Volume= 8,097 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.8 cfs @ 12.21 hrs, Volume= 8,097 cf
Routed to Pond CB8A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.55' @ 12.21 hrs
Flood Elev= 294.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**24.0" Round Culvert** L= 118.0' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 286.82' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.7 cfs @ 12.21 hrs HW=288.55' TW=286.87' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.7 cfs @ 2.51 fps)

Summary for Pond CB8A:

Inflow Area = 37,517 sf, 97.31% Impervious, Inflow Depth > 5.10" for 25-YR event
Inflow = 3.5 cfs @ 12.11 hrs, Volume= 15,954 cf
Outflow = 3.5 cfs @ 12.11 hrs, Volume= 15,954 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.5 cfs @ 12.11 hrs, Volume= 15,954 cf
Routed to Pond CB14 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 286.98' @ 12.11 hrs
Flood Elev= 293.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.00'	**15.0" Round Culvert** L= 131.3' Ke= 0.500 Inlet / Outlet Invert= 286.00' / 284.69' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.4 cfs @ 12.11 hrs HW=286.97' TW=281.53' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.4 cfs @ 3.35 fps)

Summary for Pond dmh1:

Inflow Area = 16,279 sf,100.00% Impervious, Inflow Depth > 5.29" for 25-YR event
Inflow = 2.0 cfs @ 12.09 hrs, Volume= 7,175 cf
Outflow = 2.0 cfs @ 12.09 hrs, Volume= 7,175 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 12.09 hrs, Volume= 7,175 cf
Routed to Pond CB12 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 290.65' @ 12.09 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.95'	**15.0" Round Culvert** L= 65.3' Ke= 0.500 Inlet / Outlet Invert= 289.95' / 289.30' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.9 cfs @ 12.09 hrs HW=290.64' TW=285.02' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.9 cfs @ 4.00 fps)

Summary for Pond dmh11:

Inflow Area = 398,756 sf, 17.81% Impervious, Inflow Depth > 2.76" for 25-YR event
Inflow = 10.3 cfs @ 12.26 hrs, Volume= 91,629 cf
Outflow = 10.3 cfs @ 12.26 hrs, Volume= 91,629 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.3 cfs @ 12.26 hrs, Volume= 91,629 cf
Routed to Pond SFB1 : FOREBAY #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 278.98' @ 12.26 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.23'	**24.0" Round Culvert** L= 41.0' Ke= 0.500 Inlet / Outlet Invert= 277.23' / 277.00' S= 0.0056 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=10.3 cfs @ 12.26 hrs HW=278.97' TW=277.61' (Dynamic Tailwater)
1=Culvert (Barrel Controls 10.3 cfs @ 4.72 fps)

Summary for Pond dmh23:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 2.38" for 25-YR event
Inflow = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf
Outflow = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf
Routed to Pond DMH24 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 286.52' @ 12.29 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.49'	**15.0" Round Culvert** L= 57.8' Ke= 0.500 Inlet / Outlet Invert= 285.49' / 284.91' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.1 cfs @ 12.29 hrs HW=286.52' TW=285.87' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 3.1 cfs @ 3.95 fps)

Summary for Pond DMH24:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 2.38" for 25-YR event
Inflow = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf
Outflow = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf
Routed to Pond CB23 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.88' @ 12.29 hrs
Flood Elev= 292.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.81'	**15.0" Round Culvert** L= 37.0' Ke= 0.500 Inlet / Outlet Invert= 284.81' / 284.46' S= 0.0095 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.1 cfs @ 12.29 hrs HW=285.87' TW=285.38' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 3.1 cfs @ 3.79 fps)

Summary for Pond dmh25:

Inflow Area = 95,819 sf, 19.80% Impervious, Inflow Depth > 2.55" for 25-YR event
Inflow = 4.3 cfs @ 12.29 hrs, Volume= 20,362 cf
Outflow = 4.3 cfs @ 12.29 hrs, Volume= 20,362 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.3 cfs @ 12.29 hrs, Volume= 20,362 cf
Routed to Pond DMH26 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 283.26' @ 12.29 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	282.10'	**15.0" Round Culvert** L= 113.0' Ke= 0.500 Inlet / Outlet Invert= 282.10' / 281.05' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.3 cfs @ 12.29 hrs HW=283.25' TW=281.93' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 4.3 cfs @ 3.66 fps)

Summary for Pond DMH26:

Inflow Area = 110,266 sf, 24.47% Impervious, Inflow Depth > 2.64" for 25-YR event
Inflow = 5.2 cfs @ 12.27 hrs, Volume= 24,280 cf
Outflow = 5.2 cfs @ 12.27 hrs, Volume= 24,280 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.2 cfs @ 12.27 hrs, Volume= 24,280 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 281.94' @ 12.27 hrs
Flood Elev= 292.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	280.80'	**18.0" Round Culvert** L= 126.4' Ke= 0.500 Inlet / Outlet Invert= 280.80' / 279.54' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.2 cfs @ 12.27 hrs HW=281.93' TW=278.97' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.2 cfs @ 3.62 fps)

Summary for Pond DMH3:

Inflow Area = 253,982 sf, 6.93% Impervious, Inflow Depth > 1.08" for 25-YR event
Inflow = 3.6 cfs @ 12.47 hrs, Volume= 22,821 cf
Outflow = 3.6 cfs @ 12.47 hrs, Volume= 22,821 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.6 cfs @ 12.47 hrs, Volume= 22,821 cf
Routed to Pond CB10 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.99' @ 12.47 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.97'	**15.0" Round Culvert** L= 82.0' Ke= 0.500 Inlet / Outlet Invert= 286.97' / 286.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.5 cfs @ 12.47 hrs HW=287.99' TW=286.99' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.5 cfs @ 4.52 fps)

Summary for Pond DMH5:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 2.55" for 25-YR event
Inflow = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf
Outflow = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf
Routed to Pond DMH5A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 290.40' @ 13.03 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.40'	**24.0" Round Culvert** L= 126.7' Ke= 0.500 Inlet / Outlet Invert= 289.40' / 288.13' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.4 cfs @ 13.03 hrs HW=290.40' TW=289.02' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.4 cfs @ 3.41 fps)

Summary for Pond DMH5A:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 2.55" for 25-YR event
Inflow = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf
Outflow = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf
Routed to Pond DMH6 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.02' @ 13.03 hrs
Flood Elev= 294.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**24.0" Round Culvert** L= 118.0' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 286.82' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.4 cfs @ 13.03 hrs HW=289.02' TW=287.76' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.4 cfs @ 4.88 fps)

Summary for Pond DMH6:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 2.55" for 25-YR event
Inflow = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf
Outflow = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf
Routed to Pond CB30 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.76' @ 13.03 hrs
Flood Elev= 294.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.72'	**24.0" Round Culvert** L= 79.0' Ke= 0.500 Inlet / Outlet Invert= 286.72' / 285.92' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.4 cfs @ 13.03 hrs HW=287.76' TW=286.81' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.4 cfs @ 4.73 fps)

Summary for Pond DMH9:

Inflow Area = 450,957 sf, 34.83% Impervious, Inflow Depth > 2.31" for 25-YR event
Inflow = 16.9 cfs @ 12.09 hrs, Volume= 86,866 cf
Outflow = 16.9 cfs @ 12.09 hrs, Volume= 86,866 cf, Atten= 0%, Lag= 0.0 min
Primary = 16.9 cfs @ 12.09 hrs, Volume= 86,866 cf
Routed to Pond SFB2 : FOREBAY #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 280.28' @ 12.09 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.12'	**30.0" Round Culvert** L= 24.0' Ke= 0.500 Inlet / Outlet Invert= 278.12' / 278.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=16.7 cfs @ 12.09 hrs HW=280.27' TW=279.26' (Dynamic Tailwater)
1=Culvert (Barrel Controls 16.7 cfs @ 5.01 fps)

Summary for Pond DMHRD:

Inflow Area = 22,384 sf,100.00% Impervious, Inflow Depth > 5.29" for 25-YR event
Inflow = 2.7 cfs @ 12.09 hrs, Volume= 9,866 cf
Outflow = 2.7 cfs @ 12.09 hrs, Volume= 9,866 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.7 cfs @ 12.09 hrs, Volume= 9,866 cf
Routed to Pond CB28 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 290.06' @ 12.09 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.10'	**18.0" Round Culvert** L= 28.0' Ke= 0.500 Inlet / Outlet Invert= 289.10' / 288.85' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.6 cfs @ 12.09 hrs HW=290.05' TW=289.72' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.6 cfs @ 3.21 fps)

Summary for Pond FB1: FILT. BASIN #1

Inflow Area = 441,592 sf, 16.08% Impervious, Inflow Depth > 2.52" for 25-YR event
Inflow = 10.4 cfs @ 12.26 hrs, Volume= 92,882 cf
Outflow = 2.7 cfs @ 14.36 hrs, Volume= 68,319 cf, Atten= 74%, Lag= 125.7 min
Discarded = 0.4 cfs @ 14.36 hrs, Volume= 20,423 cf
Primary = 2.3 cfs @ 14.36 hrs, Volume= 47,896 cf
Routed to Link D : future property line
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 276.36' @ 14.36 hrs Surf.Area= 14,791 sf Storage= 44,651 cf
Flood Elev= 278.00' Surf.Area= 17,354 sf Storage= 71,070 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 145.7 min (1,005.6 - 860.0)

Volume	Invert	Avail.Storage	Storage Description
#1	271.50'	76,522 cf	**FILT. BASIN #1 (18" FILTER MEDIA) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
271.50	7,427	0.0	0	0
271.51	7,427	40.0	30	30
272.99	7,427	40.0	4,397	4,426
273.00	7,427	100.0	74	4,501
274.00	11,372	100.0	9,400	13,900
275.00	12,783	100.0	12,078	25,978
276.00	14,250	100.0	13,517	39,494
277.00	15,774	100.0	15,012	54,506
278.00	17,354	100.0	16,564	71,070
278.30	18,991	100.0	5,452	76,522

Device	Routing	Invert	Outlet Devices
#1	Discarded	271.50'	**1.253 in/hr Exfiltration over Surface area**
#2	Secondary	277.50'	**6.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69
#3	Primary	266.00'	**15.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 266.00' / 265.75' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#4	Device 3	277.30'	**48.0" x 48.0" Horiz. OS1 Conc. Horz. Rim** C= 0.600
#5	Device 3	273.95'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.60 0.60 2.00 2.00 2.70 2.70 3.35 Width (feet) 0.10 0.10 0.20 0.20 0.50 0.50 1.20 1.20

Discarded OutFlow Max=0.4 cfs @ 14.36 hrs HW=276.36' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.4 cfs)

Primary OutFlow Max=2.3 cfs @ 14.36 hrs HW=276.36' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Passes 2.3 cfs of 18.4 cfs potential flow)
  ├**4=OS1 Conc. Horz. Rim** (Controls 0.0 cfs)
  └**5=Custom Weir/Orifice** (Weir Controls 2.3 cfs @ 4.18 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=271.50' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond FB2: FILT. BASIN #2

Inflow Area = 513,437 sf, 30.59% Impervious, Inflow Depth > 2.08" for 25-YR event
Inflow = 16.9 cfs @ 12.09 hrs, Volume= 89,167 cf
Outflow = 1.8 cfs @ 14.01 hrs, Volume= 84,524 cf, Atten= 89%, Lag= 114.7 min
Discarded = 1.6 cfs @ 14.01 hrs, Volume= 81,281 cf
Primary = 0.3 cfs @ 14.01 hrs, Volume= 3,244 cf
Routed to Link D : future property line
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 278.47' @ 14.01 hrs Surf.Area= 17,932 sf Storage= 33,697 cf
Flood Elev= 280.00' Surf.Area= 20,820 sf Storage= 63,233 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 156.7 min (957.8 - 801.2)

Volume	Invert	Avail.Storage	Storage Description
#1	275.50'	63,233 cf	**FILT. BASIN #2 (18" FILTER MEDIA) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
275.50	15,250	0.0	0	0
275.51	15,250	40.0	61	61
276.99	15,250	40.0	9,028	9,089
277.00	15,250	100.0	152	9,241
278.00	17,050	100.0	16,150	25,391
279.00	18,907	100.0	17,979	43,370
280.00	20,820	100.0	19,864	63,233

Device	Routing	Invert	Outlet Devices
#1	Secondary	279.50'	**6.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69
#2	Discarded	275.50'	**3.818 in/hr Exfiltration over Surface area**
#3	Device 5	277.75'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.60 0.60 0.90 0.90 1.25 Width (feet) 0.10 0.10 0.50 0.50 2.50 2.50
#4	Device 5	279.00'	**48.0" x 48.0" Horiz. OS2 Conc. Horz. Rim** C= 0.600 Limited to weir flow at low heads
#5	Primary	272.00'	**15.0" Round Culvert** L= 51.0' Ke= 0.500 Inlet / Outlet Invert= 272.00' / 271.50' S= 0.0098 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Discarded OutFlow Max=1.6 cfs @ 14.01 hrs HW=278.47' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 1.6 cfs)

Primary OutFlow Max=0.3 cfs @ 14.01 hrs HW=278.47' TW=0.00' (Dynamic Tailwater)
└**5=Culvert** (Passes 0.3 cfs of 14.3 cfs potential flow)
  └**3=Custom Weir/Orifice** (Weir Controls 0.3 cfs @ 2.12 fps)
  └**4=OS2 Conc. Horz. Rim** (Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=275.50' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond OS3: Detention Basin #1

Inflow Area = 217,984 sf, 0.97% Impervious, Inflow Depth > 2.57" for 25-YR event
Inflow = 5.2 cfs @ 13.04 hrs, Volume= 46,635 cf
Outflow = 5.2 cfs @ 13.04 hrs, Volume= 46,468 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.2 cfs @ 13.04 hrs, Volume= 46,468 cf
Routed to Pond DMH5 :
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond cb21 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 294.50' @ 13.04 hrs Surf.Area= 1,189 sf Storage= 481 cf
Flood Elev= 296.00' Surf.Area= 2,642 sf Storage= 3,352 cf

Plug-Flow detention time= 5.4 min calculated for 46,372 cf (99% of inflow)
Center-of-Mass det. time= 3.5 min (894.3 - 890.9)

Volume	Invert	Avail.Storage	Storage Description
#1	293.99'	3,352 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
293.99	693	0	0
296.00	2,642	3,352	3,352

Device	Routing	Invert	Outlet Devices
#1	Primary	290.00'	**18.0" Round Culvert** L= 100.0' Ke= 0.500 Inlet / Outlet Invert= 290.00' / 289.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	294.50'	**60.0" x 60.0" Horiz. OS3 Conc. Horz. Rim** C= 0.600
#3	Device 1	294.00'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.50 Width (feet) 0.75 0.75
#4	Secondary	295.50'	**3.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=5.2 cfs @ 13.04 hrs HW=294.50' TW=290.40' (Dynamic Tailwater)
└**1=Culvert** (Passes 5.2 cfs of 15.5 cfs potential flow)
└**2=OS3 Conc. Horz. Rim** (Orifice Controls 4.3 cfs @ 0.17 fps)
└**3=Custom Weir/Orifice** (Orifice Controls 0.9 cfs @ 2.32 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=293.99' TW=286.80' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond SFB1: FOREBAY #1

Inflow Area = 410,801 sf, 17.29% Impervious, Inflow Depth > 2.69" for 25-YR event
Inflow = 10.4 cfs @ 12.26 hrs, Volume= 91,949 cf
Outflow = 10.4 cfs @ 12.26 hrs, Volume= 91,949 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.4 cfs @ 12.26 hrs, Volume= 91,949 cf
Routed to Pond FB1 : FILT. BASIN #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.61' @ 12.26 hrs Surf.Area= 3,585 sf Storage= 0 cf
Flood Elev= 278.00' Surf.Area= 4,014 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	274.00'	0 cf	**FOREBAY #1 (0% Voids) (Prismatic)** Listed below (Recalc) 8,280 cf Overall x 0.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
274.00	628	0	0
275.00	1,144	886	886
276.00	1,915	1,530	2,416
277.00	2,900	2,408	4,823
278.00	4,014	3,457	8,280

Device	Routing	Invert	Outlet Devices
#1	Primary	277.10'	**10.4' long x 15.6' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=10.3 cfs @ 12.26 hrs HW=277.61' TW=273.98' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 10.3 cfs @ 1.93 fps)

Summary for Pond SFB2: FOREBAY #2

[80] Warning: Exceeded Pond DMH9 by 0.02' @ 0.75 hrs (0.6 cfs 455 cf)

Inflow Area = 482,983 sf, 32.52% Impervious, Inflow Depth > 2.20" for 25-YR event
Inflow = 16.9 cfs @ 12.09 hrs, Volume= 88,367 cf
Outflow = 16.9 cfs @ 12.09 hrs, Volume= 88,367 cf, Atten= 0%, Lag= 0.0 min
Primary = 16.9 cfs @ 12.09 hrs, Volume= 88,367 cf
Routed to Pond FB2 : FILT. BASIN #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 279.26' @ 12.09 hrs Surf.Area= 3,079 sf Storage= 0 cf
Flood Elev= 280.00' Surf.Area= 3,774 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	276.50'	0 cf	**FOREBAY #2 (0% VOIDS) (Prismatic)** Listed below (Recalc) 7,716 cf Overall x 0.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
276.50	741	0	0
277.00	1,132	468	468
278.00	1,958	1,545	2,013
279.00	2,837	2,398	4,411
280.00	3,774	3,306	7,716

Device	Routing	Invert	Outlet Devices
#1	Primary	278.80'	**21.0' long + 0.1 '/' SideZ x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Primary OutFlow Max=16.7 cfs @ 12.09 hrs HW=279.26' TW=277.11' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 16.7 cfs @ 1.75 fps)

Summary for Pond TD1:

Inflow Area = 36,281 sf,100.00% Impervious, Inflow Depth > 5.29" for 25-YR event
Inflow = 4.4 cfs @ 12.09 hrs, Volume= 15,992 cf
Outflow = 4.4 cfs @ 12.09 hrs, Volume= 15,992 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.4 cfs @ 12.09 hrs, Volume= 15,992 cf
Routed to Pond CB13A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 292.31' @ 12.09 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	290.70'	**24.0" Round Culvert** L= 102.3' Ke= 0.500 Inlet / Outlet Invert= 290.70' / 289.66' S= 0.0102 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=4.3 cfs @ 12.09 hrs HW=292.28' TW=292.08' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 4.3 cfs @ 2.21 fps)

Summary for Link 1: StreamStats Flow

Peak flow rates from Pea-Plow Statistics Floew Report [Peak Flow Statewide SIR2008 5206]

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.27" for 25-YR event
Inflow = 12.1 cfs @ 12.00 hrs, Volume= 43,560 cf
Primary = 12.1 cfs @ 12.00 hrs, Volume= 43,560 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 5R : 48" RCP - Naturalized Bottom

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

25-YR 25 Point manual hydrograph, To= 0.00 hrs, dt= 1.00 hrs, Area= 1,951,488 sf, cfs =

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	12.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00					

Summary for Link A: 14-44-38

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: 14-47

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: future property line

Inflow Area = 1,122,915 sf, 20.31% Impervious, Inflow Depth > 0.61" for 25-YR event
Inflow = 2.7 cfs @ 14.27 hrs, Volume= 56,832 cf
Primary = 2.7 cfs @ 14.27 hrs, Volume= 56,832 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node R1

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: 14-38-0

Inflow Area = 1,986,435 sf, 0.00% Impervious, Inflow Depth > 0.27" for 25-YR event
Inflow = 12.1 cfs @ 12.00 hrs, Volume= 44,490 cf
Primary = 12.1 cfs @ 12.00 hrs, Volume= 44,490 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link F: 14-38-0

Inflow Area = 305,720 sf, 0.00% Impervious, Inflow Depth > 1.57" for 25-YR event
Inflow = 3.5 cfs @ 13.41 hrs, Volume= 40,076 cf
Primary = 3.5 cfs @ 13.41 hrs, Volume= 40,076 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Subcatchment PS14: paved aisle

Runoff = 2.1 cfs @ 12.21 hrs, Volume= 9,837 cf, Depth> 5.99"
Routed to Pond CB6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
799	98	Roofs, HSG A
176	98	Roofs, HSG C
1,186	98	Paved parking, HSG C
16,520	98	Paved parking, HSG A
751	39	>75% Grass cover, Good, HSG A
259	74	>75% Grass cover, Good, HSG C
19,691	95	Weighted Average
1,010		5.13% Pervious Area
18,681		94.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	36	0.0280	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
0.1	23	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	170	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.3	229	Total			

Summary for Subcatchment PS15: Process Building

Runoff = 3.2 cfs @ 12.09 hrs, Volume= 11,859 cf, Depth> 6.36"
Routed to Pond DMHRD :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
21,262	98	Roofs, HSG A
1,122	98	Roofs, HSG C
22,384	98	Weighted Average
22,384		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS16: paved area

Runoff = 2.6 cfs @ 12.09 hrs, Volume= 9,444 cf, Depth> 6.36"
Routed to Pond CB8A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
286	98	Roofs, HSG A
17,540	98	Paved parking, HSG A
17,826	98	Weighted Average
17,826		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS17: paved area

Runoff = 2.4 cfs @ 12.09 hrs, Volume= 8,821 cf, Depth> 6.36"
Routed to Pond CB14 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
16,650	98	Paved parking, HSG A
16,650		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS18: roof and paved area

Runoff = 3.1 cfs @ 12.09 hrs, Volume= 11,350 cf, Depth> 6.36"
Routed to Pond CB13A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
10,840	98	Paved parking, HSG A
10,584	98	Roofs, HSG A
21,424	98	Weighted Average
21,424		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS19: loading bay and roof

Runoff = 5.3 cfs @ 12.09 hrs, Volume= 19,221 cf, Depth> 6.36"
Routed to Pond TD1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
10,257	98	Paved parking, HSG A
24,660	98	Roofs, HSG A
1,364	98	Roofs, HSG C
36,281	98	Weighted Average
36,281		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS2: offsite east

Runoff = 0.6 cfs @ 12.44 hrs, Volume= 4,427 cf, Depth> 0.97"
Routed to Pond CB10 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
9,567	98	Paved parking, HSG A
33,691	30	Woods, Good, HSG A
11,424	39	>75% Grass cover, Good, HSG A
54,682	44	Weighted Average
45,115		82.50% Pervious Area
9,567		17.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.1	92	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	49	0.1100	2.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	26	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
22.9	267	Total			

Summary for Subcatchment PS20: interconnection/upgrading yard

Runoff = 1.6 cfs @ 12.09 hrs, Volume= 5,369 cf, Depth> 5.66"
Routed to Pond CB18 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
820	39	>75% Grass cover, Good, HSG A
10,570	96	Gravel surface, HSG A
11,390	92	Weighted Average
11,390		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS21: remainder site south

area 7 is a head wall

Runoff = 1.2 cfs @ 12.58 hrs, Volume= 10,577 cf, Depth> 0.76"
Routed to Link D : future property line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
58,550	30	Woods, Good, HSG A
35,853	55	Woods, Good, HSG B
7,591	70	Woods, Good, HSG C
61,491	39	>75% Grass cover, Good, HSG A
1,806	74	>75% Grass cover, Good, HSG C
2,587	61	>75% Grass cover, Good, HSG B
8	98	Paved parking, HSG A
167,886	41	Weighted Average
167,878		100.00% Pervious Area
8		0.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	100	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
5.8	232	0.0700	0.66		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
28.4	332	Total			

Summary for Subcatchment PS22: laydown area

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 1,458 cf, Depth> 6.36"
Routed to Pond CB19 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
2,752	98	Paved parking, HSG A
2,752		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS3: offsite north

Runoff = 0.7 cfs @ 12.51 hrs, Volume= 5,813 cf, Depth> 0.76"
Routed to Pond CB3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
7,328	98	Paved parking, HSG A
11,458	70	Woods, Good, HSG C
69,043	30	Woods, Good, HSG A
4,239	39	>75% Grass cover, Good, HSG A
92,068	41	Weighted Average
84,740		92.04% Pervious Area
7,328		7.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
4.7	245	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
4.7	283	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	26	0.3500	4.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	62	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
23.7	716	Total			

Summary for Subcatchment PS31: driveway

Runoff = 1.2 cfs @ 12.09 hrs, Volume= 4,281 cf, Depth> 6.36"
Routed to Pond cb1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
8,080	98	Paved roads w/curbs & sewers, HSG A
8,080		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS32: driveway

Runoff = 1.2 cfs @ 12.09 hrs, Volume= 4,344 cf, Depth> 6.36"
Routed to Pond cb2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
8,199	98	Paved roads w/curbs & sewers, HSG A
8,199		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS33: north of driveway

Runoff = 0.2 cfs @ 12.28 hrs, Volume= 1,238 cf, Depth> 0.63"
Routed to Link E : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
11,080	39	>75% Grass cover, Good, HSG A
12,516	39	>75% Grass cover, Good, HSG A
23,596	39	Weighted Average
23,596		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS34: south of driveway

Runoff = 0.1 cfs @ 12.28 hrs, Volume= 595 cf, Depth> 0.63"
Routed to Link E : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
11,351	39	>75% Grass cover, Good, HSG A
11,351		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS4: offsite north

Runoff = 5.1 cfs @ 12.43 hrs, Volume= 28,681 cf, Depth> 2.13"
Routed to Pond CB4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
9,960	98	Paved parking, HSG A
83,865	70	Woods, Good, HSG C
56,653	30	Woods, Good, HSG A
4,399	39	>75% Grass cover, Good, HSG A
322	98	Paved parking, HSG C
6,715	96	Gravel surface, HSG C
161,914	58	Weighted Average
151,632		93.65% Pervious Area
10,282		6.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
8.8	589	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	23	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	66	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
28.6	778	Total			

Summary for Subcatchment PS40: FB2 maintenance drive

Runoff = 0.3 cfs @ 12.42 hrs, Volume= 1,689 cf, Depth> 1.36"
Routed to Reach 1R : maintenance FB2 swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
12,263	39	>75% Grass cover, Good, HSG A
2,670	96	Gravel surface, HSG A
14,933	49	Weighted Average
14,933		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PS5: offsite run on

Runoff = 7.0 cfs @ 13.03 hrs, Volume= 62,353 cf, Depth> 3.43"
Routed to Pond OS3 : Detention Basin #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
188,914	70	Woods, Good, HSG C
6,947	39	>75% Grass cover, Good, HSG A
2,123	98	Roofs, HSG C
20,000	96	Gravel surface, HSG C
217,984	72	Weighted Average
215,861		99.03% Pervious Area
2,123		0.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.5	100	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
5.4	81	0.0100	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	201	0.0100	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
9.5	248	0.0300	0.43		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.1	405	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.9	78	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
74.8	1,113	Total			

Summary for Subcatchment PS6: offsite run on

Runoff = 2.7 cfs @ 12.30 hrs, Volume= 12,736 cf, Depth> 2.98"
Routed to Pond cb21 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
46,969	70	Woods, Good, HSG C
4,352	39	>75% Grass cover, Good, HSG A
51,321	67	Weighted Average
51,321		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	100	0.0500	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.9	289	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	93	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.7	482	Total			

Summary for Subcatchment PS7: offsite run-on

Runoff = 5.2 cfs @ 13.36 hrs, Volume= 57,599 cf, Depth> 2.26"
Routed to Link F : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
226,968	70	Woods, Good, HSG C
55,157	30	Woods, Good, HSG A
23,595	39	>75% Grass cover, Good, HSG A
305,720	60	Weighted Average
305,720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.3	100	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
23.9	508	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.2	706	0.0600	0.61		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	661	0.0900	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
97.1	1,975	Total			

Summary for Subcatchment PSFB1: sediment forebay 1 area

Runoff = 0.1 cfs @ 12.29 hrs, Volume= 632 cf, Depth> 0.63"
Routed to Pond SFB1 : FOREBAY #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
12,045	39	>75% Grass cover, Good, HSG A
12,045		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSFB2: sediment forebay 2 area

Runoff = 0.1 cfs @ 12.57 hrs, Volume= 889 cf, Depth> 0.62"
Routed to Pond SFB2 : FOREBAY #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
17,093	39	>75% Grass cover, Good, HSG A
17,093		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PSM1: FB1 maintenance area

Runoff = 0.1 cfs @ 12.15 hrs, Volume= 421 cf, Depth> 0.70"
Routed to Reach 2R : maintenance FB1 swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
7,015	39	>75% Grass cover, Good, HSG A
252	74	>75% Grass cover, Good, HSG C
7,267	40	Weighted Average
7,267		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSP1: filtration basin 1 area

Runoff = 0.2 cfs @ 12.15 hrs, Volume= 1,363 cf, Depth> 0.70"
Routed to Pond FB1 : FILT. BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
22,768	39	>75% Grass cover, Good, HSG A
756	74	>75% Grass cover, Good, HSG C
23,524	40	Weighted Average
23,524		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSP2: filtration basin 2 area

Runoff = 0.2 cfs @ 12.57 hrs, Volume= 1,583 cf, Depth> 0.62"
Routed to Pond FB2 : FILT. BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
30,454	39	>75% Grass cover, Good, HSG A
30,454		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PST10: tribrid area

Runoff = 0.9 cfs @ 12.28 hrs, Volume= 4,046 cf, Depth> 4.20"
Routed to Pond CB24 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
4,006	98	Roofs, HSG A
3,911	96	Gravel surface, HSG A
3,630	39	>75% Grass cover, Good, HSG A
11,547	79	Weighted Average
7,541		65.31% Pervious Area
4,006		34.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.6	24	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.4	124	Total			

Summary for Subcatchment PST11: tribrid area

Runoff = 1.2 cfs @ 12.20 hrs, Volume= 5,068 cf, Depth> 4.21"
Routed to Pond CB27 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
7,342	98	Roofs, HSG A
1,387	96	Gravel surface, HSG A
4,531	39	>75% Grass cover, Good, HSG A
670	98	Roofs, HSG C
209	96	Gravel surface, HSG C
308	74	>75% Grass cover, Good, HSG C
14,447	79	Weighted Average
6,435		44.54% Pervious Area
8,012		55.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0230	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.5	35	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.7	135	Total			

Summary for Subcatchment PST12: tribrid area

Runoff = 1.4 cfs @ 12.22 hrs, Volume= 5,880 cf, Depth> 4.42"
Routed to Pond CB28 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
7,486	98	Roofs, HSG A
3,088	96	Gravel surface, HSG A
4,198	39	>75% Grass cover, Good, HSG A
526	98	Roofs, HSG C
109	96	Gravel surface, HSG C
550	74	>75% Grass cover, Good, HSG C
15,957	81	Weighted Average
7,945		49.79% Pervious Area
8,012		50.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	100	0.0180	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.7	40	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.4	140	Total			

Summary for Subcatchment PST13: tribrid area

Runoff = 0.7 cfs @ 12.21 hrs, Volume= 3,017 cf, Depth> 3.18"
Routed to Pond CB30 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
4,156	98	Roofs, HSG A
1,698	96	Gravel surface, HSG A
5,501	39	>75% Grass cover, Good, HSG A
34	74	>75% Grass cover, Good, HSG C
11,389	69	Weighted Average
7,233		63.51% Pervious Area
4,156		36.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0230	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.7	42	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.9	142	Total			

Summary for Subcatchment PST6: fet area

Runoff = 1.3 cfs @ 12.23 hrs, Volume= 5,675 cf, Depth> 3.28"
Routed to Pond CB15 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
7,368	98	Roofs, HSG A
3,784	96	Gravel surface, HSG A
9,624	39	>75% Grass cover, Good, HSG A
20,776	70	Weighted Average
13,408		64.54% Pervious Area
7,368		35.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
3.0	126	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.6	226	Total			

Summary for Subcatchment PST7: tribrid area

Runoff = 0.8 cfs @ 12.24 hrs, Volume= 3,539 cf, Depth> 3.58"
Routed to Pond cb20 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
5,990	98	Roofs, HSG A
974	96	Gravel surface, HSG A
4,896	39	>75% Grass cover, Good, HSG A
11,860	73	Weighted Average
5,870		49.49% Pervious Area
5,990		50.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0150	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.4	20	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.2	120	Total			

Summary for Subcatchment PST8: tribrid area

Runoff = 0.8 cfs @ 12.28 hrs, Volume= 3,785 cf, Depth> 3.89"
Routed to Pond cb22 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
5,981	98	Roofs, HSG A
1,487	96	Gravel surface, HSG A
4,212	39	>75% Grass cover, Good, HSG A
11,680	76	Weighted Average
5,699		48.79% Pervious Area
5,981		51.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.5	28	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.3	128	Total			

Summary for Subcatchment PST9: tribrid area

Runoff = 0.7 cfs @ 12.28 hrs, Volume= 3,132 cf, Depth> 3.99"
Routed to Pond CB23 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
2,995	98	Roofs, HSG A
3,172	96	Gravel surface, HSG A
3,244	39	>75% Grass cover, Good, HSG A
9,411	77	Weighted Average
6,416		68.18% Pervious Area
2,995		31.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.4	16	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.2	116	Total			

Summary for Reach 1R: maintenance FB2 swale

Inflow Area = 14,933 sf, 0.00% Impervious, Inflow Depth > 1.36" for 50-YR event
Inflow = 0.3 cfs @ 12.42 hrs, Volume= 1,689 cf
Outflow = 0.3 cfs @ 12.46 hrs, Volume= 1,680 cf, Atten= 1%, Lag= 2.8 min
Routed to Pond SFB2 : FOREBAY #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.70 fps, Min. Travel Time= 4.0 min
Avg. Velocity = 0.29 fps, Avg. Travel Time= 9.5 min

Peak Storage= 65 cf @ 12.46 hrs
Average Depth at Peak Storage= 0.05' , Surface Width= 8.29'
Bank-Full Depth= 0.50' Flow Area= 4.8 sf, Capacity= 14.2 cfs

8.00' x 0.50' deep channel, n= 0.069 Riprap, 6-inch
Side Slope Z-value= 3.0 '/' Top Width= 11.00'
Length= 165.0' Slope= 0.0606 '/'
Inlet Invert= 290.00', Outlet Invert= 280.00'



‡

Summary for Reach 2R: maintenance FB1 swale

Inflow Area = 7,267 sf, 0.00% Impervious, Inflow Depth > 0.70" for 50-YR event
Inflow = 0.1 cfs @ 12.15 hrs, Volume= 421 cf
Outflow = 0.1 cfs @ 12.29 hrs, Volume= 419 cf, Atten= 3%, Lag= 8.7 min
Routed to Pond CB16 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.74 fps, Min. Travel Time= 4.0 min
Avg. Velocity = 0.34 fps, Avg. Travel Time= 8.7 min

Peak Storage= 14 cf @ 12.29 hrs
Average Depth at Peak Storage= 0.03' , Surface Width= 3.15'
Bank-Full Depth= 0.25' Flow Area= 0.9 sf, Capacity= 2.8 cfs

3.00' x 0.25' deep channel, n= 0.041 Riprap, 2-inch
Side Slope Z-value= 3.0 '/' Top Width= 4.50'
Length= 178.0' Slope= 0.0573 '/'
Inlet Invert= 292.00', Outlet Invert= 281.80'



‡

Summary for Reach 5R: 48" RCP - Naturalized Bottom

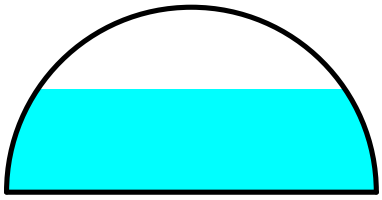
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.34" for 50-YR event
Inflow = 15.5 cfs @ 12.00 hrs, Volume= 55,800 cf
Outflow = 15.5 cfs @ 12.00 hrs, Volume= 55,803 cf, Atten= 0%, Lag= 0.2 min
Routed to Link E : 14-38-0

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 3.65 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.77 fps, Avg. Travel Time= 0.3 min

Peak Storage= 203 cf @ 12.00 hrs
Average Depth at Peak Storage= 1.12' , Surface Width= 3.31'
Bank-Full Depth= 2.00' Flow Area= 6.3 sf, Capacity= 21.7 cfs

48.0" W x 24.0" H, R=24.0" Arch Pipe
n= 0.040 Earth, cobble bottom, clean sides
Length= 48.0' Slope= 0.0167 '/'
Inlet Invert= 298.60', Outlet Invert= 297.80'



Summary for Pond cb1:

Inflow Area = 8,080 sf,100.00% Impervious, Inflow Depth > 6.36" for 50-YR event
Inflow = 1.2 cfs @ 12.09 hrs, Volume= 4,281 cf
Outflow = 1.2 cfs @ 12.09 hrs, Volume= 4,281 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.09 hrs, Volume= 4,281 cf
Routed to Pond cb2 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 293.75' @ 12.09 hrs
Flood Elev= 297.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	293.18'	**15.0" Round Culvert** L= 21.8' Ke= 0.500 Inlet / Outlet Invert= 293.18' / 292.96' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.1 cfs @ 12.09 hrs HW=293.74' TW=293.40' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.1 cfs @ 3.14 fps)

Summary for Pond CB10:

Inflow Area = 308,664 sf, 8.80% Impervious, Inflow Depth > 1.51" for 50-YR event
Inflow = 6.4 cfs @ 12.44 hrs, Volume= 38,920 cf
Outflow = 6.4 cfs @ 12.44 hrs, Volume= 38,920 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.4 cfs @ 12.44 hrs, Volume= 38,920 cf
Routed to Pond CB12 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.58' @ 12.43 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.94'	**15.0" Round Culvert** L= 169.0' Ke= 0.500 Inlet / Outlet Invert= 285.94' / 284.25' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=6.4 cfs @ 12.44 hrs HW=288.56' TW=286.27' (Dynamic Tailwater)
1=Culvert (Outlet Controls 6.4 cfs @ 5.21 fps)

Summary for Pond CB12:

Inflow Area = 324,943 sf, 13.37% Impervious, Inflow Depth > 1.76" for 50-YR event
Inflow = 7.1 cfs @ 12.42 hrs, Volume= 47,545 cf
Outflow = 7.1 cfs @ 12.42 hrs, Volume= 47,545 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.1 cfs @ 12.42 hrs, Volume= 47,545 cf
Routed to Pond CB18 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 286.29' @ 12.42 hrs
Flood Elev= 296.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.15'	**15.0" Round Culvert** L= 60.0' Ke= 0.500 Inlet / Outlet Invert= 284.15' / 283.55' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=7.0 cfs @ 12.42 hrs HW=286.28' TW=284.02' (Dynamic Tailwater)
1=Culvert (Barrel Controls 7.0 cfs @ 5.73 fps)

Summary for Pond CB13:

Inflow Area = 57,705 sf,100.00% Impervious, Inflow Depth > 6.36" for 50-YR event
Inflow = 8.4 cfs @ 12.09 hrs, Volume= 30,571 cf
Outflow = 8.4 cfs @ 12.09 hrs, Volume= 30,571 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.4 cfs @ 12.09 hrs, Volume= 30,571 cf
Routed to Pond CB14 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.72' @ 12.09 hrs
Flood Elev= 294.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**18.0" Round Culvert** L= 71.4' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 287.13' S= 0.0122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=8.1 cfs @ 12.09 hrs HW=289.67' TW=281.75' (Dynamic Tailwater)
1=Culvert (Inlet Controls 8.1 cfs @ 4.61 fps)

Summary for Pond CB13A:

Inflow Area = 57,705 sf,100.00% Impervious, Inflow Depth > 6.36" for 50-YR event
Inflow = 8.4 cfs @ 12.09 hrs, Volume= 30,571 cf
Outflow = 8.4 cfs @ 12.09 hrs, Volume= 30,571 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.4 cfs @ 12.09 hrs, Volume= 30,571 cf
Routed to Pond CB13 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 292.42' @ 12.09 hrs
Flood Elev= 294.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	290.70'	**18.0" Round Culvert** L= 102.3' Ke= 0.500 Inlet / Outlet Invert= 290.70' / 289.66' S= 0.0102 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=8.1 cfs @ 12.09 hrs HW=292.37' TW=289.67' (Dynamic Tailwater)
1=Culvert (Inlet Controls 8.1 cfs @ 4.61 fps)

Summary for Pond CB14:

Inflow Area = 111,872 sf, 99.10% Impervious, Inflow Depth > 6.29" for 50-YR event
Inflow = 14.9 cfs @ 12.09 hrs, Volume= 58,673 cf
Outflow = 14.9 cfs @ 12.09 hrs, Volume= 58,673 cf, Atten= 0%, Lag= 0.0 min
Primary = 14.9 cfs @ 12.09 hrs, Volume= 58,673 cf
Routed to Pond DMH9 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 281.78' @ 12.09 hrs
Flood Elev= 293.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	280.06'	**30.0" Round Culvert** L= 80.7' Ke= 0.500 Inlet / Outlet Invert= 280.06' / 279.25' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=14.6 cfs @ 12.09 hrs HW=281.76' TW=280.58' (Dynamic Tailwater)
1=Culvert (Outlet Controls 14.6 cfs @ 5.83 fps)

Summary for Pond CB15:

Inflow Area = 20,776 sf, 35.46% Impervious, Inflow Depth > 3.28" for 50-YR event
Inflow = 1.3 cfs @ 12.23 hrs, Volume= 5,675 cf
Outflow = 1.3 cfs @ 12.23 hrs, Volume= 5,675 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.3 cfs @ 12.23 hrs, Volume= 5,675 cf
Routed to Pond DMH5 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 292.52' @ 12.23 hrs
Flood Elev= 296.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.94'	**15.0" Round Culvert** L= 34.0' Ke= 0.500 Inlet / Outlet Invert= 291.94' / 291.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.3 cfs @ 12.23 hrs HW=292.52' TW=290.14' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.3 cfs @ 3.45 fps)

Summary for Pond CB16:

Inflow Area = 7,267 sf, 0.00% Impervious, Inflow Depth > 0.69" for 50-YR event
Inflow = 0.1 cfs @ 12.29 hrs, Volume= 419 cf
Outflow = 0.1 cfs @ 12.29 hrs, Volume= 419 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.1 cfs @ 12.29 hrs, Volume= 419 cf
Routed to Pond FB1 : FILT. BASIN #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.66' @ 12.29 hrs
Flood Elev= 281.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.55'	**15.0" Round Culvert** L= 62.0' Ke= 0.500 Inlet / Outlet Invert= 277.55' / 275.75' S= 0.0290 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.1 cfs @ 12.29 hrs HW=277.66' TW=274.69' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.1 cfs @ 1.12 fps)

Summary for Pond CB17:

Inflow Area = 339,085 sf, 13.63% Impervious, Inflow Depth > 1.92" for 50-YR event
Inflow = 7.6 cfs @ 12.40 hrs, Volume= 54,371 cf
Outflow = 7.6 cfs @ 12.40 hrs, Volume= 54,371 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.6 cfs @ 12.40 hrs, Volume= 54,371 cf
Routed to Pond DMH9 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 281.35' @ 12.10 hrs
Flood Elev= 293.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	279.72'	**18.0" Round Culvert** L= 108.0' Ke= 0.500 Inlet / Outlet Invert= 279.72' / 278.10' S= 0.0150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=7.6 cfs @ 12.40 hrs HW=281.28' TW=279.97' (Dynamic Tailwater)
1=Culvert (Inlet Controls 7.6 cfs @ 4.33 fps)

Summary for Pond CB18:

Inflow Area = 336,333 sf, 12.92% Impervious, Inflow Depth > 1.89" for 50-YR event
Inflow = 7.5 cfs @ 12.40 hrs, Volume= 52,914 cf
Outflow = 7.5 cfs @ 12.40 hrs, Volume= 52,914 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.5 cfs @ 12.40 hrs, Volume= 52,914 cf
Routed to Pond CB17 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 284.02' @ 12.40 hrs
Flood Elev= 293.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	282.45'	**18.0" Round Culvert** L= 45.2' Ke= 0.500 Inlet / Outlet Invert= 282.45' / 282.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=7.5 cfs @ 12.40 hrs HW=284.02' TW=281.28' (Dynamic Tailwater)
1=Culvert (Barrel Controls 7.5 cfs @ 5.04 fps)

Summary for Pond CB19:

Inflow Area = 2,752 sf,100.00% Impervious, Inflow Depth > 6.36" for 50-YR event
Inflow = 0.4 cfs @ 12.09 hrs, Volume= 1,458 cf
Outflow = 0.4 cfs @ 12.09 hrs, Volume= 1,458 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.09 hrs, Volume= 1,458 cf
Routed to Pond CB17 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.30' @ 12.09 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**15.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 285.00' / 284.50' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.4 cfs @ 12.09 hrs HW=285.29' TW=281.30' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.4 cfs @ 2.69 fps)

Summary for Pond cb2:

Inflow Area = 16,279 sf,100.00% Impervious, Inflow Depth > 6.36" for 50-YR event
Inflow = 2.4 cfs @ 12.09 hrs, Volume= 8,624 cf
Outflow = 2.4 cfs @ 12.09 hrs, Volume= 8,624 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.4 cfs @ 12.09 hrs, Volume= 8,624 cf
Routed to Pond dmh1 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 293.41' @ 12.09 hrs
Flood Elev= 297.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.64'	**15.0" Round Culvert** L= 155.0' Ke= 0.500 Inlet / Outlet Invert= 292.64' / 291.33' S= 0.0085 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.3 cfs @ 12.09 hrs HW=293.40' TW=290.72' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 2.3 cfs @ 4.22 fps)

Summary for Pond cb20:

Inflow Area = 11,860 sf, 50.51% Impervious, Inflow Depth > 3.58" for 50-YR event
Inflow = 0.8 cfs @ 12.24 hrs, Volume= 3,539 cf
Outflow = 0.8 cfs @ 12.24 hrs, Volume= 3,539 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.8 cfs @ 12.24 hrs, Volume= 3,539 cf
Routed to Pond cb21 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.63' @ 12.24 hrs
Flood Elev= 292.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.20'	**15.0" Round Culvert** L= 94.0' Ke= 0.500 Inlet / Outlet Invert= 289.20' / 286.90' S= 0.0245 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.8 cfs @ 12.24 hrs HW=289.62' TW=288.01' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.8 cfs @ 2.22 fps)

Summary for Pond cb21:

Inflow Area = 63,181 sf, 9.48% Impervious, Inflow Depth > 3.09" for 50-YR event
Inflow = 3.5 cfs @ 12.28 hrs, Volume= 16,275 cf
Outflow = 3.5 cfs @ 12.28 hrs, Volume= 16,275 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.5 cfs @ 12.28 hrs, Volume= 16,275 cf
Routed to Pond cb22 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.06' @ 12.30 hrs
Flood Elev= 292.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.80'	**15.0" Round Culvert** L= 44.0' Ke= 0.500 Inlet / Outlet Invert= 286.80' / 286.41' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.4 cfs @ 12.28 hrs HW=288.05' TW=287.63' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 3.4 cfs @ 3.42 fps)

Summary for Pond cb22:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 3.22" for 50-YR event
Inflow = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf
Outflow = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf
Routed to Pond dmh23 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.65' @ 12.30 hrs
Flood Elev= 291.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.31'	**15.0" Round Culvert** L= 73.0' Ke= 0.500 Inlet / Outlet Invert= 286.31' / 285.59' S= 0.0099 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.3 cfs @ 12.28 hrs HW=287.63' TW=286.90' (Dynamic Tailwater)
1=Culvert (Outlet Controls 4.3 cfs @ 4.08 fps)

Summary for Pond CB23:

Inflow Area = 84,272 sf, 17.76% Impervious, Inflow Depth > 3.30" for 50-YR event
Inflow = 5.0 cfs @ 12.28 hrs, Volume= 23,192 cf
Outflow = 5.0 cfs @ 12.28 hrs, Volume= 23,192 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.0 cfs @ 12.28 hrs, Volume= 23,192 cf
Routed to Pond CB24 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.88' @ 12.28 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.31'	**15.0" Round Culvert** L= 110.0' Ke= 0.500 Inlet / Outlet Invert= 284.31' / 283.20' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.0 cfs @ 12.28 hrs HW=285.86' TW=284.89' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.0 cfs @ 4.17 fps)

Summary for Pond CB24:

Inflow Area = 95,819 sf, 19.80% Impervious, Inflow Depth > 3.41" for 50-YR event
Inflow = 5.9 cfs @ 12.28 hrs, Volume= 27,238 cf
Outflow = 5.9 cfs @ 12.28 hrs, Volume= 27,238 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.9 cfs @ 12.28 hrs, Volume= 27,238 cf
Routed to Pond dmh25 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 284.92' @ 12.28 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	283.10'	**15.0" Round Culvert** L= 82.0' Ke= 0.500 Inlet / Outlet Invert= 283.10' / 282.23' S= 0.0106 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.8 cfs @ 12.28 hrs HW=284.89' TW=283.70' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 5.8 cfs @ 4.74 fps)

Summary for Pond CB27:

Inflow Area = 14,447 sf, 55.46% Impervious, Inflow Depth > 4.21" for 50-YR event
Inflow = 1.2 cfs @ 12.20 hrs, Volume= 5,068 cf
Outflow = 1.2 cfs @ 12.20 hrs, Volume= 5,068 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.20 hrs, Volume= 5,068 cf
Routed to Pond DMH26 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.72' @ 12.20 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.15'	**15.0" Round Culvert** L= 27.7' Ke= 0.500 Inlet / Outlet Invert= 288.15' / 287.87' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.2 cfs @ 12.20 hrs HW=288.72' TW=282.14' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 1.2 cfs @ 3.34 fps)

Summary for Pond CB28:

Inflow Area = 38,341 sf, 79.28% Impervious, Inflow Depth > 5.55" for 50-YR event
Inflow = 4.2 cfs @ 12.10 hrs, Volume= 17,739 cf
Outflow = 4.2 cfs @ 12.10 hrs, Volume= 17,739 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.2 cfs @ 12.10 hrs, Volume= 17,739 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.87' @ 12.10 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.75'	**18.0" Round Culvert** L= 20.7' Ke= 0.500 Inlet / Outlet Invert= 288.75' / 288.54' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.2 cfs @ 12.10 hrs HW=289.87' TW=279.09' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 4.2 cfs @ 4.13 fps)

Summary for Pond CB3:

Inflow Area = 253,982 sf, 6.93% Impervious, Inflow Depth > 1.63" for 50-YR event
Inflow = 5.8 cfs @ 12.44 hrs, Volume= 34,493 cf
Outflow = 5.8 cfs @ 12.44 hrs, Volume= 34,493 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.8 cfs @ 12.44 hrs, Volume= 34,493 cf
Routed to Pond DMH3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 290.98' @ 12.45 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.05'	**15.0" Round Culvert** L= 90.0' Ke= 0.500 Inlet / Outlet Invert= 289.05' / 288.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.8 cfs @ 12.44 hrs HW=290.96' TW=289.73' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.8 cfs @ 4.69 fps)

Summary for Pond CB30:

Inflow Area = 250,149 sf, 5.46% Impervious, Inflow Depth > 3.40" for 50-YR event
Inflow = 7.4 cfs @ 13.00 hrs, Volume= 70,848 cf
Outflow = 7.4 cfs @ 13.00 hrs, Volume= 70,848 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.4 cfs @ 13.00 hrs, Volume= 70,848 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.01' @ 13.00 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.80'	**24.0" Round Culvert** L= 92.0' Ke= 0.500 Inlet / Outlet Invert= 285.80' / 284.88' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.4 cfs @ 13.00 hrs HW=287.01' TW=278.87' (Dynamic Tailwater)
1=Culvert (Barrel Controls 7.4 cfs @ 5.35 fps)

Summary for Pond CB4:

Inflow Area = 161,914 sf, 6.35% Impervious, Inflow Depth > 2.13" for 50-YR event
Inflow = 5.1 cfs @ 12.43 hrs, Volume= 28,681 cf
Outflow = 5.1 cfs @ 12.43 hrs, Volume= 28,681 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.1 cfs @ 12.43 hrs, Volume= 28,681 cf
Routed to Pond CB3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 292.50' @ 12.46 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.06'	**15.0" Round Culvert** L= 191.0' Ke= 0.500 Inlet / Outlet Invert= 291.06' / 289.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.0 cfs @ 12.43 hrs HW=292.47' TW=290.92' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.0 cfs @ 4.50 fps)

Summary for Pond CB6:

Inflow Area = 19,691 sf, 94.87% Impervious, Inflow Depth > 5.99" for 50-YR event
Inflow = 2.1 cfs @ 12.21 hrs, Volume= 9,837 cf
Outflow = 2.1 cfs @ 12.21 hrs, Volume= 9,837 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.21 hrs, Volume= 9,837 cf
Routed to Pond CB8A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.60' @ 12.21 hrs
Flood Elev= 294.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**24.0" Round Culvert** L= 118.0' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 286.82' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.1 cfs @ 12.21 hrs HW=288.60' TW=286.98' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.1 cfs @ 2.64 fps)

Summary for Pond CB8A:

Inflow Area = 37,517 sf, 97.31% Impervious, Inflow Depth > 6.17" for 50-YR event
Inflow = 4.2 cfs @ 12.11 hrs, Volume= 19,281 cf
Outflow = 4.2 cfs @ 12.11 hrs, Volume= 19,281 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.2 cfs @ 12.11 hrs, Volume= 19,281 cf
Routed to Pond CB14 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.12' @ 12.11 hrs
Flood Elev= 293.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.00'	**15.0" Round Culvert** L= 131.3' Ke= 0.500 Inlet / Outlet Invert= 286.00' / 284.69' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.1 cfs @ 12.11 hrs HW=287.10' TW=281.73' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.1 cfs @ 3.58 fps)

Summary for Pond dmh1:

Inflow Area = 16,279 sf,100.00% Impervious, Inflow Depth > 6.36" for 50-YR event
Inflow = 2.4 cfs @ 12.09 hrs, Volume= 8,624 cf
Outflow = 2.4 cfs @ 12.09 hrs, Volume= 8,624 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.4 cfs @ 12.09 hrs, Volume= 8,624 cf
Routed to Pond CB12 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 290.73' @ 12.09 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.95'	**15.0" Round Culvert** L= 65.3' Ke= 0.500 Inlet / Outlet Invert= 289.95' / 289.30' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.3 cfs @ 12.09 hrs HW=290.72' TW=285.26' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.3 cfs @ 4.16 fps)

Summary for Pond dmh11:

Inflow Area = 398,756 sf, 17.81% Impervious, Inflow Depth > 3.64" for 50-YR event
Inflow = 13.7 cfs @ 12.26 hrs, Volume= 120,893 cf
Outflow = 13.7 cfs @ 12.26 hrs, Volume= 120,893 cf, Atten= 0%, Lag= 0.0 min
Primary = 13.7 cfs @ 12.26 hrs, Volume= 120,893 cf
Routed to Pond SFB1 : FOREBAY #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 279.36' @ 12.26 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.23'	**24.0" Round Culvert** L= 41.0' Ke= 0.500 Inlet / Outlet Invert= 277.23' / 277.00' S= 0.0056 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=13.7 cfs @ 12.26 hrs HW=279.36' TW=277.72' (Dynamic Tailwater)
1=Culvert (Barrel Controls 13.7 cfs @ 5.09 fps)

Summary for Pond dmh23:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 3.22" for 50-YR event
Inflow = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf
Outflow = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf
Routed to Pond DMH24 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 286.94' @ 12.30 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.49'	**15.0" Round Culvert** L= 57.8' Ke= 0.500 Inlet / Outlet Invert= 285.49' / 284.91' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.2 cfs @ 12.28 hrs HW=286.90' TW=286.34' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 4.2 cfs @ 3.78 fps)

Summary for Pond DMH24:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 3.22" for 50-YR event
Inflow = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf
Outflow = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf
Routed to Pond CB23 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 286.39' @ 12.30 hrs
Flood Elev= 292.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.81'	**15.0" Round Culvert** L= 37.0' Ke= 0.500 Inlet / Outlet Invert= 284.81' / 284.46' S= 0.0095 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.1 cfs @ 12.28 hrs HW=286.34' TW=285.86' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 4.1 cfs @ 3.34 fps)

Summary for Pond dmh25:

Inflow Area = 95,819 sf, 19.80% Impervious, Inflow Depth > 3.41" for 50-YR event
Inflow = 5.9 cfs @ 12.28 hrs, Volume= 27,238 cf
Outflow = 5.9 cfs @ 12.28 hrs, Volume= 27,238 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.9 cfs @ 12.28 hrs, Volume= 27,238 cf
Routed to Pond DMH26 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 283.71' @ 12.28 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	282.10'	**15.0" Round Culvert** L= 113.0' Ke= 0.500 Inlet / Outlet Invert= 282.10' / 281.05' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.8 cfs @ 12.28 hrs HW=283.70' TW=282.20' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 5.8 cfs @ 4.74 fps)

Summary for Pond DMH26:

Inflow Area = 110,266 sf, 24.47% Impervious, Inflow Depth > 3.52" for 50-YR event
Inflow = 7.0 cfs @ 12.27 hrs, Volume= 32,305 cf
Outflow = 7.0 cfs @ 12.27 hrs, Volume= 32,305 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.0 cfs @ 12.27 hrs, Volume= 32,305 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 282.21' @ 12.26 hrs
Flood Elev= 292.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	280.80'	**18.0" Round Culvert** L= 126.4' Ke= 0.500 Inlet / Outlet Invert= 280.80' / 279.54' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=6.9 cfs @ 12.27 hrs HW=282.21' TW=279.35' (Dynamic Tailwater)
1=Culvert (Inlet Controls 6.9 cfs @ 4.04 fps)

Summary for Pond DMH3:

Inflow Area = 253,982 sf, 6.93% Impervious, Inflow Depth > 1.63" for 50-YR event
Inflow = 5.8 cfs @ 12.44 hrs, Volume= 34,493 cf
Outflow = 5.8 cfs @ 12.44 hrs, Volume= 34,493 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.8 cfs @ 12.44 hrs, Volume= 34,493 cf
Routed to Pond CB10 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.75' @ 12.44 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.97'	**15.0" Round Culvert** L= 82.0' Ke= 0.500 Inlet / Outlet Invert= 286.97' / 286.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.8 cfs @ 12.44 hrs HW=289.73' TW=288.56' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.8 cfs @ 4.69 fps)

Summary for Pond DMH5:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 3.41" for 50-YR event
Inflow = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf
Outflow = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf
Routed to Pond DMH5A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 290.61' @ 13.00 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.40'	**24.0" Round Culvert** L= 126.7' Ke= 0.500 Inlet / Outlet Invert= 289.40' / 288.13' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.3 cfs @ 13.00 hrs HW=290.61' TW=289.24' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 7.3 cfs @ 5.25 fps)

Summary for Pond DMH5A:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 3.41" for 50-YR event
Inflow = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf
Outflow = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf
Routed to Pond DMH6 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.24' @ 13.00 hrs
Flood Elev= 294.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**24.0" Round Culvert** L= 118.0' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 286.82' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.3 cfs @ 13.00 hrs HW=289.24' TW=287.98' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 7.3 cfs @ 5.12 fps)

Summary for Pond DMH6:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 3.41" for 50-YR event
Inflow = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf
Outflow = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf
Routed to Pond CB30 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.99' @ 13.00 hrs
Flood Elev= 294.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.72'	**24.0" Round Culvert** L= 79.0' Ke= 0.500 Inlet / Outlet Invert= 286.72' / 285.92' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.3 cfs @ 13.00 hrs HW=287.98' TW=287.01' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 7.3 cfs @ 4.98 fps)

Summary for Pond DMH9:

Inflow Area = 450,957 sf, 34.83% Impervious, Inflow Depth > 3.01" for 50-YR event
Inflow = 21.0 cfs @ 12.10 hrs, Volume= 113,045 cf
Outflow = 21.0 cfs @ 12.10 hrs, Volume= 113,045 cf, Atten= 0%, Lag= 0.0 min
Primary = 21.0 cfs @ 12.10 hrs, Volume= 113,045 cf
Routed to Pond SFB2 : FOREBAY #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 280.61' @ 12.10 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.12'	**30.0" Round Culvert** L= 24.0' Ke= 0.500 Inlet / Outlet Invert= 278.12' / 278.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=20.8 cfs @ 12.10 hrs HW=280.59' TW=279.32' (Dynamic Tailwater)
1=Culvert (Barrel Controls 20.8 cfs @ 5.33 fps)

Summary for Pond DMHRD:

Inflow Area = 22,384 sf,100.00% Impervious, Inflow Depth > 6.36" for 50-YR event
Inflow = 3.2 cfs @ 12.09 hrs, Volume= 11,859 cf
Outflow = 3.2 cfs @ 12.09 hrs, Volume= 11,859 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.2 cfs @ 12.09 hrs, Volume= 11,859 cf
Routed to Pond CB28 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 290.20' @ 12.09 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.10'	**18.0" Round Culvert** L= 28.0' Ke= 0.500 Inlet / Outlet Invert= 289.10' / 288.85' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.2 cfs @ 12.09 hrs HW=290.18' TW=289.85' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.2 cfs @ 3.26 fps)

Summary for Pond FB1: FILT. BASIN #1

Inflow Area = 441,592 sf, 16.08% Impervious, Inflow Depth > 3.35" for 50-YR event
Inflow = 14.0 cfs @ 12.26 hrs, Volume= 123,306 cf
Outflow = 5.0 cfs @ 13.85 hrs, Volume= 96,684 cf, Atten= 64%, Lag= 95.6 min
Discarded = 0.5 cfs @ 13.85 hrs, Volume= 21,655 cf
Primary = 4.5 cfs @ 13.85 hrs, Volume= 75,029 cf
Routed to Link D : future property line
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.00' @ 13.85 hrs Surf.Area= 15,769 sf Storage= 54,459 cf
Flood Elev= 278.00' Surf.Area= 17,354 sf Storage= 71,070 cf

Plug-Flow detention time= 205.4 min calculated for 96,483 cf (78% of inflow)
Center-of-Mass det. time= 126.6 min (980.3 - 853.7)

Volume	Invert	Avail.Storage	Storage Description
#1	271.50'	76,522 cf	**FILT. BASIN #1 (18" FILTER MEDIA) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
271.50	7,427	0.0	0	0
271.51	7,427	40.0	30	30
272.99	7,427	40.0	4,397	4,426
273.00	7,427	100.0	74	4,501
274.00	11,372	100.0	9,400	13,900
275.00	12,783	100.0	12,078	25,978
276.00	14,250	100.0	13,517	39,494
277.00	15,774	100.0	15,012	54,506
278.00	17,354	100.0	16,564	71,070
278.30	18,991	100.0	5,452	76,522

Device	Routing	Invert	Outlet Devices
#1	Discarded	271.50'	**1.253 in/hr Exfiltration over Surface area**
#2	Secondary	277.50'	**6.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69
#3	Primary	266.00'	**15.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 266.00' / 265.75' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#4	Device 3	277.30'	**48.0" x 48.0" Horiz. OS1 Conc. Horz. Rim** C= 0.600
#5	Device 3	273.95'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.60 0.60 2.00 2.00 2.70 2.70 3.35 Width (feet) 0.10 0.10 0.20 0.20 0.50 0.50 1.20 1.20

Discarded OutFlow Max=0.5 cfs @ 13.85 hrs HW=277.00' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.5 cfs)

Primary OutFlow Max=4.5 cfs @ 13.85 hrs HW=277.00' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Passes 4.5 cfs of 19.0 cfs potential flow)
  └**4=OS1 Conc. Horz. Rim** (Controls 0.0 cfs)
  └**5=Custom Weir/Orifice** (Weir Controls 4.5 cfs @ 4.08 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=271.50' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond FB2: FILT. BASIN #2

Inflow Area = 513,437 sf, 30.59% Impervious, Inflow Depth > 2.74" for 50-YR event
Inflow = 21.0 cfs @ 12.10 hrs, Volume= 117,197 cf
Outflow = 4.0 cfs @ 13.13 hrs, Volume= 105,619 cf, Atten= 81%, Lag= 62.0 min
Discarded = 1.7 cfs @ 13.13 hrs, Volume= 86,750 cf
Primary = 2.3 cfs @ 13.13 hrs, Volume= 18,869 cf
Routed to Link D : future property line
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 278.97' @ 13.13 hrs Surf.Area= 18,860 sf Storage= 42,889 cf
Flood Elev= 280.00' Surf.Area= 20,820 sf Storage= 63,233 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 128.1 min (931.4 - 803.2)

Volume	Invert	Avail.Storage	Storage Description
#1	275.50'	63,233 cf	**FILT. BASIN #2 (18" FILTER MEDIA) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
275.50	15,250	0.0	0	0
275.51	15,250	40.0	61	61
276.99	15,250	40.0	9,028	9,089
277.00	15,250	100.0	152	9,241
278.00	17,050	100.0	16,150	25,391
279.00	18,907	100.0	17,979	43,370
280.00	20,820	100.0	19,864	63,233

Device	Routing	Invert	Outlet Devices
#1	Secondary	279.50'	**6.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69
#2	Discarded	275.50'	**3.818 in/hr Exfiltration over Surface area**
#3	Device 5	277.75'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.60 0.60 0.90 0.90 1.25 Width (feet) 0.10 0.10 0.50 0.50 2.50 2.50
#4	Device 5	279.00'	**48.0" x 48.0" Horiz. OS2 Conc. Horz. Rim** C= 0.600 Limited to weir flow at low heads
#5	Primary	272.00'	**15.0" Round Culvert** L= 51.0' Ke= 0.500 Inlet / Outlet Invert= 272.00' / 271.50' S= 0.0098 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Discarded OutFlow Max=1.7 cfs @ 13.13 hrs HW=278.97' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 1.7 cfs)

Primary OutFlow Max=2.3 cfs @ 13.13 hrs HW=278.97' TW=0.00' (Dynamic Tailwater)
└**5=Culvert** (Passes 2.3 cfs of 14.9 cfs potential flow)
  └**3=Custom Weir/Orifice** (Weir Controls 2.3 cfs @ 2.25 fps)
  └**4=OS2 Conc. Horz. Rim** (Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=275.50' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond OS3: Detention Basin #1

[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=19)

Inflow Area = 217,984 sf, 0.97% Impervious, Inflow Depth > 3.43" for 50-YR event
Inflow = 7.0 cfs @ 13.03 hrs, Volume= 62,353 cf
Outflow = 7.1 cfs @ 13.00 hrs, Volume= 62,156 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.1 cfs @ 13.00 hrs, Volume= 62,156 cf
  Routed to Pond DMH5 :
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
  Routed to Pond cb21 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 294.50' @ 13.00 hrs Surf.Area= 1,190 sf Storage= 483 cf
Flood Elev= 296.00' Surf.Area= 2,642 sf Storage= 3,352 cf

Plug-Flow detention time= 4.6 min calculated for 62,156 cf (100% of inflow)
Center-of-Mass det. time= 2.9 min (885.8 - 883.0)

Volume	Invert	Avail.Storage	Storage Description
#1	293.99'	3,352 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
293.99	693	0	0
296.00	2,642	3,352	3,352

Device	Routing	Invert	Outlet Devices
#1	Primary	290.00'	**18.0" Round Culvert** L= 100.0' Ke= 0.500 Inlet / Outlet Invert= 290.00' / 289.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	294.50'	**60.0" x 60.0" Horiz. OS3 Conc. Horz. Rim** C= 0.600
#3	Device 1	294.00'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.50 Width (feet) 0.75 0.75
#4	Secondary	295.50'	**3.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65

2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=7.1 cfs @ 13.00 hrs HW=294.50' TW=290.61' (Dynamic Tailwater)
↑**1=Culvert** (Passes 7.1 cfs of 15.3 cfs potential flow)
↑**2=OS3 Conc. Horz. Rim** (Orifice Controls 6.2 cfs @ 0.25 fps)
3=Custom Weir/Orifice (Orifice Controls 0.9 cfs @ 2.33 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=293.99' TW=286.80' (Dynamic Tailwater)
↑**4=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond SFB1: FOREBAY #1

Inflow Area = 410,801 sf, 17.29% Impervious, Inflow Depth > 3.55" for 50-YR event
Inflow = 13.8 cfs @ 12.26 hrs, Volume= 121,525 cf
Outflow = 13.8 cfs @ 12.26 hrs, Volume= 121,525 cf, Atten= 0%, Lag= 0.0 min
Primary = 13.8 cfs @ 12.26 hrs, Volume= 121,525 cf
Routed to Pond FB1 : FILT. BASIN #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.72' @ 12.26 hrs Surf.Area= 3,705 sf Storage= 0 cf
Flood Elev= 278.00' Surf.Area= 4,014 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	274.00'	0 cf	**FOREBAY #1 (0% Voids) (Prismatic)** Listed below (Recalc) 8,280 cf Overall x 0.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
274.00	628	0	0
275.00	1,144	886	886
276.00	1,915	1,530	2,416
277.00	2,900	2,408	4,823
278.00	4,014	3,457	8,280

Device	Routing	Invert	Outlet Devices
#1	Primary	277.10'	**10.4' long x 15.6' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=13.7 cfs @ 12.26 hrs HW=277.72' TW=274.54' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 13.7 cfs @ 2.12 fps)

Summary for Pond SFB2: FOREBAY #2

[80] Warning: Exceeded Pond DMH9 by 0.02' @ 0.65 hrs (0.6 cfs 392 cf)

Inflow Area = 482,983 sf, 32.52% Impervious, Inflow Depth > 2.87" for 50-YR event
Inflow = 21.0 cfs @ 12.10 hrs, Volume= 115,614 cf
Outflow = 21.0 cfs @ 12.10 hrs, Volume= 115,614 cf, Atten= 0%, Lag= 0.0 min
Primary = 21.0 cfs @ 12.10 hrs, Volume= 115,614 cf
Routed to Pond FB2 : FILT. BASIN #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 279.32' @ 12.10 hrs Surf.Area= 3,139 sf Storage= 0 cf
Flood Elev= 280.00' Surf.Area= 3,774 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	276.50'	0 cf	**FOREBAY #2 (0% VOIDS) (Prismatic)** Listed below (Recalc) 7,716 cf Overall x 0.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
276.50	741	0	0
277.00	1,132	468	468
278.00	1,958	1,545	2,013
279.00	2,837	2,398	4,411
280.00	3,774	3,306	7,716

Device	Routing	Invert	Outlet Devices
#1	Primary	278.80'	**21.0' long + 0.1 '/' SideZ x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Primary OutFlow Max=20.9 cfs @ 12.10 hrs HW=279.32' TW=277.38' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 20.9 cfs @ 1.90 fps)

Summary for Pond TD1:

Inflow Area = 36,281 sf,100.00% Impervious, Inflow Depth > 6.36" for 50-YR event
Inflow = 5.3 cfs @ 12.09 hrs, Volume= 19,221 cf
Outflow = 5.3 cfs @ 12.09 hrs, Volume= 19,221 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.3 cfs @ 12.09 hrs, Volume= 19,221 cf
Routed to Pond CB13A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 292.60' @ 12.09 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	290.70'	**24.0" Round Culvert** L= 102.3' Ke= 0.500 Inlet / Outlet Invert= 290.70' / 289.66' S= 0.0102 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.1 cfs @ 12.09 hrs HW=292.56' TW=292.37' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 5.1 cfs @ 2.20 fps)

Summary for Link 1: StreamStats Flow

Peak flow rates from Pea-Plow Statistics Floew Report [Peak Flow Statewide SIR2008 5206]

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.34" for 50-YR event
Inflow = 15.5 cfs @ 12.00 hrs, Volume= 55,800 cf
Primary = 15.5 cfs @ 12.00 hrs, Volume= 55,800 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 5R : 48" RCP - Naturalized Bottom

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

50-YR 25 Point manual hydrograph, To= 0.00 hrs, dt= 1.00 hrs, Area= 1,951,488 sf, cfs =

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00					

Summary for Link A: 14-44-38

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: 14-47

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: future property line

Inflow Area = 1,122,915 sf, 20.31% Impervious, Inflow Depth > 1.12" for 50-YR event
Inflow = 6.8 cfs @ 13.65 hrs, Volume= 104,474 cf
Primary = 6.8 cfs @ 13.65 hrs, Volume= 104,474 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node R1

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: 14-38-0

Inflow Area = 1,986,435 sf, 0.00% Impervious, Inflow Depth > 0.35" for 50-YR event
Inflow = 15.5 cfs @ 12.00 hrs, Volume= 57,636 cf
Primary = 15.5 cfs @ 12.00 hrs, Volume= 57,636 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link F: 14-38-0

Inflow Area = 305,720 sf, 0.00% Impervious, Inflow Depth > 2.26" for 50-YR event
Inflow = 5.2 cfs @ 13.36 hrs, Volume= 57,599 cf
Primary = 5.2 cfs @ 13.36 hrs, Volume= 57,599 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	50-YR	Type III 24-hr		Default	24.00	1	6.60	2

Summary for Pond FB1: FILT. BASIN #1

Inflow Area = 441,592 sf, 16.08% Impervious, Inflow Depth > 3.35" for 50-YR event
Inflow = 14.0 cfs @ 12.26 hrs, Volume= 123,306 cf
Outflow = 5.4 cfs @ 13.75 hrs, Volume= 92,252 cf, Atten= 61%, Lag= 89.7 min
Primary = 5.4 cfs @ 13.75 hrs, Volume= 92,252 cf
Routed to Link D : future property line
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.16' @ 13.75 hrs Surf.Area= 16,024 sf Storage= 57,019 cf
Flood Elev= 278.00' Surf.Area= 17,354 sf Storage= 71,070 cf

Plug-Flow detention time= 223.0 min calculated for 92,252 cf (75% of inflow)
Center-of-Mass det. time= 136.8 min (990.5 - 853.7)

Volume	Invert	Avail.Storage	Storage Description
#1	271.50'	76,522 cf	**FILT. BASIN #1 (18" FILTER MEDIA) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
271.50	7,427	0.0	0	0
271.51	7,427	40.0	30	30
272.99	7,427	40.0	4,397	4,426
273.00	7,427	100.0	74	4,501
274.00	11,372	100.0	9,400	13,900
275.00	12,783	100.0	12,078	25,978
276.00	14,250	100.0	13,517	39,494
277.00	15,774	100.0	15,012	54,506
278.00	17,354	100.0	16,564	71,070
278.30	18,991	100.0	5,452	76,522

Device	Routing	Invert	Outlet Devices
#1	Secondary	277.50'	**6.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69
#2	Primary	266.00'	**15.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 266.00' / 265.75' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	277.30'	**48.0" x 48.0" Horiz. OS1 Conc. Horz. Rim** C= 0.600
#4	Device 2	273.95'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.60 0.60 2.00 2.00 2.70 2.70 3.35 Width (feet) 0.10 0.10 0.20 0.20 0.50 0.50 1.20 1.20

Primary OutFlow Max=5.4 cfs @ 13.75 hrs HW=277.16' TW=0.00' (Dynamic Tailwater)
└─**2=Culvert** (Passes 5.4 cfs of 19.2 cfs potential flow)
  └─**3=OS1 Conc. Horz. Rim** (Controls 0.0 cfs)
  └─**4=Custom Weir/Orifice** (Weir Controls 5.4 cfs @ 4.15 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=271.50' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond FB2: FILT. BASIN #2

Inflow Area = 513,445 sf, 30.59% Impervious, Inflow Depth > 2.74" for 50-YR event
Inflow = 21.0 cfs @ 12.10 hrs, Volume= 117,201 cf
Outflow = 11.7 cfs @ 12.50 hrs, Volume= 80,093 cf, Atten= 44%, Lag= 24.3 min
Primary = 11.7 cfs @ 12.50 hrs, Volume= 80,093 cf
Routed to Link D : future property line
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 279.28' @ 12.50 hrs Surf.Area= 19,445 sf Storage= 48,768 cf
Flood Elev= 280.00' Surf.Area= 20,820 sf Storage= 63,233 cf

Plug-Flow detention time= 222.6 min calculated for 79,927 cf (68% of inflow)
Center-of-Mass det. time= 114.5 min (917.7 - 803.2)

Volume	Invert	Avail.Storage	Storage Description
#1	275.50'	63,233 cf	**FILT. BASIN #2 (18" FILTER MEDIA) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
275.50	15,250	0.0	0	0
275.51	15,250	40.0	61	61
276.99	15,250	40.0	9,028	9,089
277.00	15,250	100.0	152	9,241
278.00	17,050	100.0	16,150	25,391
279.00	18,907	100.0	17,979	43,370
280.00	20,820	100.0	19,864	63,233

Device	Routing	Invert	Outlet Devices
#1	Secondary	279.50'	**6.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69
#2	Device 4	277.75'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.60 0.60 0.90 0.90 1.25 Width (feet) 0.10 0.10 0.50 0.50 2.50 2.50
#3	Device 4	279.00'	**48.0" x 48.0" Horiz. OS2 Conc. Horz. Rim** C= 0.600 Limited to weir flow at low heads
#4	Primary	272.00'	**15.0" Round Culvert** L= 51.0' Ke= 0.500 Inlet / Outlet Invert= 272.00' / 271.50' S= 0.0098 '/' Cc= 0.900

n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=11.7 cfs @ 12.50 hrs HW=279.28' TW=0.00' (Dynamic Tailwater)
└─**4=Culvert** (Passes 11.7 cfs of 15.2 cfs potential flow)
  ├─**2=Custom Weir/Orifice** (Orifice Controls 3.9 cfs @ 3.56 fps)
  └─**3=OS2 Conc. Horz. Rim** (Weir Controls 7.8 cfs @ 1.73 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=275.50' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

PART 6

RIPRAP CALCULATIONS

SNHGEC
North Wentworth Ave.
Londonderry, NH 03053
Date: sept. 16, 2025
Revised: dec. 18 2025
Project No.: 18252.02

OUTLET	Do (ft.)	Q25 (cfs)	Tw (ft.)	La (ft.)	Wup (ft.)	Wdn (ft.)	d50 (in.)*
Headwall1(DMH11)	2.00	10.3	1.8	24.9	6.0	16.0	6.0
Headwall2 (CB16)	1.25	0.1	0.1	8.9	3.8	12.6	6.0
Headwall3 (OS1)	1.25	2.3	0.1	11.7	3.8	15.5	6.0
Headwall4 (OS2)	1.25	0.3	0.1	9.1	3.8	12.9	6.0
Headwall5 (DMH9)	2.50	16.9	2.0	30.3	7.5	19.6	6.0

*Note:6"min.

Notes:

1 Use NHDOT Class C Stone
2 Depth of Stone to be 12" min. or 1.5 times d50 - which ever is larger
3 Actual riprap dimensions may vary from calculations. See Plans.

Calculations

1. 'When Tw < 0.5Do at pipe outlet:
La = 1.8Q/Do^3/2 + 7Do
Wup = 3Do
Wdn = 3Do + La
d50 = (0.02Q^4/3)/(TwDo)

2. When Tw > or = 0.5Do at pipe outlet:
La = 3Q/Do^3/2 + 7Do
Wup = 3Do
Wdn = 3Do + 0.4La
d50 = (0.02Q^4/3)/(TwDo)

Where:
Tw is the tailwater depth at the outlet of the pipe or channel
Do is the diameter of the pipe or the width of channel
Q is the discharge from the pipe of channel
La is the length of apron
Wup is the upstream width of apron
Wdn is the downstream width of apron
d50 is the median stone diameter

Summary Tables

(25-Year Storm)

PRE-DEVELOPMENT SWALES TABLE

Node (#)	Location	Cross-Section	Slope (Ft/Ft)	Manning's (N)	Peak Discharge (CFS)	Flow Depth (Ft)	Peak Velocity (FPS)
3R	OFFSITE TO LINK E	4.0' by 2.5'	0.061	0.069	12.10	0.42	6.5

POST-DEVELOPMENT PIPES/SWALES

Node (#)	Location	Size (in)	Type	Length (Ft)	Slope (Ft/Ft)	Manning's (N)	Peak Discharge (CFS)	Flow Depth (Ft)	Peak Velocity (FPS)
CB10	CB10 TO CB12	15	HDPE	169	0.010	0.013	3.8	1.10	3.5
CB12	CB12 TO CB18	15	HDPE	60	0.010	0.013	4.3	0.20	4.7
CB13	CB13 TO CB14	18	HDPE	71	0.012	0.013	6.8	1.40	4.0
CB13A	CB13A TO CB13	18	HDPE	102	0.010	0.013	6.8	1.40	4.0
CB14	CB14 TO DMH9	30	HDPE	81	0.010	0.013	12.4	1.33	5.7
CB15	CB15 TO DMH5	15	HDPE	34	0.010	0.013	1.0	0.33	3.2
CB16	CB16 TO FB1	15	HDPE	62	0.029	0.013	0.0	0.10	0.9
CB17	CB17 TO DMH9	18	HDPE	108	0.015	0.013	4.8	1.00	4.7
CB18	CB18 TO CB17	18	HDPE	45	0.010	0.013	4.7	0.88	4.6
CB19	CB19 TO CB17	15	HDPE	50	0.010	0.013	0.3	0.12	2.6
CB23	CB23 TO CB24	15	HDPE	110	0.010	0.013	3.7	0.89	4.6
CB24	CB24 TO DMH25	15	HDPE	82	0.011	0.013	4.3	0.92	4.6
CB27	CB27 TO DMH26	15	HDPE	28	0.010	0.013	1.0	0.26	3.2
CB28	CB28 TO DMH11	18	HDPE	21	0.010	0.013	3.4	0.75	4.0
CB3	CB3 TO DMH3	15	HDPE	90	0.010	0.013	3.6	1.08	3.4

Summary Tables

(25-Year Storm)

CB30	CB30 TO DMH11	24	HDPE	92	0.010	0.013	5.5	1.02	3.4
CB4	CB4 TO CB3	15	HDPE	191	0.010	0.013	3.3	1.12	3.3
CB6	CB6 TO CB8A	24	HDPE	118	0.010	0.013	1.8	0.34	2.5
CB8A	CB8A TO CB14	15	HDPE	131	0.010	0.013	3.5	1.12	3.4
cb1	CB1 TO CB2	15	HDPE	22	0.010	0.013	1.0	1.03	3.1
cb2	CB2 TO DMH1	15	HDPE	155	0.009	0.013	2.0	0.33	4.1
cb20	CB20 TO CB21	15	HDPE	94	0.025	0.013	0.6	0.33	2.1
cb21	CB21 TO CB22	15	HDPE	44	0.009	0.013	2.5	0.76	3.6
cb22	CB22 TO DMH23	15	HDPE	73	0.010	0.013	3.2	0.77	4.6
dmh1	DMH1 TO CB12	15	HDPE	65	0.010	0.013	2.0	0.63	4.0
dmh11	DMH11 TO FB1	24	HDPE	41	0.006	0.013	10.3	1.67	4.7
dmh23	DMH23 TO DMH24	15	HDPE	58	0.010	0.013	3.2	1.13	4.0
dmh25	DMH25 TO DMH26	15	HDPE	113	0.009	0.013	4.3	1.23	3.7
DMH24	DMH24 TO CB23	15	HDPE	37	0.010	0.013	3.2	1.13	3.9
DMH26	DMH26 TO DMH11	18	HDPE	126	0.010	0.013	5.2	1.25	3.6
DMH3	DMH3 TO CB10	15	HDPE	82	0.010	0.013	3.6	1.09	4.5
DMH5	DMH5 TO DMH5A	24	HDPE	127	0.010	0.013	5.4	1.02	3.4
DMH5A	DMH5A TO DMH6	24	HDPE	118	0.010	0.013	5.4	0.94	4.9
DMH6	DMH6 TO CB30	24	HDPE	79	0.010	0.013	5.4	0.92	4.7
DMH9	DMH9 TO FB2	30	HDPE	24	0.005	0.013	16.9	2.06	5.0
DMHRD	DMHRD TO CB28	18	HDPE	28	0.009	0.013	2.7	0.76	3.2
TD1	TD1 TO CB13A	24	HDPE	102	0.010	0.013	4.4	1.24	2.2
OS1	OS1 TO HW3	15”	HDPE	40	0.006	0.013	2.1	0.17	4.0

Summary Tables

(25-Year Storm)

OS2	OS2 TO HW4	15”	HDPE	51	0.010	0.013	0.2	0.08	2.2
OS3	OS3 TO DMH5	18”	HDPE	100	0.010	0.013	4.2	1.21	3.5

POST-DEVELOPMENT SWALES TABLE

Node (#)	Location	Cross-Section	Slope (Ft/Ft)	Manning’s (N)	Peak Discharge (CFS)	Flow Depth (Ft)	Peak Velocity (FPS)
1R	PS40 TO SFB2	8’ by .5’	0.061	0.069	0.15	0.03	0.55
2R	PSM1 TO CB16	33 by .25’	0.057	0.041	0.02	0.01	0.47
5R	LINK 1 TO E	24” Dia. Arch	0.017	0.040	12.1	1.00	3.41

PART 7

Infiltration Feasibility Report

Southern New Hampshire Green Energy Campus
Tax Map 14 Lot 39
162 Litchfield Road
Londonderry, NH 03053
September 12, 2025
Revised December 18, 2025

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a. Amoozemeter Field Data Sheets

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a. USDA NRCS Soils Report (SEE PART2)
b. Site-Specific Soils Report (SEE PART2)

(a) Location of Practice

This project proposes construction of a 36,600± square foot Depackaging Building, 7,200 square foot Biogas Upgrading Yard, 5,250 square foot Interconnection Facility Yard, 14,100 square foot Process Building, and eight (8) Tribrid-Bioreactors with associated site improvements such as paved driveway, grading, utilities, and stormwater management areas. The subject parcel is identified as Tax Map 14 Lot 39 and is located at 162 Litchfield Road in Londonderry, NH.

An open and closed drainage system is proposed to attenuate, convey, and treat runoff from the proposed development. A series of catchbasins, sediment forebays, two (2) filtration basin, and one (1) detention basin will provide pretreatment/treatment and manage runoff for this phase of the project.

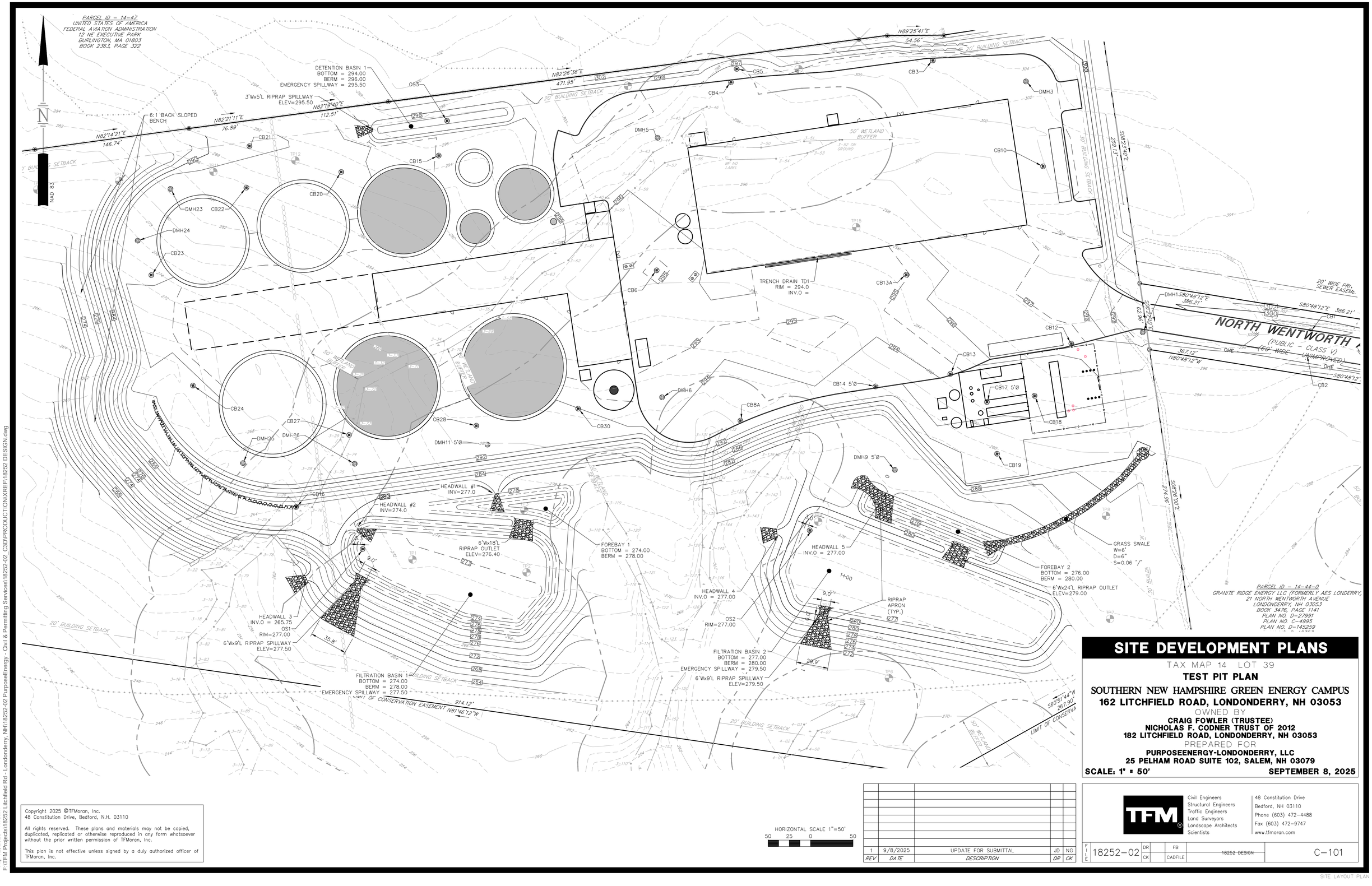
(b) Existing Topography at Location of Practice

The existing lot is a total of 47.3± which will undergo a subdivision. The proposed development will be located in the northern 15.3± acres of the existing parcel with the remainder of the parcel being donated for conservation purposes.

The proposed development is located within the Gateway Business (GB) zoning district. The site is abutted by a GB lots to the north and west, Industrial-II (IND-II) lots to the east, and Agricultural-Residential (AR-I) lots to the south.

Tax Map 14 Lot 39 is a vacant lot consisting of woods throughout the area of development with wetlands located in various areas throughout the site. Access to the proposed area of development will be from North Wentworth Avenue. Existing topography in the proposed area of work reflects a moderate elevational change from an approximate elevation of 306 in the northeastern portion of the property to an approximate elevation of 242 in the southwestern portion of the property.

(c) Test Pit Locations and Locations of Infiltration Tests



SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39

TEST PIT PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

162 LITCHFIELD ROAD, LONDONDERRY, NH 03053

OWNED BY

CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
182 LITCHFIELD ROAD, LONDONDERRY, NH 03053

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 50' **SEPTEMBER 8, 2025**

HORIZONTAL SCALE 1"=50'
50 25 0 50

REV	DATE	DESCRIPTION	DR	CK
1	9/8/2025	UPDATE FOR SUBMITTAL	JD	NG

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48 Constitution Drive, Bedford, N.H. 03110

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472–4488
Fax (603) 472–9747
www.tfmoran.com

FILE 18252–02 | DR | CK | FB | CADFILE | 18252 DESIGN | C–101

Sep 12, 2025 - 7:16am
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\XREF\18252 DESIGN.dwg

(d) Seasonal High-Water Table and Bedrock Elevations

Test Pit #1: **(Filtration Basin 1)**
Surface Elevation = 272.50
ESHWT= Observed @ 32” (Elev = 269.83)
Bedrock = None observed to 72” (Elev = 266.50)

Test Pit #2: **(Filtration Basin 1)**
Surface Elevation = 273.50
ESHWT= Observed @ 32” (Elev = 270.83)
Bedrock = None observed to 60” (Elev = 268.50)

Test Pit #3:
Surface Elevation = 276.60
ESHWT= Observed @ 34” (Elev = 273.77)
Bedrock = None observed to 60” (Elev = 271.60)

Test Pit #4: **(Filtration Basin 2)**
Surface Elevation = 276.90
ESHWT= Observed @ 32” (Elev = 274.23)
Bedrock = None observed to 60” (Elev = 271.90)

Test Pit #5: **(Filtration Basin 2)**
Surface Elevation = 272.80
ESHWT= Observed @ 32” (Elev = 270.13)
Bedrock = None observed to 60” (Elev = 267.80)

Test Pit #6:
Surface Elevation = 269.80
ESHWT= Observed @ 16” (Elev = 268.47)
Bedrock = None observed to 38” (Elev = 266.63)

Test Pit #7: **(Filtration Basin 2)**
Surface Elevation = 283.50
ESHWT= Observed @ 60” (Elev = 278.50)
Bedrock = None observed to 72” (Elev = 277.50)

Test Pit #8:
Surface Elevation = 286.80
ESHWT= Observed @ 40” (Elev = 283.47)
Bedrock = None observed to 72” (Elev = 280.80)

Test Pit #9:
Surface Elevation = 277.50
ESHWT= Observed @ 30” (Elev = 275.00)
Bedrock = None observed to 60” (Elev = 272.50)

Test Pit #10:
Surface Elevation = 279.00
ESHWT= Observed @ 34” (Elev = 276.17)
Bedrock = None observed to 60” (Elev = 274.00)

Test Pit #11:
Surface Elevation = 285.90

ESHWT= Observed @ 30” (Elev = 283.40)
Bedrock = None observed to 68” (Elev = 280.23)

Test Pit #12:
Surface Elevation = 290.10
ESHWT= Observed @ 30” (Elev = 287.60)
Bedrock = None observed to 72” (Elev = 284.10)

Test Pit #13:
Surface Elevation = 301.70
ESHWT= None observed to 80” (Elev = 295.03)
Bedrock = None observed to 80” (Elev = 295.03)

Test Pit #14:
Surface Elevation = 300.05
ESHWT= Observed @ 28” (Elev = 297.72)
Bedrock = None observed to 66” (Elev = 294.55)

Test Pit #15:
Surface Elevation = 296.15
ESHWT= None observed to 80” (Elev = 289.48)
Bedrock = None observed to 80” (Elev = 289.48)

(e) Profile Descriptions

TEST PIT REPORT

for

PurposeEnergy-Londonderry, LLC
North Wentworth Avenue
Londonderry, NH

PREPARED FOR

PurposeEnergy-Londonderry, LLC
25 Pelham Road, Suite 102
Salem, NH
18252.02

PREPARED BY

TFMoran, Inc.
48 Constitution Drive
Bedford, NH 03110

May 12, 2025

Test Pit #1 5/12/2025

0-12” 10YR 2/2 Very Dark Brown, Sandy Loam, Granular, Friable, Medium roots

12-24” 10YR 3/3 Dark Brown, Loamy Sand, Granular Friable

24-38” 2.5Y 5/6 Light Olive Brown, Loamy Sand, Granular Friable,
Redox Concentrations @ 32” 7.5YR 5/8 common distinct

38-72” 2.5Y 6/2 Light Brownish Gray, Loamy Sand, Massive, Friable Saturated.

ESHWT: Obs @ 32”
Seeps: low volume seeps at 30”
Roots: obs to 36”
No Refusal @ 72”

Test Pit #2 5/5/2025

0-8” 10YR 2/2 Very Dark Brown, Loamy Sand, Granular, Friable, fine-medium roots

8-20” 10YR 5/6 Yellowish Brown, Med. Sand, Granular, Friable, moist

20-32” 10YR 5/4 Yellowish Brown, Medium Sand, Granular Friable, Saturated

32-45” 2.5Y 6/4 Light Yellowish Brown, Medium Sand Granular, Friable

Redox Concentrations @32” 7.5YR 5/4 common, distinct

45-60” 2.5Y 6/2 Light Brownish Gray, Loamy Fine Sand, Sub angular, Blocky, Friable

ESHWT: Obs @ 32”
Seeps: low volume seeps at 32”
Roots: obs to 40”
No Refusal @ 60”

Test Pit #3 5/12/2025

0-10” 10YR 2/2 Very Dark Brown, Loamy Sand,
Granular, Friable, medium Roots

10-20” 10YR 3/3 Dark Brown, Med. Sand, Granular, Friable,
Med fine roots

20-32” 2.5Y 5/6 Light Olive Brown, Med. Sand, Granular
Friable, Saturated, Rapid Seeps
Redox Conc. @ 34” 7.5YR 5/4 Common Distinct

32-60” 10YR 4/6 Dark Yellowish Brown, Fine Sand
Massive Friable Saturated-Rapid Seeps

ESHWT: Observed at 34”
Roots to 30”
Seeps At 20” Rapid
No Refusal @ 60”

Test Pit #4 5/12/2025

0-7” 10YR 3/2 Very Dark Grayish Brown, Loamy Sand,
Granular, Friable, medium Roots

7-12” 7.5YR 3/3 Dark Brown, Med. Sand, Granular, Friable,
Med fine roots

12-32” 10YR 5/6 Yellowish Brown, Med. Sand, Granular
Friable, Saturated, Seeps
Redox Conc. @ 32” 7.5YR 5/4 & 2.5Y 6/6 Common Distinct

32-60” 2.5Y 5/2 Grayish Brown, Fine Sand
Massive, Friable Saturated- Seeps

ESHWT: Observed at 32”
Roots to 30”
Seeps At 30” Rapid
No Refusal @ 60”

Test Pit #5 5/12/2025

0-10” 10YR 3/2 Very Dark Grayish Brown, Loamy Sand, Granular, Friable, medium Roots

10-27” 10YR 5/6 Yellowish Brown, Med. Sand, Granular, Friable, Med roots

27-75” 2.5Y 5/4 Light Olive Brown, Med. Sand, Granular Friable, Saturated, Seeps
Redox Conc. @ 32” 7.5YR 5/4 Common Distinct

32-60” 2.5Y 5/4 Light Olive Brown, Medium Sand Massive, Friable Saturated- Seeps

ESHWT: Observed at 32”
Roots to 30”
Seeps At 321” Rapid
No Refusal @ 60”

Test Pit #6 5/12/2025

0-4” 10YR 2/2 Very Dark Brown, Loamy Sand, Granular, Friable, medium Roots

4-12” 2.5Y 3/2 Very Dark Grayish Brown, Med. Sand, Massive, Friable, Saturated, Fine Roots

12-20” 10YR 5/4 Light Olive Brown, Loamy Sand, Friable, Saturated, Seeps
Redox Conc. @ 16” 7.5YR 5/8 Common Distinct

20-38” 2.5Y 6/2 Light Brownish Gray, Medium Sand Granular-slightly cemented Firm, Saturated- Seeps

ESHWT: Observed at 16”
Roots to 20”
Seeps At 20” Rapid
No Refusal @ 38”

Test Pit #7 5/12/2025

0-3” 10YR 3/2 Very Dark Grayish Brown, Loamy Sand, Granular, Friable, medium Roots

3-12” 10YR 4/3 Brown, Loamy Sand, Granular, Friable, Med roots

12-30” 10YR 5/6 Yellowish Brown, Med. Sand, Granular Friable,

30-54” 2.5Y 5/4 Light Olive Brown, Medium Sand Granular, Friable Fine Roots, Saturated, Seeps @48

54-72” 2.5Y 6/4 Light Yellowish Brown, Loamy Fine Sand, Massive, Friable Fine Roots, Saturated

Redox Conc. @ 60” 7.5YR 5/4 Common Distinct

ESHWT: Observed at 60”
Roots to 48”
Seeps At 48” Rapid
No Refusal @ 72”

Test Pit #8 5/12/2025

0-3” 10YR 2/2 Very Dark Brown, Loamy Sand, Granular, Friable, Fine Roots

3-10” 10YR 3/3 Dark Brown, Loamy. Sand, Granular, Friable, Coarse Roots

10-36” 10YR 5/6 Yellowish Brown, Med. Sand, Granular, Friable, Saturated, Seeps Large Boulder encountered at 24”, Saturated, Seeps at 24”

36-72” 2.5Y 6/3 Light Yellowish Brown, Gray, Loamy Sand Granular, Friable, Saturated- Seeps

Redox Concentrations @40” 5Y 5/4 Reddish Brown Common Distinct

ESHWT: Observed at 40”
Roots to 28”
Seeps At 24” Rapid
No Refusal @ 72”

Test Pit #9 5/12/2025

0-5” 10YR 2/2 Very Dark Brown, Loamy Sand,
Granular, Friable, medium Roots

5-20” 10YR 3/6 Brown, Gravelly Loamy Sand, Granular,
Friable, Med roots

20-34” 10YR 6/6 Brownish Yellow, Loamy Sand, Granular
Friable, Seeps, Saturated

34-60” 2.5Y 5/4 Light Olive Brown, Gravelly Loamy Sand
Massive, Friable Seeps, Saturated

Redox Conc. @ 30” 7.5YR 5/6 Common Distinct

ESHWT: Observed at 30”
Roots to 36”
Seeps At 30” Rapid
No Refusal @ 60”

Test Pit #10 5/12/2025

0-5” 10YR 2/2 Very Dark Brown, Loamy Sand,
Granular, Friable, medium Roots

5-17” 10YR 4/3 Brown, Loamy Sand, Granular,
Friable, Med roots

17-32” 10YR 5/6 Yellowish Brown, Med. Sand, Granular
Friable, Saturated, Seeps at 26”

32-60” 2.5Y 5/3 Light Olive Brown, Loamy Sand
Granular, Friable Fine Roots, Saturated,
Seeps @48, Large angular boulder encountered

Redox Conc. @ 34” 2.5Y 5/6 Common Distinct

ESHWT: Observed at 34”
Roots to 36”
Seeps At 26” Rapid
No Refusal @ 60”

Test Pit #11 5/12/2025

0-5” 10YR 2/2 Very Dark Brown, Loamy Sand,
Granular, Friable, medium Roots

5-15” 10YR 3/3 Dark Brown, Loamy Sand, Granular,
Friable, Med roots

15-32” 10YR 5/4 Yellowish Brown, Loamy Sand,
Massive, Friable Saturated, Coarse Roots, seeps
Redox concentrations @30” 10YR 5/8-Common, faint

32-48” 2.5Y 6/4 Light Yellowish Brown, Loamy Fine Sand
Sub angular, Blocky, Friable, Saturated, Seeps

48-68” 2.5Y 6/2 Light Brownish Gray, Loamy Fine Sand,
Sub angular, Blocky Friable, seeps, Saturated

Redox Conc. @ 60” 7.5YR 5/4 Common Distinct

ESHWT: Observed at 30”
Roots to 36”
Seeps At 18”
No Refusal @ 68”

Test Pit #12 5/12/2025

0-5” 10YR 2/2 Very Dark Brown, Loamy Sand,
Granular, Friable, medium Roots

5-16” 10YR 4/6 Dark Yellowish Brown, Loamy Sand, Granular,
Friable, Med roots

16-32” 10YR 5/6 Yellowish Brown, Loamy Sand, Granular
Friable, Fine Roots, Saturated, rapid seeps @ 24”
Redox Conc. @30” 10YR 4/4

32-78” 2.5Y 5/4 Light Olive Brown, Loamy Sand
Massive, Friable, Fine Roots, Saturated,
Seeps

Redox Conc. @ 30” 10YR 4/4 Common Distinct

ESHWT: Observed at 30”
Roots to 40”
Seeps At 24” Rapid
No Refusal @ 72”

Test Pit #13 5/12/2025

0-10” 10YR 3/3 Dark Brown, Loamy Sand,
Granular, Friable, medium Roots

10-22” 10YR 5/4 Yellowish Brown, Med.Sand, Granular,
Friable, Med roots

22-47” 2.5Y 6/4 Light Yellowish Brown, Med. Sand, Granular
Friable, Fine Roots

47-80” 2.5Y 5/6 Light Olive Brown, Med. Sand
Massive, Friable, Fine Roots,

ESHWT: None Obs. @ 80””
Roots to 48”
Seeps None Obs. @80”
No refusal @ 80”

Test Pit #14 5/12/2025

0-9” 10YR 2/2 Very Dark Brown, Loamy Sand,
Granular, Friable, medium Roots

9-26” 2.5Y 4/4 Olive Brown, Loamy Sand, Granular,
Friable, Med roots

26-38” 2.5Y 6/4 Light Yellowish Brown, Loamy Sand, Granular
Friable, Fine Roots, Saturated, seeps @ 30”
Redox Conc. @28” 10YR 5/8

38-66” 2.5Y 5/3 Light Olive Brown, Loamy Sand
Massive, Friable, Fine Roots, Saturated,
Seeps

Redox Conc. @ 28” 10YR 5/84 Common Distinct

ESHWT: Observed at 28”
Roots to 44”
Seeps At 30” Rapid
No Refusal @ 66”

Test Pit #15 5/12/2025

0-8”	10YR 2/2 Very Dark Brown, Loamy Sand, Granular, Friable, medium Roots
8-19”	10YR 3/4 Dark Yellowish Brown, Loamy Sand, Granular, Friable, Med roots
19-33”	10YR 5/4 Yellowish Brown, Medium Sand, Granular Friable, Fine Roots,
33-80”	10YR 6/4 Light Yellowish Brown, Med. Sand Single grain, loose

ESHWT: None Observed at 80”
Roots to 40”
Seeps: None Obs @ 80”
No Refusal @ 80”

(f) Date Data was collected:

Test Pits #1 to #15
Date: May 12, 2025
Performed by: Christopher Danforth, CWS

Infiltration Tests #1 to #15
Date: May 12, 2025
Performed by: Guillermo M. Sepulveda

Town/State: Londonderry, NH
TFM Project Name: Londonderry Green Energy Campus

(g) Summary of Design Infiltration Rate

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

Test Pit #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)	SCM HydroCAD Node
1	0.33	0.165	Filtration Basin 1
2	4.68	2.340	Filtration Basin 1
3	0.07	-	-
4	6.73	3.365	Filtration Basin 2
5	8.54	4.470	Filtration Basin 2
6*	-	-	-
7	29.55	14.775	-
8	10.65	5.325	-
9	2.47	1.235	-
10	0.86	0.43	-
12	0.13	-	-
13	28.47	14.235	Detention Basin 1
14	0.26	0.130	-
15	35.55	17.775	-

** too fast for amoozemeter*

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-01.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #1 conducted 1.5' Below EG @ TP-01							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
						Average	**0.33506**	**0.13191**
						Stand Dev	0.57223017	0.22528747
Sample Set 2 Coefficient A =		**0.000745**						
0.00	0.5	0.008333	105		0		0.00000	0
0.00	0.5	0.008333	105		0		0.00000	0
0.25	0.5	0.008333	105		3150		2.34545	0.92340384
0.00	0.5	0.008333	105		0		0.00000	0
0.25	0.5	0.008333	105		3150		2.34545	0.92340384
0.00	0.5	0.008333	105		0		0.00000	0
0.50	0.5	0.008333	105		6300		4.69089	1.84680768
						Average	**1.34025**	**0.52766**
						Stand Dev	1.845386849	0.72653026
						Average Combined		0.32979

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
1	0.33	0.16

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-02.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #2 conducted 1.5' Below EG @ TP-02							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
2.50	1	0.016667	105		15750		11.72723	4.6170192
2.75	1	0.016667	105		17325		12.89995	5.07872112
2.75	1	0.016667	105		17325		12.89995	5.07872112
2.25	1	0.016667	105		14175		10.55451	4.15531728
2.25	1	0.016667	105		14175		10.55451	4.15531728
2.50	1	0.016667	105		15750		11.72723	4.6170192
2.50	1	0.016667	105		15750		11.72723	4.6170192
						Average	**11.72723**	**4.61702**
						Stand Dev	0.957524219	0.37697804
Sample Set 2 Coefficient A =		**0.000745**						
2.50	1	0.016667	105		15750		11.72723	4.6170192
2.75	1	0.016667	105		17325		12.89995	5.07872112
2.50	1	0.016667	105		15750		11.72723	4.6170192
2.50	1	0.016667	105		15750		11.72723	4.6170192
2.25	1	0.016667	105		14175		10.55451	4.15531728
3.00	1	0.016667	105		18900		14.07267	5.54042304
2.50	1	0.016667	105		15750		11.72723	4.6170192
						Average	**12.06229**	**4.74893**
						Stand Dev	1.115481957	0.43916612
						Average Combined		4.68298

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
2	4.68	2.34

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-03.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #3 conducted 1.5' Below EG @ TP-03							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
						Average	**0.16753**	**0.06596**
						Stand Dev	0.443247584	0.17450692
Sample Set 2 Coefficient A =		**0.000745**						
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
						Average	**0.16753**	**0.06596**
						Stand Dev	0.443247584	0.17450692
						Average Combined		0.06596

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
3	0.07	0.03

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-04.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #4 conducted 1.5' Below EG @ TP-04							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
5.00	1	0.016667	105		31500		23.45446	9.23403839
4.00	1	0.016667	105		25200		18.76357	7.38723071
3.50	1	0.016667	105		22050		16.41812	6.46382688
3.00	1	0.016667	105		18900		14.07267	5.54042304
4.00	1	0.016667	105		25200		18.76357	7.38723071
3.25	1	0.016667	105		20475		15.24540	6.00212496
3.75	1	0.016667	105		23625		17.59084	6.92552879
						Average	**17.75837**	**6.99149**
						Stand Dev	3.060227886	1.20481413
Sample Set 2 Coefficient A =		**0.000745**						
3.50	1	0.016667	105		22050		16.41812	6.46382688
3.75	1	0.016667	105		23625		17.59084	6.92552879
3.75	1	0.016667	105		23625		17.59084	6.92552879
3.50	1	0.016667	105		22050		16.41812	6.46382688
3.50	1	0.016667	105		22050		16.41812	6.46382688
3.00	1	0.016667	105		18900		14.07267	5.54042304
3.50	1	0.016667	105		22050		16.41812	6.46382688
						Average	**16.41812**	**6.46383**
						Stand Dev	1.172722876	0.46170192
						Average Combined		6.72766

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
4	6.73	3.36

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-05.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #5 conducted 1.5' Below EG @ TP-05							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
4.75	1	0.016667	105		29925		22.28173	8.77233647
4.75	1	0.016667	105		29925		22.28173	8.77233647
5.00	1	0.016667	105		31500		23.45446	9.23403839
4.50	1	0.016667	105		28350		21.10901	8.31063455
4.75	1	0.016667	105		29925		22.28173	8.77233647
4.75	1	0.016667	105		29925		22.28173	8.77233647
4.75	1	0.016667	105		29925		22.28173	8.77233647
						Average	**22.28173**	**8.77234**
						Stand Dev	0.677071868	0.26656373
Sample Set 2 Coefficient A =		**0.000745**						
4.50	1	0.016667	105		28350		21.10901	8.31063455
4.50	1	0.016667	105		28350		21.10901	8.31063455
4.50	1	0.016667	105		28350		21.10901	8.31063455
4.75	1	0.016667	105		29925		22.28173	8.77233647
4.50	1	0.016667	105		28350		21.10901	8.31063455
4.25	1	0.016667	105		26775		19.93629	7.84893263
4.50	1	0.016667	105		28350		21.10901	8.31063455
						Average	**21.10901**	**8.31063**
						Stand Dev	0.677071868	0.26656373
						Average Combined		8.54149

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
5	8.54	4.27

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 2.5' below EG at TP-07.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	2.5 ft	2.5 ft	

Amoozemeter Data Calculation Sheet				18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #7 conducted 2.5' Below EG @ TP-07								Ksat	Ksat
Drop in Water		Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =			**0.000745**						
16.00		1	0.016667	105		100800		75.05426	29.5489229
16.50		1	0.016667	105		103950		77.39971	30.4723267
							Average	**76.22699**	**30.01062**
							Stand Dev	1.658480596	0.65294512
Sample Set 2 Coefficient A =			**0.000745**						
15.50		1	0.016667	105		97650		72.70882	28.625519
15.75		1	0.016667	105		99225		73.88154	29.0872209
16.00		1	0.016667	105		100800		75.05426	29.5489229
							Average	**73.88154**	**29.08722**
							Stand Dev	1.172722876	0.46170192
							Average Combined		29.54892

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
7	29.55	14.77

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-08.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #8 conducted 1.5' Below EG @ TP-08							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
5.50	1	0.016667	105		34650		25.79990	10.1574422
5.50	1	0.016667	105		34650		25.79990	10.1574422
5.75	1	0.016667	105		36225		26.97263	10.6191442
5.50	1	0.016667	105		34650		25.79990	10.1574422
5.50	1	0.016667	105		34650		25.79990	10.1574422
5.50	1	0.016667	105		34650		25.79990	10.1574422
5.25	1	0.016667	105		33075		24.62718	9.69574031
						Average	**25.79990**	**10.15744**
						Stand Dev	0.677071868	0.26656373
Sample Set 2 Coefficient A =		**0.000745**						
6.00	1	0.016667	105		37800		28.14535	11.0808461
6.25	1	0.016667	105		39375		29.31807	11.542548
6.00	1	0.016667	105		37800		28.14535	11.0808461
6.00	1	0.016667	105		37800		28.14535	11.0808461
6.25	1	0.016667	105		39375		29.31807	11.542548
5.75	1	0.016667	105		36225		26.97263	10.6191442
6.00	1	0.016667	105		37800		28.14535	11.0808461
						Average	**28.31288**	**11.14680**
						Stand Dev	0.809255667	0.31860459
						Average Combined		10.65212

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
8	10.65	5.33

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-09.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #9 conducted 1.5' Below EG @ TP-09							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
1.50	1	0.016667	105		9450		7.03634	2.77021152
1.50	1	0.016667	105		9450		7.03634	2.77021152
1.50	1	0.016667	105		9450		7.03634	2.77021152
1.50	1	0.016667	105		9450		7.03634	2.77021152
2.00	1	0.016667	105		12600		9.38178	3.69361536
1.75	1	0.016667	105		11025		8.20906	3.23191344
2.00	1	0.016667	105		12600		9.38178	3.69361536
						Average	**7.87400**	**3.10000**
						Stand Dev	1.115481957	0.43916612
Sample Set 2 Coefficient A =		**0.000745**						
1.00	1	0.016667	105		6300		4.69089	1.84680768
0.75	1	0.016667	105		4725		3.51817	1.38510576
1.00	1	0.016667	105		6300		4.69089	1.84680768
1.00	1	0.016667	105		6300		4.69089	1.84680768
1.00	1	0.016667	105		6300		4.69089	1.84680768
1.25	1	0.016667	105		7875		5.86361	2.3085096
1.00	1	0.016667	105		6300		4.69089	1.84680768
						Average	**4.69089**	**1.84681**
						Stand Dev	0.677071868	0.26656373
						Average Combined		2.47340

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
9	2.47	1.24

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-10.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #10 conducted 1.5' Below EG @ TP-10							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.50	1	0.016667	105		3150		2.34545	0.92340384
						Average	**2.17791**	**0.85745**
						Stand Dev	0.443247584	0.17450692
Sample Set 2 Coefficient A =		**0.000745**						
0.75	1	0.016667	105		4725		3.51817	1.38510576
0.75	1	0.016667	105		4725		3.51817	1.38510576
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.50	1	0.016667	105		3150		2.34545	0.92340384
						Average	**2.17791**	**0.85745**
						Stand Dev	1.055140299	0.41540957
						Average Combined		0.85745

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
10	0.86	0.43

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-12.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #12 conducted 1.5' Below EG @ TP-12							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.00	1	0.016667	105		0		0.00000	0
						Average	**0.33506**	**0.13191**
						Stand Dev	0.57223017	0.22528747
Sample Set 2 Coefficient A =		**0.000745**						
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
						Average	**0.33506**	**0.13191**
						Stand Dev	0.57223017	0.22528747
						Average Combined		0.13191

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
12	0.13	0.07

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 3' below EG at TP-13.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	3 ft	3 ft	

Amoozemeter Data Calculation Sheet				18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #13 conducted 3' Below EG @ TP-13								Ksat	Ksat
Drop in Water		Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =			**0.000745**						
15.50		1	0.016667	105		97650		72.70882	28.625519
15.50		1	0.016667	105		97650		72.70882	28.625519
							Average	**72.70882**	**28.62552**
							Stand Dev	0	0
Sample Set 2 Coefficient A =			**0.000745**						
15.50		1	0.016667	105		97650		72.70882	28.625519
15.00		1	0.016667	105		94500		70.36337	27.7021152
15.50		1	0.016667	105		97650		72.70882	28.625519
							Average	**71.92700**	**28.31772**
							Stand Dev	1.354143736	0.53312746
							Average Combined		28.47162

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
13	28.47	14.24

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-14.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #14 conducted 1.5' Below EG @ TP-14							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.00	1	0.016667	105		0		0.00000	0
						Average	**0.33506**	**0.13191**
						Stand Dev	0.57223017	0.22528747
Sample Set 2 Coefficient A =		**0.000745**						
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.00	1	0.016667	105		0		0.00000	0
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.00	1	0.016667	105		0		0.00000	0
						Average	**1.00519**	**0.39574**
						Stand Dev	1.253693489	0.49358011
						Average Combined		0.26383

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
14	0.26	0.13

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025		Project: 18252-00 Londonderry Green Energy Campus	
LOCATION: 162 Litchfield Road, Londonderry, NH 03053		AIR TEMPERATURE:	73°F
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)		NOTES:	
HORIZON: A		Test conducted 3' below EG at TP-15.	
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	3 ft	3 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #15 conducted 3' Below EG @ TP-15							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
19.00	1	0.016667	105		119700		89.12694	35.0893459
20.00	1	0.016667	105		126000		93.81783	36.9361536
						Average	**91.47238**	**36.01275**
						Stand Dev	3.316961192	1.30589023
Sample Set 2 Coefficient A =		**0.000745**						
19.00	1	0.016667	105		119700		89.12694	35.0893459
19.00	1	0.016667	105		119700		89.12694	35.0893459
						Average	**89.12694**	**35.08935**
						Stand Dev	0	0
						Average Combined		35.55105

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
15	35.55	17.78

PART 8

Inspection & Maintenance Manual

PurposeEnergy-Londonderry, LLC
Southern New Hampshire Green Energy Campus
North Wentworth Avenue, Londonderry, NH
September 12, 2025
Revised December 18, 2025

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Description of Project

The Southern New Hampshire Green Energy Campus will reduce the waste management burden on New Hampshire by tackling the food waste problem. It will feature two connected resource recovery facilities.

- The first, RecycleWorks, will receive food waste that normally goes to landfill, including food that has passed its sell by date or is out of specification but is wrapped in glass, plastic, or metal packaging. RecycleWorks will remove the organic waste from that packaging and send it to the second facility on the campus,
- PurposeEnergy – Londonderry. PurposeEnergy will pump the food waste into tanks that digest it in a process similar to a human stomach. The tanks will also receive dairy waste directly by pipe from a local business, Stonyfield Yogurt. The digester tanks will produce renewable biogas that will be cleaned to pipeline quality and injected into the local natural gas network.

The Green Energy Campus is not a landfill; all of the material that comes to the campus will leave it either as recyclable material, renewable biogas, clean water, or biosolids (the residuals from digestion which will be sent to a compost facility for use as fertilizer). The net impact of the Southern New Hampshire Green Energy Campus is to

- divert 90% of solid waste away from New Hampshire landfills;
- reduce the escape of environmentally damaging methane gas resulting from decomposition of organic matter;
- support local business in the cost-effective and environmentally beneficial management of food manufacturing waste.

The site consists of the following major elements:

- 36,600 sf Depackaging Facility (RecycleWorks)
- A 14,100 sf Process Building, with future expansion of 9,800 sf (PurposeEnergy)
- tribrid bio-reactors
- 3 flow equalization tanks
- 26’ x 32’ screening room building
- A biogas upgrading yard
- An interconnection facility yard
- Truck scales
- Parking and trucking interconnection

An open and closed drainage system is proposed to attenuate, convey, and treat runoff from the proposed development. A series of catchbasins, sediment forebays, two (2) filtration basins and one (1) detention basin, strategically located though the site will provide pretreatment/treatment and manage runoff.

Responsible Party

Operator: PurposeEnergy-Londonderry, LLC

Address: PurposeEnergy-Londonderry, LLC

Contact: Sean O'Neill, oneail@purposeenergy.com, (917).776.6155

Stormwater Practices – Schedule of Maintenance

The following practices shall be inspected twice annually, once following snowmelt (spring) and once following leaf-drop (fall):

- Sediment Forebays
- Filtration/Detention Basins
- Catch Basin

The following practices shall be inspected annually following snowmelt (spring):

- Culvert
- Catch Basin
- Headwalls
- Riprap Aprons
- Swales

Stormwater Practices – Maintenance Guidelines

Treatment Practices
(Inspected twice a year)

Filtration/Detention Basin
Maintenance Requirements:

- To be inspected twice annually, once following snowmelt (spring) and once following leaf-drop (fall);
- Removal of debris from inlet and outlet structures;
- Removal of accumulated sediment;
- Periodic mowing of embankments;
- Removal of woody vegetation from embankments;
- Inspection and repair of embankments; and
- If an infiltration system does not drain within 72-hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore infiltration function, including but not limiting to removal of accumulated sediments or reconstruction of the infiltration trench.

Pretreatment Practices
(Inspected twice a year)

Sediment Forebay
Maintenance Requirements:

- To be inspected at least twice annually, once following snowmelt and once following leaf-drop and cleaned as indicated by inspection;
- Conduct periodic mowing of embankments (two times per year) to control growth of woody vegetation on embankments;
- Remove debris from outlet structure;
- Remove and dispose of accumulated sediment; and
- Install and maintain a staff gage or other measuring device to indicate depth of sediment accumulation and level at which clean-out is required. It shall be cleaned out when sediment fills half the sump depth (minimum sump depth is 2 feet when clear).

Conveyance Practices
(Inspections As Noted)

Culvert
Maintenance Requirements:

- To be inspected at least twice annually, once following snow-melt (spring) and once following leaf drop (fall), and cleaned as indicated by inspection.
- Inspect culvert inlet, outlet, and structure.
- Remove accumulated sediments greater than 2 inches in depth and debris at the inlet, at the outlet, and within the conduit.
- Repair any erosion damage at the culvert's inlet and outlet.

Catch Basin
Maintenance Requirements:

- To be inspection a least twice annually, once following snow-melt and once following leaf-drop and cleaned as indicated by inspection;
- Sediment should be removed annually and when it approaches half the sump depth; and
- If floating hydrocarbons are observed during an inspection, the material should be removed immediately by skimming, absorbent materials, or other method and disposed of in conformance with applicable state and federal regulations.

Headwalls
Maintenance Requirements:

- Inspect at least once annually for accumulation of sediment and debris and for signs of erosion along embankments;
- Remove debris whenever observed during inspection; and
- Remove sediment when accumulation exceeds 25% of channel depth.

Riprap Apron/Plunge Pool
Maintenance Requirements:

- Inspect at least once annually for damage and deterioration; and
- Repair damages immediately.

Riprap Swales
Maintenance Requirements:

- Inspect at least once annually for damage and deterioration
- Remove lodged debris

- Repair damages immediately.

System Components

Access Driveway (North Wentworth Ave ROW):
Maintenance Requirements (only for section constructed by this site plan):

- Sediments and debris should be removed and disposed of from impervious areas by power-broom sweeping.
- Sweep at least two (2) times per year and on a more frequent basis depending on sanding operations.
- All resulting sweepings shall be collected and properly disposed of off-site in accordance with NHDES and other applicable requirements.

Driveway, Sidewalk, and Parking Areas:
Maintenance Requirements:

- Sediments and debris should be removed and disposed of from impervious areas by power-broom sweeping.
- Sweep at least two (2) times per year and on a more frequent basis depending on sanding operations.
- All resulting sweepings shall be collected and properly disposed of off-site in accordance with NHDES and other applicable requirements.

Lawns and Landscaping Areas:
Maintenance Requirements:

- Inspect, maintain, and repair as necessary development area lawns and landscaped areas to ensure a stabilized surface.
- Maintain lawn areas with healthy turf. Take steps to necessary to restore distressed turf to good health.
- Ensure that landscape mulch materials are refreshed as necessary and does not wash onto sidewalks or other adjacent surfaces.

Control of Invasive Plans

During maintenance activities, check for the presence of invasive plants. If invasive plants are found, they shall be controlled and removed in a safe manner as described on the following pages.

Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as “hitchhikers” among shipments of other plants, seeds, packing materials or fresh produce. Invasive plants can cause harm by:

- Becoming weedy and overgrown;
- Killing established shade trees;
- Obstructing pipes and drainage systems
- Forming dense beds in water
- Lowering water levels in lakes, streams, and wetlands
- Destroying natural communities
- Promoting erosion on stream banks and hillsides
- Resisting control except by hazardous chemicals.

Inspection & Maintenance Log

Date	Inspector	BMPs checked	Maintenance Required

Deicing Plan

The project Chloride Management Plan is described in the following pages. Also attached is a Deicing log to be used to document maintenance procedures, and the current NHDES Fact Sheet.

Beaver Brook has been declared an impacted watershed in need of corrective action due to Chloride loading, most notably resulting from winter maintenance activities. Londonderry has a Salt Reduction Plan (SRP) that provides a procedural framework for the Town of Londonderry to continuously strive to improve winter maintenance operations while effectively and efficiently using road salt during the snow and ice removal operations. Londonderry will provide winter maintenance to town roadways, parking lots, and sidewalks in accordance with Londonderry's Winter Maintenance Snow and Ice Control Policy while striving to minimize adverse impacts to the environment by:

- Adhering to the procedures contained within the SRP;
- Committing to ongoing winter maintenance staff training and education;
- Reporting fiscal year salt usage to New Hampshire Department of Environmental Services (NHDES);
- Re-evaluating the effectiveness of the SRP as needed to incorporate new technologies or changes in procedures.

Under the existing SRP, the Town has identified four strategies to help meet the Total Maximum Demand Load allocation within the Little Cohas Brook / Cohas Brook Watershed. The current load is estimated at 854.47 tons/year imported to the watershed. The town's reduction goals are 6% for year one, 12% for year two, and 18% for year three to be achieved from the following strategies.

- Equipment upgrade pilot project;
- Improved calibration;
- Private sector outreach;
- Improved weather system monitoring.

NHDES will monitor the progress made by each community impacting the Little Cohas Brook / Cohas Brook watershed and may require modifications to each plan. In recognition of the Little Cohas Brook / Cohas Brook Watershed chloride reduction plan for Londonderry, and that approximately 40% of the chloride impact is a result of winter operations on private roadways and parking lots, the PurposeEnergy-Londonderry, LLC will be guided by the following actions:

- Private Maintenance Contracting Equipment Upgrades and Training
  All snow removal contactors shall be **NH Certified Green SnowPro** contractors who have been trained and are knowledgeable of Best Management Practices (BMP) for snow removal with reduced salt application. These practices are published and are updated though the UNH – Technology Transfer (T2) program. All private contractors employed by PurposeEnergy-Londonderry, LLC roadway maintenance will use only pre-approved methods for spreading abrasives on private roadways and parking lots. When salt is applied, it will be applied only in accordance with best management practices and will include pre-treatment and ground speed-controlled spreaders.
- Improved Weather System Monitoring
  PurposeEnergy-Londonderry, LLC will coordinate weather information gathered by both the town and NHDOT for use by maintenance contractors. In doing so, contractors will

be able to make more informed decisions as to when and to what extent chloride is applied to roadways, sidewalks, and parking lots;

- Increased Mechanical Removal Capabilities
  PurposeEnergy-Londonderry, LLC will endeavor to use mechanical removal means on a more frequent basis using more manpower and equipment than traditionally used to shorten plowing intervals and reduce the need for salting to break up hard packed snow. Shortened maintenance routes with shorter service intervals will be used to stay ahead of snowfall, thus reducing the need to sand and salt after snow and ice packing has already occurred.
- Public Awareness Campaign
  PurposeEnergy-Londonderry, LLC will inform all future developers, grantees, and tenants of the need to reduce salt application on roadways, parking lots, and sidewalks.

The manual, as with the Town's Salt Reduction Plan, is intended to be a dynamic document, modified as required based on knowledge gained from past practices and technological advancement to reflect chloride best management practices.

Deicing Data Form

Note: The operator shall report annual salt usage within the municipal boundaries to NHDES's New Hampshire Salt Management System Database at: https://www.nhms4.des.nh.gov/nh-resources/winter-maintenance/

Location: Southern New Hampshire Green Energy Campus North Wentworth Ave. Londonderry, NH 03053				
Date:				
Air Temperature	**Pavement Temperature**	**Relative Humidity**	**Dew Point**	**Sky**
Reason for applying:				
Area of Application:				
Chemical:				
Application Time:				
Application Amount:				
Observation (first day):				
Observation (after event):				
Observation (before next application):				

Name:

*__New Hampshire Certified Green SnowPro__ Applicator shall be employed for winter snow and ice management activities

Inspection Checklist

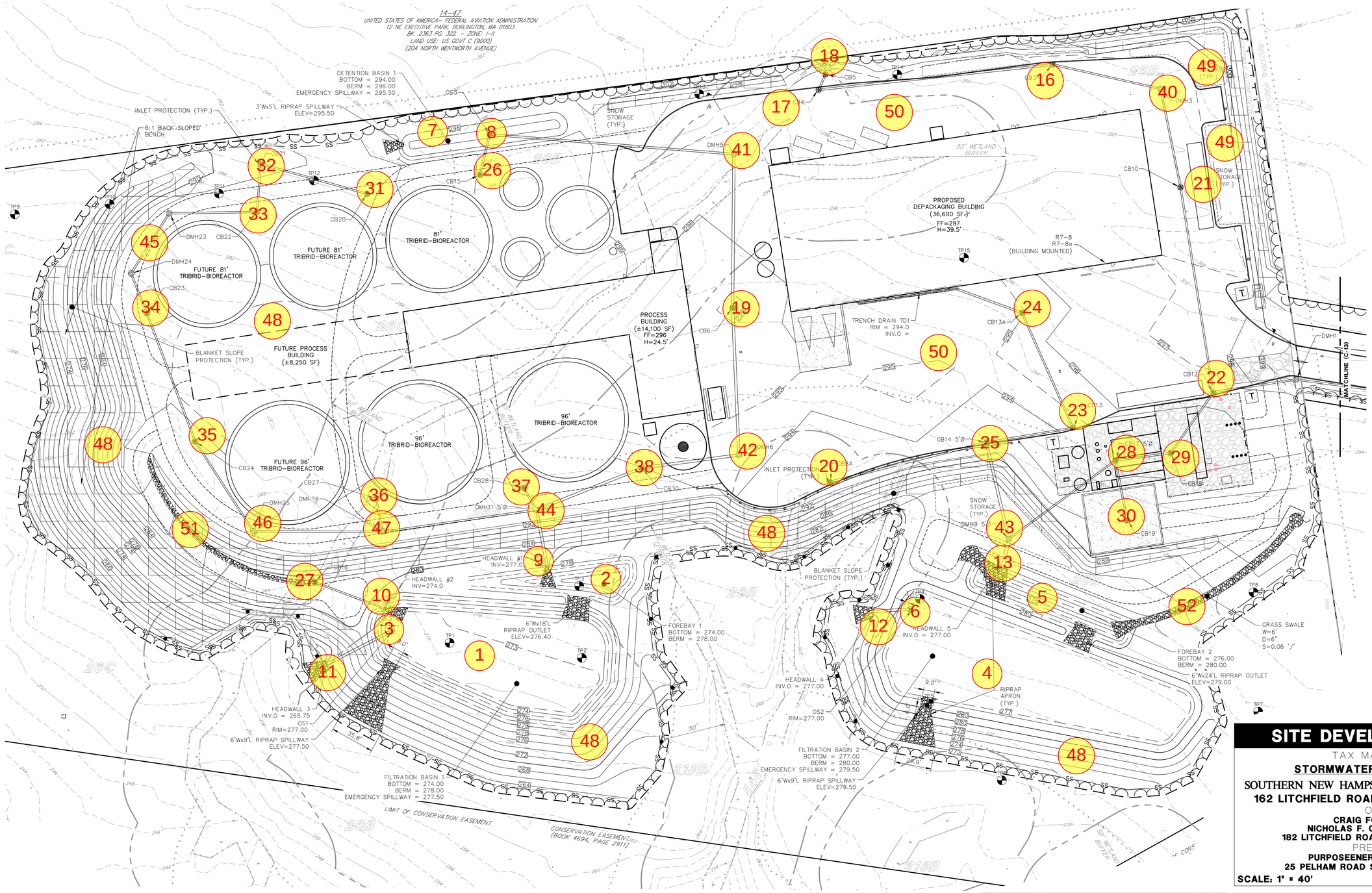
Date:	**Project Name: Southern New Hampshire Green Energy Campus**
Inspector's Name/Title:	
Inspector's Contact Information:	
☐ 1st Yearly Inspection ☐ 2nd Yearly Inspection	BMP's to be inspected: All BMP's to be inspected: Treatment and Pretreatment Practices

	BMP* **Refer to following Inspection & Maintenance Plan for BMP location**	Maintenance Required	Corrective Action Needed and Notes
1	Filtration Basin 1	☐ Yes ☐ No	
2	Forebay 1	☐ Yes ☐ No	
3	Outlet Structure 1	☐ Yes ☐ No	
4	Filtration Basin 2	☐ Yes ☐ No	
5	Forebay 2	☐ Yes ☐ No	
6	Outlet Structure 2	☐ Yes ☐ No	
7	Detention Basin 1	☐ Yes ☐ No	
8	Outlet Structure 3	☐ Yes ☐ No	
9	Headwall 1	☐ Yes ☐ No	
10	Headwall 2	☐ Yes ☐ No	
11	Headwall 3	☐ Yes ☐ No	
12	Headwall 4	☐ Yes ☐ No	

13	Headwall 5	☐ Yes ☐ No	
14	CB1	☐ Yes ☐ No	
15	CB2	☐ Yes ☐ No	
16	CB3	☐ Yes ☐ No	
17	CB4	☐ Yes ☐ No	
18	CB5	☐ Yes ☐ No	
19	CB6	☐ Yes ☐ No	
20	CB8A	☐ Yes ☐ No	
21	CB10	☐ Yes ☐ No	
22	CB12	☐ Yes ☐ No	
23	CB13	☐ Yes ☐ No	
24	CB13A	☐ Yes ☐ No	
25	CB14	☐ Yes ☐ No	
26	CB15	☐ Yes ☐ No	
27	CB16	☐ Yes ☐ No	
28	CB17	☐ Yes ☐ No	
29	CB18	☐ Yes ☐ No	
30	CB19	☐ Yes ☐ No	
31	CB20	☐ Yes ☐ No	
32	CB21	☐ Yes ☐ No	
33	CB22	☐ Yes ☐ No	
34	CB23	☐ Yes ☐ No	
35	CB24	☐ Yes ☐ No	

36	CB27	☐ Yes ☐ No	
37	CB28	☐ Yes ☐ No	
38	CB30	☐ Yes ☐ No	
39	DMH1	☐ Yes ☐ No	
40	DMH3A	☐ Yes ☐ No	
41	DMH5	☐ Yes ☐ No	
42	DMH6	☐ Yes ☐ No	
43	DMH9	☐ Yes ☐ No	
44	DMH11	☐ Yes ☐ No	
45	DMH24	☐ Yes ☐ No	
46	DMH25	☐ Yes ☐ No	
47	DMH26	☐ Yes ☐ No	
48	Development Area Lawns (Typ.)	☐ Yes ☐ No	
49	Development Area Landscaping (Typ.)	☐ Yes ☐ No	
50	Parking Lot & Driveway Sweeping (Typ.)	☐ Yes ☐ No	
51	Swale R1		
52	Swale R2		
	Other	☐ Yes ☐ No	
52			

*Best Management Practices
**Photographs of BMPs shall be included as part of the required Inspections
***Copies of Inspection & Maintenance Records shall be provided to the Town of Londonderry on an annual basis and the NHDES AoT Bureau upon request
**** SWPPP reports shall be provided via e-mail to the Town of Londonderry at the same time they are provide to the Contractor and Owner



SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39

STORMWATER MANAGEMENT PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

162 LITCHFIELD ROAD, LONDONDERRY, NH 03053

OWNED BY

CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
182 LITCHFIELD ROAD, LONDONDERRY, NH 03053

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/2025

HORIZONTAL SCALE 1"=40'
40 20 0 40

REV	DATE	DESCRIPTION	DR	CK
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE 18252-02 | DR | FB | CADFILE 18252-02 SITE PLAN | C-12

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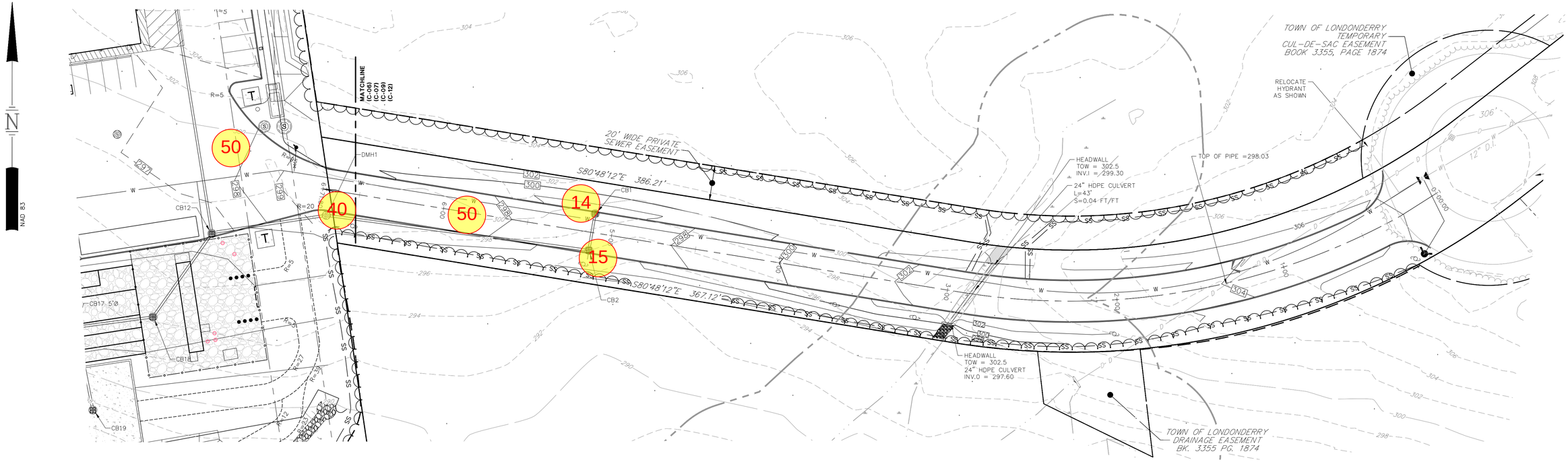

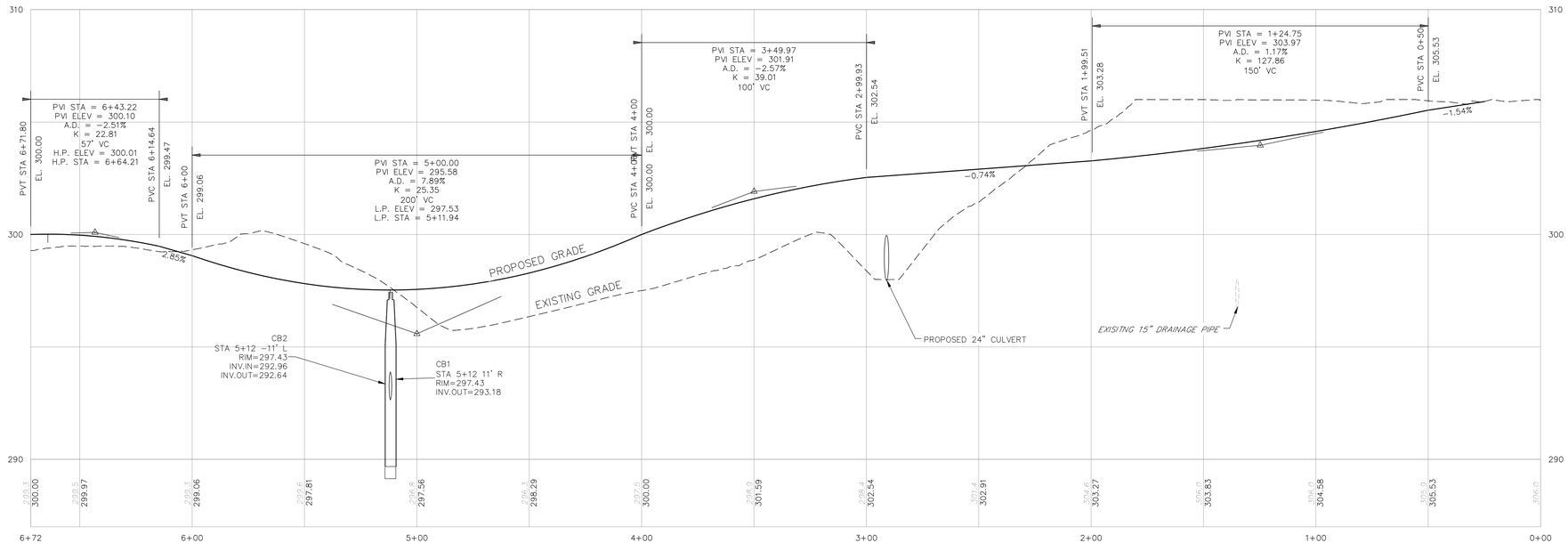

PROPOSED DRIVEWAY

HORIZONTAL SCALE 1"=30'
30 15 0 30
VERTICAL SCALE 1"=3'
3 0 3

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39

DRIVEWAY PLAN & PROFILE

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

162 LITCHFIELD ROAD, LONDONDERRY, NH 03053

OWNED BY

CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
182 LITCHFIELD ROAD, LONDONDERRY, NH 03053

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
9/12/2025

REV	DATE	DESCRIPTION	DR	CK
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	18252-02	DR		FB		C-13
		CK		CADFILE	18252-02 SITE PLAN	

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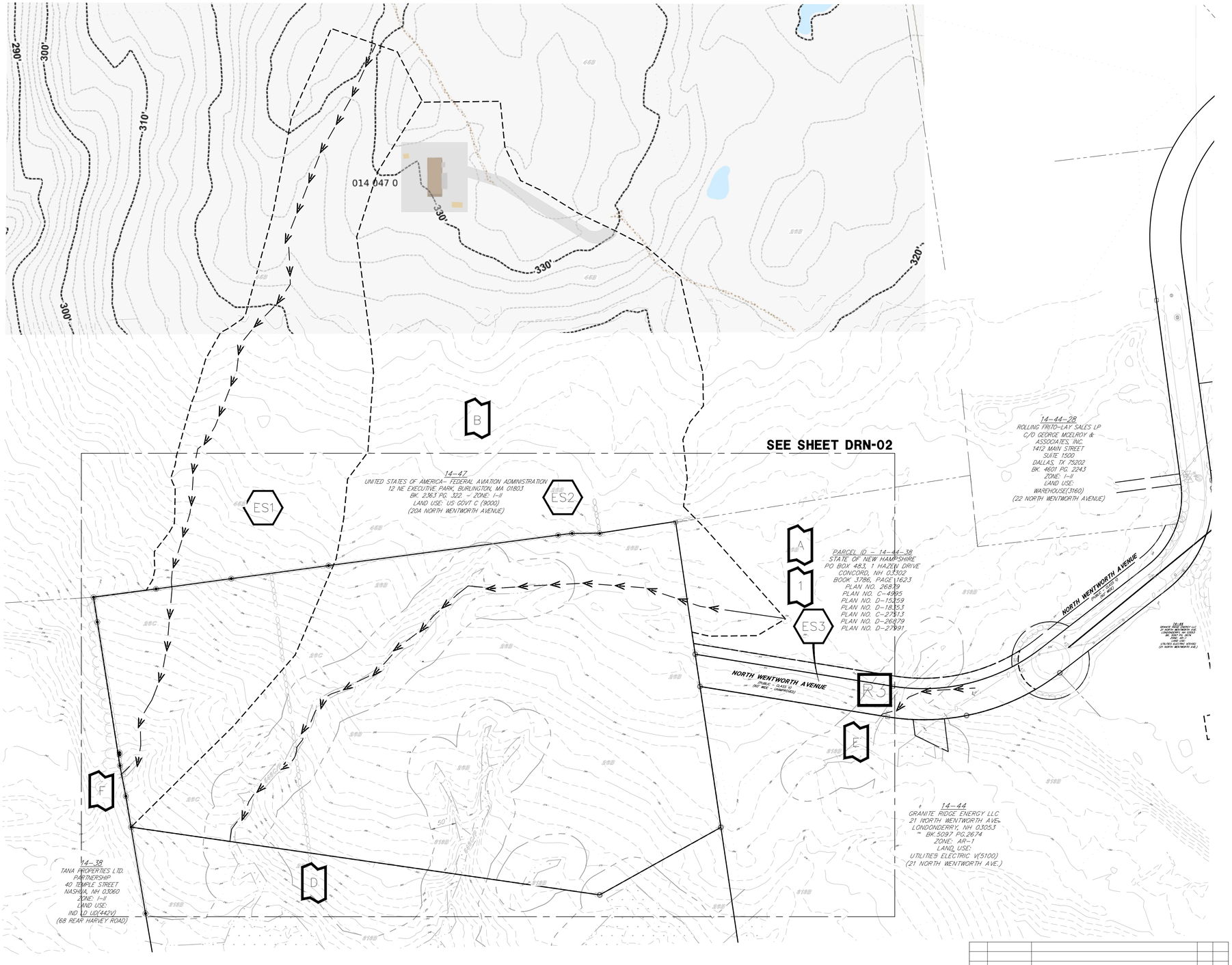
PART 9



LEGEND

- PROPERTY LINE
- LIMITS OF DRAINAGE SUBCATCHMENT
- SOIL GROUP BREAKLINE
- FLOW PATH (Tc LINE)
- REACH
- E — POINT OF INTEREST
- ES-1 — SUBCATCHMENT AREA
- EP-1 — POND, CULVERT, OR CATCH BASIN
- ER-1 — REACH

NOTES

1. THE SITE SPECIFIC SOIL MAP WAS PREPARED ON JANUARY 3, 2025 BY BRUCE A. GILDAY, CSS #012, OF BAG LAND CONSULTANTS.

NRCS SOILS LEGEND

SYMBOL	MAP UNIT	SLOPE	HSG
26B	WINDSOR LOAMY SAND	3-8%	A
26C	WINDSOR LOAMY SAND	8-15%	A
26E	WINDSOR LOAMY SAND	15-60%	A
45B	MONTAUK FINE SANDY LOAM	0-8%	C
313B	DEERFIELD LOMAY FINE SAND	3-8%	A

SITE SPECIFIC SOILS LEGEND

SYMBOL	MAP UNIT	DRAINAGE	HSG
26	WINDSOR	WELL	A
313	DEERFIELD	MODERATELY WELL	B
546AP	WALPOLE	VERY POORLY	C

SLOPE DESIGNATION	PERCENT SLOPE
B	0 TO 8%
C	8 TO 15%
D	15 TO 25%
E	>25%

Node Name	Area (sq. ft.)
ES1	401005
ES2	1011351
ES3	51226
Total	**1463582**

Bruce A. Gilday
Bruce A. Gilday
Certified Soil Scientist

STATE OF NEW HAMPSHIRE
BRUCE A. GILDAY
No. 012
CERTIFIED SOIL SCIENTIST

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
10/16/25

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

PRE DRAINAGE AREA MAP (OVERALL)

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

1" = 100' **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE 18252-02 | DR | FB | CADFILE: 18252_02 DRAINAGE | CK | DA-1

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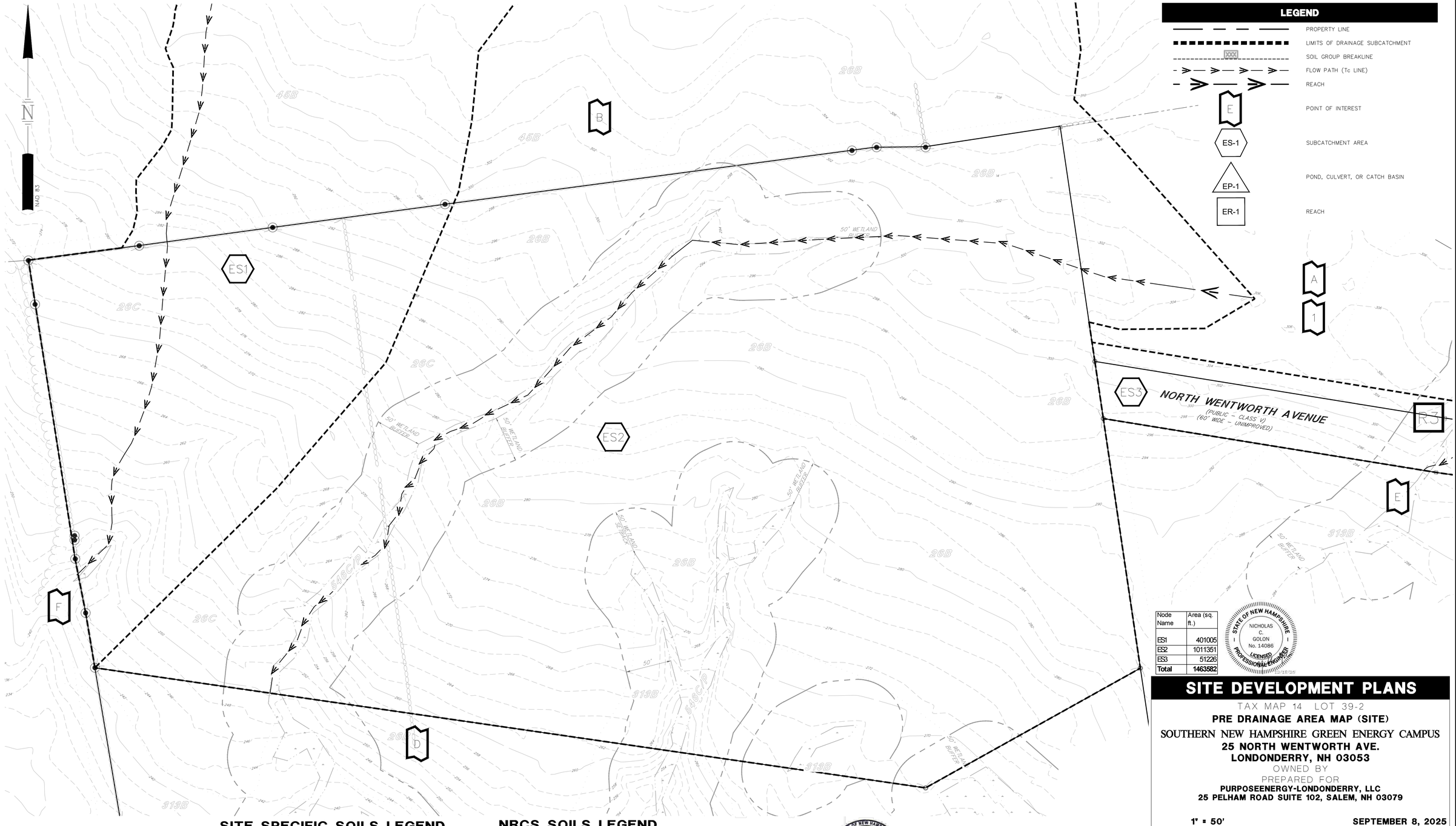

Node Name	Area (sq. ft.)
ES1	401005
ES2	1011351
ES3	51226
Total	1463582

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/18/25

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

PRE DRAINAGE AREA MAP (SITE)

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.

LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC

25 PELHAM ROAD SUITE 102, SALEM, NH 03079

1" = 50' **SEPTEMBER 8, 2025**

SITE SPECIFIC SOILS LEGEND

SYMBOL	MAP UNIT	DRAINAGE	HSG
26	WINDSOR	WELL	A
313	DEERFIELD	MODERATELY WELL	B
546/P	WALPOLE	VERY POORLY	C

SLOPE DESIGNATION	PERCENT SLOPE
B	0 TO 8%
C	8 TO 15%
D	15 TO 25%
E	>25%

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26E	WINDSOR LOAMY SAND	15-60%	A
45B	MONTAUK FINE SANDY LOAM	0-8%	C
313B	DEEREFIELD LOMAY FINE SAND	3-8%	A

Bruce A. Gilday
Certified Soil Scientist

STATE OF NEW HAMPSHIRE
BRUCE A. GILDAY
No. 012
CERTIFIED SOIL SCIENTIST

HORIZONTAL SCALE 1"=50'
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290'
300'
310'
320'
330'
014 047 0
B
SEE SHEET DRN-04
1 STORY
PROCESS BUILDING (14,400 SF)
W/ FUTURE EXPANSION BUILDING
(8,250 SF.)
14-47
UNITED STATES OF AMERICA- FEDERAL AVIATION ADMINISTRATION
12 NE EXECUTIVE PARK, BURLINGTON, MA 01803
BK. 2363 PG. 222 - ZONE: I-II
LAND USE: US GOVT C (9000)
(20A NORTH WENTWORTH AVENUE)
14-44-28
ROLLING FRITO-LAY SALES LP
C/O GEORGE MCELROY &
ASSOCIATES, INC.
1412 MAIN STREET
SUITE 1500
DALLAS, TX 75202
BK. 4601 PG. 2243
ZONE: I-II
LAND USE:
WAREHOUSE(3160)
(22 NORTH WENTWORTH AVENUE)
A
1
PARCEL ID - 14-44-38
STATE OF NEW HAMPSHIRE
C/O BOX 483, 1 HAZEN DRIVE
CONCORD, NH 03302
BOOK 3786, PAGE 1623
PLAN NO. 26879
PLAN NO. C-4995
PLAN NO. D-15259
PLAN NO. D-18353
PLAN NO. C-27913
PLAN NO. D-26879
PLAN NO. D-27991
NORTH WENTWORTH AVENUE
E
F
D
14-38
TANA PROPERTIES LTD.
PARTNERSHIP
40 TEMPLE STREET
NASHUA, NH 03060
ZONE: I-II
LAND USE:
IND LD LIX(442V)
(68 REAR HARVEY ROAD)
14-44
GRANITE RIDGE ENERGY LLC
21 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
BK. 5097 PG.2674
ZONE: AR-1
LAND USE:
UTILITIES ELECTRIC V(5100)
(21 NORTH WENTWORTH AVE.)
PS1
PS2
PS3
PS4
PS5
PS6
PS7
PS8
PS9
PS10
PS11
PS12
PS13
PS14
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PST6
PST7
PST8
PST9
PST10
PST11
PST12
PST13
PSP1
PSP2
PSFB1
PSFB2
PSM1
CB1
CB2
CB3
CB4
CB5
CB6
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CB11
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CB32
CB33
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CB35
CB36
CB37
CB38
CB39
CB40



Node Name	Area (sq. ft.)	Node Name	Area (sq. ft.)
PS2	11,390	PS32	8,199
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PS19	36,281	PST8	11,680
PS20	54,682	PST9	9,411
PS21	167,886	PST10	11,547
PS22	2,752	PST11	14,447
PS31	8,080	PST12	15,957
		PST13	11,389
		total	1,463,582

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

POST DRAINAGE AREA MAP (SITE)

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1" = 50' **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/18/25

SITE SPECIFIC SOILS LEGEND

SYMBOL	MAP UNIT	DRAINAGE	HSG
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313	DEERFIELD	MODERATELY WELL	B
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45B	MONTAUK FINE SANDY LOAM	0–8%	C
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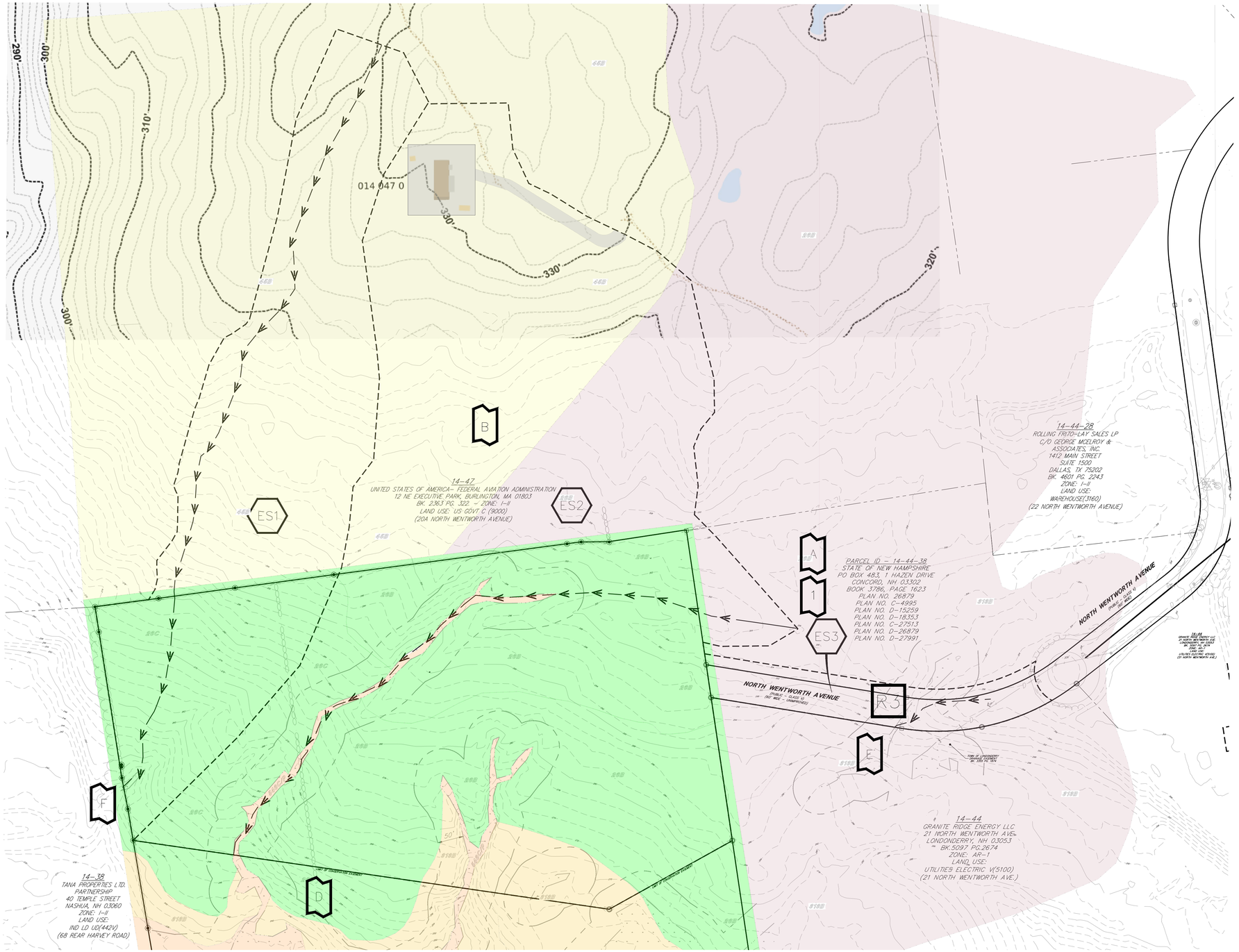

LEGEND

- PROPERTY LINE
- LIMITS OF DRAINAGE SUBCATCHMENT
- SOIL GROUP BREAKLINE
- FLOW PATH (Tc LINE)
- REACH
- E — POINT OF INTEREST
- ES-1 — SUBCATCHMENT AREA
- EP-1 — POND, CULVERT, OR CATCH BASIN
- ER-1 — REACH

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SYMBOL	MAP UNIT	SLOPE	HSG	COLOR
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1" = 100' **SEPTEMBER 8, 2025**

HORIZONTAL SCALE 1"=100'
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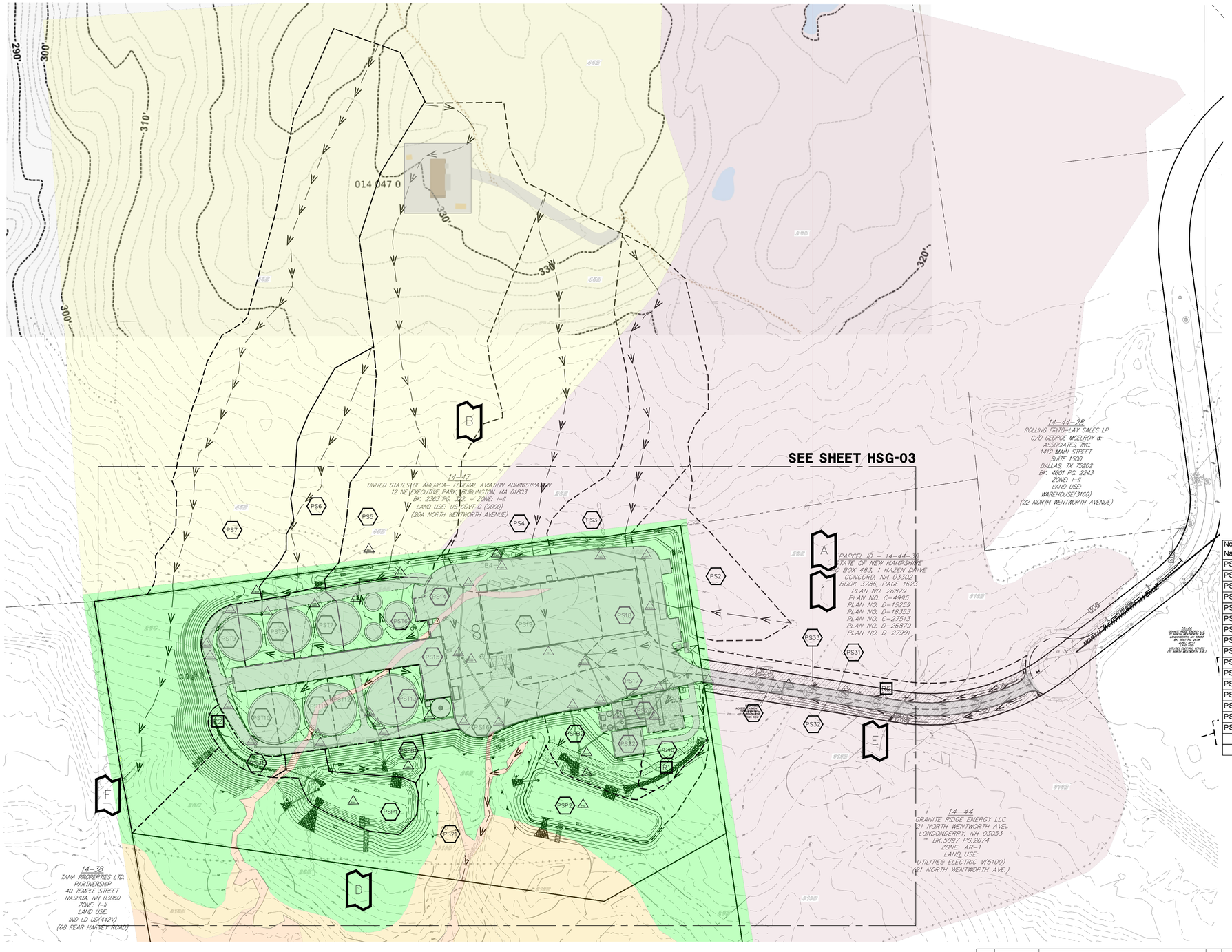

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DA-6

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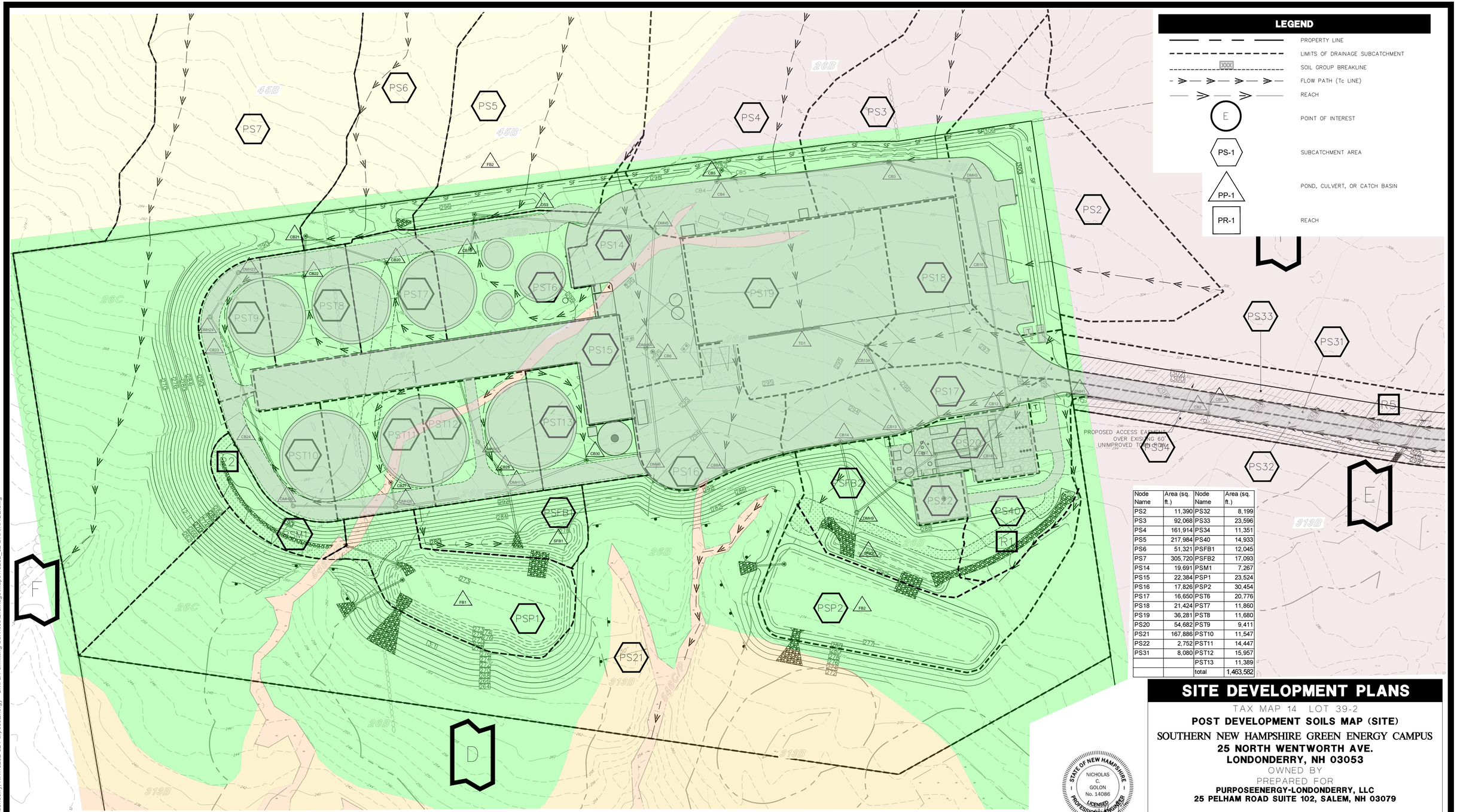

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		CK		CADFILE	18252_02 DRAINAGE	

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LETTER OF TRANSMITTAL

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Land Surveyors
Landscape Architects

48 Constitution Drive
Bedford, NH 03110
Phone: (603) 472-4488
Fax: (603) 472-9747

☐ Standard Mail ☒ Electronic ☒ Hand Carry ☐ To Be Picked Up

DATE	12/23/2025	JOB NO.	18252-00
ATTENTION	Kellie Caron, Asst. Town Manager, Dir. Eco. Dev.		
RE:	Southern New Hampshire Green Energy Campus		
	PurposeEnergy – Londonderry, LLC – Formal Submittal		
	162 Litchfield Road, Londonderry, NH 03053		
	Tax Map 14 Lot 39		

TO: Town of Londonderry
Planning Office
268B Mammoth Road
Londonderry, NH 03053

PHONE: (603) 432-1100 x193

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☒ Prints ☒ Plans ☐ Samples ☐ Specifications ☐ Copy of letter ☐ Change order

COPIES	DATE	NO.	DESCRIPTION
2	12/23/2025	-	Response Letters (DRC, 3rd Party Subdivision Review & Site Plan Review)
2	12/18/2025	-	Town Site Plan Application Form + Checklist
2	12/22/2025	-	Town Subdivision Application From + Checklist
2	12/22/2025	-	Town CUP Application & Narrative (Conservation Overlay District Buffer Reduction)
2	12/23/2025	-	Waiver Request(s) Site Plan & Subdivision
2	-	-	Deeds of Reference
4	12/23/2025	-	Completed Abutters List & Mailing Labels
2	-	-	Letter of Authorization
2	-	-	Utility Clearance Letters (Electric, Telecomm, & Gas) & MWW Memorandum
2	12/22/2025	-	FAA submittal confirmation (email)
2	12/17/2025	-	SWPPP Binder • EPA eNOI • SWPPP Plan • Site Plans (11" x 17") – 1 copy
4	12/22/2025	-	Revised Site Plans
4	12/22/2025	-	Revised Subdivision Plans
2	12/18/2025	-	Revised Stormwater Management Report
-	-	-	Electronic PDF Submittal (via email to kcaron@londonderrynh.gov)

THESE ARE TRANSMITTED as checked below:

☒ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐
☐ FOR BIDS DUE _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS:

Please see attached materials submitted for Formal Review. Should there be questions or comments please contact Nick Golon or Jonathan Devine at (603) 472-4488.

COPY: _____ SIGNED: Nicholas Golon, PE

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Town of Londonderry
Planning & Economic Development Department
268B Mammoth Road
Londonderry, NH 03053

December 23, 2025

Re: Southern New Hampshire Green Energy Campus – Subdivision, Site Plan Review and CUP – 162 Litchfield Road, Londonderry, NH – Map 14 Lot 39

Dear Kristan,

Please accept this response to the Town's Design Review Comments dated November 26, 2025 and relating to the proposed Southern New Hampshire Green Energy Campus at 162 Litchfield Road in Londonderry. Below, please see the Town's comments in regular font and our responses in **bold**:

Subdivision

1. Sheet 1-Cover Sheet: Add zoning designations of existing parcel at 162 Litchfield Road (AR-1) to Note 4 Current Zoning as well as existing use Undeveloped/Residential (Domicile), Clarify the proposed use to include organic waste processing and existing domicile (to remain)

   Suggested Notes or similar:
   4. Current Zoning is: Gateway Business (GB) for proposed lot 14-39-1 and Agricultural Residential (AR-1) for existing 162 Litchfield Road
   Existing use: Undeveloped for proposed lot, Developed Residential lot for existing 162 Litchfield Road
   Proposed use: Organic Waste Processing Facility for proposed lot and existing Developed Residential lot to remain unchanged.
   The notes have been revised consistent with the above comment, please see the revised note 4 on the cover and note 4 on sheet Sub-1 of 8.

2. Sheet 3-Sub-2 and Sheet 9-SUB 8: Indicate the location of the existing septic system on 162 Litchfield Road, overhead wire locations to the existing house and a drainage easement deed reference for the swale at the western side of existing lot 162 Litchfield Road.

   Please see the call out and depiction of the existing effluent disposal area (EDA) on the revised plans.

3. Sheet 4-SUB-3 and Sheet 7-SUB-6: Add setback lines to Gateway Business and Industrial-II boundary.

   Building setbacks have been added on sheets SUB-3 and SUB-6 per the above comment.

4. Sheet 5-SUB-4: Remove the Planning Board signature block.

   The Planning Board signature block has been removed from this sheet.

Site Plan

1. The minimum parking spaces required are 64 per SPR Section 3.09.d/Table B. The applicant proposes 23 parking spaces. A request for waiver has been provided to address this reduction request. The waiver letter for Section 3.09.d/Table B references a different incorrect section (Section 3.07.g.2) at the end of the letter. Please revise the waiver letter to the correct citation.

   A revised waiver letter has been included in this submission with the correct citation.

2. Lighting Plan: Add plan note regarding full cutoff fixtures per Checklist item VIII.1.

   Such a note has been added to the lighting plan, please see Note #2.

3. Landscape Plan: Add notes per Checklist items VII.1.k and VII.1.l regarding no plant conflicts with snow storage, light fixtures, utilities or sight distance.

   Such a note has been added to the landscaping plan, please see Note #11.

4. Building Renderings/Architectural Design:

   a. Add title block location or complete title block per SPR Section 4.02/Checklist item III.2 as well as a revision block per SPR Section 4.03.

      Please find the revised rendering with an updated title block the meets the above criteria.

   b. Details regarding signage were not included in this application per SPR Section 3.12.g and Checklist item IX.2.

      A location for the wayfinding sign has been provided at the beginning of the site proposed site driveway adjacent to North Wentworth Avenue. The design of the signage will be addressed by a turnkey vendor at a later date and is indicated as such.

Waivers Requested Include:

1. SPR Section 3.19.d to allow reduction in parking space requirement. The waiver letter for Section 3.09.d/Table B references a different incorrect section (Section 3.07.g.2) at the end of the letter. Please revise the waiver letter to the correct citation.

   The waiver letter has been corrected per the above comment.

2. SPR Section 3.10.g.1 to allow elimination of the internal parking landscape area requirement.

Please Note:
Please contact the appropriate Department or Commission individually when addressing comments that require a response. When revisions are submitted to the Planning Department, please include a response letter addressing how the DRC and engineering comments have been addressed in the revised plans.

Police Department Comments (9/22/25)

Areas of Concern:
- Access into the site
- Other Issues (explain below)

Comments:
Londonderry Police Department would be looking for collaboration in the appropriate response planning and training for officers accessing the site during an emergency. Given the high potential for environmental risk factors that may require expertise knowledge, officers should be aware of the Do's and Don't's within this environment.
The applicant has been in contact with the Londonderry PD and will organize a meeting with the PD to review training strategies for the site once all industrial process element are finalized and locations of items of interest are confirmed. A note formalizing such has been included on the Overall Site Layout Plan.

SEWER DESIGN COMMENTS

These comments have been addressed under separate cover to Londonderry Sewer Division addressed to Bob Kerry.

Assessing Department Comments (9/22/25)

None of the subject property is in Current Use.

Areas of Concern:
- Street Numbering

The Existing Map and Lot/Steet Address is 14-39/162 Litchfield Rd.
The Proposed Map and Lot/Street Address is 14-39-1, 25? North Wentworth Ave.

Comments:
1. Address will be on North Wentworth Ave., #25, subject to 911/Address Committee approval.

   The plans have been updated to reflect this comment. There is already an exisitng lot 14-39-1. We have noted the new lot to be 14-39-2.

2. How many board feet of logs, cords of wood, and tons of whole tree chips will be cut?

   These values will be provided by the project construction manager or their delegate.

3. Estimate cubic yards of earth to be excavated. If greater than 1000 cu yds/tax year, an excavation intent needs to be filed.

   These values will be provided by the project construction manager or their delegate.

Fire Department Comments (9/22/25)

- Per Londonderry Fire Regulation – There shall be a fire hydrant located within 100 feet of the fire department connection (FDC) on both buildings.
  A fire hydrant has been provided within 100' of the FDC at each building.

- Per Londonderry Fire Regulations – General purpose hydrants shall be spaces every 500 feet. **Additional hydrants have been added; one located along the access drive and the other located in the outer edge of the maintenance drive to meet the spacing requirements requested.**
- Per 2021 NFPA 1 Fire Code – The gravel drive shall be 20 feet wide and shall be designed and maintained to support the imposed loads of fire apparatus and shall be provided with an all-weather driving surface.
  The all-weather gravel drive has been extended to 20' wide per the above comment.

Tax Collector Comments (9/22/25)

- Taxes are Paid to Date.

  Comment noted.

Sincerely,
TFMoran, Inc.



Jonathan Devine, EIT

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Since 1968

NEW HAMPSHIRE 200

Ms. Kellie Caron & Ms. Kristan Farr
Town of Londonderry
Planning & Economic Development Department
268B Mammoth Road
Londonderry, NH 03053

December 23, 2025

Re: Proposed Subdivision
Map 14 Lot 39
162 Litchfield Road, Londonderry, NH

Dear Kristan,

Please accept this response to Stantec's Design Review Comments dated November 21, 2025 as relating to the proposed Subdivision of 162 Litchfield Road in Londonderry. Below, please see Stantec's comments in regular font and our responses in **bold**:

General Comments:

1. The submission information indicates the proposed lot to be created at the end of North Wentworth Avenue right of way but the lot does not have frontage on a class V or better roadway as required per section 4.5.2.B of the Zoning Ordinance. As presented, the lot does not have any frontage on a class V or better roadway since North Wentworth Drive is not constructed to the property line of the subject parcel. We note the class V portion of North Wentworth Drive is located more than 650 feet from the subject property and would require a wetlands permit to construct the public class v roadway to the property line. However, the subdivision application submission is absent of any off-site improvement work related to the extension of North Wentworth Drive (class V roadway) to the property line. It is our understanding that the proposed public roadway construction to extend North Wentworth Drive to the subject parcel shall meet the approval of the Department of Engineering and Environmental Services. We recommend the Applicant update the subdivision application and design to create and provide frontage located on a class v or better roadway for the proposed lot in compliance with the regulations. We recommend the Applicant arrange a meeting with Department of Engineering and Environmental Services and Planning Department to discuss the proposed off-site improvements design for the proposed substandard lot frontage.

   A meeting was held with the Department of Engineering and Environmental Services and Planning Department on December 17th with a follow-up meeting held with the Town Manager and Department of Public Works on December 22nd. In the follow-up meeting a conveyance of rights from the Town to the applicant was determined most appropriate to provide appropriate access to the applicant while also alleviating the need for the Town to maintain a right-of-way that does not provide a benefit to public. The form of the conveyance is to be determined and will be coordinated with the Town Manager and Town Council to the Town's satisfaction. The plans have been noted accordingly.

2. The submission information indicates the proposed lot to be created at the end of North Wentworth Avenue right of way which does not have the minimum linear frontage of 150 feet on a class V or better roadway as required per section 4.5.2.B of the Zoning Ordinance. As presented, the lot frontage

for the proposed new lot is indicated to be only the width of existing right-of-way along the property line totaling to 62.96 feet and less than one half of the minimum required by the Ordinance. The Applicant has submitted a conditional use permit document for the minimum frontage requirement. We recommend the Applicant update the design to provide minimum proper frontage located on a class v or better roadway in compliance with the regulations. We recommend the Applicant arrange a meeting with Planning Department and Zoning Officer to discuss the proposed conditional use for the proposed substandard lot frontage.

As noted in response to comment (1) above, meetings were held with the Town to review the access considerations for the subject lot and determine the most appropriate means of access. The project's location in the GB District allows the Planning Board to adjust any dimensional requirement of the district, including frontage, for projects that are truly supportive of the goals of the GB district. In tandem with our response to comment (1) the frontage requirements have been met if authorized by the Planning Board.

3. The Applicant has not provided a stormwater analysis/report per section 3.08 of the Subdivision Regulations and item X.3 of the Subdivision Application & Checklist for the off-site improvements necessary for the extension of North Wentworth Drive to the subject parcel and to demonstrate the proposed improvements comply with section 3.08.A of no increase in runoff. We recommend the Applicant indicate and label the proposed development extension of North Wentworth Drive in the project plan set and prepare and provide a stormwater analysis/report that addresses all of the proposed off-site development which demonstrates compliance with the Subdivision Regulations in accordance with section 3.08 and also demonstrates compliance with the Town's Stormwater Ordinance and Regulations under this application.

   A waiver of the above criteria has been requested based on the rational that the required elements have been provided with the site plan application, and providing duplicate information would be redundant and unnecessary. For appropriate coordination, the site driveway plan and profile and sight distance plan and profile have been included in the subdivision plans.

4. The Applicant's checklist does not address the need for a NHDES wetlands permit for off-site improvements for the extension of North Wentworth Drive to the subject parcel. In addition, the new lot at North Wentworth Drive will require a Town of Londonderry Sewer Permit. The Applicant has not indicated the permits have been submitted on the application form. The Applicant should submit for and obtain all project permits and indicate the permit approval numbers on the cover sheet and provide copies of all permits for the Planning Department files per sections 4.14 and 4.18.E of the Subdivision Regulations and Item XI of the Subdivision Application & Checklist.

   The wetlands dredge and fill permit, the Town Subdivision permit and Town Conditional Use permit (frontage) have been listed on the cover sheet. All other permits have been added to the Site Plans as these approvals are associated with the development of the site vs. its subdivision.

5. The Applicant has not provided proper utility clearance letters for communications (telephone/cable TV) electric, or water service for the new lot under this application per sections 3.05, and 3.06, and 4.18.B of the Subdivision Regulation and items X.7.a, b, c, and e, of the checklist. We recommend the Applicant provide utility clearance letters in accordance with the regulations.

   The utility clearance letters provided with the site plan application have also been provided with this resubmittal for the subdivision.

6. We recommend the Applicant obtain and address the DRC comments as applicable.

   We have addressed the DRC comments under separate transmittals with the respective departments.

7. The Applicant has not provided a driveway sight distance plan and profile for the existing driveway or proposed driveway for the new lot in accordance with Exhibit D2 of the Subdivision Regulations. The Applicant shall update the plan set to include a sight distance plan for the existing and proposed driveways with the associated clearing and grading to demonstrate compliance per Exhibit D-2 of the regulations as typically required by the Town.

The Site Distance Plan and Profile (sheet SD-1) from the site plans has been included in the subdivision plan set for coordination.

8. The Applicant has not indicated or provided proposed electric, telephone, cable TV or gas utilities to serve proposed new lot at the end of North Wentworth Drive per sections 3.05 and 4.16.B of the Subdivision Regulation and item VII.2 of the checklist. We recommend the Applicant indicate and label all utilities to serve the proposed new lot on the plans in accordance with the regulations. Please include construction details for these utilities in the plan set per section 4.16.D.13 of the regulations and item VIII.13 of the checklist.

   A waiver of the above criteria has been requested based on the rational that the required elements have been provided with the site plan application, and providing duplicate information would be redundant and unnecessary.

9. The existing conditions plan sheet SUB-1 indicates the existing sewer manhole is located more than 1,000 feet from the new lot at the end of North Wentworth Avenue with a sewer easement located along abutting lot 14-44-38 to serve the site, but the subdivision application submission does not include any information (design or details) relative to the proposed sewer service especially the impacts at the existing cul-de-sac to construct the sewer service per section 3.07.A and 4.16.B 1 and 2 of the regulations and items VII.2.a and b and VIII.14-18 of the checklist. We recommend the Applicant arrange a meeting with the Department of Environmental Services and Sewer Division to discuss the sewer service under this application. Please update as acceptable to the Department of Environmental Services and Sewer Division.

   A waiver of the above criteria has been requested based on the rational that the required elements have been provided with the site plan application, and providing duplicate information would be redundant and unnecessary.

   The right to construct the sewer service through the existing cul-de-sac has already been conveyed by the underlying landowner at the time of the easement's creation, see sheet D-26879 and book 3355 page 1877 as recorded in the Rockingham County Registry of Deeds. Appropriate coordination by the applicant is being conducted with Sewer Division to assure the adequacy of sewer services.

   Through consultation with the Town Manager and Office of the DPW, a private easement will be requested for the limited private utility to be located within North Wentworth Ave where the sewer forcemain crosses into the Stonyfield lot.

10. The existing conditions plan sheet SUB-8 indicates a 15" stormwater pipe outlet exists from the stormwater system of Litchfield Road to a swale near the westerly property line, but the plans do not indicate an existing drainage easement in this location. It is our understanding that the Town typically requests easements or flowage rights when existing roadway runoff is currently directed on site for maintenance. Please review the existing conditions with the Department of Engineering and Environmental Services and update as acceptable to the Department.

    Correct, no drainage easement exists in the above noted location, although we note there is no regulation requiring the landowner to convey such an easement. We have spoken with the underlying landowner, and Mr. Codner will review the request directly with the Department of Engineering and Environmental Services.

11. Portions of the indicated right of way along Litchfield Road are less than 25 feet from the centerline of the existing roadway pavement. We understand that the Department of Engineering & Environmental Services typically requests that a minimum of 25 feet from the existing roadway centerline be provided along existing roads for future widening. We recommend an easement be provided on Litchfield Road as acceptable to the Department.

    Correct, a minimum of 25 feet is not provided from the existing roadway centerline (variable width), although we note there is no regulation requiring the landowner to convey such an easement. We have spoken with the underlying landowner, and Mr. Codner will review the request directly with the Department of Engineering and Environmental Services.

12. The Applicant did not provide copies of any proposed easement deeds, protective covenants, or other legal documents as required by section 4.18. C & D of the regulations and item II.6 of the Checklist. We recommend the Applicant provide draft copies for review by the Town in the next project submission.

    Once the final mechanism for access to the site is determined with the Town Manager and Office of the DPW, copies of any proposed easement deeds or legal documents will be provided for the Town's review at that time.

13. The submission did not include lot size calculations per Section 3.10 of the Subdivision Regulations and Item X.1 of the checklist. We recommend the Applicant provide calculations in accordance with eh regulations.

    A waiver request has been provided to address the above as municipal sewer service is available to both the proposed lot (15.3+/- acres) and the existing lot (49.5+/- acres). Due to the size of the lots and the availability of municipal sewer, lot sizing calculations would provide no public value.

14. We recommend the Applicant address the following on the **Subdivision Plan and Existing Conditions (Topographic) Plan:**

    a. Please update the contact for the Fire Department on the cover sheet.

       Phil LeBlanc, acting fire chief, has been added to the cover.

    b. The plans do not provide the proper closure certification for the indicated survey per section 4.12.A of the regulations and item V.1 of the checklist. Please update the plans accordingly.

       A revised certification note has been added to the plan indicating the proper closure.

    c. A proposed driveway to serve the new lot was absent from the submission per sections 3.09.B and 3.09.F of the regulations and item VII.3.a.11 of the checklist. Please update the plans accordingly.

       Driveway Plan and Profile (Sheet C-13) has been added to the subdivision plan from the site plans for coordination.

    d. Please remove the Planning Board signature block from the topographic plans per section 4.03 of the regulations.

       The signature block has been removed from this plan.

    e. Please provide proper monuments along the property boundary that are missing per sections 3.02.A & B and 4.12.C.4.ii of the regulations and item V.4.b of the checklist. Please update all sheets accordingly.

       Monuments "to be set" have been indicated where missing consistent with the regulations.

    f. Please indicate the proposed monuments for the limits of the CO District and the associated buffers on the plans per sections 3.02.C and 4.12.c.14 of the regulations and item V.14 of the checklist.

       A partial waiver request has been submitted to sign only the proposed lot. The remainer lot is already under conservation and further signage would provide no public benefit. This is consistent with what was presented to and approved by the conservation commission.

    g. The plan notes the new lot number as 39-1, but there is an existing lot 39-1 that abuts the project. Please confirm the proposed lot number designations and addresses with the Assessor per section 4.12.C.10 of the regulations and item V.10 of the checklist. Please update all plans accordingly.

       The plans have been updated to reflect lot 14-39-2 per the assessor.

    h. Please update the notes on the subdivision plan to properly address and include the following notes per section 4.11 of the regulations and item IV of the checklist;

       1. Existing and proposed use of the entire existing parcel and proposed parcels;
       2. Sanitary sewer source of the entire existing parcel and proposed parcels;

3. Water supply source of the entire existing parcel and proposed parcels;
4. List of required permits;
5. Notes identifying # bedrooms in the existing dwelling;

The above notes have been added to SUB 1-8 Notes 13-17. Required permits are addressed on the cover sheet.

i. Please indicate and label the existing septic system serving the dwelling on the plans per section 4.12.c.19 of the regulations and item V.19.a of the checklist.

The existing septic system serving the dwelling on the plans has been added, see area labeled "E.D.A" next to the existing residential structure.

j. Please indicate the existing overhead wires serving the existing dwelling on the plans per section 4.12.c.22 of the regulations and item V.22 of the checklist.

Overhead electrical service has been shown on the plans for the existing dwelling.

k. Please clarify the separate Planning Board and owner signature blocks on sheet 3.

Only the Town approved planning board signature block has been provided.

Summary:

We recommend the Applicant arrange a meeting with the Department of Engineering & Environmental Services and Planning Department before addressing the issues noted above. After the meeting, we recommend the Applicant address the comments and issues noted above and resubmit revised drawings and supporting information. We recommend the Applicant provide a summary response letter with the revised drawings and supporting information addressing each comment noted above as required by the regulations. We understand that the project has not been scheduled for a Planning Board meeting at this time.

A meeting was held with the Department of Engineering and Environmental Services and Planning Department on December 17th with a follow-up meeting held with the Town Manager and Department of Public Works on December 22nd.

Sincerely,

TFMoran, Inc.



Jonathan Devine, EIT

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Town of Londonderry
Planning & Economic Development Department
268B Mammoth Road
Londonderry, NH 03053

December 23, 2025

Re: Southern New Hampshire Green Energy Campus – Site Plan Review
25 North Wentworth Avenue, Londonderry, NH
Map 14 Lot 39-2

Dear Kristan,

Please accept this response to the Stantec's Design Review Comments dated November 21, 2025 and relating to the proposed Southern New Hampshire Green Energy Campus to be located at the end of North Wentworrh at 162 Litchfield Road in Londonderry. Below, please see the Stantec's comments in regular font and our responses in **bold**:

General Comments

1. The Applicant indicates the NHDES Sewer Discharge Permit, NHDES Alteration of Terrain Permit, NHDES Wetlands Permit, NHDES Solid Waste Permits, Army Corps of Engineers Permit, Londonderry Sewer Discharge Permit, and Town of Londonderry Stormwater Permit are to be submitted on the checklist. With the project in close proximity to the Manchester Airport, FAA permits are applicable, but appear absent from the submission. The Applicant should submit for and obtain all project permits, indicate the permit approval numbers in the permit list on the cover sheet and provide copies of all permits for the Planning Department files per sections 4.13 and 4.18.e of the Site Plan Regulations and Item XII of the Site Plan Application & Checklist.

   Copies of approvals will be provided to the Planning Department and denoted on the Cover Sheet, C-01 upon receipt. Permits with the FAA have been filed by the applicant and are included in this submittal.

2. The Applicant has not provided proper utility clearance letters for communications (telephone/cable TV) electric, or water service for the new lot under this application per sections 3.04, and 3.05, and 4.18.B of the Subdivision Regulation and items X.7.a, b, c, and e, of the checklist. We recommend the Applicant provide utility clearance letters in accordance with the regulations.

   Utility clearance letters from MWW, Eversource, Liberty and Xfinity have been included as part of this submittal.

3. We recommend the Applicant obtain and address the DRC comments as applicable.

   DRC comments have been addressed under separate transmittal.

4. It is our understanding that the requirements of the Building Rendering, Landscape and Lighting plans will be reviewed by the Planning Department under this application. We recommend the Applicant

arrange a meeting with the Planning Department to confirm the landscape plan, lighting plan, and building rendering requirements and discuss site signage for the project.

This is our understanding as well and a meeting to review these elements took place on December 17, 2025.

5. The proposed project indicates impacts to the Conservation Overlay District (COD) will occur, and the project application submission includes a Conditional Use Permit (CUP) application. We recommend the Applicant obtain recommendations for the CUP from the Conservation Commission.

   The Conservation Commission has reviewed and unanimously recommended approval of this project at their June, 2025 meeting.

6. The Applicant has submitted a written waiver request for the internal parking landscaping area requirement per section 3.10.g of the Site Plan Regulations. The Applicant should discuss the proposed waiver request with the Planning Department under this application. Please update the design as necessary meeting the approval of the Town.

   We have reviewed the request, and that it follows appropriate industry standards, we believe it to be appropriate for this application.

7. The existing conditions plan indicates the existing sewer manhole is located more than 1,000 feet from the new lot at the end of North Wentworth Avenue with a sewer easement located along abutting lot 14-44-38 to serve the site. We note the submission did not include sewer calculations for the proposed flows as required by the Sewer Division. It is our understanding that the requirements of the Londonderry Sewer permit will be reviewed further by the Londonderry Sewer Division.

   Sewer flow calculations are being provided to the Londonderry Sewer Division in parallel with this submittal.

8. The submitted building renderings do not provide a proper title block location or complete title block information per section 4.02. of the regulations and item III.2 of the checklist. Please update the plans accordingly and include a revision block per section 4.03 of the regulations.

   The revised renderings provide a title block that adheres to the above regulations.

9. The submission information indicates the Applicant proposes to construct a private driveway within the Town's existing roadway right-of-way to the subject lot, but the proposed improvements do not appear to comply with section 3.09 of the Subdivision Regulations including the roadway width, proper cul-de-sac terminus, embankment slopes, underdrain, etc. to provide the necessary improvements for a class V or better roadway to serve the site as required per section 4.5.2.B of the Zoning Ordinance, section 3.09.A of the Subdivision Regulations and section 3.08.a of the Site Plan Regulations. We note the class V portion of North Wentworth Drive is located more than 650 feet from the subject property and requires a wetlands permit to construct the public class v roadway to the property line. It is our understanding that the proposed public roadway construction to extend North Wentworth Drive to the subject parcel shall meet the approval of the Department of Engineering and Environmental Services. We recommend the Applicant arrange a meeting with Department of Engineering and Environmental Services and Planning Department to discuss the proposed off-site improvements design under this application.

   A meeting was held with the Department of Engineering and Environmental Services and Planning Department on December 17th with a follow-up meeting held with the Town Manager and Department of Public Works on December 22nd. In the follow-up meeting a conveyance of rights from the Town to the applicant was determined most appropriate to provide appropriate access to the applicant while also alleviating the need for the Town to maintain a right-of-way

that does not provide a benefit to public. The form of the conveyance is to be determined and will be coordinated with the Town Manager and Town Council to the Town's satisfaction. The plans have been revised accordingly, noting the final form of conveyance is to be determined.

10. The submission information indicates the Applicant proposes to construct a separate and private sewer force main within the North Wentworth Avenue roadway that extends beyond the existing sewer manhole that will cross the roadway and extend to and within the Stonyfield Yogurt facility. It is our understanding private utilities are not allowed in the public roadways. In addition, there is no information in the application from Stonyfield Yogurt stating any agreement to work on their property or agreement to provide processing materials to the proposed facility as implied. Does this discharge from Stonyfield require a NHDES discharge permit and/ or Town of Londonderry Sewer Permit since it is noted as a waste product and is not discharged to a municipal sewer system when it leaves the site? It is our understanding that any work within the North Wentworth Avenue right-of-way shall meet the approval of the Department of Engineering and Environmental Services. In addition, it is our understanding that the separate wastewater design shall meet the approval of the Sewer Division. We recommend the Applicant arrange a meeting with Department of Engineering and Environmental Services and Sewer Division to discuss the proposed off-site improvements and interconnection of the proposed wastewater system under this application.

    Through consultation with the Town Manager and Office of the DPW, a private easement will be requested for the limited private utility to be located within North Wentworth Ave. Copies of the private agreement between the applicant and Stonyfield may be provided to the Town's satisfaction once formalized. Permitting of this offsite improvement is required, and the Sewer Division will address this in their review, noting the Sewer Division has already conveyed to the applicant that Stonyfield has their own existing sewer permit that can be modified to address the proposed work. The design of the process piping interconnecting the facilities is currently depicted on the TFM site plans for coordination purposes, but final plans will be provided by others consistent with the expectations of the Sewer Division and Department of Engineering and Environmental Services. We would request this work be addressed in a similar capacity to an offsite improvement, with plans to be provided to the Town for review and approval as condition subsequent to the extent necessary.

11. The Applicant has implied the project will create "biogas" as a result of the proposed industrial processing and the "biogas" will be injected into the local natural gas network, but the plans do not include any details or information relative to this process. This would appear to be a potentially hazardous/explosive process that is absent from the submission and appears to need critical review by the Fire Department and gas utility provider. In addition, it is unknown if the injection into the local gas network has been approved by the gas provider. Does such action require regulatory approval by the Public Utilities Commission? If the injection to the gas network is not allowed, what is to happen with the "biogas" that is produced?. We recommend the Applicant provide additional information relative to the proposed processes at the site and how this material will leave the site as implied including all agreements and any applicable regulatory approvals.

    These elements are expected to be finalized and reviewed during the building permit stage of the project in addition to being reviewed by the Authorities Having Jurisdiction over these elements; NHDES Hazardous Waste Bureau, Liberty Utilities, Town of Londonderry Fire Department, etc. The project Team is coordination appropriately with the above regulatory agencies/departments and will provide a thorough presentation to the Planning Board and Staff to address the processes involved to the Town's satisfaction. Approvals and necessary permits from governmental and municipal agencies are identified on the cover sheet in accordance with section 4.13 and final copies will be provided for the Town's records as required.

12. The project application does not address the separate subdivision that creates the subject lot that is not lot 39 and is not located at 162 Litchfield Road as stated on the plans and application. Please update the plans and application accordingly to properly represent the subject lot, subject lot number and address.

    The plans have been updated based on the feedback of the assessing office to identify the site at 25 North Wentworth Avenue, Tax Map 14, Lot 39-2.

13. The Applicant's design does not comply with or provide the minimum parking spaces of 64 spaces per section 3.09.d.9 and Table B of the Site Plan Regulations. The Applicant indicates 23 parking spaces are to be provided. We recommend the Applicant arrange a meeting with the Planning Department, Zoning Officer and Department of Engineering and Environmental Services relative to the required parking for the project. Please update the design in compliance with the regulations and as acceptable to the Town.

    A waiver to provide an alternate parking calculation meeting an appropriate industry standard (ITE parking generation) was submitted as noted on the plans. A meeting was held with the Department of Engineering and Environmental Services and Planning Department on December 17th.

14. The Applicant did not provide copies of any proposed easement deeds, protective covenants, agreements, or other legal documents as required by section 4.18. of the regulations and item II.5 of the Checklist. We recommend the Applicant provide copies for review by the Town in the next project submission.

    Through consultation with the Town Manager and Office of the DPW, a private easement will be requested for the limited private utility to be located within North Wentworth Ave where the sewer forcemain crosses into the Stonyfield lot. Conveyance of rights from the Town to the applicant will also be required to provide appropriate access to the applicant. The form of the conveyance is to be determined and will be coordinated with the Town Manager and Town Council to the Town's satisfaction. The plans have been noted accordingly.

15. We recommend the Applicant address the following on the **Cover Sheet and Notes:**

    a. Please revise Planning Board signature block on the cover sheet to comply with section 4.03 of the regulations. Please update the plan set accordingly.

       The new planning board signature block has replaced the prior one throughout the revised plans.

    b. Please update the Fire Department contact on the cover sheet.

       Phil Leblanc, the Acting Chief has been noted on the cover sheet.

    c. General note 17 appears to be incomplete in the second column. Please review and update.

       The indexing of note 17 has been corrected on the revised plan.

    d. Utility note 9 does not include the Town of Londonderry. Please review and update as acceptable to the Town.

       Utility note 9 has been updated to include the Town of Londonderry.

    e. Utility note 10 states the Town of Londonderry is a water supplier which is incorrect. Please review and update this note and utility note 17 accordingly.

       Waster service shall be in accordance with the Manchester Water Works details and standards and is noted as such.

f. The grading and drainage notes 1, 16 and 17 do not include the Town of Londonderry. Please review and update as acceptable to the Town.

The Town of Londonderry has been included in the above listed notes.

g. We recommend the site preparation notes include the standard notes required by the Fire Department for access.

Note 1 states that emergency services (Police/Fire Department) shall have access to the site for the duration of construction.

16. We recommend the Applicant address the following on the **Existing Conditions Plan:**

a. The plans do not provide the proper certification for the indicated survey per section 4.12.b of the regulations and item V.1 of the checklist. Please update the plans accordingly.

The certification statement has been updated to note and verify that the error of closure is 1:10,000 per the above cited regulation.

b. Please provide proper monuments along the property boundary that are missing per sections 3.02.a and 4.12.c.4 of the regulations and item V.3 of the checklist. Please update all sheets accordingly.

Monuments "to be set" have been indicated where missing consistent with the regulations.

c. Please indicate and label the existing septic system serving the dwelling on the plans per section 4.12.c.19 of the regulations and item V.15 of the checklist.

The existing septic system serving the dwelling on the plans has been added, see area labeled "E.D.A" next to the existing residential structure.

d. Please indicate the existing overhead wires serving the existing dwelling on the plans per section 4.12.c.22 of the regulations and item V.18 of the checklist.

Overhead electrical service has been shown on the plans for the existing dwelling.

e. Please clarify/explain why there is a Project Owner signature block for the Stonyfield existing conditions plan on sheet S9 and not a signature from Stonyfield.

Sheet S9 has been removed from the plan set as it was determined unnecessary in the December 17th review meeting.

f. The plans do not indicate the trees greater than 15" in diameter and species per section 4.12.c.19.viii of the regulations. Please update the plans accordingly.

A waiver has been requested as it would not be practical or beneficial to locate and identify species of trees greater than 15" in diameter.

17. We recommend the Applicant provide a note on the site preparation and demolition plan" stating that the edge of the Conservation Overlay District and Non-Disturbance (No-cut) Zones shall be appropriately delineated in the field prior to construction per section 4.14.23 of the Regulations and section VI.1.2.w of the checklist.

Such a note has been added to the plan (see note 6 on sheet C-4).

18. We recommend the Applicant clarify/address the following on the **Overall Site Plan, Site Grading Plan, Site Utility Plan, Site Layout Plan, and Erosion Control Plans:**

a. We recommend the Applicant clarify/address the following on the Overall (Master) Site Plan:

1. Please clarify the days of operation in note 4 on sheet C-05.

   Clarification has been provided with this note on the revised plans to specify that the offices are operated 7am-4pm, the facility runs 24/7 year round with exceptions for maintenance.

2. Please clarify the proposed lot area in note 5 that is inconsistent with the existing conditions plan.

   Note 5 reflects the lot area proposed after finalization and record of the proposed subdivision.

3. Please update the plan to include/address all items noted under section 4.04 of the regulations.

   The Site Plan Sheet has been updated to address the applicable criteria of Section 4.04, noting several items (bicycle parking, outdoor storage) are note applicable as none is proposed.

4. Please update the plan to include/address all notes per section 4.11 of the regulations.

   The plans have been updated to address the information required by Section 4.11. These items are addressed within the plans on the Cover Sheet, Overall Site Plan, Site Layout Plan, Grading and Drainage Plan, etc., as applicable to the scope shown on the plan for clarity and readability.

5. Please review and update the abutters that appear inconsistent with the existing conditions plan.

   The abutters list and existing conditions plan have been reconciled.

b. The site layout plan (C-06) indicates the site would be developed in phases, but the overall site plan (C-05) and the other development plans does not clarify the limits of work under the proposed phases. Please clarify accordingly.

   The intent of the site plans is to show the full buildout of the facility as depicted on sheets C-05. Sheet C-06 provided linework that shows the potential phased condition reflected on sheet PH-2 which excludes the future tribid-bio-reactors. The phases of construction to accomplish the full site construction is shown on sheet PH-1 as required by the Alteration of Terrain Bureau given the anticipated open area of each phase. An interim phase that does not include the future tribid-bio-reactors is demonstrated on sheet PH-1.

c. The plans indicate sidewalk widths of 5 feet adjacent to the buildings that do not meet the minimum width of 7 feet adjacent to buildings per section 3.08.c.2.v of the Site Plan Regulations. We recommend the Applicant update the project design to dimension and provide the minimum sidewalk widths in compliance with the Town's standard detail and regulations.

   All proposed striping where proposed around the buildings for pedestrian use has been revised to be 7' in width.

d. The site plan labels several site specific features such as Tribrid- Bioreactor, FET, 15,000 gallon tanks, enclosed flare, etc., but plans and details of these site features are absent from the submission. It is unclear what the height is for these features at the project site which is located near the Manchester Airport. In addition, it is unknown how the features are related/connected to the processing systems and how the separate buildings are connected by the processing systems. Please review and provide additional plans and details to clarify each proposed feature and the

interconnections, as well as heights to document any impacts to the flight zones of the Airport and as required for FAA permitting.

These elements are expected to be finalized and reviewed during the building permit stage of the project in addition to being reviewed by the Authorities Having Jurisdiction over these elements; FAA, NHDES Hazardous Waste Bureau, Liberty Utilities, Town of Londonderry Fire Department, etc. The project Team is coordination appropriately with the above regulatory agencies/departments and will provide a thorough presentation to the Planning Board and Staff to address the processes involved to the Town's satisfaction.

e. The plans identify a Hydrogen Sulfide Media area that would appear to be a hazardous materials concern and likely requires review by the Fire Department. We note this location is in proximity to the noted interconnection facility that is shown with several boxes, circles and squares, but no other information. We recommend the Applicant provide additional detailed information relative to the proposed processes at the site. In addition, please provide supporting information so the Fire Department is aware of the proposed Hydrogen Sulfide Media area.

Similar to comment (d) above, these elements are expected to be finalized and reviewed during the building permit stage of the project in addition to being reviewed by the Authorities Having Jurisdiction over these elements; FAA, NHDES Hazardous Waste Bureau, Liberty Utilities, Town of Londonderry Fire Department, etc. The project Team is coordination appropriately with the above regulatory agencies/departments and will provide a thorough presentation to the Planning Board and Staff to address the processes involved to the Town's satisfaction

f. The Applicant has not indicated or addressed outside storage in the application or on the plans. We note the site plan does indicates dumpsters/compactors and a separate biosolids storage bin are proposed that is considered outside storage. We recommend the Applicant clarify if any additional outside storage is proposed for this project. If so, then compliance per section 4.3.2.B of the Zoning Ordinance should be demonstrated.

The items identified in the above comment are not defined as outdoor storage by the Zoning Ordinance which will be reviewed and confirmed by the Town Code Enforcement officer and addressed to the satisfaction of the Town. No outside storage is proposed and the industrial systems are self contained enclosed systems. Please note section 4.3.2.B of the Zoning Ordinance relates to commercial zoned properties, whereas the subject site is zoned industrial.

g. Will the biosolids storage bin be exposed to the air and be an odor nuisance or an attraction for birds?

This is a closed component of the process and will adhere to the applicable regulations.

h. The existing conditions plan indicates an existing stone wall is located in the development area. Please clarify the location of the reset wall or walls as typically requested by the Heritage Commission.

The project received unanimous support from the Heritage Commission and as recommended by the Commission to the Planning Board we will reclaim stones from the stone walls to be removed, with the stones placed at the limits of work to the extent practical.

i. We recommend the Applicant verify the fire hydrant and service locations to the buildings with the Londonderry Fire Department per item VI.1.2.d.2 of the checklist. Please update the plans acceptable to the Fire Department.

Per DRC comments received by the Fire Department, a fire hydrant shall be located within 100 feet of the fire department connection (FDC) on both buildings and General-purpose hydrants shall be spaces every 500 feet. hydrants have been located. A concurrent resubmittal has been made to the Fire Department for their review, and we will notify the Planning Staff once approval is received.

j. Please label the number of stories for the proposed buildings on the site plan as typically requested by the Town. In addition, please clarify the dimension along the southwesterly side of the depackaging building that is obscured by text.

These dimensions have been added to the revised plans.

k. Please review the northerly gravel access drive from the parking lot that does not appear correct and clarify/label what type of curb is located at the pavement/gravel drive interface for proper construction.

There is only one type of curb proposed at the development, sloped bituminous curb/sloped asphalt curb. The conflict between the parking and the maintenance drive has been addressed in the revised layout plan.

l. The driveway design indicates the proposed site curbing extending into the existing cul- se sac right of way that is typically not allowed by the Department of Engineering and Environmental Services. Please remove the curb in the right of way, review the design with the Department, and update as acceptable to the Department.

The driveway design incorporates curbing to the extend necessary to meet the Town requirements to provide appropriate stormwater management/treatment of the development including the proposed driveway.

m. The proposed detention basin 1 embankment width appears to be 2 feet wide and is less than the 6 feet wide per the outlet structure detail on sheet D-22. Please revise the grading design to comply with the minimum embankment width shown in the outlet structure detail.

In a limited area at the emergency overflow spillway associated with filtration Basin #1, the "embankment" has been widened to 6'. The design as presented is now consistent with Exhibit D108 - Typical Outlet Structure at Detention Bains as required by the Town of Londonderry.

n. The proposed embankment grading along the northerly side of the site to the property line and the embankment grading along the southerly side of the pavement and gravel driveway above the detention basins shown on sheet C-07 does not provide a proper 3H:1V embankment in accordance with the regulations. We recommend the grading design be revised to 3H:1V in all locations on the site as typically requested by the Town. In addition, we recommend additional proposed contour labels be provided. It is our understanding that the Town requests slopes steeper than 3H:1V, when allowed, to be riprap. Please revise as acceptable to the Department of Engineering and Environmental Services.

The limited locations of 2H:1V slope are appropriate for their intended use and are not contrary to the Site Plan Regulations. The applicant has reviewed with the Department of Engineering and Environmental Services and additional notation for proper compaction of

these slopes has been added to the plan for proper construction. See note 23 on sheet C-03 and Note 21 on sheet D-23.

o. The westerly high embankment slope shown on sheet C-07 is noted to include a 6:1 backslope, but it is unclear how this backslope would collect and drain the 20 foot uphill embankment draining to it. We note the plans do not include a detail for construction and the stormwater analysis does not address this issue. Please review and revise the design to address this and update the details and stormwater report accordingly.

This area of fill has been reviewed with NHDES and the bench has been removed from the design as it is not required.

p. Please revise the maintenance access for Basin 1 shown on sheet C-07 to extend to the forebay area near the inlet for maintenance. In addition, please review and demonstrate the indicated access drives to the basins are appropriately located to access and maintain the outlet structures as acceptable to the Department of Engineering and Environmental Services and update as necessary.

The maintenance drive at filtration basin #1 has been extended towards the forebay and minor grading revisions incorporated to provide improved access to outlet structure.

q. The stormwater analysis indicates the entirety of the process building roof entering CB28 located 110 feet from the building, but the drainage plan does not indicate any connection to the building. The analysis also indicates the depackaging building directly discharging to the stormwater system, but no connection is indicated. Please review and revise the drainage design to include all stormwater features consistent with the submitted analysis.

A new DMH and pipe have been provided for clarity of the connection. There will be a 15" HDPE connector pipe from the vertical roof drain of the building which routes the flow to the new DMH and then filtration basin 1.

r. It is unclear how maintenance of the outlet pipes and headwalls from the basins will occur. Please review and update to demonstrate how access for maintenance of the basin outlets will occur as acceptable to the Department of Engineering and Environmental Services.

The outlet pipes and associated headwalls can be reached by a crane from the adjacent gravel maintenance road or will otherwise be maintained by maintenance personnel with hand tools with access from the 12' maintenance drives.

s. A cursory review of the drainage structure table indicates several of the structures do not have the proper rim elevations (CB18 rim=298.57 with the proposed grade shown at 295.) or proper inverts (CB 4 and CB5 note – 4.39 and -4.25 respectfully) and some CBs with no sumps, and thus appears incomplete. We recommend the Applicant review and revise the table to be complete and representative of the design.

The table has been updated and revised to be consistent with the design.

t. The utility plan indicates two industrial wastewater tanks are proposed as being points of compliance. Please review and verify the locations are appropriately accessible and acceptable to the Sewer Division.

The utility plan designs will comply with the Sewer Division as required.

u. The text shown at the easterly property line near the access drive is overlapping and illegible. Please update to be legible. In addition, please label the size and type of proposed gas line to serve the development on the utility plan.

This text conflict has been revised for clarity. The label has been updated to include size and material information, however final design will be completed by the utility provider.

v. The plans note a "feedstock" force main by others is proposed to serve the site, but the proposed sewer and water line profiles do not include/address this proposed pipeline including the size, pipe material, etc. per section 4.14.b.2.ii of the regulations and item VI2.b.2 of the checklist. In addition, it is unknown if this proposed force main conflicts with the stormwater design. Please review and revise to provide the required information and address all force main pipe crossings accordingly.

As noted, the feedstock line is shown for coordination purposes and will be an offsite improvement conducted by others but coordinated with the site plans for proper construction.

w. The driveway (roadway) plan and profile does not indicate the proposed gas line to the site and may conflict with CB5. The profile also does not indicate the proposed waterline, both proposed sewer force mains, or underdrains, or show the entire stormwater system as required by the regulations. In addition, the overhead wires are absent and a stop sign and stop bar are missing at the driveway. Please update accordingly.

The additional utility lines have been added to the driveway profile. No underdrains for the driveway are proposed.

x. We recommend the driveway culvert pipe be concrete due to the location adjacent to the conservation area and consistent with NHF&G recommendations.

A 48" RCP infilled with natural streambed material has been provided instead of the HDPE. Please see the updated plan, details and stormwater report. For the record, the design was reviewed and approved by NHF&G with the HDPE.

y. Please label the pavement radii on the driveway plans per section 4.16.C.1.xiii of the Subdivision Regulations. In addition, please review and update the plan to include all items noted in section 4.16.c of the Subdivision Regulations.

Pavement radii have been added. The items necessary for construction of the driveway have been shown, noting the above regulation citation would be for a roadway, which is not proposed (site driveway proposed).

z. Please indicate and label the limits of sawcut associated with the proposed utility connections on the driveway and force main profile sheets. In addition, please indicate the limits of clearing associated with the sewer force main. We note that some of the sewer force main information appears incomplete since the pipe extends beyond the plan view and profile. Also, please verify the north arrow orientation on the sewer force main. Please update to provide complete information.

These sawcut limits are now shown in North Wentworth Avenue. This plan only shows the limits of the sewer force main. The feedstock force main is shown for coordination purposes only and will be addressed by separate off-site plans.

aa. The force main plan notes a portion of the construction will include directional drilling, but the details for the directional drill were absent from the submission. Please update accordingly.

Means and methods of the directional drilling will be at the contractors discretion. The note is provided so it is understood an open trench at this location is not the intent of the plan.

19. We recommend the Applicant clarify/address the following on the **Construction Details:**

    a. The typical driveway (roadway) section does not indicate the proper embankment slopes per exhibit D5 of the Subdivision Regulations for the work on the roadway. Please update the detail and design accordingly.

       A driveway is proposed vs. a roadway, the above regulation does not apply.

    b. Please provide a construction detail for the following items noted on the site/grading plans:

       - Interconnection facility
       - Scale
       - Biosolids storage bin
       - 15,000 gallon tanks
       - Tribrid-bioreactor
       - FET
       - Biogas upgrading yard
       - 12' gravel drive
       - Biogas water KO
       - Enclosed flare
       - H2S media laydown area
       - 6:1 backslope bench

       Items applicable to the site plan regulations (20' gravel drive12' drainage maintenance drive, for example) have been provided on sheet D--3. The remaining items are part of the industrial process and will be reviewed once finalized in coordination with the building permit application.

    c. Please update the retaining wall detail on sheet D-04 to indicate and dimension the location of the proposed guardrail and proposed curb for proper construction.

       No retaining wall/guardrail combination is proposed.

    d. Please update the internal drop sewer manhole detail to be the current design with an inside drop bowl meeting approval of the Sewer Division.

       The detail in the plan set has historically met the approval of the sewer division and is currently being coordinated with that entity. The plans will be updated to incorporate sewer divisions review comments.

    e. The industrial tank detail makes reference to the Massachusetts DEP standards that do not apply. Please revise to provide proper specifications meeting approval of the Sewer Division.

       This is a standard reference from the manufacturer but has been removed for clarity.

    f. The pump chamber detail on sheet D-15 appears incomplete since there are no pumps and the rectangular structure does not match the detail on sheet C-16. Please review and revise as necessary meeting approval of the Sewer Division.

       The design shall be reviewed by the Sewer Division and revised if necessary.

    g. We understand the sewer design and details will be reviewed by the Sewer Division and recommend the Applicant coordinate the review with the Sewer Division. Please update acceptable to the Sewer Division.

Agreed.

h. Please review and revise the outlet structure detail to properly indicate the location of "B", "C", and "D" in the plan view. In addition please correct J for detention basin 1.

Minor adjustments have been made for clarity on "B", "C", and "D". The table has been revised to reflect the updated design from all other comments.

20. We recommend the Applicant address the following relative to the **Project Drainage Analysis:**

a. The report does not properly identify all the abutters to the project in the narrative or the impacts to all abutting lots (i.e. lots 47, 44-38 & 44-13) or the roadway as required per section 3.07.b.3 of the regulations and item Xi.2.c of the checklist. Please provide a summary table in the report narrative that indicates the pre- and post-development impacts to each abutting lot and the roadway, and indicates no increase in runoff in accordance with the regulations is achieved as typically required by the Town.

All abutters regardless of contributing flow to the analysis are now listed in the project drainage analysis noting lot 014-044-13 (Stonyfield lot) is associated with offsite improvements and not the subject of this analysis.

b. It is unclear that the Applicant has assessed the impacts for the off-site sewer connection or the separate off-site sewer service connection from Stonyfield under this project. Please review and provide additional supporting information to substantiate the existing conditions assumptions of the analysis are complete and representative of the proposed project impacts. Please update the post development analysis as applicable and clarify compliance is achieved – no increase in runoff.

The land coefficient changes within the area of development including the installation of the site driveway within the Town right-of-way and the installation of the sewer force main up to the North Wentworth Ave cul-de-sac have been identified in the pre/post development analysis. The offsite portion of the sewer forcemain beyond the cul-de-sacappears to be in a grass area based on aerial imagery, whereby no change in runoff would be anticipated by the trenching for the utility (no tree removal). Should tree removal be required, we would expect this to be addressed as part of the offsite design provided by others.

c. It is unclear if the existing conditions approach has properly address the upstream flow relative to subcatchment ES3 since the upstream flow would have to pass through the subcatchment (and not bypass it) to reach lot 44. We recommend the Applicant clarify the upstream flow contributing to the Town's existing unimproved roadway. Please provide additional information to support the analysis approach is representative of the existing conditions flow contributing to the Town's existing unimproved roadway and the proposed site development under this project.

The site plan and model include the Town's right of way in its scope. Please refer to offsite link that is modeled in the pre model, this link is data directly from USGS stream stats for this wetland section. A reach has been added to the pre-development model to not "bypass" the right of way.

An updated cross culvert has been provided in the post development. The culver is a 48" RCP with a naturalized bottom to better provide hydraulic connectivity and lessen its environmental impact.

d. The predevelopment Tc for subcatchment ES2 does not begin at the highest point consistent with subcatchment ES1 or the post development analysis to provide a proper evaluation of the downstream impacts. Please revise the Tc in the ES2 predevelopment calculations according and demonstrate compliance is achieved – no increase in runoff.

The highest elevation of a subcatchment is not a dependent variable of time of concentration. The dependent variable is the location that produces the longest hydraulic time. As currently shown ES2 Tc produces the longest time of concentration.

e. The submitted pre-development and post-development drainage plans do not include the areas of each subcatchment per section 3.07.b.7 and 8 or identify the abutters to the project. Please update the plans accordingly.

The maps have been updated with area tables. The abutters labels are now shown in the revised submission.

f. The calculations include post subcatchment FB2, but the plans do not indicate a subcatchment with the label. Please review and revise the analysis to be consistent with the post development plan subcatchment labels.

A label has been provided on the revised drainage map for clarity. FB2 is filtration basin 2.

g. Please clarify how post subcatchment PS1 (depackaging building) directly contributes to the trench drain CB TD1 and demonstrate the connection is adequately sized for the indicated 25-year design flow.

The roof will drip onto the asphalt that is tributary to the trench drain. The two subcatchments have been revised to show the portions of the roof that drain to the trench drain and CB13. The model now accurately reflects the design and is consistent with how the rest of the asphalt is modeled.

h. Please clarify how post subcatchment PS15 (process building) directly contributes to the trench drain CB28 and demonstrate the connection is adequately sized for the indicated 25-year design flow.

A new pipe and DMH have been added for clarity. The roof drain collection will be piped via a 15” HDPE pipe to the new DMH (DMH RD) and then connected to CB26. The design and model have been updated to reflect this clarification.

i. Please update the post subcatchment PS21 calculations to include the riprap and retaining walls and demonstrate compliance is achieved – no increase in runoff. In addition, please update the subcatchment PS3 calculations to include the retaining walls.

The footprints of the headwall have been added to the calculations per the above comment. Riprap provides adequate void space between the stone such that it would not be considered impervious.

j. Please revise the post subcatchment PS5 calculations to include the gravel surface noted in the predevelopment calculations for ES2 and demonstrate compliance is achieved – no increase in runoff.

The offsite gravel surfaces are entirely within one subcatchtment (ES2) in the development model but are split into two subcatchements (PS5 and PS4) in the post development model. The same total gravel offsite area is modeled in both the pre and the post model.

k. Please revise the post subcatchment PSP2 calculations to include the riprap and pond conditions and demonstrate compliance is achieved – no increase in runoff.

The footprints of the headwall have been added to the calculations per the above comment. Riprap provides adequate void space between the stone such that it would not be considered impervious.

l. Please review and provide additional information to demonstrate post subcatchments PST11, PST13, PST6, PST7, and PST9 have properly accounted for the proposed building/structure roofs and impervious areas that appear to be more than indicated in the calculations and update accordingly.

Please note that due to the increase in the maintenance drive that all the above subcatchement areas were revised, reevaluated, and recalculated in the revised post model.

m. We recommend CB4 and CB8A be double grate catch basins. Please update the plans accordingly.

CB4 receives 3.33 CFS in the 25-Year storm event and CB8A receives 2.16 CFs in that same storm event. Both structures have been redesigned with double grates and a 5' diameter structure to accommodate. Please note that CB13 has also been designed with a double grate.

n. Please revise the Tc for post subcatchment PS33 and PS34 to be the same as the predevelopment Tc for ES3 and demonstrate compliance is achieved – no increase in runoff.

Please see that Tc for the above subcatchments have been set to 6 minutes per the above comment.

o. The post development analysis includes infiltration at the detention basins but the analysis does not include calculations to demonstrate the designs have addressed frozen ground conditions (no infiltration) per the stormwater system design and management standards of the Londonderry Stormwater Regulations. Please update the calculations accordingly and demonstrate compliance is achieved – no increase in runoff.

The stormwater basins (filtration basins) are designed in accordance with the Town of Londonderry DPW & Engineering Stormwater Regulations. Specific to Section 6.B, which includes design guidelines, the stormwater treatment practices and measures have been appropriately selected and designed in accordance with the listed specifications which include but are not limited to; the NH Stormwater Manuel and NHDES Alteration of Terrain rules (RSA 485-A:17). Additional reporting during the 50-year storm event for each filtration basin has been included in the stormwater report to account for frozen ground conditions when the devices may not function at their optimal design per Section 6.B.1.A(3). The basins function as intended with no overtopping of the emergency spillway or basin berm. As previously determined by the Planning Board via actions under separate applications, the stormwater management areas are designed to the appropriate state standards (as referenced in the Town regulations), and although a more conservative approach is to exclude infiltration, the Town regulations do not stipulate this as a requirement in calculating stormwater runoff totals.

p. The Pond OS3 calculations indicate an infiltration rate that exceeds the NHDES standards of a maximum of 10in/hour. The calculations shall be revised accordingly.

This detention basin has been revised to include a limiting (clay) liner. Infiltration has

been removed from the analysis of this basin.

q. The pond routing analysis for FB#1 and OS3 indicates top grates smaller than the standard Town of Londonderry outlet structure and the detail provided in the plan set. In addition, the top grate in the calculations for FB2 indicates a grate larger than the detail. Please review and revise the calculations to be consistent and representative of the design presented in the plans and as required by the regulations, demonstrate compliance is achieved – no increase in runoff.

The grate modeling for all basins has been revised to be consistent with the Town detail & NHF&G comments. The outlet control structure "rim" is a square concrete rim.

r. The grading design indicates a swale is proposed below the southwesterly gravel drive that flows to CB16. In addition, the grading design indicates a swale along the southerly side of the maintenance drive to filtration basin 2, but a swale summary table per section 3.07.b.5 of the regulations and item XI.2.e of the checklist was missing from the report. Please update the report accordingly.

Two new reaches have been added to the post map and model to describe the swales. The swales have been modeled in hydrocad. The hydrocad output was used to create the updated swale summary table in Part 6 of the revised stormwater report.

s. The report includes an Inspection and Maintenance (I&M) manual for the stormwater management systems. We recommend the Applicant update the I&M Plan to include and address the following:

1. The proposed design includes swales draining to CB16 and a separate swale to basin 2, but the I&M is absent of identifying these features. Please provide inspection and maintenance for the swales. Please update the I&M document and checklist accordingly. The information in the plan set shall also be updated.

   The swales have now been included in the revised I&M plan, please see revised part 8 of the report.

2. The I&M does not address the long and steep westerly embankments or the 6:1 backslope/swale that may not be part of the lawn area. Please update the I&M document and checklist accordingly. The information in the plan set shall also be updated.

   The 6:1 back slope has been removed from the design. The I&M now encompasses all site features to be maintained by the operator.

3. The access driveway (North Wentworth Avenue) is not addressed in the I&M document or checklist. Please update as acceptable to the Department of Engineering and Environmental Services. The information in the plan set shall also be updated.

   This item has been added to the I&M plan.

4. Please correct the checklist that includes two detention basin 1 (#7 and #9).

   Basins #7 and #9 have been removed from the list.

5. The reporting of the amount of salt usage on an annual basis to NHDES under the Salt Minimization Plan and De-icing Log should be stated in the document and noted on the maintenance report form consistent with the Town's Stormwater Ordinance. In addition, please provide a plan showing the proposed snow storage locations in the I&M. Please update the plan set information accordingly.

Please see the updated note on the de-icing log that instructs operators to report icing and supplies the resources on where to submit this information.

21. We recommend the Applicant address the following relative to the submitted **SWPPP:**

    a. Section 1.2 has not identified a site contractor. Please update the document accordingly
    A revised SWPPP binder has been supplied stating the site contractor. The site contractor is Baumer Construction Inc.

    b. The location of the stockpiled sediment or soil per 4.4 of the document and part 2.2.5 of the CGP are not indicated on the plans in Attachment A. Please update accordingly.
    Please find the addition of the action construction plan depicting the above information.

    c. The document does not address the use of temporary sediment basins per section 2.1.12 of the CGP. Please indicate the locations and update the plan set accordingly.
    Please find the addition of the action construction plan depicting the above information.

    d. Location of specific dewatering practices to be implemented per section 4.11 of the document and part 2.4 of the CGP should be identified on the plans. Please update accordingly.
    Please find the addition of the action construction plan depicting the above information.

    e. The location of the laydown area and site staging needed for the project do not appear to be indicated on the plans. Please update accordingly.
    Please find the addition of the action construction plan depicting the above information.

    f. Please indicate and label the location of the vehicle maintenance and refueling area on the plans per Section 5.3 of the document and as required section 2.3.1 of the CGP.
    Please find the addition of the action construction plan depicting the above information.

    g. Please indicate and label the location of the equipment and vehicle washing area on the plans as required by section 2.3.2 of the CGP.
    Please find the addition of the action construction plan depicting the above information.

    h. Please indicate and label the location of the waste management area on the plans per as required per CGP section 2.3.
    Please find the addition of the action construction plan depicting the above information.

    i. Please indicate and label the location of the hazardous materials storage area on the plans as required per CGP section 2.3.3
    Please find the addition of the action construction plan depicting the above information.

    j. Please indicate and label the location of the sanitary wastes (portable toilets) on the plans as required per CGP 2.3.3.f
    Please find the addition of the action construction plan depicting the above information.

    k. Please indicate and label the location of the washout, cleanout area on the plans as required per CGP 2.3.4.
    Please find the addition of the action construction plan depicting the above information.

    l. The stormwater team and certification per sections 6.1 and 7 of the document and parts 6.1 and 7.2.2 of the CGP indicating the inspector has the necessary training and is a "qualified person" in

accordance with CGP are absent. Please update the document accordingly.
This information shall be provided in the document and to the Londonderry Department of Engineering and Environmental Services when the eNOI is certified and active.

m. The signatures for the certification under section 8 and Appendix G of the document were absent. Please update accordingly.
This information shall be provided in the document and to the Londonderry Department of Engineering and Environmental Services when the eNOI is certified and active.

n. An NOI application approval from EPA under Appendix C of the document was missing. Please update accordingly.
This information shall be provided in the document and to the Londonderry Department of Engineering and Environmental Services when the eNOI is certified and active.

o. The SWPPP submission appears to only address the approved site plan work upon the subject parcel. The off-site utility construction for the sewer force main from Stonyfield to serve the site was not included in the SWPPP. Please clarify/document how the site will obtain the necessary sewer service to become operational under the approved site plan and this SWPPP and/or another SWPPP.

p. A condition of the Londonderry Stormwater Permit will be the SWPPP reports shall be provided via e-mail to the Town at the same time they are provided to the Contractor and Owner.
Comment noted the applicant is eager to adhere to all conditions of the approvals.

Summary:

We recommend the Applicant arrange a meeting with the Department of Engineering & Environmental Services and Planning Department before addressing the issues noted above. After the meeting, we recommend the Applicant address the comments and issues noted above and resubmit revised drawings and supporting information. We recommend the Applicant provide a summary response letter with the revised drawings and supporting information addressing each comment noted above as required by the regulations. We understand that the project has not been scheduled for a Planning Board meeting at this time.

A meeting was held with the Department of Engineering and Environmental Services and Planning Department on December 17th with a follow-up meeting held with the Town Manager and Department of Public Works on December 22nd.

Sincerely,
TFMoran, Inc.

Jonathan Devine, EIT

LONDONDERRY PLANNING BOARD

SITE PLAN APPLICATION & CHECKLIST

Planning Department Date Stamp

❑ **Design Review** ☒ **Formal Application**

All information provided and submitted with this Application Checklist shall conform to the Londonderry Site Plan Regulations. ***Please note that the Planning Board may not accept and consider the application complete if the required items as outlined in the checklist are missing from the submittal.***

❑ Site Plan Amendment

I. General Information:

A. Project Name: Southern New Hampshire Green Energy Campus — 14 *(Map)* 39-2 *(Lot)*

B. Project Location: 25 N. Wentworth Ave. — Zone: GB

C. Primary Contact: Nicholas Golon, P.E. — Phone: (603) 472-4488

❑ Applicant ❑ Owner ☒ Engineer/Surveyor — E-Mail: ngolon@tfmoran.com

D. Applicant's Name: PurposeEnergy-Londonderry, LLC

Address: PO Box 4345 City: Windham State: NH Zip: 03087

Phone: (617) 202-9156 Fax: E-Mail: ONeill@purposeenergy.com

Applicant Signature: [signature] Date: 6/10/25

E. Owner's Name: Codner Nicholas F Trust 2012

Address: 162 Litchfield Road City: Londonderry State: NH Zip: 03053

Phone: (603) 432-1100 ext.161 Fax: E-Mail: ncodner@londonderrynh.org

Owner's Signature: [signature] (Agent) Date: 6/10/25

. F. Engineer/Surveyor (Firm Name): TFMoran, Inc.

Address: 48 Constitution Drive City: Bedford State: NH Zip: 03110

Phone: (603) 472-4488 Fax: E-Mail: ngolon@tfmoran.com

1) Name of Licensed Land Surveyor: Michael Dahlberg, LLS - TFMoran, Inc.

Signature: [signature]

2) Name of Licensed Professional Engineer: Nicholas Golan, P.E. - TFMoran, Inc.

Signature: [signature]

3) Name of Certified Soil Scientist: Bruce Gilday, CSS - BAG Land Consultants

4) Name of Certified Wetland Scientist: Christopher Danforth, CWS - TFMoran, Inc.

5) Name of Licensed Traffic Engineer: Robert Duval, P.E. - TFMoran, Inc.

G. Lot Area (SF) 15.31 ac Existing Building Footprint (SF): 0 sf Proposed Addition (SF) 106,702sf +/-

☐ Change or ☒ Additional Use(s): Organic Waste Processing Facility

Site Plan Application Checklist

☒ Additional Pavement (SF): 119,209 sf +/- ☐ Other Modification: _____

II. General Requirements (All Applications):

		Provided	N/A
1.	Executed Site Plan Application Form	☒	
2.	Complete Abutters list, 3 sets mailing labels	☒	
3.	Application Fees	☒	
4.	Four (4) sets of plans and electronic "PDF" plans (See #11)	☒	
5.	Copies of proposed easement deeds, protective covenants or other legal documents	☒	☐ pending
6.	Waiver request(s) with justifications	☒	☐
7.	Technical reports and supporting documents (Drainage report, Traffic Study, etc.)	☒	☐ traffic study pending under separate submittal
8.	Completed Site Plan Application Checklist	☒	
9..	Escrow Agreement and Fees	☒	☐
10..	Conditional Use Permit request(s) with justifications per Zoning	☒	☐
11.	Response Letter to DRC Review and 2 highlighted plans (Plans may substitute for 2 sets required in #4 above)	☒	☐

III. General Plan Information (All Plans):

		Provided	N/A
1.	Size and presentation of sheet(s) per requirements of the site plan regulations	☒	
2.	Title block information:		
	a. Drawing title	☒	
	b. Name of site plan	☒	
	c. Location of site plan	☒	
	d. Tax map & lot #s of subject parcel(s)	☒	
	e. Name & address of owner(s)	☒	
	f. Date of plan	☒	
	g. Scale of plan	☒	
	h. Sheet number	☒	
	i. Name, address, & telephone number of design firm	☒	
	j. Name and address of Applicant	☒	
3.	Revision block	☒	
4.	Planning Board approval block provided on appropriate sheets (Cover sheet, site plan, landscape plan only)	☒	
5.	Certification block (for engineer, surveyor, soil scientist, or wetland scientist)	☒	
6.	Match lines (if any)	☒	☐

Site Plan Application Checklist

IV. **Master Site Plan Sheet**: (Applicant may provide separate Title Sheet)

			Provided	N/A
1.		The following notes shall be provided:		
	a.	Purpose of plan	☒	
	b.	Tax map and lot #s of all subject parcels	☒	
	c.	Area (existing & proposed) of subject parcel(s)	☒	
	d.	Zoning designation of subject parcel(s)	☒	
	e.	Min. lot area, frontages & setback dimensions	☒	
	f.	Existing and proposed uses	☒	
	g.	Parking calculations, as outlined in the Regulations	☒	
	h.	% green area, as outlined in the Zoning Ordinance	☒	
	i.	% building coverage, as outlined in the Zoning Ordinance	☒	
	j.	Sanitary sewer source (name of provider company if offsite)	☒	
	k.	Water supply source (name of provider company if offsite)	☒	
	l.	Zoning variances/special exceptions with conditions	❑	☒
	m.	List FEMA sheet(s) used to identify 100-year flood elevation. (Note if no flood zone present as applicable)	☒	
	n.	List of required permits and permit approval numbers	☒	❑
	o.	List of Planning Board waivers and Conditional Use Permits with Regulation or Ordinance section reference (if applicable)	☒	❑
	p.	Note identifying which plans are on file at the Town	☒	❑
	q.	Note the following: "If, during construction, it becomes apparent that deficiencies exist in the approved design drawings, the Owner shall be required to correct the deficiencies to meet the requirements of the regulations at no expense to the Town."	☒	❑
	r.	Note the following: "If, during construction, it becomes apparent that additional erosion control measures are required to stop any erosion on the construction site due to actual site conditions, the Owner shall be required to install the necessary erosion protection at no expense to the Town."	☒	❑
	s.	Note the following: "All materials and methods of construction shall conform to Town of Londonderry Site Plan Regulations and the latest edition of the New Hampshire Department of Transportation's Standard Specifications for Road & Bridge Construction."	☒	❑
	t.	Note the following: "In accordance with Section 6.01 of the Londonderry Site Plan Regulations and RSA § 676:13, all improvements specified on these site plans shall be constructed, completed, and inspected and approved by the Town of Londonderry prior to the issuance of a certificate of occupancy."	☒	❑

	u.	For sites requiring off-site improvements, note the following: "In accordance with Section 6.01 of the Londonderry Site Plan Regulations and RSA § 676:12, all off-site improvements specified on these site plans shall be constructed, completed, and inspected and approved by the Town of Londonderry (and/or the NHDOT, if applicable) prior to the issuance of a certificate of occupancy."	☒	❑
2.		Vicinity plan (at a scale of 1"=2500')	☒	
3.		Plan index indicating all sheets	☒	❑

V. **Existing Conditions Plan:**

			Provided	**N/A**
1.		Surveyor's certification stamped and signed by LLS	☒	
2.		Boundary of entire property by metes and bounds	☒	❑
3.		Boundary monuments:		
	a.	Monuments found	☒	❑
	b.	Monuments to be set	☒	❑
4.		Map # and Lot #, name addresses, and zoning of all abutting land owners	☒	
5.		Existing streets:		
	a.	Name labeled	☒	❑
	b.	Status noted or labeled	☒	❑
	c.	Right-of-way dimensioned	☒	❑
	d.	Pavement width dimensioned	☒	❑
6.		Municipal boundaries (if any)	☒	❑
7.		Existing easements (identified by type)	☒	❑
8.		North arrow	☒	
9.		Locus map (at a scale of 1" = 2,500)	☒	
10.		Limits of wetlands & CO District Boundary	☒	❑
11.		Wetland delineation criteria & Certification	☒	❑
12.		SCS Soils (Boundary & Type)	☒	
13.		Owner(s) signature(s)	☒	
14.		All required setbacks (including any applicable buffers)	☒	
15.		Existing physical features:		
		Buildings	❑	☒
		Wells	❑	☒
		Septic systems	☒	❑
		Stone walls	☒	❑
		Paved drives	☒	❑
		Gravel drives	☒	❑
16.		Location & name (if any) of any streams or waterbodies	☒	❑
17.		Location & elevation(s) of 100-year flood zone per FEMA Flood Insurance Study or as determined by drainage study	❑	☒
18.		Location of existing overhead utility lines, poles, towers, etc.	☒	❑
19.		Plan and deed references	☒	❑
20.		Zoning District boundary lines (if any)	☒	❑

Site Plan Application Checklist

VI. **Improvement Plans (Grading Plan, Utility Plan, etc. and Stamped by Engineer Licensed in NH):**

			Provided	N/A
1.	**Grading and Drainage Plan:**			
	a.	Existing topography (two-foot contour interval minimum)	☒	❑
	b.	Proposed contours	☒	❑
	c.	Existing spot elevations	❑	☒
	d.	Proposed spot elevations	☒	❑
	e.	Existing edge of pavement	☒	❑
	f.	Proposed edge of pavement	☒	❑
	g.	Existing curb line	☒	❑
	h.	Proposed curb line	☒	❑
	i.	Existing buildings and structures	☒	❑
	j.	Proposed buildings and structures	☒	❑
	k.	Existing retaining walls	❑	☒
	l.	Proposed retaining walls	☒	❑
	m.	Existing stone walls	☒	❑
	n.	Proposed and reconstructed stone walls	❑	☒
	o.	Wetland Mapping		
		1.) Wetland limits identified	☒	❑
		2.) Impact Area in square feet for each individual location	☒	❑
		3.) Mitigation areas (as may be required)	❑	☒
	p.	Existing treeline	☒	❑
	q.	Proposed treeline	☒	❑
	r.	Benchmarks	☒	❑
	s.	Existing drainage systems:		
		1) Pipes/culverts (each location):		
		i. Type	☒	❑
		ii. Size	☒	❑
		iii. Length and slope	☒	❑
		iv. Inverts	☒	❑
		v. End sections/Headwalls	☒	❑
		2) Structures (catch basins, drain manholes, special structures):		
		i. Location (station and off-set)	☒	❑
		ii. Type	☒	❑
		iii. Size	☒	❑
		iv. Rim Elevations	☒	❑
		v. Inverts	☒	❑
		3) Swales/Ditches/Waterways:		
		i. Flow arrows (direction of flow)	❑	☒
		ii. Topography	☒	❑
		iii. Spot elevations	❑	☒
	t.	Proposed Drainage Systems:		
		1) Pipes/culverts (each location):		
		i. Type	☒	❑
		ii. Size	☒	❑
		iii. Length and slope	☒	❑
		iv. Inverts	☒	❑
		v. End sections/headwalls	☒	❑
		vi. Identify minimum cover and location	☒	❑
		vii. Outlet erosion protection	☒	❑

Site Plan Application Checklist

			Provided	N/A
2)	Structures (catchbasins, drain manholes, special structures):			
	i.	Location (sta. and off-set)	☒	❑
	ii.	Type	☒	❑
	iii.	Size	☒	❑
	iv.	Rim elevations	☒	❑
	v.	Inverts	☒	❑
3)	Swales/ditches/waterways:			
	i.	Flow arrows (direction of flow)	☒	❑
	ii.	Grading	☒	❑
	iii.	Spot elevations	☒	❑
	iv.	Erosion protection (riprap, matting, etc.)	☒	❑
u.	Temporary erosion protection during construction:			
1)	Silt fence, haybales, etc.		☒	❑
2)	Matting, mulch, etc.		☒	❑
v.	Tree protection for existing areas and/or individual trees 15” in diameter or greater		❑	☒
w.	Plan note stating that the edge of the Conservation Overlay District and Non-Distubance Zones shall be appropriately delineated in the field prior to construction		☒	❑

2. Utilities Plan:

			Provided	N/A
a.	Existing sanitary sewer system:			
1)	Pipes:			
	i.	Type	☒	❑
	ii.	Size	☒	❑
	iii.	Length and slope	☒	❑
2)	Structures:			
	i.	Location (sta. and off-set)	☒	❑
	ii.	Type	☒	❑
	iii.	Size	☒	❑
	iv.	Rim elevations	☒	❑
	v.	Inverts	☒	❑
b.	Proposed sanitary sewer system:			
1)	Pipes (gravity):			
	i.	Type	☒	❑
	ii.	Size	☒	❑
	iii.	Length and slope	☒	❑
	iv.	Separation (18" below water)	☒	❑
	v.	Identify minimum cover and locations	☒	❑
2)	Force Main:			
	i.	Type	☒	❑
	ii.	Size	☒	❑
	iii.	Direction of flow (flow arrows)	☒	❑
	iv.	Bends and thrust blocking	☒	❑
	v.	Air relief valves and structures	☒	❑
	vi.	Clean-out structures	☒	❑
	vii.	Identify minimum cover and locations	☒	❑
3)	Structures:			
	i.	Location (sta. and off-set)	☒	❑
	ii.	Type	☒	❑
	iii.	Size	☒	❑
	iv.	Rim elevations	☒	❑
	v.	Inverts	☒	❑
4)	Service laterals to each individual lot:			
	i.	Type	❑	☒

			Provided	N/A
	ii.	Size	❑	☒
	iii.	Length and slope	❑	☒
	iv.	Separation (18" below water)	❑	☒
	v.	Minimum cover and locations identified	❑	☒
	vi.	Location of connection	❑	☒
c.	Existing Water System:			
1)	Pipes:			
	i.	Type	☒	❑
	ii.	Size	☒	❑
2)	Hydrants		☒	❑
3)	Valves		☒	❑
4)	Bends and thrust blocks		☒	❑
5)	Tees		☒	❑
d.	Proposed Water System:			
1)	Pipes:			
	i.	Type	☒	❑
	ii.	Size	☒	❑
2)	Hydrants			
	i.	Locations approved by Fire Department	☒	❑
3)	Valves		☒	❑
4)	Bends and thrust blocks		☒	❑
5)	Tees		☒	❑
e.	Existing Gas Lines:			
1)	Pipes:			
	i.	Type	☒	❑
	ii.	Size	☒	❑
2)	Valves		☒	❑
f.	Proposed Gas Lines:			
1)	Pipes:			
	i.	Type	☒	❑
	ii.	Size	☒	❑
2)	Valves		☒	❑
3)	Services to each lot		☒	❑
g.	Telephone/Electrical/Cable:			
1)	U-poles		☒	❑
2)	Pedestals/transformers		☒	❑
3)	Overhead lines		☒	❑
4)	Underground lines		☒	❑
5)	Services to each lot		☒	❑

3. **Roadways:** If streets are to be built as part of a site plan (e.g., for a multi-family residential site plan), then the design of such streets shall comply with Section 3.09 of the Londonderry Subdivision Regulations, please see Subdivision Application Checklist.

VII. **Landscape Plan (Section 3.09):**

		Provided	N/A
1.	General Information		
a.	Native Plants as suggested by Appendix LS1	❑	☒
b.	No use of Invasive materials as listed in Appendix LS2	☒	❑
c.	Plant materials meet winter hardiness requirement	☒	❑

			Provided	N/A
	d.	Proposed materials are of proper caliper or height	☒	❑
	e.	Stone walls incorporated into Landscape Plan	☒	❑
	f.	Existing vegetation preservation (no-cut) areas described by metes and bounds and monumented	☒	❑
	g.	Landscaping Calculations	☒	❑
	h.	Plant Schedule	☒	❑
	I.	Landscaping Details	☒	❑
	j.	Tree Protection Detail	❑	☒
	k.	Note on Plan stating No Plant Conflicts with Snow Storage Areas, Light Fixtures, Underground Utilities	☒	❑
	l.	Note on Plan stating No Landscaping Conflicts with Sight Distance	☒	❑
	m.	Submit a Landscape Master Sheet for Review (Landscaping, site features, snow storage, light poles, detention basin edges, grading, utilities)	☒	❑
2.	Parking Lot Landscaping			
	a.	Interior landscaping percentage based on Section 3.11e	☒	❑
	b.	Interior shade trees @ 1 per 15 parking spaces	☒	❑
	c.	Perimeter shade trees @ 1 per 20 parking spaces OR 1 per 50 feet of perimeter with buffer required	☒	❑
	d.	Screening provides proper vertical opacity per Section 3.11e	☒	❑

VIII. Illumination Plan & Lighting Details (Section 3.13):

		Provided	N/A
1.	Full Cut-Off Fixtures with plan note stating all lights are full cut-off fixtures as required	☒	❑
2.	Shielded, downcast building/external signage lighting	❑	☒
3.	No direct light source at residential property lines	☒	❑
4.	Plan to scale with illumination levels shown in footcandles	☒	❑
5.	Specification (details) for all proposed lighting fixtures including photometric data, designation as IESNA “cut-off” fixtures, Color Rendering Index (CRI) of all lamps (bulbs), and other descriptive information about fixtures	☒	❑
6.	Proposed mounting height of all exterior lighting fixtures	☒	❑
7.	Illumination levels not to exceed 0.2 footcandles at any property line (Except at driveway intersections per Regulations)	☒	❑
8.	Gas Station Canopies to meet requirements of Appendix Light 2	❑	☒

IX. Building Design & Renderings (Section 3.12):

1.	Building Elevations/Renderings in compliance with Section 3.13	☒	❑
2.	Signage renderings/details	❑	☒
3.	Large Retail Establishments - Comply with Section 3.13H	❑	☒

Site Plan Application Checklist

X. Construction Detail Drawings:

Note: *Construction details to conform with NHDOT Standards & Specifications for Roads & Bridges, Town of Londonderry Department of Public Works requirements, and Subdivision & Site Plan Regulations*

		Provided	N/A
1.	Typical cross-section of pavement	☒	❑
2.	Typical driveway apron detail	☒	❑
3.	Curbing detail	☒	❑
4.	Guardrail detail	☒	❑
5.	Sidewalk detail	❑	☒
6.	Traffic signs and pavement markings	☒	❑
7.	Typical underdrain trench detail	☒	❑
8.	Drainage structure(s):		
	a. Catchbasin (including frame and grate)	☒	❑
	b. Manhole (including frame and cover)	☒	❑
	c. Outlet structure (detention basins)	☒	❑
	d. Headwalls	☒	❑
	e. Flared end sections	☒	❑
9.	Outlet protection riprap apron	☒	❑
10.	Level spreader	❑	☒
11.	Treatment swale	❑	☒
12.	Typical section at detention basin	☒	❑
13.	Typical pipe trench:		
	a. Drainage	☒	❑
	b. Sewer	☒	❑
	c. Water	☒	❑
	d. Utilities	☒	❑
14.	Sewer structures:		
	a. Manholes (including frame and cover, inverts)	☒	❑
	b. Drop manholes	☒	❑
	c. Special structures (pump stations, blowoffs, etc.)	☒	❑
	d. Pipe manhole joint details	☒	❑
15.	Typical sewer lateral service connection detail	☒	❑
16.	Project specific sewer details (sleeves, etc.)	☒	❑
17.	Typical sewer notes (per NHDES & Sewer Div. requirements)	☒	❑
18.	Hydrant detail	☒	❑
19.	Thrust block details	☒	❑
20.	Valve box detail	☒	❑
21.	Typical water connection service detail	☒	❑
22.	Erosion control details:		
	a. Haybale barriers at waterways	❑	☒
	b. Silt fence	☒	❑
	c. Stone check dam	☒	❑
	d. Stone construction entrance	☒	❑
	e. Inlet filter basket	☒	❑
	f. Haybale barrier at catchbasin	❑	☒

24.	Notes:			
	a.	General notes as required by the Department of Public Works	☒	☐
	b.	Construction sequence	☒	☐
	c.	Erosion control notes	☒	☐
	d.	Turf establishment notes	☒	☐
	e.	Sewer construction notes (as required by Sewer Ordinance)	☒	☐
	f.	Water system construction notes (as required by local water company)	☒	☐
25.	Tree protection details		☐	☒

XI. Supporting Documentation:

			Provided	**N/A**
1.	Traffic Impact Analysis:			
	a.	Traffic Impact analysis as required by Section 3.14	☒	☐
2.	Stormwater management report including the following:			
	a.	Table of contents	☒	☐
	b.	Narrative statement (including conclusions)	☒	☐
	c.	Summary table comparing existing and post-development conditions	☒	☐
	d.	Summary table of data for each pipe & piping system:		
		1.) Discharge	☒	☐
		2.) Depth of flow	☒	☐
		3.) Velocity	☒	☐
	e.	Summary table of data for each swale & channel:		
		1.) Discharge	☒	☐
		2.) Depth of flow	☒	☐
		3.) Velocity	☒	☐
	f.	Project location plan (on USGS quadrangle)	☒	☐
	g.	Watershed area plan for existing condition	☒	☐
	h.	Watershed area plan for post-development condition	☒	☐
	i.	Runoff calculations for existing & post-development conditions	☒	☐
	j.	Flood routing calculations for each detention basin	☒	☐
	k.	Design for water quality treatment facilities (level spreaders, treatment swales, etc.)	☒	☐
	l.	Riprap design calculations	☒	☐
	m.	Report stamped by licensed professional engineer in NH	☒	☐
3.	Fiscal impact study provided (if required)		☐	☒
4.	Off-site improvements:			
	a.	Design plans included in the project drawings	☒	☐
	b.	Arrangements and agreements	☒	☐
	c.	Easements	☒	☐
5.	Utility clearance letters (as applicable):			
	a.	Electric	☒	☐
	b.	Telephone	☒	☐
	c.	Cable television	☒	☐
	d.	Gas	☒	☐
	e.	Water	☒	☐
	f.	Sewer	☒	☐
6.	Other project-specific information as required by the Design Review Committee (DRC)		☐	☒

Site Plan Application Checklist

XII. Required Project Permits (as applicable to applications):

		Provided	N/A	App Submitted
1.	NHDES site-specific approval	❑	❑	☒ Pending Approval
2.	NHDES wetlands permit	❑	❑	☒ Pending Approval
3.	NHDES sewer discharge permit	❑	❑	☒ Pending Approval
4.	NHDES water supply permit	❑	☒	❑
5.	NHDES dam permit	❑	☒	❑
6.	NHDOT driveway permit	❑	☒	❑
7.	Londonderry ZBA variance(s)/special exception(s)	❑	☒	❑
8.	Londonderry sewer discharge permit	❑	❑	☒ Pending Approval
9.	Army Corps of Engineers	❑	❑	☒ Pending Approval
10.	Federal Aviation Administration	❑	❑	☒ Pending Approval
11.	Other federal, state or local permits (if applicable) for project	❑	❑	☒ Pending Approval

XIII. Acknowledgment and Signature:

The undersigned acknowledges he/she has read and understands all of the Town's current zoning, subdivision, site plan, and health regulations and requirements for obtaining all required local, state, and federal permits. .

Nicholas Golon

(Signature of person preparing plans)

Nicholas Golon, P.E. - TFMoran, Inc.

(Name)

Principal, Civil Department Manager

(Title)

12/18/25

(Date)

EXHIBIT 5

LONDONDERRY PLANNING BOARD
SUBDIVISION APPLICATION & CHECKLIST

❑ **Design Review** ■ **Formal Application**

All information provided and submitted with this Application Checklist shall conform to the Londonderry Site Plan Regulations. **Please note that the Planning Board may not accept and consider the application complete if the required items as outlined in the checklist are missing from the submittal.**

I. General Information:

A. Name of Project: Southern New Hampshire Green Energy Campus

B. Location of Project: 162 Litchfield Road (street) | 14 (Map) | 39 (lot)

GB & AR-1 (zoning)

C. Owner:

Name: Codner Nicholas F Trust 2012
Address: 162 Litchfield Road
Londonderry, NH 03053
Phone: (603) 432-1100 ext.161
Fax:
E-Mail: ncodner@londonderrynh.org
Signature: SONeill (Agent)

D. Applicant:

Name: PurposeEnergy-Londonderry, LLC c/o Sean O'neil
Address: 25 Pelham Road Suite #102, Salem, NH 03079
Phone: (844) 344-3783
Fax:
E-Mail: ONeill@purposeenergy.com
Signature: SONeill

E. Design Firm:
Name: TFMoran, Inc. - Nicholas Golon

Address: 48 Constitution Drive

Phone: (603) 472-4488

Fax:

E-Mail: ngolon@tfmoran.com

F. Name of Licensed Land Surveyor: Michael Dahlberg
(in responsible charge)
Signature:

G. Name of Licensed Professional Engineer: Nicholas Golon
(in responsible charge)
Signature:

H. Name of Certified Soil Scientist: Bruce Gilday

I. Name of Certified Wetland Scientist: Christopher Danforth

J. Date of Submittal to Planning Department: September 12, 2025

II. General Requirements (All Applications):

		Provided	N/A	
1.	Executed Subdivision Formal Application Request Form (Exhibit 2)	■	☐	
2.	Executed Subdivision Design Review Request Form (Exhibit 3)	■	☐	
3.	Complete abutters list	■	☐	
4.	All Required Fees	■	☐	
5.	Four (4) sets of plans and electronic "PDF" plans (12 sets if electronic plans not possible) submitted with all required information in accordance with the site plan regulations and this checklist	■	☐	
6.	Copies of any proposed easement deeds, protective Covenants or other legal documents	☐	■	pending
7.	Any waiver request(s) submitted with justification in writing	■	☐	
8.	Technical reports and supporting documents (see Sections X & XI of this checklist)	☐	■	
9.	Completed Subdivision Application Checklist	■	☐	

		Provided	N/A
10.	Letter explaining how DRC comments have been addressed and two (2) sets of highlighted, revised drawings (applicable if pre-application design review process was followed).	■	☐

III. General Plan Information (All Plans):

1.	Size and presentation of sheet(s) per requirements of the subdivision regulations	■	☐
2.	Title block information:		
	a. Drawing title	■	☐
	b. Name of site plan	■	☐
	c. Location of site plan	■	☐
	d. Tax map & lot #s of subject parcel(s)	■	☐
	e. Name & address of owner(s)	■	☐
	f. Date of plan	■	☐
	g. Scale of plan	■	☐
	h. Sheet number	■	☐
	i. Name, address, & telephone number of design firm	■	☐
	j. Name and address of Applicant	■	☐
3.	Revision block	■	☐
4.	Planning Board approval block provided on appropriate sheets (Cover sheet, boundary plans only)	■	☐
5.	Certification block (for engineer, surveyor, soil scientist, or wetland scientist)	■	☐
6.	Match lines (if any)	■	☐

IV. Title Sheet:
(may be consolidated with Boundary Plan)

1.	The following notes shall be provided:		
	a. Purpose of plan	■	☐
	b. Tax map and lot #s of all subject parcels	■	☐
	c. Area (existing & proposed) of subject parcel(s)	■	☐
	d. Zoning designation of subject parcel(s)	■	☐
	e. Min. lot area, frontages & setback dimensions	■	☐
	f. Existing and proposed use	■	☐
	g. Sanitary sewer source (name of provider (company) if offsite)	■	☐
	h. Water supply source (name of provider (company) if offsite)	■	☐
	i. Zoning variances/special exceptions with conditions	■	☐
	j. List FEMA sheet(s) used to identify 100-year flood elevation. (Note if no flood zone present as applicable)	☐	☐
	k. List of required permits and permit approval numbers	■	☐
	l. List of Planning Board waivers (if applicable)	■	☐
	m. Note identifying # of bedrooms per dwelling for residential use	■	☐

			Provided	N/A
	n.	Phasing notes, as required, under Section 4.18i as applicable	■	☐
	o.	Note identifying which plans are to be recorded and which are on file at the town	■	☐
	p.	Note the following: "If, during construction, it becomes apparent that deficiencies exist in the approved design drawings, the Owner shall be required to correct the deficiencies to meet the requirements of the regulations at no expense to the Town."	■	☐
	q.	Note the following: "If, during construction, it becomes apparent that additional erosion control measures are required to stop any erosion on the construction site due to actual site conditions, the Owner shall be required to install the necessary erosion protection at no expense to the Town.	■	☐
	r.	Note the following: "All materials and methods of construction shall conform to Town of Londonderry Subdivision Regulations and the latest edition of the New Hampshire Department of Transportation's Standard Specifications for Road & Bridge Construction."	■	☐
2.		Tax map sketch plan (or detail) showing proposed lot configuration at a scale 1" = 400'	■	☐
3.		Vicinity plan (at a scale of 1"=2500')	■	☐
4.		Plan index indicating all sheets	■	☐
V.		**Boundary Plan (Subdivision, Consolidation and Lot Line Adjustment:**		
1.		Surveyor's certification stamped and signed by LLS	■	☐
2.		Boundary of entire property by metes and bounds	■	☐
3.		Proposed lot configuration defined by metes and bounds	■	☐
4.		Boundary monuments:		
	a.	Monuments found	■	☐
	b.	Monuments to be set	■	☐
5.		Map # and Lot #, name addresses, and zoning of all abutting land owners	■	☐
6.		Existing streets:		
	a.	Name labeled	■	☐
	b.	Status noted or labeled	■	☐
	c.	Right-of-way dimensioned	■	☐
	d.	Pavement width dimensioned	■	☐
7.		Municipal boundaries (if any)	■	☐
8.		Existing easements (identified by type)	■	☐

		Provided	N/A
9.	Proposed easements defined by metes & bounds. Check each type of proposed easement applicable to this application:		
	a. Drainage easement(s)	☐	■
	b. Slope easement(s)	☐	■
	c. Utility easement(s)	☐	■
	d. Temporary easement(s) (such as temporary turnaround)	☐	■
	e. No-cut zone(s), including those along streams & wetlands (as may be requested by the Conservation Commission)	☐	■
	f. Vehicular & pedestrian access easement(s)	☐	■
	g. Visibility easements	☐	■
	h. Fire pond/cistern easement(s)	☐	■
	i. Roadway widening easement(s)	☐	■
	j. Walking trail easement(s)	☐	■
	k. Other easement(s) _____ Note type(s) _____	☐	■
10.	Designation of each proposed lot (by map & lot #s as provided by the assessor)	■	☐
11.	Area of each lot (in acres & square feet):		
	a. Existing lot(s)	■	☐
	b. Proposed lot(s)	■	☐
12.	North Arrow	■	☐
13.	Locus map (at a scale of 1" = 2,500)	■	☐
14.	Limits of wetlands & CO District Boundary	■	☐
15.	Wetland delineation:		
	a. Wetland delineation criteria & Certification	■	☐
16.	Owner(s) signature(s)	■	☐
17.	Proposed streets:		
	a. Name(s) labeled	☐	■
	b. Width of right-of-way dimensioned	☐	■
18.	All required setbacks (including any applicable buffers)	■	☐
19.	Physical features:		
	a. Existing features -- Buildings	■	☐
	Wells	■	☐
	Septic systems	■	☐
	Stonewalls	■	☐
	Paved drives	■	☐
	Gravel drives	■	☐
20.	Location & name (if any) of any streams or waterbodies	☐	■
21.	Location & elevation(s) of 100-year flood zone per FEMA Flood Insurance Study or as determined by drainage study	☐	■
22.	Location of existing overhead utility lines, poles, towers, etc.	■	☐

		Provided	N/A
23.	Plan and deed references	■	☐
24.	Zoning District boundary lines (if any)	■	☐
VI.	**Topographical/HISS Plan Requirements):**		
1.	Surveyor's stamp and signature by LLS	■	☐
2.	Boundary of entire property to be subdivided	■	☐
3.	Proposed lot configuration defined by metes and bounds	■	☐
4.	Boundary monuments:		
	a. Monuments found	■	☐
	b. Monuments to be set	■	☐
5.	Map # and lot #, name addresses, and zoning of all abutting land owners	■	☐
6.	Existing streets:		
	a. Name labeled	■	☐
	b. Status noted or labeled	■	☐
	c. Right-of-way dimensioned	■	☐
	d. Pavement width dimensioned	■	☐
7.	Municipal boundaries (if any)	■	☐
8.	Existing easements (identified by type)	■	☐
9.	Proposed easements defined by metes & bounds. Check each type of proposed easement applicable to this application:		
	a. Drainage easement(s)	☐	■
	b. Slope easement(s)	☐	■
	c. Utility easement(s)	☐	■
	d. Temporary easement(s) (such as temporary turnaround)	☐	■
	e. No-cut zone(s) along streams & wetlands (as may be requested by the Conservation Commission)	☐	■
	f. Vehicular & pedestrian access easement(s)	☐	■
	g. Visibility easements	☐	■
	h. Fire pond/cistern easement(s)	☐	■
	i. Roadway widening easement(s)	☐	■
	j. Walking trail easement(s)	☐	■
	k. Other easement(s) _____ Note type(s) _____	☐	■
10.	Designation of each proposed lot (by map & lot #s as provided by the assessor)	■	☐
11.	Area of each lot (in acres & square feet):		
	a. Existing lot(s)	■	☐
	b. Proposed lot(s)	■	☐
12.	North arrow	■	☐

		Provided	N/A
13.	Locus map (at a scale of 1" = 2,500) shown	■	☐
14.	Limits of wetlands	■	☐
15.	Wetland delineation:		
	a. Wetland delineation criteria	■	☐
	b. Wetland scientist certification	■	☐
16.	Owner(s) signature(s)	■	☐
17.	Proposed streets:		
	a. Name(s) labeled	☐	■
	b. Width of right-of-way dimensioned	☐	■
	c. Pavement width dimensioned	☐	■
18.	All required setbacks (including any applicable buffers)	■	☐
19.	Physical features (Existing Features):		
	a. Buildings	■	☐
	b. Wells	■	☐
	c. Septic systems	■	☐
	d. Stone walls	■	☐
	e. Paved drives	■	☐
	f. Gravel drives	■	☐
20.	Location & name (if any) of any streams or waterbodies	■	☐
21.	Location & elevation(s) of 100-year flood zone per FEMA Flood Insurance Study or as determined by drainage study	☐	■
22.	Location of existing overhead utility lines, poles, towers, etc.	■	☐
23.	Plan and deed references	■	☐
24.	Two-foot contour interval topography shown over all subject parcels	■	☐
25.	Source and datum of topographic information (USGS required)	■	☐
26.	Show at least one benchmark per sheet (min.) and per 5 acres (min.) of total site area	■	☐
27.	USDA-SCS soil survey information (where municipal sewer is to be provided)	■	☐
28.	Location, type, size & inverts of the following (as applicable):		
	a. Existing water systems	■	☐
	b. Existing sewer systems	■	☐
	c. Existing drainage systems	■	☐
	d. Existing utilities	■	☐

		Provided	N/A	see site plans & waiver requests
29.	4K Areas with test pits on all proposed lots (meeting NHDES & Town setback requirements)	☐	■	
30.	Location of all water wells with protective radii as required by the NHDES (meeting Town and NHDES setback requirements)	☐	■	
31.	Existing treelines	■	☐	
32.	Existing ledge outcroppings & other significant natural features	■	☐	
33.	HISS requirements:			
	a. Criteria for HISS delineation	☐	■	
	b. Soil scientist certification on plan (if HISS required)	☐	■	
	c. HISS mapping shown over all subject parcels (where no municipal sewer exists)	☐	■	
34.	Plan as submitted to the NHDES	☐	■	
VII.	**Improvement Plans (Stamped by Engineer Licensed in NH):**			
1.	Grading and Drainage:			
	a. Existing topography (two-foot contour interval minimum)	☐	☐	
	b. Proposed contours	☐	■	
	c. Existing spot elevations	■	☐	
	d. Proposed spot elevations	☐	■	
	e. Existing edge of pavement	■	☐	
	f. Proposed edge of pavement	☐	■	
	g. Existing curb line	■	☐	
	h. Proposed curb line	☐	■	
	i. Existing buildings and structures	■	☐	
	j. Proposed buildings and structures	☐	■	
	k. Existing retaining walls	■	☐	
	l. Proposed retaining walls	☐	■	
	m. Existing stone walls	■	☐	
	n. Reconstructed stone walls	☐	■	
	o. Existing treeline	■	☐	
	p. Proposed treeline	☐	■	
	q. Benchmarks	■	☐	
	r. Existing drainage systems:			
	1.) Pipes/culverts (each location):			
	i. Type	■	☐	
	ii. Size	■	☐	
	iii. Length and slope	■	☐	
	iv. Inverts	■	☐	
	v. End sections/Headwalls	■	☐	
	2.) Structures (catchbasins, drain manholes, special structures):			
	i. Location (sta. and off-set)	■	☐	
	ii. Type	■	☐	
	iii. Size	■	☐	
	iv. Rim Elevations	■	☐	
	v. Inverts	■	☐	

		Provided	N/A	
3.)	Swales/Ditches/Waterways:			
i.	Flow arrows (direction of flow)	■	☐	
ii.	Topography	■	☐	
iii.	Spot elevations	■	☐	
t.	Proposed Drainage Systems:			
1.)	Pipes/culverts (each location):			
i.	Type	☐	■	see site plans & waiver requests
ii.	Size	☐	■	
iii.	Length and slope	☐	■	
iv.	Inverts	☐	■	
v.	End sections/headwalls	☐	■	
vi.	Identify minimum cover and location	☐	■	
vii.	Outlet erosion protection	☐	■	
2.)	Structures (catchbasins, drain manholes, special structures):			
i.	Location (sta. and off-set)	☐	■	
ii.	Type	☐	■	
iii.	Size	☐	■	
iv.	Rim elevations	☐	■	
v.	Inverts	☐	■	
3.)	Swales/ditches/waterways:			
i.	Flow arrows (direction of flow)	☐	■	
ii.	Grading	☐	■	
iii.	Spot elevations	☐	■	
iv.	Erosion protection (riprap, matting, etc.)	☐	■	
u.	Temporary erosion protection during construction:			
1.)	Silt fence, haybales, etc.	☐	■	
2.)	Matting, mulch, etc.	☐	■	
2. Utilities:				
a.	Existing sanitary sewer system:			
1.)	Pipes:			
i.	Type	■	☐	
ii.	Size	■	☐	
iii.	Length and slope	■	☐	
2.)	Structures:			
i.	Location (sta. and off-set)	■	☐	
ii.	Type	■	☐	
iii.	Size	■	☐	
iv.	Rim elevations	■	☐	
v.	Inverts	■	☐	
b	Proposed sanitary sewer system:			
1.)	Pipes (gravity):			
i.	Type	☐	■	see site plans & waiver requests
ii.	Size	☐	■	
iii.	Length and slope	☐	■	
iv.	Separation (18" below water)	☐	■	
v.	Identify minimum cover and locations	☐	■	

			Provided	N/A	
2.)	Force Main:				see site plans & waiver requests
	i.	Type	☐	■	
	ii.	Size	☐	■	
	iii.	Direction of flow (flow arrows)	☐	■	
	iv.	Bends and thrust blocking	☐	■	
	v.	Air relief valves and structures	☐	■	
	vi.	Clean-out structures	☐	■	
	vii.	Identify minimum cover and locations	☐	■	
3.)	Structures:				
	i.	Location (sta. and off-set)	☐	■	
	ii.	Type	☐	■	
	iii.	Size	☐	■	
	iv.	Rim elevations	☐	■	
	v.	Inverts	☐	■	
4.)	Service laterals to each individual lot:				
	i.	Type	☐	■	
	ii.	Size	☐	■	
	iii.	Length and slope	☐	■	
	iv.	Separation (18" below water)	☐	■	
	v.	Minimum cover and locations identified	☐	■	
	vi.	Location of connection	☐	■	
c.	Existing Water System:				
1.)	Pipes:				
	i.	Type	■	☐	
	ii.	Size	■	☐	
2.)	Hydrants		■	☐	
3.)	Valves		■	☐	
4.)	Bends and thrust blocks		■	☐	
5.)	Tees		■	☐	
d.	Proposed Water System:				
1.)	Pipes:				
	i.	Type	■	☐	
	ii.	Size	■	☐	
2.)	Hydrants				
	i.	Locations approved by Fire Department	■	☐	
3.)	Valves		■	☐	
4.)	Bends and thrust blocks		■	☐	
5.)	Tees		■	☐	
e.	Existing Gas Lines:				
1.)	Pipes:				see site plans & waiver requests
	i.	Type	☐	■	
	ii.	Size	☐	■	
2.)	Valves		☐	■	
f.	Proposed Gas Lines:				
1.)	Pipes:				
	i.	Type	☐	■	
	ii.	Size	☐	■	
2.)	Valves		☐	■	

		Provided	N/A
3.)	Services to each lot	☐	■
g. Telephone/Electrical/Cable:			
1.)	U-poles	■	☐
2.)	Pedestals/transformers	■	☐
3.)	Overhead lines	■	☐
4.)	Underground lines	■	☐
5.)	Services to each lot	■	☐

3. Roadways:

a.	Plan and profile drawings (stamped by engineer licensed in NH)	■	☐	see site plans & waiver requests
1.)	All items required above under a. Grading and Drainage	☐	■	
2.)	All items required above under b. Utilities	☐	■	
3.)	Profile grid (station and elevation) with horizontal To vertical scale (ratio = 10:1) and datum	■	☐	
4.)	Existing grade profile	■	☐	
5.)	Proposed profile:			
i.	PVIs (station and elevation)	■	☐	
ii.	PVCs (station and elevation)	■	☐	
iii.	PVTs (station and elevation)	■	☐	
iv.	Length of vertical curve	■	☐	
v.	K-values	■	☐	
vi.	Tangent slopes	■	☐	
vii.	Drainage system	■	☐	
viii.	Sewer system	■	☐	
ix.	Water system	■	☐	
x.	Crest stations identified (stations and elevations)	■	☐	
xi.	Sag station identified (stations and elevations)	■	☐	
xii.	Existing and proposed grades at fifty (50) foot stations	■	☐	
6.)	Road intersection (equation of stations)	☐	■	
7.)	Label street name	☐	■	
8.)	Right-of-way lines	■	☐	
9.)	Easement lines:			
i.	Drainage	■	☐	
ii.	Sewer	■	☐	
iii.	Visibility	☐	■	
iv.	Utility	☐	■	
v.	Access	☐	■	
vi.	Slope	☐	■	
10.)	Wetlands Mapping:			
i.	Wetland limits identified	■	☐	
ii.	Impact area identified in square feet for each individual location	■	☐	
11.)	Driveway shown to each individual lot (with grading and culverts if required)	☐	■	

		Provided	N/A
12.)	Centerline geometry including:		
	i. Bearings and distances labeled	■	☐
	ii. Tangents	■	☐
	iii. Curve data	■	☐
	iv. PC's	■	☐
	v. PT's	■	☐
13.)	Pavement:		
	i. Width	■	☐
	ii. Corner radius (edge of pavement)	■	☐
	iii. Curbing	■	☐
14.)	Existing and proposed lot lines	■	☐
15.)	Lot designations	■	☐
16.)	Underdrain location (beginning and end stations)	☐	■
17.)	Guardrail Location (beginning and end stations, off-set)	☐	■
18.)	Traffic control signs (stop, street, etc.)	☐	■
19.)	Pavement markings	■	☐

see site plans & waiver requests

VIII. Construction Detail Drawings:

Note: Construction details to conform with NHDOT Standards & Specifications for Roads & Bridges, Town of Londonderry Department of Public Works requirements, and Subdivision Regulations

1.	Typical cross-section of pavement	☐	■
2.	Typical driveway apron detail	☐	■
3.	Curbing detail	☐	■
4.	Guardrail detail	☐	■
5.	Sidewalk detail	☐	■
6.	Traffic signs and pavement markings	☐	■
7.	Typical underdrain trench detail	☐	■
8.	Drainage structure(s):		
	a. Catchbasin (including frame and grate)	☐	■
	b. Manhole (including frame and cover)	☐	■
	c. Outlet structure (detention basins)	☐	■
	d. Headwalls	☐	■
	e. Flared end sections	☐	■
9.	Outlet protection riprap apron	☐	■
10.	Level spreader	☐	■
11.	Treatment swale	☐	■
12.	Typical section at detention basin	☐	■

			Provided	N/A	see site plans & waiver requests
13.	Typical pipe trench:				
	a.	Drainage	☐	■	
	b.	Sewer	☐	■	
	c.	Water	☐	■	
	d.	Utilities	☐	■	
14.	Sewer structures:				
	a.	Manholes (including frame and cover, inverts)	☐	■	
	b.	Drop manholes	☐	■	
	c.	Special structures (pump stations, blowoffs, etc.)	☐	■	
	d.	Pipe manhole joint details	☐	■	
15.	Typical sewer lateral service connection detail		☐	■	
16.	Typical chimney detail		☐	■	
17.	Project specific sewer details (sleeves, etc.)		☐	■	
18.	Typical sewer notes (as per NHDES and Sewer Division requirements)		☐	■	
19.	Hydrant detail		☐	■	
20.	Thrust block details		☐	■	
21.	Valve box detail		☐	■	
22.	Typical water connection service detail		☐	■	
23.	Erosion control details:				
	a.	Haybale barriers at waterways	☐	■	
	b.	Silt fence	☐	■	
	c.	Stone check dam	☐	■	
	d.	Stone construction entrance	☐	■	
	e.	Inlet filter basket	☐	■	
	f.	Haybale barrier at catchbasin	☐	■	
24.	Notes:				
	a.	General notes as required by the Department of Public Works	☐	■	
	b.	Construction sequence	☐	■	
	c.	Erosion control notes	☐	■	
	d.	Turf establishment notes	☐	■	
	e.	Sewer construction notes (as required by Sewer Ordinance)	☐	■	
	f.	Water system construction notes (as required by local water company)	☐	■	
IX.	**Cross-Sections**:				
1.	Roadway cross sections at 50-foot intervals		☐	■	
2.	Roadway cross sections at culvert locations (inlet/outlet)		☐	■	

		Provided	N/A	
3.	Scale of sections at 1" = 5' H & V	☐	■	see site plans & waiver requests
4.	Existing & finish centerline grades	☐	■	
5.	Proposed pavement, crushed gravel and bank run gravel limits	☐	■	
6.	Right-of-way and easement limits	■	☐	
7.	Roadway & shoulder cross slopes	☐	■	see site plans & waiver requests
8.	Embankment slopes	☐	■	
9.	Underdrains	☐	■	
10.	Drainage piping and structures	☐	■	
11.	Sewer piping and structures	☐	■	
12. Utilities:				
a.	Water lines	☐	■	
b.	Gas lines	☐	■	
c.	Telephone/electric/cable	☐	■	
13.	Guardrail	☐	■	

X. Supporting Documentation:

1.	Lot sizing calculations	☐	■	
2.	Test pit/perc.test data	☐	■	
3.	Stormwater management report including the following:			
a.	Table of contents	☐	■	
b.	Narrative statement (including conclusions)	☐	■	
c.	Summary table comparing existing and post-development conditions	☐	■	
d.	Summary table of data for each pipe & piping system:			
1.)	Discharge	☐	■	
2.)	Depth of flow	☐	■	
3.)	Velocity	☐	■	
e.	Summary table of data for each swale & channel:			
1.)	Discharge	☐	■	
2.)	Depth of flow	☐	■	
3.)	Velocity	☐	■	
f.	Project location plan (on USGS quadrangle)	☐	■	
g.	Watershed area plan for existing condition	☐	■	
h.	Watershed area plan for post-development condition	☐	■	
i.	Runoff calculations for existing & post-development conditions	☐	■	
j.	Flood routing calculations for each detention basin	☐	■	

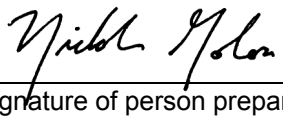
			Provided	N/A	
	k.	Design for water quality treatment facilities (level spreaders, treatment swales, etc.)	☐	■	see site plans & waiver requests
	l.	Riprap design calculations	☐	■	
	m.	Report stamped by licensed professional engineer in NH	☐	■	
4.		Traffic Impact Analysis:			
	a.	Traffic Impact analysis as required by Section 3.14	☐	■	
5.		Fiscal impact study provided (if required)	☐	■	
6.		Off-site improvements:			
	a.	Design plans included in the project drawings	☐	■	
	b.	Arrangements and agreements	☐	■	
	c.	Easements	☐	■	
7.		Utility clearance letters (as applicable):			
	a.	Electric	☐	■	
	b.	Telephone	☐	■	
	c.	Cable television	☐	■	
	d.	Gas	☐	■	
	e.	Water	☐	■	
	f.	Sewer	☐	■	
8.		Other project-specific information as required by the Design Review Committee (DRC)	■	☐	

XI. Required Project Permits (as applicable to applications):

		Provided	N/A	App Submitted	
1.	NHDES subdivision approval	☐	☐	■	see site plans
2.	NHDES site-specific approval	☐	☐	■	
3.	NHDES wetlands permit	☐	☐	■	
4.	NHDES sewer discharge permit	☐	☐	■	
5.	NHDES water supply permit	☐	☐	■	
6.	NHDES dam permit	☐	☐	■	
7.	NHDOT driveway permit	☐	☐	■	
8.	Londonderry ZBA variance(s)/special exception(s)	☐	☐	■	
9.	Londonderry sewer discharge permit	☐	☐	■	
10.	Army Corps of Engineers	☐	☐	■	
11.	Federal Aviation Administration	☐	☐	■	
12.	Other federal, state or local permits (if applicable) for project	☐	☐	■	

XII. Acknowledgment and Signature:

The undersigned acknowledges he/she has read and understands all of the Town's current zoning, subdivision, site plan, and health regulations and requirements for obtaining all required local, state, and federal permits.



(Signature of person preparing plans)

Nicholas Golon, PE

(Name)

Principal, Civil Department Manager

(Title)

December 22, 2025

(Date)

EXHIBIT 2
SUBDIVISION FORMAL APPLICATION REQUEST FORM

A. Name of Subdivision : TFMoran, Inc. - Nicholas Golon

B. Location of Subdivision: 162 Litchfield Road (Street) 14 (Map #) 39 (Lot #)

Number of Lots: 2

Total Acreage: 47.3

Zoning: (GB) & (AR-1)

C. Owner:

Name: Codner Nicholas F Trust 2012
Address: 162 Litchfield Road
Londonderry, NH 03053
Phone: (603) 432-1100 ext.161
Fax:
E-Mail: ncodner@londonderrynh.org
Signature: (Agent)

D. Applicant:

Name: PurposeEnergy-Londonderry, LLC c/o Sean O'neil
Address: 25 Pelham Road Suite #102, Salem, NH 03079
Phone: (844) 344-3783
Fax:
E-Mail: ONeill@purposeenergy.com
Signature:

E. . Design Firm:

Name: TFMoran, Inc.
Address: 48 Constitution Drive, Bedford, NH 03110
Phone: (603) 472-4488
Fax:
E-Mail: ngolon@tfmoran.com

F. Name of Licensed Land Surveyor: Michael Dahlberg, LLS
(in responsible charge)
Signature:

G. Name of Licensed Professional Engineer: Nicholas Golon
(in responsible charge)

Signature: Nicholas Golon

H. Name of Certified Soil Scientist: Bruce Gilday, CSS

I. Name of Certified Wetland Scientist: Christopher Danforth, CWS

J. Date of Submittal to Planning Department: September 12, 2025

Application Fee Attached:	☑
Escrow for Review Cost Attached:	☑
Subdivision Plans Attached:	☑
Abutters List Attached:	☑
Subdivision Application Checklist Attached:	☑
Required Documents Attached (As outlined in Subdivision Application Checklist)	☐

For Planning Department Use Only (Date Received Stamp)

Application for a Conservation Overlay District Conditional Use Permit
Form B - For a Buffer Reduction by Conditional Use Permit (Named Wetlands ONLY)

Conditional Use permit is as part of a: ■ Site Plan ■ Subdivision

I. General Information:

A. Name of Project: Southern New Hampshire Green Energy Campus

B. Location of Project: 162 Litchfield Road (Street) 25 N. Wentworth Ave. 14 (Map #) 39, 39-2 (Lot #)

C. Applicant:

Name: PurposeEnergy - Londonderry, LLC

Address: 25 Pelham Road, Suite 102
Salem, NH 03079

Phone: 617-202-9156

Fax:

Signature:

II. Required Information:

- ■ Plans showing existing and proposed conditions.
- ■ Wetland delineation certified by a Certified Wetlands Scientist and mapped by a licensed land surveyor.
- ■ Areas on plans highlighted to show areas where conditional use permit is sought
- ■ Narrative description of project and conditional use permit request.
- ■ Criteria for conditional use permit described (see below).

III. Optional Information:

- ■ Aerial Photographs
- ❑ Site Photographs

IV. Conditional Use Permit Criteria

Address, in the provided boxes, the following criteria in accordance with Section 2.6.3 of the Zoning Ordinance:

1. The structure for which the exception is sought cannot feasiblely, after consideration of all reasonable alternatives, be constructed on a portion or portions of the lot which lie outside the CO district **OR** the application of the CO district eliminates greater than 50% of the buildable area located on the parcel.

The project has been designed to avoid impacting high functioning wetlands and the associated CO district by consolidation the configuration of the facility to the extent practicable. All reasonable alternatives have been considered but wetlands currently run through the middle of the lot and the proposed development cannot feasibly be designed without impacting the buffers.

2. The proposed structure and use must be consistent with the intent of the CO district, and provisions must be made to ensure the structure's drainage will not adversely impact any wetlands and be consistent with the purpose and intent of Section VIII.

The proposed structure and use is consistent with the intent of the CO district by maintaining and enhancing the quality of surface waters and groundwater through best management practices incorporated into the design. The proposed structure is essential to the productive use of land not within the CO District but is consistent with existing uses in the vicinity and approved within the Gateway Business District

3. Description of proposed best management practices:

The site has been designed to minimize impacts within the CO district as well as the implementation of underground stormwater chambers to capture, treat, store, and infiltrate stormwater runoff to prevent flooding and improve water quality. Grass swales are proposed in the design to convey and treat stormwater by removing pollutants. Infiltration basins are located in southwest and northwest corner to manage stormwater runoff, increase groundwater recharge, and improve water quality. These measures replicate the principal wetland functions identified in the wetland functional assessment used in the initial site design.

4. There shall be no construction of parking areas within the area for which the conditional use permit is sought.

5. The maximum building coverage in the outer-50 feet of the buffer area shall be no greater than 50%.

6. Square Footage of Wetland Impacts: 8937p/348t

7. Square footage of Buffer Impacts: 117,210 sf

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

September 12, 2025

Ms Kristan Farr, Town Planner
Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

RE: Conditional Use Permit – Conservation Overlay District
Southern New Hampshire Green Energy Campus
162 Litchfield Road, Map 14/Lot 39
Londonderry, NH 03079

Dear Ms Farr:

On behalf of our client, PurposeEnergy – Londonderry, LLC, a conditional use permit for disturbance within the Conservation Overlay District (Londonderry Zoning Ordinance 4.6.1) for this project is requested.

The project, located at 162 Litchfield Road and identified as Map 14. Lot 39 consists of 49.473 acres and is located within the Gateway Business District (GB). The project is proposed on the northern 15.316 acres of the property and will be accessed from North Wentworth Avenue. A portion of the property, south of the proposed development site, was set aside as compensatory mitigation by the NHDOT for construction at the Manchester Regional Airport project. This conservation land is connected to other conservation land along Horsetrail Brook to provide contiguous wildlife corridors. Although the upper reach of Horsetrail Brook is located within Lot 39 it is more than 200 feet from the project site and is protected within the conservation easement. The 15.316 acre parcel was intentionally set aside for future development within the Gateway Business district and the proposed use is integral to the Southern New Hampshire Green Energy Campus.

Londonderry's new Southern New Hampshire Green Energy Campus will keep waste out of New Hampshire's landfills by turning it into renewable energy. About 30% of the U.S. food supply, over 30 million tons, goes to landfills every year. It is the single largest contributor to landfill waste. Meanwhile, New Hampshire's landfills are projected to exhaust their capacity in the next decade. As capacity declines, local communities could be forced to pay more for waste management, and state taxpayers could incur the high cost of landfill closure and new landfill development. New landfills are likely to be built in rural areas where they may have significant environmental impacts.

The Southern New Hampshire Green Energy Campus will reduce the waste management burden on New Hampshire by tackling the food waste problem. It will feature two connected resource recovery facilities.

- The first, RecycleWorks, will receive food waste that normally goes to landfill, including food that has passed its sell by date or is out of specification but is wrapped in glass, plastic or metal

packaging. RecycleWorks will remove the organic waste from that packaging and send it to the second facility on the campus,

- PurposeEnergy – Londonderry. PurposeEnergy will pump the food waste into tanks that digest it in a process similar to a human stomach. The tanks will also receive dairy waste directly by pipe from a local business, Stonyfield Yogurt. The digester tanks will produce renewable biogas that will be cleaned to pipeline quality and injected into the local natural gas network.

Left in its packaging, this waste would not only add dramatically to the tonnage of waste reaching New Hampshire landfills, but the decomposition of the organic material in a landfill would release methane, one of the most harmful greenhouse gases, into the atmosphere.

The Green Energy Campus is not a landfill; all of the material that comes to the campus will leave it either as recyclable material, renewable biogas, clean water, or biosolids (the residuals from digestion which will be sent to a compost facility for use as fertilizer). The net impact of the Southern New Hampshire Green Energy Campus is to

- divert 90% of solid waste away from New Hampshire landfills;
- reduce the escape of environmentally damaging methane gas resulting from decomposition of organic matter;
- support local business in the cost-effective and environmentally beneficial management of food manufacturing waste.

Based on the Conservation Overlay District definition (4.4.1.2 A-4) all uplands with 50-feet of the delineated wetlands for this project are subject to the rules and restrictions of the Conservation Overlay District

The proposed resource recovery facility is comprised of a series of tribrid bioreactors, a 36,600 s.f. depackaging building, a control room, process equipment room, lab and office building (14,688 s.f.). Supporting infrastructure includes driveways, parking, utilities, and a stormwater management system are also part of the development plan for this facility. The total project footprint is approximately 11.23 acres of the total 15.316-acre lot.

Wetlands on the entire lot were delineated by a certified wetland scientist and a wetland functional assessment was completed to identify functionally significant wetlands within the project area. This document was used in the initial planning and layout of the project to ensure the more functionally significant wetlands are avoided to the extent practicable. The report shows the higher functioning wetlands are located to the south within the existing conservation easement, those wetlands more directly connected to Horsetrail Brook. Wetlands subject to project impacts include the upper reaches of Wetland 3, the largest wetland within the project site consisting of narrow gullies that drain to the south. Wetland 4 is a small, isolated wetland of 1028 sf with low functional value. Wetland 5/6 is a higher functioning wetland located offsite to the south and east of the project. However, it will be impacted by construction of the access road from North Wentworth Ave. The principal functions identified for Wetland 3 are Wildlife Habitat and Groundwater discharge/recharge

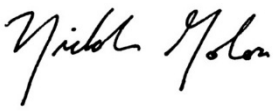
Conditional Use Permits may be granted providing the proposed buffer impacts meet the criteria in accordance with Section 4.6.1.4.B.2 of the zoning ordinance. The campus configuration was designed to minimize site development impacts. However, Wetland 3 crosses through the middle of the site making complete avoidance impracticable and infeasible. Provisions for controlling, treating and infiltrating stormwater runoff will be managed onsite to ensure water quality is maintained at preconstruction levels. Groundwater Recharge/Discharge is a Principal Function of Wetland 3 and is mitigated through the implementation of the stormwater management system. Wildlife Habitat is the second Principal Function identified for Wetland 3 that is also mitigated through the existing conservation easement that provides protection of the higher functioning wetlands (Wetland 5/6) that also maintains a contiguous, unfragmented travel corridors and habitats.

An application to fill wetlands has been submitted to the NH Department of Environmental Services Wetlands Bureau. Wetland impacts total 8,937 s.f. of permanent filling and 348 s.f of temporary construction impacts. Total impacts to the Conservation Overlay district 50-foot buffer is 117,210 s.f. As part of this review the NH Department of Fish and Game, the NH DES Alteration of Terrain Bureau, the U.S. Army Corps of Engineers and US Environmental Protection Agency will have the opportunity to review and comment on this project.

Londonderry's Director of Economic Development has determined the administrative classification of this proposed use to be "similar to Materials Recovery Facilities (NAICS 562920), Miscellaneous Food Manufacturing (NAICS 311999), and Specialized Freight (NAICS 484220)". There are other industrial uses in the vicinity that are similar, and this use has been deemed to be "permitted by right" in the Gateway Business District.

Please consider this request for relief from the Conservation Overlay District requirements. If you find you have concerns or need additional information regarding this request, please contact me at 603-472-4488 or ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.



Nicholas Golon, P.E.
Civil Department Manager, Principal

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

September 12, 2025

RE: Conditional Use Permit – Frontage Dimensional Relief
Southern New Hampshire Green Energy Campus
162 Litchfield Road, Londonderry, NH 03053
Tax Map 14, Lot 39

On behalf of our Client, PurposeEnergy - Londonderry, LLC, a conditional use permit for dimensional relief of the minimum lot frontage requirement of 150-feet per Section 4.5.2.B. of the Londonderry Zoning Ordinance is requested. Relief is requested in consideration of a proposed subdivision of tax map 14, lot 39 whereby the lot would be subdivided along the limits of the existing conservation easement established as the Airport Access Road Mitigation Area, an initiative implemented to mitigate the environmental impact of the Airport Access Road project. The subdivision would result in a remainder lot of 34.157-acres and new lot of 15.316-acres. The remainder lot, which consists of an existing single-family home will retain frontage on Litchfield Road totaling approximately 560.74-feet, with the new lot to retain frontage along North Wentworth Avenue consisting of approximately 62.96-feet. The subdivision will facilitate the development of the portion of the lot outside of the conservation easement to serve as the Southern New Hampshire Green Energy Campus. The Energy Campus will reduce the waste management burden on New Hampshire by addressing the food waste problem with two connected resource recovery facilities.

- The first, RecycleWorks, will receive food waste that normally goes to landfill, including food that has passed its sell-by date or is out of specification but is wrapped in glass, plastic or metal packaging. RecycleWorks will remove the organic waste from that packaging and send it to the second facility on the campus,
- PurposeEnergy – Londonderry. PurposeEnergy will pump the food waste into tanks that digest it in a process similar to a human stomach. The tanks will also receive dairy waste directly by pipe from a local business, Stonyfield Yogurt. The digester tanks will produce renewable biogas that will be cleaned to pipeline quality and injected into the local natural gas network.

The Green Energy Campus is not a landfill; all of the material that comes to the campus will leave it either as recyclable material, renewable biogas, clean water, or biosolids (the residuals from digestion which will be sent to a compost facility for use as fertilizer). The net impact of the Southern New Hampshire Green Energy Campus is to;

- Divert 90% of solid waste away from New Hampshire landfills;
- Reduce the escape of environmentally damaging methane gas resulting from decomposition of organic matter;
- Support local business in the cost-effective and environmentally beneficial management of food manufacturing waste.

Per the Londonderry Zoning Ordinance Section 4.5.3 Conditional Use Permits, subsection B - Dimensional Relief by Conditional Use Permit, states: “The Planning Board may through the

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Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

granting of a Conditional Use Permit adjust standards of any dimensional requirement of the district (including but not limited to: setback, density, green space, or frontage) for projects that are truly supportive of the goals of the GB District as noted above, and where such adjustments would allow the developer to more fully meet these goals and objectives.".

The site at the end of North Wentworth Avenue in Londonderry is zoned Gateway Business District and is located directly adjacent to the Londonderry Ecological Industrial Park which represents similar land uses already prominent in the surrounding area whereby the existing occupants enable industrial facilities to more efficiently utilize materials, and both reduce and recycle waste.

Per Section 4.5.3.B. of the Londonderry Zoning Ordinance, Conditional Use permits may be granted under the circumstance that the proposed frontage meets the following conditions:

6.2 General Criteria

The following criteria must be satisfied in order for the Planning Board to grant a conditional use permit:

A. Granting of the application would meet some public need or convenience.

   Granting of the application would allow significant reductions in solid waste being discharged to New Hampshire landfills which in turn reduces the escape of environmentally damaging methane gas resulting from decomposition of organic matter and supports local business in the cost-effective and environmentally beneficial management of food manufacturing waste.

B. Granting of the application is in the public interest.

   As similarly stated above, granting the application is in the public interest. The intended use of the lot is consistency with the Town 2013 Comprehensive Master Plan that states "…Londonderry should promote and build upon its's existing eco-park and use this area to generate competitive advantages that attract sustainable industries to Town.". This conformity with the Master Plan demonstrates the proposed development would not alter the essential character of the locality and would be in the public interest.

C. The property in question is reasonably suited for the use requested.

   The property is zoned Gateway Business District which provides a permitted by right location and is located directly adjacent to the Londonderry Ecological Industrial Park which represents similar land uses already prominent in the surrounding area whereby the existing occupants enable industrial facilities to more efficiently utilize materials, and both reduce and recycle waste.

D. The use requested would not have a substantial adverse effect on the rights of the owners of surrounding properties.

   In that the use is allowed by right, is co-located with similar uses in the immediate vicinity, and consistent with the expectations expressed by the Master Plan, the request would not have a substantial adverse effect on the rights of the owners of surrounding properties.

E. The traffic generated by the proposed use is consistent with the identified function, capacity, and level of service of transportation facilities serving the community.

Traffic from this proposal generates less than 100 trips, only 44 am trips and 77 pm trips, or one new trip every 1-2 minutes. Traffic will be distributed in several directions so there is not a concentration of trips impacting a single movement or intersection. This level of traffic falls within the allowance for ordinary background growth and can be safely accommodated without need for improvements.

F. There must be appropriate provision for access facilities adequate for the estimated traffic from public streets and sidewalks, so as to assure public safety and to avoid traffic congestion.

North Wentworth Avenue provides frontage to the lot with a private driveway to be installed to serve as the means of access from the current cu-de-sac at the end of this dead-end Class V Town road. There are no other conflicting access points, and the center of the cul-de-sac is grass with no visual obstruction, so there is adequate sightline available for the proposed driveway. North Wentworth Avenue connects to Harvey Road less than half a mile south of Pettengill Road. The roadway generally provides one travel lane in each direction with a default speed limit of 30 mph. This roadway configuration is appropriate for the intended use, assures public safety and avoids traffic congestion.

6.3.9 Gateway Business District

Applications for a Conditional Use Permit within the Gateway Business district must demonstrate compliance with the general criteria of Section 6.2 and this section.

A. The following criteria must be satisfied in order for the Planning Board to grant a conditional use permit in the Gateway Business District. The applicant shall demonstrate that:

1. The application demonstrates that the alternative design for which the Conditional Use Permit is sought does not impact the general health, safety, and general welfare of the Town, and is otherwise in compliance will all requirements of the Zoning Ordinance, Site Plan Regulations, and Subdivision Regulations, as applicable to the proposed project.

The alternative frontage is consistent with the intent of the frontage requirements in that it ensures adequate access for the intended users/emergency responders, provides access to utilities and services, and ensures public safety and welfare by preventing overcrowding of the land and appropriately manages traffic flow. The frontage provided accommodates turning movements associated with oversized vehicles as well as the largest emergency responder vehicle, and its special condition as a dead-end lot surrounded by a conservation easement on three sides furthers the purpose of not overcrowding the land and managing traffic flow. These elements demonstrate that the CUP sought will not adversely impact the general health, safety, and general welfare of the Town as it upholds the spirt and intent of the frontage requirements.

2. The applicant has demonstrated that the alternative design for which the Conditional Use Permit is sought better achieves the Objectives and Characteristics of the district, while not diminishing surrounding property values or the ability of nearby parcels to develop in accordance with the Objectives and Characteristics of the district; and

In that the use is allowed by right, is co-located with similar uses in the immediate vicinity, and consistent with the expectations expressed by the Master Plan, the request would not diminish property values or the ability of nearby parcels to develop in accordance with the objective sand characteristics of the district.

3. The property in question is reasonably suited for the use requested, and the design of the site represents to the extent practicable preservation of natural resources, open space, and does not create a hazard to surface or underground water resources.

   The Project Team took great care to select a site not only designated for industrial development, but where appropriate protections for the local environment have already been provided to preserve the ecology of the surrounding area. The site at the end of North Wentworth Avenue in Londonderry is zoned Gateway Business District which provides a permitted by right location for the use and the portion of the property intended for development was excluded from the adjacent Conservation Easement established as the Airport Access Road Mitigation Area, an initiative implemented to mitigate the environmental impact of the Airport Access Road project. The location of the mitigation area along the properties east, south and west property lines preserve valuable wildlife habitat and passageway through this portion of Londonderry. The subject property is also located directly adjacent to the Londonderry Ecological Industrial Park and represents similar land uses already prominent in the surrounding area whereby the existing occupants enable industrial facilities to more efficiently utilize materials, and both reduce and recycle waste. Appropriate controls will be put in place to ensure the facility does not create a hazard to surface or underground water resources.

4. Granting of the application is in the public interest;

   Granting of the application would allow significant reductions in solid waste being discharged to New Hampshire landfills which in turn reduces the escape of environmentally damaging methane gas resulting from decomposition of organic matter and supports local business in the cost-effective and environmentally beneficial management of food manufacturing waste. The intended use of the lot is consistency with the Town 2013 Comprehensive Master Plan that states "…Londonderry should promote and build upon its's existing eco-park and use this area to generate competitive advantages that attract sustainable industries to Town.". This conformity with the Master Plan demonstrates the proposed development would not alter the essential character of the locality and would be in the public interest.

5. The proposed use is consistent with the Objectives and Characteristics of the Gateway Business District, Section 4.5.1;

   See below response.

4.5.1 Gateway Business District

The Gateway Business District (GB) is intended to allow for the development of gateways to the Town of Londonderry, centers of commerce, and employment centers for the Southern NH region. It is the desire of the Town of Londonderry that all of these activities be developed in a manner that both serves the business interests contained in the district, and in a manner that that conveys a campus atmosphere to those arriving here. Traffic circulation and alternate modes of transportation

need to be provided for, as does parking for employees and visitors alike. A wide variety of industrial, supporting commercial development, and open space & recreational amenities are desired, in accordance with the various planning efforts undertaken by the Town in recent years (primarily the 2004 Master Plan which includes the 2003 Londonderry Business Park Design Charrette, and any other planning efforts as completed and applicable). All of these activities are envisioned as being developed in a manner that involves quality design of landscaping, a high level of quality in individual building and site design which takes into account the context of the site in its natural environment, and flexibility on the part of the Town so as to achieve the design suggested in those documents.

> As identified in the above responses the project embodies the intent of the Gateway Business District and the expectations expressed in the Town Master Plan specific to enhancing the Londonderry Ecological Park. This specific parcel has the advantage of being located at the end of North Wentworth Avenue and surrounded by conservation land that is protected in perpetuity such that the alternate frontage proposed satisfies its intended purpose and will not impact the general health, safety and general welfare of the Town.

Should there be any questions or concerns regarding this submittal or the project in general please do not hesitate to contact the undersigned at 472-4488 or ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, P.E.
Civil Department Manager, Principal

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Planners

September 12, 2025

Kellie Caron, Assistant Town Manager & Director of Economic Development
Town of Londonderry Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

Re: Waiver Request – 3.10.g.1.
Southern New Hampshire Green Energy Campus
Tax Map 14, Lot 39

Dear Kellie,

On behalf of our client, PurposeEnergy Londonderry - LLC, we respectfully request a waiver from Section 3.10.g.1 of the Londonderry Site Plan Regulations to waive the internal parking landscape area requirement.

Internal parking landscaping areas are impractical for this industrial facility due to the follow;

- No centralized parking for the facility is provided and site parking is dispersed throughout the campus in limited quantities.
- This site is unique in that it does not have a traditional street presence as it is accessed at the end of a Town ROW. There will be insignificant visibility to the site from the road.
- The inclusion of additional internal landscape area would necessitate a larger project footprint which increases the area of disturbance, limits of clearing, and increase retaining wall heights to avoid unnecessary wetland impacts.
- The site has been meticulously engineered to utilize the best technologies and efficient routing of waste and process piping. Internal landscape islands would be limited to shrubs which is not practical for this type of facility.

We feel this request is appropriate and consistent with the expectations of the Planning Board and that this landscape design associated with the Southern New Hampshire Green Energy Campus upholds the spirit of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 3.10.g.1.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
Civil Department Manager/Principal

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Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
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Civil Engineers
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September 12, 2025

Kellie Caron, Assistant Town Manager & Director of Economic Development
Town of Londonderry Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

RE: Waiver Request – 3.09.d.(Table B)
Southern New Hampshire Green Energy Campus
Tax Map 14, Lot 39

Dear Kellie,

On behalf of our client, PurposeEnergy Londonderry - LLC, we respectfully request a waiver from Section 3.09(d)(Table B) of the Site Plan Regulations to allow an alternate method of parking demand calculation.

The applicant requests the use of the Parking Generation Manual by the Institute of Transportation Engineers (ITE), 6th edition, October 2023 as an alternative to the Town of Londonderry Site Plan Regulations, Section 3.09 Table B. The ITE Parking generation manual provides for a more specific evaluation of the parking needs of this specific type of facility, which is more so predicated on employee count than building square footage as it has large floor areas with unmanned process equipment. The end users have provided forecasted employee counts for their maximum buildout which has been used to define the proposed required parking. PurposeEnergy and Recycleworks have similar facilities and evaluated the employee demand for this site at 30 employees.

Using the Institute for Transportation Engineers land use code (luc) 110 - general light industrial:
avg. rate = 0.76 spaces/employee
30 employees x 0.76 spaces/employees = 23 spaces

We feel this request is appropriate and consistent with the expectations of the Planning Board and that this Site Plan the Southern New Hampshire Green Energy Campus upholds the spirit of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 3.07.g.2.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, P.E.
Principal, Civil Department Manager

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Fax (603) 472-9747
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Civil Engineers
Structural Engineers
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Land Surveyors
Landscape Architects
Planners

December 23, 2025

Kellie Caron, Assistant Town Manager & Director of Economic Development
Town of Londonderry Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

Re: Waiver Request – 4.12.c.19.viii.
Southern New Hampshire Green Energy Campus
Tax Map 14, Lot 39-2

Dear Kellie,

On behalf of our client, PurposeEnergy Londonderry - LLC, we respectfully request a waiver from Section 4.12.c.19.viii of the Londonderry Site Plan Regulations to waive the requirement to show trees with greater than 15" diameter and specify their species on the subdivision plans.

Given the size of the parent property (49.473-acres), it would not be practical to request the applicant to locate trees greater than 15" in diameter and specify their species over such a large area. The majority of the remainder lot (34.157-acres) is under a conservation easement, and the proposed development lot (15.316-acres) is surrounded by the same conservation easement which limits sight lines from immediately adjacent areas for which preserving large specimen trees would potentially provide a benefit. As such, we feel locating trees as suggested is not necessary and would not provide a substantial benefit to the public and may be waived accordingly.

We feel this request is appropriate and consistent with the expectations of the Planning Board and that waiving this requirement relative to this specific lot upholds the spirit of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 4.12.c.19.viii.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
Civil Department Manager/Principal

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Planners

December 23, 2025

Kellie Caron, Assistant Town Manager & Director of Economic Development
Town of Londonderry Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

Re: Waiver Request – Section 3.10, 4.17 & checklist item X1
Proposed Subdivision
Tax Map 14, Lot 39

Dear Kellie,

On behalf of our client, PurposeEnergy Londonderry - LLC, we respectfully request a waiver from Section 3.10 and 4.17 of the Londonderry Subdivision Regulation & checklist item X1 to provide site specific soil mapping in lieu of HISS mapping requirements.

The subject lots exceed the 5-acre threshold for State Subdivision, proposed lot (15.3+/- acres) and existing lot (49.5+/- acres) with both having municipal sewer available. Due to the size of the lots and the availability of municipal service, lot sizing calculations would provide no public value.

We feel this request is appropriate and consistent with the expectations of the Planning Board and that waiving this requirement relative to this specific lot upholds the spirit of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 3.02.C & 4.12.c.14 of the Londonderry Subdivision Regulation & checklist item V.14.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
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December 23, 2025

Kellie Caron, Assistant Town Manager & Director of Economic Development
Town of Londonderry Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

Re: Waiver Request – 3.10.g.1.
Southern New Hampshire Green Energy Campus
Tax Map 14, Lot 39-2

Dear Kellie,

On behalf of our client, PurposeEnergy Londonderry - LLC, we respectfully request a waiver from Section 3.10.g.1 of the Londonderry Site Plan Regulations to waive the internal parking landscape area requirement.

Internal parking landscape areas are impractical for this industrial facility due to the follow;

- No centralized parking for the facility is provided, and site parking is dispersed throughout the campus in limited quantities.
- This site is unique in that it does not have a traditional street presence as it is accessed at the end of a Town ROW. There will be insignificant visibility to the site from the road.
- The inclusion of additional internal landscape area would necessitate a larger project footprint which increases the area of disturbance, limits of clearing, and increase retaining wall heights to avoid unnecessary wetland impacts.
- The site has been meticulously engineered to utilize the best technologies and efficient routing of waste and process piping. Internal landscape islands would be limited to shrubs which is not practical for this type of facility.

We feel this request is appropriate and consistent with the expectations of the Planning Board and that this landscape design associated with the Southern New Hampshire Green Energy Campus upholds the spirit of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 3.10.g.1.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
Civil Department Manager/Principal

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December 23, 2025

Kellie Caron, Assistant Town Manager & Director of Economic Development
Town of Londonderry Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

RE: Waiver Request – 3.09.d.(Table B)
Southern New Hampshire Green Energy Campus
Tax Map 14, Lot 39-2

Dear Kellie,

On behalf of our client, PurposeEnergy Londonderry - LLC, we respectfully request a waiver from Section 3.09(d)(Table B) of the Site Plan Regulations to allow an alternate method of parking demand calculation.

The applicant requests the use of the Parking Generation Manual by the Institute of Transportation Engineers (ITE), 6th edition, October 2023 as an alternative to the Town of Londonderry Site Plan Regulations, Section 3.09 Table B. The ITE Parking generation manual provides for a more specific evaluation of the parking needs of this specific type of facility, which is more so predicated on employee count than building square footage as it has large floor areas with unmanned process equipment. The end users have provided forecasted employee counts for their maximum buildout which has been used to define the proposed required parking. PurposeEnergy and Recycleworks have similar facilities and evaluated the employee demand for this site at 30 employees.

Using the Institute for Transportation Engineers land use code (luc) 110 - general light industrial:
avg. rate = 0.76 spaces/employee
30 employees x 0.76 spaces/employees = 23 spaces

We feel this request is appropriate and consistent with the expectations of the Planning Board and that this Site Plan the Southern New Hampshire Green Energy Campus upholds the spirit of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 3.09(d)(Table B).

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, P.E.
Civil Department Manager/Principal

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December 23, 2025

Kellie Caron, Assistant Town Manager & Director of Economic Development
Town of Londonderry Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

Re: Waiver Request – Subdivision regulation(s) Section 3.05, 3.06, 3.07, 3.08, 4.16 and check list items X.3, VII.2a-b, VIII.13-18 & Exhibit D2.
Proposed Subdivision
Tax Map 14, Lot 39

Dear Kellie,

On behalf of our client, PurposeEnergy Londonderry - LLC, we respectfully request a waiver from Sections 3.05, 3.06, 3.07, 3.08 & 4.16 of the Londonderry Subdivision Regulations and check list items X.3, VII.2a-b, VIII.13-18 & Exhibit D2 to waive the requirement to provide all technical design elements and improvement plan related information associated with the development on the proposed subdivision plans and instead provide within the corresponding site plans. The Driveway Plan and Profile and Sight Distance Plan and Profile have been provided in the Subdivision plans for coordination/verification of access. Waivers are supported by the following facts;

- The Subdivision plans provide the necessary information to convey the ownership rights of the property consistent with the regulations.
- The technical design elements, reports, and improvement plan items required by the above sections/check list items have been sufficiently provided within the site plans to meet the regulation requirements.
- Revisions to the technical documents to specifically limit them to the subdivision elements is not practical and would be an unnecessary burden to the applicant.
- The provision to provide duplicative information within the subdivision plans is not of benefit to project or the public.

We feel this request is appropriate and consistent with the expectations of the Planning Board and that waiving this requirement relative to this specific subdivision upholds the spirit of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from the above sections of the subdivision regulations.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
Civil Department Manager/Principal

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December 23, 2025

Kellie Caron, Assistant Town Manager & Director of Economic Development
Town of Londonderry Planning & Economic Development
268B Mammoth Road
Londonderry, NH 03053

Re: Waiver Request – Section 3.02.C & 4.12.c.14 & checklist item V.14
Proposed Subdivision
Tax Map 14, Lot 39

Dear Kellie,

On behalf of our client, PurposeEnergy Londonderry - LLC, we respectfully request a waiver from Section 3.02.C & 4.12.c.14 of the Londonderry Subdivision Regulation & checklist item V.14 3.02.C to partially waive the requirement to install markers along the conservation overlay district for the remainer parcel.

The majority of the remainder lot is already under conservation easement and further signage would provide no public benefit. Signage on the development lot will be provided in accordance with the regulations. This is consistent with what was presented and recommended for approval by the conservation commission.

We feel this request is appropriate and consistent with the expectations of the Planning Board and that waiving this requirement relative to this specific lot upholds the spirit of the regulations and public convenience, and welfare will not be adversely affected. As such, we respectfully request a waiver from Section 3.02.C & 4.12.c.14 of the Londonderry Subdivision Regulation & checklist item V.14.

If you have any questions or comments, please do not hesitate to contact the undersigned at (603) 472-4488 or email ngolon@tfmoran.com.

Sincerely,
TFMoran, Inc.

Nicholas Golon, PE
Civil Department Manager/Principal

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EASEMENT DEED

KNOW ALL MEN BY THESE PRESENTS that **Sustainable Design and Development, LLC**, a New Hampshire limited liability company, with an address at 170 South River Road, Bedford, New Hampshire 03110 (hereinafter "Grantor"), for consideration paid, grants to **Nicholas F. Codner, Jr.**, with a mailing address of 162 Litchfield Road, Londonderry, New Hampshire 03053 (hereinafter "Grantee'), with QUITCLAIM COVENANTS upon the conditions hereafter set forth a sewer easement (the easement shall be referred to herein as the "Easement").

0090914

1. Recitals.

1.1 Said Easement is located on the land of Grantor in Londonderry, Rockingham County, New Hampshire and shown on the Plan of land entitled "Map 14, Lot 44 & 44-32 Subdivision Plan of Land of The Town of Londonderry Ecological Industrial Park Wentworth Avenue and Burton Drive, Londonderry, New Hampshire prepared for Sustainable Design & Development, LLC by TF Moran, Inc. scale 1" = 200' dated July 7, 1998 and revised through October 19, 1998, which shall be recorded in the Rockingham County Registry of Deeds ("Plan") and incorporated by reference.

DEC 31 10 28 AM '98

2. Grant of Easements.

Grantor, for consideration paid, hereby grants to Grantee, its successors and assigns, with Quitclaim Covenants the following:

2.1 A Sewer Easement designated as a "Proposed Private 20' Wide Sewer Easement" on the Plan of the transport of human waste from Grantee's land (Map 14, Lot 39 on the Plan) to the proposed public sewer of the Town of Londonderry or City of Manchester located in North Wentworth Avenue. (The easement area shall be referred to herein as the "Easement Area").

ROCKINGHAM COUNTY
REGISTRY OF DEEDS

Together with the perpetual easement, privilege and right of way to excavate land to construct, lay, maintain, operate, alter, repair, renew, enlarge and remove in whole or in part at any time one or more sewer lines, pipes, pumps, manholes, with all fixtures, appurtenances, and structures necessary thereto within, through or across said Easement Area and for that purpose to dig, open and fill pipe trenches and to transport pipe and other necessary materials to and from the same doing no unnecessary damage and replacing as much as possible the land to its condition before work began.

3. The Easement Deed and the rights and privileges granted hereby are perpetual and shall run with the land and are for the benefit of Map 14, Lot 39 as shown on the Plan.

4. Grantee, for itself and its successors and assigns shall keep the Easement Area in good condition and repair.

5. The easements, covenants and constitutions herein shall be binding and/or to the benefit of the parties heirs, successors and assigns.

6. The consideration for this conveyance is less than $100.00

7. Workmanlike Manner – the Grantee agrees that any and all work performed by it pursuant to the easement rights granted herein will be constructed and maintained in a workmanlike manner. All refuse and waste material will be removed and the Easement Area and surrounding land will be reasonably graded, reseeded, resoiled and repaved if pavement was disturbed, so that such Easement Area remain in a neat and clean condition.

8. Liability and Indemnity – except for injury or damage caused by Grantor's willful act, Grantor or its successors or assigns shall not be liable for any injury or damage to any property or any person performing any construction, maintenance, repair or otherwise engaging in any activities described herein. Except for injury or damage caused as aforesaid with respect to activities performed or undertaken by the Grantor or any improvements constructed by Grantor, the Grantee will defend, indemnify and hold Grantor harmless from any and all liability, damages, costs and expenses, including reasonable attorneys fees and from any and all suits, claims and demands of any kind whatsoever based upon any incident, occurrence, injury or damage which may happen as a result of any labor or task performed by the Grantee or its agents performed in the construction or maintenance, or as a result of any defaults of Grantee hereunder or as a result of the improvements constructed by Grantee or its use or exercise of its rights pursuant to such easement rights.

9. Reserving to Grantor, their successors and assigns, the use and enjoyment of said Easement Area for such purposes only as will in no way interfere with the perpetual use thereof by the Grantee, its successors and assigns for the purposes contained herein; provided, however, that the Grantor, their successors and assigns shall not erect any building or any kind of permanent structure on said Easement Area , except sewer systems, drainage structures, roadways, sidewalks, curbs, landscaping materials, utility lines, fencing and like or similar structures and systems ("Improvements") so long as such Improvements do not materially interfere with Grantee's use of the Easement Area. Grantor also reserves the right to relocate the Easement Area so long as such relocation does not reduce or diminish Grantee's rights and to determine their final location based on final as-built plans to be recorded in the Registry of Deeds.

10. Grantee, its successor and assigns, shall at all times comply with the rules, regulations and ordinances of the utility accepting said sewerage from the sewer easement. Grantee shall not dispose of any corrosive, damaging or harmful materials into said sewer line, nor dispose of any hazardous waste, flammable or similar material into said sewer line.

In witness whereof, Andover Consulting Group, Inc., the duly authorized Manager of Sustainable Design and Development, LLC, has executed this Easement Deed this 30th day of December, 1998.

Sustainable Design and Development, LLC
By: Andover Consulting Group, Inc., Manager

By: _____
Its: ~~Manager~~ President Justin S. Bellagus

STATE OF NEW HAMPSHIRE
COUNTY OF Hillsborough

The foregoing instrument was acknowledged before me this 30th day of December, 1998 by Justin S. Bellagus, Pres. of Andover Consulting Group, Inc., the duly authorized Manager of Sustainable Design and Development, LLC on behalf of said limited liability company.

_____
~~Notary Public~~/Justice of the Peace
~~My Commission Expires:~~

STATE OF NEW HAMPSHIRE
DEPARTMENT OF REVENUE ADMINISTRATION
REAL ESTATE TRANSFER TAX
XX THOUSAND XX HUNDRED AND 40 DOLLARS
MO. DAY YR. 12 31 98 358514
AMOUNT $ 40.00
VOID IF ALTERED

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2006 AUG 15 AM 10:25
ROCKINGHAM COUNTY
REGISTRY OF DEEDS

CONSERVATION EASEMENT DEED

Nicholas F. Codner, Jr. of 162 Litchfield Road, Londonderry 03053, County of Rockingham, State of New Hampshire, (hereinafter referred to as the "Grantor", which word where the context requires includes the plural and shall, unless the context clearly indicates otherwise, include the Grantor's executors, administrators, legal representatives, devisees, heirs, successors and assigns), for consideration paid, with WARRANTY covenants, grant[s] in perpetuity to the State of New Hampshire, with a principal mailing address of PO Box 483, 7 Hazen Drive, Concord 03302-0483, County of Merrimack, State of New Hampshire, acting by and through the Department of Transportation (hereinafter referred to as the "Grantee" which shall, unless the context clearly indicates otherwise, include the Grantee's successors and assigns), the Conservation Easement (herein referred to as the "Easement") hereinafter described with respect to that certain parcel of land (herein referred to as the "Property") being unimproved land situated on Litchfield Road in the Town of Londonderry, County of Rockingham, State of New Hampshire, with said Property and Easement, described in "Appendix A" attached hereto and depicted on "Exhibit A", attached hereto; and

1. **PURPOSES**
The Easement hereby granted is pursuant to NH RSA 477:45-47, exclusively for the following conservation purposes:

   A. To preserve and protect in perpetuity for its wildlife habitat qualities, the natural vegetation, soils, hydrology, wetlands, natural habitat and the scenic and aesthetic character of the Property so that the Property retains its natural qualities and functions; and
   B. Mitigation of environmental impacts, including wetland impacts, from the Manchester Airport Access Road project purposes (also known as: Bedford-Manchester-Londonderry-Litchfield-Merrimack, 11512); and
   C. Allowing maintenance of an artificially high water level to support wetlands habitat and wildlife species in the Little Cohas Marsh, the water level shall be as generated by the existing dam on Parcel 3003 as shown on the project Mitigation Plan; and
   D. To prevent any future development, construction, or use that will significantly impair or interfere with the conservation values of the Property while allowing the reserved rights of Grantor as allowed under Section 4; and
   E. Public access to be allowed only through the auspices of the Grantor, which will allow the general public to participate in limited low impact non-commercial outdoor recreational activities on the Property. Utilization of motorized vehicles is prohibited. Snowmobiles, if allowed, will be restricted to designated trails that are developed to pass through the area. Prohibition of public access is the responsibility of the Grantor to notice by erection of "No Trespassing" signs in accordance with RSA 635:4 or other public trespass laws.
   F. The management of the Property in accordance with a Management Plan (hereinafter the "Plan"), that will be implemented and periodically updated approximately every ten (10) years after consultation with a certified wetlands scientist or other professionals as may be appropriate, that encourages and facilitates improvements in wetland vegetation, soils, hydrology and habitats. The Plan will include:
      i. The Property's current owner(s), including their then current mailing address and telephone number(s);

ii. The Easement reference (by Rockingham County Registry of Deeds Book and Page numbers);
iii. A history of the Property and its management, including forestry or agricultural activities engaged in since the last Plan;
iv. An inventory of natural resources, including, but not limited to vegetation, wetland areas, and vernal pools and presence of any threatened or endangered animal or plant species.
v. A Property map, which shall delineate: the Property's boundaries, forest types, wetland areas, vernal pools, estimated locations of any threatened or endangered animal and plant species, unique geological, hydrological, historical, and/or cultural features, existing roads and other access to the Property, soil types, topography and aspect;
vi. A schedule for the routine monitoring of the Property and identification of the party(s) responsible for monitoring.

2. **GRANTEE'S RIGHTS**

A. The Grantor conveys to the Grantee the right to enter, build, maintain, and control the dam or water control structure located at site of said beaver dam and old stone dam, adjacent to Station 2521 of the Manchester and Lawrence Branch Railroad (hereinafter "Dam", and associated property flooded by said Dam), the outfall elevation of which is to be maintained at an elevation of 259.00', for purposes of perpetuating a wetland area ("Marsh").
B. The Grantee shall have the right to flow and maintain water upon so much of the Grantor's land as will be flooded by the Dam when holding water to full capacity to support wetlands habitat and wildlife species.
C. Through the auspices of the Grantor, the public has the right of pedestrian access, in perpetuity, on and across the Property for non-commercial recreational activities unless prohibited by notice posted by the Grantor along the perimeter of the Property line, in accordance with current laws and regulations. The right of overnight camping, motorized access or construction of fires on the Property by the public is not hereby conveyed. The Grantee agrees to cooperate with the Grantor to prevent use of the property inconsistent with the Purposes listed in Section 1 of this Easement.
D. The Grantee shall have reasonable access to the Property for such inspection as is necessary to determine compliance with and to enforce this Easement and exercise the rights conveyed hereby and fulfill the responsibilities and carry out the duties assumed by the acceptance of this Easement.
E. The Grantee shall have the right, but not the obligation, to maintain boundaries of the Property.
F. The Grantee shall erect and/or maintain "Safety Zone" signage so as to identify and delineate proximity of dwellings and areas where hunting is permitted within public access areas of the Little Cohas Marsh.

3. **Use Restrictions** [(Subject to the reserved rights specified in Section 4 below)]

A. The property shall be maintained in perpetuity in an undeveloped and natural condition without there being conducted thereon any residential, industrial, or commercial activities, except as described below, and provided that such uses shall not degrade the conservation purposes of this Easement. No use shall be made of the Property, and no activity shall be permitted thereon, which is inconsistent with the intent of this Easement, that being the perpetual protection and preservation of the Property, as more particularly described in Section 1 herein.
B. The Property under Easement shall not be subdivided.
C. No structure or improvement, including, but not limited to, a dwelling, any portion of a septic system, tennis court, swimming pool, dock, strip, tower, commercial facility, conduit or utility line, billboard or other means of advertising display, driveway or road made of asphalt or other impervious surface, mobile home or other temporary or permanent structure or improvement, shall be constructed, placed, or introduced onto the Property.
D. No removal of trees, brush, minerals, gravel, sand, topsoil, nor filling, or other disturbances of soil surface, nor any changes in topography, surface or subsurface water systems, wetlands, or natural habitat, except to eliminate existing, potential or future safety hazards, shall be allowed unless such activities:
    i. are commonly necessary in the accomplishment of the agricultural, forestry, conservation, habitat management, specifically reserved by Grantor and as allowed under Section 4 of this Easement; and

ii. do not harm state or federally recognized rare, threatened, or endangered species; such determination of harm to be based upon information from the New Hampshire Natural Heritage Inventory or the agency then recognized by the State of New Hampshire as having responsibility for identification and/or conservation of such species; and
iii. do not impact wetland vegetation, soils, hydrology or habitat; and
iv. are not detrimental to the purposes of this Easement.

Prior to commencement of any such activities, all necessary federal, state and local permits and approvals shall be secured and such notices as may be required under Section 8 of this Easement shall be delivered.

E. There shall be no net loss or reduction in the volume of flood storage within the easement area, nor shall there be any permanent obstructions in the floodplain.
F. There shall be no dumping, filling, injecting, stockpiling, burning or burial of any waste, refuse, or other materials whatsoever in the easement area.

4. **RESERVED RIGHTS**

A. The Grantor reserves the right to conduct agricultural activities or forestry and forest management consistent with an approved forest management plan.

B. The Grantor reserves the right to maintain and expand, as necessary, storm water detention systems that currently exist within the easement area as well as maintain storm water discharge pipes and drainage outfalls from such pipes and the continued ability to flow surface and storm water through such systems and into the stream or existing water body as these elements exist within the easement area.
C. The Grantor reserves the right to prohibit public access and/or hunting on the Property by posting such Property in accordance with RSA 635:4 or other public trespass laws.
D. The Grantor must notify the Grantee in writing at least thirty (30) days before any exercise of the aforesaid reserved rights.

5. **NOTIFICATION OF TRANSFER, MAINTENANCE OR OTHER ACTIVITIES**

A. The Grantor agrees to notify the State of New Hampshire, Department of Transportation, Bureau of Right-of-Way in writing ten (10) days before the transfer of title to the Property [or any division of ownership thereof permitted hereby].
B. The Grantee shall be under no obligation to maintain the Property or pay any taxes or assessments thereon.
C. Except as otherwise specifically stated in this Easement, Grantor shall notify Grantee in writing thirty (30) days before exercising any right reserved herein. The notice shall describe the nature, scope, design location, timetable and any other material aspect of the proposed activity in sufficient detail to permit Grantee to evaluate the proposed activity with the purposes of this Easement.

6. **BENEFITS, BURDENS AND ACCESS**

A. The burden of the Easement conveyed hereby shall run with the Property and shall be enforceable against all future owners and tenants in perpetuity; the benefits of this Easement shall not be appurtenant to any particular parcel of land but shall be in gross assignable or transferable only to the State of New Hampshire, the U.S. Government, or any subdivision of either of them, as amended, or to any qualified organization, within the meaning of Section 170 (h) (3) of the Internal Revenue Code of 1986, which organization has among its purpose the conservation and preservation of land and water areas and agrees to and is capable of enforcing the conservation purpose of this Easement. Any such assignee or transferee shall have like power of assignment or transfer.
B. The Grantee shall have access to the Property for such inspection as is necessary to determine compliance with and to enforce this Easement and exercise the rights conveyed hereby and fulfill the responsibilities and carry out the duties assumed by the acceptance of this Easement.

C. Members of general public shall, by default, have access to the Property for outdoor recreation and education activities, unless the Grantor posts appropriate notice restricting such access. Implementation of posting by the Grantor does not invoke a responsibility on the Grantee to enforce such posting. Such enforcement is subject to local or state law enforcement, as the New Hampshire state statutes provide.

7. **LEGAL REMEDIES OF GRANTEE**
   A. Nothing contained in this Easement shall be construed to entitle the Grantee to bring any action against the Grantor for any injury to or change in the Property resulting from causes beyond the Grantor's control, including, but not limited to, unauthorized actions by third parties, natural disasters such as fire, flood, storm, and earth movement, or from any prudent action taken by the Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Property resulting from such causes.
   B. The Grantee reserves the right, separately or collectively, to pursue all legal remedies against any party responsible for any actions detrimental to the conservation purposes of this Easement.
   C. Grantee shall have the right to enforce this Easement by appropriate legal means and to obtain injunctive and other equitable relief against any violations, including without limitation, relief requiring restoration of the Property to its condition prior to the time of the violation, and shall be in addition to, and not limitation of, any other rights and remedies available to the Grantee.
   D. Grantee, by its acceptance of this Easement, does not undertake any liability or obligation relating to the condition of the Property.
   E. The then Commissioner of the New Hampshire Department of Transportation (NHDOT) shall have standing to seek mandamus or such other relief against Grantee and/or Grantor as may be necessary in the event Grantee and/or Grantor has not, in the Commissioner's opinion, taken steps necessary under this section to adequately preserve and protect the conservation purposes of this Easement.

8. **NOTICES**
   All notices, requests and other communications required or permitted to be given under this Easement shall be in writing, except as otherwise provided herein, and shall be delivered in hand or sent by certified mail, postage prepaid, return receipt requested to the appropriate address set forth above or at such other address as the Grantor or the Grantee may hereafter designate by notice given in accordance herewith. Notice shall be deemed to have been given when so delivered or so mailed.

Said Conservation Easement being acquired for the Bedford-Manchester-Londonderry-Litchfield-Merrimack, DPR-F-0047(001), 11512 project on file in the records of the New Hampshire Department in Transportation and to be recorded in the Hillsborough County Registry of Deeds.

IN WITNESS WHEREOF, we have hereto under set our hand this 10th day of August, 2006.

Nicholas F. Codner, Jr.

The State of New Hampshire
County of Rockingham

Personally appeared Nicholas F. Codner, Jr., this 10TH day of AUGUST 2006, acknowledged the foregoing to be his voluntary act and deed.

Before me

Justice of the Peace/~~Notary Public~~
My commission expires: 2/25/2010

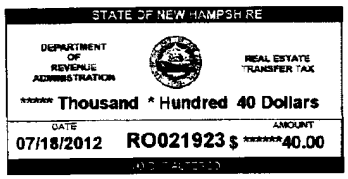
JAMES M. GILBERT
Justice of the Peace - NH
My Commission Expires February 25, 2010

APPENDIX "A"

Meaning and intended to describe a portion of that property as shown as Parcel 1051 on a master plan entitled "Manchester Airport Access Mitigation Plan" prepared by Vanasse Hangen Brustlin, Inc. on file in the records of the New Hampshire Department of Transportation and to be recorded at Rockingham County Registry of Deeds, bounded and described as follows:

Being a conservation easement interest in all that property belonging to Nicholas F. Codner, Jr. beginning at a point in the division line of land now or formerly of Granite Ridge Energy, LLC and land now or formerly of Victor D. Reis and Cecilia C. Reis and land of Nicholas F. Codner, Jr., thence S 61° 38' 48" W for a distance of three hundred seven and ninety-five hundredths (307.13) feet to a point, thence S 62° 15' 18" W for a distance of one hundred eighty-two and ninety-five hundredths (182.95) feet to a point, thence S 64° 19' 30" W for a distance of fifty-three and seventy-two hundredths (53.72) feet to a point, thence S 51° 02' 51" W for a distance of six hundred eighty-one and forty-two hundredths (681.42) feet to a point, thence N 09° 12' 51" W for a distance of seven hundred ninety-four and sixty-three hundredths (794.63) feet to a point, thence N 09° 50' 12" W for a distance of five hundred fourteen and fifty-three hundredths (514.53) feet to a point, thence N 09° 30' 46" W for a distance of one hundred sixty-eight and ninety-five hundredths (168.95) feet to a point, thence S 81° 46' 19" E for a distance of nine hundred fourteen and eleven hundredths (914.11) feet to a point, thence N 60° 51' 41" E for a distance of two hundred sixty-seven and ninety hundredths (267.90) feet to a point, thence S 08° 26' 03" E for a distance of seven hundred eighty-three and thirty-six hundredths (783.36) feet to the point of beginning.

Containing in all twenty-six and three hundred eighty-eight thousandths (26.388) acres, more or less, and being a portion of that property described in a document recorded July 3, 1996, at the Rockingham County Registry of Deeds in Book 3164, Page 2251.



C/H
L-CHIP
ROA164833

035357

2012 JUL 18 AM 10:42

ROCKINGHAM COUNTY
REGISTRY OF DEEDS

QUITCLAIM DEED

KNOW ALL MEN BY THESE PRESENTS, that I, Nicholas F. Codner, Jr. , presently of 162 Litchfield Road, Londonderry, New Hampshire 03053 for consideration paid of $1.00, grant to the Nicholas F. Codner Trust of 2012, a New Hampshire trust established pursuant to a trust agreement dated April 27, 2012, by and between Nicholas F. Codner, Jr. as Grantor and, Craig Fowler, presently of Derry, New Hampshire, as Trustee and having an address of 162 Litchfield Road, Londonderry, New Hampshire 03053 all of my rights, title and interest in and to the following, with Quitclaim Covenants:

A certain parcel of land with the buildings thereon situated on Litchfield Road in the Westerly part of the said Londonderry, bounded and described as follows:

Beginning at the Southwest corner of the premises on the highway leading form the Baptist meeting house in said Londonderry to Litchfield, now known as Corning Road, on the Northerly side of said highway; thence North 30 minutes East, by land now or formerly of Cecile Besse, 145 ½ rods to land now or formerly of Ernest Watts; thence South 87 3/4 degrees East, by land now or formerly of said Watts and by land now of formerly of Pettengill, 65 rods to land now or formerly of Leigh Nesmith; thence South, by land of said Nesmith, about 128 rods and 14.5 feet to land now or formerly of Armand and Mary Bocash at a point 200 feet from said highway; thence Northwsest, by land of said Bocash and parallel with said highway, 200 feet to a point 200 feet from said highway; thence South, by land of said Armand and Mary Bocash, 200 feet to said highway; thence West, along said highway about 52 rods and 14.5 feet to the point begun at.

Meaning and intending to convey the same premises as conveyed to the within Grantor by Quitclaim Deed of Nicholas F. Codner, Jr. and Susan M. Finney (formerly as Susan M. Codner), dated June 3, 1996, and recorded with the Rockingham County Registry of Deeds at Book 3164, Page 2251.

Grantor reserves all rights of Homestead.

N.F.C.

WITNESS my hand and seal this 18th day of June, 2012.

Nicholas F. Codner, Jr.

Witness

Witness

STATE OF NEW HAMPSHIRE
COUNTY OF ROCKINGHAM

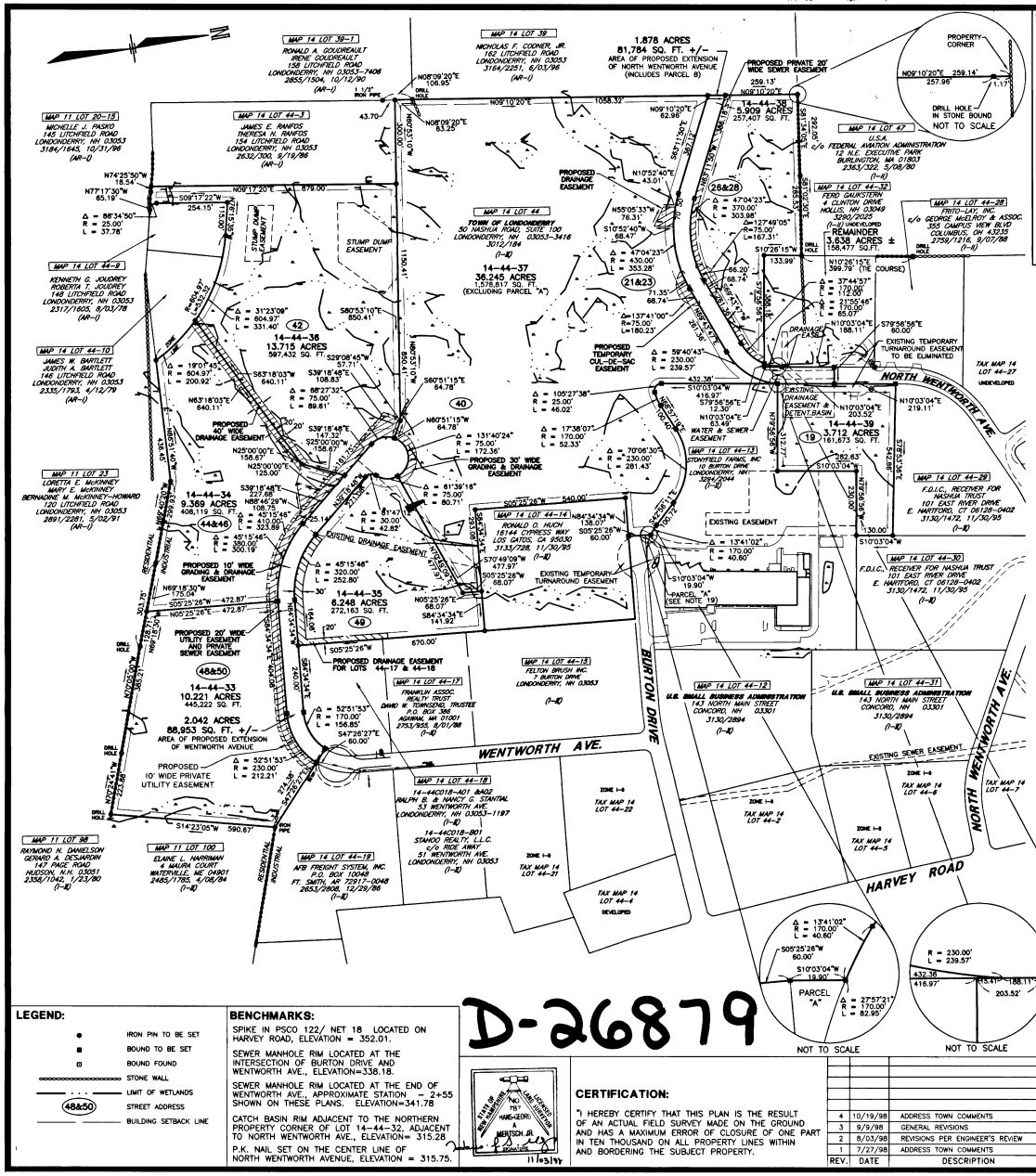
Personally appeared the above named Nicholas F. Codner, Jr., known to me or satisfactorily proven to be the person whose name is subscribed to the within instrument and acknowledged the foregoing instrument to be Nicholas F. Codner, Jr.'s free act and deed. Before me this 18th day of June, 2012.

Justice of the Peace / Notary Public
My commission expires:

FRED J. FORMAN, Justice of the Peace
My Commission Expires June 27, 2012

Printed from Internet for on 11/9/2015

Dec 31 10:20 AM '98


WENTWORTH AVE.
NORTH WENTWORTH AVE.
BURTON DRIVE
HARVEY ROAD
PROPOSED PRIVATE 20' WIDE SEWER EASEMENT
PROPOSED DRAINAGE EASEMENT
PROPOSED TEMPORARY CUL-DE-SAC EASEMENT
PROPOSED 30' WIDE GRADING & DRAINAGE EASEMENT
PROPOSED 40' WIDE DRAINAGE EASEMENT
PROPOSED 10' WIDE GRADING & DRAINAGE EASEMENT
PROPOSED 20' WIDE UTILITY EASEMENT AND PRIVATE SEWER EASEMENT
PROPOSED 10' WIDE PRIVATE UTILITY EASEMENT
PROPOSED DRAINAGE EASEMENT FOR LOTS 44-17 & 44-18
EXISTING EASEMENT
EXISTING DRAINAGE EASEMENT
EXISTING SEWER EASEMENT
EXISTING TEMPORARY TURNAROUND EASEMENT
EXISTING TEMPORARY TURNAROUND EASEMENT TO BE ELIMINATED
STUMP DUMP EASEMENT
WATER & SEWER EASEMENT
DRAINAGE EASEMENT
14-44-37 36.245 ACRES 1,578,817 SQ. FT. (EXCLUDING PARCEL "A")
14-44-38 13.715 ACRES 597,432 SQ. FT.
14-44-39 3.712 ACRES 161,673 SQ. FT.
14-44-34 9.369 ACRES 408,119 SQ. FT.
14-44-35 6.248 ACRES 272,163 SQ. FT.
14-44-33 10.221 ACRES 445,222 SQ. FT.
2.042 ACRES 88,953 SQ. FT. +/- AREA OF PROPOSED EXTENSION OF WENTWORTH AVENUE
1.878 ACRES 81,784 SQ. FT. +/- AREA OF PROPOSED EXTENSION OF NORTH WENTWORTH AVENUE (INCLUDES PARCEL B)
5.909 ACRES 257,407 SQ. FT.
3,638 ACRES ± 158,477 SQ.FT.
PARCEL "A" (SEE NOTE 19)
PARCEL "B" 255 S.F.
MAP 14 LOT 39 NICHOLAS F. CODNER, JR. 162 LITCHFIELD ROAD LONDONDERRY, NH 03053 3164/2251, 6/03/96 (AR-I)
MAP 14 LOT 38-1 RONALD A. GOUDREAULT IRENE GOUDREAULT 158 LITCHFIELD ROAD LONDONDERRY, NH 03053-7406 2855/1504, 10/12/90 (AR-I)
MAP 14 LOT 44-3 JAMES E. RANFOS THERESA N. RANFOS 154 LITCHFIELD ROAD LONDONDERRY, NH 03053 2632/300, 9/19/96 (AR-I)
MAP 14 LOT 44 TOWN OF LONDONDERRY 50 NASHUA ROAD, SUITE 100 LONDONDERRY, NH 03053-3416 3012/184 (I-N)
MAP 14 LOT 44-9 KENNETH G. JOUDREY ROBERTA T. JOUDREY 148 LITCHFIELD ROAD LONDONDERRY, NH 03053 2317/1605, 8/03/78 (AR-I)
MAP 14 LOT 44-10 JAMES W. BARTLETT JUDITH A. BARTLETT 142 LITCHFIELD ROAD LONDONDERRY, NH 03053 2335/1793, 4/12/79 (AR-I)
MAP 11 LOT 23 LORETTA E. McKINNEY MARY E. McKINNEY BERNADINE M. McKINNEY-HOWARD 120 LITCHFIELD ROAD LONDONDERRY, NH 03053 2891/2281, 5/02/91 (AR-I)
MAP 14 LOT 44-14 RONALD O. HUCH 16144 CYPRESS WAY LOS GATOS, CA 95030 3133/728, 11/30/95 (I-N)
MAP 14 LOT 44-13 STONYFIELD FARM, INC. 10 BURTON DRIVE LONDONDERRY, NH 3053-2044 (I-N)
MAP 14 LOT 44-28 FRITO-LAY, INC. c/o GEORGE McGRATH & ASSOC. 355 CAMPUS VIEW BLVD COLUMBUS, OH 43235 2759/1216, 9/07/88 (I-N)
MAP 14 LOT 44-32 FERD GAUKSTERN 4 CLINTON DRIVE HOLLIS, NH 03049 2290/2025 (I-N) UNDEVELOPED
MAP 14 LOT 44-27 UNDEVELOPED
MAP 14 LOT 44-29 F.D.I.C., RECEIVER FOR NASHUA TRUST 101 EAST RIVER DRIVE E. HARTFORD, CT 06128-0402 3130/1472, 11/30/95 (I-N)
MAP 14 LOT 44-30 F.D.I.C., RECEIVER FOR NASHUA TRUST 101 EAST RIVER DRIVE E. HARTFORD, CT 06128-0402 3130/1472, 11/30/95 (I-N)
MAP 14 LOT 44-31 U.S. SMALL BUSINESS ADMINISTRATION 143 NORTH MAIN STREET CONCORD, NH 03301 3130/2894 (I-N)
MAP 14 LOT 44-12 U.S. SMALL BUSINESS ADMINISTRATION 143 NORTH MAIN STREET CONCORD, NH 03301 3130/2894 (I-N)
MAP 14 LOT 44-15 FELTON BRUSH INC. 1 BURTON DRIVE LONDONDERRY, NH 03053 (I-N)
MAP 14 LOT 44-17 FRANKLIN ASSOC. REALTY TRUST DAVID W. TOWNSEND, TRUSTEE P.O. BOX 395 NASHUA, NH 01061 2753/955, 6/01/98 (I-N)
MAP 14 LOT 44-18 14-44C018-A01 BASS RALPH B. & NANCY G. STANTIAL 53 WENTWORTH AVE. LONDONDERRY, NH 03053-1197 (I-N)
14-44C018-B01 STANCO REALTY, L.L.C. c/o RIDE AWAY 51 WENTWORTH AVE. LONDONDERRY, NH 03053 (I-N)
MAP 14 LOT 44-19 AFB FREIGHT SYSTEM, INC. P.O. BOX 10048 FT. SMITH, AR 72917-0048 2653/2808, 12/29/86 (I-N)
MAP 11 LOT 98 RAYMOND N. DANIELSON GERARD A. DESJARDIN 147 PAGE ROAD HUDSON, NH. 03051 2358/1042, 1/23/90 (I-N)
MAP 11 LOT 100 ELAINE L. HARRIMAN 4 MAURN COURT WATERVILLE, ME 04901 2485/1785, 5/08/94 (I-N)
TAX MAP 14 LOT 44-2
TAX MAP 14 LOT 44-4
TAX MAP 14 LOT 44-5
TAX MAP 14 LOT 44-6
TAX MAP 14 LOT 44-7
TAX MAP 14 LOT 44-21
TAX MAP 14 LOT 44-22
ZONE I-8
N69°18'30"W 175.04'
S14°23'05"W 590.67'
S74°26'27"E 60.00'
S47°26'27"E 60.00'
S05°25'26"W 472.87'
S05°25'26"W 670.00'
S05°25'26"W 60.00'
S05°25'26"W 68.07'
S05°25'26"W 141.92'
S10°03'04"W 19.90'
S10°03'04"W 60.00'
S10°03'04"W 282.63'
S10°03'04"W 130.00'
S79°56'56"E 12.30'
S79°56'56"E 60.00'
N10°03'04"E 219.11'
N10°03'04"E 203.52'
N10°03'04"E 63.49'
N10°03'04"E 63.49'
N10°03'04"E 188.11'
N10°03'04"E 63.49'
N10°26'15"E 399.79' (TIE COURSE)
N10°26'15"E 133.99'
N09°10'20"E 259.13'
N09°10'20"E 62.98'
N09°10'20"E 1058.32'
N09°10'20"E 257.96'
N09°09'20"E 106.93'
N08°09'20"E 63.25'
N09°17'20"E 879.00'
N74°25'50"W 18.54'
N77°17'30"W 65.19'
S09°17'22"W 254.15'
N10°52'40"E 43.01'
N55°05'33"W 76.31'
S10°52'40"W 68.47'
S10°26'15"W 399.79'
S10°26'15"W 133.99'
S80°53'10"E 850.41'
S80°51'15"E 64.78'
S39°18'48"E 227.68'
S39°18'48"E 147.32'
S39°18'48"E 108.83'
S39°18'48"E 640.11'
S29°08'45"W 57.71'
S25°00'00"E 158.67'
S25°00'00"E 125.00'
N83°18'03"E 640.11'
N80°51'15"W 64.78'
N25°00'00"E 158.67'
N25°00'00"E 125.00'
N05°25'26"E 472.87'
N05°25'26"E 472.87'
N05°25'26"E 670.00'
N05°25'26"E 60.00'
N05°25'26"E 68.07'
N84°34'34"W 138.07'
N84°34'34"W 141.92'
N74°49'09"W 477.97'
N10°03'04"E 203.52'
N10°03'04"E 63.49'
N10°03'04"E 188.11'
N10°03'04"E 63.49'
N10°03'04"E 19.90'
N10°03'04"E 60.00'
N10°03'04"E 282.63'
N10°03'04"E 130.00'
N10°03'04"E 219.11'
N10°03'04"E 203.52'
N10°03'04"E 63.49

Abutters List

December 23, 2025 | Londonderry Green Energy Campus Project | TFM JOB #18252.02

R014-039-0
Nicholas F Codner Trust 2012
162 Litchfield Road
Londonderry, NH 03053

R014-047-0
US of America Fed Aviation Admin
12 NE Executive Park
Burlington, MA 01803

R014-044-38
State of New Hampshire
PO Box 483, 1 Hazen Drive
Concord, NH 03302-0483

R014-44-0
Granite Ridge Energy, LLC
21 North Wentworth Ave
Londonderry, NH 03053

R014 Lots 044-3 & 040-0
Tracie L & Bruce A Lemieux
154 Litchfield Road
Londonderry, NH 03053

R014-039-1
Victor D & Cecilia C Reis
158 Litchfield Road
Londonderry, NH 03053

R011-020-13
Richard A Belanger
149 Litchfield Road
Londonderry, NH 03053

R011-020-12
Nicole M Thomas
151 Litchfield Road
Londonderry, NH 03053

R011-020-11
Justin M Quish
153 Litchfield Road
Londonderry, NH 03053

R011-020-10
Sharon B Bartholomew
155 Litchfield Road
Londonderry, NH 03053

R011-020-9
Sahin B Dayioglu
157 Litchfield Road
Londonderry, NH 03053

R011-020-8
Eric J and Amber E Pomer
159 Litchfield Road
Londonderry, NH 03053

R011-020-7
John Albert & Lisa Marie Kircaldie
51 Yellowstone Road
Londonderry, NH 03053-2502

R011-020-6
Michael A St. Pierre
163 Litchfield Road
Londonderry, NH 03053-7408

R011-020-5
Clark Family Trust of 2011
165 Litchfield Road
Londonderry, NH 03053

R011-015-0
Erick Mendonsa
167 Litchfield Road
Londonderry, NH 03053

R014-051-0
Claire M Kelly
166 Litchfield Road
Londonderry, NH 03053

R014-050-0
Bruce Allan & Cindy Louise Goodwin
168 Litchfield Road
Londonderry, NH 03053

R014-007-0
Michael W Siracuse III
170 Litchfield Road
Londonderry, NH 03053

R014-005-0
Arianna O'Neil
172 Litchfield Road
Londonderry, NH 03053

R014-048-1
State of New Hampshire
PO Box 483
Concord, NH 03302-0483

R-014-003-26
Gypsum Construction Corp.
184 Rockingham Road
Londonderry, NH 03053

R014-038-0
Tana Properties Ltd. Partnership
40 Temple Street
Nashua, NH 03060

Applicant
PurposeEnergy-Londonderry, LLC
Sean O'Niel
25 Pelham Road Suite #102
Salem, NH 03079

Soil Scientist
BAG Land Consultants
Bruce A. Gilday
43 Rockingham Street
Concord, NH 03301

Wetlands Scientist
TFMoran, Inc
Christopher Danforth
48 Constitution Drive
Bedford, NH 03110

Engineer & Surveyor
TFMoran, Inc
Nicholas Golon
Michael Dahlberg
48 Constitution Drive
Bedford, NH 03110

Letter of Authorization

Nicholas Codner
162 Litchfield Road
Londonderry, NH 03053

Subject: PurposeEnergy – Londonderry

To Whom It May Concern:

I, Nicholas F. Codner, Trustee of Nicholas F Codner Trust 2012, am the landowner of 162 Litchfield Road, Londonderry, NH 03053, Tax Map 14 Lot 39. I am under contract to sell approximately 15 acres of the above noted parcel, north of the existing Conservation Easement, accessible from the right of way from North Wentworth Avenue in Londonderry to PurposeEnergy-Londonderry, LLC. PurposeEnergy-Londonderry, LLC intends to construct a new facility on the parcel from my property at 162 Litchfield Road. I support PurposeEnergy's application for all required site plan, zoning, federal, state and local permits to support the project.

Regarding permit applications associated with the project, I authorize PurposeEnergy-Londonderry, LLC, and its representatives, to sign on behalf of the owner on all local, state, and federal permit applications. I authorize TFMoran, Inc., and its representatives, to sign as agent or applicant on all local, state and federal permit applications.

Applicant/Developer:
PurposeEnergy – Londonderry LLC
25 Pelham Road, Suite 102
Salem, NH 03079

Applicant's Representative:
Sean O'Neill, VP Development

Should you need additional information or have any questions on the project please contact Sean O'Neill at (917) 776-6155 or oneill@purposeenergy.com. We look forward to welcoming PurposeEnergy's investment in Londonderry and its operations to the local business community.

Sincerely,

Nick Codner

EVERSOURCE ENERGY

Field Engineering & Design Box 330
370 Amherst St
Nashua, NH 03063

4/4//25

Re: 225 ROCKINGHAM RD LONDONDERRY, NH

To whom it may concern:

Eversource Energy agrees to provide electric service to the above site in accordance with the Tariff for Electric Service on file with the New Hampshire Public Utilities Commission (NHPUC), subject to the applicable NHPUC rules and regulations, as well as Eversource's "Requirements for Electric Service Connections".

Please keep in mind that all requirements for providing electric service, such as, but not limited to, contracts, licenses, fees, payments, easements, and inspections must be provided to Eversource prior to the construction of the electric facilities.

This letter does not constitute you having an approved electric layout, just that we provide electric service in the Town of Londonderry. There is 3 Ph distribution facilities on Rockingham Rd, but may need to be extended to this property. When you have approved plans, please work with our field representative and they will provide you with a layout.

Should you have any questions or concerns, please call us at 1-800-362-7764

Sincerely,

Marco Martinelli

Marco Martinelli
Field Supervisor Electric Design

Liberty | Business & Community Development
130 Elm Street
Manchester, NH 03031
T 800-833-4200
libertyutilities.com
#

4.10.2025

Purpose Energy LLC

Melinda Macinnis

25 Pelham Road Suite 102

Salem, NH 03079

RE: Gas Availability Letter

Proposed Londonderry Green Energy Campus, 162 Litchfield Rd, Londonderry

Melinda,

Liberty has received a request for gas availability clearance letter for a proposed industrial project located 162 Litchfield Road in Londonderry, NH. As part of this request, Liberty was provided TF Moran Test Fit Plan dated February 28, 2025.

Liberty has a 4" high pressure (60 PSIG MAOP) main located in Burton Drive and a 2" high pressure main located in Wentworth Ave that may be utilized to provide natural gas service for project. Town of Londonderry approved plans and finalized gas load information for the new project will need to be provided to Liberty to perform a full review in accordance with our current tariff and to determine scope of work required to provide natural gas service.

A final commitment to serve and agreement will be provided once full engineering review and financial analysis according to our current tariff is completed by Liberty.

If you need any additional information for this project, please feel free to call or email me at your convenience.

Respectfully,

Andy Morgan

Andrew Morgan | Liberty (New Hampshire**) |**

Manager III-GAS, Key Accounts

P: 603-782-2321 | C: 603-327-5357 | E: Andrew.Morgan@libertyutilities.com#

#

#

COMCAST BUSINESS SERVICE ORDER

Company Name: PurposeEnergy **Order #** 41687696

Service Location:		**Billing Location:**	
Address 1	225 ROCKINGHAM RD	Address 1	225 ROCKINGHAM RD
Address 2		Address 2	
City	LONDONDERRY	City	LONDONDERRY
State	NH	State	NH
Zip	03053	Zip	03053
Primary Contact Name	Melinda MacInnis	Billing Contact Name	Melinda MacInnis
Primary Contact Phone	(603) 456-9527	Billing Contact Phone	(603) 456-9527
Primary Contact Email	melinda@purposeenergy.com	Billing Contact Email	melinda@purposeenergy.com
		Tax Exempt	No
Service Term	12 Months	**Promo Code:**	
Package Code:	PL_PD_$209.99BIGigX_SE_Pkg_1yr		

Package & Promotion Details

Data, SecurityEdge Package for discounted rate of $209.99 for months 1-60, increasing to then regular rate in month 61. Equipment, installation, taxes and applicable fees, including Broadcast TV Fee, Regional Sports Fee, regulatory recovery fee and other charges extra and subject to change. Package includes Business Internet Gigabit Extra (download speed up to 1.25 Gbps) and SecurityEdge. 1 year term agreement required. Additional $10 monthly discount with enrollment in both paperless billing and automatic payments with bank account via https://business.comcast.com/myaccount within 30 days of service installation. If either paperless billing or automatic payment service is cancelled, or automatic payment method is changed to credit or debit card, the monthly service charge automatically increases by $10.00. $20 mobile discount limited to customers with Comcast Business Internet Standard service or higher who activate new Comcast Business Mobile service with minimum one Mobile Unlimited line. Mobile discount applied to Comcast Business Internet bill for 12 months. Limit one discount per account. Mobile Unlimited lines must be activated within 90 days of Internet installation to qualify for the mobile discount. After 12 months, or if any of the required services are cancelled or downgraded, or if Unlimited service is switched to By the Gig, the mobile discount will be removed. Comcast Business Internet must be installed by 4/28/2025 to qualify for the mobile discount.

Customer Initials

Package	Services Included	Qty	Package Monthly Service Charge[1]	Package Non-Recurring Charge[2]
Data, SecurityEdge Package	Business Internet Gigabit Extra (download speeds up to 1.25 Gbps)	1	$ 209.99	$ 0.00
	SecurityEdge	1		

Equipment and Additional Service(s)	Qty	Additional Monthly Service Charge[1]	Additional Non-Recurring Charge[2]
Equipment Fee			
Package Equipment Fee	1	$ 24.95	
Equipment Sub Total		**$ 24.95**	
Additional Fees			
Standard Installation Fee / Change of Service Fee	1		$ 129.95
Total Additional Charge		**$ 24.95**	**$ 129.95**

	Monthly Service Charge[1]	Non-Recurring Charge[2]
Total Charge for Service Order	**$ 234.94**	**$ 129.95**

COMCAST BUSINESS

COMCAST BUSINESS SERVICE ORDER

Company Name: PurposeEnergy **Order #** 41687696

[1] Charges identified in the Service Order Agreement are exclusive of maintenance and repair charges, and applicable federal, state, and local taxes, fees, surcharges and recoupments (however designated).
[2] Non-Recurring Charges in the Service Order Agreement reflect activation and installation fees for this order. This excludes any custom installation fees.

General Special Instructions

AGREEMENT

1. This Comcast Business Service Order Agreement ("Agreement") sets forth the terms and conditions under which Comcast Cable Communications Management, LLC and its operating affiliates ("Comcast") will provide the Services to the above-named customer ("Customer"). This Agreement consists of this document (this "SOA"), the Business Services Customer Terms and Conditions (the "Terms and Conditions"), and any jointly executed amendments ("Amendments") entered under the Agreement. In the event of inconsistency among these documents, the order of precedence will be as follows: (1) Amendments, (2) Terms and Conditions, and (3) this SOA. This Agreement shall commence and become a legally binding agreement upon Customer's execution of the SOA. The Agreement shall terminate as set forth in the Terms and Conditions. The Terms and Conditions are located at https://business.comcast.com/terms-conditions-smb. Capitalized terms not otherwise defined in this SOA shall have the meaning ascribed to them in the Terms and Conditions. Use of the Services is also subject to the then-current Acceptable Use Policy for High-Speed Internet Services (the "AUP") located at https://business.comcast.com/customer-notifications/acceptable-use-policy (or any successor URL), and the then-current Privacy Statement (the "Privacy Policy") located at https://business.comcast.com/privacy-statement (or any successor URL), both of which Comcast may update from time to time.

2. Each Comcast Business Service ("Service") carries a thirty (30) day money back guarantee. If within the first thirty (30) days following installation of a new Service, Customer is not completely satisfied, Customer may cancel the Service and Comcast will issue a refund for the monthly recurring charge paid for the first thirty (30) days of Service, excluding any custom installation fees, voice usage charges, fees, taxes, surcharges and optional service fees. Customer will be charged for any non-refundable fees and other charges. In order to be eligible for the refund, Customer must cancel the new Service within thirty (30) days of installation and return any Comcast-provided equipment in good working order. In no event shall the refund exceed $500.00. If Customer uses the Service in the first thirty (30) days, Customer will be refunded its subscription fees, but charged the applicable one-time fee. For the avoidance of doubt, this money back guarantee does not apply to renewals of an existing Service.

3. Modifications: All modifications to the Agreement, if any, must be captured in a written Amendment, executed by an authorized Comcast Vice President and the Customer. All other attempts to modify the Agreement shall be void and non-binding on Comcast. Customer by signing below, agrees and accepts the Terms and Conditions of this Agreement.

CUSTOMER SIGNATURE
By signing below, Customer agrees and accepts the Terms and Conditions of this Agreement. General Terms and Conditions can be found at http://business.comcast.com/terms-conditions/index.aspx
Signature
Name
Title
Date

FOR COMCAST USE ONLY	
Sales Representative	Shane Talley-Thomas
Sales Representative Code	
Sales Manager Name	Megan Pelletier
Sales Manager Approval	
Division	NorthEast

COMCAST BUSINESS

COMCAST BUSINESS SERVICE ORDER

Company Name: PurposeEnergy **Order #** 41687696

BUSINESS INTERNET CONFIGURATION DETAILS

Transfer Existing Comcast.net	No	**Equipment**	Comcast Owned
Number of Static Ips	0	**Business Web**	No

Outlook

N Wentworth Drive, Londonderry

From StPierre,John <jstpierre@manchesternh.gov>
Date Tue 4/15/2025 1:06 PM
To Melinda MacInnis <Melinda@purposeenergy.com>
Cc Penn,Kelly <kpenn@manchesternh.gov>; Chabot, Guy <GCHABOT@manchesternh.gov>

===== External Sender =====

Good Afternoon Melinda,

I can confirm that the Manchester Water Works is the utility which provides water service to North Wentworth Drive in Londonderry.

The Manchester Water Works will not provide a “Will Serve” letter until a full set of engineering, plumbing, and fire protection plans are provided to us for review. This typically happens during the planning board approval process.

Thank you,
John

John St.Pierre, P.E.
Planning and Meter Services Manager
Manchester Water Works
281 Lincoln Street
Manchester, NH 03103
jstpierre@manchesternh.gov
(603)792-2811

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Zachary Zweifler

From: noreply@faa.gov
Sent: Wednesday, December 17, 2025 12:52 PM
To: Zachary Zweifler
Subject: Status of FAA Filing

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Your filing is assigned Aeronautical Study Number(s) (ASN): 2025-ANE-3843-OE, 2025-ANE-3846-OE, 2025-ANE-3844-OE, 2025-ANE-3847-OE, 2025-ANE-3849-OE, 2025-ANE-3848-OE, 2025-ANE-3845-OE, 2025-ANE-3842-OE.

To review your electronic record, go to our website oeaaa.faa.gov and Search to locate your case using the assigned Aeronautical Study Number (ASN).

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For Wind Turbine proposals only, please ensure Wind Turbine Data as described on the project summary page in your registered e-filing account has been uploaded to your filing.

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Storm Water Pollution Prevention Plan

Southern New Hampshire Green Energy Campus
North Wentworth Avenue
Londonderry, NH 03053

Prepared for:
PurposeEnergy – Londonderry, LLC
25 Pelham Road, Suite 102
Salem, NH 03079

Prepared On:
May 31, 2025

Revised On:
December 17, 2025

TFM Job Number:
18252.02

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Planners

48 Constitution Drive
Bedford, NH 03110
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Stormwater Pollution Prevention Plan (SWPPP)

For Construction Activities At:

Southern New Hampshire Green Energy Campus
North Wentworth Road
Londonderry, NH 03053

SWPPP Prepared For:

PurposeEnergy – Londonderry, LLC
25 Pelham Road Suite 102
Salem, NH 03079

SWPPP Prepared By:

TFMORAN, INC.
ROBERT DUVAL, P.E.
BRYAN LEVESQUE, P.E., CPESC
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
603-472-4488
603-472-9747

SWPPP Preparation Date:

May 31, 2025

Estimated Project Dates:

Project Start Date: TBD
Project Completion Date: TBD

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SECTION 1: CONTACT INFORMATION/RESPONSIBLE PARTIES

1.1 Operator(s) / Subcontractor(s)

Operator(s): Area of Control: Owner & Overall Site Control

PurposeEnergy-Londonderry, LLC
c/o Sean O'Neill
25 Pelham Road, Suite 102
Salem, NH 03079
(insert contact phone and email)

Emergency 24-Hour Contact:

PurposeEnergy-Londonderry, LLC
c/o Sean O'Neill
25 Pelham Road, Suite 102
Salem, NH 03079

1.2 Stormwater Team

PurposeEnergy-Londonderry, LLC: Project Owner

PurposeEnergy-Londonderry, LLC
c/o Sean O'Neill
25 Pelham Road, Suite 102
Salem, NH 03079

TBD: Site Contractor

TBD

TFMoran, Inc: SWPPP Preparation & Inspections

SWPPP Coordinator
Bryan Levesque, PE, CPESC
603-472-4488 x 358
blevesque@tfmoran.com

Stormwater Team			
Name and/or position, and contact	Responsibilities	I Have Completed Training Required by CGP 6.2	I Have Read the CGP and Understand the Applicable Requirements
TFMoran, Inc. Bryan Levesque, P.E., CPESC EPA Inspector Certification 603-472-4488 x358 blevesque@tfmoran.com	SWPPP Inspections SWPPP Revisions	☒ Yes ☐ No	☒ Yes Date: 06/01/2025
TFMoran, Inc. Dan Blais, CPESC, CESSWI EPA Inspector Certification 603-472-4488 dblais@tfmoran.com	SWPPP Inspections	☒ Yes ☐ No	☒ Yes Date: 06/01/2025
TFMoran, Inc. Scott Olsen, EIT, CPESC-IT EPA Inspector Certification 603-472-4488 solsen@tfmoran.com	SWPPP Inspections	☒ Yes ☐ No	☒ Yes Date: 06/01/2025
TFMoran, Inc. Allyson Jones EPA Inspector Certification 603-472-4488 ajones@tfmoran.com	SWPPP Inspections	☒ Yes ☐ No	☒ Yes Date: 06/01/2025

SECTION 2: SITE EVALUATION, ASSESSMENT, AND PLANNING

2.1 Project/Site Information

The Project involves the extension of a new waste to biogas digester facility on North Wentworth Road in Londonderry. The project consists of the clearing of the existing site and construction of a level building pad; construction of the new digester tanks, piping, buildings, electric, water and gas lines, sanitary sewer lines, site lighting, and a new access from the end of North Wentworth Road.

SIZE OF PROPERTY: Approx. 15 Acres
TOTAL AREA OF CONSTRUCTION DISTURBANCES: 11.4 Acres

Project Latitude/Longitude

Latitude:	Longitude:
42.905442 °N	71.431632 °W

Horizontal Reference Datum: ☒ NAD 83 or WGS 84 via Google Maps

Additional Project Information

Is the project/site located on Indian country lands, or located on a property of religious or cultural significance to an Indian tribe? ☐ Yes ☒ No

Are you applying for permit coverage as a "federal operator" as defined in Appendix A of the 2022 CGP? ☐ Yes ☒ No

2.2 Discharge Information

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)? ☒ Yes ☐ No

Are there any surface waters within 50-feet of disturbance on this project ☐ Yes ☒ No

Table 1 – Names of Receiving Waters

Name(s) of the first surface water that receives stormwater directly from your site and/or from the MS4 (note: multiple rows provided where your site has more than one point of discharge that flows to different surface waters)
1. Watts Brook

Table 2 – Impaired Waters / TMDLs (Answer the following for each surface water listed in Table 1 above)

	Is this surface water listed as "impaired"?	If you answered yes, then answer the following:			
		What pollutant(s) are causing the impairment?	Has the TMDL been completed?	Title of the TMDL document	Pollutant(s) for which there is a TMDL
1	☒ YES ☐ NO	Chloride, Dissolved Oxygen, Iron, pH, Mercury	☐ YES ☒ NO	**33883 NE Regional Mercury TMDL**	**Mercury**

Describe the method(s) you used to determine whether or not your project/site discharges to an impaired water: USEPA Waterbody Quality Assessment Reports & NHDES Data

Table 3 – Tier 2, 2.5, or 3 Waters (Answer the following for each surface water listed in Table 1 above)

	Is this surface water designated as Tier 2, Tier 2.5, or Tier 3 water? (See Appendix F)	If you answered yes, specify which Tier (2, 2.5, or 3) the surface water is designated as?
1	☐ YES ☒ NO	

2.3 Nature of the Construction Activity

Description of Project

The Project involves the extension of a new waste to biogas digester facility on North Wentworth Road in Londonderry. The project consists of the clearing of the existing site and construction of a level building pad; construction of the new digester tanks, piping, buildings, electric, water and gas lines, sanitary sewer lines, site lighting, and a new access from the end of North Wentworth Road.

Construction Support Activities

There are no support facilities proposed for this project. If they become necessary, they will be added to the SWPPP.

2.4 Sequence and Estimated Dates of Construction Activities

Approximate Sequence of Activities

Survey and stake limits of clearing and grubbing.
Survey and stake limits of disturbance.
Install temporary erosion control measures and establish stabilized construction entrance(s).
Clear and grub all of the areas to be disturbed by construction.
Construct a level building pad, construct the hew facility.
Perform all remaining site construction.
Loam and seed all disturbed areas.
Remove temporary erosion and sedimentation control measures.

2.5 Allowable Non-Stormwater Discharges

List of Allowable Non-Stormwater Discharges Present at the Site

Type of Allowable Non-Stormwater Discharge	**Likely to be Present at Your Site?**
Discharges from emergency fire-fighting activities	☒ YES ☐ NO
Fire hydrant flushings	☒ YES ☐ NO
Landscape irrigation	☒ YES ☐ NO
Waters used to wash vehicles and equipment	☒ YES ☐ NO
Water used to control dust	☒ YES ☐ NO
Potable water including uncontaminated water line flushings	☐ YES ☒ NO
Routine external building wash down	☐ YES ☒ NO
Pavement wash waters	☒ YES ☐ NO
Uncontaminated air conditioning or compressor condensate	☐ YES ☒ NO
Uncontaminated, non-turbid discharges of ground water or spring water	☒ YES ☐ NO
Foundation or footing drains	☒ YES ☐ NO
Construction dewatering water	☒ YES ☐ NO

2.6 Site Maps

Site Maps are located in Appendix A

SECTION 3: DOCUMENTATION OF COMPLIANCE WITH OTHER FEDERAL REQUIREMENTS

3.1 Endangered Species Protection

The site was reviewed using the IPAC search function of the USFWS. No critical habitats are noted for the site.

3.2 Historic Preservation

Appendix E, Step 1

Do you plan to install any of the following stormwater controls at your site? Check all that apply below, and proceed to Appendix E, Step 2.

- ☐ Dike
- ☒ Berm
- ☒ Catch Basin
- ☒ Pond
- ☒ Stormwater Conveyance Channel (e.g., ditch, trench, perimeter drain, swale, etc.)
- ☒ Culvert
- ☐ Other type of ground-disturbing stormwater control:

Appendix E, Step 2

If you answered yes in Step 1, have prior surveys or evaluations conducted on the site already determined that historic properties do not exist, or that prior disturbances at the site have precluded the existence of historic properties on site? ☒ YES ☐ NO

3.3 Safe Drinking Water Act Underground Injection Control Requirements

Do you plan to install any of the following controls?

- ☐ Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

- ☒ Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow

- ☐ Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

Subsurface infiltration systems are planned for this project.

SECTION 4: EROSION AND SEDIMENT CONTROLS

Erosion and sediment controls used on the project may include, but are not limited to:

- Construction Sequencing
- Silt Fence
- Compost Filter Socks and/or Compost Filter Berms
- Construction Entrances
- Vegetated Buffers
- Fiber Rolls/Wattles
- Storm Drain Inlet Protection
- Temporary Sediment Basins
- Stormwater Detention Basins (utilized for construction runoff storage during construction)
- Pneumatic Plugs
- Vegetated and Stone Lined Conveyance Channels/Ditches
- Geotextile Matting and Fabrics
- Stone Check Dams
- Hay Mulch with Tackifiers
- Dust Suppression with Water Truck
- Soil Stabilizers

4.1 Natural Buffers or Equivalent Sediment Controls

Buffer Compliance Alternatives
Are there any surface waters within 50 feet of your project's earth disturbances? ☒ YES ☐ NO

Buffer Exceptions
Which of the following exceptions to the buffer requirements applies to your site?

☐ This is a linear construction project that will provide and maintain an undisturbed natural buffer where this is less than 50 feet and supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer. There are locations in the project at which the limits of work are at or in wetlands and streams. To the extent practicable, the project will install and maintain two independent rows of perimeter erosion and sediment control practices of silt fence in conjunction with silt sock.

☐ Buffer disturbances are authorized under a CWA Section 404 permit.

☐ Buffer disturbances will occur for the construction of a water-dependent structure or water access area (e.g., pier, boat ramp, and trail).

None of these apply to this Project.

4.2 Perimeter Controls

General - Sediment controls will be installed along the perimeter areas of the site that will receive stormwater from earth disturbing activities.

Specific Perimeter Controls

Perimeter Control # 1 - Silt Fence

BMP Description: Silt fence should be installed along the down gradient areas of the property as shown on the plan.

Installation Schedule:	The silt fence shall be installed before construction begins as indicated on the design plans.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm:** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	The silt fence shall be inspected to ensure that it is intact and there are no gaps or tears along its length. If gaps or tears are found during the inspection, the fabric shall be repaired or replaced immediately. Accumulated sediment shall be removed from the base of the fence once it reaches one-third the height of the silt sock and disposed of in a legal manner. Before the silt fence is removed from the site, any accumulated sediment shall be removed and disposed of in a legal manner.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

<u>Alternate</u> Perimeter Control and Sediment Barrier

Perimeter Control # 2 - Erosion Control Mix Berm or Stump Grindings Berm

BMP Description: Erosion Control Mix or Stump Grindings Berm should be installed in place of or in conjunction with silt fencing as shown on the Site Map.

Installation Schedule:	The Erosion Control Mix or Stump Grindings Berm (Berm) shall be installed before construction begins as indicated on the design plans.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm:** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	The Berm should be inspected to ensure that it is intact and there are no gaps along its length. If gaps are found during the inspection, the Berm shall be repaired immediately. Accumulated sediment shall be removed from the Berm once it reaches one-third the height of the Berm and disposed of in a legal manner. Before the Berm is removed from the site, any accumulated sediment shall be removed and disposed of in a legal manner.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

<u>Alternate</u> Perimeter Control and Sediment Barrier

Perimeter Control # 3 – Erosion Control Mix or Compost Filter Sock

BMP Description: Erosion Control Mix or Compost Filter Sock should be installed in place of, or in conjunction with silt fencing as shown on the Site Map.

Installation Schedule:	The Compost Filter Sock shall be installed before construction begins as indicated on the design plans.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm:** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	The Compost Filter Sock should be inspected to ensure that it is intact and there are no gaps or tears along its length. If gaps or tears are found during the inspection, the Compost Filter Sock shall be repaired or replaced immediately. Accumulated sediment shall be removed from the Compost Filter Sock once it reaches one-half the height of the Compost Filter Sock and disposed of in a legal manner. Before the Compost Filter Sock is removed from the site, any accumulated sediment shall be removed and disposed of in a legal manner.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

4.3 Sediment Track-Out

General - Stone construction entrance pads will be utilized to minimize the track-out of sediment onto off-site streets, other paved areas, and sidewalks from vehicles exiting your construction site.

Track-Out Control # 1 - Stabilized Construction Entrance

BMP Description: The stabilized construction entrances consisting of stone and filter fabric should be installed at the entrance/exit onto existing paved surfaces, as identified on the design plans, to prevent off-site transport of sediment by construction vehicles. The anti-tracking pad shall be at least seventy-five feet long, a minimum of 12 feet wide (reduced due to narrow work zone), flared at the intersection with parking areas, and shall consist of a twelve-inch layer of 3-6" stone. The stone shall be placed over a layer of geotextile fabric to reduce mitigation of sediment from the underlying soil.

Installation Schedule:	The stabilized construction entrance shall be installed before construction begins on site. The stone shall remain in place until the subgrade of pavement is installed on site.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm:** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	The stabilized construction entrance shall be maintained in a condition that will prevent tracking or flowing of sediment onto any paved surface not within the active construction. Any sediment tracked, spilled, dropped, or washed onto these areas shall be immediately cleaned up and disposed of in a legal manner. Sediment shall be removed from the entrance at least weekly, or more often if necessary. If sediment has clogged the entrance, then additional crushed stone shall be added. Replacement of the entrance may become necessary when it becomes completely filled with sediment. The entrance shall be reshaped as indicated on the design plans for runoff control. The construction entrance shall be removed at the completion of the project.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

4.4 Stockpiled Sediments or Soils

General – The following apply to stockpiles of soils and sediment materials for the project:

- Stockpiles are to be located outside of any natural buffers established under Part 2.1.2.1a and physically separated from other stormwater controls made in accordance with Part 2.1 of the CGP.
- Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier.
- Where practicable, provide cover or appropriate temporary stabilization to protect from precipitation and/or minimize sediment discharge.
- Do not hose down or sweep accumulated soil or sediment on pavements into any stormwater conveyance (unless connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet or surface water; and,
- Unless infeasible, contain and securely protect from wind.

Specific Stockpile Controls

The perimeter controls outlined in Section 4.2 shall be utilized as a perimeter sediment barrier.

4.5 Dust Control

General - The generation of dust will be minimized to the extent feasible through the appropriate application of water and/or other dust suppression techniques.

Specific Dust Controls

Dust Control # 1 - Watering

BMP Description: Dust from the site should be controlled by using a mobile pressure-type distributor truck to apply potable water to disturbed areas. The mobile unit will apply water at a rate of 300 gallons per acre and minimize as necessary to prevent runoff and ponding.

Installation Schedule:	Dust controls will be implemented as needed upon the start of site grading, during windy conditions (forecasted or actual wind conditions of 20 mph or greater) and continue through grading operations. Potable water will be applied at a rate of 300 gallons per acre and be performed by a mobile pressure-type distributor truck no more than three times a day from May to September and once per day from October to April, or as required.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	At least one mobile unit shall always be available to distribute potable water to control dust on the site. Each mobile unit shall be equipped with a positive shutoff valve to prevent overwatering of the disturbed area. For vehicle and equipment maintenance practices, see Section 3, Part 3.4.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

4.6 Minimize the Disturbance of Steep Slopes

General

- Steep slopes will be stabilized with stone or erosion control blankets per NHDOT specifications.
- Slopes that will have a vegetative cover for final stabilization will be tracked (to the extent practicable) prior to application of slope mix seed.

Specific Steep Slope Controls

Steep Slope Control # 1 – Erosion Control Matting

BMP Description: North American Green (or approved equal) BioNet blanket slope protection should be used to provide stabilization for the slopes as shown on the project plans. The blanket slope protection shall be installed in accordance with the manufacturer's recommendations and project requirements.

Installation Schedule:	The blanket slope protection shall be installed once the slopes are final graded.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	The blanket shall be inspected to determine if cracks, tears, or breaches have formed; if so, the blanket shall be repaired immediately. Contact with the soil must be maintained and erosion should not occur under the blanket. Any areas where the blanket is not in close contact with the ground shall be repaired or replaced.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

4.7 Topsoil

General - Topsoil will be preserved, stockpiled, and reused on the site to the extent practicable.

Specific Topsoil Controls

Topsoil Control # 1 - Topsoil

BMP Description: Topsoil stripped from the construction area Should be stockpiled as identified on the SWPPP sheets. The stockpile area shall be in an area that will not interfere with the construction phases and at least 15 feet away from areas of concentrated flows or pavement. The slopes of the stockpile shall not exceed 2:1 to prevent erosion. A silt fence (or alternate perimeter control) shall be installed around the perimeter of the stockpile, in accordance with the specifications on the design plans and in Section 2.1.2.4. Of the CGP. The stockpile shall be temporarily stabilized with erosion controls as described in Section 2.1.2.4.c of the CGP if necessary.

Installation Schedule:	Topsoil stockpiles shall be established during grading activities. Temporary stabilization will be applied immediately after the slopes of the stockpile have been graded and construction equipment traverses the slopes.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm:** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	Areas on or around the stockpile that have eroded shall be immediately stabilized with proper erosion controls.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

4.8 Soil Compaction

General - To minimize topsoil compaction, to the extent practicable after loam or humus is placed, vehicle and equipment traffic will be limited in the areas where final vegetative stabilization will occur.

4.9 Storm Drain Inlets

General - The project will install inlet protection measures that remove sediment from discharge prior to entry into the storm drain inlet.

Specific Storm Drain Inlet Controls #1 - Sedimentation Control at Catch Basin

BMP Description: All existing catch basins within the paved areas should be protected from sediment by installing a filter fabric wrapped around the grate.

Installation Schedule:	Sedimentation control at the catch basins shall be installed as the catch basin structures are constructed.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance	Clean, remove and/or replace, the protection measures as sediment accumulates, if the filter becomes clogged, and/or performance is otherwise compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, you must remove the deposited sediment by the end of the same workday in which it is found or by the end of the following workday if removal by the same workday is not feasible.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

Specific Storm Drain Inlet Controls #2 - Dandy Bag II (or approved equal)

BMP Description: Existing catch basins should be protected from sediment by Dandy Bag II catch basin inserts. The inserts should be removed by the contractor once the construction site has been permanently stabilized.

Installation Schedule:	Dandy Bag II shall be installed in the existing catch basin prior to any earth moving activity on site and within the new catch basins immediately after they are installed.
Inspections:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm:** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	Clean, remove and/or replace, the protection measures as sediment accumulates, if the filter becomes clogged, and/or performance is otherwise compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, you must remove the deposited sediment by the end of the same workday in which it is found or by the end of the following workday if removal by the same workday is not feasible.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

4.10 Constructed Stormwater Conveyance Channels

General - Stormwater conveyance channels will be constructed at various locations for the project. These channels will be lined with non-woven geotextile fabric and stone, or an approved erosion control matting prior to directing stormwater flows to minimize erosion in the channel.

4.11 Dewatering Practices

General - Ground water and/or accumulated stormwater that is removed from excavations, trenches, foundations, vaults, or other similar points of accumulation, shall be effectively managed by appropriate controls prior to leaving the construction site. Dewatering water that is non-contaminated and non-turbid dewatering water may be able to be discharged without being routed to a control.

Specific Dewatering Practices:

Dewatering Practice # 1 - Excavation Dewatering

BMP Description: Construction dewatering practices are intended to prevent sedimentation associated with managing water removed from excavations during construction. Activities must be conducted to remove sediments, prevent the discharged water from eroding soil on the site, and preserve down gradient wetlands and ditches. Water should be pumped into a portable dewatering bag, frac tank or a dewatering area. The dewatering area shall be located on a flat surface not within a runoff path. For non-vegetated dewatering areas, a layer of crushed stone with a minimum diameter of 2 inches should be installed. The dewatering area shall be encompassed with silt fence or sediment logs to allow infiltration of water into the ground. Dewatering cannot be discharged within 20-ft of a wetland resource area or into a closed drainage system (i.e.: catch basins drain manholes, underground drainage systems).

***Installation Schedule*:**	The dewatering facility should be installed prior to starting dewatering activities.
Inspections:	**Weekly:** The dewatering facility area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized; Additionally, the dewatering facility should be inspected daily by the Contractor during the active dewatering process. **During/Post-Storm:** The environmental monitor shall also inspect the dewatering facility during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	Special attention should be paid to the buffer area of the dewatering facility for any signs of erosion or flow concentration that may damage the buffer's vegetation and/or the underlying soil. Dewatering discharge should be stopped immediately upon any sign of instability or erosion in the receiving area. If a portable dewatering bag is used for the dewatering facility, check the bag daily for rips and repair or replace as needed. If a gravel pad is used, check the surface area for erosion and install additional crushed stone if necessary. The silt fence or sediment log perimeter adjacent to the downstream side of the dewatering facility should be checked for gaps, tears or other deficiencies and repaired/replaced as needed. Dewatering should be avoided during periods of intense, heavy rain. Any repairs or replacements to the dewatering facilities should be done by the end of the same workday in which it is found or by the end of the following workday if removal by the same workday is not feasible. The dewatering effluent should be visually monitored to assess whether additional treatment is required to protect downstream receiving waters. Care must be exercised to prevent contact of dewatering effluent with oil, grease, other petroleum products, toxic and/or hazardous materials. Contaminated runoff must be contained, treated, and discharged or removed in accordance with the Project Plans and Specifications, as well as NHDES requirements. Turbid backwash water should either be hauled away for disposal or returned to the start of the treatment process. Replace or clean filter media for the dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

4.12 Chemical Treatment

Stormwater treatment chemicals will not be utilized on this project.

4.13 Other Stormwater Controls

General - This document can be amended to include other stormwater controls if they become necessary.

4.14 Site Stabilization

Site Stabilization Practice (only use this if you are <u>not</u> located in an arid, semi-arid, or drought-stricken area)

☒ *Vegetative* ☐ *Non-Vegetative*
☒ *Temporary* ☐ *Permanent*

Temporary Stabilization

BMP Description: Earthwork temporarily ceasing on a portion or the entire site and not resuming within 3 days shall be stabilized. Proposed pavement areas are to be stabilized with compacted gravels; other areas that will not be permanently seeded within 14 days of disturbance with 6" loam and not less than 2.8 lbs. of Erosion Control Seed Mix per 1,000 sq. ft. Proposed vegetated areas not exhibiting a minimum of 85% vegetative cover growth by the end of growing season, or which are disturbed after the end of growing season, shall be stabilized by sowing Erosion Control Seed Mix and mulching with hay mulch, hydraulic mulch, or other approved method. On slopes greater than 3:1, the area shall be seeded and protected with erosion control blankets or mulched using a minimum of 3.2 tons of mulch per acre that is secured with anchored netting, tackifiers, hydraulic mulch or bonded fiber matrix (BFM). The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or frozen ground and shall be completed prior to thawing or spring melting events. All ditches or swales not exhibiting a minimum of 85% vegetative growth by the end of growing season, or which are disturbed shall be stabilized temporarily with stone or composite turf reinforcement mat (North American Green SC 150). After November 15, parking surfaces where work has stopped for the winter season, shall be protected with a minimum of 3 inches of crushed gravel NHDOT Item No. 304.3.

Installation Schedule:	Inspect portions of the site where earthwork temporarily ceases and shall not resume within 3 days.
Inspection:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	If washout, breakage, or erosion occurs, the surface will be repaired, and new stabilization measures shall be added to the damaged areas.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

Site Stabilization Practice (only use this if you are not located in an arid, semi-arid, or drought-stricken area)

☒ *Vegetative* ☐ *Non-Vegetative*
☐ *Temporary* ☒ *Permanent*

Permanent Seeding

BMP Description: Permanent seeding should be applied immediately after the final design grades are achieved on portions of the site but not later than 72 hours after construction activities cease. Permanent stabilization will be completed in accordance with final stabilization procedures in Section 7. All stabilization is to be performed in compliance with the NHDOT Standard Specifications.

Installation Schedule:	Permanent seeding shall be applied immediately after the final design grades are achieved on portions of the site but not later than 72 hours after construction activities cease.
Inspection:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and permanently stabilized. **During/Post-Storm** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	If washout, breakage, or erosion occurs, the surface will be repaired, and new permanent stabilization measures shall be added to the damaged areas.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

SECTION 5: POLLUTION PREVENTION STANDARDS

5.1 Potential Sources of Pollution

Potential sources of sediment to stormwater runoff:

- Topsoil stripping and stockpiling (if necessary)
- Vehicle tracking
- Grading and excavation activities

Potential pollutants and sources, other than sediment, to stormwater runoff:

- Material Storage Area – topsoil stockpile (if necessary)
- Construction Activity – paving, concrete barrier installation, concrete pouring/mortar

Construction Site Pollutants

Trade Name Material	Chemical/Physical Description	Storm Water Pollutants
Asphalt	Black solid	Oil, petroleum distillates
Concrete	White solid	Limestone, sand
Glue, adhesives	White or yellow liquid	Polymers, epoxies
Hydraulic oil/fluids	Brown oily petroleum hydrocarbon	Mineral oil
Gasoline	Colorless, pale brown or pink petroleum hydrocarbon	Benzene, ethyl benzene, toluene, xylene, MTBE
Diesel Fuel	Clear, blue green to yellow liquid	Petroleum distillate, oil and grease, naphthalene, xylenes
Antifreeze/coolant	Clear green/yellow liquid	Ethylene glycol, propylene glycol, heavy metals (copper, lead, zinc)
Erosion	Solid Particles	Soil, Sediment
Construction Debris/ Municipal Waste	Solid Particles	Trash/Debris/Organic Material
Sanitary toilets	Various colored liquids	Bacteria, parasites, and viruses

5.2 Spill Prevention and Response

Spill Prevention and Control Procedures

BMP Description:

A Spill Prevention and Response Plan shall be prepared and identify ways in which to reduce the chance of spills, stop the source of spills, contain, and clean up spills, dispose of material containment by spills and train personnel responsible for spill prevention and response.

i. Employee Training: All employees will be trained via bi-weekly training sessions, as detailed in Section 7.
ii. Vehicle Maintenance: All vehicles and equipment including subcontractor vehicles will be checked for leaking oil and fluids. Vehicles leaking fluids will not be allowed on-site. Drip pans will be placed under all vehicles and equipment that are parked overnight.
iii. Hazardous Material Storage: Hazardous materials will be stored in accordance with Section 5, Part 5 and in accordance with all federal, state and local regulations.
iv. Spill Kits: Spill kits will be within the materials storage area.
v. Spills: All spills will be cleaned up immediately upon discovery. Spent absorbent materials and rags will be hauled off-site immediately after the spill is cleaned up in a legal manner. Spills large enough to discharge into surface waters shall be reported to the National Response Center at (800) 424-8802.
vi. Material safety data sheets, a material inventory, and emergency contact information will be maintained at the on-site project trailer.

Installation Schedule:	The spill prevention and control procedures will be implemented once construction begins on-site.
Inspection:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	All personnel shall be instructed during training sessions regarding the correct procedures for spill prevention and control. Notices that state these practices will be posted in the office trailer, and the individual who manages day-to-day site operations will be responsible for seeing that these procedures are followed.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

5.3 Fueling and Maintenance of Equipment or Vehicles

General – The following apply to the fueling and maintenance of equipment and vehicles at the site.

- Adequate clean-up supplies are to be always available to handle spills and leaks. Clean up spills or contaminated surfaces immediately, using dry clean up measures where possible and eliminate the source of the spill to prevent a discharge, or a furtherance of an ongoing discharge.
- Use drip pans and absorbents under or around leaky vehicles.
- Dispose of used clean up supplies, oil, and oily wastes in accordance with other federal, state, tribal, or local requirements; and
- Do not clean surfaces by hosing the spill area.

Specific Pollution Prevention Practices

Pollution Prevention Practice # 1 - Equipment/Vehicle Fueling and Maintenance

BMP Description: When possible, equipment/vehicle fueling, and maintenance shall be done at an offsite facility. All major equipment/ vehicle maintenance will be performed off-site. If equipment/vehicle fueling or maintenance needs to be done on site, employees and subcontractor shall be trained in proper fueling and maintenance procedures. Several types of vehicles and equipment will be used on-site throughout the project. Fuel tanks shall be kept on-site in the materials storage area. Fueling activities shall occur in the designated materials storage area. All equipment fluids generated from maintenance activities will be disposed of into designated storage in accordance with Section 5 Part 5. Absorbent, spill-cleanup materials and spill kits will be available at the staging and materials storage area. Drip pans will be placed under all equipment receiving maintenance and vehicles and equipment parked overnight.

Installation Schedule:	BMPs implemented for equipment and vehicle maintenance and fueling activities will begin at the start of the project.
Inspection:	**Weekly:** The area shall be inspected by an environmental monitor at least once every seven (7) days from the start of terrain alteration until the site is completed and stabilized. **During/Post-Storm** The environmental monitor shall also inspect the site during any rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event.
Maintenance:	Vehicles and equipment will be inspected on each day of use. Leaks will be repaired immediately, or the problem vehicles(s) or equipment will be removed from the project site. Keep an ample supply of spill-cleanup materials on-site and immediately clean up spills and dispose of materials in accordance with local and state regulations. Recycle fluids whenever possible.
Responsible Staff:	PurposeEnergy Londonderry, LLC or their subcontractors

SECTION 6: INSPECTION AND CORRECTIVE ACTION

6.1 Inspection Personnel and Procedures

Personnel Responsible for Inspections
Dan Blais, CPESC, CESSWI; TF Moran, Inc.
Scott Olsen, CPESC, TFMoran, Inc.
Bryan Levesque, PE, CPSEC; TF Moran, Inc.
Or Other qualified TFM personnel as may be assigned to the Project

Inspection Frequency

Inspections and monitoring are to be done in accordance with NHDOT Standard Specifications.

Weekly Inspection: At least once every 7 calendar days; and within 24 hours of the occurrence of a storm event of 0.50 inches or greater. To determine if a storm event of 0.50 inches or greater has occurred on your site, you must either keep a properly maintained rain gauge on your site or obtain the storm event information from a weather station that is representative of your location.

Post-Storm Inspection: In addition to the weekly inspection, the environmental monitor shall also inspect the site within 24-hrs of a rain event in which 0.50 inches of precipitation or more falls within a 24-hour period. If the environmental monitor is unable to be present during such a storm, an inspection shall be performed within 24 hours of the event. *"Within 24 hours of the occurrence of a storm event"* means that you are required to conduct an inspection within 24 hours once a storm event has produced 0.50 inches, even if the storm event is continuing. Thus, if there is a storm event at your site that continues for multiple days, and each day of the storm produces 0.50 inches or more of rain, you are required to conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the end of the storm.

All erosion and sediment controls will be inspected in accordance with the applicable requirements of the NHDES. If you find a problem (*e.g., erosion and sediment controls need to be replaced, repaired, or maintained*), you must make the necessary repairs or modifications in accordance with the following schedule in Section 6.2 below in this document. The SWPPP Inspector shall notify the Contractor's Site Supervisor of corrective actions identified during the inspection prior to leaving the project and submit a copy of the inspection report to the Contractor. The site supervisor shall initiate corrective actions made to the deficient area within the guidelines listed in Section 6.2 below. SWPPP Action Items will be listed on the SWPPP Inspection Report. Corrective actions to address deficiencies will be recorded in the Corrective Action Log in Appendix E. For any corrective actions requiring a SWPPP amendment, the SWPPP Amendment Log in Appendix F shall be filled out appropriately and the SWPPP sheets updated as necessary.

Rain Gauge Location

The rain gauge used will be the KNHLONDO3 rain gauge from Weather Underground in the vicinity of the project.

Inspection Report Forms

A COPY OF THE SWPPP INSPECTION FORM IS LOCATED IN APPENDIX D.

6.2 Corrective Action

Immediately take all reasonable steps to address the condition, including cleaning up any contaminated surfaces so the material will not be discharged in subsequent storm events. When the problem does not require a new or replacement control or significant repair, the corrective action must be completed by the close of the next business day.

When the problem requires a new or replacement control or significant repair, install the new or modified control and make it operational, or complete the repair, by no later than seven (7) calendar days from the time of discovery. If it is infeasible 1

Personnel Responsible for Corrective Actions

PurposeEnergy Londonderry, LLC or their subcontractors

Corrective Action Forms

A COPY OF THE CORRECTIVE ACTION FORM IS LOCATED IN APPENDIX E

6.3 Delegation of Authority

The Delegation of Authority identifies the individual or position where the construction site operator has delegated authority for the purposes of signing inspection reports, certifications, or other information.

See Appendix J for the Delegation of Authority form.

SECTION 7: TRAINING

Individual(s) Responsible for Training:

PurposeEnergy Londonderry, LLC or their subcontractors

General stormwater and BMP awareness training for staff and subcontractors:

Informal training provided for all staff, including subcontractors, on the site. The training will be conducted primarily via training sessions and focus on avoiding damage to storm water BMPs and preventing illicit discharges. The training sessions will address the following topics: Erosion Control BMPs, Sediment Control BMPs, Non-stormwater BMPs, Waste Management and Materials Storage BMPs, and Emergency Procedures specific to the construction site.

See Appendix I – SWPPP Training Log.

SECTION 8: CERTIFICATION AND NOTIFICATION

- The following certification statement must be signed by a responsible corporate officer or any other person who performs policy or decision-making functions or a manager where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
- This certification must be re-signed in the event of a SWPPP Modification.

I certify under the penalty of the law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiries about the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____ Title: _____

Signature: _____ Date: _____

[Repeat as needed for multiple construction operators at the site.]

SWPPP APPENDICES

Attach the following documentation to the SWPPP:

Appendix A – Site Maps

Appendix B – 2022 Copy of the Construction General Permit (CGP)

Appendix C – Notice of Intent

Appendix D – Sample SWPPP Inspection Report Form

Appendix E – Corrective Action Form

Appendix F – SWPPP Amendment Log

Appendix G – Subcontractor Certifications/Agreements

Appendix H – Grading and Stabilization Activities Log

Appendix I – Training Log

Appendix J – Delegation of Authority

Appendix K – Endangered Species Documentation

Appendix L – Permits

Appendix M – Project Schedule (to be attached by the Contractor)

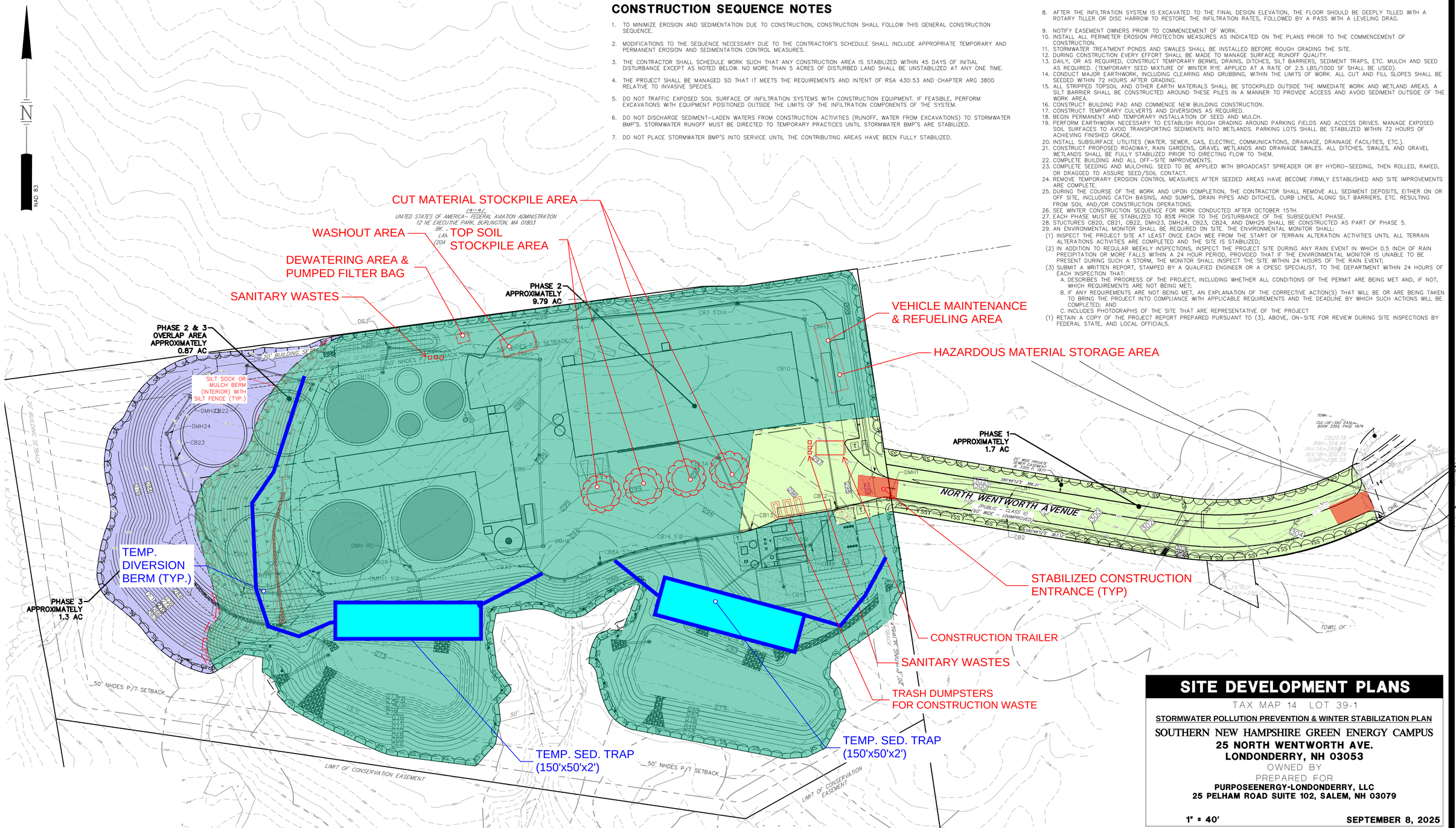
Appendix N – NRCS and Project Specific Soil Maps of the Site

Appendix O - Completed SWPPP Inspections

Appendix A – Site Maps

CONSTRUCTION SEQUENCE NOTES

1. TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, CONSTRUCTION SHALL FOLLOW THIS GENERAL CONSTRUCTION SEQUENCE.
2. MODIFICATIONS TO THE SEQUENCE NECESSARY DUE TO THE CONTRACTOR'S SCHEDULE SHALL INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.
3. THE CONTRACTOR SHALL SCHEDULE WORK SUCH THAT ANY CONSTRUCTION AREA IS STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE EXCEPT AS NOTED BELOW. NO MORE THAN 5 ACRES OF DISTURBED LAND SHALL BE UNSTABILIZED AT ANY ONE TIME.
4. THE PROJECT SHALL BE MANAGED SO THAT IT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER ARG 3800 RELATIVE TO INVASIVE SPECIES.
5. DO NOT TRAFFIC EXPOSED SOIL SURFACE OF INFILTRATION SYSTEMS WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
6. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO STORMWATER BMP'S. STORMWATER RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMP'S ARE STABILIZED.
7. DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
8. AFTER THE INFILTRATION SYSTEM IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE THE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
9. NOTIFY EASEMENT OWNERS PRIOR TO COMMENCEMENT OF WORK.
10. INSTALL ALL PERIMETER EROSION PROTECTION MEASURES AS INDICATED ON THE PLANS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
11. STORMWATER TREATMENT PONDS AND SWALES SHALL BE INSTALLED BEFORE ROUGH GRADING THE SITE.
12. DURING CONSTRUCTION EVERY EFFORT SHALL BE MADE TO MANAGE SURFACE RUNOFF QUALITY.
13. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT BARRIERS, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED. (TEMPORARY SEED MIXTURE OF WINTER RYE APPLIED AT A RATE OF 2.5 LBS/1000 SF SHALL BE USED).
14. CONDUCT MAJOR EARTHWORK, INCLUDING CLEARING AND GRUBBING, WITHIN THE LIMITS OF WORK. ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN 72 HOURS AFTER GRADING.
15. ALL STRIPPED TOPSOIL AND OTHER EARTH MATERIALS SHALL BE STOCKPILED OUTSIDE THE IMMEDIATE WORK AND WETLAND AREAS. A SILT BARRIER SHALL BE CONSTRUCTED AROUND THESE PILES IN A MANNER TO PROVIDE ACCESS AND AVOID SEDIMENT OUTSIDE OF THE WORK AREA.
16. CONSTRUCT BUILDING PAD AND COMMENCE NEW BUILDING CONSTRUCTION.
17. CONSTRUCT TEMPORARY CULVERTS AND DIVERSIONS AS REQUIRED.
18. BEGIN PERMANENT AND TEMPORARY INSTALLATION OF SEED AND MULCH.
19. PERFORM EARTHWORK NECESSARY TO ESTABLISH ROUGH GRADING AROUND PARKING FIELDS AND ACCESS DRIVES. MANAGE EXPOSED SOIL SURFACES TO AVOID TRANSPORTING SEDIMENTS INTO WETLANDS. PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
20. INSTALL SUBSURFACE UTILITIES (WATER, SEWER, GAS, ELECTRIC, COMMUNICATIONS, DRAINAGE, DRAINAGE FACILITIES, ETC.).
21. CONSTRUCT PROPOSED ROADWAY, RAIN GARDENS, GRAVEL WETLANDS AND DRAINAGE SWALES. ALL DITCHES, SWALES, AND GRAVEL WETLANDS SHALL BE FULLY STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
22. COMPLETE BUILDING AND ALL OFF-SITE IMPROVEMENTS.
23. COMPLETE SEEDING AND MULCHING. SEED TO BE APPLIED WITH BROADCAST SPREADER OR BY HYDRO-SEEDING, THEN ROLLED, RAKED, OR DRAGGED TO ASSURE SEED/SOIL CONTACT.
24. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDED AREAS HAVE BECOME FIRMLY ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE.
25. DURING THE COURSE OF THE WORK AND UPON COMPLETION, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT DEPOSITS, EITHER ON OR OFF SITE, INCLUDING CATCH BASINS, AND SUMPS, DRAIN PIPES AND DITCHES, CURB LINES, ALONG SILT BARRIERS, ETC. RESULTING FROM SOIL AND/OR CONSTRUCTION OPERATIONS.
26. SEE WINTER CONSTRUCTION SEQUENCE FOR WORK CONDUCTED AFTER OCTOBER 15TH.
27. EACH PHASE MUST BE STABILIZED TO 85% PRIOR TO THE DISTURBANCE OF THE SUBSEQUENT PHASE.
28. STUCTURES CB20, CB21, CB22, DMH23, DMH24, CB23, CB24, AND DMH25 SHALL BE CONSTRUCTED AS PART OF PHASE 5.
29. AN ENVIRONMENTAL MONITOR SHALL BE REQUIRED ON SITE. THE ENVIRONMENTAL MONITOR SHALL:
    (1) INSPECT THE PROJECT SITE AT LEAST ONCE EACH WEE FROM THE START OF TERRAIN ALTERATION ACTIVITIES UNTIL ALL TERRAIN ALTERATIONS ACTIVITIES ARE COMPLETED AND THE SITE IS STABILIZED;
    (2) IN ADDITION TO REGULAR WEEKLY INSPECTIONS, INSPECT THE PROJECT SITE DURING ANY RAIN EVENT IN WHICH 0.5 INCH OF RAIN PRECIPITATION OR MORE FALLS WITHIN A 24 HOUR PERIOD, PROVIDED THAT IF THE ENVIRONMENTAL MONITOR IS UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THE RAIN EVENT;
    (3) SUBMIT A WRITTEN REPORT, STAMPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, TO THE DEPARTMENT WITHIN 24 HOURS OF EACH INSPECTION THAT:
        A. DESCRIBES THE PROGRESS OF THE PROJECT, INCLUDING WHETHER ALL CONDITIONS OF THE PERMIT ARE BEING MET AND, IF NOT, WHICH REQUIREMENTS ARE NOT BEING MET;
        B. IF ANY REQUIREMENTS ARE NOT BEING MET, AN EXPLANATION OF THE CORRECTIVE ACTION(S) THAT WILL BE OR ARE BEING TAKEN TO BRING THE PROJECT INTO COMPLIANCE WITH APPLICABLE REQUIREMENTS AND THE DEADLINE BY WHICH SUCH ACTIONS WILL BE COMPLETED; AND
        C. INCLUDES PHOTOGRAPHS OF THE SITE THAT ARE REPRESENTATIVE OF THE PROJECT
    (1) RETAIN A COPY OF THE PROJECT REPORT PREPARED PURSUANT TO (3), ABOVE, ON-SITE FOR REVIEW DURING SITE INSPECTIONS BY FEDERAL STATE, AND LOCAL OFFICIALS.



HORIZONTAL SCALE 1"=40'
40 20 0 40

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-1

STORMWATER POLLUTION PREVENTION & WINTER STABILIZATION PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

1" = 40' **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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48 Constitution Drive, Bedford, N.H. 03110

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

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FILE	DR		FB		
18252-02	CK		CADFILE	18252-02 SITE PLAN	PH-1

Dec 08, 2025 - 12:32pm
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SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE. LONDONDERRY, NEW HAMPSHIRE

GENERAL INFORMATION

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MAP 14 LOT 39
CODNER NICHOLAS F TRUST 2012
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603-432-1100

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PREPARED FOR
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48 CONSTITUTION DRIVE
BEDFORD, NH 03110
ROBERT DUVAL, PE, PRINCIPAL

WETLAND SCIENTIST
TFMORAN, INC.
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
CHRISTOPHER K. DANFORTH, CWS

SOIL SCIENTIST
BAG LAND CONSULTANTS
43 ROCKINGHAM STREET
CONCORD, NH 03301
BRUCE A. GILDAY, CSS

ABUTTERS
R014-039-0
NICHOLAS F CODNER TRUST 2012
162 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-047-0
US OF AMERICA FED AVIATION ADMIN
12 NE EXECUTIVE PARK
BURLINGTON, MA 01803

R01-044-38
STATE OF NEW HAMPSHIRE
PO BOX 483, 1 HAZEN DRIVE
CONCORD, NH 03302-0483

R014-44-0
GRANITE RIDGE ENERGY, LLC
21 NORTH WENTWORTH AVE
LONDONDERRY, NH 03053

R014 LOTS 044-3 & 040-0
TRACIE L & BRUCE A LEMIEUX
154 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-039-1
VICTOR D & CECILIA C REIS
158 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-13
RICHARD A BELANGER
149 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-12
NICOLE M THOMAS
151 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-11JUSTIN M QUISH
153 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-10
SHARON B BARTHOLOMEW
155 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-9
SAHIN B DAYIOGLU
157 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-8
ERIC J AND AMBER E POMER
159 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-7
JOHN ALBERT & LISA MARIE KIRCALDIE
51 YELLOWSTONE ROAD
LONDONDERRY, NH 03053-2502

R011-020-6
MICHAEL A ST. PIERRE
163 LITCHFIELD ROAD
LONDONDERRY, NH 03053-7408

R011-020-5
CLARK FAMILY TRUST OF 2011
165 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-015-0
ERICK MENDONSA
167 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-051-0
CLAIRE M KELLY
166 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-050-0
BRUCE ALLAN & CINDY LOUISE GOODWIN
168 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-007-0
MICHAEL W SIRACUSE III
170 LITCHFIELD ROAD
LONDONDERRY, NH 03053

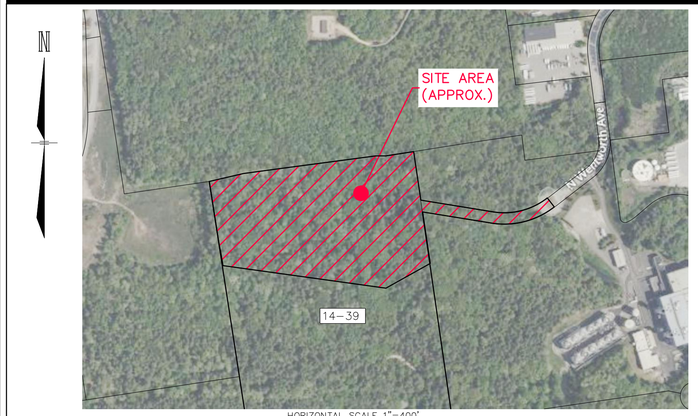
R014-005-0
ARIANNA ONEIL
172 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-048-1
STATE OF NEW HAMPSHIRE
PO BOX 483
CONCORD, NH 03302-0483

R-014-003-26
GYPSUM CONSTRUCTION CORP.
184 ROCKINGHAM ROAD
LONDONDERRY, NH 03053

R014-038-0
TANA PROPERTIES LTD. PARTNERSHIP
40 TEMPLE STREET
NASHUA, NH 03060

LOCATION PLAN



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PERMITS/APPROVALS

	NUMBER	APPROVED	EXPIRES
TOWN PLANNING BOARD SUBDIVISION APPROVAL			
TOWN PLANNING BOARD SITE PLAN REVIEW APPROVAL			
TOWN PLANNING BOARD DRIVEWAY PERMIT			
TOWN PLANNING BOARD CUP (WETLAND BUFFERS)			
TOWN PLANNING BOARD CUP (FRONTAGE)			
TOWN STORMWATER PERMIT			
TOWN SEWER DISCHARGE PERMIT			
TOWN INDUSTRIAL DISCHARGE PERMIT			
TOWN INDUSTRIAL DISCHARGE PERMIT			
US EPA CGP			
NHDES SOLID WASTE PERMIT			
NHDES INDUSTRIAL WASTEWATER DICHARGE PERMIT			
NHDES INDUSTRIAL WASTEWATER DICHARGE PERMIT			
NHDES AOT PERMIT			
NHDES SEWER CONNECTION PERMIT			
NHDES WETLAND PERMIT (MAJOR)			
NH NHB DATA CHECK	NHB24-1680	6/11/24	6/11/25
NH DHR RPR	2025PR00341	3/27/25	
FAA			

NHF&G AOT PERMIT CONDITIONS

1. BLANDING'S TURTLE (STATE ENDANGERED), EASTERN HOGNOSE SNAKE (STATE ENDANGERED), NEW ENGLAND COTTONTAIL (STATE ENDANGERED), SMOOTH GREEN SNAKE (SPECIAL CONCERN), SPOTTED TURTLE (STATE THREATENED), northern BLACK RACER (STATE THREATENED) OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. ALL OPERATORS AND PERSONNEL WORKING ON OR ENTERING THE SITE SHALL BE MADE AWARE OF THE POTENTIAL PRESENCE OF THESE SPECIES AND SHALL BE PROVIDED FLYERS THAT HELP TO IDENTIFY THESE SPECIES, ALONG WITH NHFG CONTACT INFORMATION. SEE FLYERS ON PLAN SHEET D-17.
2. RARE SPECIES INFORMATION (E.G. IDENTIFICATION, OBSERVATION AND REPORTING OF OBSERVATIONS, WHEN TO CONTACT NHFG IMMEDIATELY AND NHFG CONTACT INFORMATION) SHALL BE COMMUNICATED DURING MORNING TAILGATE MEETINGS PRIOR TO WORK COMMENCEMENT WHILE THE PROJECT IS UNDER ACTIVE CONSTRUCTION. SEE FLYERS ON PLAN SHEET D-17.
3. OBSERVATIONS OF EASTERN HOGNOSE SNAKE AND NORTHERN BLACK RACER SHALL BE REPORTED IMMEDIATELY TO NHFG WILDLIFE BIOLOGISTS MELISSA WINTERS (603-479-1129) AND BRENDAN CLIFFORD (603-944-0885) VIA GROUP TEXT. A PHOTOGRAPH WITH THE TEXT WILL BE PROVIDED IF FEASIBLE. IMMEDIATE REPORTING OF OBSERVATIONS IS CRITICAL AS NHFG BIOLOGISTS WILL NEED TO COLLECT DATA ON THE INDIVIDUAL. SEE FLYERS ON PLAN SHEET D-17.
4. NHFG SHALL HAVE THE OPPORTUNITY TO ATTEMPT TO TRAP AND RELOCATE ANY RABBITS THAT MAY BE ON SITE. ENTRAPMENT AND RELOCATION OF RABBITS SHALL BE COORDINATED NO LESS THAN THREE WEEKS IN ADVANCE WITH NHFG BEFORE WORK BEGINS.
5. ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, WITH THE EXCEPTION OF TURF REINFORCEMENT MATS, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN PLASTIC, OR MULTIFILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES. SEE DETAILS ON SHEET D-01 AND D-02.
6. TURTLES MAY BE ATTRACTED TO DISTURBED GROUND DURING NESTING SEASON. TURTLE NESTING SEASON OCCURS APPROXIMATELY MAY 15TH – JULY 30TH. ALL TURTLE SPECIES NESTS AND NORTHERN BLACK RACER NESTS ARE PROTECTED BY NH LAWS. IF A NEST IS OBSERVED OR SUSPECTED, OPERATORS SHALL CONTACT JOSH MEGYESY AT NHFG IMMEDIATELY FOR FURTHER CONSULTATION. THE NEST OR SUSPECTED NEST SHALL BE MARKED (SURROUNDING ROPED OFF OR CONE BUFFER DEPLOYED) AND AVOIDED; THIS SHALL BE COMMUNICATED TO ALL PERSONNEL ONSITE. SITE ACTIVITIES SHALL NOT OCCUR IN THE AREA SURROUNDING THE NEST OR SUSPECTED NEST UNTIL FURTHER GUIDANCE IS PROVIDED BY NHFG.
10. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES ON THE PROJECT SITE SHALL BE REPORTED IMMEDIATELY TO THE NHFG NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV, WITH THE EMAIL SUBJECT LINE: NHB24-1680, DCT25-2647 LONDONDERRY GREEN ENERGY CAMPUS, WILDLIFE SPECIES OBSERVATION.
1. PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHFG IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION, AS FEASIBLE.
11. IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHFG AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHFG.
   A. SITE OPERATORS SHALL BE ALLOWED TO RELOCATE WILDLIFE ENCOUNTERED IF DISCOVERED WITHIN THE ACTIVE WORK ZONE IF IN DIRECT HARM FROM PROJECT ACTIVITIES. WILDLIFE SHALL BE RELOCATED IN CLOSE PROXIMITY TO THE CAPTURE LOCATE BUT OUTSIDE OF THE WORK ZONE AND IN THE DIRECTION THE INDIVIDUAL WAS HEADING. NHFG SHALL BE CONTACTED IMMEDIATELY IF THIS ACTION OCCURS.
12. THE NHFG, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT, ALONG WITH NHFG CONTACT INFORMATION. THE APPLICANT SHOULD NOTIFY NHFG 30 DAYS PRIOR TO STARTING SONSTRUCTION ACTIVITIES. NHFG SHOULD HAVE THE OPPURTUNITY TO ATTEMPT TO TRAP ANDD RELOCATE ANY RABBITS THAT MAY BE ON SITE.
13. SMOOTH GREEN SNAKE (SPECIAL CONCERN) OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. ALL OPERATORS AND PERSONNEL WORKING ON OR ENTERING THE SITE SHOULD BE MADE AWARE OF THE POTENTIAL PRESENCE OF THIS SPECIES AND SHOULD BE PROVIDED FLYERS THAT HELP TO IDENTIFY THIS SPECIES, ALONG WITH NHFG CONTACT INFORMATION. SEE FLYER ON PLAN SHEET D-17.
14. A WILDLIFE EXCLUSIONARY BARRIER SHOULD BE INSTALLED AROUND THE PERIMETER OF THE SITE PRIOR TO APRIL 15TH AND MAINTAINED BETWEEN APRIL 15TH AND OCTOBER 15TH THROUGHOUT THE LIFE OF THE ACTIVE PROJECT/CONSTRUCTION ACTIVITES. THE WILDLIFE EXLUSIONARY BARRIER SHOULD BE BURIED TO A DEPTH OF NO LESS THAN 6-8" AND EXTEND NO LESS THAN 18" ABOVE EXISTING GRADE. THE WILDLIFE EXCULSIONARY BARRIER SHOULD BE INSPECTED DAILY FOR ANY DEFECTS AS WELL AS POSSIBLE TRAPPED WILDLIFE PRIOR TO SITE CONSTRUCTION ACTIVITIES.
15. WETLAND IMPACT SHOULD OCCUR BETWEEN APRIL 15TH AND OCTOBER 15TH TO AVOID IMPACTING OVERWINTERING TURTLES.
16. STAGING OF CONSTRUCTION EQUIPMENT/MATERIAL AND VEHICLE PARKING SHOULD NOT OCCUR IN SHRUB COVER OR WETLANDS AND SHRUB CONVER SHOULD NOT BE REMOVED.
17. CATCH BASINS AND OUTLET CONTROL STRUCTURES SHOULD NOT CONTAIN SUMPS AND SHOULD HAVE GRATE OPENINGS NO LARGER THAN 2" X 2".
18. OUTLET CONTROL STRUCTURES SHOULD BE A MINIMUM OF 12-18" ABOVE GRADE AND SET BACK AT LEAST 3' FROM ADJACENT SLOPES.
19. RIP-RAP SHOULD BE FILLED WITH FINER MATERIAL (NATIVE WETLAND MATERIAL, NATIVE WETLAND SEED MIX, OR GRAVEL IN BETWEEN RIP-RAP) TO CREATE A RELATIVELY SMOOTH SURFACE FOR WILDLIFE TO TRAVERSE.
20. IF HYDROSEEDING IS DEEMED NECESARY, THE MIX SHOULD NOT CONTAIN MICROPLASTICS AND DYES SHOULD BE WATER-SOLUABLE AND ECO-FRIENDLY. HYDROSEEDING SHOULD NOT OCCUR WITHIN 75 FEET OF WETLANDS. SEE PLAN SHEETS C-06.
21. AVOID OR MINIMIZE THE USE OF FERTILIZERS IN UPLAND AREAS OR TRANSITION ZONES. IF FERTILIZERS ARE NECESSARY, USE ORGANIC VERSUS SYNTHETIC FERTILIZER OPTIONS. SYNTHETIC OPTIONS SHOULD BE AVOIDED; HOWEVER, IF CHOSEN, THEY SHOULD BE CONTROLLED-RELEASED/SLO-RELEASED AND AT LOW STRENGTHS. SEE PLAN SHEETS C-06.
22. A NATIVE SEED MIXTURE SHOULD BE APPLIED TO ALL AREAS AFFECTED BY CONSTRUCTION. PLEASE SEE THE MODIFIED NEW ENGLAND CONSERVATION/WETLAND MIX BY NEW ENGLAND WETLAND PLANTS, INC AS A SEED MIXTURE OPTION THAT MAY BE USED IN AREA AFFECTED BY CONSTRUCTION. THE SEED MIXES SHALL NOT CONTAIN INVASIVE SPECIES SUCH AS CROWN VETCH, BIRD'S-FOOT TRFOIL, OXEYE DAISY, ALSIKE CLOVER, AND FLATPEA. SEE PLAN SHEET C-03 OR D-18
23. MITIGATION REQUIREMENTS INCLUDED WITH NHFG'S REVIEW AND RECOMMENDATIONS ARE CONSISTEN WITH AN AGREEMENT BETWEEN THE TOWN OF LONDONDERRY AND NHFG THAT WAS ENTERED INTO EFFECT ON MAY 28, 2019 THAT REQUIRES A MITIGATION FEE FOR EACH INDIVIDUAL PROJECT THAT OCCURS WITHIN A PREDEFINED AREA WITHIN LONDONDERRY. PER RSA 212-A:16, A MITIGATION FEE BASED ON A DISTURBANCE AREA SHOULD BE MADE PAYABLE TO THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT FOR NEGATIVE IMPACTS TO NEW ENGLAND COTTONTAIL, A STATE-ENDANGERED SPECIES. THE MEMO FIELD SHOULD IDENTIFY "NONGAME AND ENDANGERED WILDLIFE PROGRAM, NHB24-1680, DCT25-2647". THIS CHECK SHOULD BE ISSUED AND SUBMITTED TO NHFG FOLLOWING PERMIT APPROVAL AND MUST BE RECEIVED PRIOR TO ANY WORK OCCURRING ON THE SITE.
24. THESE CONSERVATION MEASURES DO NOT CONSTIUTION COMPLIANCE WITH THE FEDERAL ENGANGED SPECIES ACT (ESA). THERE MAY BE OCCURRENCES OF FEDERALLY LISTED SPECIES IN NEW HAMPSHIRE THAT ARE NOT INCLUDED ON THE DATACHECK LETTER. PLEASE VISIT THE US FISH AND WILDLIFE SERVICES'S (USFWS) INFORMATION FOR PLANNING AND CONSULTATION WEBSITE (IPAC; HTTPS://IPAC.ECOSPHERE.FWS.GOV/) FOR AN OFFICIAL LIST OF FEDERALLY LISTED SPECIES THAT MAY BE PRESENT IN YOUR PROJECT AREA. IF A FEDERAL AGENCY IS INVOLVED IN YOUR PROJECT THROUGH FUNDING, PERMIT, OR OTHER AUTHORIZATION, COORDINATE YOUR IPAC RESULTS WITH YOUR POINT OF CONTACT AT THAT AGENCY FOR FURTHER ESA REVIEW. IF THERE IS NO FEDERAL AGENCY NEXUS TO YOUR PROJECT AND YOU DETERMINE THOUGH IPAC, HABITAT EVALUATIONS, ECT. THAT A PROJECT MAY CAUSE TAKE OF FEDERALLY LISTED SPECIES, WE RECOMMENT COORDIANTION WITH THE USFWS' NEW ENGLAND GFIELD OFFICE (NEWENGLAND@FWS.GOV; 603-223-2541)

WAIVERS

THE FOLLOWING WAIVERS FROM THE TOWN OF LONDONDERRY SITE REVIEW REGULATIONS IS REQUESTED FROM THE PLANNING BOARD:

1. TOWN OF LONDONDERRY SITE REVIEW REGULATIONS SECTION 3.09(d)(TABLE B) – TO USE ITE GENERATION MANAUL FOR PARKING CALCULATION.
2. TOWN OF LONDONDERRY SITE REVIEW REGULATIONS SECTION 3.10(g)(1) – TO WAIVE AN INTERIOR PARKING LANDSCAPE AREA.
2. TOWN OF LONDONDERRY SITE REVIEW REGULATIONS SECTION 4.12.c.19.viii – TO WAIVE DELINEATING TREES WITH GREATER THEN 15" DIAMETER

Approved by the Londonderry, NH Planning Board for Phase _____

on Date:_____

Certified by:

_____

_____

OWNER'S SIGNATURE

_____ 12/22/2025

OWNER OR AUTHORIZED AGENT *DATE*

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

COVER SHEET

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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DIG SAFE NH 811 – CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE		DR		FB	–	
18252-02		CK		CADFILE	18252-02 COVER & DETAILS	C-01

Dec 23, 2025 - 2:14pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 Cover & Details.dwg

LEGEND

PROPOSED

- PROPERTY LINE
- ZONING LINE
- EASEMENT
- BASELINE
- FLOODPLAIN
- EDGE OF WATERBODY
- EDGE OF WETLAND
- SETBACK (WETLAND)
- SETBACK (STRUCTURE)
- SETBACK (PARKING)
- SETBACK (LANDSCAPE)
- GRAVEL ROAD
- EOP — EDGE OF PAVEMENT
- VGC — VERTICAL GRANITE CURB
- SGC — SLOPED GRANITE CURB
- CC — CONCRETE CURB
- ICC — INTEGRATED CONCRETE CURB
- BIT — BITUMINOUS ASPHALT CURB
- CCB — CAPE COD BERM
- SAWCUT
- BUILDING
- BUILDING ROOF OVERHANG
- BUILDING FOUNDATION
- BUILDING ENTRANCE
- OVERHEAD DOOR
- TREE LINE
- FENCE (CHAIN LINK)
- FENCE (WIRE)
- FENCE (STOCKADE)
- GUARDRAIL
- BLANKET SLOPE PROTECTION
- RETAINING WALL
- SILT FENCE
- SILT SOCK
- SOIL BOUNDARY
- LIMIT OF GRADING
- 100 — CONTOUR
- TC100.50 / BC100.00 OR 100.00 — SPOT GRADE
- ## — PARKING COUNT
- DSLY — YELLOW DOUBLE SOLID LINE
- SSLY — YELLOW SINGLE SOLID LINE
- SSLW — WHITE SINGLE SOLID LINE
- SBLW — WHITE SINGLE BROKEN LINE
- STOP — STOP BAR
- CROSSWALK
- ACCESSIBLE PARKING SYMBOL
- PAVEMENT ARROW
- TRAFFIC FLOW ARROW (NOT PAINTED)
- SIGN (SINGLE POST)
- SIGN (DOUBLE POST)
- SIGN (PYLON)
- SIGN (MONUMENT)
- BOLLARD
- D — DUMPSTER PAD

PROPOSED

- CONCRETE
- GRAVEL
- WETLAND IMPACT
- CONSTRUCTION ENTRANCE
- SNOW STORAGE
- RIPRAP
- INLET PROTECTION
- FLOW ARROW
- RIDGE — GRADE BREAK RIDGE
- DRAIN LINE
- DRAINAGE SWALE
- STORMWATER BMP
- S — SEWER LINE
- FM — SEWER FORCE MAIN LINE
- W — WATER LINE
- G — GAS LINE
- OHE — OVERHEAD UTILITY LINE
- UGE — UNDERGROUND UTILITY LINE
- CATCH BASIN
- DRAIN INLET
- OUTLET CONTROL STRUCTURE
- ROOF DRAIN
- DRAIN CLEANOUT
- DRAIN MANHOLE
- FARED END SECTION
- SEWER CLEAN OUT
- SEWER MANHOLE
- SEWER VENT
- DRAIN/SEWER/WATER PLUG OR CAP
- HYDRANT
- FIRE DEPARTMENT CONNECTION
- WATER GATE VALVE
- WATER SHUTOFF
- THRUST BLOCK
- WATER METER
- WATER MANHOLE
- WELL
- GAS GATE VALVE
- GAS SHUT OFF
- GAS METER
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- TRAFFIC CONTROL CABINET
- ELECTRIC HANDHOLE
- ELECTRIC PULL BOX
- ELECTRIC METER
- FLOOD LIGHT
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- T — TRANSFORMER PAD
- B-# — BORING LOCATION
- TP-# — TEST PIT LOCATION
- IT-# — INFILTRATION TEST LOCATION
- MW-# — MONITORING WELL

ABBREVIATIONS

GENERAL

ABAN	ABANDON
AC	ACRES
ADJ	ADJUST
APPROX	APPROXIMATE
BC	BOTTOM OF CURB
BIT	BITUMINOUS
BK/PG	BOOK & PAGE
BLDG	BUILDING
BMP	BEST MANAGEMENT PRACTICE
BS	BOTTOM OF SLOPE
BW	BOTTOM OF WALL
CONC	CONCRETE
COORD	COORDINATE
DIA	DIAMETER
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EXIST	EXISTING
FFE	FINISHED FLOOR ELEVATION
FND	FOUNDATION
HP	HIGH POINT
INV	INVERT ELEVATION
IT	INFILTRATION TEST
L	LENGTH
LF	LINEAR FEET
LSA	LANDSCAPE AREA
MAX	MAXIMUM
MIN	MINIMUM
N/F	NOW OR FORMERLY
NHFG	NEW HAMPSHIRE FISH & GAME
NTS	NOT TO SCALE
OC	ON CENTER
PAVE	PAVEMENT
PERF	PERFORATED
PROP	PROPOSED
R	RADIUS
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
REM	REMOVE
RET	RETAIN
RIM	RIM ELEVATION
ROW	RIGHT OF WAY
S	SLOPE
SF	SQUARE FEET
SW	SIDEWALK
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TP	TEST PIT
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
WCR	ACCESSIBLE WHEELCHAIR RAMP
W/	WITH

UTILITIES

CB	CATCH BASIN
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
COND	CONDUIT
DCB	DOUBLE CATCH BASIN
DIP	DUCTILE IRON PIPE
DMH	DRAIN MANHOLE
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FES	FLARED END SECTION
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
LP	LIGHT POLE
OCS	OUTLET CONTROL STRUCTURE
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
SMH	SEWER MANHOLE
SOS	SEDIMENT OIL SEPARATOR
TSV	TAPPING SLEEVE, VALVE, AND BOX
UP	UTILITY POLE

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GENERAL NOTES

1. THESE PLANS ARE PERMIT DRAWINGS ONLY AND HAVE NOT BEEN DETAILED FOR CONSTRUCTION OR BIDDING.
2. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN, INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
3. ALL IMPROVEMENTS SHOWN ON THE SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE LONDONDERRY PLANNING BOARD.
4. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF LONDONDERRY, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ALL WORK TO CONFORM TO TOWN OF LONDONDERRY DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. ALL WORK WITHIN THE RIGHT-OF-WAY OF THE LONDONDERRY AND/OR STATE SHALL COMPLY WITH APPLICABLE STANDARDS. COORDINATE ALL WORK WITHIN THE RIGHT-OF-WAY WITH APPROPRIATE LONDONDERRY, COUNTY, AND/OR STATE AGENCY.
5. THE SITE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH APPLICABLE SECTIONS OF ENV-WQ 1500. THE SITE CONTRACTOR SHALL NOTIFY THE ENGINEER IN ADVANCE OF CONSTRUCTION OF EACH STORMWATER FACILITY TO COORDINATE REQUIRED INSPECTIONS. THE CONTRACTOR SHALL TAKE PROGRESS PHOTOS DURING CONSTRUCTION OF ALL STORMWATER DRAINAGE COMPONENTS AND SEND TO THE ENGINEER.
6. SEE EXISTING CONDITIONS PLAN FOR THE HORIZONTAL AND VERTICAL DATUM.
7. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
8. CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN THE EASEMENTS.
9. PRIOR TO COMMENCING ANY SITE WORK, ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
10. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
11. TFMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
12. TEMPORARY FENCING SHALL BE PROVIDED AND COVERED WITH A FABRIC MATERIAL TO CONTROL DUST MITIGATION.
13. ALL DEMOLITION SHALL ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKWAYS, AND ANY OTHER ADJACENT OPERATING FACILITIES. PRIOR WRITTEN PERMISSION FROM THE OWNER/DEVELOPER AND LOCAL PERMITTING AUTHORITY IS REQUIRED IF CLOSURE/OBSTRUCTIONS TO ROADS, STREET, WALKWAYS, AND OTHERS IS DEEMED NECESSARY. CONTRACTOR TO PROVIDE ALTERNATE ROUTES AROUND CLOSURES/OBSTRUCTIONS PER LOCAL/STATE/FEDERAL REGULATIONS.
14. REFER TO ARCHITECTURAL PLANS FOR LAYOUT OF BUILDING FOUNDATIONS AND CONCRETE ELEMENTS WHICH ABUT THE BUILDING SUCH AS STAIRS, SIDEWALKS, LOADING DOCK RAMPS, PADS, AND COMPACTOR PADS. DO NOT USE SITE PLANS FOR LAYOUT OF FOUNDATIONS.
15. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
16. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
17. CONTRACTOR'S GENERAL RESPONSIBILITIES:
    - A. BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS, AND STANDARDS AND CONDITIONS OF ALL PROJECT-SPECIFIC PERMITS AND APPROVALS AS LISTED ON THE COVER SHEET TO THESE PLANS OR OTHERWISE REQUIRED.
    - B. NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES OF PROPOSED LAYOUT AND/OR EXISTING FEATURES.
    - C. EMPLOY A LICENSED SURVEYOR TO DETERMINE ALL LINES AND GRADES AND LAYOUT OF SITE ELEMENTS AND BUILDINGS.
    - D. THE CONTRACTOR SHALL BE RESPONSIBLE TO BECOME FAMILIAR WITH THE SITE AND ALL SURROUNDING CONDITIONS. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
    - E. MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
    - F. IN ACCORDANCE WITH RSA 430:53 AND AGR 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.
    - G. COORDINATE WITH ALL UTILITY COMPANIES AND CONTACT DIGSAFE (811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
    - H. PROTECT NEW AND EXISTING BURIED UTILITIES DURING INSTALLATION OF ALL SITE ELEMENTS. DAMAGED UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
    - I. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
    - J. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
    - K. VERIFY LAYOUT OF PROPOSED BUILDING FOUNDATIONS WITH ARCHITECT AND THAT PROPOSED FOUNDATION MEETS PROPERTY LINE AND/OR WETLAND SETBACKS PRIOR TO COMMENCING ANY FOUNDATION CONSTRUCTION.
    - L. PROVIDE AN AS-BUILT PLAN AT THE COMPLETION OF THE PROJECT TO THE TOWN PLANNER AND PER LONDONDERRY REGULATIONS.
    - M. IF ANY DEVIATIONS FROM THE APPROVED PLANS AND SPECIFICATIONS HAVE BEEN MADE, THE SITE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS STAMPED BY A LICENSED SURVEYOR OR QUALIFIED ENGINEER ALONG WITH A LETTER STAMPED BY A QUALIFIED ENGINEER DESCRIBING ALL SUCH DEVIATIONS, AND BEAR ALL COSTS FOR PREPARING AND FILING ANY NEW PERMITS OR PERMIT AMENDMENTS THAT MAY BE REQUIRED.
    - N. AT COMPLETION OF CONSTRUCTION, THE SITE CONTRACTOR SHALL PROVIDE A LETTER CERTIFYING THAT THE PROJECT WAS COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND A LETTER STAMPED BY A QUALIFIED ENGINEER THAT THEY HAVE OBSERVED ALL UNDERGROUND DETENTION SYSTEMS, INFILTRATION SYSTEMS, OR FILTERING SYSTEMS PRIOR TO BACKFILL, AND THAT SUCH SYSTEMS CONFORM TO THE APPROVED PLANS AND SPECIFICATIONS.
    - O. THIS PROJECT IS SUBJECT TO THE AOT PERMIT LISTED ON THE COVER SHEET. THE CONTRACTOR SHALL CONFORM TO ALL CONDITIONS OF THE PERMIT AND PROVIDE THE FOLLOWING DOCUMENTATION TO OWNER AND ENGINEER.
    - – ADVANCE WRITTEN NOTICE AT LEAST ONE WEEK PRIOR TO COMMENCING ANY WORK UNDER THE PERMIT AND NOTIFICATION TO AOT VIA THE START OF CONSTRUCTION FORM.
    - – UPON COMPLETION OF CONSTRUCTION, NOTIFICATION TO AOT VIA THE COMPLETION OF CONSTRUCTION FORM AND WRITTEN CERTIFICATION THAT:
      - A) ALL WORK UNDER THE PERMIT HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATION.
      - B) IF ANY DEVIATION FROM THE APPROVED PLANS WERE MADE, WRITTEN DESCRIPTIONS AND AS-BUILT DRAWINGS OF ALL SUCH DEVIATIONS, STAMPED BY A QUALIFIED ENGINEER, SHALL BE PROVIDED.
    - P. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT DEFICIENCIES EXIST IN THE APPROVED DESIGN DRAWINGS, THE OWNER SHALL BE REQUIRED TO CORRECT THE DEFICIENCIES TO MEET THE REQUIREMENTS OF THE REGULATIONS AT NO EXPENSE TO THE TOWN.
    - Q. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE TOWN.
    - R. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO TOWN OF LONDONDERRY SUBDIVISION REGULATIONS AND THE LATEST EDITION OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
    - S. IN ACCORDANCE WITH SECTION 6.01 OF THE LONDONDERRY SITE PLAN REGULATIONS AND RSA § 676:13, ALL IMPROVEMENTS SPECIFIED ON THESE SITE PLANS SHALL BE CONSTRUCTED, COMPLETED, AND INSPECTED AND APPROVED BY THE TOWN OF LONDONDERRY PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
    - T. IN ACCORDANCE WITH SECTION 6.01 OF THE LONDONDERRY SITE PLAN REGULATIONS AND RSA § 676:12, ALL OFF-SITE IMPROVEMENTS SPECIFIED ON THESE SITE PLANS SHALL BE CONSTRUCTED, COMPELTED, AND INSPECTED AND APPROVED BY THE TOWN OF LONDONDERRY (AND/OR THE NHDOT, IF APPLICABLE) PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

UTILITY NOTES

1. LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
2. ALL PROPOSED UTILITY WORK, INCLUDING MATERIAL, INSTALLATION, TERMINATION, EXCAVATION, BEDDING, BACKFILL, COMPACTION, TESTING, CONNECTIONS, AND CONSTRUCTION SHALL BE COORDINATED WITH AND COMPLETED IN ACCORDANCE WITH THE APPROPRIATE REQUIREMENTS, CODES, AND STANDARDS OF ALL CORRESPONDING UTILITY ENTITIES AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE DIGGING.
4. COORDINATE ALL WORK ADJACENT TO PROPOSED BUILDINGS WITH ARCHITECTURAL BUILDING DRAWINGS. CONFIRM UTILITY PENETRATIONS AND INVERT ELEVATIONS ARE COORDINATED PRIOR TO INSTALLATION.
5. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
6. THE EXACT LOCATION OF NEW UTILITY CONNECTIONS SHALL BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH UTILITY COMPANY, COUNTY AGENCY, AND/OR PRIVATE UTILITY COMPANY.
7. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER THE UTILITY INSTALLATION COMPLETE AND OPERATIONAL.
8. ALL UTILITY COMPANIES REQUIRE INDIVIDUAL CONDUITS. CONTRACTOR TO COORDINATE WITH TELEPHONE, CABLE, AND ELECTRIC COMPANIES REGARDING NUMBER, SIZE, AND TYPE OF CONDUITS REQUIRED PRIOR TO INSTALLATION OF ANY CONDUIT.
9. SANITARY SEWER SHALL BE CONSTRUCTED TO THE TOWN OF LONDONDERRY STANDARDS AND SPECIFICATIONS AS SHOWN ON THESE PLANS. ALL SEWER MAINS AND FITTINGS SHALL BE PVC AND SHALL CONFORM TO ASTM F 679 (SDR 35 MINIMUM). FORCE MAINS AND FITTINGS SHALL CONFORM TO NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. ALL SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. SANITARY MANHOLES SHALL CONFORM TO NHDES WATER DIVISION WASTEWATER ENGINEERING BUREAU STANDARDS AND SPECIFICATIONS SHOWN HEREON.
10. ON-SITE WATER DISTRIBUTION SHALL BE TO MANCHESTER WATER WORKS STANDARDS AND SPECIFICATIONS. WATER MAINS SHALL HAVE A MINIMUM OF 5.5' COVER. WHERE WATER PIPES CROSS SEWER LINES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. HORIZONTAL SEPARATION BETWEEN WATER AND SEWER SHALL BE 10' MINIMUM. WHERE A SANITARY LINE CROSSES A WATER LINE, SEWER LINE MUST BE CONSTRUCTED OF FORCE MAIN MATERIALS (PER ENV-WQ 704.08) FROM BUILDING OR MANHOLE TO MANHOLE, OR SUBSTITUTE RUBBER-GASKETED PRESSURE PIPE FOR THE SAME DISTANCE. WHEN SANITARY LINES PASS BELOW WATER LINES, LAY PIPE SO THAT NO JOINT IN THE SANITARY LINE WILL BE CLOSER THAN 6' HORIZONTALLY TO THE WATER LINE.
11. THRUST BLOCKS SHALL BE PROVIDED AT ALL LOCATIONS WHERE WATER LINE CHANGES DIRECTIONS OR CONNECTS TO ANOTHER WATER LINE.
12. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRING TO ALL SIGNS AND LIGHTS. CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
13. ALL PROPOSED UTILITIES SHALL BE UNDERGROUND. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES.
14. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS, TESTING, AND RELATED SERVICES AND SUBMIT COPIES OF ACCEPTANCE TO THE OWNER, UNLESS OTHERWISE INDICATED.
15. PROVIDE PERMANENT PAVEMENT REPAIR FOR ALL UTILITY TRENCHES IN EXISTING ROAD OR PAVEMENT TO REMAIN. SAW CUT TRENCH, PAVEMENT, AND GRANULAR BASE THICKNESS TO MATCH EXISTING PAVEMENT. OBTAIN ALL PERMITS REQUIRED FOR TRENCHING.
16. UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, CHAMBERS, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.
17. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:

DRAINAGE	PRIVATE
SEWER	MUNICIPAL
WATER	MUNICIPAL
GAS	LIBERTY UTILITIES
ELECTRIC	EVERSOURCE ENERGY
TELECOMM.	COMCAST XFINITY

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

NOTES & LEGEND

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Traffic Engineers
Land Surveyors
Landscape Architects
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FILE	18252-02	DR		FB	–	C-02
		CK		CADFILE	18252-02 COVER & DETAILS	

Dec 23, 2025 - 2:14pm
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CONSTRUCTION SEQUENCE NOTES

1. TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, CONSTRUCTION SHALL FOLLOW THIS GENERAL CONSTRUCTION SEQUENCE.
2. MODIFICATIONS TO THE SEQUENCE NECESSARY DUE TO THE CONTRACTOR'S SCHEDULE SHALL INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.
3. CONDUCT A PRE-CONSTRUCTION MEETING WITH THE OWNER, CONTRACTOR, TOWN ENGINEER, AND OTHER TOWN DEPARTMENTS. TOWN INSPECTIONS SHALL BE CONDUCTED AT INTERVALS AS REQUIRED BY THE TOWN OF LONDONDERRY PUBLIC WORKS AND ENGINEERING DEPARTMENT.
4. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
5. CUT AND CLEAR TREES WITHIN AREA OF DISTURBANCE UNLESS OTHERWISE NOTED.
6. CONSTRUCT TEMPORARY AND PERMANENT EROSION CONTROL FACILITIES, AND BASINS PRIOR TO ANY ROUGH GRADING.
7. CONSTRUCT PERMANENT SWALES PRIOR TO ANY ROUGH GRADING. SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
8. GRUB & ROUGH GRADE SITE FOR PHASED WORK AREA. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING. ALL DISTURBED AREAS SHALL BE STABILIZED NO LATER THAN 72 HOURS AFTER CONSTRUCTION ACTIVITY CEASES. IF EARTHWORK TEMPORARILY CEASES ON A PORTION OF OR THE ENTIRE SITE, AND WILL NOT RESUME WITHIN 21 DAYS, THE AREA SHALL BE STABILIZED.
9. AN AREA SHALL BE CONSIDERED STABILIZED IF:
   A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED, OR
   D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
10. CONSTRUCT CULVERTS, STORMWATER MANAGEMENT AREAS, AND SWALES. PLACE FLARED END SECTIONS, RIP-RAP AND OTHER DRAINAGE FACILITIES ACCORDING TO PLAN. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND BASINS PRIOR TO DIRECTING FLOW TO THEM.
11. INSTALL ALL UNDERGROUND UTILITIES.
12. CONSTRUCT BUILDINGS AND STRUCTURES.
13. CONSTRUCT PARKING AND FINISH GRADE SITE ACCORDING TO PLAN. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING.
14. THE CONTRACTOR SHALL INSPECT ALL TEMPORARY EROSION CONTROL MEASURES AT LEAST ONCE A WEEK AND WITHIN TWENTY-FOUR (24) HOURS OF THE END OF A STORM WITH RAINFALL AMOUNT GREATER THAN 0.5 INCHES. THE INSPECTIONS SHALL VERIFY THAT THE STRUCTURAL BMPS SHOWN AND DESCRIBED ON THE PLANS ARE IN GOOD CONDITION AND ARE MINIMIZING EROSION. A MAINTENANCE AND INSPECTION REPORT SHALL BE MADE WITH EACH INSPECTION.
15. COMPLETE PERMANENT SEEDING.
16. REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE ALL AREAS ARE STABILIZED WITH A SUITABLE STAND OF GRASS, PAVEMENT OR COMPACTED GRAVELS.
17. REFER TO THE STORMWATER MANAGEMENT PLAN FOR EROSION CONTROL MEASURES AND SPECIFIC INFORMATION.

GENERAL NOTES

1. WHERE DEPTH OF COVER IS LESS THAN 3 FEET CLASS V REINFORCED CONCRETE PIPE SHALL BE USED.
2. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
4. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
5. EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES STANDARDS. THESE DETAILS SERVE AS A GUIDE ONLY.
6. REFER TO THE TOWN STANDARD DETAILS, LATEST REVISION, FOR THE APPLICABLE REGULATIONS AND STANDARDS.
7. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND BASINS PRIOR TO DIRECTING FLOW TO THEM.
8. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. SEE PHASING PLAN FOR ADDITIONAL INFORMATION ON ALLOWABLE AREAS OF DISTURBANCE.

WINTER CONSTRUCTION

IN ADDITION TO THE OTHER NOTES CONTAINED ON THIS PLAN, THE FOLLOWING MUST BE IMPLEMENTED:

1. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED AS SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
2. ANY AREA WITHIN 50 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIER.
3. TEMPORARY MULCH MUST BE APPLIED WITHIN 7 DAYS OF SOIL EXPOSURE OR PRIOR TO ANY STORM EVENT, BUT AFTER EVERY WORKDAY IN AREAS WITHIN 100 FEET FROM A PROTECTED NATURAL RESOURCE.
4. AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE PERMANENTLY MULCHED THE SAME DAY.
5. IN THE EVENT OF A SNOWFALL GREATER THAN 1 INCH (FRESH OR CUMULATIVE), THE SNOW SHALL BE REMOVED FROM THE AREAS DUE TO BE SEEDED AND MULCHED.
6. LOAM SHALL BE FREE OF FROZEN CLUMPS BEFORE IT IS APPLIED.
7. A DITCH THAT WILL BE CONSTRUCTED DURING THE WINTER MUST BE STABILIZED WITH RIPRAP.
8. ALL PROPOSED VEGETATIVE AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
9. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
10. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF GRAVEL PER NHDOT ITEM 304.3.
11. ALL TEMPORARY AND PERMANENT STABILIZATION REQUIREMENTS DENOTED IN ADDITIONAL PLAN NOTES SHALL BE APPLICABLE DURING WINTER CONSTRUCTION.

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EROSION CONTROL NOTES

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED:

1. INSTALLATION OF SILTATION FENCES AND/OR OTHER EROSION CONTROL MEASURES SHALL BE COMPLETED PRIOR TO THE START OF SITE WORK IN ANY GIVEN AREA. PREFABRICATED SILTATION FENCES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. SILTATION FENCES AND/OR OTHER EROSION CONTROL MEASURES SHALL BE KEPT CLEAN DURING CONSTRUCTION AND REMOVED WHEN ALL SLOPES HAVE A VEGETATIVE COVER OF GREATER THAN 85%. EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE A WEEK AND WITHIN TWENTY-FOUR (24) HOURS OF THE END OF A STORM WITH RAINFALL AMOUNT GREATER THAN 0.5 INCHES.
3. EXISTING VEGETATION IS TO REMAIN UNDISTURBED WHEREVER POSSIBLE.
4. THE AREA OF LAND EXPOSED AND THE TIME OF EXPOSURE SHALL BE MINIMIZED. UNLESS A LARGER AREA IS ALLOWED UNDER ENV-WQ 1505.03(c), NO MORE THAN 5 ACRES SHALL BE DISTURBED (NOT STABILIZED) AT ANY TIME. DISTURBED AREAS MUST BE STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 45 DAYS AFTER INTIAL DISTURBANCE. CUT AND FILL SLOPES SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING.
5. ALL DISTURBED AREAS SHALL HAVE A MINIMUM OF 6" OF LOAM. ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

   PARK SEED MIX (NHDOT TYPE 44) MIN. 135 LBS/ACRE:
   33% CREEPING RED FESCUE (MIN. 45 LBS/ACRE)
   42% PERENNIAL RYEGRASS (MIN. 55 LBS/ACRE)
   21% KENTUCKY BLUEGRASS (MIN. 30 LBS/ACRE)
   4% REDTOP (MIN. 5 LBS/ACRE)

   MODIFIED NEW ENGLAND CONSERVATION WILDLIFE MIX (MIN. 25 LBS/ACRE)*
   CONTAINS: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), BLUE VERVAIN (VERBENA HASTATA), BLACK EYED SUSAN (RUDBECKIA HIRTA), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).
   *SEED MIX SHALL NOT CONTAIN INDIAN GRASS (SORGHASTRUM NUTANS), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), OR COMMON SNEEZEWEED (HELENIUM AUTUNALE).

   TEMPORARY LAWN MIX: (MIN. 47 LBS/ACRE)
   100% ANNUAL RYE

   A. PLACING LOAM ON SITE
      a. ALL SUBGRADE ELEVATIONS SHOULD BE UNIFORMLY GRADED TO RECEIVE LOAM AND SHALL BE INSPECTED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO PLACEMENT OF LOAM.
      b. PLACE LOAM TO FORM A MINIMUM DEPTH OF 4" WHEN ROLLED, UNLESS OTHERWISE INDICATED.
      c. ALL DEPRESSIONS EXPOSED DURING THE ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM.

   B. SEED BED PREPARATION
      AFTER FINISH GRADING AND JUST BEFORE SEEDING, THE AREAS TO BE SEEDED SHALL BE LOOSENED TO PROVIDE A ROUGH, FIRM BUT FINELY PULVERIZED SEEDBED. THE INTENT IS A TEXTURE CAPABLE OF RETAINING WATER, SEED AND FERTILIZER WHILE REMAINING STABLE AND ALLOWING SEED TIME TO GERMINATE. SEED SHALL BE APPLIED TO THE CONDITIONED SEEDBED NOT MORE THAN 48 HOURS AFTER THE SEEDBED HAS BEEN PREPARED.
6. LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE SOIL PRIOR TO OR AT THE TIME OF AT THE TIME OF SEEDING. A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS. PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. SEEDING PRACTICES SHALL COMPLY WITH LOCAL USDA SOIL CONSERVATION SERVICES RECOMMENDATIONS.
7. HAY OR STRAW MULCH OR JUTE MATTING SHALL BE USED WHERE INDICATED ON THE PLANS. IF JUTE MATTING IS USED, IT SHALL BE LAID IN THE DIRECTION OF RUNOFF FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
8. MULCHING SHALL COMPLY WITH:
   ENV-WQ 1506.01 EROSION CONTROL METHODS: TEMPORARY AND PERMANENT MULCHING.
   (a) HAY AND STRAW MULCHES SHALL BE ANCHORED WITH MULCH NETTING OR TACKIFIER SO THAT THEY ARE NOT BLOWN AWAY BY WIND OR WASHED AWAY BY FLOWING WATER;
   (b) MULCH MATERIALS SHALL BE SELECTED BASED UPON SOILS, SLOPE, FLOW CONDITIONS, AND TIME OF YEAR;
   (c) HAY OR STRAW MULCH SHALL BE APPLIED AT A RATE OF 1.5 TO 2 TONS PER ACRE, EQUIVALENT TO 70 TO 90 POUNDS PER 1,000 SQUARE FEET.
   ENV-WQ 1506.02 EROSION CONTROL METHODS: VEGETATION. VEGETATING DISTURBED AREAS SHALL BE COMPLETED ONLY AS SPECIFIED BELOW:
   (h) AREAS SEEDED BETWEEN MAY 15TH TO AUGUST 15TH SHALL BE COVERED WITH HAY OR STRAW MULCH MEETING THE CRITERIA OF ENV-WQ 1506.01(a) THROUGH (c).
9. PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. SEEDED AREAS SHALL BE MULCHED AND PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS.
10. WATER SHALL BE USED FOR DUST CONTROL IN APPROPRIATE AREAS.
11. TEMPORARY DIVERSION SWALES, SEDIMENT TRAPS AND/OR BASINS MUST BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL SOILS ARE STABILIZED. TACKIFIER SHALL BE APPLIED IN ALL TEMPORARY STABILIZATION UTILIZING SEEDING. SEE PHASING PLAN, FOR ADDITIONAL INFORMATION.
12. OWNER SHALL MAINTAIN AT LEAST 85% COVERAGE OF VEGETATION IN GOOD CONDITION (EVENLY DISTRIBUTED, WITH NO BARE AREAS) AND REPAIR AREAS OF EROSION.

OVERWINTER STABILIZATION

1. PERMANENT STABILIZATION CONSISTS OF AT LEAST 85% VEGETATION, PAVEMENT/GRAVEL BASE OR RIPRAP.
2. DO NOT EXPOSE SLOPES OR LEAVE SLOPES EXPOSED OVER THE WINTER OR FOR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY PROTECTED WITH MULCH.
3. APPLY HAY MULCH AT TWICE THE STANDARD RATE (150 LBS. PER 1,000 SF). THE MULCH MUST BE THICK ENOUGH SUCH THAT THE GROUND SURFACE WILL NOT BE VISIBLE AND MUST BE ANCHORED.
4. USE MULCH AND MULCH NETTING OR AN EROSION CONTROL MULCH BLANKET OR MIX FOR ALL SLOPES GREATER THAN 8% OR OTHER AREAS EXPOSED TO DIRECT WIND.
5. INSTALL AN EROSION CONTROL BLANKET IN ALL DRAINAGE WAYS (BOTTOM AND SIDES) WITH A SLOPE GREATER THAN 3%.
6. SEE THE VEGETATION MEASURES FOR MORE INFORMATION ON SEEDING DATES AND TYPES.

CONSTRUCTION SEQUENCE NOTES (FOR ALTERATION OF TERRAIN)

1. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO BMP'S DURING ANY STAGE OF CONSTRUCTION.
2. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
3. AFTER INFILTRATION SYSTEMS ARE EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
4. DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
5. DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED, IF NECESSARY, AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

GRADING & DRAINAGE NOTES

1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 AND THE TOWN OF LONDONDERRY AS APPLICABLE.
2. THE CONTRACTOR SHALL PREPARE, MAINTAIN, AND EXECUTE A S.W.P.P.P. IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
5. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEER'S RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE, INCLUDING AND NOT LIMITED TO DEWATERING METHODS, PERIMETER DRAINS AND TIE INTO STORMWATER MANAGEMENT SYSTEM, ETC.
6. COORDINATE WITH GEOTECHNICAL/STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
7. COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILED GRADING AT BUILDING, AND SIZE AND LOCATION OF ALL BUILDING SERVICES.
8. COORDINATE WITH MECHANICAL AND PLUMBING PLANS FOR ROOF DRAIN INFORMATION.
9. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS, AND ALIGNMENTS.
10. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS, AND LOADING AREAS.
11. THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER DEEPER THAN 1/4" FOR A PERIOD OF MORE THAN 15 MINUTES AFTER FLOODING.
12. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
13. ALL SIDEWALK AND OTHER CURB REVEALS SHALL BE 6" WITH A TOLERANCE OF PLUS OR MINUS 3/8". WHERE SIDEWALK IS TO BE FLUSH, THE PAVEMENT REVEAL SHALL BE 1/4" WITH A TOLERANCE OF 1/8".
14. THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
15. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
16. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND SHALL MEET TOWN OF LONDONDERRY STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
17. STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO TOWN OF LONDONDERRY & NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
18. NO FILL SHALL BE PLACED IN ANY WETLAND AREA.
19. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
20. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
21. DENSITY REQUIREMENTS:

MINIMUM DENSITY*	LOCATION
95%	BELOW PAVED OR CONCRETE AREAS
95%	TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL
90%	BELOW LOAM AND SEED AREAS

   *ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM ASTM D-6938 OR EQUIVOLENT METHOD.
22. PER THE GEOTECHNICAL REPORT: STRUCTURAL FILL SHOULD BE USED FOR ENGINEERED FILLS BELOW PROPOSED BUILINGS, BIOREACTORS, TANKS, RETAINING WALLS, AND FOUNDATION BACKFILL.
23. PER THE GEOTECHNICAL REPORT: COMMON FILL SHOULD BE USED FOR ENGINEERED FILLS BELOW ROADWAY, PARKING, AND OTHER NON-STRUCTURAL AREAS.

Type	Sieve Size	% Passing
Structural Fill, NHDOT 304.3 (Crushed Gravel)	3" (75 mm) 2" (50 mm) 1" (25 mm) No. 4 (4.75 mm) No. 200 (75 µm)	100 95-100 55-85 27-52 0-12* (in sand portion)
Common Fill	8" No. 200 (75 µm)	100 0-15 when placed within 3 feet of finished grade in paved areas

SITE PREPARATION NOTES

1. LONDONDERRY EMERGENCY SERVICES (POLICE/FIRE) SHALL HAVE ACCESS TO THE SITE AT ALL TIMES DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
3. THE CONTRACTOR SHALL VERIFY ALL SURVEY INFORMATION IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
4. EXISTING UTILITY SERVICES TO BE DISCONTINUED ARE TO BE CAPPED AS REQUIRED BY THE RESPECTIVE UTILITY COMPANIES.
5. ALL DEMOLITION AND CONSTRUCTION DEBRIS SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
6. IN THAT THE PROJECT WILL DISTURB MORE THAN 5-ACRES AT ONE TIME A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL OR A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE ("MONITOR") SHALL BE EMPLOYED TO INSPECT THE SITE FROM THE START OF ALTERATION OF TERRAIN ACTIVITIES UNTIL THE SITE IS IN FULL COMPLIANCE WITH THE ALTERATION OF TERRAIN PERMIT ("PERMIT").
   A. DURING THIS PERIOD, THE MONITOR SHALL INSPECT THE SUBJECT SITE AT LEAST ONCE A WEEK, AND IF POSSIBLE, DURING ANY ½ INCH OR GREATER RAIN EVENT (I.E. ½ INCH OF PRECIPITATION OR MORE WITHIN A 24 HOUR PERIOD). IF UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THIS EVENT.
   B. THE MONITOR SHALL PROVIDE TECHNICAL ASSISTANCE AND RECOMMENDATION TO THE CONTRACTOR ON THE APPROPRIATE BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROLS REQUIRED TO MEET THE REQUIREMENTS OF RSA 485-A:17 AND ALL APPLICABLE DES PERMIT CONDITIONS.
   C. WITHIN 24 HOURS OF EACH INSPECTION, THE MONITOR SHALL SUBMIT A REPORT TO DES VIA EMAIL (TO KEVIN THATCHER AT KEVIN.D.THATCHER@DES.NH.GOV).
7. CONTRACTOR TO INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE WORK. REFER TO THE STORMWATER MANAGEMENT PLAN FOR SPECIFIC INFORMATION.
8. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN OF LONDONDERRY'S CONSTRUCTION STANDARDS AND DETAILS (LATEST ADDITION), AND THE TOWN STANDARDS SHALL TAKE PRECEDENCE IN CASE OF ANY DETAILS OR PLANS IN CONFLICT.
8. FINAL CONSTRUCTION SEQUENCING SUBJECT TO CONTRACTOR AND OWNER CONFIRMATION.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

NOTES

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/30/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 COVER & DETAILS	C-03

Dec 23, 2025 - 2:14pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_CSD\PRODUCTION\18252-02 Cover & Details.dwg

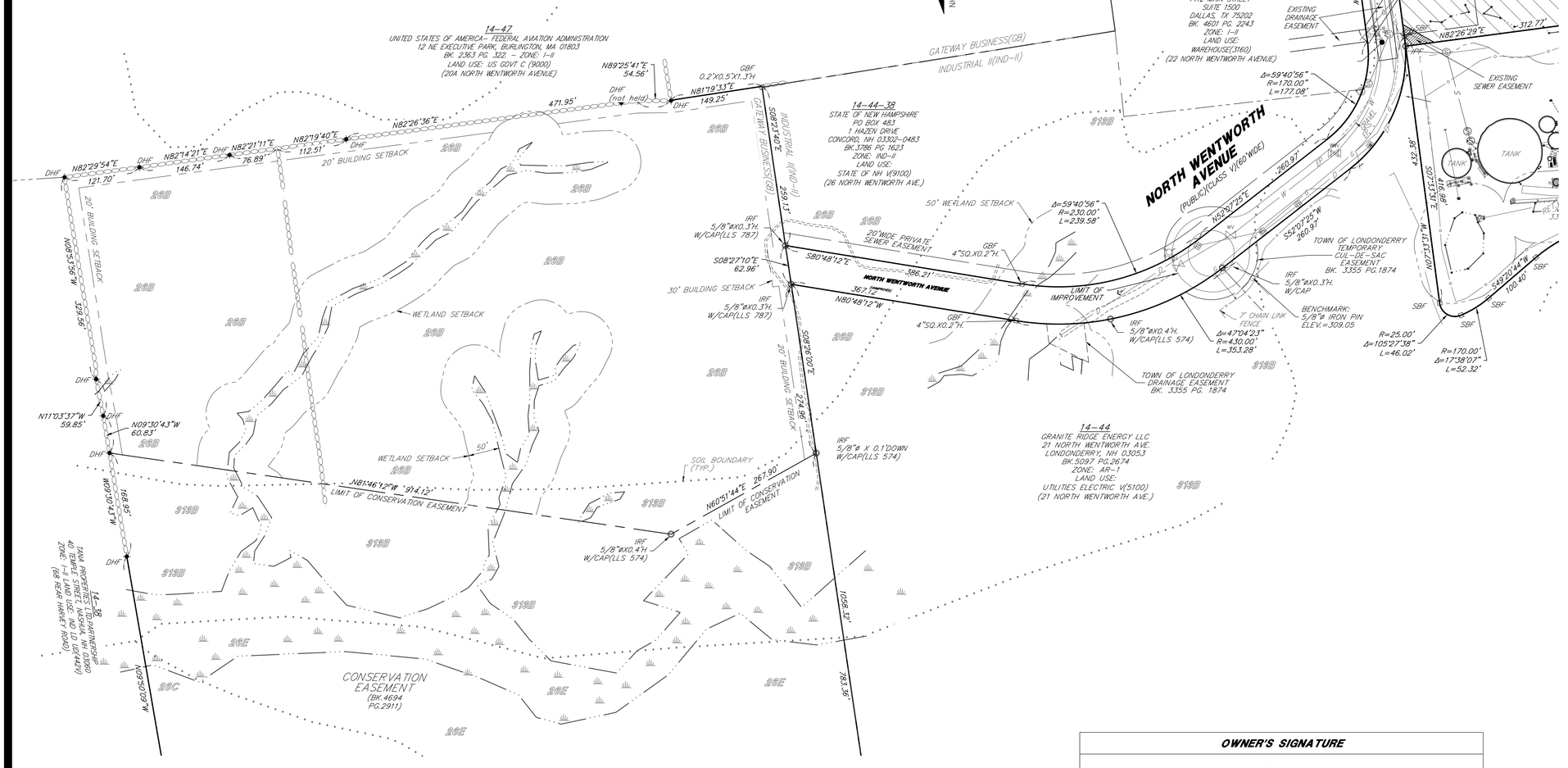
LEGEND

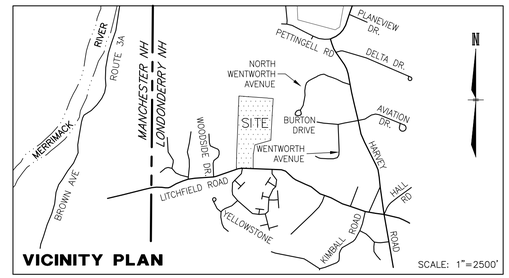
STONE BOUND (FOUND)	SAC	SLOPED ASPHALT CURB	ABUTTING PROPERTY LINE
IRON PIN (FOUND)	OHW	OVERHEAD WIRES	BUILDING SETBACK
DRILL HOLE (FOUND)		STONEWALL	EDGE OF PAVEMENT
UTILITY POLE	302	2' CONTOUR	ZONING DISTRICT BOUNDARY
GUY WIRE		10' CONTOUR	PROPERTY BOUNDARY
BENCHMARK	280	SOILS BOUNDARY	EASEMENT LINE
WATER VALVE	26A	SOILS MAP UNIT SYMBOL	W WATER LINE
HYDRANT		WETLAND DELINEATION	G GAS LINE
CATCH BASIN	5-12	WETLAND FLAG LOCATION	D DRAIN LINE
DIRECTION OF DRAINAGE FLOW		WETLAND SETBACK	S SEWER LINE

N

TFM

NH-SPC 83/86





NOTES

1. OWNER OF RECORD OF MAP 14 LOT 39: CRAIG FOWLER (TRUSTEE)
   NICHOLAS F. CODNER 2012 TRUST
   162 LITCHFIELD ROAD
   LONDONDERRY, NH 03053
   DEED REFERENCE: BK. 5336 PG. 1874
   AREA = 2,155,033 S.F. OR 49.473 ACRES
2. 14-39 INDICATES TAX MAP AND LOT NUMBER.
3. THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS PRESENT ON TAX MAP 14, LOT 39, LOCATED AT 162 LITCHFIELD ROAD AND THE WESTERLY PORTION OF NORTH WENTWORTH AVENUE IN LONDONDERRY, NEW HAMPSHIRE, AS SHOWN HEREON, AND NO OTHER PURPOSE.
4. CURRENT ZONING:
   GATEWAY BUSINESS (GB)
   MINIMUM LOT SIZE: 43,560 S.F./1 ACRE (SUBJECT TO PLANNING BOARD APPROVAL)
   MINIMUM LOT FRONTAGE: 150 FEET
   MAXIMUM BUILDING HEIGHT: 50 FEET
   MINIMUM GREEN SPACE: 25 PERCENT
   MINIMUM BUILDING SETBACKS: FRONT 30 FEET. SIDE & REAR 20 FEET.

   AGRICULTURAL/RESIDENTIAL (AR-1)
   MINIMUM LOT SIZE: (MUNICIPAL WATER & SEWER)
   SINGLE FAMILY (1-2 BEDROOMS): 35,000 S.F.
   SINGLE FAMILY (3 OR MORE BEDROOMS): 40,000 S.F.
   DUPLEX (2-4 BEDROOMS)(BOTH DWELLINGS): 52,500 S.F.
   DUPLEX (5 OR MORE BEDROOMS): 60,000 S.F.
   (NO MUNICIPAL SEWER)
   SINGLE OR TWO FAMILY RESIDENCE: 43,560 S.F./1 ACRE
   MINIMUM LOT FRONTAGE (CLASS V OR BETTER)
   SINGLE FAMILY: 150 FEET
   TWO FAMILY: 200 FEET
   MAXIMUM BUILDING HEIGHT: 35 FEET
   MINIMUM BUILDING SETBACKS: FRONT 40 FEET, SIDE & REAR 15 FEET.

   INDUSTRIAL II (IND-II)
   MINIMUM LOT SIZE: 43,560 S.F. (SUBJECT TO PLANNING BOARD APPROVAL)
   MINIMUM LOT FRONTAGE (CLASS V OR BETTER): 150 FEET
   MAXIMUM BUILDING HEIGHT: 50 FEET
   MINIMUM BUILDING SETBACKS: FRONT 30 FEET, SIDE & REAR 20 FEET.
5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER: 33015C0318E, EFFECTIVE DATE: MAY 17, 2005, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.
6. HORIZONTAL DATUM: NAD 83/86. VERTICAL DATUM: NGVD 29. BENCHMARKS SET: AS NOTED
7. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL MAY DETERMINE.
8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.
9. SEE SHEETS S-03 THROUGH S-09 FOR BENCHMARK INFORMATION.
10. SEE SHEETS S-03 THROUGH S-09 FOR DETAILED UTILITY INFORMATION.

Graphic Scale

100' 50' 0' 100' 200' 300' 400'

1" = 100'

TAX MAP 14 LOT 39

EXISTING CONDITIONS PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
ARCO/MURRAY
113 NORTH MAY STREET, CHICAGO, IL 60607

SCALE: 1" = 100' **JUNE 12, 2024**

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Bedford, N.H. 03110

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REV.	DATE	DESCRIPTION	DR	CK
2	12-18-25	PER REVIEW COMMENTS FROM TOWN	MRD	MRD
1	11-17-25	REVISE SEWER EASEMENT DEED REFERENCE	MRD	MRD

CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION "IT'S THE LAW"
811 Dig Safe MA-ME-NH-RI-VT

WETLAND SCIENTIST CERTIFICATION

JURISDICTIONAL WETLANDS SHOWN ON THIS PLAN WERE DELINEATED ON AUGUST 16, 2024 BY CHRISTOPHER K. DANFORTH CWS #077. THE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2, JANUARY 2012. DOMINANT HYDRIC SOILS WITHIN THE WETLAND(S) WERE IDENTIFIED USING "FIELD INDICATORS OF HYDRIC SOILS OF THE UNITIED STATES" A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, NRCS, VERSION 8.1, 2017. DOMINANCE OF HYDROPHYTIC VEGETATION WAS DETERMINED USING THE USACE NATIONAL WETLAND PLANT LIST, NWPL 2016 VERSION 3.3 HTTP://WETLAND_PLANTS.USACE.ARMY.MIL.

STATE OF NEW HAMPSHIRE
CHRISTOPHER K. DANFORTH
No. 077
8/28/2024
CERTIFIED WETLAND SCIENTIST

OWNER'S SIGNATURE

OWNER OR AUTHORIZED AGENT — 12/22/2025 DATE

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. FURTHER, THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY MADE BY THIS OFFICE IN MAY OF 2024. SAID SURVEY HAS AN ERROR OF CLOSURE OF NOT LESS ACCURACY THAN ONE PART IN TEN THOUSAND (1:10,000).

I CERTIFY THAT THIS SURVEY PLAT IS NOT A SUBDIVISION PURSUANT TO THIS TITLE AND THAT THE LINES OF STREETS AND WAYS SHOWN ARE THOSE OF PUBLIC OR PRIVATE STREETS OR WAYS ALREADY ESTABLISHED AND THAT NO NEW WAYS ARE SHOWN. (RSA 676:18)

Michael R Dahlberg — 12-22-25
LICENSED LAND SURVEYOR — DATE

STATE OF NEW HAMPSHIRE No. 714 MICHAEL R. DAHLBERG LICENSED LAND SURVEYOR
Michael R Dahlberg SIGNATURE

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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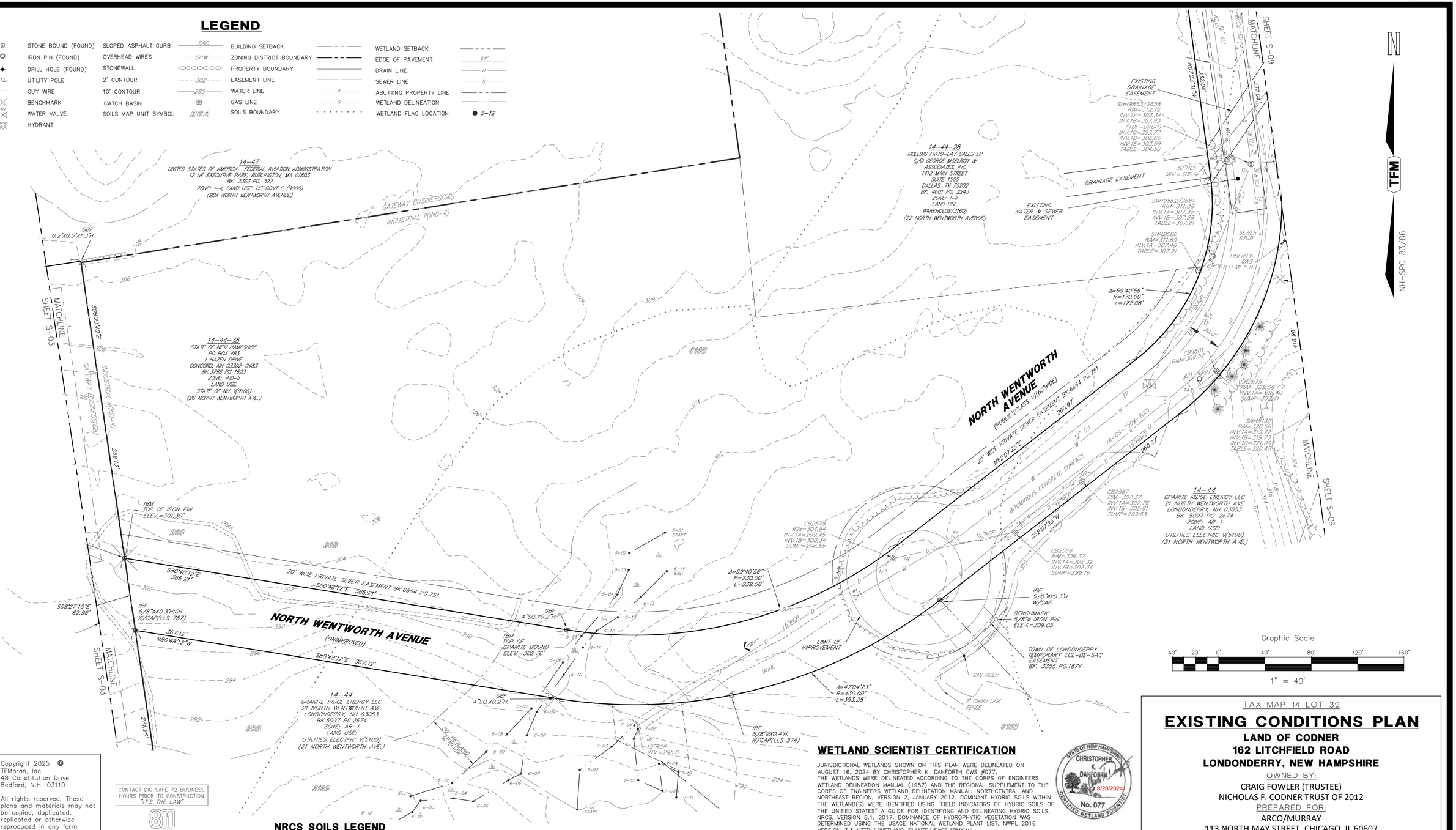
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE		DR	TNB	FB	2229/2230	
	18252.01	CK	MRD	CADFILE	18252-01 Survey	S-01

LEGEND

STONE BOUND (FOUND)	SLOPED ASPHALT CURB	SAC	BUILDING SETBACK	WETLAND SETBACK	
IRON PIN (FOUND)	OVERHEAD WIRES	OHW	ZONING DISTRICT BOUNDARY	EDGE OF PAVEMENT	EP
DRILL HOLE (FOUND)	STONEWALL		PROPERTY BOUNDARY	DRAIN LINE	D
UTILITY POLE	2' CONTOUR	302	EASEMENT LINE	SEWER LINE	S
GUY WIRE	10' CONTOUR	280	WATER LINE	ABUTTING PROPERTY LINE	
BENCHMARK	CATCH BASIN		GAS LINE	WETLAND DELINEATION	
WATER VALVE	SOILS MAP UNIT SYMBOL	26A	SOILS BOUNDARY	WETLAND FLAG LOCATION	5-12
HYDRANT					



Graphic Scale

40' 20' 0' 40' 80' 120' 160'

1" = 40'

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CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION "IT'S THE LAW"

811 Dig Safe MA-ME-NH-RI-VT

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2	12-18-25	PER REVIEW COMMENTS FROM TOWN	MRD	MRD
1	11-17-25	REVISE SEWER EASEMENT DEED REFERENCE	MRD	MRD

NRCS SOILS LEGEND

SOILS INFORMATION SHOWN HEREON IS GRAPHICALLY REPRODUCED FROM THE USDA NATURAL RESOURCES CONSERVATION SERVICE, NATIONAL COOPERATIVE SOIL SURVEY OF ROCKINGHAM COUNTY, NEW HAMPSHIRE.

26A	WINDSOR LOAMY SAND, 0 TO 3 PERCENT SLOPES
26B	WINDSOR LOAMY SAND, 3 TO 8 PERCENT SLOPES
26C	WINDSOR LOAMY SAND, 8 TO 15 PERCENT SLOPES
26E	WINDSOR LOAMY SAND, 15 TO 60 PERCENT SLOPES
45B	MONTAUK FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES, VERY STONY
116	SCARBORO MUCK, COASTAL LOWLAND, 0 TO 3 PERCENT SLOPES
319B	DEERFIELD LOAMY FINE SAND, 3 TO 8 PERCENT SLOPES

WETLAND SCIENTIST CERTIFICATION

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STATE OF NEW HAMPSHIRE · CHRISTOPHER K. DANFORTH · No. 077 · 8/28/2024 · CERTIFIED WETLAND SCIENTIST

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. FURTHER, THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY MADE BY THIS OFFICE IN MAY OF 2024 THAT HAS AN ERROR OF CLOSURE OF NOT LESS ACCURACY THAN ONE PART IN TEN THOUSAND (1:10,000).

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Michael R Dahlberg — 12-22-25
LICENSED LAND SURVEYOR — DATE

STATE OF NEW HAMPSHIRE · LICENSED LAND SURVEYOR · No. 714 · MICHAEL R. DAHLBERG · SIGNATURE

TAX MAP 14 LOT 39

EXISTING CONDITIONS PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
ARCO/MURRAY
113 NORTH MAY STREET, CHICAGO, IL 60607

SCALE: 1" = 40' **JUNE 12, 2024**

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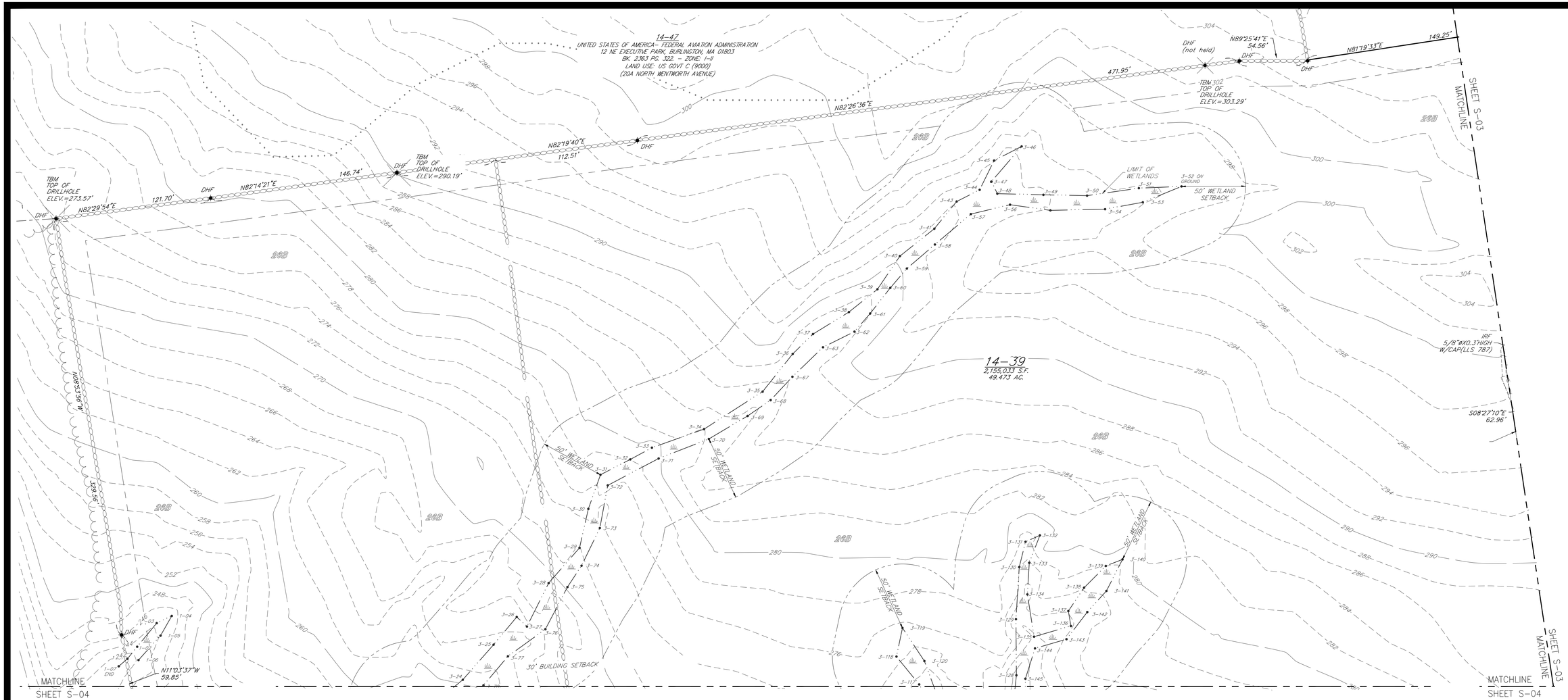
48 Constitution Drive · Bedford, NH 03110 · Phone (603) 472-4488 · Fax (603) 472-9747 · www.tfmoran.com

FILE		DR	TNB	FB	2229/2230	
	18252.01	CK	MRD	CADFILE	18252-01 Survey	S-02



LEGEND

STONE BOUND (FOUND)	SLOPED ASPHALT CURB	SAC	BUILDING SETBACK
IRON PIN (FOUND)	OVERHEAD WIRES	OHW	ZONING DISTRICT BOUNDARY
DRILL HOLE (FOUND)	STONEWALL		PROPERTY BOUNDARY
UTILITY POLE	2' CONTOUR	302	EASEMENT LINE
GUY WIRE	10' CONTOUR	280	WATER LINE
BENCHMARK	SOILS BOUNDARY		GAS LINE
WATER VALVE	SOILS MAP UNIT SYMBOL	26A	DRAIN LINE
HYDRANT	WETLAND DELINEATION		SEWER LINE
CATCH BASIN	WETLAND FLAG LOCATION	5-12	ABUTTING PROPERTY LINE
MAILBOX	WETLAND SETBACK		
EDGE OF PAVEMENT	DIRECTION OF DRAINAGE FLOW		

NRCS SOILS LEGEND

SOILS INFORMATION SHOWN HEREON IS GRAPHICALLY REPRODUCED FROM THE USDA NATURAL RESOURCES CONSERVATION SERVICE, NATIONAL COOPERATIVE SOIL SURVEY OF ROCKINGHAM COUNTY, NEW HAMPSHIRE.

26A	WINDSOR LOAMY SAND, 0 TO 3 PERCENT SLOPES
26B	WINDSOR LOAMY SAND, 3 TO 8 PERCENT SLOPES
26C	WINDSOR LOAMY SAND, 8 TO 15 PERCENT SLOPES
26E	WINDSOR LOAMY SAND, 15 TO 60 PERCENT SLOPES
45B	MONTAUK FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES, VERY STONY
116	SCARBORO MUCK, COASTAL LOWLAND, 0 TO 3 PERCENT SLOPES
313B	DEERFIELD LOAMY FINE SAND, 3 TO 8 PERCENT SLOPES

Graphic Scale

40' 20' 0' 40' 80' 120' 160'

1" = 40'

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Bedford, N.H. 03110

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CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION "IT'S THE LAW"

811 Dig Safe MA·ME·NH·RI·VT

REV.	DATE	DESCRIPTION	DR	CK
2	12-18-25	PER REVIEW COMMENTS FROM TOWN	MRD	MRD
1	11-17-25	REVISE SEWER EASEMENT DEED REFERENCE	MRD	MRD

WETLAND SCIENTIST CERTIFICATION

JURISDICTIONAL WETLANDS SHOWN ON THIS PLAN WERE DELINEATED ON AUGUST 16, 2024 BY CHRISTOPHER K. DANFORTH CWS #077. THE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2, JANUARY 2012. DOMINANT HYDRIC SOILS WITHIN THE WETLAND(S) WERE IDENTIFIED USING "FIELD INDICATORS OF HYDRIC SOILS OF THE UNITIED STATES" A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, NRCS, VERSION 8.1, 2017. DOMINANCE OF HYDROPHYTIC VEGETATION WAS DETERMINED USING THE USACE NATIONAL WETLAND PLANT LIST, NWPL 2016 VERSION 3.3 HTTP://WETLAND_PLANTS.USACE.ARMY.MIL.

STATE OF NEW HAMPSHIRE CHRISTOPHER K. DANFORTH No. 077 CERTIFIED WETLAND SCIENTIST 8/28/2024

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Michael R Dahlberg 12-22-25
LICENSED LAND SURVEYOR DATE

STATE OF NEW HAMPSHIRE No. 714 MICHAEL R. DAHLBERG LICENSED LAND SURVEYOR
Michael R Dahlberg
SIGNATURE

TAX MAP 14 LOT 39

EXISTING CONDITIONS PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
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NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
ARCO/MURRAY
113 NORTH MAY STREET, CHICAGO, IL 60607

SCALE: 1" = 40' **JUNE 12, 2024**

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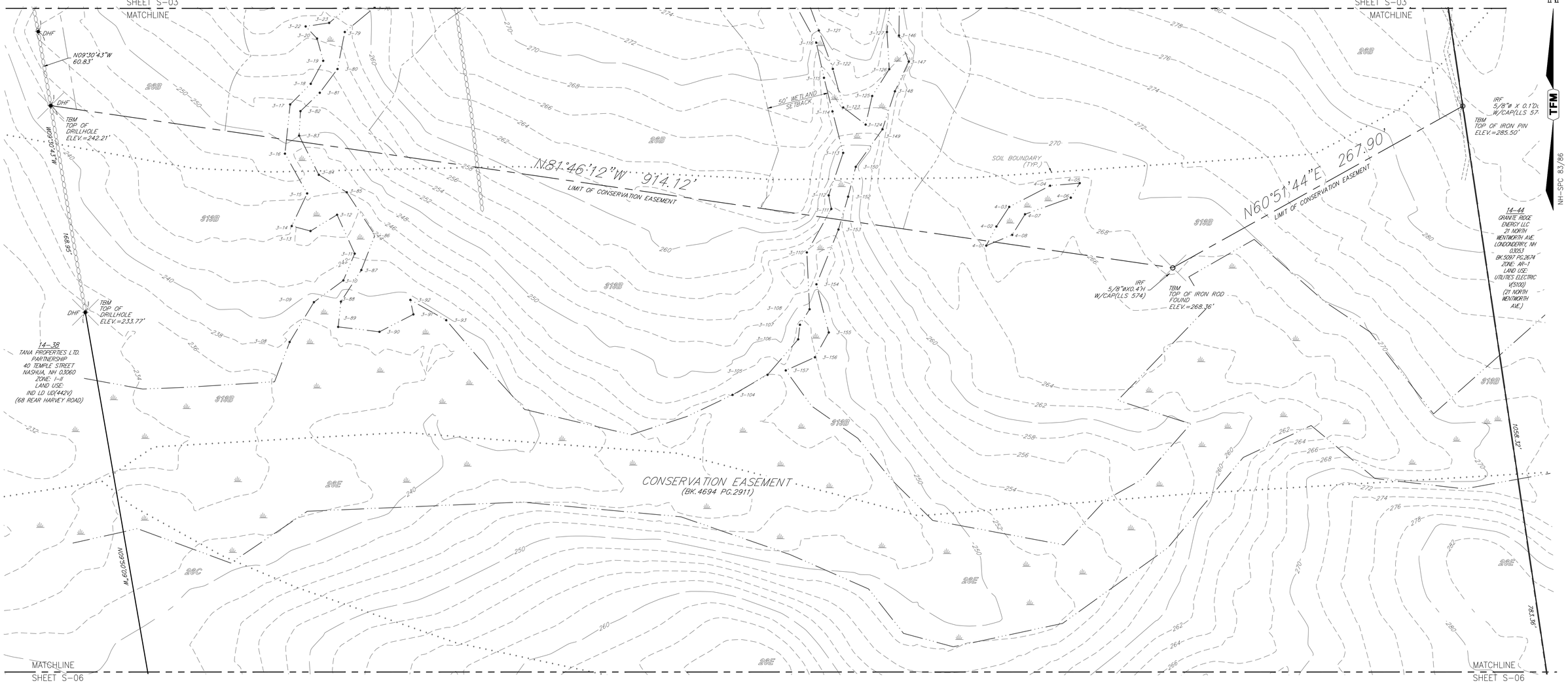
18252.01		TNB		2229/2230		S-03
		CK	MRD	CADFILE	18252-01 Survey	



LEGEND

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1	11-17-25	REVISE SEWER EASEMENT DEED REFERENCE	MRD	MRD

WETLAND NOTE

THE WETLANDS DEPICTED ON THIS SHEET AND THOSE LOCATED WITHIN THE EXISTING CONSERVATION EASEMENT WERE DIGITIZED FROM PLANS OF RECORD PREPARED FOR THE STATE OF NEW HAMPSHIRE AND RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAN #

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8/28/2024
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Michael R Dahlberg 12-22-25
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No. 714
MICHAEL R. DAHLBERG
LICENSED LAND SURVEYOR
SIGNATURE

TAX MAP 14 LOT 39

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162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

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PREPARED FOR:
ARCO/MURRAY
113 NORTH MAY STREET, CHICAGO, IL 60607

SCALE: 1" = 40' **JUNE 12, 2024**

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Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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Fax (603) 472-9747
www.tfmoran.com

FILE		DR	TNB	FB	2229/2230	
	18252.01	CK	MRD	CADFILE	18252-01 Survey	S-04

NOTES

1. SITE PREP. NOTES ON SHEET C-03.
2. SEE GRADING AND DRAIANGE NOTES ON SHEET C-03
3. SEE CONSTRUCTION SEQUENCING AND EROSION CONTROL NOTES ON SHEET C-03
4. SEE STORMWATER MANAGEMENT NOTES ON C-12
5. SEE CONSTRUCTION PHASING NOTES ON SHEET PH-1.
6. THE EDGE OF THE CONSERVATION OVERLAY AND NON-DISTURBANCE (NO-CUT) ZONES SHALL BE APPROPRIATELY DELINEATED IN THE FIELD PRIOR TO CONSTUCTION.

SITE SPECIFIC SOILS LEGEND

SYMBOL	MAP UNIT	DRAINAGE	HSG
26	WINDSOR	WELL	A
313	DEERFIELD	MODERATELY WELL	B
546/P	WALPOLE	VERY POORLY	C

SLOPE DESIGNATION	PERCENT SLOPE
B	0 TO 8%
C	8 TO 15%
D	15 TO 25%
E	>25%

STATE OF NEW HAMPSHIRE
BRUCE A. GILDAY
No. 012
CERTIFIED SOIL SCIENTIST

SOILS CERTIFICATION

THE SITE SPECIFIC SOIL MAPPING WAS PERFORMED DECEMBER 2024 BY BRUCE A. GILDAY, CERTIFIED SOIL SCIENTIST #012, OF BAG LAND CONSULTANTS, IN CONCORD, NH. THIS MAPPING WAS PERFORMED ACCORDING TO THE STANDARDS OF THE "SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE AND VERMONT," VERSION 7.0, JULY 2021. THESE STANDARDS ARE PUBLISHED BY THE SOCIETY OF SOIL SCIENTISTS OF NORTHERN NEW ENGLAND (SSSNNE).

WILDLIFE EXCLUSIONARY FENCING (POSTS INTERIOR TO SITE)

STONEWALL TO BE RELOCATED WITHIN LIMITS OF WORK WHERE PRACTICAL, COORDINATE WITH OWNER (TYP.)

PROPOSED TREELINE

CLEAR AND GRUB

81,954 SF 50' WETLAND BUFFER IMPACT AREA

APPROX. LIMITS OF DISTURBANCE

WETLAND IMPACT AREA
199 SF. TEMPORARY IMPACT
8,132 SF. PERMANENT IMPACT

25,298 SF 50' WETLAND BUFFER IMPACT AREA

WETLAND IMPACT AREA
65 SF. TEMPORARY IMPACT
439 SF. PERMANENT IMPACT

SILT SOCK OR MULCH BERM WITH SILT FENCE WITHIN 50' OF WETLAND BOUNDARY (TYP.)

SILT SOCK OR MULCH BERM (INTERIOR) WITH SILT FENCE (TYP.)

INSTALL CONSERVATION OVERLAY DISTRICT SIGN 50' O.C. (MAX)

PROPOSED TREELINE (TYP.)

INSTALL PERIMETER CONTROL WITH INTERIOR WILDLIFE RAMPS EVERY 75' (SEE DETAIL)

LIMIT OF CONSERVATION EASEMENT

NORTH WENTWORTH AVENUE

MATCHLINE

STABILIZED CONSTRUCTION ENTRANCE

RIGHTS TO BUILD AND MAINTAIN ACCESS, UTILITIES, AND WAYFINDING SIGNAGE TO BE CONVEYED TO TAX MAP 14 LOT 39-2. FINAL FORM OF CONVEYENCE TO BE DETERMINED. AREA =38,7±

20' WIDE PRIVATE SEWER EASEMENT B. 3355 P. 1872

TOWN OF LONDONDERRY TEMPORARY CUL-DE-SAC EASEMENT BOOK 3355, PAGE 1874

AREA OF WETLAND TO BE CLEARED WITH STUMPS LEFT IN PLACE

WETLAND IMAPCT
366 SF. PERMANENT
84 SF. TEMPORARY

4,470 SF 50' WETLAND BUFFER IMPACT AREA
STREAM BED SCOUR PROTECTION

5,488 SF 50' WETLAND BUFFER IMPACT AREA

HORIZONTAL SCALE 1"=50'
50 25 0 50

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SITE PREPARATION & DEMOLITION PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 50' **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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FILE	DR		FB		
18252-02		CK		CADFILE	18252-02 SITE PLAN

C-04

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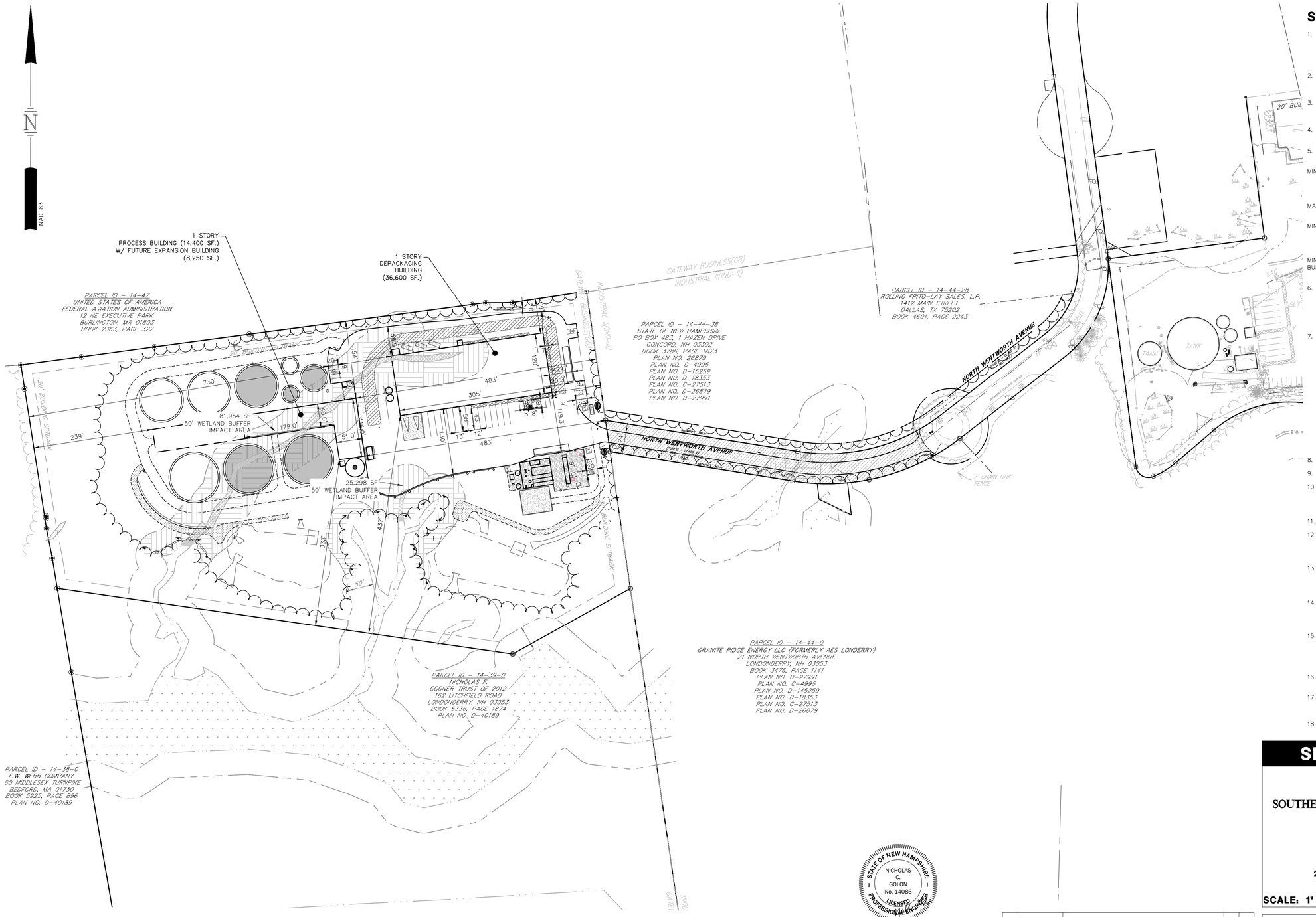
Dec 23, 2025 - 2:15pm
P:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 SITE PLAN.dwg



SITE DATA

1. OWNER OF RECORD OF MAP 14 LOT 39:

   CRAIG FOWLER (TRUSTEE) NICHOLAS F. CODNER TRUST 2012, 162 LITCHFIELD ROAD
   DEED REFERENCE TO PARCEL IS BK 5336 PG 1874
   AREA OF PARCEL = 2,155,033± SF OR 49.473± ACRES

2. ZONED: GATEWAY BUSINESS (GB)
   EXISTING USE: UNDEVELOPED
   PROPOSED USE: ORGANIC WASTE PROCESSING FACILITY

3. THE PURPOSE OF THIS PLAN IS TO CONSTRUCT A RESOURCE RECOVERY CENTER. ASSOCIATED IMPROVEMENTS INCLUDE AND ARE NOT LIMITED TO ACCESS, GRADING, STORMWATER MANAGEMENT SYSTEMS, UTILITIES, LIGHTING, AND LANDSCAPING.

4. TYPICAL HOURS OF OPERATION (OFFICE): 7 AM TO 4 PM MONDAY TO FRIDAY. FACILTY RUNS 24–7 YEAR ROUND WITH EXCEPTIONS FOR MAINTENANCE.

5. DIMENSIONAL REQUIREMENTS (CURRENT ZONING)

	REQUIRED:	PROVIDED:
MINIMUM LOT DIMENSIONS:		
LOT AREA	43,560 SF (1.00± AC)	667,167.7 SF* (15.316± AC)
LOT FRONTAGE	150 FT	60 FT
MAXIMUM STRUCTURE DIMENSIONS:		
STRUCTURE HEIGHT	50 FT	39.5 FT
MINIMUM SETBACKS/BUFFER:		
BUILDING FRONT	30 FT	96.6 FT
BUILDING SIDE	20 FT	69.4 FT
BUILDING REAR	20 FT	351.9 FT
MINIMUM GREEN SPACE	25%	64%%
BUILDING COVERAGE	N/A	

   * UPON FINALIZATION AND RECORDING OF LOT SUBDIVISION

6. PARKING REQUIREMENTS

PARKING SPACES (SEE CALCULATION)	1 PER 800 SF FA	64 SPACES
ACCESSIBLE SPACES (REQ'D BY ADA)	3 FOR 51–75 SPACES	3 SPACES
PARKING SPACE SIZE	9 FT X 20 FT	9 FT X 20 FT
AISLE WIDTH	22 FT	22 FT

7. PARKING CALCULATIONS

   REQUIRED PARKING RATIO:
   RESOURCE RECOVERY CETNER: 1 SPACE PER 800 SF FLOOR AREA

TOTAL REQUIRED = 50,700 SF FA/800 SF	= 64	SPACES
TOTAL	= 64	SPACES

   PARKING PROVIDED PER ITE:

   LAND USE CODE (LUC) 110 – GENERAL LIGHT INDUSTRIAL

   AVG. RATE = 0.76 SPACES/EMPLOYEE

   30 EMPLOYEES x 0.76 SPACES/EMPLOYEES = 23 SPACES

   THE SITE PROVIDES 23 CAR PARKING SPACES AND 6 TRUCK PARKING SPACES.

8. THIS PLANSET IS ON FILE AT THE TOWN OF LONDONDERRY PLANNING DEPARTMENT

9. THE SITE WILL BE SERVICED BY MUNICIPAL SEWER AND WATER.

10. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0318E, EFFECTIVE DATE OF MAY 17, 2005, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.

11. ALL BUILDINGS ON SITE SHALL BE 1 STORY.

12. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEAUSRES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE TOWN.

13. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO TOWN OF LONDONDERRY SUBDIVISION REGULATIONS AND THE LATEST EDITION OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION.

14. IN ACCORDANCE WITH SECTION 6.01 OF THE LONDONDERRY SITE PLAN REGUALTIONS AND RSA 676.13, ALL IMPROVMENTS SPECIFIED ON THESE SITE PLAN SHALL BE CONSTRUCTED, COMPLETED, INSPECTED AND APPROVED BY THE TOWN OF LONDONDERRY PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

15. IN ACCORDANCE WITH SECTION 6.01 OF THE LONDONDERRY SITE PLAN REGULATIONS AND RSA 676:12, ALL OFF–SITE IMPROVEMENTS SPECIFIED ON THESE SITE PLAN SHALL BE CONSTRUCTED, COMPLETED, INSPECTED AND APPROVED BY THE TOWN OF LONDONDERRY (AND/OR THE NHDOT, IF APPLICABLE) PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

16. APPLICANT SHALL COORDINATE TRAINING MEETING WITH LONDONDERRY POLICE & FIRE DEPARTMENTS.

17. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT DEFINCIENCIES EXIST IN THE APPROVED DESIGN DRAWINGS, THE OWNER SHALL BE REQUIRED TO CORRECT THE DEFICIENCIES TO MEET THE REGULATIONS AT NO EXPENSE TO THE TOWN.

18. THIS PLAN SET HAS BEEN PREPARED FOR THE FULL BUILDOUT OF THE FACILITY NOTING A PHASED CONSTRUCTION SCHEDULE.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

OVERALL SITE PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

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LONDONDERRY, NH 03053

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PREPARED FOR

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SCALE: 1" = 100' **SEPTEMBER 8, 2025**

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OWNER'S SIGNATURE

OWNER OR AUTHORIZED AGENT — DATE 12/22/2025

Approved by the Londonderry, NH Planning Board for Phase _____

on Date: _____

Certified by:

_____

_____

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=100'
100 50 0 100

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FILE 18252-02 | DR | FB | CK | CADFILE 18252-02 SITE PLAN | C-05

Dec 23, 2025 - 2:15pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 SITE PLAN.dwg

14-47
UNITED STATES OF AMERICA- FEDERAL AVIATION ADMINISTRATION
12 NE EXECUTIVE PARK, BURLINGTON, MA 01803
BK. 2363 PG. 322 - ZONE: I-II
LAND USE: US GOVT C (9000)
(20A NORTH WENTWORTH AVENUE)

N
NAD 83

NOTES

1. SEE NOTES ON SHEET C-03.
2. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS NOTED OTHERWISE.
3. LIGHTING, SIGNAGE, LANDSCAPING, AND SCREENING SHALL MEET THE REQUIREMENTS OF THE LONDONDERRY ZONING ORDINANCE AND SITE PLAN REGULATIONS.
4. SNOW SHALL NOT BE STOCKPILED IN STORMWATER BMP'S, WETLAND BUFFERS, OR WETLANDS. SEE SNOW STORAGE LOCATIONS. IN THE EVENT THAT THE SNOW STORAGE AREAS PROVIDED ON THE SITE ARE COMPLETELY UTILIZED, EXCESS SNOW SHALL BE TRANSPORTED OFF SITE FOR DISPOSAL IN ACCORDANCE WITH NHDES REGULATION. IF SNOW IS STORED WITHIN PARKING AREA, KEEP CATCH BASINS CLEAR.

MODULAR BLOCK RETAINING WALL
NATURAL GAS GENERATOR PAD
10,000 GAL LIFT STATION
26' x 32' SCREENING ROOM (RECEIVIING)
DETENTION BASIN #1
20' BUILDING SETBACK
50' NHDES P/T SETBACK
EOG
FUTURE FET
FUTURE 81' TRIBRID-BIOREACTOR
81' TRIBRID-BIOREACTOR
FET 1
FET 2
CB5
CB4
CCB
NO PARKING FIRE ACCESS
50' WETLAND BUFFER
ROLL UP DOOR
DOWN CAST WALL PACK (TYP.)
PFO1B
ODOR CONTROL PAD
DUMPSTER/COMPACTOR AREA
1 STORY DEPACKAGING BUILDING (36,600 SF)
FF=297
H=39.5'
15,000 GAL TANK
6' DIA RE-AERATION TANK
1 STORY PROCESS BUILDING (±14,100 SF)
FF=296
H=24.5'
TIPPING TRUCK GARAGE DOORS (RECEIVING)
LOADING DOCK DOOR (TYP.)
R7-8
R7-8a
(BUILDING MOUNTED)
CONC. WHEEL STOP (TYP.)
ROLL UP DOOR
RECEIVING
ACCESS DRIVE
CONCRETE APRON (SEE DETAILS)
CONCRETE RETAINING WALL (BY OTHERS)
11' X 26' BIOSOLIDS STORAGE BIN (ELEVATED)
BIT. CONC. PAVEMENT (TYP.)
OUTBOUND SCALE
INBOUND SCALE
SNOW STORAGE (TYP.)
18' DOWN CAST LIGHT POLE (TYP.)
INDUSTRIAL PARK DRIVE (PUBLIC)
TRANSFORMER PAD 20'L X 8'W CONC. PAD FOR SEWER PUMP STATION AND BACK UP GENERATOR
RELOCATED STONES
TRANSFORMER P
INTERCONNECTION FACILITY YARD
LOAM AND SEED (TYP.)
FUTURE PROCESS BUILDING (±8,250 SF)
WETLAND IMPACT AREA
199 SF. TEMPORARY IMPACT
8,132 SF. PERMANENT IMPACT
FUTURE 96' TRIBRID-BIOREACTOR
96' TRIBRID-BIOREACTOR
20' GRAVEL DRIVE
BIOGAS WATER KO
ENCLOSED FLARE AND CLEAR RADIUS
GUARDRAIL
BIOGAS UPGRADING YARD
TRANSFORMER PAD
H_2S MEDIA LAYDOWN AREA (CONC. PAD)
12' MAINTENANCE DRIVE
WETLAND IMPACT AREA
65 SF. TEMPORARY IMPACT
439 SF. PERMANENT IMPACT
REINFORCED MODULAR BLOCK RETAINING WALL
FILTRATION BASIN #1 AREA
FILTRATION BASIN #2 AREA
PROPOSED TREELINE (TYP.)
WETLAND CONSERVATION BOUNDARY SIGNS (TYP.)
LIMIT OF CONSERVATION EASEMENT
LIMIT OF CONSERVATION EASEMENT
CONSERVATION EASEMENT (BOOK 4634, PAGE 2911)
20' BUILDING SETBACK

HORIZONTAL SCALE 1"=40'
40 20 0 40

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SITE LAYOUT PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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OWNER'S SIGNATURE

OWNER OR AUTHORIZED AGENT — DATE 12/22/2025

Approved by the Londonderry, NH Planning Board for Phase _____
on Date:_____
Certified by:
_____
_____

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Civil Engineers
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Land Surveyors
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Phone (603) 472-4488
Fax (603) 472-9747
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FILE: 18252-02 | DR: | FB: | CK: | CADFILE: 18252-02 SITE PLAN | C-06

Dec 23, 2025 - 2:16pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 SITE PLAN.dwg

14-47
UNITED STATES OF AMERICA- FEDERAL AVIATION ADMINISTRATION
12 NE EXECUTIVE PARK, BURLINGTON, MA 01803
BK. 2363 PG. 322 - ZONE: I-A
LAND USE: US GOVT C (9000)
(20A NORTH WENTWORTH AVENUE)

N
NAD 83

DETENTION BASIN 1
W/ LINER SEE DETAIL
BOTTOM = 294.00
BERM = 296.00
EMERGENCY SPILLWAY = 295.50
3'Wx5'L RIPRAP SPILLWAY
ELEV=295.50

TBM
TOP OF DRILLHOLE
ELEV=290.12'

20' BUILDING SETBACK

50' NHDES P/T SETBACK

81'
TRIBRID-BIOREACTOR

FUTURE 81'
TRIBRID-BIOREACTOR

FUTURE 81'
TRIBRID-BIOREACTOR

FUTURE PROCESS
BUILDING
(±8,250 SF)

INV.O ROOF DRAIN = 289.50

1 STORY
PROCESS
BUILDING
(±14,100 SF)
FF=296
H=24.5'

96'
TRIBRID-BIOREACTOR

96'
TRIBRID-BIOREACTOR

FUTURE 96'
TRIBRID-BIOREACTOR

1 STORY
DEPACKAGING BUILDING
(36,600 SF)
FF=297
H=39.5'

TRENCH DRAIN TD1
RIM = 294.0
INV.O = 289.5

MODULAR BLOCK
RETAINING WALL
TOW=303.0
BOW=300.0

MODULAR BLOCK
RETAINING WALL
TOW=300.0
BOW=297.5

TBM
TOP OF DRILLHOLE
ELEV=303.29'

MATCHLINE (C-13)

RIP RAP PLUNGE POOL
BOT. = 276.00
SEE SHEET D22

HEADWALL #1
INV=277.0

CUTOFF SWALE W/
UNDERDRAINED TRENCH
W=3'
D=0.25'
S=0.065

HEADWALL #2
INV=274.0

10.4'Wx15.6'L
RIPRAP OUTLET
ELEV=276.40

REINFORCED MODULAR
BLOCK RETAINING WALL
TOW=279.0
BOW=262.0

TOW=279
BOW=262

TOW=278
BOW=262

TOW=270
BOW=264

TOW=260
BOW=257

HEADWALL 3
INV.O = 265.75

OS1
RIM=277.30

6'Wx9'L RIPRAP SPILLWAY
ELEV=277.50

FILTRATION BASIN 1
BOTTOM = 273.00
FILTER MEDIA = 271.50
BERM = 278.00
EMERGENCY SPILLWAY = 277.50

LIMIT OF CONSERVATION EASEMENT

FOREBAY 1
BOTTOM = 274.00
BERM = 278.00

HEADWALL 5
INV.O = 277.00

HEADWALL 4
INV.O = 277.00

OS2
RIM=279.00

FILTRATION BASIN 2
BOTTOM = 277.00
FILTER MEDIA = 275.50
BERM = 280.00
EMERGENCY SPILLWAY = 279.50
6'Wx9'L RIPRAP SPILLWAY
ELEV=279.50

RIPRAP
APRON
(TYP.)

FOREBAY 2
6' x 122' BOTTOM = 276.50
BERM = 280.00
21'W x 9'L RIPRAP WEIR
ELEV=278.80

RIPRAP SWALE
W=8'
D=6"
S=0.06 '/'

20' BUILDING SETBACK

CB1, CB2, CB3 5'Ø, CB4, CB5, CB6, CB8A 5'Ø, CB10, CB12, CB13, CB13A 5'Ø, CB14 5'Ø, CB15, CB16, CB17 5'Ø, CB18, CB19, CB20, CB21, CB22, CB23, CB24, CB27, CB28, CB30
DMH1, DMH3, DMH5, DMH5A, DMH6, DMH9 5'Ø, DMH11 5'Ø, DMH23, DMH24, DMH25, DMH 26, DMH RD

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

GRADING & DRAINAGE PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
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25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=40'
40 20 0 40

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FILE	18252-02	DR		FB		C-07
		CK		CADFILE	18252-02 SITE PLAN	

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F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_CSD\PRODUCTION\18252-02 SITE PLAN.dwg

Pipe Table				
Pipe Name	SIZE	MATERIAL	Length	Slope
CB10–CB12	15"	HDPE PIPE	169 LF	0.010
DMH1–CB12	15"	HDPE PIPE	65 LF	0.010
CB14–DMH9	24"	HDPE PIPE	81 LF	0.010
CB13–CB14	15"	HDPE PIPE	71 LF	0.012
CB1–CB2	15"	HDPE PIPE	22 LF	0.010
CB2–DMH1	15"	HDPE PIPE	156 LF	0.010
CB12–CB18	15"	HDPE PIPE	60 LF	0.010
CB6–CB8A	24"	HDPE PIPE	153 LF	0.008
CB8A–CB14	18"	HDPE PIPE	131 LF	0.010
DMH9–POND2	30"	HDPE PIPE	24 LF	0.005
CB30–DMH11	24"	HDPE PIPE	92 LF	0.010
DMH11–POND1	24"	HDPE PIPE	46 LF	0.005
CB28–DMH11	15"	HDPE PIPE	25 LF	0.008
CB27–DMH26	15"	HDPE PIPE	28 LF	0.010
CB20–CB21	15"	HDPE PIPE	94 LF	0.025
CB21–CB22	15"	HDPE PIPE	44 LF	0.009
CB22–DMH23	15"	HDPE PIPE	73 LF	0.010
DMH23–DMH24	15"	HDPE PIPE	58 LF	0.010
CB24–DMH25	15"	HDPE PIPE	82 LF	0.011
DMH25–DMH26	15"	HDPE PIPE	113 LF	0.009
DMH26–DMH11	18"	HDPE PIPE	126 LF	0.010
DMH6–CB8A	24"	HDPE PIPE	80 LF	0.010
DMH24–CB23	15"	HDPE PIPE	37 LF	0.009
OS3–DMH5	18"	HDPE PIPE	199 LF	0.010
DMH5–DMH5A	24"	HDPE PIPE	132 LF	0.010

Pipe Table				
Pipe Name	SIZE	MATERIAL	Length	Slope
CB4–DMH5	18"	HDPE PIPE	191 LF	0.010
CB23–CB24	15"	HDPE PIPE	110 LF	0.010
CB13A–CB13	15"	HDPE PIPE	102 LF	0.010
CB17–DMH9	18"	HDPE PIPE	108 LF	0.015
CB5–CB4	15"	HDPE PIPE	14 LF	0.007
TD–CB13A	24"	HDPE PIPE	56 LF	0.010
CB18–CB17	18"	HDPE PIPE	45 LF	0.010
CB19–CB17	15"	HDPE PIPE	50 LF	0.010
CB3–DMH3	15"	HDPE PIPE	90 LF	0.010
DMH3–CB10	15"	HDPE PIPE	82 LF	0.010
OS2–OUT	15"	HDPE PIPE	31 LF	0.016
OS1–OUT	15"	HDPE PIPE	60 LF	0.004
CB16–HW2	15"	HDPE PIPE	61 LF	0.030
CB15–OS3	15"	HDPE PIPE	38 LF	0.009
DMH RD–CB28	15"	HDPE PIPE	39 LF	0.005
PROCESS –DMH RD	15"	CORRUGATED HDPE PIPE	72 LF	0.005
DMH5A–DMH6	24"	CORRUGATED HDPE PIPE	114 LF	0.010

NOTES

1. SEE NOTES ON SHEET C-02.
2. SEE GRADING AND DRAINAGE PLAN ON SHEET C-07

STRUCTURE TABLE		
STRUCTURE NAME	STRUCTURE DETAILS	SUMP
CB1	RIM = 297.43 CB1–CB2 INV OUT = 293.18	0.0
CB2	RIM = 297.43 CB1–CB2 INV IN = 292.96 CB2–DMH1 INV OUT = 292.64	0.0
CB3 5'Ø	RIM = 296.74 CB4–DMH5 INV IN = 289.15 CB3–DMH3 INV OUT = 289.05	0.0
CB4	RIM = 297.46 CB5–CB4 INV IN = 291.16 CB4–DMH5 INV OUT = 291.06	0.0
CB5	RIM = 296.65 CB5–CB4 INV OUT = 291.26	0.0
CB6	RIM = 294.80 CB6–CB8A INV OUT = 288.00	0.0
CB8A 5'Ø	RIM = 293.10 CB6–CB8A INV IN = 286.82 CB8A–CB14 INV IN = 284.69	0.0
CB10	RIM = 296.00 DMH3–CB10 INV IN = 286.15 CB10–CB12 INV OUT = 285.94	0.0
CB12	RIM = 296.75 CB10–CB12 INV IN = 284.25 CB12–CB18 INV OUT = 284.15	0.0
CB13	RIM = 294.50 CB13A–CB13 INV IN = 289.66 CB13–CB14 INV OUT = 288.00	0.0
CB13A 5'Ø	RIM = 294.95 TD–CB13A INV IN = 288.94 CB13A–CB13 INV OUT = 290.70	0.0
CB14 5'Ø	RIM = 293.10 CB13–CB14 INV IN = 287.13 CB8A–CB14 INV OUT = 286.00 CB14–DMH9 INV OUT = 280.06	0.0
CB15	RIM = 296.08 CB15–OS3 INV OUT = 291.94	0.0
CB16	RIM = 281.80 CB16–HW2 INV OUT = 277.55	0.0
CB17 5'Ø	RIM = 298.57 CB18–CB17 INV OUT = 282.45 CB17–DMH9 INV OUT = 279.72 CB19–CB17 INV OUT = 285.00	0.0
CB18	RIM = 298.57 CB18–CB17 INV IN = 282.00 CB12–CB18 INV IN = 283.55	0.0
CB19	RIM = 293.00 CB19–CB17 INV IN = 284.50	0.0
CB20	RIM = 293.44 CB20–CB21 INV OUT = 289.20	0.0
CB21	RIM = 291.69 CB20–CB21 INV IN = 286.90 CB21–CB22 INV OUT = 286.80	0.0
CB22	RIM = 293.45 CB21–CB22 INV IN = 286.41 CB22–DMH23 INV OUT = 286.31	0.0

STRUCTURE TABLE		
STRUCTURE NAME	STRUCTURE DETAILS	SUMP
CB23	RIM = 293.50 DMH24–CB23 INV IN = 284.46 CB23–CB24 INV OUT = 284.31	0.0
CB24	RIM = 293.40 CB23–CB24 INV IN = 283.20 CB24–DMH25 INV OUT = 283.10	0.0
CB27	RIM = 292.34 CB27–DMH26 INV OUT = 288.15	0.0
CB28	RIM = 293.39 DMH RD–CB28 INV IN = 288.85 CB28–DMH11 INV OUT = 288.75	0.0
CB30	RIM = 295.91 DMH6–CB8A INV IN = 285.92 CB30–DMH11 INV OUT = 285.80	0.0
DMH RD	RIM = 294.18 PROCESS –DMH RD INV IN = 289.15 DMH RD–CB28 INV OUT = 289.05	0.0
DMH1	RIM = 300.00 DMH1–CB12 INV IN = 289.30 CB2–DMH1 INV IN = 291.08	0.0
DMH3	RIM = 296.65 CB3–DMH3 INV IN = 288.15 DMH3–CB10 INV OUT = 286.97	0.0
DMH5	RIM = 296.65 OS3–DMH5 INV IN = 289.51 DMH5–DMH5A INV OUT = 289.40	0.0
DMH5A	RIM = 293.04 DMH5–DMH5A INV IN = 288.13 DMH5A–DMH6 INV OUT = 288.00	0.0
DMH6	RIM = 294.50 DMH5A–DMH6 INV IN = 286.82 DMH6–CB8A INV OUT = 286.72	0.0
DMH9 5'Ø	RIM = 292.03 CB17–DMH9 INV IN = 278.10 CB14–DMH9 INV IN = 279.25 DMH9–POND2 INV OUT = 278.12	0.0
DMH11 5'Ø	RIM = 292.73 CB30–DMH11 INV IN = 284.88 CB28–DMH11 INV IN = 288.54 DMH26–DMH11 INV IN = 279.54 DMH11–POND1 INV OUT = 277.23	0.0
DMH23	RIM = 293.73 CB22–DMH23 INV IN = 285.59 DMH23–DMH24 INV OUT = 285.49	0.0
DMH24	RIM = 293.70 DMH23–DMH24 INV IN = 284.91 DMH24–CB23 INV OUT = 284.81	0.0
DMH25	RIM = 293.90 CB24–DMH25 INV IN = 282.23 DMH25–DMH26 INV OUT = 282.10	0.0
DMH26	RIM = 293.70 DMH25–DMH26 INV IN = 281.05 CB27–DMH26 INV IN = 287.87 DMH26–DMH11 INV OUT = 280.80	0.0
OS1	RIM = 277.30 OS1–OUT INV OUT = 266.00	0.0
OS2	RIM = 279.00 OS2–OUT INV OUT = 272.00	0.0
OS3	RIM = 295.90 CB15–OS3 INV IN = 291.60 OS3–DMH5 INV OUT = 291.50	0.0

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DRAINAGE STRUCTURE TABLES

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NONE **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
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12/22/25

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4	10/24/2025	NHF&G APPROVAL	JD	NG
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FILE 18252-02 | DR | FB | CADFILE | 18252-02 SITE PLAN | C-08

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12 NE EXECUTIVE PARK, BURLINGTON, MA 01803
BK. 2363 PG. 322 – ZONE: I-A
LAND USE: US GOVT C (9000)
(20A NORTH WENTWORTH AVENUE)

B

N
NAD 83

NOTES

1. SEE NOTES ON SHEET C-02.

HYDRANT
CB5
CB4
CB3 5'Ø
DMH3
OS3
DMH5
CB21
CB15
CB20
CB22
DMH23
DMH24
CB23
81' TRIBRID-BIOREACTOR
FUTURE 81' TRIBRID-BIOREACTOR
FUTURE 81' TRIBRID-BIOREACTOR
HYDRANT
SMH2
SMH1
SANITARY SEWER 8" PVC INV.O=289.33
INDUSTRIAL SEWER 8" PVC INV.O=289.33
DMH5A
1 STORY PROCESS BUILDING (±14,100 SF) FF=296 H=24.5'
FUTURE PROCESS BUILDING (±8,250 SF)
CB6
SMH10
INDUSTRIAL WASTE WATER TANK POINT OF COMPLIANCE RIM=295.6± INV.I = 289.28 INV.O = 289.20
4" STORZ FIRE DEPARTMENT CONNECTION
2" DEOMESTIC SERVICE WITH CURB STOP & BOX
96' TRIBRID-BIOREACTOR
96' TRIBRID-BIOREACTOR
DMH RD
HYDRANT
CB24
FUTURE 96' TRIBRID-BIOREACTOR
CB27
CB28
DMH25
DMH26
DMH11 5'Ø
CB30
DMH6
CB8A 5'Ø
CB14 5'Ø
CB16
1 STORY DEPACKAGING BUILDING (36,600 SF.)
FF=297 H=39.5'
INDUSTRIAL WASTE WATER TANK POINT OF COMPLIANCE RIM=296.4± INV.I = 289.21 INV.O = 289.13
4" STORZ FIRE DEPARTMENT CONNECTION
2" DEOMESTIC SERVICE WITH CURB STOP & BOX
SANITARY SEWER 8" PVC INV.O=289.33
HYDRANT W/ BOLLARD
CB10
6" DI FIRE SERVICE
6"X6"X2" DI MJ TEE
8"X8"X6" DI MJ ANCHOR TEE WITH 6" GATE VALVE
FEEDSTOCK FM SHOWN FOR COORDINATION (DESIGN BY OTHERS)
CB13A 5'Ø
SMH5
SMH3
SMH11
8" DI
8"X8"X6" MJ ANCHOR TEE WITH 6" GATE VALVE
CB12
CB13
CB17 5'Ø
CB18
CB19
DMH9 5'Ø
6" SDR35, PUMP STATION VENT (3-FT TALL)
SEWER PUMP STATION (6'DIA) RIM=298.5 INV IN=294.2
VALVE PIT (8'DIA)
MASTER ELECTRICAL ENCLOSURE (FINAL DESIGN/SELECTION BY OTHERS)
DIESEL EMERGENCY GENERATOR (FINAL DESIGN/SELECTION BY OTHERS)
8"X8"X6" MJ ANCHOR TEE WITH 6" GATE VALVE
HYDRANT
DMH1
OHE
6"X6"X6" MJ ANCHOR TEE WITH 6" GATE VALVE
COORDINATE SIZE AND MATERIALS OF GAS LINE WITH LIBERTY UTILITY
8"X8"X2" MJ ANCHOR TEE WITH 2" GATE VALVE
UGE
UGE/T/C
W
T
LIMIT OF CONSERVATION EASEMENT

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

UTILITY PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
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PREPARED FOR
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SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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FILE 18252-02 | DR | FB | CADFILE 18252-02 SITE PLAN | CK

C-09

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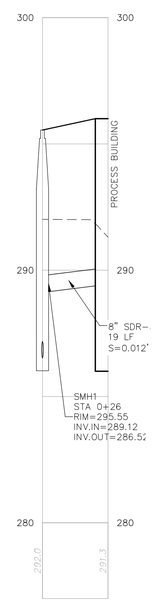
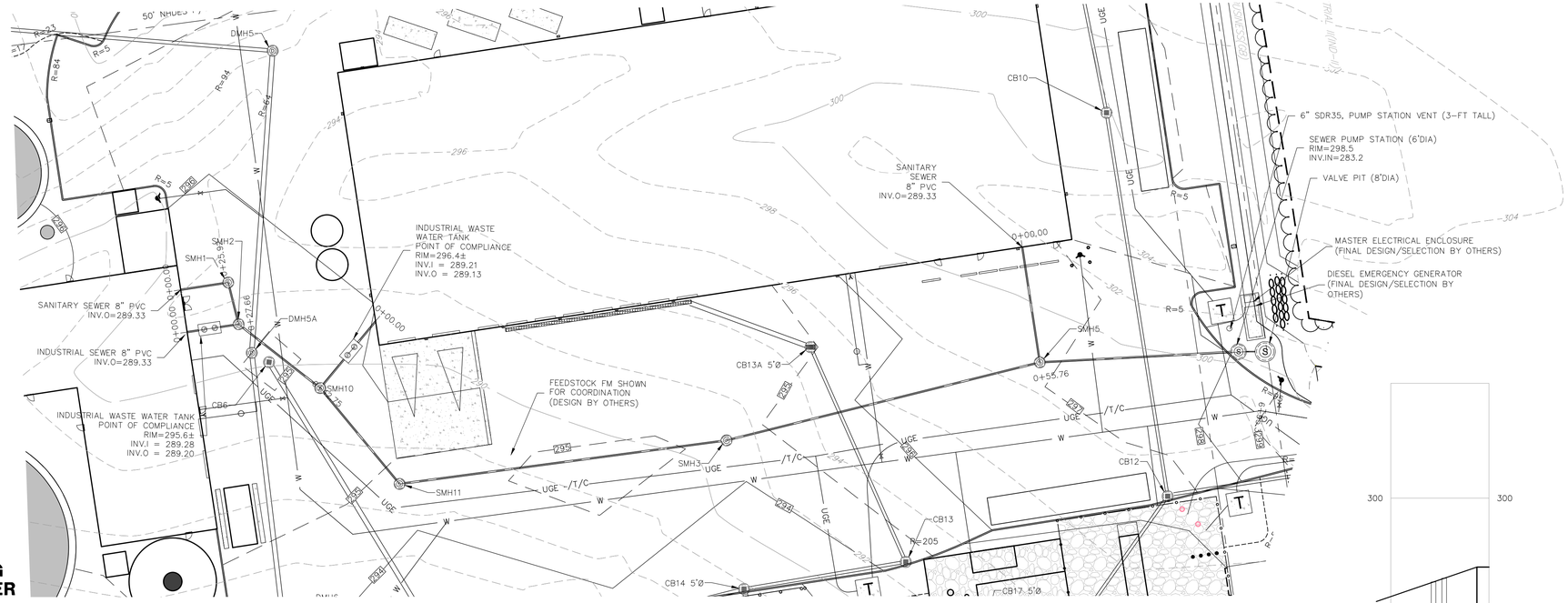
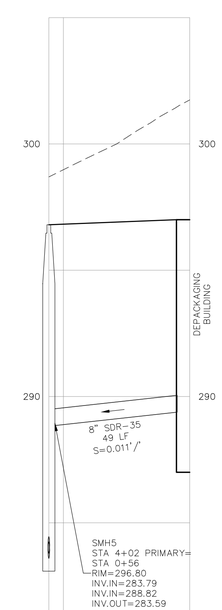
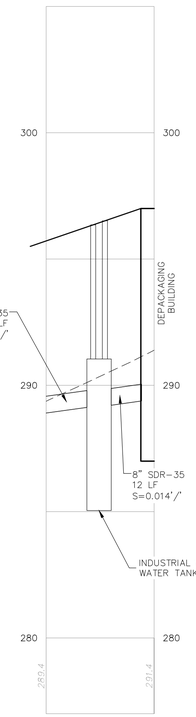


PROCESS BLDG SANITARY SEWER

SCALE: 1"=30'H / 1"=3'V

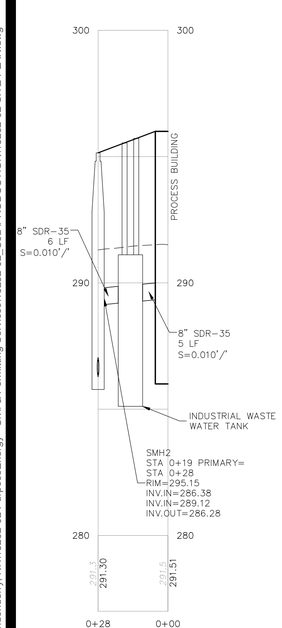






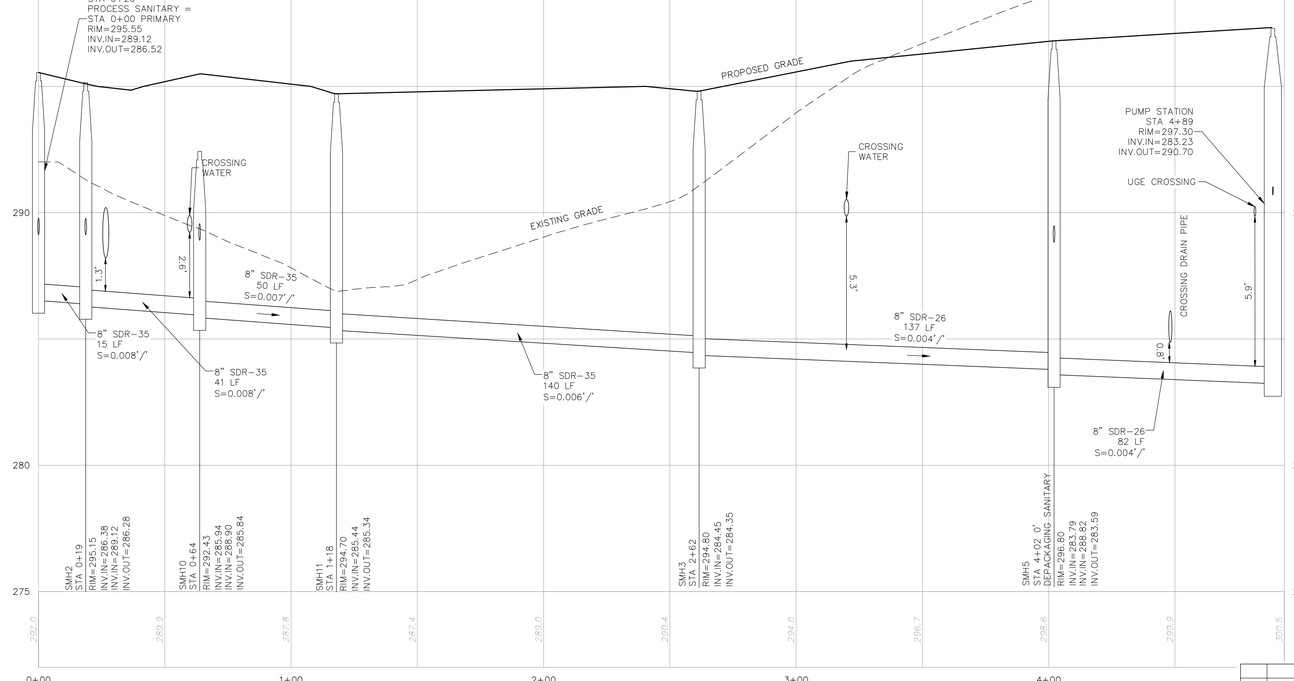
DEPACKING BLDG INDUSTRIAL SEWER

SCALE: 1"=30'H / 1"=3'V



PROCESS BLDG INDUSTRIAL SEWER

SCALE: 1"=30'H / 1"=3'V



PRIMARY SITE SEWER

SCALE: 1"=30'H / 1"=3'V

HORIZONTAL SCALE 1"=30'

VERTICAL SCALE 1"=3'

NOTES

1. SEE NOTES ON SHEET C-02.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SITE SEWERS PLAN AND PROFILE

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.

LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC

25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Land Surveyors
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Scientists

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PROJ.	18252-02	DR		FB		C-10
		CK		CADFILE	18252-02 SITE PLAN	

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

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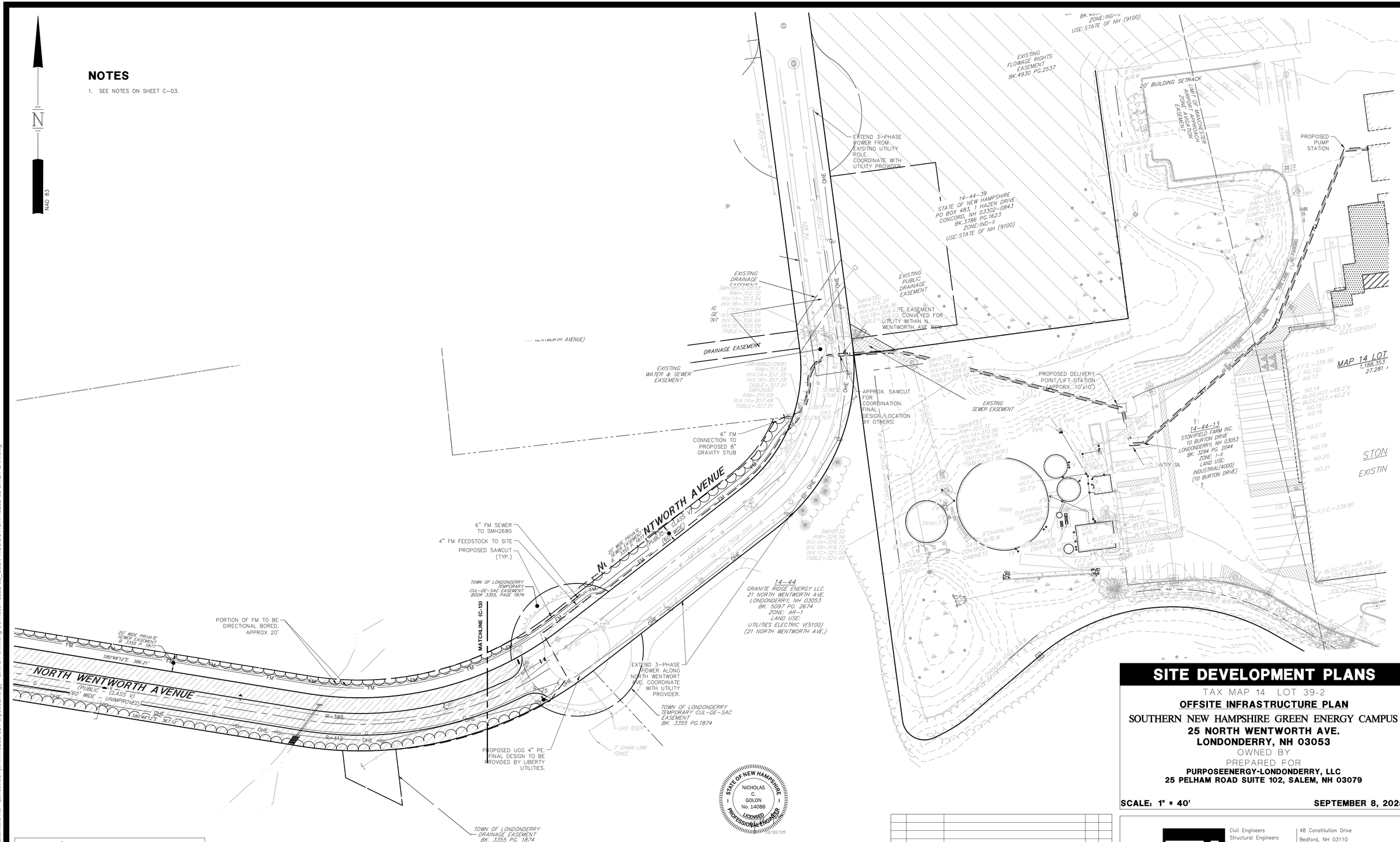
NOTES

1. SEE NOTES ON SHEET C-03.



SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

OFFSITE INFRASTRUCTURE PLAN

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OWNED BY

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SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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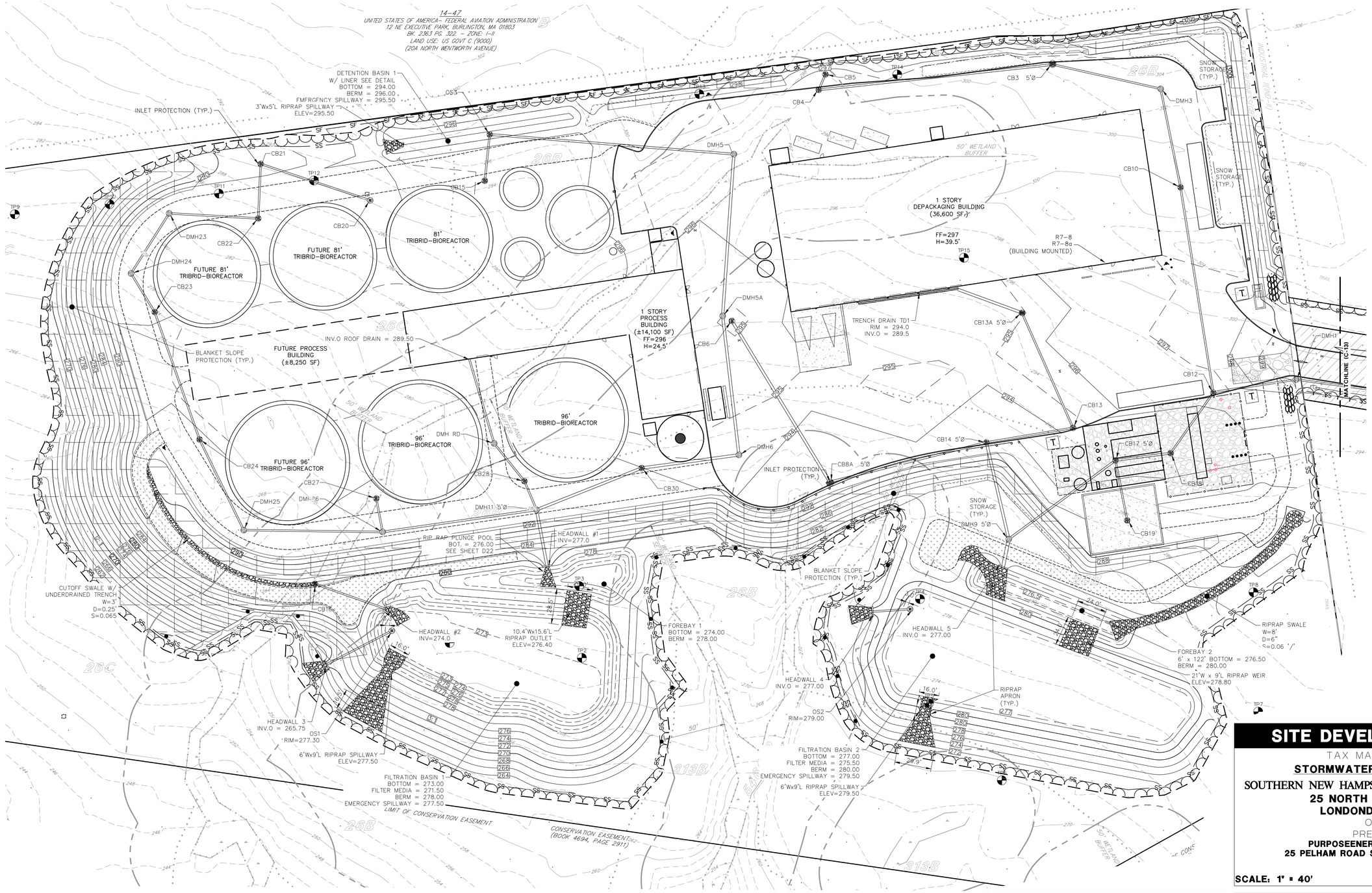

NOTES

1. SEE SHEET D-01 FOR STORMWATER MANAGMENT AND CONSTRUCTION GENERAL PERMIT NOTES.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

STORMWATER MANAGEMENT PLAN

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25 NORTH WENTWORTH AVE.

LONDONDERRY, NH 03053

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25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=40'
40 20 0 40

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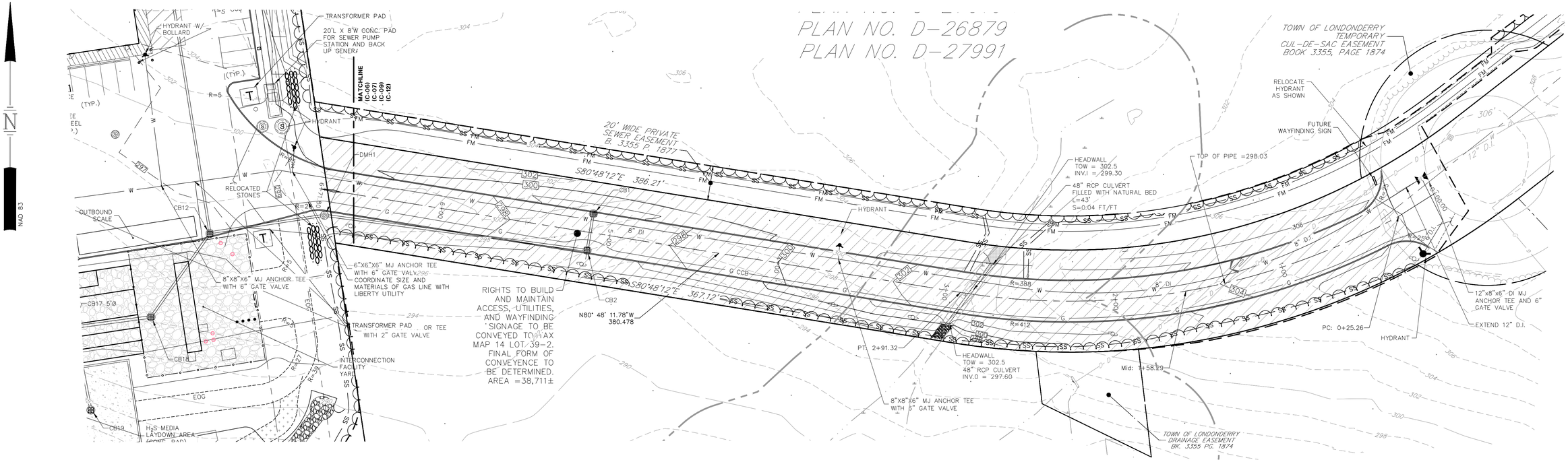

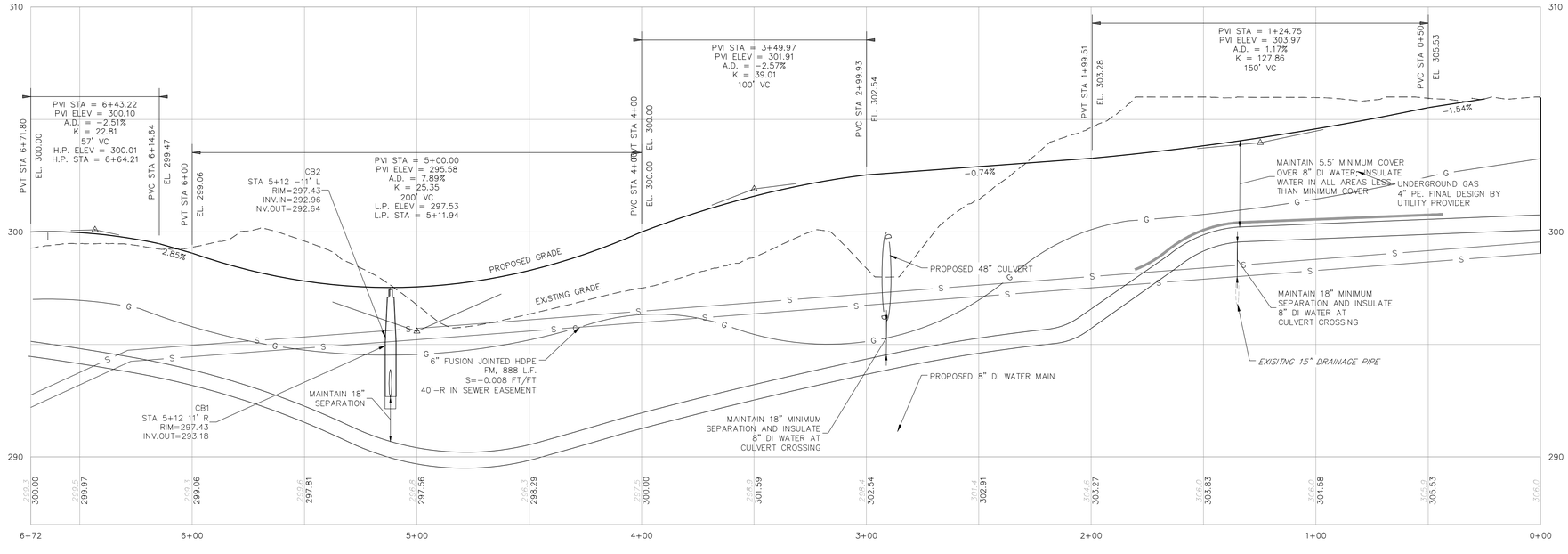

PROPOSED DRIVEWAY

HORIZONTAL SCALE 1"=30'
30 15 0 30
VERTICAL SCALE 1"=3'
3 0 3

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DRIVEWAY PLAN & PROFILE

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PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

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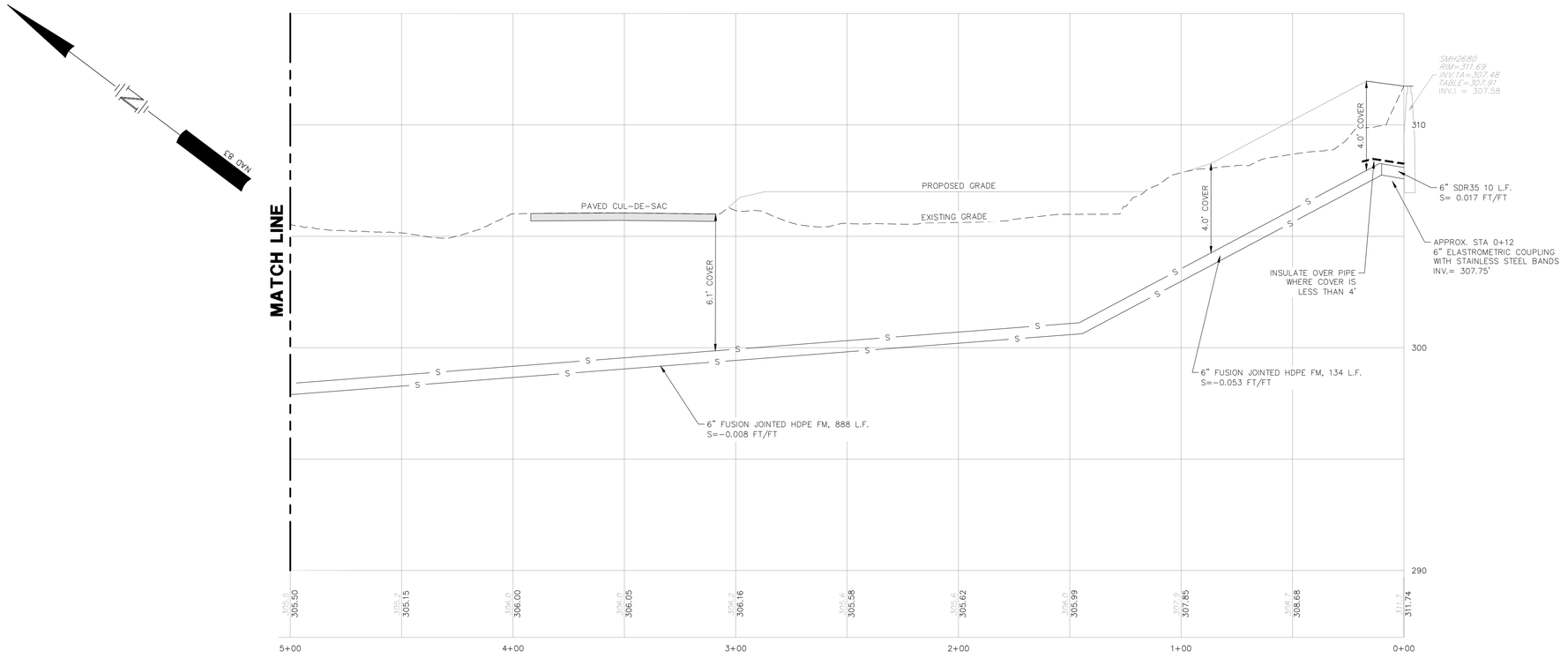
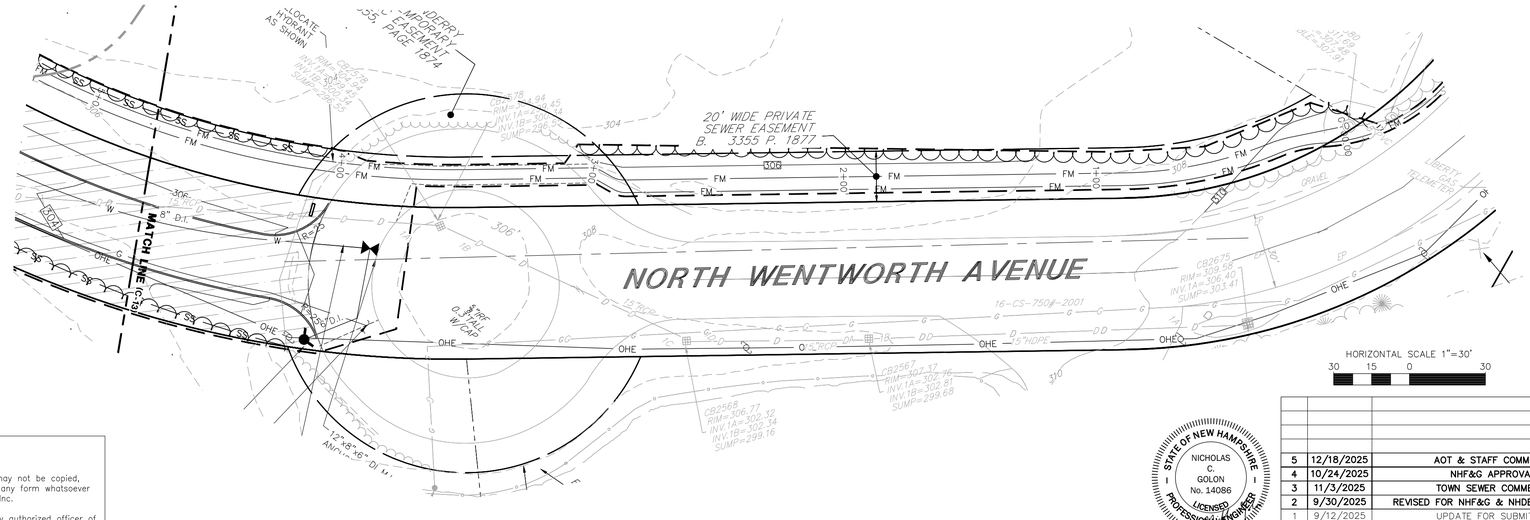
NOTES

1. SEE NOTES ON SHEET C-03.



SEWER FORCEMAIN TO MUNICIPAL SYSTEM

SCALE: 1" = 30' H/1"=3' V



HORIZONTAL SCALE 1"=30'

30 15 0 30

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

FORCEMAIN PLAN AND PROFILE

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LONDONDERRY, NH 03053

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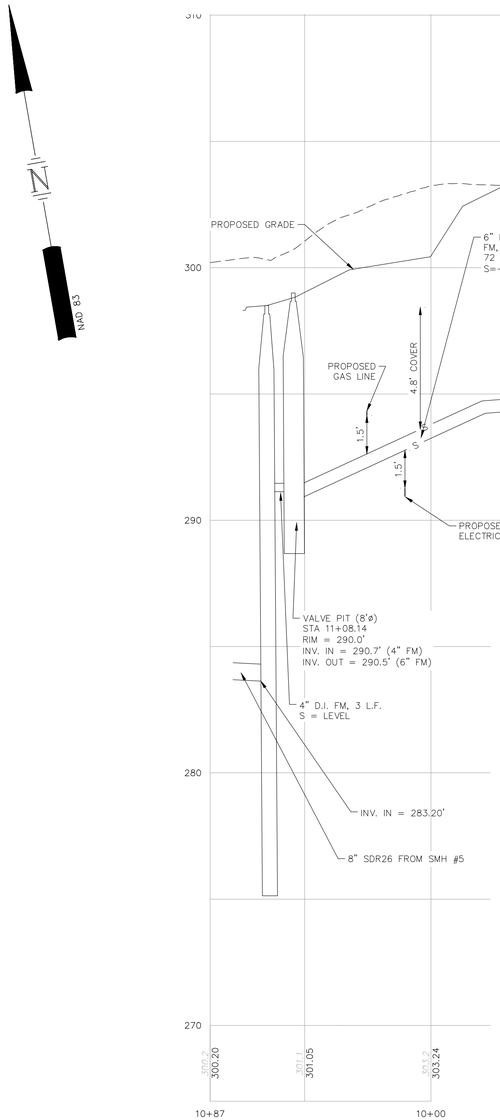
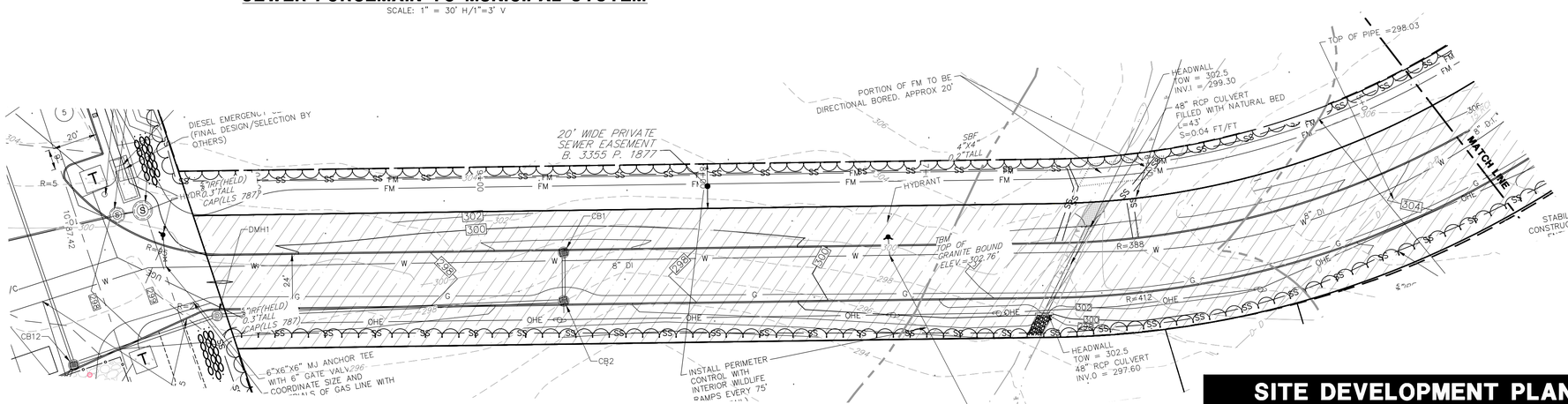
NOTES

1. SEE NOTES ON SHEET C-03.



SEWER FORCEMAIN TO MUNICIPAL SYSTEM

SCALE: 1" = 30' H/1"=3' V



HORIZONTAL SCALE 1"=30'

30 15 0 30

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

FORCEMAIN PLAN AND PROFILE

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NOTES

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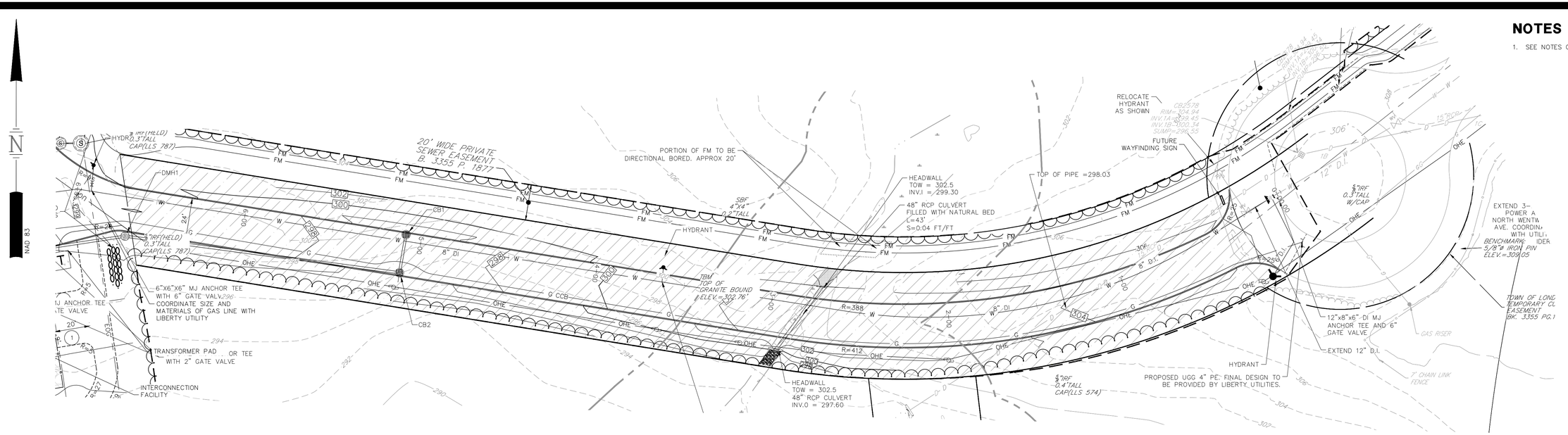

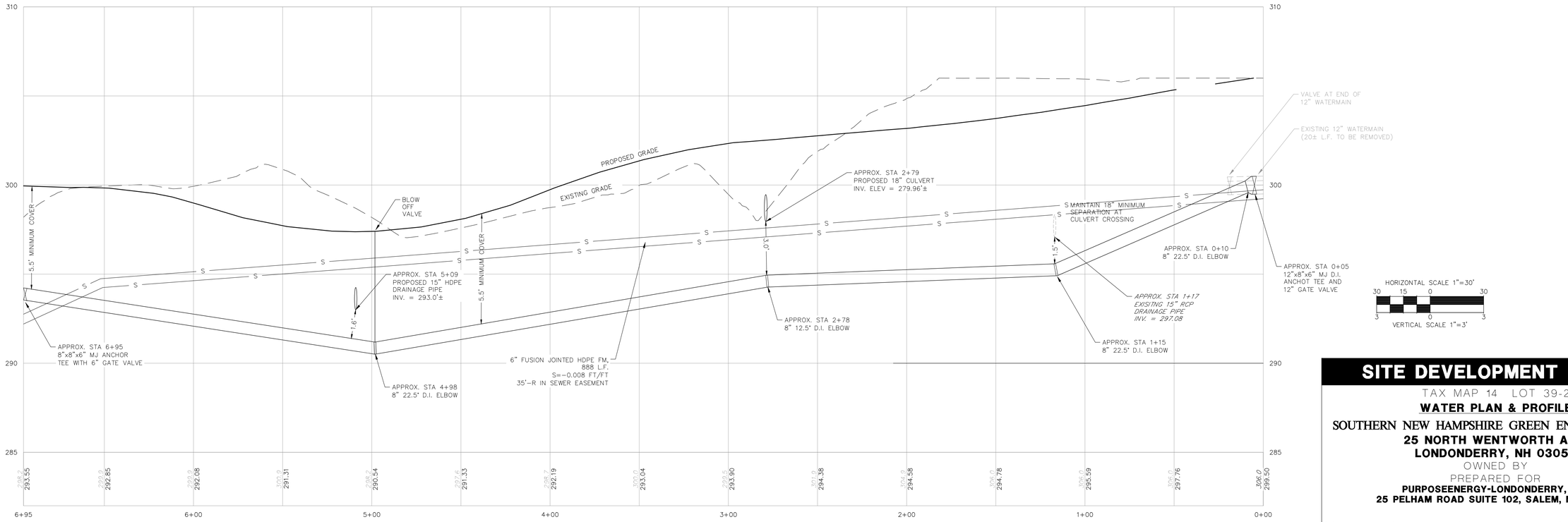

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

WATER PLAN & PROFILE

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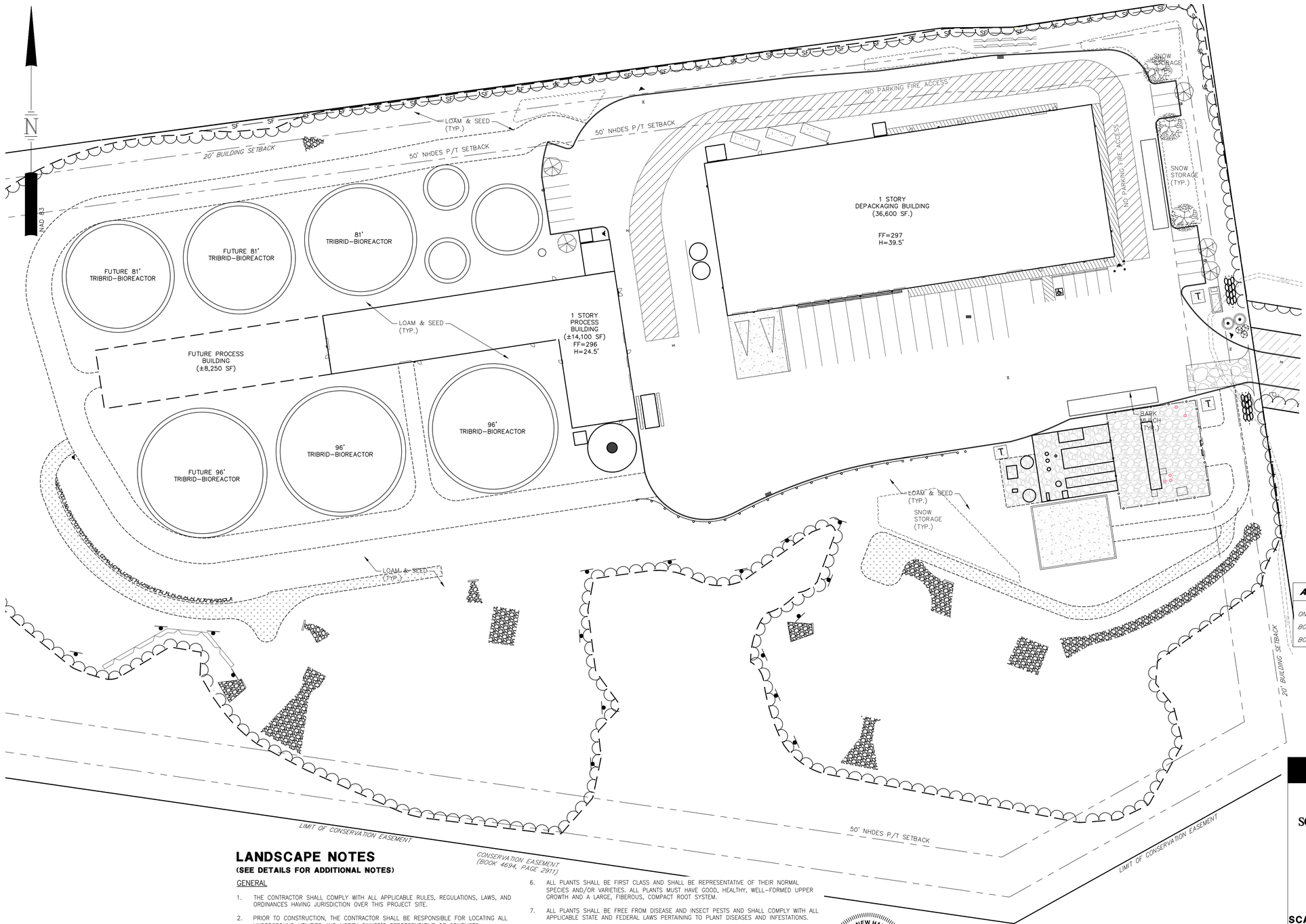

LANDSCAPE LEGEND

SYMBOL	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
	3	QUERCUS RUBRA RED OAK	2 1/2" TO 3" CAL.	B&B
	5	QUERCUS P. 'GREEN PILLAR' GREEN PILLAR PIN OAK	2 1/2" TO 3" CAL.	B&B
	3	JUNIPERUS VIRGINIANA HILLSPIRE' HILLSPIRE EASTERN RED CEDAR	6' TO 7'	B&B
	3	SYRINGA VULGARIS 'NEW AGE LAVENDER' NEW AGE LAVENDER LILAC	5 GAL.	CONT.

LANDSCAPE REQUIREMENTS

GREEN SPACE REQUIREMENT:
REQUIRED: 25%
PROVIDED: 64%

INTERIOR PARKING LANDSCAPE AREA REQUIREMENTS:
(3.10g1. OF SITE PLAN REG.'S) *WAIVER REQUIRED

INTERNAL PARKING LOT LANDSCAPING:
(3.10g3. OF SITE PLAN REG.'S)
1 TREE/15 PARKING SPACES (19 SPACES/15) = 1.2 TREES
TOTAL TREES REQUIRED = 1
TREES PROVIDED = 2 TREES

PARKING LOT PERIMETER LANDSCAPING:
(3.10g5. OF SITE PLAN REG.'S)
1 SHADE TREE/20' OF PARKING PERIMETER = 117 SF/20' = 5.8 SHADE TREES
TOTAL TREES REQUIRED = 6
TREES PROVIDED = 6 TREES

SCREENING FROM PUBLIC RIGHT-OF-WAY:
(3.10g6. OF SITE PLAN REG.'S)
EXISTING VEGETATION TO SATISFY REQUIREMENT.

ACCORDING TO THE USDA PLANT HARDINESS ZONE MAP THE ANNUAL MINIMUM TEMERATURE ZONES FOR SOUTHERN NH ARE BETWEEN ZONE 4 (−30 TO −20 DEGREES) AND ZONE 5 (−20 TO −10 DEGREES). THE PLANT MATERIALS SHOWN ON THIS PLAN HAVE A HARDINESS ZONE TO MEET THAT OF SOUTHERN NH.

THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE THROUGHOUT CONSTRUCTION OF PROTECTIVE TREE FENCING LOCATED 12" INCHES OFF THE THE DRIPLINE OF ALL TREES TO BE PROTECTED. PRIOR TO CONSTRUCTION THE CONTRACTOR IS REQUIRED TO HAVE ALL NO-CUT ZONES DELINEATED IN THE FIELD.

THE CONTRACTOR/APPLICANT IS RESPONSIBLE FOR REPLACEMENT OF "ANY TREES DESIGNATED TO REMAIN, WHICH HAVE BEEN DAMAGED, KILLED OR REMOVED AS A RESULT OF CONSTRUCTION ACTIVITIES". SEE TOWN OF LONDONDERRY "LANDSCAPE DESIGN STANDARDS" SECTION 3.10.D OF THE SITE PLAN REGULATIONS.

THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF ALL LANDSCAPE AREAS ONCE CONSTRUCTION IS COMPLETED AS OUTLINED IN THE TOWN OF LONDONDERRY, "LANDSCAPE DESIGN STANDARDS" SECTION 3.10.F OF THE SITE PLAN REGULATIONS.

APPROVED BY THE TOWN OF LONDONDERRY PLANNING BOARD

ON _____

BOARD MEMBER _____ AND

BOARD MEMBER _____

LANDSCAPE NOTES

(SEE DETAILS FOR ADDITIONAL NOTES)

GENERAL

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES, REGULATIONS, LAWS, AND ORDINANCES HAVING JURISDICTION OVER THIS PROJECT SITE.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
3. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON PLANS BEFORE PRICING THE WORK. ANY DIFFERENCE IN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. LANDSCAPE QUANTITIES SHOWN ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN LANDSCAPE LEGEND.
4. THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT PRIOR TO STARTING WORK AND VERIFY THAT THE PLANS IN THE CONTRACTOR'S POSSESSION ARE THE MOST CURRENT PLANS AVAILABLE AND ARE THE APPROVED PLAN SET FOR USE IN CONSTRUCTION.
5. ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA) [FORMERLY THE AMERICAN ASSOCIATION OF NURSERYMEN] IN THE AMERICAN STANDARD FOR NURSERY STOCK (AS AMENDED) [ANSI Z60.1–1996].
6. ALL PLANTS SHALL BE FIRST CLASS AND SHALL BE REPRESENTATIVE OF THEIR NORMAL SPECIES AND/OR VARIETIES. ALL PLANTS MUST HAVE GOOD, HEALTHY, WELL-FORMED UPPER GROWTH AND A LARGE, FIBEROUS, COMPACT ROOT SYSTEM.
7. ALL PLANTS SHALL BE FREE FROM DISEASE AND INSECT PESTS AND SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS PERTAINING TO PLANT DISEASES AND INFESTATIONS.
8. ALL TREES SHALL BE BALLED AND BURLAPPED (B & B) UNLESS OTHERWISE NOTED OR APPROVED BY LANDSCAPE ARCHITECT.
9. IF APPLICABLE, THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.
10. ALL INVASIVE PLANT SPECIES FROM THE "NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST", TO BE REMOVED SHALL BE DONE SO IN ACCORDANCE WITH THE "INVASIVE SPECIES ACT, HB 1258–FN."
11. LANDSCAPING SHALL NOT CONFLICT WITH SNOW STORAGE, LIGHT FIXTURES, OR SIGHT DISTANCE.

GUARANTEE

1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE WORK FOR A PERIOD OF ONE

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

HORIZONTAL SCALE 1"=40'
40 20 0 40

REV	DATE	DESCRIPTION	DR	CK
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4	10/24/2025	NHF&G APPROVAL	JD	NG
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1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

LANDSCAPE PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
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FILE	18252-02	DR		FB		C-17
		CK		CADFILE	18252-02 SITE PLAN	

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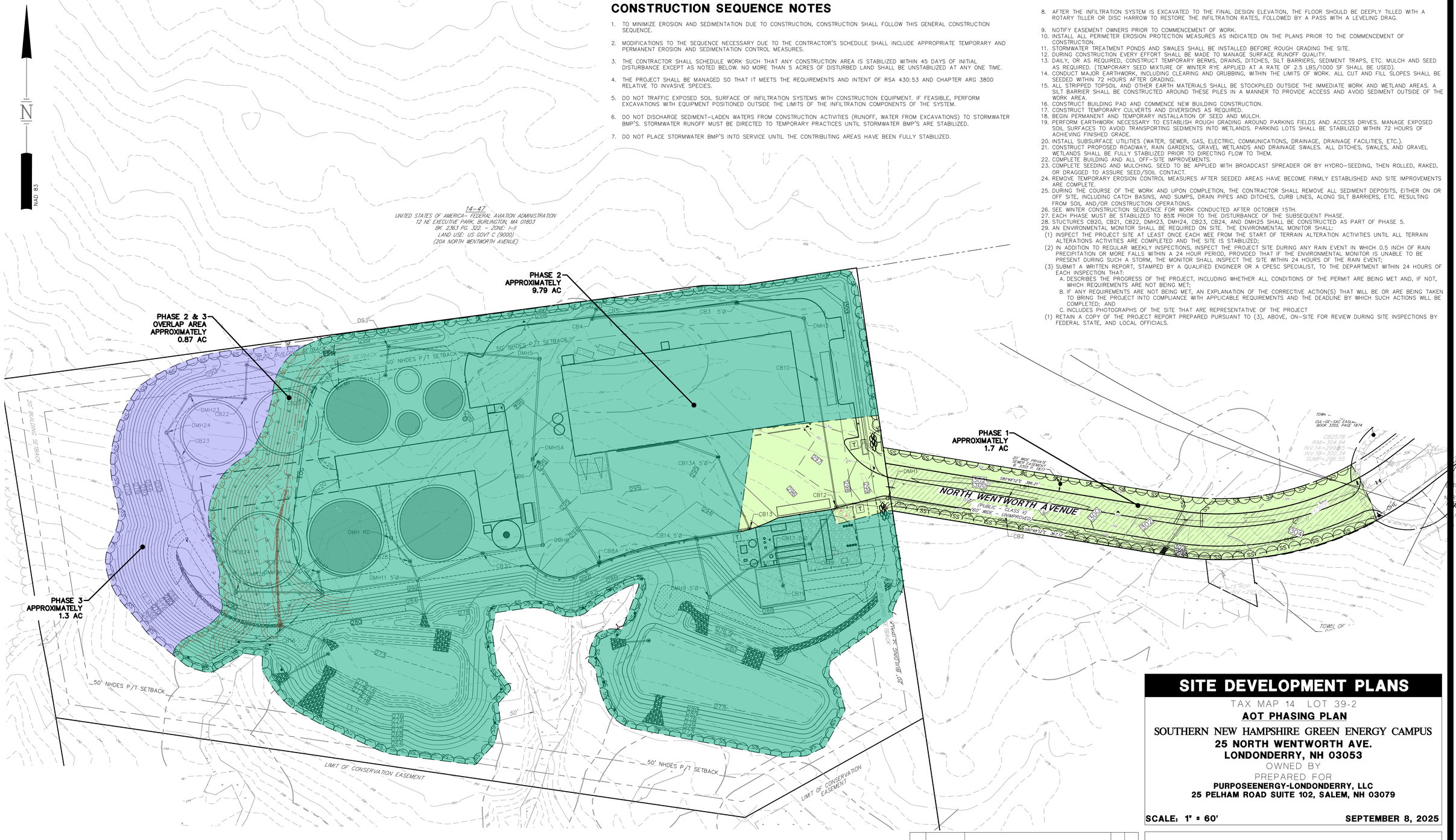
CONSTRUCTION SEQUENCE NOTES

1. TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, CONSTRUCTION SHALL FOLLOW THIS GENERAL CONSTRUCTION SEQUENCE.
2. MODIFICATIONS TO THE SEQUENCE NECESSARY DUE TO THE CONTRACTOR'S SCHEDULE SHALL INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.
3. THE CONTRACTOR SHALL SCHEDULE WORK SUCH THAT ANY CONSTRUCTION AREA IS STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE EXCEPT AS NOTED BELOW. NO MORE THAN 5 ACRES OF DISTURBED LAND SHALL BE UNSTABILIZED AT ANY ONE TIME.
4. THE PROJECT SHALL BE MANAGED SO THAT IT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER ARG 3800 RELATIVE TO INVASIVE SPECIES.
5. DO NOT TRAFFIC EXPOSED SOIL SURFACE OF INFILTRATION SYSTEMS WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
6. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO STORMWATER BMP'S. STORMWATER RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMP'S ARE STABILIZED.
7. DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
8. AFTER THE INFILTRATION SYSTEM IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE THE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
9. NOTIFY EASEMENT OWNERS PRIOR TO COMMENCEMENT OF WORK.
10. INSTALL ALL PERIMETER EROSION PROTECTION MEASURES AS INDICATED ON THE PLANS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
11. STORMWATER TREATMENT PONDS AND SWALES SHALL BE INSTALLED BEFORE ROUGH GRADING THE SITE.
12. DURING CONSTRUCTION EVERY EFFORT SHALL BE MADE TO MANAGE SURFACE RUNOFF QUALITY.
13. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT BARRIERS, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED. (TEMPORARY SEED MIXTURE OF WINTER RYE APPLIED AT A RATE OF 2.5 LBS/1000 SF SHALL BE USED).
14. CONDUCT MAJOR EARTHWORK, INCLUDING CLEARING AND GRUBBING, WITHIN THE LIMITS OF WORK. ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN 72 HOURS AFTER GRADING.
15. ALL STRIPPED TOPSOIL AND OTHER EARTH MATERIALS SHALL BE STOCKPILED OUTSIDE THE IMMEDIATE WORK AND WETLAND AREAS. A SILT BARRIER SHALL BE CONSTRUCTED AROUND THESE PILES IN A MANNER TO PROVIDE ACCESS AND AVOID SEDIMENT OUTSIDE OF THE WORK AREA.
16. CONSTRUCT BUILDING PAD AND COMMENCE NEW BUILDING CONSTRUCTION.
17. CONSTRUCT TEMPORARY CULVERTS AND DIVERSIONS AS REQUIRED.
18. BEGIN PERMANENT AND TEMPORARY INSTALLATION OF SEED AND MULCH.
19. PERFORM EARTHWORK NECESSARY TO ESTABLISH ROUGH GRADING AROUND PARKING FIELDS AND ACCESS DRIVES. MANAGE EXPOSED SOIL SURFACES TO AVOID TRANSPORTING SEDIMENTS INTO WETLANDS. PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
20. INSTALL SUBSURFACE UTILITIES (WATER, SEWER, GAS, ELECTRIC, COMMUNICATIONS, DRAINAGE, DRAINAGE FACILITIES, ETC.).
21. CONSTRUCT PROPOSED ROADWAY, RAIN GARDENS, GRAVEL WETLANDS AND DRAINAGE SWALES. ALL DITCHES, SWALES, AND GRAVEL WETLANDS SHALL BE FULLY STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
22. COMPLETE BUILDING AND ALL OFF-SITE IMPROVEMENTS.
23. COMPLETE SEEDING AND MULCHING. SEED TO BE APPLIED WITH BROADCAST SPREADER OR BY HYDRO-SEEDING, THEN ROLLED, RAKED, OR DRAGGED TO ASSURE SEED/SOIL CONTACT.
24. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDED AREAS HAVE BECOME FIRMLY ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE.
25. DURING THE COURSE OF THE WORK AND UPON COMPLETION, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT DEPOSITS, EITHER ON OR OFF SITE, INCLUDING CATCH BASINS, AND SUMPS, DRAIN PIPES AND DITCHES, CURB LINES, ALONG SILT BARRIERS, ETC. RESULTING FROM SOIL AND/OR CONSTRUCTION OPERATIONS.
26. SEE WINTER CONSTRUCTION SEQUENCE FOR WORK CONDUCTED AFTER OCTOBER 15TH.
27. EACH PHASE MUST BE STABILIZED TO 85% PRIOR TO THE DISTURBANCE OF THE SUBSEQUENT PHASE.
28. STUCTURES CB20, CB21, CB22, DMH23, DMH24, CB23, CB24, AND DMH25 SHALL BE CONSTRUCTED AS PART OF PHASE 5.
29. AN ENVIRONMENTAL MONITOR SHALL BE REQUIRED ON SITE. THE ENVIRONMENTAL MONITOR SHALL:
    (1) INSPECT THE PROJECT SITE AT LEAST ONCE EACH WEE FROM THE START OF TERRAIN ALTERATION ACTIVITIES UNTIL ALL TERRAIN ALTERATIONS ACTIVITIES ARE COMPLETED AND THE SITE IS STABILIZED;
    (2) IN ADDITION TO REGULAR WEEKLY INSPECTIONS, INSPECT THE PROJECT SITE DURING ANY RAIN EVENT IN WHICH 0.5 INCH OF RAIN PRECIPITATION OR MORE FALLS WITHIN A 24 HOUR PERIOD, PROVIDED THAT IF THE ENVIRONMENTAL MONITOR IS UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THE RAIN EVENT;
    (3) SUBMIT A WRITTEN REPORT, STAMPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, TO THE DEPARTMENT WITHIN 24 HOURS OF EACH INSPECTION THAT:
        A. DESCRIBES THE PROGRESS OF THE PROJECT, INCLUDING WHETHER ALL CONDITIONS OF THE PERMIT ARE BEING MET AND, IF NOT, WHICH REQUIREMENTS ARE NOT BEING MET;
        B. IF ANY REQUIREMENTS ARE NOT BEING MET, AN EXPLANATION OF THE CORRECTIVE ACTION(S) THAT WILL BE OR ARE BEING TAKEN TO BRING THE PROJECT INTO COMPLIANCE WITH APPLICABLE REQUIREMENTS AND THE DEADLINE BY WHICH SUCH ACTIONS WILL BE COMPLETED; AND
        C. INCLUDES PHOTOGRAPHS OF THE SITE THAT ARE REPRESENTATIVE OF THE PROJECT
    (1) RETAIN A COPY OF THE PROJECT REPORT PREPARED PURSUANT TO (3), ABOVE, ON-SITE FOR REVIEW DURING SITE INSPECTIONS BY FEDERAL STATE, AND LOCAL OFFICIALS.



SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

AOT PHASING PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.

LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC

25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 60' **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=60'
60 30 0 60

REV	DATE	DESCRIPTION	DR	CK
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4	10/24/2025	NHF&G APPROVAL	JD	NG
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FILE 18252-02 | DR | FB | CK | CADFILE 18252-02 SITE PLAN

PH-1

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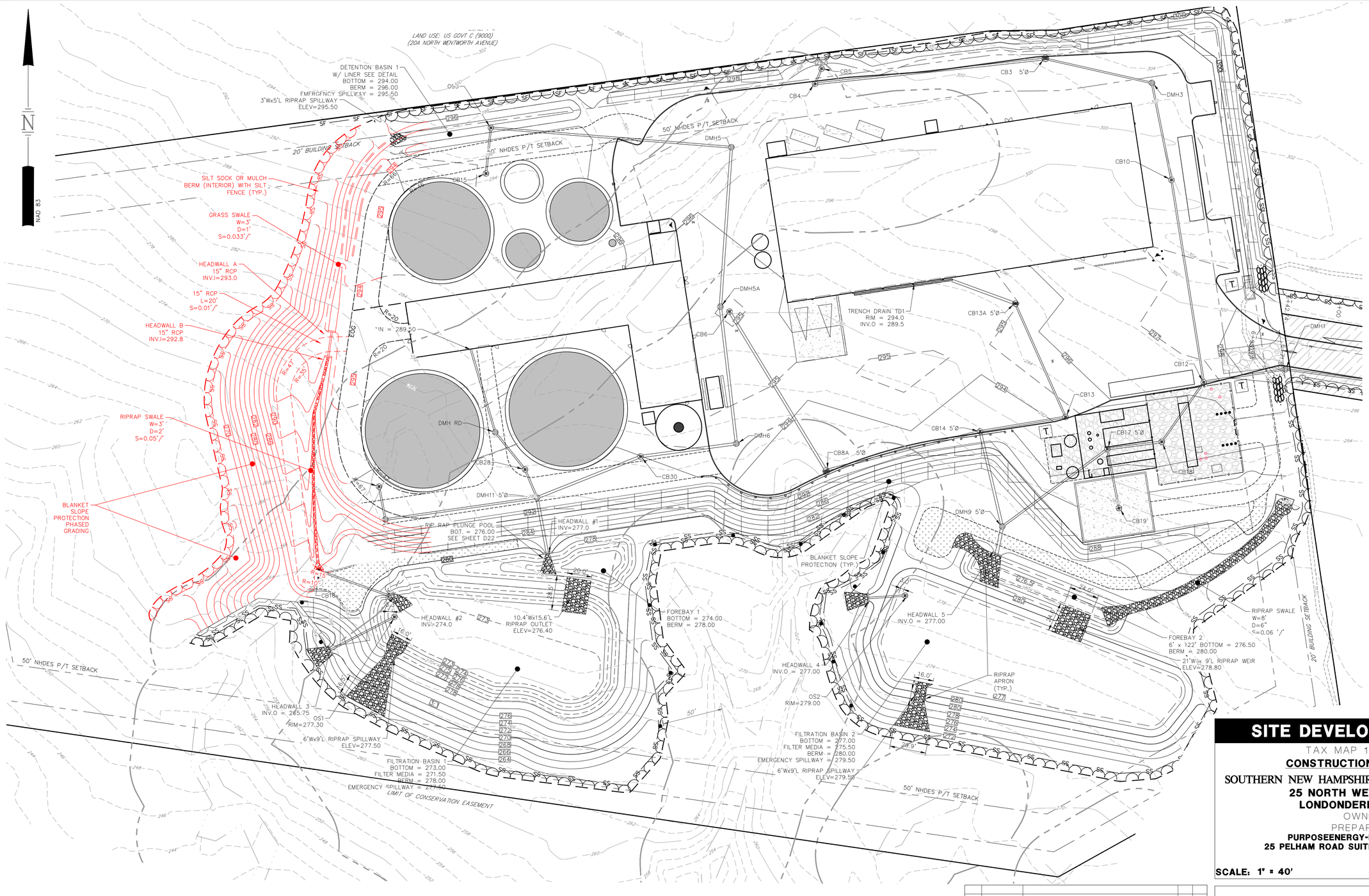

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

CONSTRUCTION PHASING PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

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25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=40'
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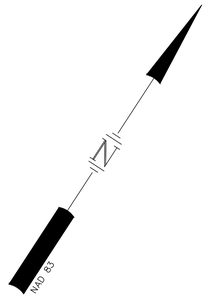
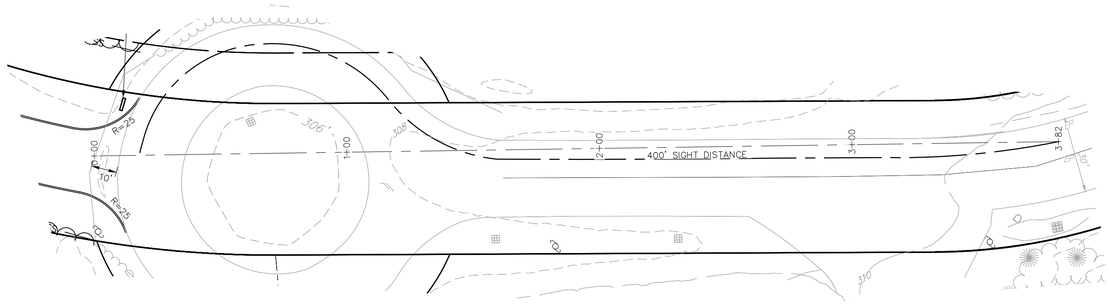
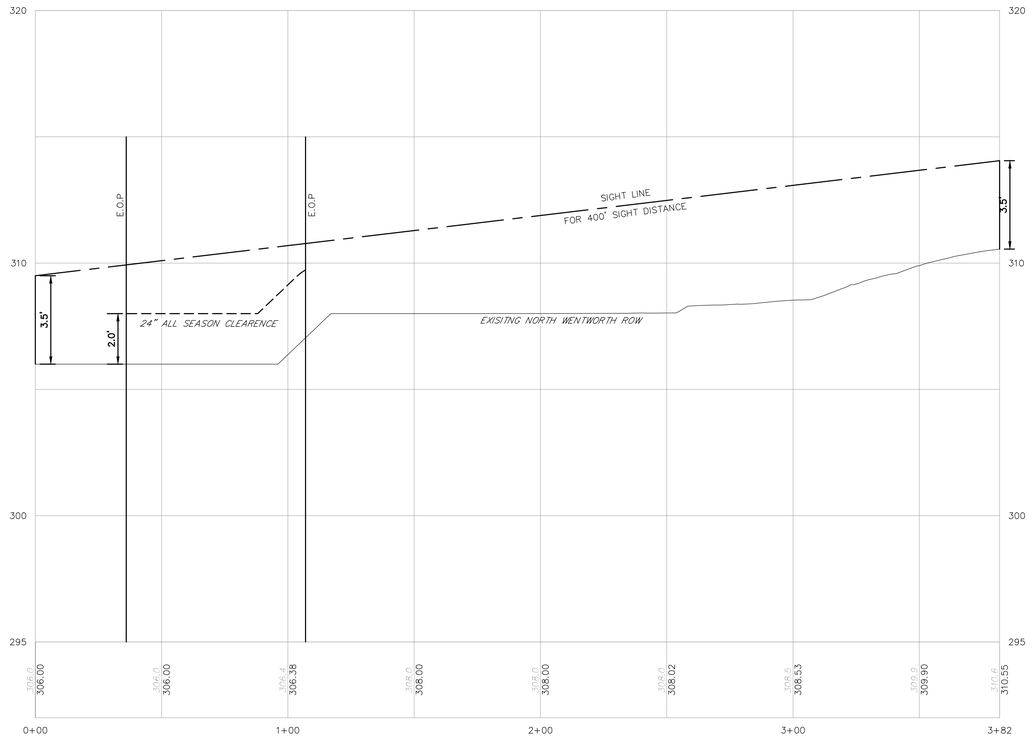
NOTES

1. POSTED SPEED LIMIT ON NORTH WENTWORTH AVE. IS 30 MPH.
2. TOWN OF LONDONDERRY SIGHT DISTANCE CALCULATIONS:

   SUBDIVISION REGULATIONS SECTION 3.09.F.2 & EHXIBIT D3
   MINIMUM ALL SEASON SIGHT DISTANCE = 365–FEET (NON–RESIDNETIAL) WHICH IS EXCEEDED.







SITE DISTANCE

HORIZONTAL SCALE 1"=30'
30 15 0 30
VERTICAL SCALE 1"=3'
3 0 3

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SIGHT DISTANCE

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
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SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
12/22/25

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CONSTRUCTION GENERAL PERMIT

1. THE OWNER, IN CONJUNCTION WITH THE CONTRACTOR (OPERATORS), MUST OBTAIN A CONSTRUCTION GENERAL PERMIT (CGP) FOR LARGE CONSTRUCTION ACTIVITIES (FIVE OR MORE ACRES) OR SMALL CONSTRUCTION ACTIVITIES (GREATER THAN ONE ACRE BUT LESS THAN FIVE ACRES) FROM THE ENVIRONMENTAL PROTECTION AGENCY (EPA). AS PART OF THE CGP, A STORMWATER NOTICE OF INTENT (NOI) MUST BE SUBMITTED TO THE EPA AT LEAST 7 DAYS PRIOR TO COMMENCING CONSTRUCTION. THE NOI MUST BE SUBMITTED TO STORM WATER NOTICE OF INTENT (4203M), USEPA, 1200 PENNSYLVANIA AVE. NW, WASHINGTON, DC 20460.

2. THE CGP OUTLINES A SET OF PROVISIONS MANDATING THE OWNER AND CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER REGULATIONS, INCLUDING, BUT NOT LIMITED TO, STORM WATER POLLUTION PREVENTION PLANS (SWPPP'S), IMPLEMENTATION OF EROSION AND SEDIMENTATION CONTROLS, EQUIPMENT MAINTENANCE GUIDELINES, ETC. PLEASE CONTACT USEPA OFFICE OF WASTEWATER MANAGEMENT AT 202-564-9545 OR AT WWW.EPA.GOV/NPDES/STORMWATER FOR ADDITIONAL INFORMATION. FOR FURTHER ASSISTANCE, CONTACT ABBY SWAINE OF NEW ENGLAND'S EPA REGION 1 AT 617-918-1841.

NOTES

1. IT IS BEING PROPOSED TO CONSTRUCT AN ORGANIC WASTE PROCESSING FACILITY INCLUDING ACCESS, GRADING, STORMWATER MANAGEMENT SYSTEMS, UTILITIES, AND LANDSCAPING.

TOTAL SITE AREA: 15.3 AC (SITE PARCEL)
TOTAL PROPOSED AREA OF DISTURBANCE: 13.0 AC

SOILS SHOWN WERE PREPARED IN ACCORDANCE WITH THE SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEWHAMPSHIRE AND VERMONT, VERSION 7.0, HULY 2021.
26 – WINDSOR
313 – DEERFIELD
546/P – WALPOLE

2. STORM WATER DRAINAGE SYSTEM IS SHOWN ON THE PLAN. SEE GRADING & DRAINAGE PLAN AND INVERT TABLES FOR RIM, INVERT, PIPE LENGTH, AND SLOPE INFORMATION.
POST-CONSTRUCTION RUNOFF COEFFICIENT: C=0.37
IMPERVIOUS SURFACE AREA: 5.9± AC
*IMPERVIOUS AREA AND POST-DEVELOPMENT RUNOFF COEFFICIENT DO NOT INCLUDE OFFSITE RUN-ON AREAS

3. STABILIZATION PRACTICES FOR EROSION AND SEDIMENTATION CONTROLS:

TEMPORARY STABILIZATION – TOPSOIL STOCKPILES AND DISTURBED AREAS OF THE CONSTRUCTION SITE THAT WILL NOT BE REDISTURBED FOR 14 DAYS OR MORE MUST BE STABILIZED BY THE 14TH DAY AFTER THE LAST DISTURBANCE. THE TEMPORARY SEED SHALL BE ANNUAL RYE APPLIED AT THE RATE OF 1.1 LBS PER 1,000 SF. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY. AREAS OF THE SITE THAT WILL BE PAVED WILL BE TEMPORARILY STABILIZED BY APPLYING GEOTEXTILES AND A STONE SUB-BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED. CALCIUM CHLORIDE SHALL BE USED FOR DUST CONTROL IF NEEDED.

PERMANENT STABILIZATION – DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 3 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. THE PERMANENT SEED MIX SHALL BE AS SPECIFIED BY THE LANDSCAPE PLAN NOTES OR MAY OTHERWISE CONSIST OF 0.45 LBS/1,000 SF TALL FESCUE, 0.20 LBS/1,000 SF CREEPING RED FESCUE, AND 0.20 LBS/1,000 SF BIRDSFOOT TREFOIL. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE IF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY.

4. STRUCTURAL PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

SILT SOCK – WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE DISTURBED AREAS AND WILL DELINEATE THE LIMITS OF WORK FOR THE PROPOSED CONSTRUCTION. THE SILT SOCK WILL BE INSTALLED BY OTHERS. POSTS SHALL BE USED WITH AT LEAST 6" OF THE POST BURIED BELOW THE GROUND SURFACE TO PREVENT THE SILT SOCK FROM FORMING GAPS NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE SILT SOCK WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

SILT FENCE – WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE DISTURBED AREAS AND WILL DELINEATE THE LIMITS OF WORK FOR THE PROPOSED CONSTRUCTION. THE SILT FENCE WILL BE INSTALLED BY STRETCHING REINFORCED FILTER FABRIC BETWEEN POSTS WITH AT LEAST 8" OF THE FABRIC BURIED BELOW THE GROUND SURFACE TO PREVENT GAPS FROM FORMING NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE FILTER FABRIC WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

STABILIZED CONSTRUCTION ENTRANCE – WILL BE INSTALLED IN ACCORDANCE WITH THE DETAIL AT THE ENTRANCE TO THE CONSTRUCTION SITE TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS OFF THE SITE. THE STABILIZED ENTRANCE WILL BE 20'-WIDE AND FLARE AT THE ENTRANCE TO THE PAVED ROAD AND HAVE A DEPTH OF 12" OF STONE. THE STABILIZED ENTRANCE SHALL BE MAINTAINED UNTIL THE REMAINDER OF THE CONSTRUCTION SITE HAS BEEN FULLY STABILIZED. THE PAVED STREET ADJACENT TO THE SITE SHALL BE SWEPT ON A WEEKLY BASIS TO REMOVE EXCESS MUD AND DIRT FROM BEING TRACKED FROM THE SITE. TRUCKS HAULING MATERIAL TO AND/OR FROM THE SITE SHALL BE COVERED WITH A TARPAULIN.

CATCH BASINS – WILL BE CLEANED ON AN ANNUAL BASIS TO REMOVE ALL SEDIMENTS FROM THE CATCH BASIN SUMPS.

CATCH BASIN PROTECTION – WILL BE INSTALLED AT ALL CATCH BASINS WITHIN THE CONSTRUCTION AREA. FILTER FABRIC WILL BE INSTALLED AROUND THE GRATES OF CATCH BASINS THAT ARE LOCATED IN THE TRAVEL WAY AND STONE/FILTER FABRIC PROTECTION WILL BE INSTALLED AT THE CATCH BASINS FOUND WITHIN THE PARKING AREA AND GRASS.

BLANKET SLOPE PROTECTION – SHALL BE INSTALLED ON ALL 2:1 SLOPES OR STEEPER ON SITE. ANCHOR THE TOP OF THE BLANKET BY ANCHORING THE BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING. ROLL THE BLANKET IN THE DIRECTION OF STORM WATER FLOW. WHERE 2 OR MORE STRIPS OF BLANKET ARE REQUIRED, A MINIMUM OF 4" OF OVERLAP SHALL BE PROVIDED.

STONE CHECK DAMS – WILL BE INSTALLED IN EXISTING AND PROPOSED GRASS SWALES TO REDUCE THE VELOCITY OF CONCENTRATED STORM WATER FLOWS AND PREVENT EROSION OF THE SWALE.

5. STORM WATER MANAGEMENT

STORM WATER DRAINAGE FOR DEVELOPED AREAS WILL BE COLLECTED BY A PIPE AND CATCH BASIN CLOSED DRAINAGE SYSTEM. APPROXIMATELY 3.6 ACRES OF THE 15.3 ACRE SITE WILL REMAIN UNTOUCHED AND IN ITS NATURAL STATE. WHEN CONSTRUCTION IS COMPLETE THE FACILITY AND PARKING AREA WILL BE ROUTED TO TWO (2) SURFACE STORMWATER TREATMENT FILTER BASINS.

6. ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURE DUMPSTERS OR APPROVED ENCLOSURE AND REMOVED FROM THE SITE ON A WEEKLY BASIS. NO CONSTRUCTION WASTE SHALL BE BURIED ON SITE. PORTABLE TOILET SANITARY WASTE FACILITIES WILL BE PROVIDED DURING CONSTRUCTION AND MAINTAINED/DISPOSED OF ON A REGULAR BASIS IN ACCORDANCE WITH TOWN AND STATE REGULATIONS.

7. A LIST OF CONSTRUCTION ITEMS AND OTHER PRODUCTS USED ON THIS PROJECT SHALL BE KEPT ON RECORD WITH THIS PLAN ONSITE. ALL CHEMICALS, PETROLEUM PRODUCTS AND OTHER MATERIALS USED DURING CONSTRUCTION SHALL BE STORED IN A SECURE AREA, AND PRECAUTIONS USED TO PREVENT POTENTIAL SOURCES OF CONTAMINATION OR POLLUTION. ANY SPILL OF THESE TYPES OF SUBSTANCES SHALL BE CLEANED UP AND DISPOSED OF IN A LEGAL MANNER AS SPECIFIED BY STATE REGULATIONS AND THE MANUFACTURER. ANY SPILL IN AMOUNTS EQUAL TO OR EXCEEDING REPORTABLE QUANTITY AS DEFINED BY THE EPA SHALL TAKE THE FOLLOWING STEPS:
- NOTIFY THE NATIONAL RESPONSE CENTER IMMEDIATELY AT (888) 424-8802; IN WASHINGTON, D.C., CALL (202) 426-2675.
- WITHIN 14 DAYS, SUBMIT A WRITTEN DESCRIPTION OF THE RELEASE TO THE EPA REGIONAL OFFICE PROVIDING THE DATE AND CIRCUMSTANCES OF THE RELEASE AND THE STEPS TO BE TAKEN TO PREVENT ANOTHER RELEASE.
- MODIFY THE POLLUTION PREVENTION PLAN TO INCLUDE THE INFORMATION LISTED ABOVE.

GOOD HOUSEKEEPING:
THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT.
- AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB;
- ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE;
- PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL;
- SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER;
- WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER;
- MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED;
- TRASH DUMPSTERS SHALL BE GASKETED OR HAVE A SECURE WATERTIGHT LID AND BE PLACED AWAY FROM STORMWATER CONVEYANCES AND DRAINS;
- THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

HAZARDOUS PRODUCTS:
THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
- PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE;
- ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION;
- IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

PRODUCT SPECIFIC PRACTICES:
THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:
PETROLEUM PRODUCTS:
ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS:
FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

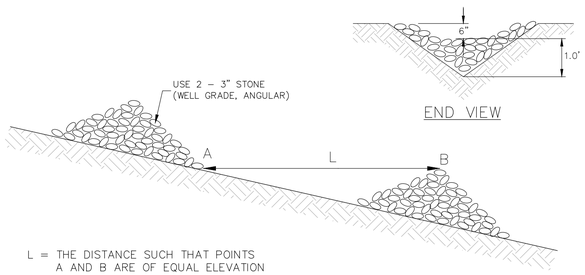
PAINTS:
ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS:
EXCESS CONCRETE SHALL BE USED IN AREAS DESIGNATED BY THE SITE CONTRACTOR. WASH WATER SHALL BE DISPOSED OF USING BEST MANAGEMENT PRACTICES. BUILDING CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL DRUM WASH WATER ASSOCIATED WITH CONCRETE FOR THE BUILDING PAD. SITE CONTRACTOR TO COORDINATE AND PROVIDE BUILDING CONTRACTOR WITH AN AREA FOR DRUM WASH WATER.

SPILL CONTROL PRACTICES:
IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
- MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
- MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
- ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
- THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF SIZE.
- THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
- THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THEY WILL DESIGNATE AT LEAST THREE OTHER SITE PERSONNEL WHO WILL EACH RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.

11. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN RECORDS OF CONSTRUCTION ACTIVITIES, INCLUDING DATES OF MAJOR GRADING ACTIVITIES, DATES WHEN CONSTRUCTION ACTIVITIES HAVE TEMPORARILY CEASED ON A PORTION OF THE SITE, DATES WHEN WORK IS COMPLETED ON A PORTION OF THE SITE, AND DATES WHEN STABILIZATION MEASURES ARE INITIATED ONSITE.

12. THE CONTRACTOR SHALL PERFORM INSPECTIONS OR HAVE A CONSULTING ENGINEER PERFORM INSPECTIONS EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS AFTER A STORM OF 0.5" OR GREATER. INSPECTIONS REPORTS ARE TO BE KEPT ON FILE AT THE SITE WITH THIS PLAN. MAINTENANCE OR MODIFICATION SHALL BE IMPLEMENTED AND ADDED TO THE PLAN AS RECOMMENDED BY THE QUALIFIED INSPECTOR.



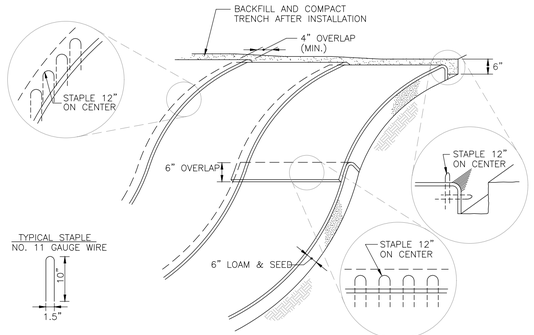
END VIEW

L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

CHECK DAM

STONE CHECK DAM

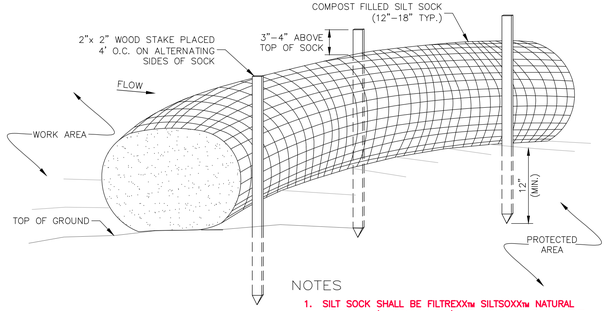
IN SWALE NOT TO SCALE



1. BLANKET SLOPE PROTECTION SHALL MEET REQUIREMENTS OF ENV-WQ 1506.15 MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS.
2. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING.
3. ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
4. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SWALE, PLACE BLANKET END OVER END WITH 6 INCH (MIN.) OVERLAP AND ANCHOR DOWN SLOPE BLANKET IN A 6 INCH DEEP TRENCH.
6. BLANKET SHALL BE NORTH AMERICAN GREEN C125BN, EAST COAST EROSION CONTROL ECC-2B, AMERICAN EXCELSIOR COMPANY CURLEX III FIBRENET, ROLANKA GEONATURAL EROSION & SEDIMENT CONTROL MATTE JUTEMAT OR BIOD-OCF 30, OR APPROVED EQUAL.
7. **BLANKET SHALL NOT CONTAIN WELDED PLASTIC, PLASTIC, MULTI-FILAMENT, OR MONO-FILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8".**

BLANKET SLOPE PROTECTION

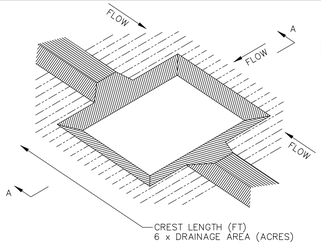
FOR EROSION CONTROL NOT TO SCALE



NOTES
1. **SILT SOCK SHALL BE FILTREXX™ SILTSOXX™ NATURAL ORIGINAL™ (BIODEGRADABLE) OR APPROVED EQUIVALENT.**
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

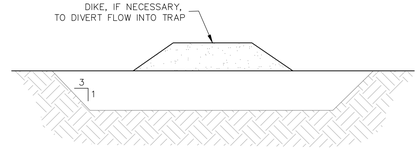
SILT SOCK

NOT TO SCALE



NOTES
1. SEDIMENT TRAP TO BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL BASINS/PONDS ARE STABILIZED. IF IT IS DETERMINED THAT CONSTRUCTION OF A SEDIMENT TRAP IS WARRANTED, CONSULT WITH ENGINEER TO DETERMINE APPROPRIATE NUMBER AND DIMENSIONS.

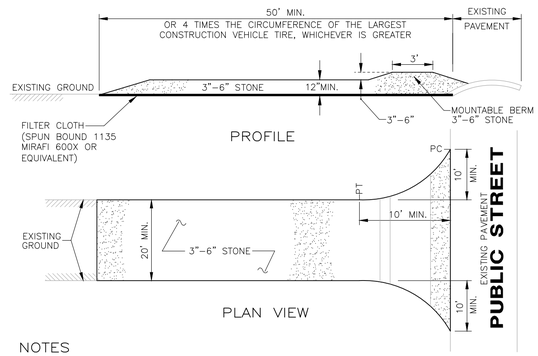
SEDIMENT TRAP – ISOMETRIC VIEW



SECTION A-A

SEDIMENT TRAP

NOT TO SCALE



PROFILE

PLAN VIEW

NOTES
1. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE SURFACE.
2. NO SURFACE WATER SHALL BE DIRECTED TOWARD CONSTRUCTION ENTRANCES.
3. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
4. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
5. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN STORM EVENT.

STABILIZED CONSTRUCTION ENTRANCE

SEE PLAN FOR PROPOSED LOCATION NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

STATE OF NEW HAMPSHIRE – NICHOLAS C. GOLON No. 14086 – LICENSED PROFESSIONAL ENGINEER – 12/22/25

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE 18252-02 | DR | | FB | – | D-01
CK | | CADFILE | 18252-02 COVER & DETAILS

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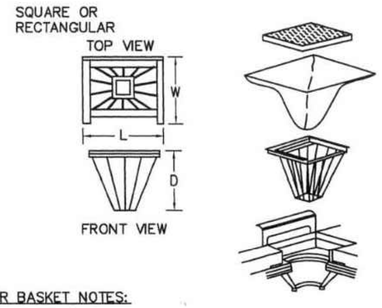
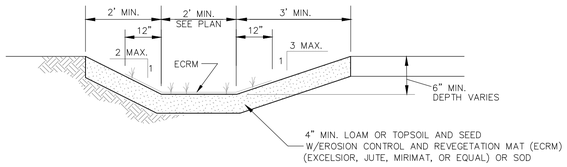


FILTER BASKET NOTES:

1. INLET BASKETS SHALL BE USED ON ALL CATCH BASINS WITHIN THE PROJECT LIMITS WITHIN PAVED AREAS. INLET FILTER BASKETS SHALL BE "SILT SACK®" OR APPROVED EQUAL.
2. FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND EXTEND AT LEAST 6 INCHES PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.
3. THE FILTER FABRIC SHALL BE A GEO-TEXTILE FABRIC: POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:
   GRAB STRENGTH: 300 lb. MINIMUM IN ANY PRINCIPAL DIRECTION (ASTM D-4632).
   MULLEN BURST STRENGTH: MINIMUM 800 psi (ASTM D-3786).
4. THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 40 U.S. STANDARD SIEVE AND MINIMUM PERMEABILITY OF 40 gpm/sq. ft.
5. THE INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM ENTERING THE DRAINAGE PIPING SYSTEM AND/OR CAUSING SURFACE FLOODING.
6. INLET BASKETS SHALL BE MAINTAINED IN PLACE UNTIL ALL PAVING IS COMPLETED AND ALL UNPAVED AREAS HAVE BEEN STABILIZED WITH VEGETATION.

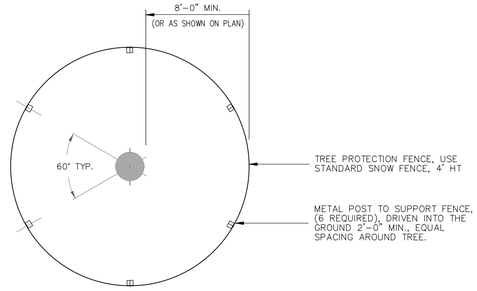
INLET FILTER BASKET

NOT TO SCALE



GRASS LINED SWALE

FOR USE WHERE VELOCITIES ARE 3 FPS OR LESS NOT TO SCALE

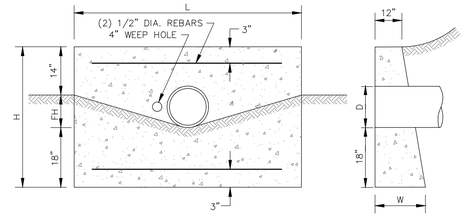


NOTES:
EXCAVATING WITHIN 10 FEET OF EXISTING TREES SHALL BE PERFORMED BY HAND DIGGING, HYDRAULIC, OR PNEUMATIC TOOLS METHODS. THE USE OF HEAVEY EQUIPMENT SHALL BE AVOIDED. NO ROOTS GREATER THAN 2 INCHES IN DIAMETER SHALL BE CUT WITHOUT APPROVAL OF AN ARBORIST. WHEN ROOTS MUST BE CUT, THEY SHALL BE CUT CLEANLY WITH A SHARP SAW TO SOUND WOOD AND FLUSH WITH THE TRENCH SITE. AVOID EXPOSING ROOTS DURING HOT, DRY WEATHER. BACKFILL TRENCHES AS SOON AS POSSIBLE WITH SOIL AND SOAK WITH WATER THE SAME DAY. IF THE TRENCH MUST BE LEFT OPEN FOR AN EXTENDED AMOUNT OF TIME, ALL ROOTS MUST BE KEPT MOIST BY WRAPPING THEM IN PEAT MOSS AND BURLAP.

TREE PROTECTION

NOT TO SCALE

NOMINAL PIPE SIZE D	LENGTH OF BARS	L	H	FH	W
12	3'-2"	3'-6"	3'-6"	0'-10"	1'-10.5"
15	4-2	4-6	3-9	1-1	1-11.25
18	5-2	5-6	4-0	1-4	2-0
24	7-2	7-6	4-6	1-10	2-1.5
30	9-2	9-6	5-0	2-4	2-3
36	11-2	11-6	5-6	2-10	2-4.5
42	13-2	13-6	6-0	3-4	2-6
48	15-2	15-6	6-6	3-10	2-7.5



CONCRETE HEADWALL

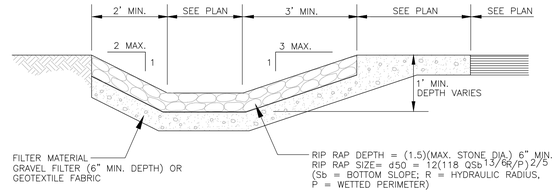
SINGLE PIPE SYSTEM NOT TO SCALE

RIP-RAP GRADATION

STONE SIZE	% FINER BY WEIGHT D 50 = 6"	D50 = 9"	D 50 = 12"	D50 = 18"	D 50 = 24"
2"	0-15%	0%	–	–	–
4"	20-35%	10-20%	0-10%	–	–
6"	35-50%	25-35%	10-25%	0-10%	–
8"	50-65%	30-50%	20-30%	10-20%	0-10%
10"	60-80%	40-60%	30-40%	15-30%	5-15%
12"	75-100%	–	–	–	–
15"	–	70-100%	45-60%	25-40%	20-30%
20"	–	–	70-100%	40-60%	30-45%
30"	–	–	–	70-100%	50-70%
40	–	–	–	–	70-100%

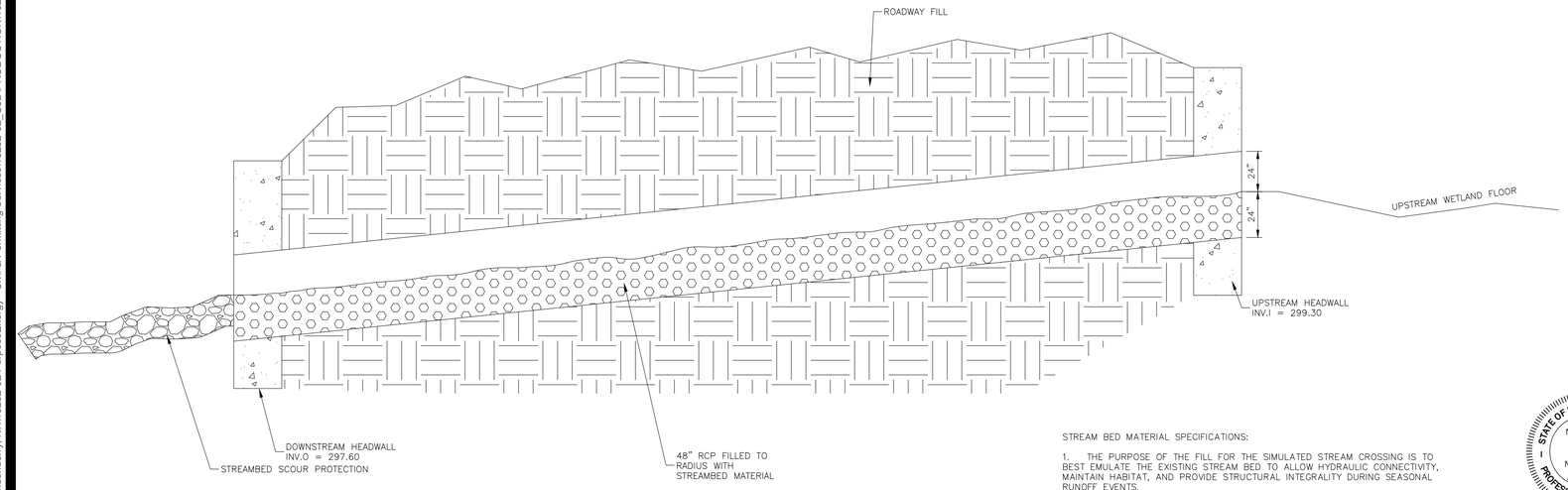
GRAVEL FILTER GRADATION

SIEVE SIZE	% PASSING BY WEIGHT
3½"	100
3"	85-100
1½"	60-90
¾"	40-70
⅜"	20-50
NO. 4	10-40
NO. 200	0-8



RIP RAP SWALE

FOR USE WHERE VELOCITIES EXCEED 3 FPS NOT TO SCALE



STREAM BED MATERIAL SPECIFICATIONS:

1. THE PURPOSE OF THE FILL FOR THE SIMULATED STREAM CROSSING IS TO BEST EMULATE THE EXISTING STREAM BED TO ALLOW HYDRAULIC CONNECTIVITY, MAINTAIN HABITAT, AND PROVIDE STRUCTURAL INTEGRALITY DURING SEASONAL RUNOFF EVENTS.
2. THE STREAMBED MATERIAL SHALL CONSIST OF WELL GRADED, ROUNDED, FLAT BOTTOM, NATURAL RIVER BED MATERIAL. NO ANGULAR ROCK TO BE USED.
3. COBBLES, STONES, AND GRAVELS:

STONE SIZE	PERCENT PASSING BY WEIGHT
8"	50%
4"	40%
2"	10%

CROSS CULVERT SECTION

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

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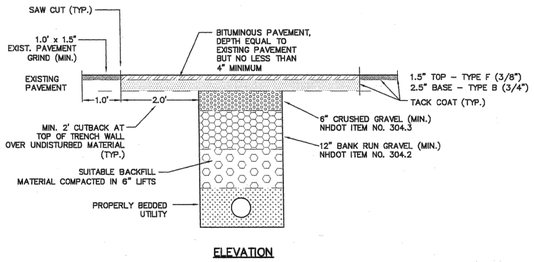
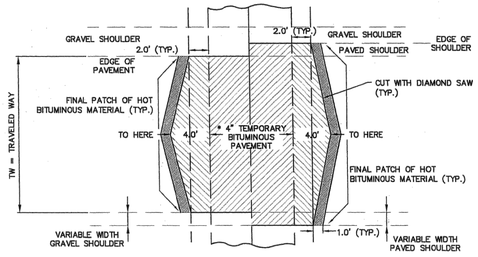


ELEVATION

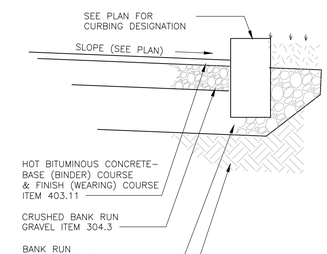


PLAN

* TO BE REMOVED FOR PERMANENT REPAIR

PAVEMENT TRENCH PATCH

FLUSH NOT TO SCALE



LAYER	STANDARD DUTY
TOP	1.5"
BINDER	2.5"
CRUSHED GRAVEL	6"
BANK RUN GRAVEL	12"

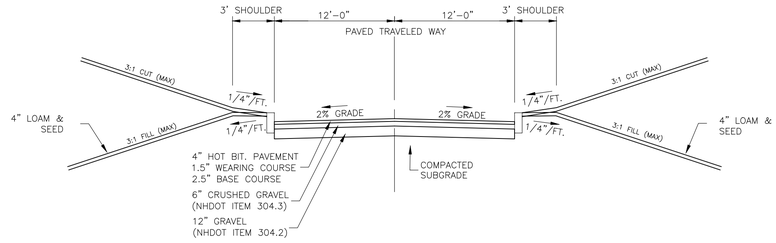
ROAD CONSTRUCTION NOTES

REMOVE ALL LOAM, CLAY, MUCK, STUMPS, AND OTHER IMPROPER PAVEMENT FOUNDATION MATERIAL WITHIN 2' OF SUBGRADE. REPLACE WITH COMPACTED GRANULAR FILL MATERIAL ACCEPTABLE TO APPROVING AGENCY. COMPACTION TO BE AT LEAST 95% OF STANDARD PROCTOR.

ALL PAVEMENT, BASE MATERIALS AND WORKMANSHIP TO BE IN COMPLIANCE WITH N.H.D.O.T. "STANDARDS FOR ROAD AND BRIDGE CONSTRUCTION" LATEST EDITION.

PAVEMENT SECTION

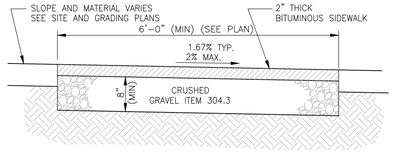
NOT TO SCALE



1. ALL ROADWAY MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE LATEST NHDOT SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. PROVIDE 4" MIN. COMPACTED LOAM AND SEED ON ALL SIDE SLOPES AND DRAINAGE SWALES UNLESS OTHERWISE NOTED.
3. ALL LEDGE SHALL BE REMOVED TO 6" BELOW SUBGRADE.
4. CURBING SHALL BE BITUMINOUS CONCRETE CURB.

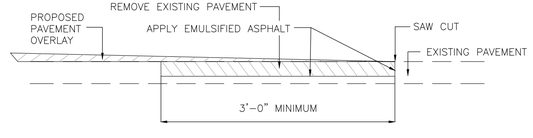
DRIVEWAY SECTION

NOT TO SCALE



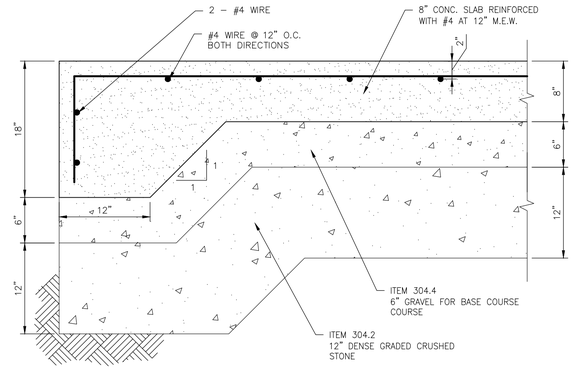
BITUMINOUS SIDEWALK

NOT TO SCALE



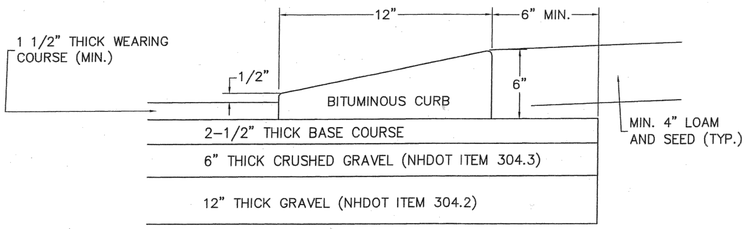
PAVEMENT SAWCUT

NOT TO SCALE



CONCRETE PAD DETAIL

NOT TO SCALE

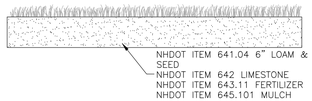


NOTES:

1. APPLY TACK COAT PRIOR TO PLACEMENT OF CURB
2. BITUMINOUS CURB MATERIAL SHALL MEET THE REQUIREMENTS OF NHDOT SECTION 609.
3. CAPE COD BERM DIMENSIONS SHALL MATCH THOSE GIVEN IN THIS DETAIL.

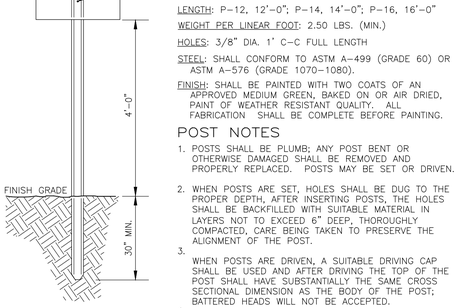
BITUMINOUS CONCRETE CURB

NOT TO SCALE



LOAM & SEED DETAIL

NOT TO SCALE



LENGTH: P-12, 12'-0"; P-14, 14'-0"; P-16, 16'-0"

WEIGHT PER LINEAR FOOT: 2.50 LBS. (MIN.)

HOLES: 3/8" DIA. 1' C-C FULL LENGTH

STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070-1080).

FINISH: SHALL BE PAINTED WITH TWO COATS OF AN APPROVED MEDIUM GREEN, BAKED ON OR AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

POST NOTES

1. POSTS SHALL BE PLUMB; ANY POST BENT OR OTHERWISE DAMAGED SHALL BE REMOVED AND PROPERLY REPLACED. POSTS MAY BE SET OR DRIVEN.
2. WHEN POSTS ARE SET, HOLES SHALL BE DUG TO THE PROPER DEPTH, AFTER INSERTING POSTS, THE HOLES SHALL BE BACKFILLED WITH SUITABLE MATERIAL IN LAYERS NOT TO EXCEED 6" DEEP, THOROUGHLY COMPACTED, CARE BEING TAKEN TO PRESERVE THE ALIGNMENT OF THE POST.
3. WHEN POSTS ARE DRIVEN, A SUITABLE DRIVING CAP SHALL BE USED AND AFTER DRIVING THE TOP OF THE POST SHALL HAVE SUBSTANTIALLY THE SAME CROSS SECTIONAL DIMENSION AS THE BODY OF THE POST; BATTERED HEADS WILL NOT BE ACCEPTED.
4. POSTS SHALL NOT BE DRIVEN WITH THE SIGN ATTACHED TO THE POST.
5. SIGNS SHALL BE ERECTED IN CONFORMANCE WITH THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
6. WHEN SIGN IS IN PLACE NO PART OF POST SHALL EXTEND ABOVE THE SIGN.
7. DIMENSIONS SHOWN ARE NOMINAL.
8. ALTERNATE SECTIONS MUST BE APPROVED PRIOR TO USE.

PROTECTED CONSERVATION AREA

DO NOT DISTURB SOILS OR VEGETATION

VIOLATORS WILL BE PROSECUTED

For Information Or To Report A Violation Call The Code Enforcement Officer At 432-1100 Ext. 125

SIGN NOTE

SIGNS SHALL BE PLACED ON TREES IN BUFFER LINE OR SHALL BE INSTALLED ON SIGN POSTS AS SHOWN. THE MAXIMUM SPACING BETWEEN SIGNS SHALL BE 50 FEET.

CONSERVATION OVERLAY DISTRICT SIGN

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

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FILE	18252-02	DR		FB	-	D-03
		CK		CADFILE	18252-02 COVER & DETAILS	

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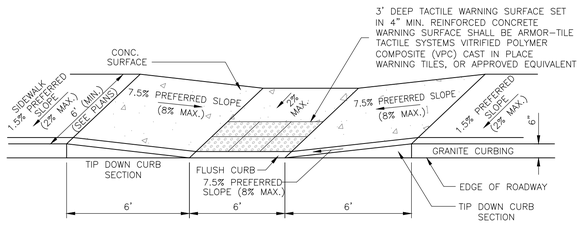
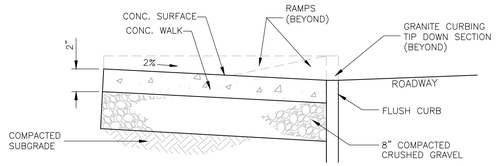
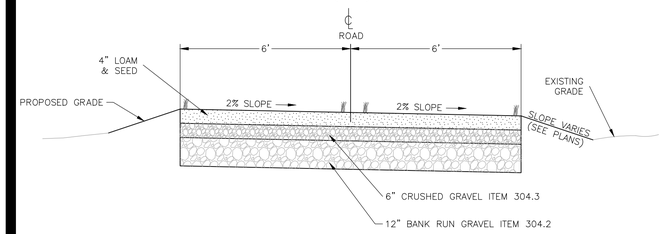




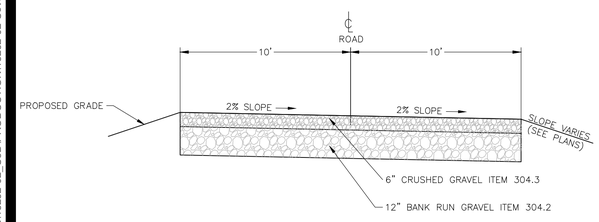
ACCESSIBLE RAMP RECESSED IN WALK

WITH DETECTABLE WARNING SURFACE (VPC) NOT TO SCALE



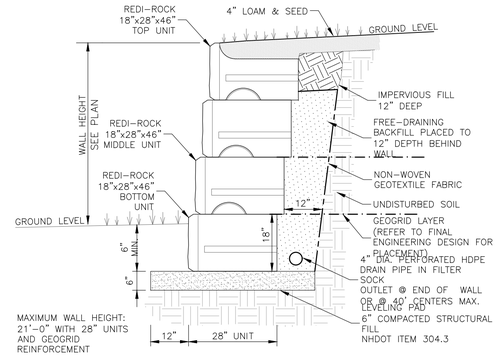
MAINTENANCE DRIVE

STORMWATER MANAGEMENT AREAS NOT TO SCALE



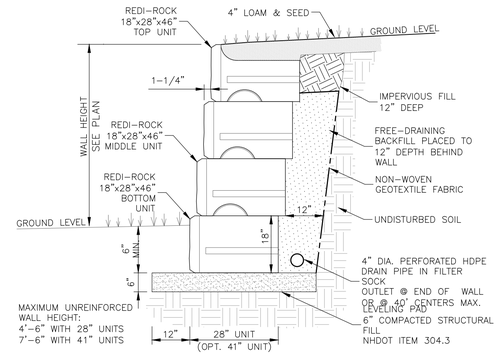
GRAVEL MAINTENANCE DRIVE

PROCESS BUILDING NOT TO SCALE



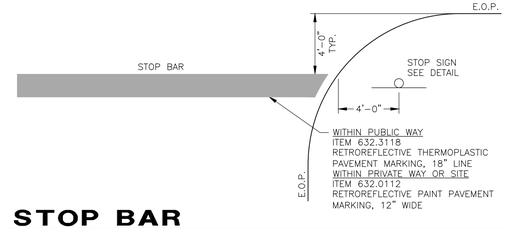
REDI-ROCK RETAINING WALL

REINFORCED WITH GEOGRID SCALE: 1/2"=1'-0"



REDI-ROCK RETAINING WALL

UNREINFORCED SCALE: 1/2"=1'-0"



STOP BAR

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 9/22/25

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FILE	18252-02	DR		FB	–	D-04
		CK		CADFILE	18252-02 COVER & DETAILS	

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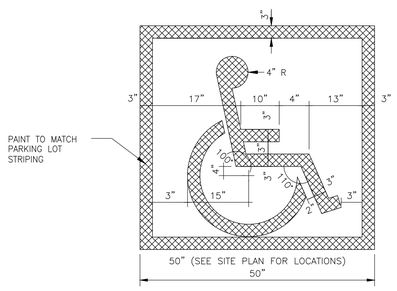
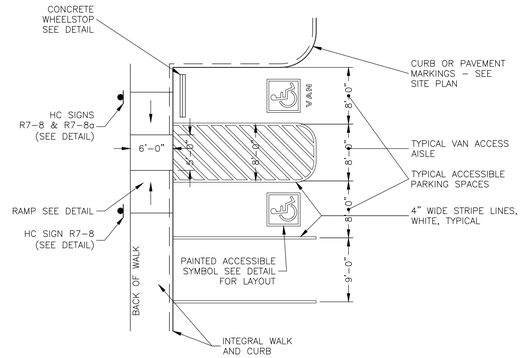


PAINTED ACCESSIBLE SYMBOL

NOT TO SCALE



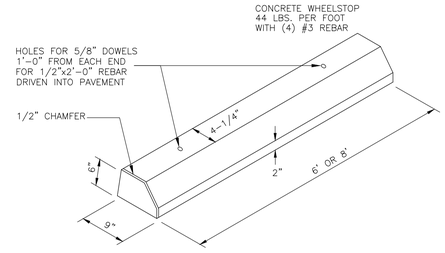
VAN ACCESSIBLE STRIPING LAYOUT

NOT TO SCALE



LADDER CROSSWALK

NOT TO SCALE

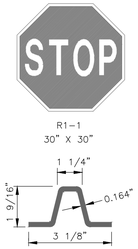


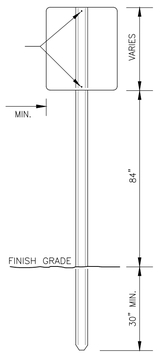
CONCRETE WHEELSTOP

NOT TO SCALE









LENGTH: P–12, 12'–0"; P–14, 14'–0"; P–16, 16'–0".

WEIGHT PER LINEAR FOOT: 2.50 LBS. (MIN.)

HOLES: 3/8" DIA. 1' C–C FULL LENGTH

STEEL: SHALL CONFORM TO ASTM A–499 (GRADE 60) OR ASTM A–576 (GRADE 1070–1080).

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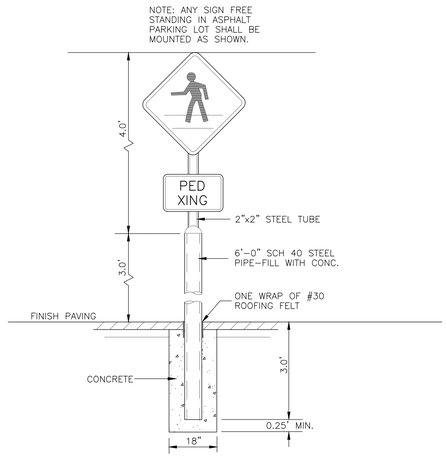
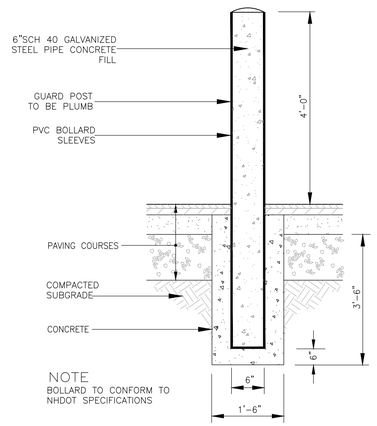
SIGN POST IN GRADE

NOT TO SCALE



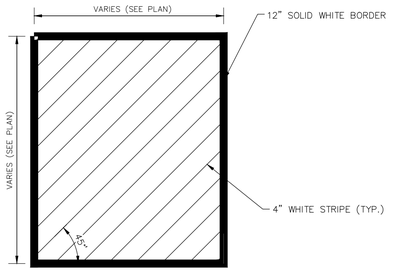
SIGN POLE IN PAVEMENT

NOT TO SCALE



GUARD POST (BOLLARD)

NOT TO SCALE



LOADING ZONE PAINT

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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PRT	18252-02	DR		FB	–	D–05
		CK		CADFILE	18252-02 COVER & DETAILS	

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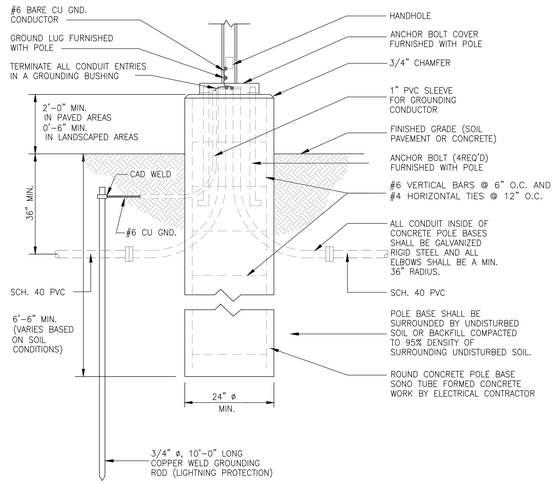
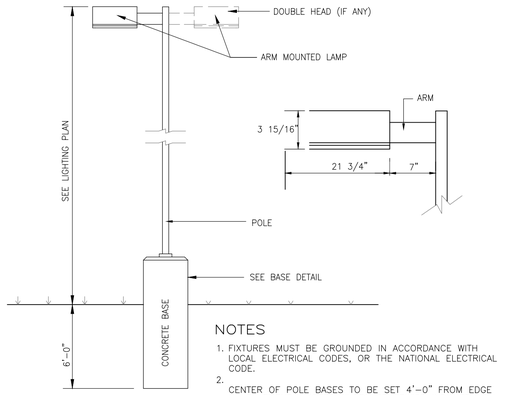


LIGHT POLE BASE

NOT TO SCALE



LIGHT POLE

NOTES

1. FIXTURES MUST BE GROUNDED IN ACCORDANCE WITH LOCAL ELECTRICAL CODES, OR THE NATIONAL ELECTRICAL CODE.
2. CENTER OF POLE BASES TO BE SET 4'-0" FROM EDGE OF PAVEMENT, EXCEPT WHERE OTHERWISE INDICATED ON
3. DRAWING.
   LIGHTING SHOWN HERE IS AREA LIGHTING, SUPPLEMENTAL BUILDING-MOUNTED FIXTURES AT DOORWAYS, ETC. MAY
4. BE REQUIRED.
   SEE LIGHTING PLAN FOR FIXTURE SCHEDULE.

NOT TO SCALE

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18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-06

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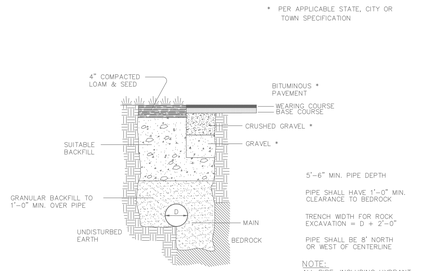


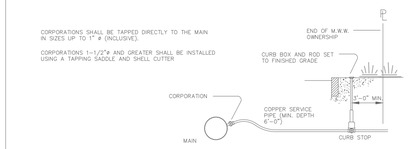
TYPICAL TRENCH DETAIL

NOT TO SCALE

6-22-95

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD1A
	STANDARD DETAIL	

95SD1



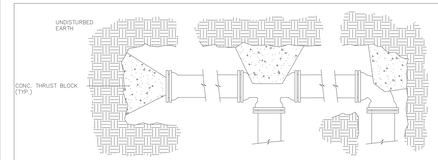
TYPICAL SERVICE CONNECTION

NOT TO SCALE

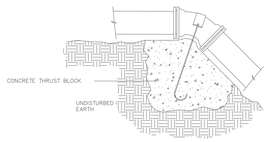
6-22-95

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD2
	STANDARD DETAIL	

95SD2



PLAN – HORIZONTAL BENDS, TEES AND PLUGS



ELEVATION – VERTICAL BENDS

THRUST BLOCK DIMENSIONS TO BE DETERMINED IN FIELD BY ENGINEER BASED ON PIPE SIZE, WATER PRESSURE AND SOIL TYPE.

STONE BACKING MAY BE SUBSTITUTED FOR CONCRETE THRUST BLOCKS PROVIDED THE STONE(S) ARE OF EQUAL SIZE AND BEAR ON UNDISTURBED EARTH.

USE OF JOINT RESTRAINT SYSTEMS SHALL NOT ELIMINATE THRUST BLOCK REQUIREMENTS (WHERE POSSIBLE).

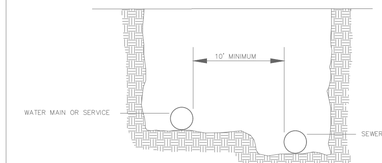
TYPICAL THRUST BLOCKS

NOT TO SCALE

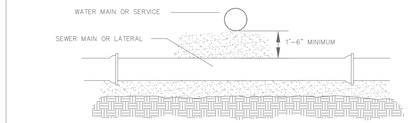
6-22-95

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD4
	STANDARD DETAIL	

95SD4



PARALLEL INSTALLATION



MAIN CROSSINGS

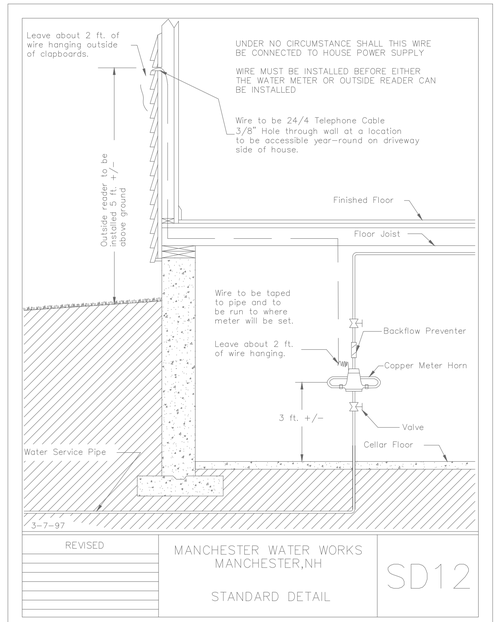
WATER MAIN/SEWER MAIN SEPARATION

NOT TO SCALE

6-22-95

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD6
	STANDARD DETAIL	

95SD6



3-7-97

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD12
	STANDARD DETAIL	

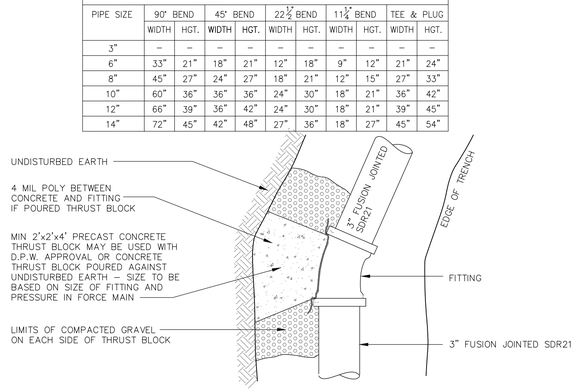


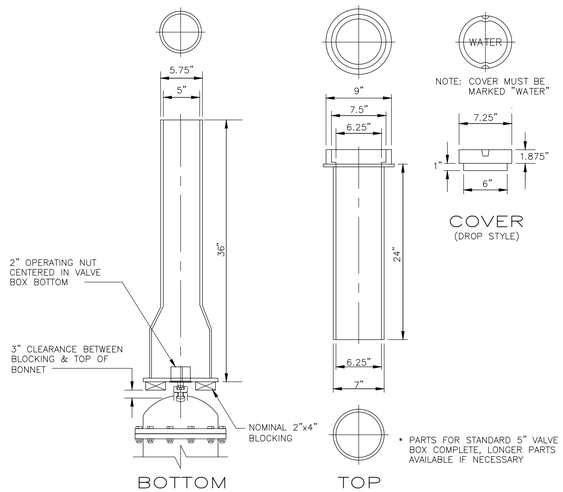
TABLE OF DIMENSIONS										
PIPE SIZE	90° BEND		45° BEND		22½° BEND		11¼° BEND		TEE & PLUG	
	WIDTH	HGT.	WIDTH	HGT.	WIDTH	HGT.	WIDTH	HGT.	WIDTH	HGT.
3"	–	–	–	–	–	–	–	–	–	–
6"	33"	21"	18"	21"	12"	18"	9"	12"	21"	24"
8"	45"	27"	24"	27"	18"	21"	12"	15"	27"	33"
10"	60"	36"	36"	36"	24"	30"	18"	21"	36"	42"
12"	66"	39"	36"	42"	24"	30"	18"	21"	39"	45"
14"	72"	45"	42"	48"	27"	36"	18"	27"	45"	54"

NOTE

1. ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO D.P.W. TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 6' FROM TOP OF PIPE TO FINISH GRADE, UNLESS NOTED OTHERWISE. REFER TO SEWER EXTENSION PROFILE.

THRUST BLOCKING BEHIND FITTINGS INSTALLATION

NOT TO SCALE



VALVE BOX

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE – NICHOLAS C. GOLON No. 14086 – LICENSED PROFESSIONAL ENGINEER – 9/30/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	18252-02	DR		FB	–	D-07
		CK		CADFILE	18252-02 COVER & DETAILS	

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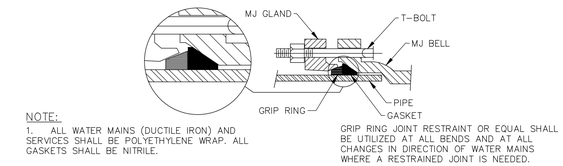


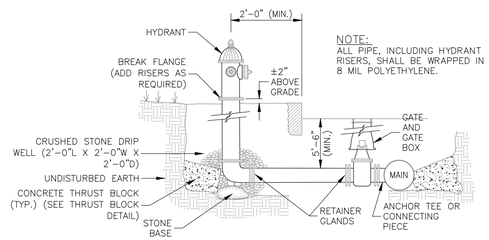
NOTE:

1. ALL WATER MAINS (DUCTILE IRON) AND SERVICES SHALL BE POLYETHYLENE WRAP. ALL GASKETS SHALL BE NITRILE.

GRIP RING JOINT RESTRAINT OR EQUAL SHALL BE UTILIZED AT ALL BENDS AND AT ALL CHANGES IN DIRECTION OF WATER MAINS WHERE A RESTRAINED JOINT IS NEEDED.

GRIP RING JOINT RESTRAINT

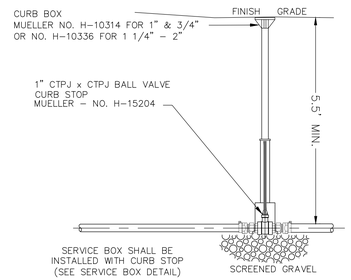
NOT TO SCALE



NOTE:
ALL PIPE, INCLUDING HYDRANT RISERS, SHALL BE WRAPPED IN 8 MIL POLYETHYLENE.

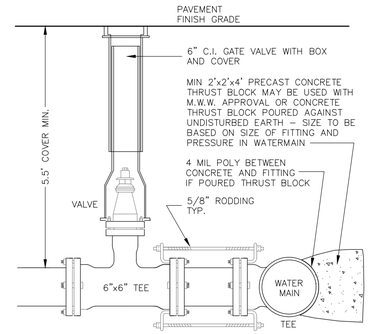
TYPICAL HYDRANT INSTALLATION

MANCHESTER WATER WORKS NOT TO SCALE



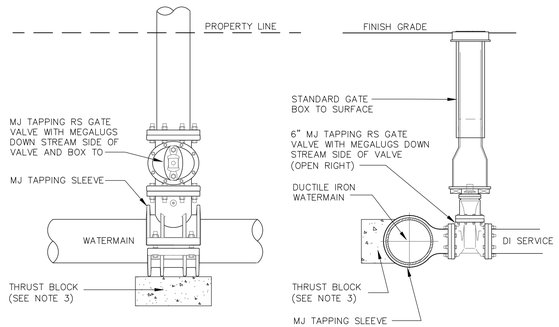
CURB STOP

NOT TO SCALE



BURIED GATE VALVE

NOT TO SCALE



NOTE

1. ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO M.W.W. TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTHS OF 5'-6" FROM TOP OF PIPE TO FINISH GRADE.
3. MIN 2'x2'x4' PRECAST CONCRETE THRUST BLOCK MAY BE USED WITH M.W.W. APPROVAL OR CONCRETE THRUST BLOCK POURED AGAINST UNDISTURBED EARTH - SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATERMAIN.

WET TAP TEE INSTALLATION

NOT TO SCALE

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON No. 14086
LICENSED PROFESSIONAL ENGINEER
12/30/25

REV	DATE	DESCRIPTION	DR	CK
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2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
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LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
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SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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Landscape Architects
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FILE	18252-02	DR		FB	-	D-08
		CK		CADFILE	18252-02 COVER & DETAILS	

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SEWER SERVICE NOTES

1) MINIMUM SIZE PIPE FOR SEWER SERVICE SHALL BE FOUR INCHES.

2) PIPE AND JOINT MATERIALS:
   A. PLASTIC SEWER PIPE
      1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 TO T-3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
D2680	*ABS (COMPOSITES WALL)	8" THROUGH 15"

*PVC: POLY VINYL CHLORIDE
*ABS: ACRYLONITRILE-BUTADIENE-STYRENE

      2. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.

      ABS TRUSS PIPE AND FITTINGS SHALL CONFORM TO ASTM D-2680, POLYMER COMPOUNDING SHALL BE TO ASTM D-1788 (CLASS 322).

      JOINTS FOR ABS TRUSS PIPE SHALL BE CHEMICAL WELDED COUPLINGS TYPE SC IN ACCORDANCE WITH ASTM D-2680, FORMING A CHEMICAL WELDED JOINT.

   B. DUCTILE-IRON PIPE, FITTINGS AND JOINTS.

      1. DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
         A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.
         A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.
      2. JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:
         A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS

3) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

4) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER-TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATIOI WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5) TEES AND WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURERS' INSTRUCTIONS USING A BOLTED, CLAMPED OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 15" DIAMETER.

6) SEWER SERVICE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 6 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.

   THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN 1/4" INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

7) TESTING: THE COMPLETED SEWER SERVICE SHALL BE SUBJECTED TO A THIRD PARTY LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS: (PRIOR TO BACKFILLING)

   A. ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.

      LOW PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:

         ASTM F1417-92(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR".

         UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW PRESSURE AIR TESTING OF INSTALLED SEWER PIPE".

   LEAKAGE OBSERVED IN ANY ONE OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER TIGHTNESS.

8) ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.

9) WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE.

10) BEDDING: CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67.

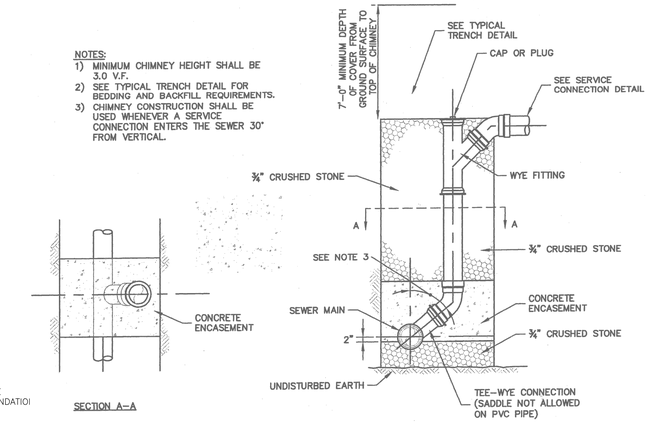
100% PASSING	1 INCH SCREEN
90%-100% PASSING	3/4 INCH SCREEN
20%-55% PASSING	3/8 INCH SCREEN
0%-10% PASSING	#4 SIEVE
0%-5% PASSING	#8 SIEVE

   WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, CRUSHED STONE 1/2 INCH TO 1 1/ INCH SHALL BE USED.

11) LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.

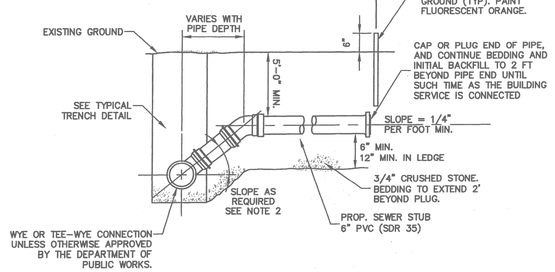
12) CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE SEWER CONNECTION. CHIMNEY INSTALLATION AS RECOMMENDED BY THE PIPE MANUFACTURER MAY BE USED IF APPROVED BY THE ENGINEER.

SEWER SERVICE DETAILS



CHIMNEY (SEE NOTE 12)

NOT TO SCALE



NOTES:
1. ALL SERVICE CONNECTIONS TO BE 6" MINIMUM UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. USE CHIMNEY DETAIL WHERE SERVICE CONNECTION ENTERS SEWER AT GREATER THAN 60° TO THE HORIZONTAL.

SEWER SERVICE

NOT TO SCALE

GRAVITY SEWER NOTES

1. MINIMUM SIZE PIPE FOR GRAVITY SEWER SHALL BE 8-INCHES.
2. PIPE AND JOINT MATERIALS FOR PLASTIC SEWER PIPE SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034-04a	* PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679-03	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F794-03	PVC (RIBBED WALL)	8" THROUGH 36"
F1760-01(2005)e1	PVC, RECYCLED	ALL DIAMETERS

*PVC: POLY VINYL CHLORIDE

3. PLASTIC SEWER PIPE SHALL HAVE A PIPE STIFFNESS RATING OF AT LEAST 46 POUNDS PER SQUARE INCH AT 5 PERCENT PIPE DIAMETER DEFLECTION, AS MEASURED IN ACCORDANCE WITH ASTM D2412-02 DURING MANUFACTURE.
4. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212-96(a)(2003)e1 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.
5. DUCTILE-IRON PIPE, FITTINGS AND JOINTS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION (AWWA).

   AWWA C150/A21.50 FOR THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A536 FOR DUCTILE IRON CASTINGS.

   AWWA C151/A21.51 FOR DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL- OR SAND-LINED MOLDS FOR WATER, WASTEWATER, AND RECLAIMED WATER SYSTEMS.

   JOINTS SHALL BE OF THE MECHANICAL TYPE, PUSH-ON TYPE, OR BALL- AND SOCKET TYPE AS APPROPRIATE FOR THE SPECIFIC APPLICATION. JOINTS AND GASKETS SHALL CONFORM TO AWWA C151/A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS.
6. CONCRETE PIPE SHALL CONFORM TO AWWA C302-04.
7. PRESTRESSED CONCRETE CYLINDER PIPE AND FITTINGS SHALL CONFORM TO AWWA C301-99.
8. JOINTS SEALS FOR CONCRETE CYLINDER PIPE SHALL BE OIL RESISTANT ELASTOMERIC MATERIAL CONFORMING TO ASWWA C301-99 SPECIFICATIONS.
9. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
10. GRAVITY SEWER PIPE TESTING SHALL BE AS FOLLOWS:

    ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.

    LOW PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:

       ASTM F1417-92(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR".

       UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW PRESSURE AIR TESTING OF INSTALLED SEWER PIPE".
11. ALL NEW GRAVITY SEWERS SHALL BE CLEANED AND VISUALLY INSPECTED AND SHALL BE TRUE TO LINE AND GRADE FOLLOWING INSTALLATION AND PRIOR TO USE.
12. ALL PLASTIC SEWER PIPE SHALL BE DEFLECTION TESTED NOT LESS THAN 30 DAYS FOLLOWING INSTALLATION.
13. THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5 PERCENT OF THE AVERAGE INSIDE DIAMETER.
14. TRENCH CONSTRUCTION SHALL CONFORM TO THE FOLLOWING:

    SEWERS SHALL BE BURIED TO A MINIMUM DEPTH OF 6' BELOW GRADE IN ALL ROADWAY LOCATIONS AND TO A MINIMUM DEPTH OF 4 FEET BELOW GRADE IN ALL CROSS COUNTRY LOCATIONS.

    WHERE SEWER LINES CROSS WATER PIPES, A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. AT SEWER/WATER INTERSECTIONS, A MINIMUM OF 6 FEET SHALL BE PROVIDED FROM THE WATER LINE TO THE SEWER PIPE JOINT. 12" SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE REQUIRED BETWEEN SEWER LINES AND ALL OTHER PIPES.

    TRENCH DIMENSIONS FOR SEWER PIPE LESS THAN 15 INCHES IN DIAMETER, THE ALLOWABLE TRENCH WIDTH AT A PLANE 12 INCHES ABOVE THE PIPE SHALL BE NO MORE THAN 36 INCHES AND FOR PIPE 15 INCHES AND LARGER, THE ALLOWABLE WIDTH SHALL BE EQUAL TO THE PIPES OUTSIDE DIAMETER PLUS 24 INCHES.

    PIPE TRENCH BEDDING MATERIAL AND FILL MATERIAL FOR EXCAVATION BELOW GRADE SHALL BE CRUSHED STONE TO ASTM C33-03 STONE SIZE NO. 67. THE PIPE SAND BLANKET MATERIAL SHALL BE GRADED SAND FREE FROM ANY ORGANIC MATERIALS, GRADED SUCH THAT 100 PERCENT PASSED THE 1/2-INCH SIEVE AND A MAXIMUM OF 15 PERCENT PASSES A #200 SIEVE. IN LIEU OF A SAND BLANKET, A STONE ENVELOPE 6 INCHES THICK COMPLETELY AROUND THE PIPE USING 3/4-INCH STONE MAY BE USED.

    PIPE BEDDING MATERIAL SHALL EXTEND FROM A HORIZONTAL PLANE THROUGH THE PIPE AXIS TO 6-INCHES BELOW THE BOTTOM OF THE OUTSIDE SURFACE OF THE PIPE.

    PIPE SAND BLANKET MATERIAL SHALL COVER THE PIPE A MINIMUM OF 12 INCHES ABOVE THE CROWN OF THE OUTSIDE SURFACE.

    COMPACTION SHALL BE IN 12-INCH LAYERS FOR BEDDING AND BLANKET MATERIALS.

    BACKFILL MATERIAL SHALL BE IN 3-FOOT LAYERS TO THE GROUND SURFACE EXCEPT FOR ROAD CONSTRUCTION WHERE THE FINAL 3-FEET SHALL BE COMPACTED IN 12-INCH LAYERS TO THE ROAD BASE SURFACE.

    TRENCH BACKFILL MATERIAL IN ROADWAY LOCATIONS SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION, EXCLUDING DEBRIS, PAVEMENT PIECES, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT, CLAY, EXCAVATED LEDGE, ROCKS OVER 6 INCHES IN THE LARGEST DIMENSION, OR ANY OTHER UNSUITABLE MATERIAL NOT APPROVED BY THE ENGINEER.

    TRENCH BACKFILL AT CROSS-COUNTRY LOCATIONS SHALL BE AS DESCRIBED ABOVE EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLE RECONSTRUCTION, WHEN NECESSARY WILL BE PRESERVED. BACKFILL SHALL BE MOUNDED 6-INCHES ABOVE ORIGINAL GROUND.

    BASE COURSE MATERIALS FOR TRENCH REPAIRS SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.

    WHERE SHEETING IS PLACED ALONG SIDE OF THE PIPE AND EXTENDS BELOW MID-DIAMETER, THE SHEETING SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN ONE FOOT ABOVE THE TOP OF THE PIPE AND AT LEAST 3 FEET BELOW FINISH GRADE.

    TRENCHES FOR SEWER PIPES WITH SLOPES OVER 0.08 FEET PER FOOT AND TRENCHES FOR SEWER PIPES BELOW THE SEASONAL HIGH GROUND WATER LEVEL SHALL HAVE IMPERVIOUS TRENCH DAMS CONSTRUCTED EVERY 300 FEET TO PREVENT POTENTIAL DISTURBANCE TO PIPE BEDDING AND BLANKET MATERIALS.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Land Surveyors
Landscape Architects
Scientists
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18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-09

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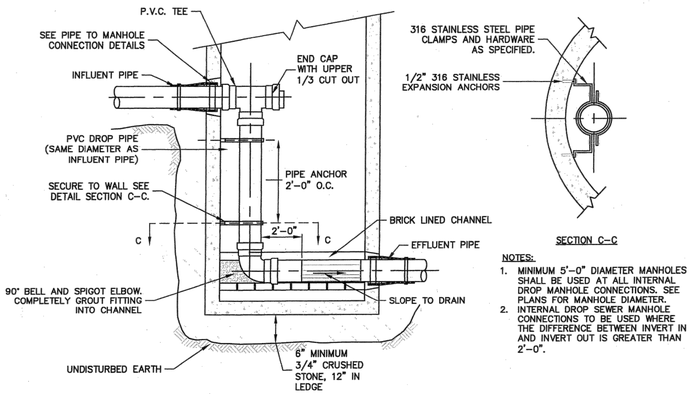
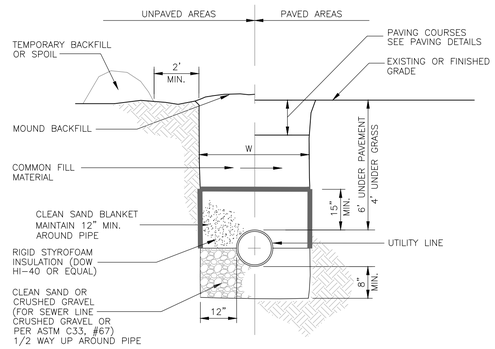


NOTES:
1. MINIMUM 5'-0" DIAMETER MANHOLES SHALL BE USED AT ALL INTERNAL DROP MANHOLE CONNECTIONS. SEE PLANS FOR MANHOLE DIAMETER.
2. INTERNAL DROP SEWER MANHOLE CONNECTIONS TO BE USED WHERE THE DIFFERENCE BETWEEN INVERT IN AND INVERT OUT IS GREATER THAN 2'-0".

TYPICAL SEWER MANHOLE
WITH INTERNAL DROP CONNECTION

NOT TO SCALE



NOTE

W=MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.

PIPE INSULATION

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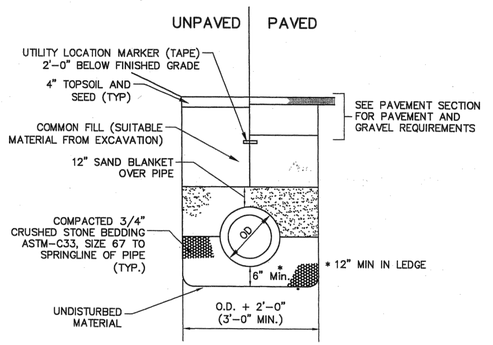

TYPICAL SEWER PIPE TRENCH

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NICHOLAS C. GOLON
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GENERAL NOTES

1. ALL SEWER CONSTRUCTION STANDARDS AND DETAILS SHALL ADHERE TO ENV-WQ 700, EFFECTIVE DATE JULY 1, 2025.
2. IT IS THE INTENTION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES SHALL BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT AND ADEQUATE JOINTING. THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND HS-20-44 LOADING INCLUDING THE FRAME AND COVER.
3. SEWER MANHOLE DIAMETER SHALL BE AS INDICATED ON THE PLANS.
4. LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN OF LONDONDERRY AND NHDES REQUIREMENTS. INVERT AND SHELF TO BE PLACED AFTER PASSING THE LEAKAGE TEST.
   (a) ALL MANHOLES SHALL BE TESTED FOR LEAKAGE USING A VACUUM TEST IN ACCORDANCE WITH THE ASTM C1244 STANDARD IN EFFECT WHEN THE TESTING IS PERFORMED.
   (b) THE MANHOLE VACUUM TEST SHALL CONFORM TO THE FOLLOWING:
      1. THE INITIAL VACUUM GAUGE TEST PRESSURE SHALL BE 10 INCHES Hg.
      2. THE MINIMUM ACCEPTABLE TEST HOLD TIME FOR 1-INCH Hg PRESSURE DROP TO 9 INCHES SHALL BE:
         A. NOT LESS THAN 2 MINUTES FOR MANHOLES LESS THAN 10 FEET DEEP.
         B. NOT LESS THAN 2.5 MINUTES FOR MANHOLES 10 TO 15 FEET DEEP.
         C. NOT LESS THAN 3 MINUTES FOR MANHOLES MORE THAN 15 FEET DEEP.
   (c) THE MANHOLE SHALL BE REPAIRED AND RETESTED IF THE TEST HOLD TIMES FAIL TO ACHIEVE THE ACCEPTANCE LIMITS SPECIFIED IN (b) ABOVE.
   (d) INVERTS AND SHELVES SHALL NOT BE INSTALLED UNTIL AFTER SUCCESSFUL TESTING IS COMPLETE.
   (e) FOLLOWING COMPLETION OF THE LEAKAGE TEST, THE FRAME AND COVER SHALL BE PLACED ON TOP OF THE MANHOLE OR SOME OTHER MEANS USED TO PREVENT ACCIDENTAL ENTRY BY UNAUTHORIZED PERSONS, CHILDREN OR ANIMALS, UNTIL THE CONTRACTOR IS READY TO MAKE FINAL ADJUSTMENT TO GRADE.
5. CARE SHALL BE TAKEN TO ENSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE. BASE SECTION TO BE FULL.
6. MANHOLE CHANNELS REQUIRING CHANGE IN ALIGNMENT ARE TO BE BUILD ON A SMOOTH RADIUS.
7. IN CROSS COUNTRY AREAS BEYOND ROADWAY RIGHT-OF-WAYS, THE MANHOLE FRAME ELEVATION SHALL BE A MINIMUM OF 6" ABOVE FINISHED GRADE. GRADE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE MANHOLE.
8. FRAMES AND COVERS: MANHOLES FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. 3-INCH (MINIMUM HEIGHT) LETTERS WITH THE WORD "SEWER" SHALL BE PLAINLY CAST INTO THE CENTER OF EACH MANHOLE COVER.
9. BARRELS, CONE SECTIONS AND CONCRETE GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE AND SHALL CONFORM ENV-WQ 704.12 & 704.13.
10. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478-06.
11. BASE SECTIONS SHALL BE OF MONOLITHIC CONSTRUCTION TO A POINT AT LEAST 6 INCHES ABOVE THE CROWN OF THE INCOMING PIPE.
12. MANHOLE CONE SECTIONS SHALL BE ECCENTRIC IN SHAPE.
13. ALL PRECAST SECTIONS AND BASES SHALL HAVE THE DATE OF MANUFACTURE AND THE NAME OR TRADEMARK OF THE MANUFACTURER IMPRESSED OR INDELIBLY MARKED ON THE INSIDE WALL.
14. ALL PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING.
15. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H-20 LOADS.
16. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATERTIGHTNESS USING A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT. APPROVED ELASTOMERIC SEALANTS ARE:
   (a) SIKAFLEX-12-SL; OR
   (b) SONNEBORN BUILDING PRODUCTS-SONOLASTIC SL-1
17. THE MINIMUM INTERNAL DIAMETER OF MANHOLES SHALL BE 48 INCHES. FOR SEWERS LARGER THAN 24-INCH DIAMETER. MANHOLE DIAMETERS SHALL BE INCREASED SO AS TO PROVIDE AT LEAST 12-INCHES OF SHELF ON EACH SIDE OF THE SEWER.
18. LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE TO ENV-WQ 704.17.
19. BRICK MASONRY FOR SHELF, INVERT AND GRADE ADJUSTMENT SHALL COMPLY WITH ASTM C32-05, CLAY OR SHALE, FOR GRADE SS HARD BRICK.
20. MORTAR SHALL BE COMPOSED OF PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION. PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE:
   (a) 4.5 PARTS SAND AND 1.5 PARTS CEMENT; OR
   (b) 4.5 PARTS SAND, 1 PART CEMENT AND 0.5 PART HYDRATED LIME
21. CEMENT SHALL BE TYPE II PORTLAND CEMENT CONFORMING TO ASTM C150-05. HYDRATED LIME SHALL BE TYPE S CONFORMING TO ASTM C207-06 "STANDARD SPECIFICATIONS FOR HYDRATED LIME FOR MASONRY PURPOSES". SAND SHALL CONSIST OF INERT NATURAL SAND CONFORMING TO ASTM C33-03 "STANDARD SPECIFICATIONS FOR CONCRETE, FINE AGGREGATES".
22. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED OR PRECAST CONCRETE SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF THE PIPE AND FLOW. AT CHANGES IN DIRECTIONS, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.
23. FRAMES AND COVERS: MANHOLES FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN, CLASS 30, CONFORMING TO ASTM A48/48M AND PROVIDE A 30-INCH CLEAR OPENING. 3-INCH WORD (MINIMUM HEIGHT) LETTERS "SEWER" SHALL BE PLAINLY CAST INTO THE TOP SURFACE. THE CASTING SHALL BE OF EVEN GRAINED CAST IRON, SMOOTH, AND FREE FROM SCALE, LUMPS, BLISTERS, SAND HOLES AND DEFECTS. CONTACT SURFACES OF COVERS AND FRAMES SHALL BE MACHINED AT THE FOUNDRY TO PREVENT ROCKING OF COVERS IN ANY ORIENTATION.
24. BEDDING: PRECAST BASES SHALL BE PLACED ON A 6-INCH (12-INCH IN LEDGE) LAYER OF COMPACTED BEDDING MATERIAL THAT CONFORMS TO ASTM C33-03 NO. 67 STONE AND FREE FROM CLAY, LOAM AND ORGANIC MATTER. THE EXCAVATION SHALL BE PROPERLY DEWATERED WHILE PLACING BEDDING MATERIAL AND SETTING OF THE BASE OR POURING CONCRETE. WATER-STOPS SHALL BE USED AT THE HORIZONTAL JOINT OF THE CAST-IN-PLACE MANHOLES.

100% PASSING	1" SCREEN
90-100% PASSING	3/4" SCREEN
20-55% PASSING	3/8" SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE

25. FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES FROM ANY MANHOLE CONNECTION: (a) WITHIN 48 INCHES FOR REINFORCED CONCRETE PIPE (RCP). (b) WITHIN 60 INCHES FOR PVC PIPE LARGER THAN 15" DIAMETER.
26. NO FLEXIBLE JOINT SHALL BE REQUIRED FOR DUCTILE IRON PIPE OR PVC PIPE UP THROUGH 15-INCH DIAMETER.
27. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS FOLLOWS:
   A. ELASTOMERIC, RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND PIPE SURFACES.
   B. CAST INTO WALL OR SECURED WITH STAINLESS STEEL CLAMPS.
   C. ELASTOMERIC SEALING RING CAST IN THE MANHOLE OPENING WITH THE SEAL FORMED ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING.

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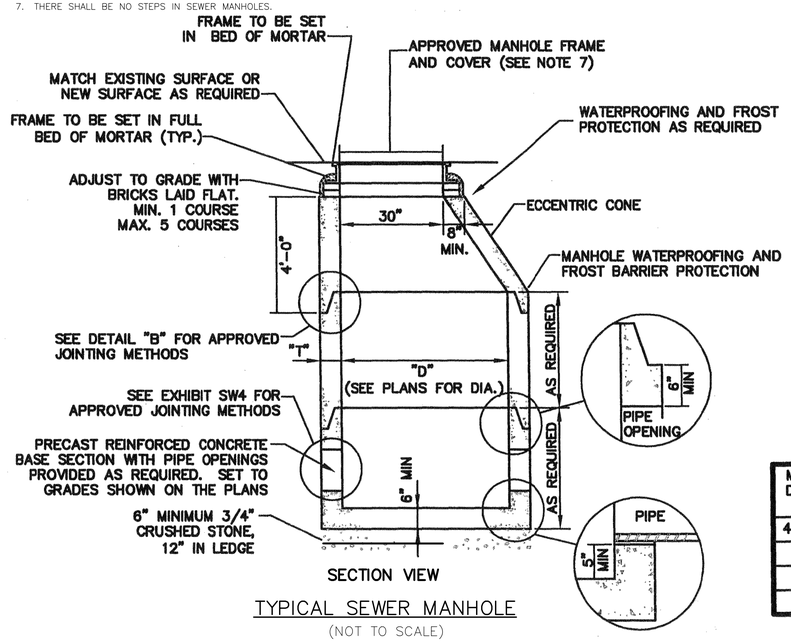
1. IN CROSS COUNTRY AREAS BEYOND ROADWAY RIGHT-OF-WAYS, THE MANHOLE FRAME ELEVATION SHALL BE A MINIMUM OF 6" ABOVE FINISHED GRADE. GRADE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE MANHOLE
2. THE INVERT OF THE INCOMING PIPE SHALL BE NO MORE THAN 6 INCHES ABOVE THE OUTGOING PIPE UNLESS A DROP ENTRY IS USED.
3. THE SEWER CONNECTIONS SHALL BE INSPECTED BY AUTHORIZED TOWN OF LONDONDERRY PUBLIC WORKS AND ENGINEERING DEPARTMENT PERSONNEL BEFORE ANY BACKFILLING. INSPECTION HOURS ARE BETWEEN 9:00AM AND 4:30PM, MONDAY-FRIDAY, WITH AT LEAST 2 DAYS OF ADVANCE NOTICE.
4. THE SEWER SERVICE MANHOLE SHALL BE VACUUM TESTED AND THE PVC PIPING PRESSURE TESTED WITH AUTHORIZED TOWN OF LONDONDERRY PUBLIC WORKS AND ENGINEERING DEPARTMENT PERSONNEL PRESENT ON SITE WITH A WITNESS.
5. ALL SEWER CONSTRUCTION AND USE SHALL CONFORM TO THE STATE OF NEW HAMPSHIRE STANDARD SEWER CONSTRUCTION SPECIFICATION AND THE TOWN OF LONDONDERRY SEWER USE ORDINANCE.
6. A MANDATORY PRECONSTRUCTION MEETING SHALL BE HELD WITH THE TOWN, CONTRACTOR, OWNER AND ALL UTILITY REPRESENTATIVES PRIOR TO ANY CONSTRUCTION. NO WORK SHALL BEGIN UNTIL APPROVAL BY THE DEPARTMENT OF PUBLIC WORKS HAS BEEN OBTAINED.
7. THERE SHALL BE NO STEPS IN SEWER MANHOLES.

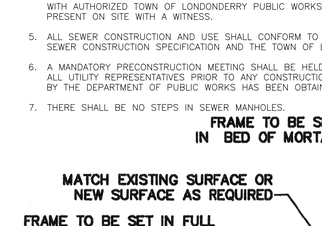


SECTION VIEW

TYPICAL SEWER MANHOLE

(NOT TO SCALE)

MANHOLE DIAMETER "D"	MAX. PIPE DIAMETER STRAIGHT THROUGH TO 45° DEFLECTION	"T" (WALL THICKNESS)
48" (MIN.)	30" OD MAX.	5" (MIN.)
60"	44" OD MAX.	6"
72"	51" OD MAX.	7"
96"	72" OD MAX.	9"



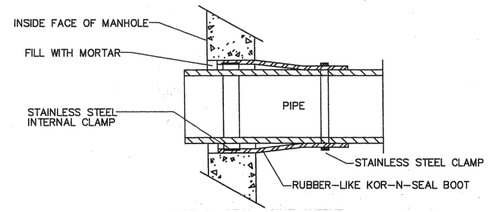
ELASTOMERIC SEALANT

NOTE:
ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS

DETAIL "B" HORIZONTAL JOINTS

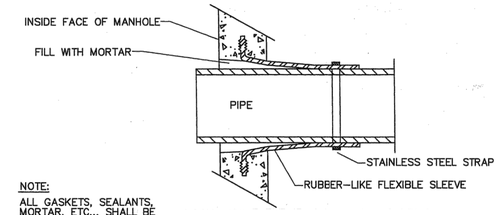
SECTION "A-A"

SECTION "B-B"



KOR-N-SEAL JOINT SLEEVE

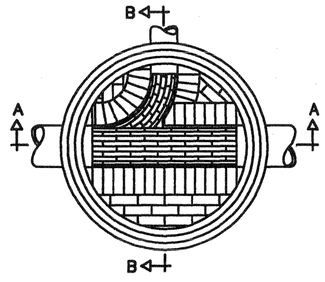
(OR ACCEPTABLE SUBSTITUTE)



NOTE:
ALL GASKETS, SEALANTS, MORTAR, ETC... SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS

LOCK-JOINT FLEXIBLE MANHOLE SLEEVE

(OR ACCEPTABLE SUBSTITUTE)



PLAN VIEW

TYPICAL MANHOLE - PLAN VIEW

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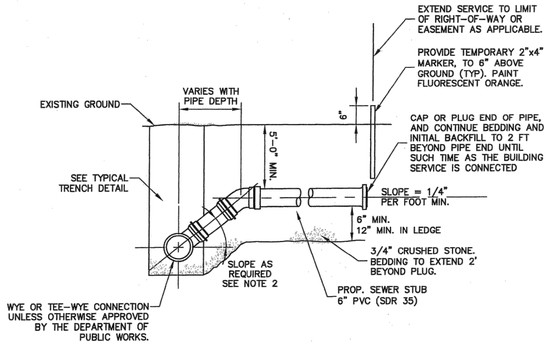
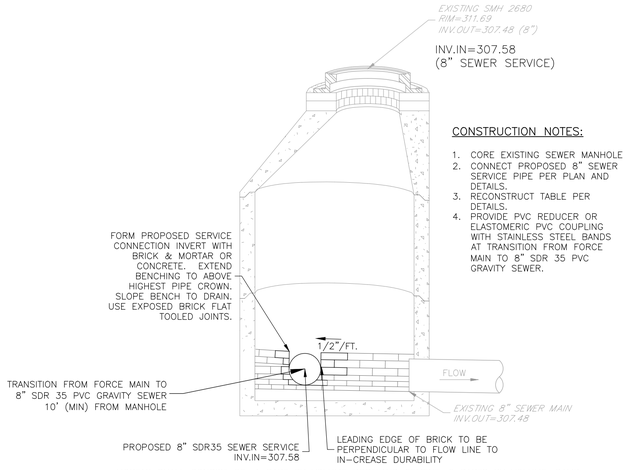


NOTES:
1. ALL SERVICE CONNECTIONS TO BE 6" MINIMUM UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. USE CHIMNEY DETAIL WHERE SERVICE CONNECTION ENTERS SEWER AT GREATER THAN 60° TO THE HORIZONTAL.

SEWER SERVICE CONNECTION

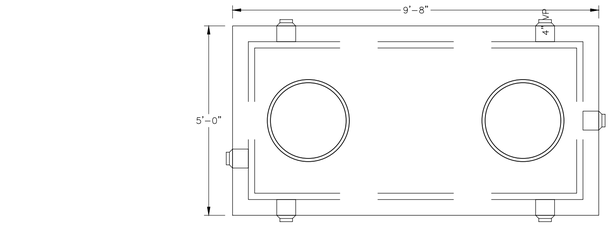


CONSTRUCTION NOTES:
1. CORE EXISTING SEWER MANHOLE
2. CONNECT PROPOSED 8" SEWER SERVICE PIPE PER PLAN AND DETAILS.
3. RECONSTRUCT TABLE PER DETAILS.
4. PROVIDE PVC REDUCER OR ELASTOMERIC PVC COUPLING WITH STAINLESS STEEL BANDS AT TRANSITION FROM FORCE MAIN TO 8" SDR 35 PVC GRAVITY SEWER.

MORTAR SHALL CONSIST OF: 1 PART BY VOLUME PORTLAND CEMENT, 2 PARTS BY VOLUME, DAMP WASHED COARSE SAND AND POTABLE WATER TO PRODUCE A CONSISTENCY OF STIFF PASTE. SEAL ALL PRECAST JOINTS WITH MORTAR.

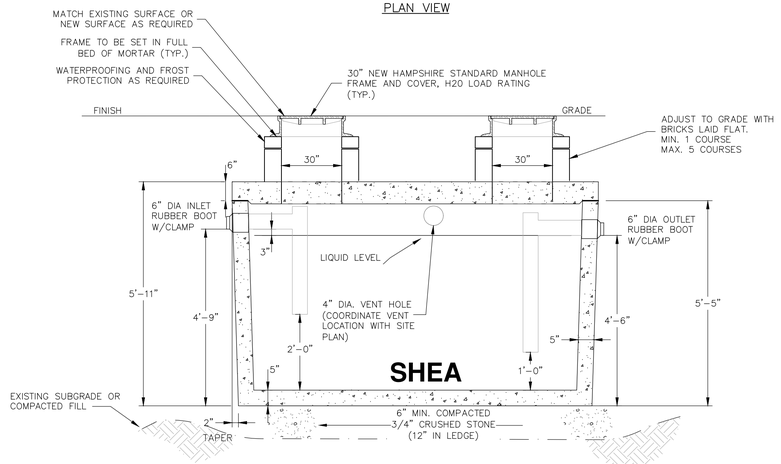
SEWER SERVICE CONNECTION

EX. SMH2680 NOT TO SCALE



PLAN VIEW

NOTES
1. TANK, WHETHER A SINGLE UNIT OR MULTIPLE SECTIONS, SHALL BE SEALED SO AS TO MEET N.H.D.E.S. WATERTIGHT SPECIFICATIONS.
2. SEE TYPICAL SEWER MANHOLE DETAIL AND AND JOINT DETAILS FOR ADDITIONAL DETAILS.



SECTION VIEW

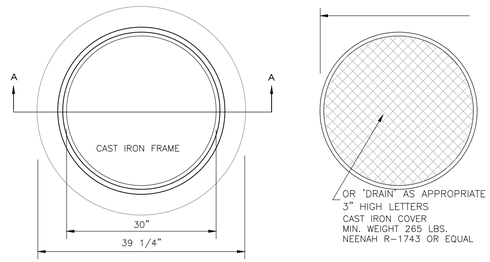
ITEM NO.	M1000H	H-20 (6" TOP)
	M1000HT10	H-20 (10" TOP)

WEIGHT:
BOTTOM = 11,250#
10" TOP = 5,960#
6" TOP = 3,575#

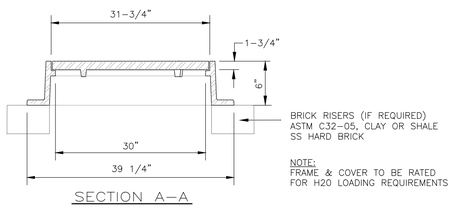
NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. ALL REINFORCEMENT PER ASTM C1227.
3. TEES AND BAFFLES SOLD SEPARATELY.
4. TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN.
5. DESIGNED FOR AASHTO HS-20 LOADING, 1 TO 5 FT COVER.

INDUSTRIAL TANK DETAIL

SHEA CONCRETE 1,000 GALLON SEPTIC TANK (OR APPROVED EQUAL) NOT TO SCALE



PLAN VIEW

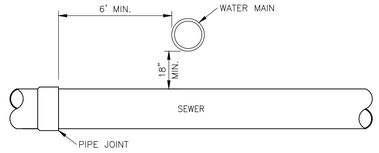


SECTION A-A

NOTE:
FRAME & COVER TO BE RATED FOR H20 LOADING REQUIREMENTS

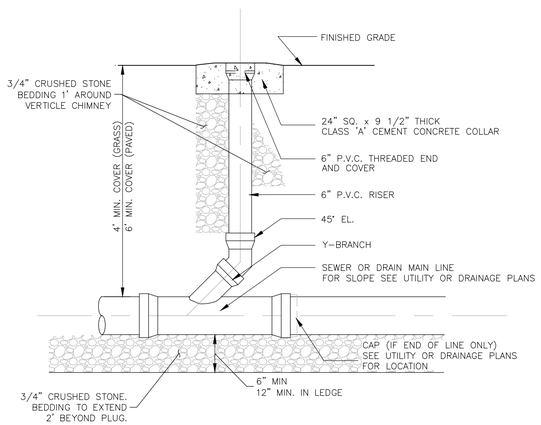
MANHOLE FRAME & COVER

HEAVY DUTY



SEWER / WATER INTERSECTIONS

ELEVATION VIEW NOT TO SCALE



SEWER CLEAN OUT

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
3	12/18/2025	AOT & STAFF COMMENTS	JD	NG
2	**10/22/2025**	**TOWN SEWER COMMENTS**	**JD**	**NG**
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Civil Engineers
Structural Engineers
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FILE	18252-02	DR		FB	-	D-12
		CK		CADFILE	18252-02 COVER & DETAILS	

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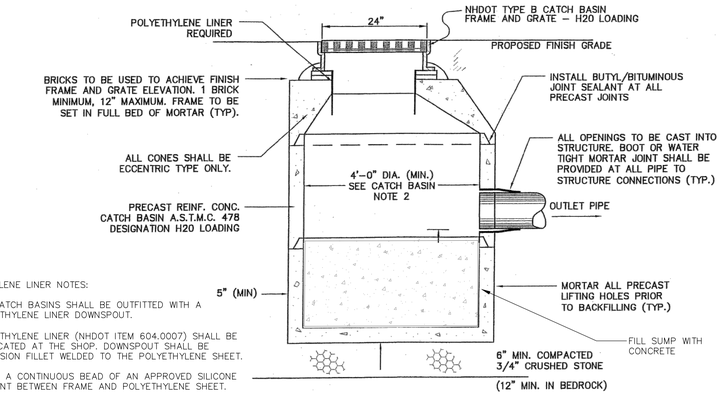


POLYETHYLENE LINER NOTES:

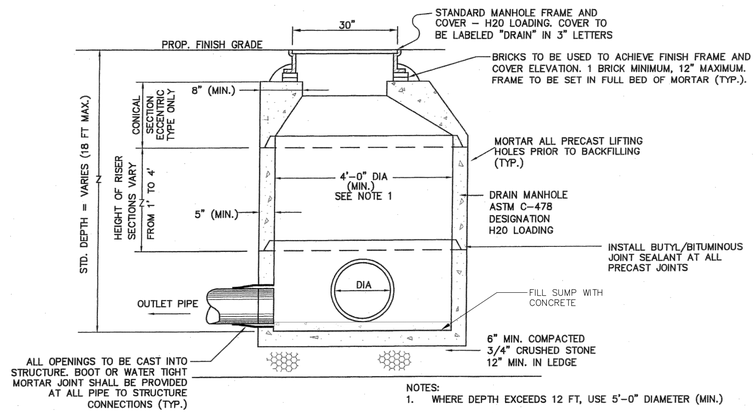
1. ALL CATCH BASINS SHALL BE OUTFITTED WITH A POLYETHYLENE LINER DOWNSPOUT.
2. POLYETHYLENE LINER (NHDOT ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
3. PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT BETWEEN FRAME AND POLYETHYLENE SHEET.
4. PLACE A CLASS AA CONCRETE TO 2" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE).
5. TRIM POLYETHYLENE SHEET A MAXIMUM OF 4" OUTSIDE THE FLANGE ON THE FRAME FOR THE CATCH BASIN BEFORE PLACING CONCRETE (EXCEPT AS SHOWN WHEN USED WITH CURB).
6. THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 3" FROM THE CENTER OF THE DOWNSPOUT IN ANY DIRECTION.

CATCH BASIN NOTES:

1. WHERE DEPTH EXCEEDS 12 FT, USE 5'–0" DIAMETER (MIN.)
2. MINIMUM PIPE DROP (INLET TO OUTLET) SHALL BE 3" UNLESS OTHERWISE APPROVED BY THE TOWN OF LONDONDERRY DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.
3. ALL BOOTS, GASKETS, AND SEALANTS, SHALL BE IN ACCORDANCE WITH MANUFACTURES WRITTEN INSTRUCTIONS.
4. ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C–478 DESIGNAT ION H20 LOADING.

CATCH BASIN

NOT TO SCALE



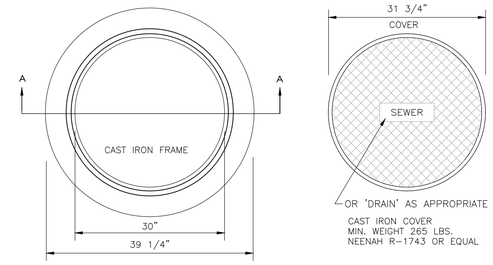
NOTES:

1. WHERE DEPTH EXCEEDS 12 FT, USE 5'–0" DIAMETER (MIN.)
2. MINIMUM PIPE DROP (INLET TO OUTLET) SHALL BE 3" UNLESS OTHERWISE APPROVED BY THE DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.
3. ALL BOOTS, GASKETS AND SEALANTS SHALL BE IN ACCORDANCE WITH MANUFACTURES WRITTEN INSTRUCTIONS

DRAIN MANHOLE

ECCENTRIC CONE

NOT TO SCALE

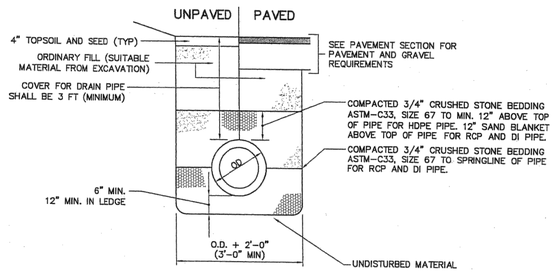


NOTE:
FRAME & COVER TO BE RATED FOR H20 LOADING REQUIREMENTS

MANHOLE FRAME & COVER

HEAVY DUTY

NOT TO SCALE



NOTE:

DRAIN PIPE SHALL BE 15" DIAMETER MIN.

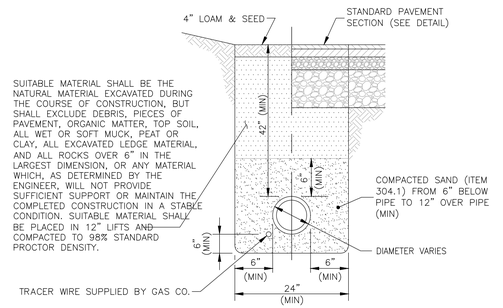
PLASTIC DRAIN PIPE (HDPE) SHALL BE ADS N–12 (CORRUGATED EXTERIOR/SMOOTH INTERIOR) OR EQUAL MEETING AASHTO M–252 AND H–20 LOADING.

DI DRAIN PIPE SHALL BE CL. 50.

RC DRAIN PIPE SHALL BE CLASS III UNLESS OTHERWISE NOTED.

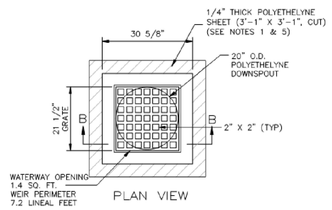
STORM DRAIN TRENCH

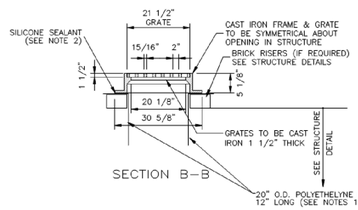
NOT TO SCALE



GAS MAIN TRENCH

NOT TO SCALE





1. POLYETHYLENE LINER (ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
2. PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT (SUBSIDIARY TO ITEM 604.0007) BETWEEN FRAME AND POLYETHYLENE SHEET (SEE SECTION A–A, PLATE 4).
3. PLACE CLASS AA CONCRETE TO 2" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE). USE ON DRAINAGE STRUCTURES 4' MIN. DIAMETER ONLY.
4. TRIM POLYETHYLENE SHEET A MAXIMUM OF 4" OUTSIDE THE FLANGE ON THE FRAME FOR THE CATCH BASIN BEFORE PLACING CONCRETE (EXCEPT AS SHOWN WHEN USED WITH 3–FLANGE FRAME AND CURB)
5. THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 6" FROM THE CENTER OF THE DOWNSPOUT IN AS SHOWN WHEN USED WITH 3–FLANGE FRAME AND CURB).
6. PLACED ONLY IN DRAINAGE STRUCTURES IN PAVEMENT. ANY DIRECTION.

CATCH BASIN FRAME AND GRATE

NEENAH R–3404 OR EQUIVALENT

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

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LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
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		CK		CADFILE	18252–02 COVER & DETAILS	

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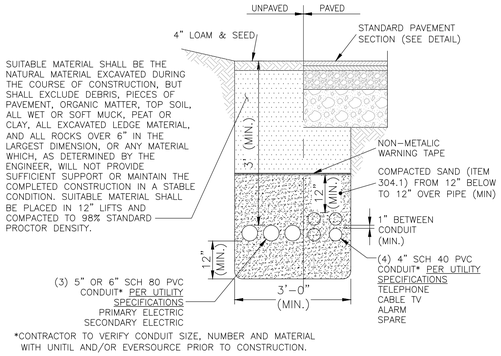
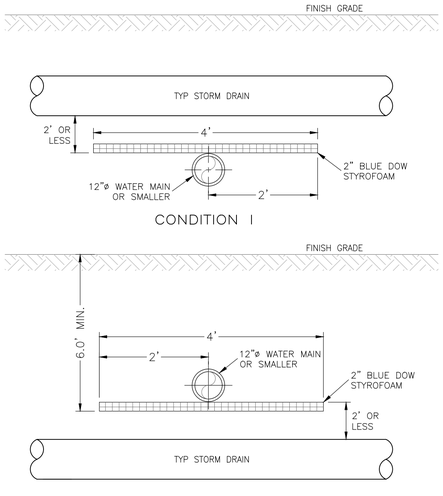


UTILITY TRENCH

NOT TO SCALE

NOTES

1. ALL CONDUITS SHALL BE 6" GRAY, ELECTRICAL GRADE, SCHEDULE 80 PVC CONDUIT WITH THE EXCEPTION OF THE SWEEPS AT RISER POLE AND THE FIRST HORIZONTAL AND VERTICAL CONDUIT SECTIONS AT EACH RISER POLE WHICH SHALL BE 6" HOT-DIPPED, GALVANIZED RIGID STEEL.
   a. THE STEEL TO PVC CONDUIT TRANSITIONS SHALL BE MADE WITH PVC THREADED ADAPTORS.
2. CONDUITS SHALL BE INSTALLED IN STRAIGHT LINES.
   a. NO SWEEPS SHALL BE USED IN THE CONDUIT SYSTEM EXCEPT AT RISER POLES AND EQUIPMENT PADS.
   b. THE MAXIMUM CHANGE IN CONDUIT DIRECTION BETWEEN TO CONTIGUOUS LENGTH OF CONDUIT SHALL BE LIMITED TO 2.5 DEGREES.
   c. ALL HORIZONTAL AND/OR VERTICAL CONDUIT BEND/CHANGES IN DIRECTION, NO MATTER HOW SMALL, SHALL BE REVIEWED AND APPROVED BY UNITIL.
3. ALL CONDUIT RUNS SHALL BE CLEANED BY PULLING A PLUG OR MANDREL (NO SMALLER THAN ¼" LESS THAN THE CONDUIT) THROUGH EACH CONDUIT.
4. ALL CONDUITS SHALL HAVE A 2,500# FLAT, WOVEN, POLYESTER PULLING LINE INSTALLED.
5. TEMPORARY CAPS SHALL BE INSTALLED ON THE END OF CONDUITS UNTIL CABLES ARE INSTALLED.
6. THE CONDUIT DUCT BANK INSTALLATION SHALL BE INSPECTED AND ACCEPTED BY UNITIL PRIOR TO BACKFILL.

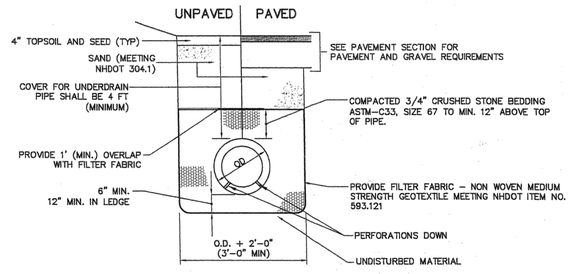


NOTES

1. INSULATION REQUIREMENTS MAY BE MODIFIED BY WATER DEPT. BASED ON FIELD CONDITIONS, ETC.
2. THE LENGTH OR WIDTH OF INSULATION SHALL EXTEND 1 STORM DRAIN PIPE DIAMETER BEYOND THE EDGE OF STORM DRAIN PIPE IN EACH DIRECTION OR A MINIMUM OF 2' BEYOND THE CENTERLINE OF THE STORM DRAIN PIPE, WHICHEVER IS GREATER.
3. ALL BUTT JOINT SEAMS TO BE OVERLAPPED WITH A 1' PIECE OF INSULATION CENTERED OVER SEAM.

STORM DRAIN / WATER MAIN INTERSECTING RUNS

ELEVATION VIEW NOT TO SCALE



NOTE:

PLASTIC UNDERDRAIN PIPE (HDPE) SHALL BE 6" DIAMETER (MIN.) ADS N-12 (CORRUGATED EXTERIOR/SMOOTH INTERIOR) OR EQUAL MEETING AASHTO M-252 AND H-20 LOADING.

UNDERDRAIN TRENCH

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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STATE OF NEW HAMPSHIRE
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FILE	DR		FB	–	
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PUMP STATION DESIGN NOTES

Env–Wq 704.07 FORCE MAINS:

1. FORCE MAINS FOR CONSTANT SPEED PUMPS SHALL BE SIZED TO YIELD A CLEANSING VELOCITY OF 3 FEET PER SECOND OR GREATER AT DESIGN PUMP CAPACITY.
2. FORCE MAINS FOR VARIABLE SPEED PUMPS SHALL BE SIZED TO YIELD A VELOCITY OF 2 FEET PER SECOND OR GREATER AT AVERAGE DAILY DESIGN FLOW.
3. SEWER FORCE MAIN SHALL BE 6" INCHES IN NOMINAL DIAMETER FOR THE SEWER FROM THE SITE.
4. FORCE MAINS SHALL BE PROVIDED WITH AUTOMATIC AIR RELIEF VALVE(S) AT HIGH POINTS TO PREVENT AIR LOCKING.
5. FORCE MAINS SHALL ENTER THE GRAVITY SEWER SYSTEM AT THE FLOW LINE OF THE RECEIVING MANHOLE.
6. FORCE MAINS SHALL BE PROVIDED WITH DRAINAGE BLOW–OFFS, PROPERLY VALVED, AT LOW POINTS. SPACE SHALL BE AVAILABLE AT SUCH LOCATIONS FOR HANDLING THE DISPLACED WASTE WITHOUT DANGER OF POLLUTION OR HEALTH HAZARD.
7. FORCE MAINS SHALL BE DESIGNED IN ACCORDANCE WITH Env–Wq 704.07, CONSTRUCTED WITH MATERIALS AS SPECIFIED IN Env–Wq 704.08, AND TESTED AS SPECIFIED IN Env–Wq 704.09.
8. THRUST BLOCKS MADE FROM INORGANIC, CORROSION–RESISTANT MATERIAL SHALL BE PLACED AT ALL BENDS, ELBOWS, TEES AND JUNCTIONS.
9. FORCE MAINS SHALL BE DESIGNED TO WITHSTAND HYDROSTATIC PRESSURES OF AT LEAST 2.5 TIMES THE DESIGN TOTAL DYNAMIC HEAD.

Env–Wq 704.09 FORCE MAIN AND PRESSURE SEWER TESTING:

1. FORCE MAINS AND PRESSURE SEWERS AND FORCE MAINS AND PRESSURE SEWERS SHALL BE TESTED IN ACCORDANCE WITH SECTION 5 OF THE AWWA C600, "INSTALLATION OF CAST IRON WATER MAINS AND THEIR APPURTENANCES" STANDARD IN EFFECT WHEN THE TEST IS CONDUCTED, AVAILABLE AS NOTED IN APPENDIX D, AT A PRESSURE EQUAL TO THE GREATER OF 150 PERCENT OF THE DESIGN OPERATING TOTAL DYNAMIC HEAD OR AT LEAST 100 PSI.

Env–Wq 705.04 PUMP STATION ACCESS:

1. DRY WELL SHALL PROVIDE ACCESSIBILITY FOR THE REPAIR AND REMOVAL OF PUMPS, MOTORS, AND OTHER ITEMS OF EQUIPMENT THAT ARE ESSENTIAL TO THE SEWAGE PUMPING PROCESS.
2. SEPARATE EXTERIOR ENTRANCES SHALL BE PROVIDED TO BOTH WET WELLS AND DRY WELLS OF SEWAGE PUMPING STATIONS.
3. FOR BUILT–IN–PLACE SEWAGE PUMPING STATIONS, ACCESS TO LOWER LEVELS SHALL BE BY STAIRWAYS WITH HANDRAILS.
4. PREFABRICATED STATIONS MAY HAVE LADDERS WITH LESS THAN OR EQUAL TO A 75° SLOPE OR SPIRAL STAIRS.
5. VERTICAL DISTANCES BETWEEN FLOORS OR REST LANDINGS SHALL NOT EXCEED 12 FEET.
6. SAFETY BARRIERS TO PREVENT FALLING SHALL BE PROVIDED AT LANDINGS.
7. POWER ELEVATORS PROPOSED FOR ALL DEEP STATIONS SHALL HAVE A CAPACITY LIMIT OF NOT LESS THAN 600 POUNDS.
8. LIFTING EQUIPMENT SHALL BE PROVIDED FOR SUBMERSIBLE PUMP REMOVAL.
9. LIFTING CHAINS SHALL BE STAINLESS STEEL OR OTHER CORROSION RESISTANT MATERIAL.

Env–Wq 705.07 ELECTRICAL REQUIREMENTS:

1. SUBMERSIBLE PUMPS FOR SEWAGE PUMPING STATIONS SHALL CONFORM TO THE NEC REQUIREMENTS ADOPTED BY REFERENCE IN THE STATE BUILDING CODE PURSUANT TO RSA 155–A:1, IV, FOR INSTALLATION IN AREAS CLASSIFIED BY THE NEC AS CLASS I, DIVISION I.
2. ELECTRICAL SYSTEMS AND COMPONENTS INCLUDING MOTORS, LIGHTS, CABLE, CONDUITS, SWITCH BOXES AND CONTROL CIRCUITS SHALL BE PROTECTED FROM FLOODING IN ACCORDANCE WITH Env–Wq 705.01.
3. ELECTRICAL SYSTEMS AND COMPONENTS INCLUDING MOTORS, LIGHTS, CABLES, CONDUITS, SWITCH BOES AND CONTROL CIRCUITS IN ENCLOSED OR PARTIALLY ENCLOSED SPACES WHERE FLAMMABLE MIXTURES OCCASIONALLY MAY BE PRESENT, INCLUDING RAW SEWAGE WET WELLS, SHALL BE CERTIFIED BY THE MANUFACTURER AS:
   A. COMPLYING WITH THE NEC REQUIREMENTS ADOPTED BY REFERENCE IN THE STATE BUILDING CODE PURSUANT TO RSA 155–A:1, IV, FOR CLASS 1, DIVISION 1 LOCATIONS; OR
   B. BEING RATED FOR CLASS I DIVISION 2 REQUIREMENTS WHERE MECHANICAL VENTILATION IS PROVIDED IN ACCORDANCE WITH THE NFPA AS ADOPTED BY REFERENCE IN THE STATE FIRE CODE IN SAF–C 6000.
4. ALL ELECTRICAL EQUIPMENT AND WORK SHALL COMPLY WITH THE REQUIREMENTS OF NEC AS ADOPTED BY REFERENCE IN THE STATE BUILDING CODE PURSUANT TO RSA 155–A:1, IV, AND NFPA AS ADOPTED BY REFERENCE IN THE STATE FIRE CODE IN SAF–C 6000 IN EFFECT AT THE TIME OF INSTALLATION.

Env–Wq 705.08 VENTILATION REQUIREMENTS:

1. MECHANICAL VENTILATION FOR PERSONNEL AND EQUIPMENT SHALL BE PROVIDED FOR ALL OCCUPIED SPACES WITHIN SEWAGE PUMPING STATION IN ACCORDANCE WITH THE NFPA AS INCORPORATED BY REFERENCE IN THE STATE FIRE CODE IN SAF–C 6000.
2. MECHANICAL VENTILATION FOR BELOW–GRADE DRY WELLS SHALL BE PROVIDED, SO ARRANGED AS TO INDEPENDENTLY VENTILATE THE DRY WELL AND THE WET WELL.
3. THERE SHALL BE NO INTERCONNECTION BETWEEN THE WET WELL AND DRY WELL VENTILATION SYSTEMS.
4. SWITCHES FOR OPERATION OF VENTILATION EQUIPMENT SHALL BE MARKED AND LOCATED CONVENIENTLY.
5. DEHUMIDIFICATION SHALL BE PROVIDED IN BELOW–GROUND DRY WELLS.
6. VENTILATION OF WET WELLS SHALL PROVIDE AT LEAST 30 AIR CHANGES PER HOUR IF THE VENTILATION SYSTEM IS OPERATED INTERMITTENTLY, OR AT LEAST 12 AIR CHANGES PER HOUR IF THE VENTILATION SYSTEM IS OPERATED CONTINUOUSLY.
7. FANS INSTALLED WITHIN THE WET WELL STRUCTURE SHALL BE SUITABLE FOR A CLASS I, DIVISION I, GROUP C OR D ENVIRONMENT.
8. VENTILATION OF SUBMERSIBLE PUMP CHAMBERS OR SUCTION LIFE WET WELLS WHERE THERE IS NO OCCUPANCY FOR REGULAR MAINTENANCE PURPOSES MAY BE BY GRAVITY VENTILATION.
9. VENTILATION EXHAUST FROM WET WELLS SHALL NOT CAUSE AN ODOR NUISANCE TO THE PUBLIC OR SURROUNDING OCCUPIED BUILDINGS.
10. ACCESS DOORS TO WET WELLS SHALL HAVE WARNING SIGNS ON THE UNDERSIDE WHICH READ, "WARNING – HAZARDOUS AREA, ENTER ONLY WITH PROPER EQUIPMENT" OR "CONFINED SPACE, ENTRY BY PERMIT ONLY", AS APPROPRIATE.
11. THE ALARM SHALL INCLUDE A LOCAL AUDIBLE ENUNCIATOR AND LIGHT.

PUMP STATION OPERATIONAL INSTRUCTIONS

1. THE FOLLOWING MAINTENANCE SHALL BE DONE ON A MONTHLY BASIS (AT A MINIMUM):
2. PUMP STATION SHALL BE VISUALLY INSPECTED TO ENSURE THAT PUMPS AND APPURTENANCES ARE FUNCTIONING, PIPE SUPPORTS ARE SECURELY FIXED TO THE MANHOLE, STAINLESS STEEL LIFTING CHAINS ARE SAFELY STORED WITHIN THE PUMP STATION. IF ANY OF THE ABOVE PARTS ARE NOT FUNCTIONING AS DESIGNED THEY SHALL BE REPAIRED IMMEDIATELY.
3. PUMP STATION AND VALVE MANHOLE ACCESS HATCHES ARE WORKING PROPERLY. IF THE ACCESS HATCHES ARE NOT FUNCTIONING PER THE MANUFACTURER'S RECOMMENDATIONS, THEY SHALL BE REPAIRED IMMEDIATELY.
4. ELECTRIC CONTROL PANEL SHALL BE INSPECTED TO CONFIRM ELAPSED TIME METER, HIGH WATER ALARM, LOW LEVEL ALARM, LOSS OF ONE OR MORE PHASES OF POWER SUPPLY OR VOLTAGE DROP ALARM, LOSS OF ALARM TRANSMISSION LINE, AND STANDBY GENERATOR APPLICATION ALARM. IF ANY OF THE ALARMS ARE NOT FUNCTIONING AS DESIGNED, THEY SHALL BE REPAIRED IMMEDIATELY.
5. THE BACK–UP GENERATOR SHALL BE INSPECTED ON A MONTHLY BASIS (AT A MINIMUM, UNLESS OTHERWISE NOTED):
6. ALL RECOMMENDATIONS FROM THE MANUFACTURER AND OPERATOR'S MANUAL SHALL BE STRICTLY FOLLOWED.
7. THE GENERATOR SHALL BE PRIMED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
8. ALL FLUIDS SHALL BE CHECKED ON A DAILY BASIS AND ADDED ON AN AS NEEDED BASIS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
9. ALL PARTS SHALL BE CHECKED ON A DAILY BASIS AND SHALL BE FIXED IMMEDIATELY WHEN NOT FUNCTIONING PROPERLY.
10. PUMP STATION OPERATION & MAINTENANCE (O&M) MANUAL SHALL BE SUBMITTED TO NHDES WASTEWATER BUREAU WITHIN 60 DAYS FOLLOWING COMPLETION OF PUMP STATION CONSTRUCTION.

Env–Wq 705.09 ALARM SYSTEMS:

1. ALARM SYSTEMS SHALL BE PROVIDED FOR ALL SEWAGE PUMPING STATIONS.
2. THE ALARM SIGNAL SHALL BE ACTIVATED IN ONE OF THE FOLLOWING CASES:
   A. HIGH WATER IN THE WET WELL.
   B. LOW WATER IN THE WET WELL.
   C. LOSS OF ONE OR MORE PHASES OF POWER SUPPLY OR SEVERE VOLTAGE DROP.
   D. HIGH WATER LEVEL IN THE PUMP ROOM SUMP.
   E. LOSS OF ALARM TRANSMISSION CAPABILITY.
   F. STANDBY GENERATOR APPLICATION.
   G. PUMP MALFUNCTION, INCLUDING SHAFT SEAL FAILURE.
   H. LOSS OF AIR PRESSURE IN A BUBBLER TUBE SYSTEM.
   I. LEVEL SENSING MALFUNCTION OR FAILURE.
   J. LOSS OF VENTILATION IN AREAS CLASSIFIED AS CLASS 1 DIVISION 2 AND USING MECHANICAL VENTILATION PER THE NFPA AS INCORPORATED BY REFERENCE IN THE STATE FIRE CODE IN SAF–C 6000.
   K. INTRUSION.
   L. TEMPERATURE OUTSIDE NORMAL OPERATING RANGES.
3. THE HIGH WATER ALARM AND LOW WATER ALARM TRIGGERS SHALL BE SEPARATE DEVICES, INDEPENDENT OF THE PUMP WET WELL LEVEL CONTROL SYSTEM AND SET AT ELEVATIONS ABOVE AND BELOW THE LAG PUMP ON AND OFF ELEVATIONS.
4. SATISFACTORY OPERATION OF THE ALARM SYSTEM SHALL BE INDICATED ON A PANEL WITH A LIGHT WHICH LIGHTS UP UPON FAILURE OF THE ALARM SYSTEM.
5. THE POWER SOURCE FOR THE ALARM SYSTEM SHALL BE:
   A. AN INDEPENDENT BATTERY WITH A CONTINUOUS CHARGE OR;
   B. MAIN LINE POWER WITH A BACK–UP BATTERY SYSTEM, WHICH SHALL BE CONNECTED AUTOMATICALLY SHOULD MAIN POWER FAIL.
6. THE ALARM SIGNAL SHALL BE TRANSMITTED THROUGH A 24 HOUR PER DAY, 7 DAY PER WEEK NOTIFICATION SYSTEM TO THE APPROPRIATE UTILITY OPERATOR.
7. THE ALARM SHALL INCLUDE A LOCAL AUDIBLE ENUNCIATOR AND LIGHT.
8. PROVISION SHALL BE MADE TO PERMIT SILENCING OF THE AUDIBLE ENUNCIATOR MANUALLY, AFTER THE ALARM HAS BEEN SOUNDED, BUT THE LIGHT SHALL CONTINUE UNTIL THE ALARM CONDITION HAS BEEN RECTIFIED.
9. ALARM SIGNALS FOR PRIVATELY–OPERATED SEWER PUMPING STATIONS SHALL BE TRANSMITTED TO THE RESPONSIBLE MAINTENANCE PERSON DIRECTLY OR VIA AN ANSWERING SERVICE.
10. IF A CENTRAL SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SYSTEM EXISTS AT THE WWTP, THE PUMPING STATION ALARMS SHALL BE CONNECTED TO THE SCADA SYSTEM USING PROGRAMMABLE LOGIC CONTROLLER (PLC) TECHNOLOGY.

Env–Wq 705.10 INSTRUCTION AND EQUIPMENT:

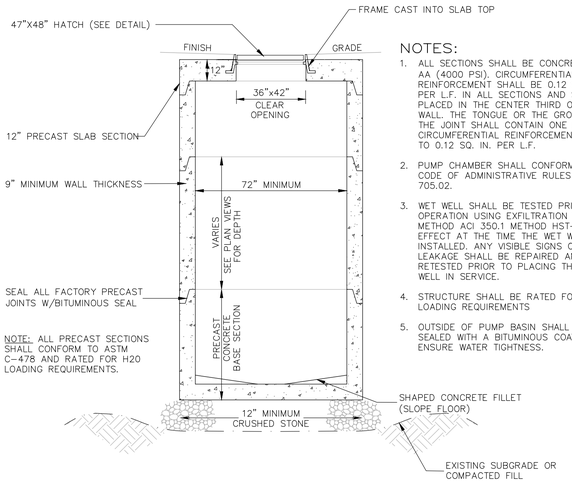
1. THE OWNER SHALL OBTAIN AN OPERATION AND MAINTENANCE MANUAL THAT PROVIDES INFORMATION AND GUIDANCE FOR DAY–TO–DAY OPERATION OF THE SEWAGE PUMPING STATION AND PROVIDE A COPY TO NHDES.

Env–Wq 705.11 EMERGENCY OPERATION:

1. THE ENGINEER SHALL RECOMMEND EMERGENCY OPERATION PROCEDURES TO PREVENT THE BACK–UP, OVERFLOW, OR OTHER UNPERMITTED DISCHARGE OF WASTEWATER FROM THE SEWAGE PUMPING STATION.
2. AN INDEPENDENT ENGINE–GENERATOR TYPE SOURCE OF ELECTRIC POWER SHALL BE PROVIDED FOR ELECTRICALLY–DRIVEN PUMPS. THIS SOURCE SHALL BE AUTOMATICALLY ACTIVATED BY FAILURE OF ANY PHASE OF POWER SUPPLY OR UPON ANY FLUCTUATION IN VOLTAGE, THE AMOUNT OR DURATION OF WHICH WOULD CAUSE DAMAGE TO THE MOTORS. INSTALLATIONS SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE AND THE STATE FIRE CODE IN SAF–C 6000.
3. THE EMERGENCY POWER GENERATOR SHALL BE PERMANENTLY SECURED IN PLACE, WITH PROVISIONS FOR REMOVAL TO FACILITATE GENERATOR REPAIR OR REPLACEMENT.
4. PROVISIONS SHALL BE MADE FOR AUTOMATIC AND MANUAL START–UP AND CUT–IN. THE CONTROLS SHALL BE SUCH THAT UPON AUTOMATIC START–UP UNDER EMERGENCY CONDITIONS, SHUT–DOWN SHALL BE ACCOMPLISHED AUTOMATICALLY ON RESTORATION OF UTILITY POWER WITH CONTROLLED SHUT–DOWN OF THE UNIT. MANUAL SHUT–DOWN SHALL ALSO BE PROVIDED. PROVISION SHALL BE MADE TO ALLOW PUMPS TO RUN DOWN BEFORE RE–ENERGIZING ON TRANSFER OF POWER.
5. THE EMERGENCY POWER GENERATOR SHALL BE SIZED TO SEQUENTIALLY START AND OPERATE ALL PUMPS NEEDED TO HANDLE DESIGN MAXIMUM WASTE FLOWS, PLUS LIGHTING, VENTILATION, CONTROLS, AND GRINDING OR SCREENING.
6. THE EMERGENCY POWER GENERATOR SHALL BE LOCATED ABOVE GRADE WITH VENTILATION OF EXHAUST GASES.
7. ALL EMERGENCY POWER GENERATION EQUIPMENT SHALL BE PROVIDED WITH INSTRUCTIONS FOR ROUTINE EXERCISING, LOAD TESTING AND MAINTENANCE.
8. THE GENERATOR ENGINE CONTROLS SHALL BE EQUIPPED WITH AN AUTOMATIC EXERCISER WHICH CAN BE SET ON ANY SELECTED SCHEDULE TO START THE GENERATOR, RUN THE GENERATOR UNDER NO LOAD OR LOAD CONDITIONS BY SELECTION AND SHUT THE GENERATOR OFF WITHOUT ACTUATING THE ALARM SYSTEM.
9. THE OWNER SHALL PROVIDE EACH EMERGENCY GENERATOR WITH ENOUGH FUEL FOR THE GENERATOR TO RUN UNDER FULL LOAD OR PEAK STATION FLOW FOR AT LEAST 46 HOURS OR UNDER NORMAL OPERATING CONDITIONS FOR AT LEAST 96 HOURS, WHICHEVER REQUIRES THE GREATER AMOUNT OF FUEL.
10. NO SEWAGE PUMPING STATION BY–PASSES ALLOWING THE DISCHARGE OF RAW SEWAGE EITHER OVERLAND OR TO ANY WATER COURSE SHALL BE PERMITTED.

GENERATOR STANDARD SPECIFICATIONS

1. GENERAC STANDBY GENERATOR, MODEL SD015T
   - 1.1. RATED MAXIMUM POWER CAPACITY: 15,000 WATTS
   - 1.2. RATED VOLTAGE: 240
   - 1.3. PHASE: 3
   - 1.4. TYPE OF ENGINE: PERKINS 2.2L
   - 1.5. OPERATING RPM: 1,800
   - 1.6. FUEL CONSUMPTION: HALF LOAD: 1.0 GAL/HR; FULL LOAD: 1.3 GAL/HR
2. INSTALLATIONS SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE NEC AND THE STATE FIRE CODE IN SAF–C 6000.
3. EMERGENCY GENERATOR SHALL HAVE ENOUGH FUEL TO OPERATE FOR EITHER 48–HRS UNDER FULL LOAD OR 96–HRS UNDER NORMAL OPERATING CONDITIONS, WHICHEVER REQUIRES MORE FUEL.
   - 3.1. HALF LOAD: 1.0 GAL/HR X 96–HRS = 96.0 GALLONS
   - 3.2. FULL LOAD: 1.3 GAL/HR X 48–HRS = 62.4 GALLONS
4. A 130–GALLON DIESEL FUEL TANK IS INCORPORATED INTO THE GENERATOR ASSEMBLY.
5. SEE PLANS FOR GENERATOR, VENT PIPE, AND ENCLOSURE LOCATIONS.
6. FINAL GENERATOR SELECTION SHALL CONFORM TO THESE MINIMUM STANDARDS. COORDINATE WITH OWNER, CONTRACTOR AND ELECTRICAL CONSULTANT.

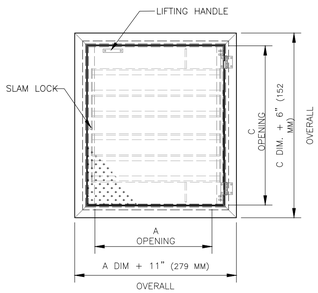


NOTES:

1. ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 PSI). CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER L.F. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.
2. PUMP CHAMBER SHALL CONFORM TO NH CODE OF ADMINISTRATIVE RULES Env–Wq 705.02.
3. WET WELL SHALL BE TESTED PRIOR TO OPERATION USING EXFILTRATION TESTING METHOD ACI 350.1 METHOD HST–NML IN EFFECT AT THE TIME THE WET WELL IS INSTALLED. ANY VISIBLE SIGNS OF LEAKAGE SHALL BE REPAIRED AND RETESTED PRIOR TO PLACING THE WET WELL IN SERVICE.
4. STRUCTURE SHALL BE RATED FOR H20 LOADING REQUIREMENTS
5. OUTSIDE OF PUMP BASIN SHALL BE SEALED WITH A BITUMINOUS COATING TO ENSURE WATER TIGHTNESS.

PUMP CHAMBER MANHOLE

SLAB TOP — NOT TO SCALE



SERIES H1R ACCESS DOOR

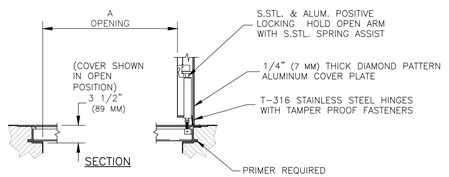
STANDARD FEATURES:

- AUTO–LOCK T–316 STAINLESS STEEL HOLD OPEN ARM WITH RELEASE HANDLE
- T–316 STAINLESS STEEL HINGES AND ATTACHING HARDWARE
- T–316 STAINLESS STEEL SLAM LOCK WITH REMOVABLE KEY
- STAINLESS STEEL COMPRESSION SPRING ASSIST
- SINGLE LEAF CONSTRUCTION
- H20 LOAD RATING (SEE NOTES)
- EXTRUDED ALUMINUM FRAME
- RECESSED LIFTING HANDLE
- LIFETIME GUARANTEE

NOTES:

1) SUITABLE FOR USE IN OFF STREET LOCATION WHERE NOT SUBJECTED TO HIGH DENSITY TRAFFIC.

2) PROVIDE A FULL BED OF CLASS "A" CONCRETE UNDER FRAME AND SUPPORT ANGLES.



PUMP CHAMBER HATCH

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
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Fax (603) 472–9747
www.tfmoran.com

FILE	DR		FB	–	
18252–02	CK		CADFILE	18252–02 COVER & DETAILS	D–15

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Dec 23, 2025 - 2:24pm
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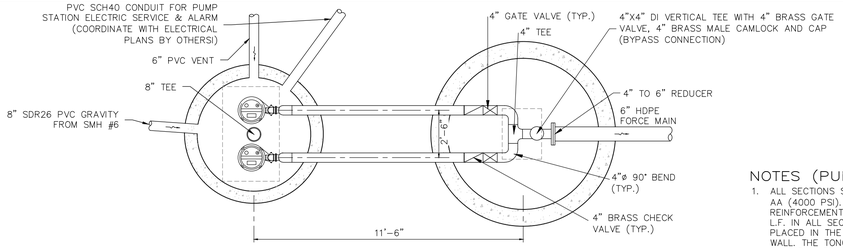


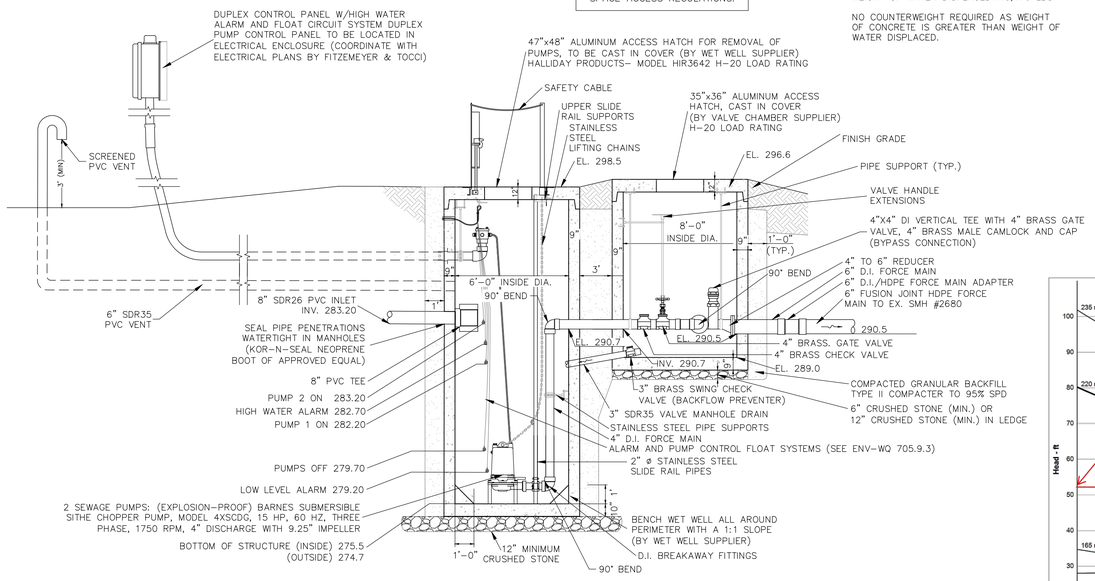
NOTES (PUMP STATION MANHOLE):

1. ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 PSI). CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER L.F. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.
2. PUMP CHAMBER SHALL CONFORM TO NH CODE OF ADMINISTRATIVE RULES Env-Wq 705.02.
3. BUOYANCY CALCULATIONS:
   WEIGHT OF CONCRETE=56,019 LBS
   WEIGHT OF WATER DISPLACED=40,476 LBS

   NO COUNTERWEIGHT REQUIRED AS WEIGHT OF CONCRETE IS GREATER THAN WEIGHT OF WATER DISPLACED.

CAUTION

THIS IS A CONFINED SPACE. DO NOT ENTER WITHOUT FOLLOWING OSHA CONFINED SPACE ACCESS REGULATIONS.



WASTEWATER FLOW INFORMATION

AVERAGE DAILY FLOW:	120,440 GPD (84 GPM)
PEAK DAILY FLOW:	650,376 GPD (452 GPM)

PUMP INFORMATION (AT PEAK DAILY FLOW RATE)

STATIC HEAD:	28'
FRICTION HEAD:	24'
TOTAL DYNAMIC HEAD:	52'

WET WELL STORAGE

VOLUME OF WET WELL:	211 GAL/VERTICAL FT
AVAIL. VERT STORAGE: (INV. TO PUMP OFF)	3.5 FT
VOLUME AVAILABLE:	740 GALLONS

PUMP STATION NOTES:

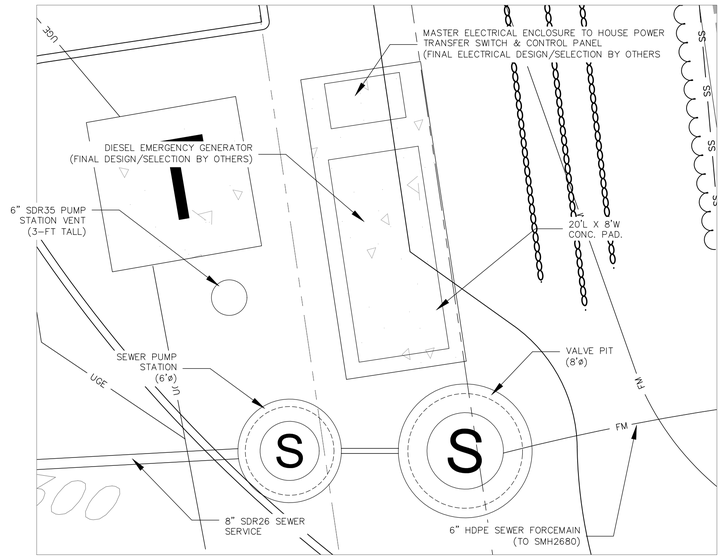
ALL PIPE AND FITTINGS TO BE PRODUCED BY A SINGLE MANUFACTURER AND TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS. BURIED PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM F 1668. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564. PRIMER SHALL CONFORM TO ASTM F 656.

NOTES:

1. STRUCTURES AND HATCHES TO BE H-20 LOADING. SUBMERSIBLE PUMPS AND ALL ELECTRICAL COMPONENTS SHALL BE SUITABLE FOR USE IN CLASS 1 DIVISION 1 HAZARDOUS LOCATIONS.
2. DUPLEX AUTOMATIC CONTROL PANEL AND ALARM PANEL TO BE PLACED IN ENCLOSURE. SYSTEM SHALL INCLUDE BOTH AUDIBLE AND VISUAL ALARMS. COORDINATE LOCATION WITH ARCHITECT.
3. USE 2 DUPLEX (EXPLOSION-PROOF) BARNES SUBMERSIBLE SITHE CHOPPER PUMP, MODEL 4XSCDG, 15 HP, 60 HZ, THREE PHASE, 1750 RPM, 4" DISCHARGE WITH 9.25" IMPELLER, OR APPROVED EQUAL.
4. OUTSIDE OF PUMP BASIN SHALL BE SEALED WITH A BITUMINOUS COATING TO ENSURE WATER TIGHTNESS.
5. ALL JOINTS SHALL BE SEALED WITH A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT.
6. CONTROL PANEL TO BE WIRED TO ALTERNATE OPERATION OF PUMPS. PUMP CONTROLS SHALL PROVIDE AUTOSTART OF LAG PUMP SHOULD LEAD PUMP FAIL TO START.
7. SEPARATE ELECTRICAL CIRCUITS SHALL BE PROVIDED FOR THE PUMPS AND ALARM SYSTEMS.
8. AN ADDITIONAL RECEPTACLE SHALL BE PROVIDED FOR CONNECTION OF GENERATOR IN THE EVENT OF POWER OUTAGE.
9. ALL PIPE AND FITTINGS TO BE PRODUCED BY A SINGLE MANUFACTURER AND TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS. BURIED PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM F 1668. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564. PRIMER SHALL CONFORM TO ASTM F 656.
10. PUMP STATIONS SHALL BE OUTFITTED WITH AUDIBLE ALARM, FLASHING WARNING LIGHT AND DISCONNECT TO BE MOUNTED ADJACENT TO EACH PUMP STATION.
11. PUMP STATION SHALL RECORD PUMP RUN TIMES AND HAVE CONTINUOUS FLOW RECORDING.
12. AN OPERATION AND MAINTENANCE MANUAL IS REQUIRED AND SHALL BE PROVIDED TO THE OWNER/OPERATOR PURSUANT TO ENV-WQ 705.10(a).
13. VALVE PIT SHALL BE EQUIPPED WITH A BYPASS CONNECTION TO ALLOW FOR CONNECTION OF A PUMP AROUND WET WELL FOR MAINTENANCE, REPAIRS AND CONSTRUCTION PURSUANT TO ENV-WQ 705.02(e)(2).

PUMP STATION / VALVE MANHOLE DETAIL

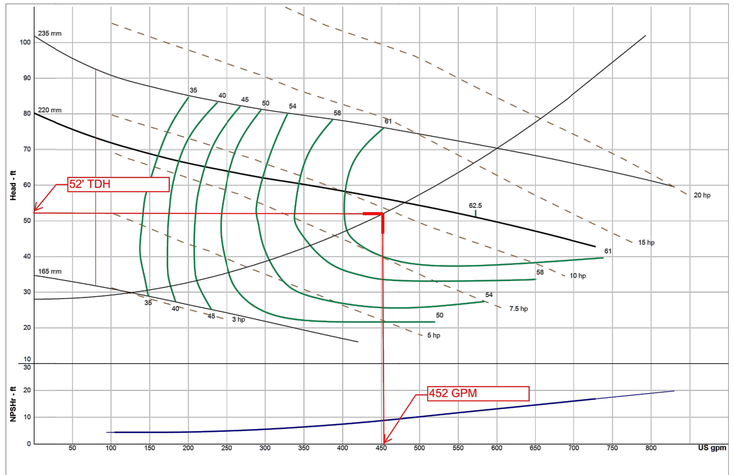
NOT TO SCALE



SEWER PUMP STATION PLAN VIEW

SCALE: 1"=5'

NOTES:
1. SYSTEM COMPONENTS (ELECTRICAL, CONTROLS, EMERGENCY GENERATOR, ETC.) SHOWN FOR COORDINATION PURPOSES ONLY.
2. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL PLANS (BY OTHERS) FOR CONSTRUCTION DETAILS.



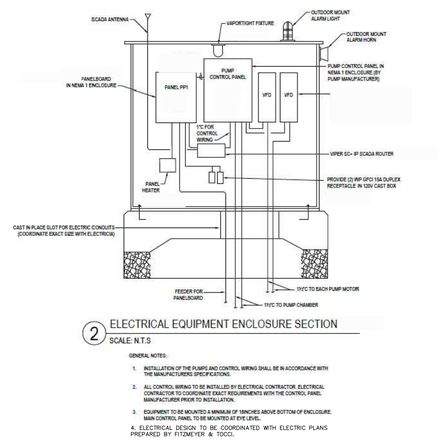
Company:	Crane Barnes.60	Size:	4ESCDG / 4XESCDG
Name:	Catalog: Barnes.60, Vers 4/23/20	Speed:	1750 rpm
Date: 06/05/2025	envie ESC 4" Chopper - 1800 rpm	Dia:	220 mm
	Design Point: 452 US gpm, 52 ft	Curve:	---
	Static Head: 28.05 ft		

BARNES

PUMP CURVE DATA

BARNES SUBMERSIBLE CHOPPER PUMP

NOT TO SCALE



2 ELECTRICAL EQUIPMENT ENCLOSURE SECTION

SCALE: N.T.S

GENERAL NOTES:
1. INSTALLATION OF THE PUMPS AND CONTROL WIRING SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
2. ALL CONTROL WIRING TO BE INSTALLED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO COORDINATE EXACT REQUIREMENTS WITH THE CONTROL PANEL MANUFACTURER PRIOR TO INSTALLATION.
3. EQUIPMENT TO BE MOUNTED A MINIMUM OF 18INCHES ABOVE BOTTOM OF ENCLOSURE. MAIN CONTROL PANEL TO BE MOUNTED AT EYE LEVEL.
4. ELECTRICAL DESIGN TO BE COORDINATED WITH ELECTRIC PLANS PREPARED BY FITZMEYER & TOCCI.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 10/22/25

TFM — Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists
48 Constitution Drive, Bedford, NH 03110, Phone (603) 472-4488, Fax (603) 472-9747, www.tfmoran.com

FILE	18252-02	DR		FB	–	D-16
		CK		CADFILE	18252-02 COVER & DETAILS	

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Dec 23, 2025 - 2:25pm
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NEW HAMPSHIRE
STATE ENDANGERED

BLANDING'S TURTLE

Report Sightings: Contact Wildlife Biologist Josh Megyesy at (603) 271 – 1125 or the Wildlife Division at (603) 271 – 2461. Observation reports can be sent to RAARP@wildlife.nh.gov. Photographs and exact locations are strongly encouraged.



Specific Information:

- Adults are 7 – 9 inches long.
- Shell is highly domed with light speckles.
- Distinct yellow throat and chin.
- Uses variety of wetlands and moves extensively over land.
- Turtles are frequently concealed by leaves and undergrowth and may not be easily visible.
- Turtles are most active from April 15 – October 15.
- During nesting season (May 15 – July 15) turtles are attracted to disturbed ground.





This species is protected under RSA 212-A and Fis 1000. Thank you for reporting any observations.

PLEASE DO NOT DISTURB OR HANDLE WILDLIFE

New England Cottontail *(Sylvilagus transitionalis)*

(New Hampshire State-Endangered)



- Adults are 15-17" in length
- Brown and gray coat that does NOT change color with the seasons.
- Black spot between the years is sometimes visible but not always present.
- Can be mistaken for non-native Eastern cottontails.

Please report sightings to NH Fish and Game at RAARP@wildlife.nh.gov or at 603-271-2461. Photo documentation, location, and date/time of observation is helpful.

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REPORT OBSERVATIONS
Smooth Green Snake
(Species of Special Concern)

Report sightings to NHFG Wildlife Division at NHFGReview@wildlife.nh.gov

Reference NHB# and project name if applicable.
Please report promptly, noting specific location and date.
Photographs strongly encouraged.



- Thin, bright green snake
- 10-20 inches long
- White or pale yellow underside
- Found in open or lightly forested habitats such as grassy fields, meadows, blueberry barrens, and forest openings
- Dead individuals turn blue





Northern Black Racer

(New Hampshire state threatened species)



- Solid black with a white throat and chin
- Slender with glossy scales, 3-6 ft. long
- Hatchlings are very small and patterned



Immediately report sightings to NH Fish and Game
Melissa Winters (603-479-1129) or
Brendan Clifford (603-944-0885)
Please report promptly, noting specific location and date
Photographs strongly encouraged

EASTERN HOGNOSE SNAKE

(New Hampshire state endangered species)

*Egg laying occurs **June 1 - July 15th**,*
*Young emerge in **August - September**.*



Identifying traits

- Black, gray or patterned appearance
- Upturned snout
- Adults are 2-3 ft. long
- May spread neck out or hiss
- May play dead if they feel threatened.
- Rarely bite – display is a defense strategy



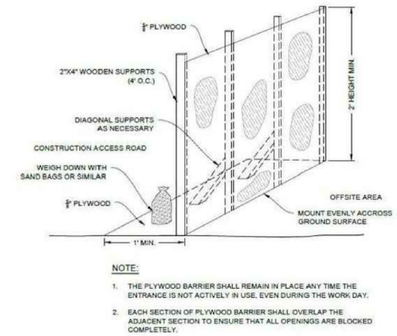
Habitat Use

- Can be found in a variety of habitats throughout the season



Immediately report sightings to NH Fish & Game
Melissa Winters (603-479-1129) or
Brendan Clifford (603-944-0885)
Please report promptly, noting specific location and date.
Photographs strongly encouraged.

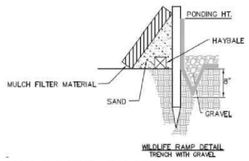
State Laws Pertaining to this Species
RSA 212-A:7, FIS 804.05, Fis 1401.03 (a)



NOTE:
1. THE PLYWOOD BARRIER SHALL REMAIN IN PLACE ANY TIME THE ENTRANCE IS NOT ACTIVELY IN USE, EVEN DURING THE WORK DAY.
2. EACH SECTION OF PLYWOOD BARRIER SHALL OVERLAP THE ADJACENT SECTION TO ENSURE THAT ALL OPENINGS ARE BLOCKED COMPLETELY.

WILDLIFE EXCLUSIONARY BARRIER GATE

NOT TO SCALE



WILDLIFE RAMP DETAIL
TRENCH WITH GRAVEL

WILDLIFE RAMP

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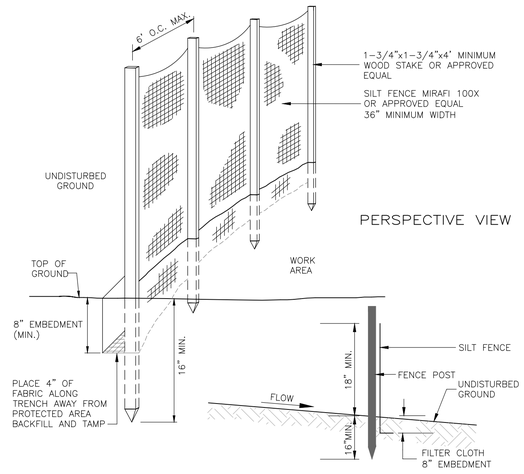
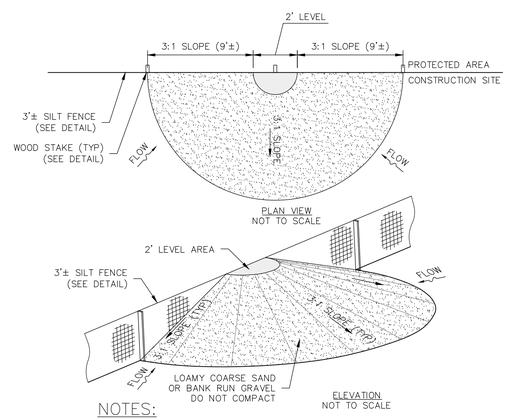


SILT FENCE

NOT TO SCALE



NOTES:

1. RAMP TO BE ON SIDE OF FENCE WHERE CONSTRUCTION ACTIVITIES OCCUR.
2. REFER TO SILT FENCE DETAIL FOR FENCE INSTALLATION.
3. SPACE AT 75'.

SILTATION FENCE WILDLIFE RAMP

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

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		CK		CADFILE	18252-02 COVER & DETAILS	

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LANDSCAPE NOTES

SITE AND SOIL PREPARATION

1. WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR LEDGE, NOTIFY LANDSCAPE ARCHITECT/ENGINEER BEFORE PLANTING.

2. ALL DISTURBED AREAS & PLANTING AREAS, INCLUDING AREAS TO BE SODDED, SHALL RECEIVE THE FOLLOWING SOIL PREPARATION PRIOR TO PLANTING: A MINIMUM OF 6 INCHES OF LIGHTLY COMPACTED TOPSOIL SHALL BE INSTALLED OVER THE SUBSOIL IF TOPSOIL HAS BEEN REMOVED OR IS NOT PRESENT.

3. LOAM SHALL CONSIST OF LOOSE FRIABLE TOPSOIL WITH NO ADMIXTURE OF REFUSE OR MATERIAL TOXIC TO PLANT GROWTH. LOAM SHALL BE FREE FROM STONES, LUMPS, STUMPS, OR SIMILAR OBJECTS LARGER THAN TWO INCHES (2") IN GREATEST DIAMETER, SUBSOIL, ROOTS, AND WEEDS. THE MINIMUM AND MAXIMUM PH VALUE SHALL BE FROM 5.5 TO 7.0. LOAM SHALL CONTAIN A MINIMUM OF TWO PERCENT (2%) AND A MAXIMUM OF FIVE PERCENT (5%) ORGANIC MATTER AS DETERMINED BY LOSS BY IGNITION. SOIL TEXTURE SHALL BE SANDY CLAY LOAM OR SANDY LOAM WITH CLAY CONTENT BETWEEN 15 AND 25%, AND A COMBINED CLAY/SILT CONTENT OF NO MORE THAN 55%. NOT MORE THAN SIXTY-FIVE PERCENT (65%) SHALL PASS A NO. 200 SIEVE AS DETERMINED BY THE WASH TEST IN ACCORDANCE WITH ASTM D1140. IN NO INSTANCE SHALL MORE THAN 20% OF THAT MATERIAL PASSING THE #4 SIEVE CONSIST OF CLAY SIZE PARTICLES.

4. NATURAL TOPSOIL NOT CONFORMING TO THE PARAGRAPH ABOVE OR CONTAINING EXCESSIVE AMOUNTS OF CLAY OR SAND SHALL BE TREATED BY THE CONTRACTOR TO MEET THOSE REQUIREMENTS.

5. SUBMIT TEST RESULTS OBTAINED FROM SOURCE TO ENGINEER/LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL, PRIOR TO SPREADING OPERATIONS.

6. APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT TO USE THE TOPSOIL WILL DEPEND UPON THE RESULTS OF THE SOIL TESTS.

7. THE BURDEN OF PROOF OF SOIL AMENDMENT INSTALLATION RESTS WITH THE CONTRACTOR. SOIL TESTS MAY BE REQUIRED AT THE CONTRACTOR'S EXPENSE IN ORDER TO CONFIRM AMENDMENT INSTALLATION.

SEEDING

1. ROUGH GRADING SHALL BE COMPLETED PRIOR TO THE START OF PLANTING IN ANY GIVEN AREA OF THE PROJECT SITE.

2. SEEDING SHALL BE DONE BETWEEN APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 15, EXCEPT FOR RESEEDING OF BARE SPOTS AND MAINTENANCE. ALL DISTURBED AREAS NOT COVERED BY BUILDINGS, PAVING OR AREAS THAT HAVE NOT BEEN OTHERWISE DEVELOPED SHALL BE SEEDED OR SODDED. SLOPES GREATER THAN 3:1 SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET. AFTER OCTOBER 15 DISTURBED SOILS SHALL BE PROTECTED IN ACCORDANCE WITH THE WINTER CONSTRUCTION NOTES.

ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

PARK SEED MIX (NHDOT TYPE 44) MIN. 135 LBS/ACRE:
- 33% CREEPING RED FESCUE (MIN. 45 LBS/ACRE)
- 42% PERENNIAL RYEGRASS (MIN. 55 LBS/ACRE)
- 21% KENTUCKY BLUEGRASS (MIN. 30 LBS/ACRE)
- 4% REDTOP (MIN. 5 LBS/ACRE)

MODIFIED NEW ENGLAND CONSERVATION WILDLIFE MIX (MIN. 25 LBS/ACRE)*
CONTAINS: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), BLUE VERVAIN (VERBENA HASTATA), BLACK EYED SUSAN (RUDBECKIA HIRTA), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).
*SEED MIX SHALL NOT CONTAIN INDIAN GRASS (SORGHASTRUM NUTANS), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), OR COMMON SNEEZEWEED (HELENIUM AUTUNALE).

TEMPORARY LAWN MIX: (MIN. 47 LBS/ACRE)
100% ANNUAL RYE

*SEED MIX SHALL NOT CONTAIN INDIAN GRASS (SORGHASTRUM NUTANS), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), OR COMMON SNEEZEWEED (HELENIUM AUTUNALE).

PLANTING

1. EXCAVATE PITS, PLANTERS, BEDS AND TRENCHES WITH VERTICAL SIDES AND WITH BOTTOM OF EXCAVATION SLIGHTLY RAISED AT CENTER TO PROVIDE PROPER DRAINAGE. LOOSEN HARD SUBSOIL IN BOTTOM OF EXCAVATION.

2. ANY LEDGE OR RUBBLE MATERIAL SHALL BE FRACTURED TO A DEPTH OF 3 FEET AND EXCAVATED TO A DEPTH OF 30 INCHES FOR TREE POCKETS AND 18 INCHES FOR SHRUB BEDS. THIS PROCEDURE SHALL BE HANDLED BY THE SITE CONTRACTOR. SITE TOPSOIL SHALL BE DEPOSITED IN ALL EXCAVATED POCKETS.

3. DISPOSE OF SUBSOIL REMOVED FROM PLANTING EXCAVATIONS. DO NOT MIX WITH PLANTING SOIL OR USE AS BACKFILL.

4. FILL EXCAVATIONS FOR TREES AND SHRUBS WITH WATER AND ALLOW TO PERCOLATE OUT BEFORE PLANTING.

5. DISH TOP OF BACKFILL TO ALLOW FOR MULCH – PLANT SAUCERS SHALL BE AS SHOWN ON DETAIL SHEETS; 6' DIAMETER FOR ALL DECIDUOUS TREES, AND FOR EVERGREEN TREES A RADIUS 2' BEYOND THE OUTER MOST BRANCHES.

6. MULCH TREES, SHRUBS, PLANTERS AND BEDS. PROVIDE NOT LESS THAN 3" THICKNESS OF BARK MULCH, 3/8"–2" OF WIDTH, AND WORK INTO TOP OF BACKFILL. FINISH LEVEL WITH ADJACENT FINISH GRADES AS DIRECTED IN THE FIELD.

7. TREEGATOR WATERING SYSTEM OR APPROVED EQUAL SHALL BE INSTALLED FOR ALL DECIDUOUS TREES AT TIME OF PLANTING AND REMOVED BEFORE FROST. WATERING RATE TO BE APPLIED PER MANUFACTURER'S SPECIFICATIONS.

8. ALL PLANT MATERIALS SHALL HAVE DEAD OR DAMAGED BRANCHES REMOVED AT TIME OF PLANTING. ALL TAGS AND RIBBONS SHALL BE REMOVED AT THIS TIME.

9. THE CONTRACTOR SHALL REQUEST A FINAL OBSERVATION BY THE OWNER'S REPRESENTATIVE UPON COMPLETION OF INSTALLATION.

10. AVOID OR MINIMIZE THE USE OF FERTILIZERS IN UPLAND AREAS OR TRANSITION ZONES. IF FERTILIZERS ARE NECESSARY, USE ORGANIC VERSUS SYNTHETIC FERTILIZERS OPTIONS. SYNTHETIC OPTIONS SHOULD BE AVOIDED; HOWEVER, IF CHOSEN, THEY SHOULD BE CONTROLLED-RELEASE/SLOW-RELEASE AND AT LOW STRENGTHS.

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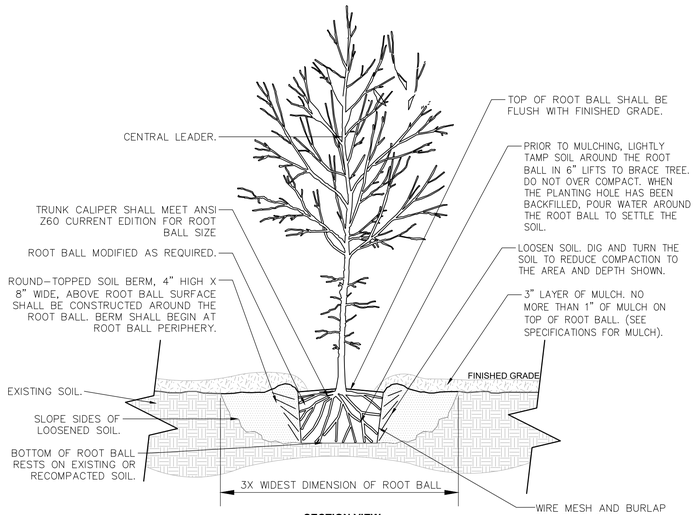
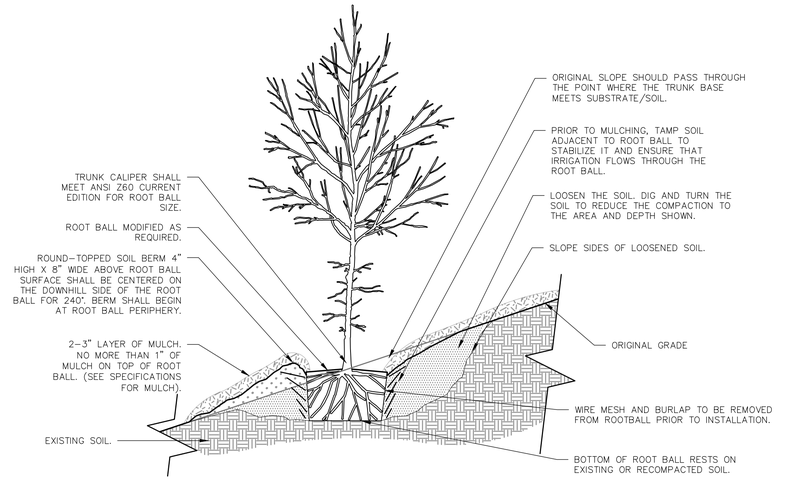
This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.



SECTION VIEW

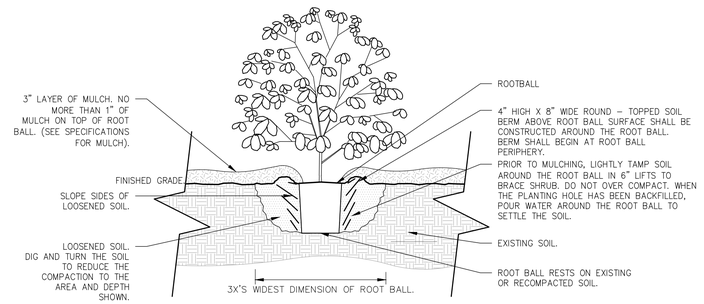
TREE WITH MULCH BERM

NOT TO SCALE



TREE ON SLOPE 5% (20:1) TO 50% (2:1)

NOT TO SCALE



SECTION VIEW

SHRUB PLANTING

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

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18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-18

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STORMWATER MANAGEMENT INSPECTION & MAINTENANCE MANUAL

COPIES OF THE I&M REPORTS SHALL BE FILED WITH THE TOWN ON AN ANNUAL BASIS.

Inspection & Maintenance Manual

PurposeEnergy-Londonderry, LLC
Southern New Hampshire Green Energy Campus
North Wentworth Avenue, Londonderry, NH
September 12, 2025
Revised December 18, 2025

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Deicing Data Form

Inspection Checklist and Inspection & Maintenance Plan

Description of Project

The Southern New Hampshire Green Energy Campus will reduce the waste management burden on New Hampshire by tackling the food waste problem. It will feature two connected resource recovery facilities.

- The first, RecycleWorks, will receive food waste that normally goes to landfill, including food that has passed its sell by date or is out of specification but is wrapped in glass, plastic, or metal packaging. RecycleWorks will remove the organic waste from that packaging and send it to the second facility on the campus,
- PurposeEnergy – Londonderry. PurposeEnergy will pump the food waste into tanks that digest it in a process similar to a human stomach. The tanks will also receive dairy waste directly by pipe from a local business, Stonyfield Yogurt. The digester tanks will produce renewable biogas that will be cleaned to pipeline quality and injected into the local natural gas network.

The Green Energy Campus is not a landfill; all of the material that comes to the campus will leave it either as recyclable material, renewable biogas, clean water, or biosolids (the residuals from digestion which will be sent to a compost facility for use as fertilizer). The net impact of the Southern New Hampshire Green Energy Campus is to

- divert 90% of solid waste away from New Hampshire landfills;
- reduce the escape of environmentally damaging methane gas resulting from decomposition of organic matter;
- support local business in the cost-effective and environmentally beneficial management of food manufacturing waste.

The site consists of the following major elements:

- 36,600 sf Depackaging Facility (RecycleWorks)
- A 14,100 sf Process Building, with future expansion of 9,800 sf (PurposeEnergy)
- tribrid bio-reactors
- 3 flow equalization tanks
- 26' x 32' screening room building
- A biogas upgrading yard
- An interconnection facility yard
- Truck scales
- Parking and trucking interconnection

An open and closed drainage system is proposed to attenuate, convey, and treat runoff from the proposed development. A series of catchbasins, sediment forebays, two (2) filtration basins and one (1) detention basin, strategically located though the site will provide pretreatment/treatment and manage runoff.

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
North Wentworth Ave.
Londonderry, NH 03053

Responsible Party

Operator: PurposeEnergy-Londonderry, LLC

Address: PurposeEnergy-Londonderry, LLC

Contact: Sean O'Neill, oneail@purposeenergy.com, (917).776.6155

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
North Wentworth Ave.
Londonderry, NH 03053

Stormwater Practices – Schedule of Maintenance

The following practices shall be inspected twice annually, once following snowmelt (spring) and once following leaf-drop (fall):

- Sediment Forebays
- Filtration/Detention Basins
- Catch Basin

The following practices shall be inspected annually following snowmelt (spring):

- Culvert
- Catch Basin
- Headwalls
- Riprap Aprons
- Swales

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
North Wentworth Ave.
Londonderry, NH 03053

Stormwater Practices – Maintenance Guidelines

Treatment Practices
(Inspected twice a year)

Filtration/Detention Basin
Maintenance Requirements:
- To be inspected twice annually, once following snowmelt (spring) and once following leaf-drop (fall);
- Removal of debris from inlet and outlet structures;
- Removal of accumulated sediment;
- Periodic mowing of embankments;
- Removal of woody vegetation from embankments;
- Inspection and repair of embankments; and
- If an infiltration system does not drain within 72-hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore infiltration function, including but not limiting to removal of accumulated sediments or reconstruction of the infiltration trench.

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
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Pretreatment Practices
(Inspected twice a year)

Sediment Forebay
Maintenance Requirements:
- To be inspected at least twice annually, once following snowmelt and once following leaf-drop and cleaned as indicated by inspection;
- Conduct periodic mowing of embankments (two times per year) to control growth of woody vegetation on embankments;
- Remove debris from outlet structure;
- Remove and dispose of accumulated sediment; and
- Install and maintain a staff gage or other measuring device to indicate depth of sediment accumulation and level at which clean-out is required. It shall be cleaned out when sediment fills half the sump depth (minimum sump depth is 2 feet when clear).

Conveyance Practices
(Inspections As Noted)

Culvert
Maintenance Requirements:
- To be inspected at least twice annually, once following snow-melt (spring) and once following leaf drop (fall), and cleaned as indicated by inspection.
- Inspect culvert inlet, outlet, and structure.
- Remove accumulated sediments greater than 2 inches in depth and debris at the inlet, at the outlet, and within the conduit.
- Repair any erosion damage at the culvert's inlet and outlet.

Catch Basin
Maintenance Requirements:
- To be inspection a least twice annually, once following snow-melt and once following leaf-drop and cleaned as indicated by inspection;
- Sediment should be removed annually and when it approaches half the sump depth; and
- If floating hydrocarbons are observed during an inspection, the material should be removed immediately by skimming, absorbent materials, or other method and disposed of in conformance with applicable state and federal regulations.

Headwalls
Maintenance Requirements:
- Inspect at least once annually for accumulation of sediment and debris and for signs of erosion along embankments;
- Remove debris whenever observed during inspection; and
- Remove sediment when accumulation exceeds 25% of channel depth.

Riprap Apron/Plunge Pool
Maintenance Requirements:
- Inspect at least once annually for damage and deterioration; and
- Repair damages immediately.

Riprap Swales
Maintenance Requirements:
- Inspect at least once annually for damage and deterioration
- Remove lodged debris

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
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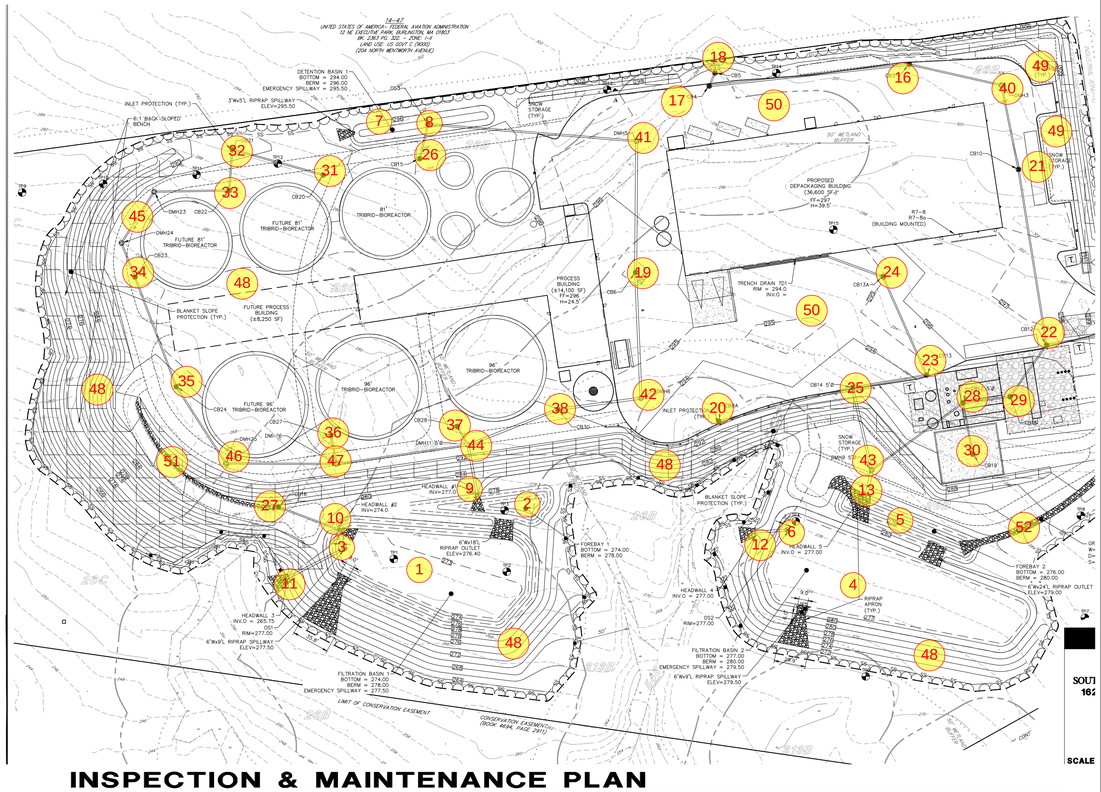
Londonderry, NH 03053



INSPECTION & MAINTENANCE PLAN

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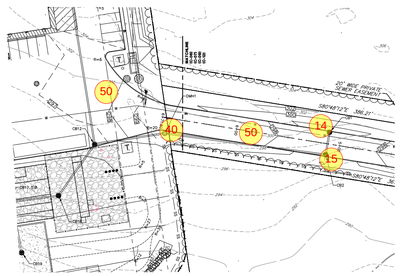

STORMWATER MANAGEMENT INSPECTION & MAINTENANCE MANUAL

COPIES OF THE I&M REPORTS SHALL BE FILED WITH THE TOWN ON AN ANNUAL BASIS.

- Repair damages immediately.

System Components

Access Driveway (North Wentworth Ave ROW):
Maintenance Requirements (only for section constructed by this site plan):

- Sediments and debris should be removed and disposed of from impervious areas by power-broom sweeping.
- Sweep at least two (2) times per year and on a more frequent basis depending on sanding operations.
- All resulting sweepings shall be collected and properly disposed of off-site in accordance with NHDES and other applicable requirements.

Driveway, Sidewalk, and Parking Areas:
Maintenance Requirements:

- Sediments and debris should be removed and disposed of from impervious areas by power-broom sweeping.
- Sweep at least two (2) times per year and on a more frequent basis depending on sanding operations.
- All resulting sweepings shall be collected and properly disposed of off-site in accordance with NHDES and other applicable requirements.

Lawns and Landscaping Areas:
Maintenance Requirements:

- Inspect, maintain, and repair as necessary development area lawns and landscaped areas to ensure a stabilized surface.
- Maintain lawn areas with healthy turf. Take steps to necessary to restore distressed turf to good health.
- Ensure that landscape mulch materials are refreshed as necessary and does not wash onto sidewalks or other adjacent surfaces.

Control of Invasive Plans

During maintenance activities, check for the presence of invasive plants. If invasive plants are found, they shall be controlled and removed in a safe manner as described on the following pages.

Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as "hitchhikers" among shipments of other plants, seeds, packing materials or fresh produce. Invasive plants can cause harm by:

- Becoming weedy and overgrown;
- Killing established shade trees;
- Obstructing pipes and drainage systems
- Forming dense beds in water
- Lowering water levels in lakes, streams, and wetlands
- Destroying natural communities
- Promoting erosion on stream banks and hillsides
- Resisting control except by hazardous chemicals.

Inspection & Maintenance Log

Date	Inspector	BMPs checked	Maintenance Required

Deicing Plan

The project Chloride Management Plan is described in the following pages. Also attached is a Deicing log to be used to document maintenance procedures, and the current NHDES Fact Sheet.

Beaver Brook has been declared an impacted watershed in need of corrective action due to Chloride loading, most notably resulting from winter maintenance activities. Londonderry has a Salt Reduction Plan (SRP) that provides a procedural framework for the Town of Londonderry to continuously strive to improve winter maintenance operations while effectively and efficiently using road salt during the snow and ice removal operations. Londonderry will provide winter maintenance to town roadways, parking lots, and sidewalks in accordance with Londonderry's Winter Maintenance Snow and Ice Control Policy while striving to minimize adverse impacts to the environment by:

- Adhering to the procedures contained within the SRP;
- Committing to ongoing winter maintenance staff training and education;
- Reporting fiscal year salt usage to New Hampshire Department of Environmental Services (NHDES);
- Re-evaluating the effectiveness of the SRP as needed to incorporate new technologies or changes in procedures.

Under the existing SRP, the Town has identified four strategies to help meet the Total Maximum Demand Load allocation within the Little Cohas Brook / Cohas Brook Watershed. The current load is estimated at 854.47 tons/year imported to the watershed. The town's reduction goals are 6% for year one, 12% for year two, and 18% for year three to be achieved from the following strategies:

- Equipment upgrade pilot project;
- Improved calibration;
- Private sector outreach;
- Improved weather system monitoring.

NHDES will monitor the progress made by each community impacting the Little Cohas Brook / Cohas Brook watershed and may require modifications to each plan. In recognition of the Little Cohas Brook / Cohas Brook Watershed chloride reduction plan for Londonderry, and that approximately 40% of the chloride impact is a result of winter operations on private roadways and parking lots, the PurposeEnergy-Londonderry, LLC will be guided by the following actions:

- Private Maintenance Contracting Equipment Upgrades and Training
  All snow removal contactors shall be NH Certified Green SnowPro contractors who have been trained and are knowledgeable of Best Management Practices (BMP) for snow removal with reduced salt application. These practices are published and are updated though the UNH – Technology Transfer (T2) program. All private contractors employed by PurposeEnergy-Londonderry, LLC roadway maintenance will use only pre-approved methods for spreading abrasives on private roadways and parking lots. When salt is applied, it will be applied only in accordance with best management practices and will include pre-treatment and ground speed-controlled spreaders.
- Improved Weather System Monitoring
  PurposeEnergy-Londonderry, LLC will coordinate weather information gathered by both the town and NHDOT for use by maintenance contractors. In doing so, contractors will be able to make more informed decisions as to when and to what extent chloride is applied to roadways, sidewalks, and parking lots;
- Increased Mechanical/Removal Capabilities
  PurposeEnergy-Londonderry, LLC will endeavor to use mechanical removal means on a more frequent basis using more manpower and equipment than traditionally used to shorten plowing intervals and reduce the need for salting to break up hard packed snow. Shortened maintenance routes with shorter service intervals will be used to stay ahead of snowfall, thus reducing the need to sand and salt after snow and ice packing has already occurred.
- Public Awareness Campaign
  PurposeEnergy-Londonderry, LLC will inform all future developers, grantees, and tenants of the need to reduce salt application on roadways, parking lots, and sidewalks.

The manual, as with the Town's Salt Reduction Plan, is intended to be a dynamic document, modified as required based on knowledge gained from past practices and technological advancement to reflect chloride best management practices.

Deicing Data Form

Note: The operator shall report annual salt usage within the municipal boundaries to NHDES's New Hampshire Salt Management System Database at: https://www.nhmed.des.nh.gov/salt-resources/winter-maintenance/

Location: Southern New Hampshire Green Energy Campus North Wentworth Ave. Londonderry, NH 03053				
Date:				
Air Temperature	**Pavement Temperature**	**Relative Humidity**	**Dew Point**	**Sky**
Reason for applying:				
Area of Application:				
Chemical:				
Application Time:				
Application Amount:				
Observation (first day):				
Observation (after event):				
Observation (before next application):				

Name:

*__New Hampshire Certified Green SnowPro__ Applicator shall be employed for winter snow and ice management activities

Inspection Checklist

Date:	**Project Name: Southern New Hampshire Green Energy Campus**
Inspector's Name/Title:	
Inspector's Contact Information:	
☐ 1st Yearly Inspection	BMP's to be inspected: All
☐ 2nd Yearly Inspection	BMP's to be inspected: Treatment and Pretreatment Practices

BMP* **Refer to following Inspection & Maintenance Plan for BMP location**		Maintenance Required	Corrective Action Needed and Notes
1	Filtration Basin 1	☐ Yes ☐ No	
2	Forebay 1	☐ Yes ☐ No	
3	Outlet Structure 1	☐ Yes ☐ No	
4	Filtration Basin 2	☐ Yes ☐ No	
5	Forebay 2	☐ Yes ☐ No	
6	Outlet Structure 2	☐ Yes ☐ No	
7	Detention Basin 1	☐ Yes ☐ No	
8	Outlet Structure 3	☐ Yes ☐ No	
9	Headwall 1	☐ Yes ☐ No	
10	Headwall 2	☐ Yes ☐ No	
11	Headwall 3	☐ Yes ☐ No	
12	Headwall 4	☐ Yes ☐ No	

13	Headwall 5	☐ Yes ☐ No	
14	CB1	☐ Yes ☐ No	
15	CB2	☐ Yes ☐ No	
16	CB3	☐ Yes ☐ No	
17	CB4	☐ Yes ☐ No	
18	CB5	☐ Yes ☐ No	
19	CB6	☐ Yes ☐ No	
20	CB8A	☐ Yes ☐ No	
21	CB10	☐ Yes ☐ No	
22	CB12	☐ Yes ☐ No	
23	CB13	☐ Yes ☐ No	
24	CB13A	☐ Yes ☐ No	
25	CB14	☐ Yes ☐ No	
26	CB15	☐ Yes ☐ No	
27	CB16	☐ Yes ☐ No	
28	CB17	☐ Yes ☐ No	
29	CB18	☐ Yes ☐ No	
30	CB19	☐ Yes ☐ No	
31	CB20	☐ Yes ☐ No	
32	CB21	☐ Yes ☐ No	
33	CB22	☐ Yes ☐ No	
34	CB23	☐ Yes ☐ No	
35	CB24	☐ Yes ☐ No	

36	CB27	☐ Yes ☐ No	
37	CB28	☐ Yes ☐ No	
38	CB30	☐ Yes ☐ No	
39	DMH1	☐ Yes ☐ No	
40	DMH3A	☐ Yes ☐ No	
41	DMH5	☐ Yes ☐ No	
42	DMH6	☐ Yes ☐ No	
43	DMH9	☐ Yes ☐ No	
44	DMH11	☐ Yes ☐ No	
45	DMH24	☐ Yes ☐ No	
46	DMH25	☐ Yes ☐ No	
47	DMH26	☐ Yes ☐ No	
48	Development Area Lawns (Typ.)	☐ Yes ☐ No	
49	Development Area Landscaping (Typ.)	☐ Yes ☐ No	
50	Parking Lot & Driveway Sweeping (Typ.)	☐ Yes ☐ No	
51	Swale R1		
52	Swale R2		
	Other	☐ Yes ☐ No	
52			

*Best Management Practices
**Photographs of BMPs shall be included as part of the required Inspections
***Copies of Inspection & Maintenance Records shall be provided to the Town of Londonderry on an annual basis and the NHDES AoT Bureau upon request
**** SWPPP reports shall be provided via e-mail to the Town of Londonderry at the same time they are provide to the Contractor and Owner

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	18252-02	DR		FB	–	D-20
		CK		CADFILE	18252-02 COVER & DETAILS	

Dec 23, 2025 - 2:25pm
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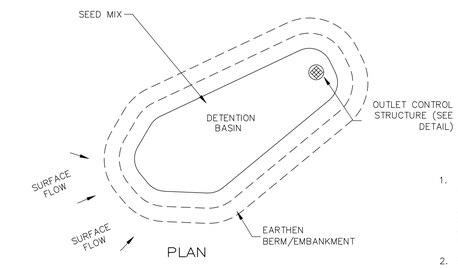
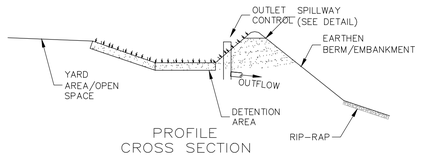
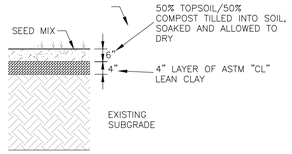


PLAN



PROFILE
CROSS SECTION

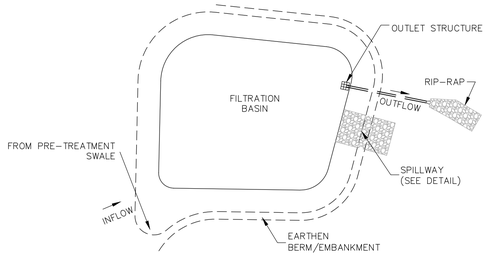


BASIN BOTTOM

1. THE INSTALLER SHALL NOT ALLOW ANY VEHICULAR OR CONSTRUCTION EQUIPMENT TRAVEL TO OCCUR ACROSS THE PROPOSED BASIN AREA AT ANY TIME EXCEPT DURING EXCAVATION OF TOPSOIL, SUBSOIL AND OTHER MATERIALS NOT SUITABLE FOR BED BOTTOM CONDITIONS.
2. CAUTION SHOULD BE EXERCISED DURING SITE PREPARATION TO AVOID COMPACTION OF THE INFILTRATIVE SURFACE.
3. SEED MIX
   NEW ENGLAND ROADSIDE MATRIX WET MEADOW SEED MIX (MIN. 35 LBS/ACRE)
4. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE BASIN.
5. VEGETATION SHOULD BE ESTABLISHED IMMEDIATELY.
6. DO NOT PLACE SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

DETENTION BASIN

NOT TO SCALE



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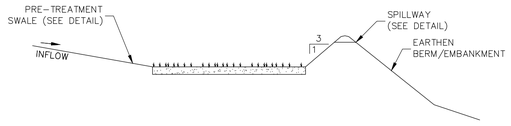
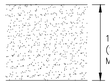


PROFILE



BASIN BOTTOM

FILTER MEDIA NOTES

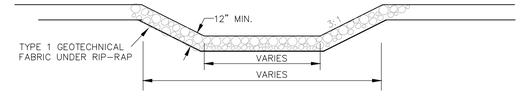
1. ASTM C-33 CONCRETE SAND (50%-55% BY VOLUME)
2. LOAMY SAND TOPSOIL WITH 15%-25% FINES PASSING THE NO. 200 SIEVE (20%-30% BY VOLUME)
3. MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH WITH LESS THAN 5% PASSING THE NO. 200 SIEVE (20%-30% BY VOLUME)

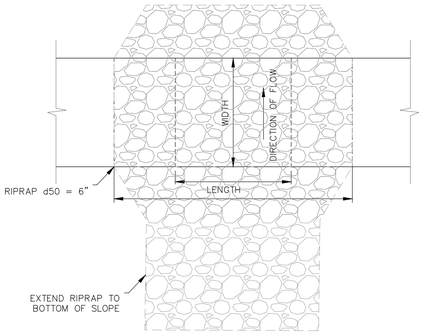
FILTRATION BASIN NOTES

1. THE INSTALLER SHALL NOT ALLOW ANY VEHICULAR OR CONSTRUCTION EQUIPMENT TRAVEL TO OCCUR ACROSS THE PROPOSED BASIN AREA AT ANY TIME EXCEPT DURING EXCAVATION OF TOPSOIL, SUBSOIL AND OTHER MATERIALS NOT SUITABLE FOR BED BOTTOM CONDITIONS.
2. CAUTION SHOULD BE EXERCISED DURING SITE PREPARATION TO AVOID COMPACTION OF THE INFILTRATIVE SURFACE.
3. SEED MIX
   NEW ENGLAND ROADSIDE MATRIX WET MEADOW SEED MIX (MIN. 35 LBS/ACRE)
4. FILTER MEDIA SOIL SAMPLE TO BE PROVIDED TO THE ENGINEER PRIOR TO PLACEMENT. ON SITE MIXING OF MANUFACTURED SOIL MAY BE ACCEPTABLE PENDING ENGINEER APPROVAL.
5. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE BASIN.
6. AFTER THE BASIN IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
7. VEGETATION SHOULD BE ESTABLISHED IMMEDIATELY.
8. DO NOT PLACE FILTRATION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
9. FILTRATION MEDIA SHALL BE INSTALLED ALONG INTERIOR SIDE SLOPES TO ELEVATION EQUAL TO OUTLET STRUCTURE RIM OR WEIR ELEVATION, WHICHEVER IS LOWER.
10. FILL TO BRING EMBANKMENT AREAS TO GRADE SHALL BE EXISTING SIDE MATERIALS OR IMPORTED MATERIAL CONSISTENT WITH THE GEOTECHNICAL REPORT RECOMMENDATIONS FOR COMMON FILL (SEE NOTE 21 AND 22 ON SHEET C-02).

FILTRATION BASIN

NOT TO SCALE





WEIR	TOP OF BASIN BERM EL.	WEIR INV.	LENGTH	WIDTH
SEDIMENT FOREBAY #1	278.0	276.40	10.4'	15.6'
SEDIMENT FOREBAY #2	280.0	278.90	21.0'	9.0'

BROAD CRESTED WEIR

FROM FOREBAYS

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

PREPARE BEDDING:

BACKFILL MATERIAL AROUND THE END SECTION MAY BE THE SAME AS THE MATERIAL AROUND THE PIPE, PLACE A FEW INCHES OF BACKFILL MATERIAL IN THE TRENCH OR DITCH WHERE THE END SECTION WILL BE PLACED. COMPACT AND CONTOUR THIS BEDDING MATERIAL TO GENERALLY MATCH THE END SECTION, EXCAVATE AN AREA IN THE BEDDING WHERE TOE TROUGH WILL SEAT SO THAT THE END SECTION WILL BE LEVEL WITH THE BOTTOM OF THE TRENCH OR DITCH IN THE FINISHED INSTALLATION.

PLACE END SECTION OF PIPE:

OPEN THE END SECTION COLLAR AND SEAT IT OVER THE TWO PIPE CONNECTIONS. ONCE THE END SECTION IS POSITIONED, CHECK TO MAKE SURE THAT THE INVERT OF THE END SECTION MATCHES THE INVERT OF THE PIPE AND THAT THE END SECTION IS LEVEL WITH THE TRENCH OR DITCH BOTTOM.

SECURE THE END SECTION:

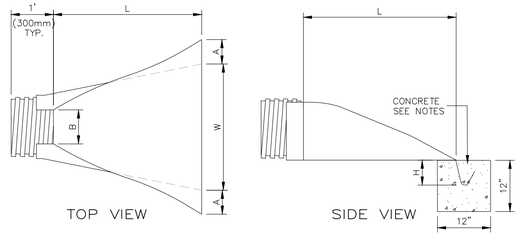
SLIP THE STAINLESS STEEL ROD THROUGH THE PRE-DRILLED HOLES AT THE TOP OF THE COLLAR. THE ROD SHOULD BE BETWEEN THE CROWNS OF THE TWO PIPE CONNECTIONS. PLACE A WASHER ON EITHER END OF THE ROD. PLACE A NUT ON EITHER END OF THE ROD AND TIGHTEN WITH A WRENCH.

SECURE THE TOE TROUGH:

TO PREVENT WASHOUTS FROM HIGH VELOCITY FLOW, IT IS RECOMMENDED THAT THE TROUGH BE SECURED WITH CONCRETE. POUR CONCRETE IN THE TROUGH UP TO THE LEVEL OF THE TRENCH OR DITCH BOTTOM AND ALONG THE ENTIRE LENGTH OF THE TROUGH.

FINISH BACKFILL:

SHOVEL BACKFILL AROUND THE END SECTION IN 6 TO 9 INCH LAYERS EQUALLY ON BOTH SIDES, KNIFING IT TO ELIMINATE VOIDS. TAMP WITH A SMALL-FACED COMPACTOR OR OTHER EQUIPMENT SUITABLE FOR SMALL AREAS. CONTINUE PLACING, KNIFING, AND COMPACTING BACKFILL LAYERS TO THE TOP OF THE END SECTION TO SEAT IT WELL INTO THE BACKFILL.



	DIMENSIONS, INCHES (mm)					
PIPE DIAMETER	PART NO.	A, ±1 (25)	B MAX	H, ±1 (25)	L, ±1/2 (13)	W, ±2 (50)
12", 15" (300,375)	1210 NP	6.5 (165)	10 (254)	6.5 (165)	25 (635)	29 (736)
18" (450)	1810 NP	7.5 (190)	15 (380)	6.5 (168)	32 (812)	35 (890)
24" (600)	2410 NP	7.5 (190)	18 (450)	6.5 (165)	36 (900)	45 (1140)
30" (750)	3010 NP	10.5 (266)	NA	7.0 (178)	53 (1346)	68 (1725)
36" (900)	3610 NP	10.5 (266)	NA	7.0 (178)	53 (1346)	68 (1725)

FLARED END SECTION

HIGH DENSITY POLYETHYLENE (HDPE)

NOT TO SCALE

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SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
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Fax (603) 472-9747
www.tfmoran.com

FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-21

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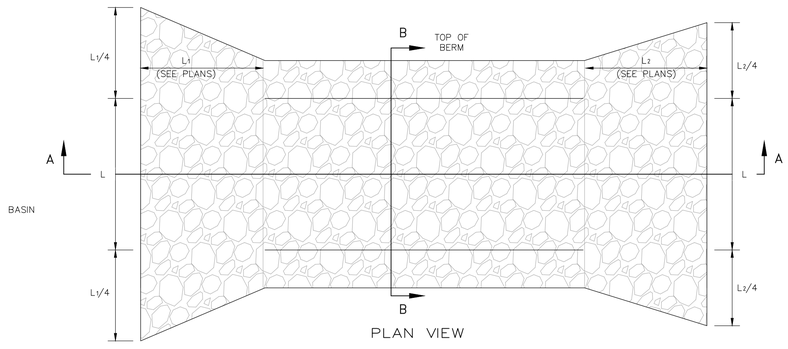
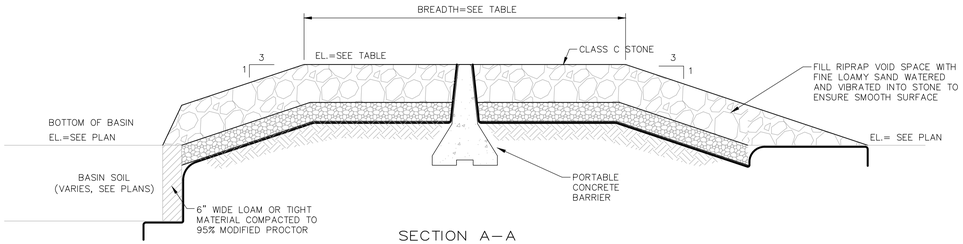
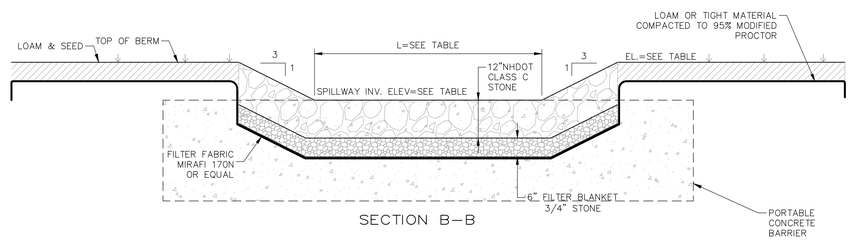
RIP-RAP GRADATION

	% FINER BY WEIGHT				
STONE SIZE	D 50 = 6"	D50 = 9"	D 50 = 12"	D50 = 18"	D50 = 24"
2"	0-15%	0%	–	–	–
4"	20-35%	10-20%	0-10%	–	–
6"	35-50%	25-35%	10-25%	0-10%	–
8"	50-65%	30-50%	20-30%	10-20%	0-10%
10"	60-80%	40-60%	30-40%	15-30%	5-15%
12"	75-100%	–	–	–	–
15"	–	70-100%	45-60%	25-40%	20-30%
20"	–	–	70-100%	40-60%	30-45%
30"	–	–	–	70-100%	50-70%
40	–	–	–	–	70-100%





SECTION A-A

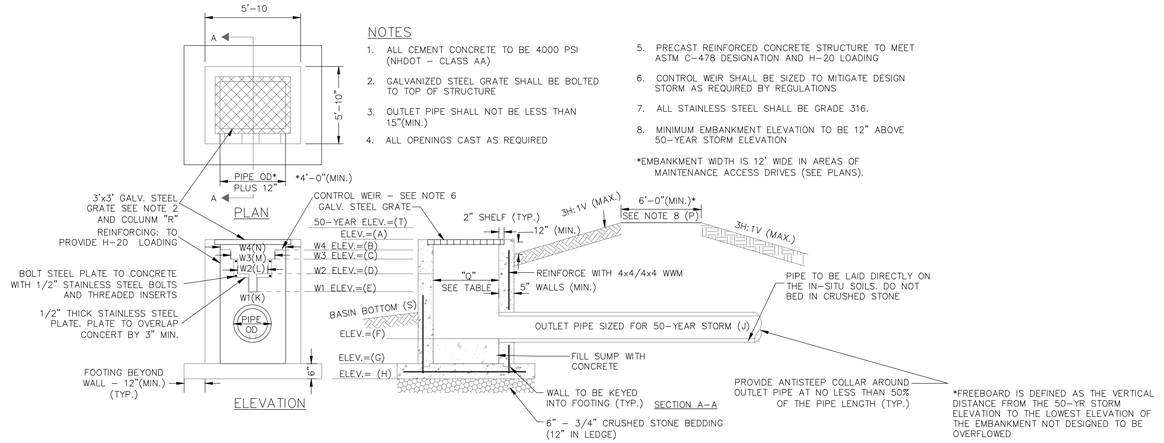


SECTION B-B

SYSTEM	TOP OF BASIN BERM EL.	SPILLWAY INV.	LENGTH (L)	BREADTH
FILTRATION BASIN #1	278.0	277.5	6'	9'
FILTRATION BASIN #2	280.0	279.5	6'	9'
DETENTION BASIN #1	296.0	295.5	3'	5'

SPILLWAY

FROM BASINS NOT TO SCALE



NOTES

1. ALL CEMENT CONCRETE TO BE 4000 PSI (NHDOT - CLASS AA)
2. GALVANIZED STEEL GRATE SHALL BE BOLTED TO TOP OF STRUCTURE
3. OUTLET PIPE SHALL NOT BE LESS THAN 15"(MIN.)
4. ALL OPENINGS CAST AS REQUIRED
5. PRECAST REINFORCED CONCRETE STRUCTURE TO MEET ASTM C-478 DESIGNATION AND H-20 LOADING
6. CONTROL WEIR SHALL BE SIZED TO MITIGATE DESIGN STORM AS REQUIRED BY REGULATIONS
7. ALL STAINLESS STEEL SHALL BE GRADE 316.
8. MINIMUM EMBANKMENT ELEVATION TO BE 12" ABOVE 50-YEAR STORM ELEVATION

*EMBANKMENT WIDTH IS 12' WIDE IN AREAS OF MAINTENANCE ACCESS DRIVES (SEE PLANS).

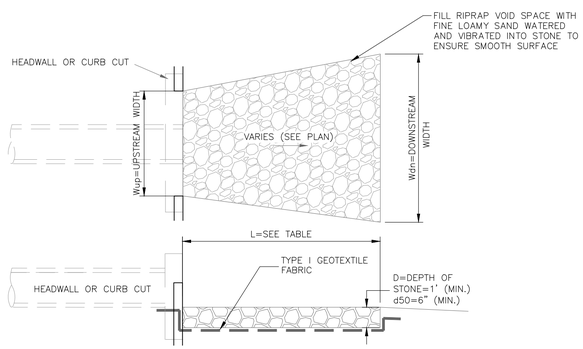
*FREEBOARD IS DEFINED AS THE VERTICAL DISTANCE FROM THE 50-YR STORM ELEVATION TO THE LOWEST ELEVATION OF THE EMBANKMENT NOT DESIGNED TO BE OVERFLOWED

	ELEVATIONS/DIMENSIONS																	
OUTLET STRUCTURE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	FREEBOARD (A-T)
FILTRATION BASIN #1	277.30	296.65	295.95	274.55	273.95	266.00	265.50	265.00	15"	1.2"	2.4"	6.0"	14.4"	278.00	4.00'x4.00'	4.50'x4.50'	273.00	277.00	1.00'
FILTRATION BASIN #2	279.00	–	278.65	278.35	277.75	272.00	271.50	271.00	15"	1.2"	6.0"	30.0"	–	280.00	4.00'x4.00'	4.50'x4.50'	277.00	278.97	1.03'
RETENTION BASIN #1	294.50	–	–	–	294.00	290.00	289.50	289.00	18"	9.0"	–	–	–	296.00	5.00'x5.00'	5.50'x5.50'	294.00	294.50	1.50'

OUTLET STRUCTURE AT STORMWATER BASINS

NOT TO SCALE

OUTLET	Do (ft.)	Q25 (cfs)	Tw (ft.)	La (ft.)	Wup (ft.)	Wdn (ft.)	d50 (in.)*
Headwall1(DMH11)	2.00	10.3	1.8	24.9	6.0	16.0	6.0
Headwall2 (CB16)	1.25	0.1	0.1	8.9	3.8	12.6	6.0
Headwall3 (OS1)	1.25	2.3	0.1	11.7	3.8	15.5	6.0
Headwall4 (OS2)	1.25	0.3	0.1	9.1	3.8	12.9	6.0
Headwall5 (DMH9)	2.50	16.9	2.0	30.3	7.5	19.6	6.0

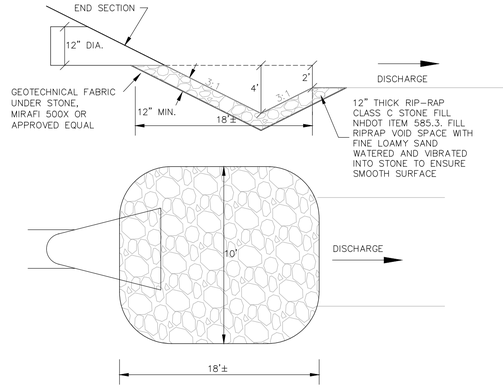


CONSTRUCTION SPECIFICATIONS:

1. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIP-RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK USED FOR RIP-RAP SHALL CONFORM TO THE SPECIFIED GRADATION (D50=6" (MIN)).
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP-RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP-RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

OUTLET APRON

NOT TO SCALE



RIP RAP PLUNGE POOL

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
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TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-22

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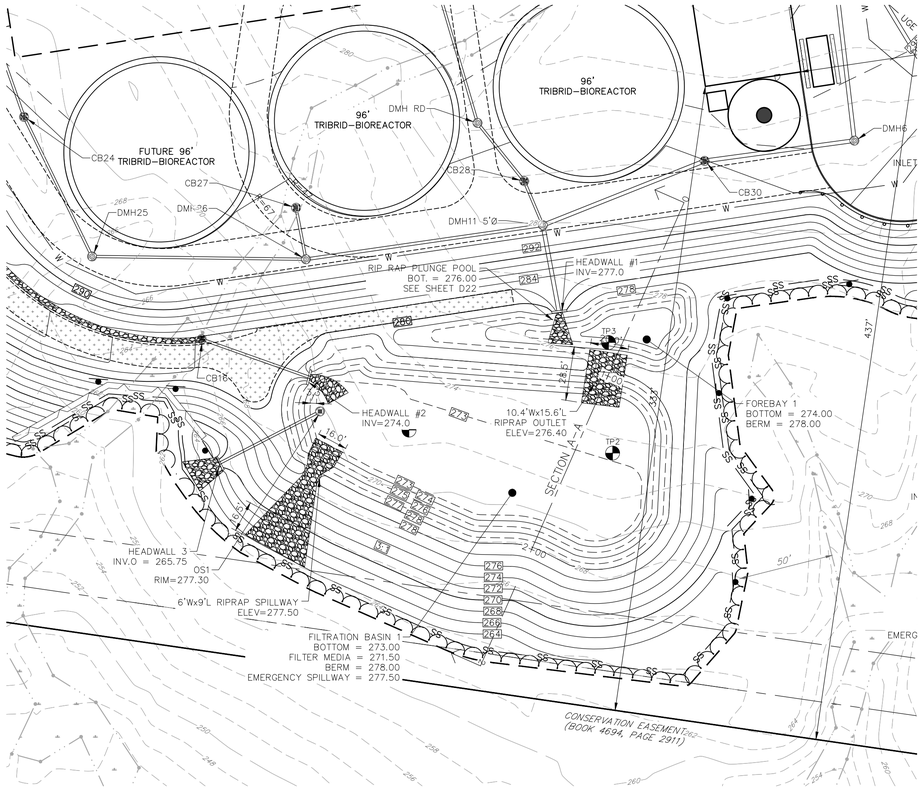
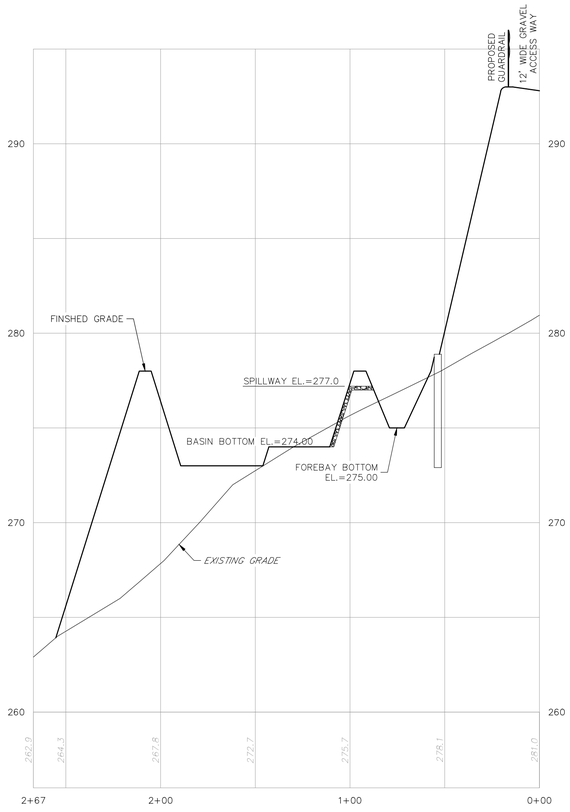


FILTRATION BASIN #1 PLAN VIEW

SCALE: 1"=40'



FILTRATION BASIN #1 SECTION A-A

SCALE: 1"=40' H/1"=4' V

GRADING & DRAINAGE NOTES

1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV–WQ 1500 AS APPLICABLE.
2. THE CONTRACTOR SHALL PREPARE, MAINTAIN, AND EXECUTE A S.W.P.P.P. IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
5. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEER'S RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE, INCLUDING AND NOT LIMITED TO DEWATERING METHODS, PERIMETER DRAINS AND TIE INTO STORMWATER MANAGEMENT SYSTEM, ETC.
6. COORDINATE WITH GEOTECHNICAL REPORT FOR SITE PREPARATION AND OTHER PERTINENT INFORMATION.
7. COORDINATE WITH ELECTRICAL DESIGN PLANS FOR DETAILED GRADING AT ELECTRICAL STRUCTURES, AND SIZE AND LOCATION OF ALL ELECTRICAL SERVICES.
8. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, DRIVES, ROADS, AND ALIGNMENTS.
10. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS, AND LOADING AREAS.
11. THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER DEEPER THAN 1/4" FOR A PERIOD OF MORE THAN 15 MINUTES AFTER FLOODING.
12. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
13. ALL SIDEWALK AND OTHER CURB REVEALS SHALL BE 6" WITH A TOLERANCE OF PLUS OR MINUS 3/8". WHERE SIDEWALK IS TO BE FLUSH, THE PAVEMENT REVEAL SHALL BE 1/4" WITH A TOLERANCE OF 1/8".
14. THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
15. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
16. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND SHALL MEET LOCAL STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
17. STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
18. NO FILL SHALL BE PLACED IN ANY WETLAND AREA.
19. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
20. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
21. DENSITY REQUIREMENTS:

MINIMUM DENSITY*	LOCATION
95%	BELOW PAVED OR CONCRETE AREAS
95%	TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL
90%	BELOW LOAM AND SEED AREA
90%	EMBANKMENTS/PERIMETER SLOPES ASSOCIATED WITH STORMWATER MANAGEMENT AREAS
70%	STORMWATER MANAGEMENT AREAS BASIN BOTTOMS, INCLUDING SUBGRADE

*ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D–1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D–1556 OR ASTM D–6938.

22. COMMON FILL GRADATION REQUIREMENTS *PER GEOTECHNICAL REPORT SPECIFICATIONS

SIEVE SIZE	PERCENT FINER BY WEIGHT
8 INCH	100
NO. 4	25 – 70
NO.200	0 – 12 (TOTAL)

23. SWALES ARE TO BE VEGETATED OR STONE LINED PRIOR TO DIRECTING RUNOFF TO THEM.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

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LONDONDERRY, NH 03053
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PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

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Land Surveyors
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FILE	18252-02	DR		FB	–	D–23
		CK		CADFILE	18252-02 COVER & DETAILS	

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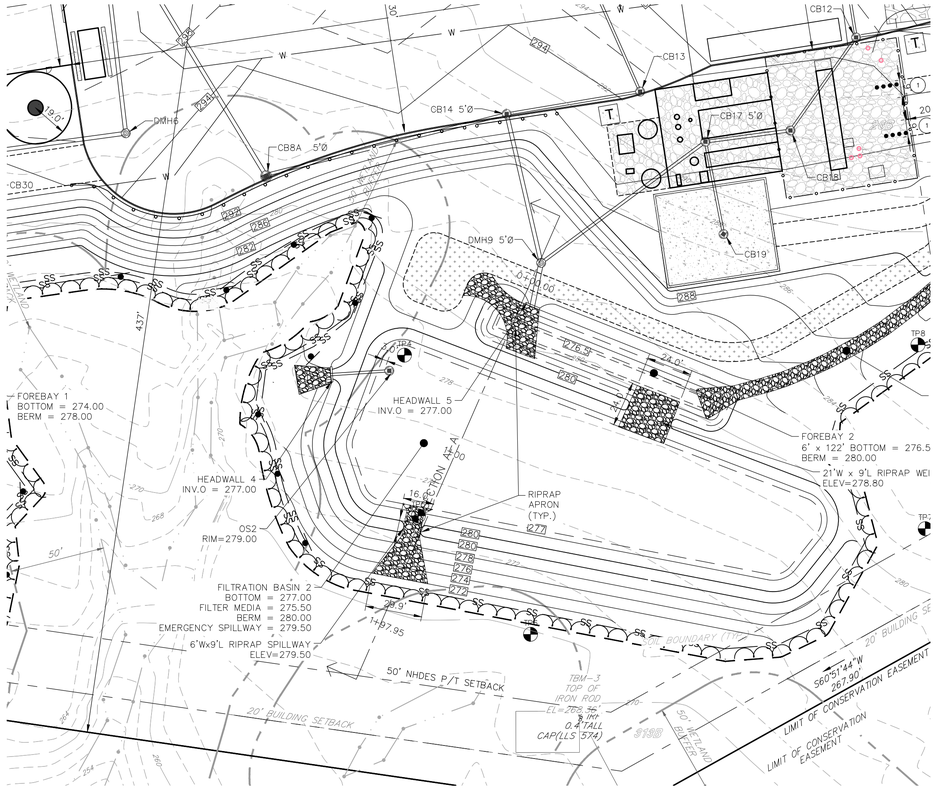
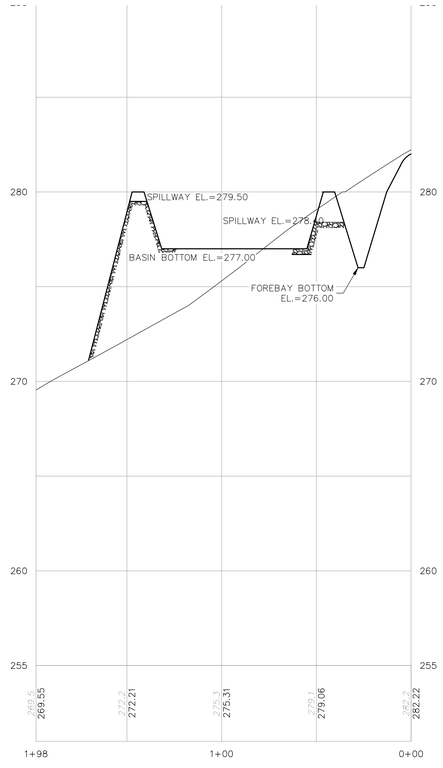
GRADING & DRAINAGE NOTES

1. SEE NOTES ON SHEET D-23.





FILTRATION BASIN #2

FILTRATION BASIN #2 PLAN VIEW

SCALE: 1"=40'

FILTRATION BASIN #2 SECTION A-A

SCALE: 1"=40' H/1"=4' V

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NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
12/22/25

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SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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Civil Engineers
Structural Engineers
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Land Surveyors
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FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-24

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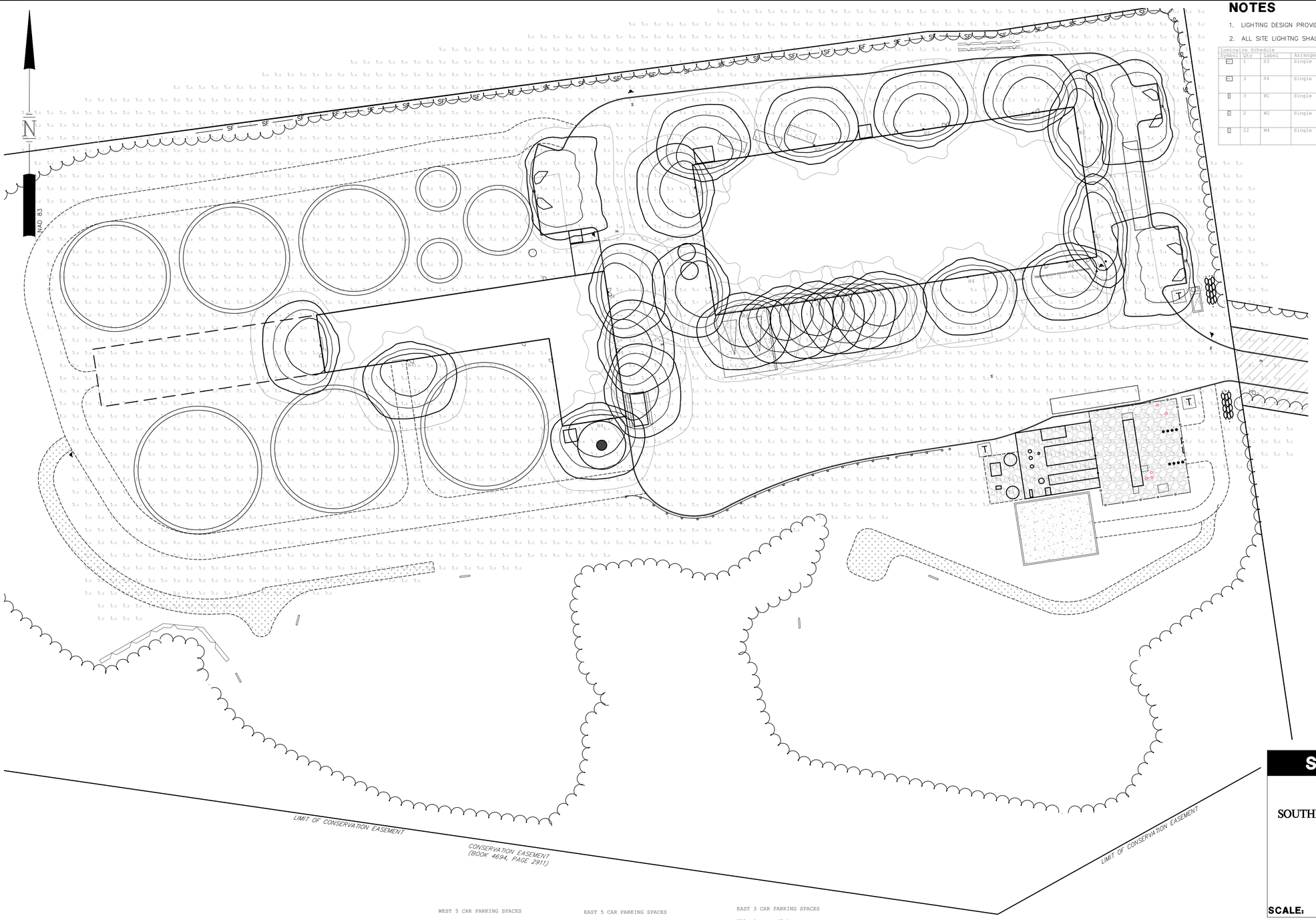

NOTES

1. LIGHTING DESIGN PROVIDED BY EXPOSURE INCORPORATED.
2. ALL SITE LIGHITNG SHALL BE FULL CUTOFF, DOWNCAST FIXTURE TYPES.

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Description	[MANUFAC]	Tag
	1	S3	Single	VALS-09L-5W-UNV-30K8-CXX-SA-IMSBTL1 / 4SQ B3 S1LG16 S CXX AB 48C	LSI INDUSTRIES, INC.	16' POLE ON 2' BASE
	3	S4	Single	VALS-09L-4P-30K8-CXX-SA-IMSBTL1 / 4SQ B3 S1LG16 S CXX AB 48C	LSI INDUSTRIES, INC.	16' POLE ON 2' BASE
	3	W1	Single	XWS-LED-3L-FTW-UNV-DIM-30-80CRI-IMSBTIL-CXX	LSI INDUSTRIES, INC.	WALL MOUNTED 8' AFG
	2	W2	Single	XWM-2-LED-8L-30K8-UE-CXX-IMSBTIL	LSI INDUSTRIES, INC.	WALL MOUNTED 16' AFG
	22	W4	Single	XWM-4-LED-8L-30K8-UE-CXX-IMSBTIL	LSI INDUSTRIES, INC.	WALL MOUNTED 16' AFG

DOCK AREAS
Illuminance (Fc)
Average = 4.62
Maximum = 9.3
Minimum = 0.9
Avg/Min Ratio = 5.13
Max/Min Ratio = 10.33

PARKING AT BACK OF BLDG
Illuminance (Fc)
Average = 3.76
Maximum = 6.4
Minimum = 2.2
Avg/Min Ratio = 1.71
Max/Min Ratio = 2.91

TRUCK PKG AT BACK OF BLDG
Illuminance (Fc)
Average = 1.92
Maximum = 5.1
Minimum = 0.4
Avg/Min Ratio = 4.80
Max/Min Ratio = 12.75

PARKING IN FRONT OF BLDG
Illuminance (Fc)
Average = 2.51
Maximum = 4.1
Minimum = 1.1
Avg/Min Ratio = 2.28
Max/Min Ratio = 3.73



POLE MOUNTED FIXTURE
V-LOCITY SMALL VALS (S3 & S4)



WALL MOUNTED FIXTURE
MIRADA MEDIUM WALL SCONCE XWM (W2 & W4)



WALL MOUNTED FIXTURE
MIRADA SMALL WALL SCONCE XWS VC (W1)

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

LIGHTING PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
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SCALE: **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

HORIZONTAL SCALE 1"=20'
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FILE		DR		FB		
	18252-02	CK		CADFILE	18252-02 SITE PLAN	L-01

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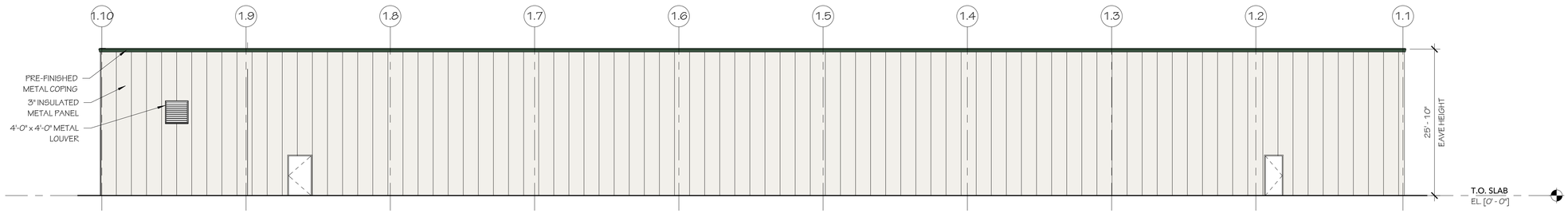
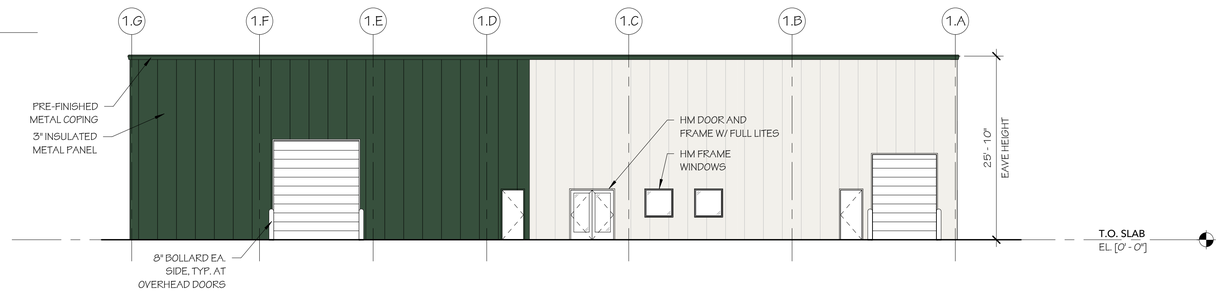


4 NORTH ELEVATION

3/32" = 1'-0" PROCESS BUILDING



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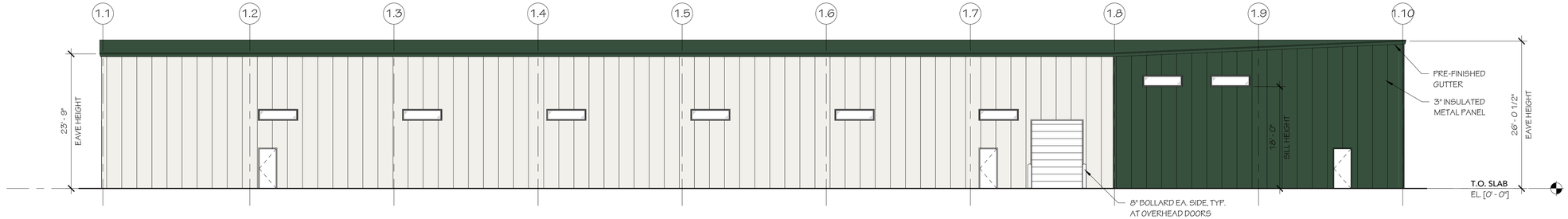
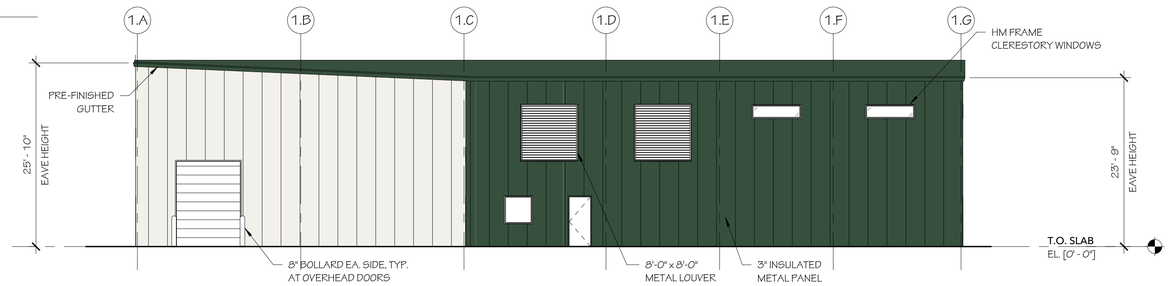
3/32" = 1'-0" PROCESS BUILDING



2 SOUTH ELEVATION

3/32" = 1'-0" DEPACK BUILDING



1 WEST ELEVATION

3/32" = 1'-0" PROCESS BUILDING

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-1

BUILDING ELEVATIONS

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25 NORTH WENTWORTH AVE.
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3/32" = 1'-0" SEPTEMBER 8, 2025

REV	DATE	DESCRIPTION	DR	CK
1	12/08/25	REVISION #1	JQ	MQ

285 SOUTH OHIO STREET
P.O. BOX 3
MINSTER, OHIO 45865
(419) 628-3364
www.baumerconstruction.com

JOB #	DR	JQ	SCALE	3/32" = 1'-0"	A-1
25.02	CK	MQ	DATE	12/08/2025	

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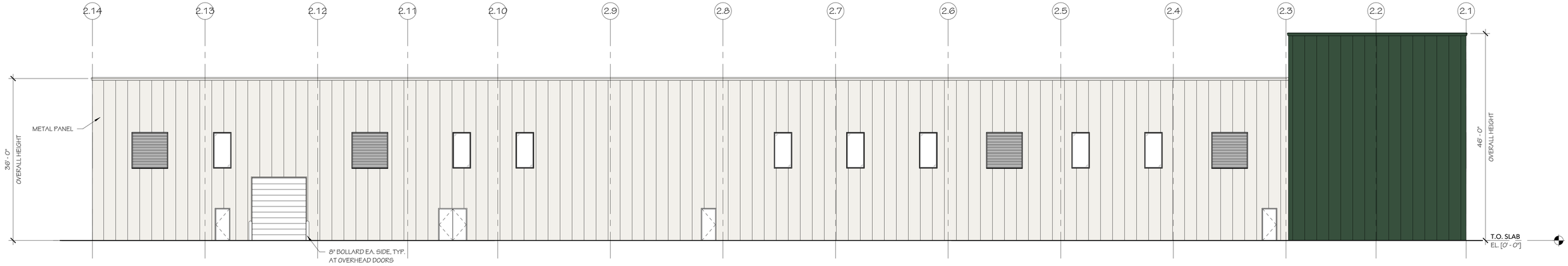
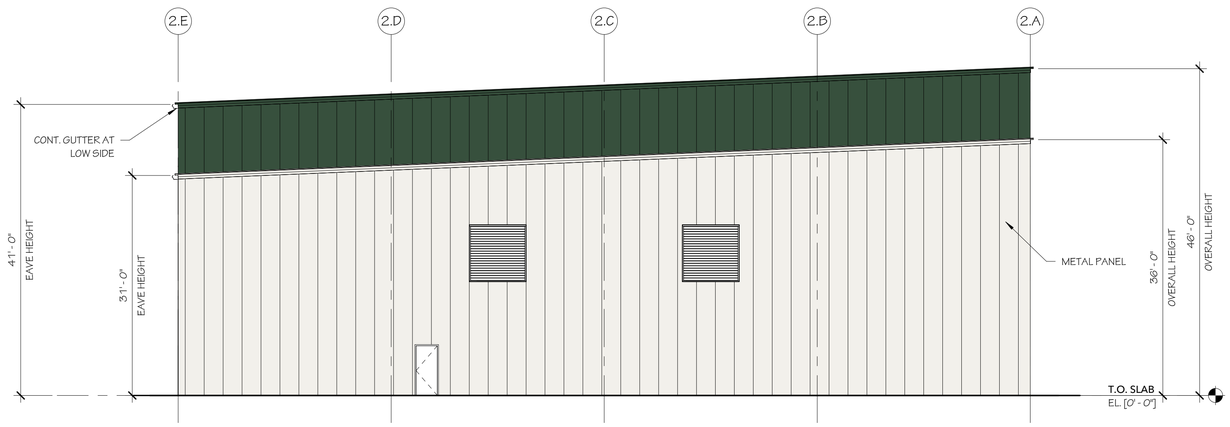


2 NORTH ELEVATION

3/32" = 1'-0" DEPACK BUILDING



1 EAST ELEVATION

3/32" = 1'-0" DEPACK BUILDING

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-1

BUILDING ELEVATIONS

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285 SOUTH OHIO STREET
P.O. BOX 3
MINSTER, OHIO 45865
(419) 628-3364
www.baumerconstruction.com

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	25.02	CK	MQ	DATE	12/08/2025	

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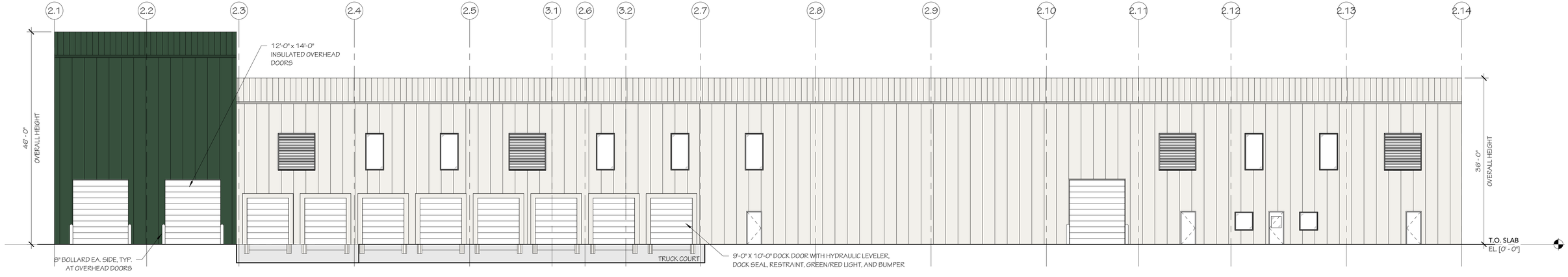
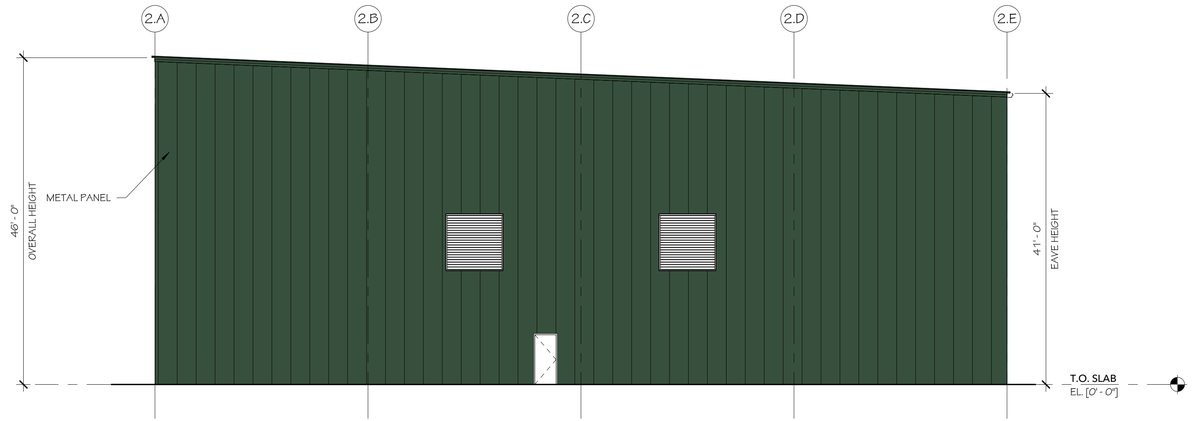


4 SOUTH ELEVATION

3/32" = 1'-0" | DEPACK BUILDING



3 WEST ELEVATION

3/32" = 1'-0" | DEPACK BUILDING

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-1

BUILDING ELEVATIONS

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JOB #					
25.02	DR	JQ	SCALE	3/32" = 1'-0"	A-3
	CK	MQ	DATE	12/08/2025	

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Appendix B – 2022 CGP (Construction General Permit)

National Pollutant Discharge Elimination System (NPDES)
Construction General Permit (CGP) for Stormwater Discharges from Construction Activities

In compliance with the provisions of the Clean Water Act, 33 U.S.C. §1251 et. seq., (hereafter CWA), as amended by the Water Quality Act of 1987, P.L. 100-4, "operators" of construction activities (defined in Appendix A) that meet the requirements of Part 1.1 of this National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP), are authorized to discharge pollutants in accordance with the effluent limitations and conditions set forth herein. Permit coverage is required from the "commencement of construction activities" (see Appendix A) until one of the conditions for terminating CGP coverage has been met (see Part 8.2).

This permit becomes effective on 12:00 am, February 17, 2022.

This permit and the authorization to discharge expire at 11:59pm, February 16, 2027.

Signed and issued this 18 day of January 2022

DEBORAH SZARO
Digitally signed by DEBORAH SZARO
Date: 2022.01.18 08:31:14 -05'00'

Deborah Szaro,
Acting Regional Administrator, EPA Region 1.

Signed and issued this 18 day of January 2022

JAVIER LAUREANO
Digitally signed by JAVIER LAUREANO
Date: 2022.01.18 11:21:16 -05'00'

Javier Laureano,
Director, Water Division, EPA Region 2.

Signed and issued this 18 day of January 2022

CARMEN GUERRERO PEREZ
Digitally signed by CARMEN GUERRERO PEREZ
Date: 2022.01.18 10:19:51 -04'00'

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1 HOW TO OBTAIN COVERAGE UNDER THE CONSTRUCTION GENERAL PERMIT (CGP)

To be covered under this permit, you must meet the eligibility conditions and follow the requirements for obtaining permit coverage in this Part.

1.1 ELIGIBILITY CONDITIONS

1.1.1 You are an "operator" of a construction site for which discharges will be covered under this permit. For the purposes of this permit and in the context of stormwater discharges associated with construction activity, an "operator" is any party associated with a construction project that meets either of the following two criteria:

a. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or

b. The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Where there are multiple operators associated with the same project, all operators must obtain permit coverage.[1] Subcontractors generally are not considered operators for the purposes of this permit.

1.1.2 Your site's construction activities:

a. Will disturb one or more acres of land, or will disturb less than one acre of land but are part of a common plan of development or sale (as defined in Appendix A) that will ultimately disturb one or more acres of land; or

b. Have been designated by EPA as needing permit coverage under 40 CFR § 122.26(a)(1)(v) or 40 CFR § 122.26(b)(15)(ii);

1.1.3 Your site is located in an area where EPA is the permitting authority and where coverage under this permit is available (see Appendix B);

1.1.4 Discharges from your site are not:

a. Already covered by a different NPDES permit for the same discharge; or

b. In the process of having coverage under a different NPDES permit for the same discharge denied, terminated, or revoked.[2, 3]

1.1.5 You can demonstrate you meet one of the criteria in the Endangered Species Protection section of the Notice of Intent (NOI) that you submit for coverage under this permit, per Part 1.4, with respect to the protection of Federally listed endangered or threatened species and Federally designated critical habitat under the Endangered Species Act

[1] If the operator of a "construction support activity" (see Part 1.2.1c) is different than the operator of the main site, that operator must also obtain permit coverage. See Part 7.1 for clarification on the sharing of permit-related functions between and among operators on the same site and for conditions that apply to developing a SWPPP for multiple operators associated with the same site.

[2] Parts 1.1.4a and 1.1.4b do not include sites currently covered under the 2017 CGP that are in the process of obtaining coverage under this permit, nor sites covered under this permit that are transferring coverage to a different operator.

[3] Notwithstanding a site being made ineligible for coverage under this permit because it falls under the description of Parts 1.1.4a or 1.1.4b, above, EPA may waive the applicable eligibility requirement after specific review if it determines that coverage under this permit is appropriate.

(ESA). If the EPA Regional Office grants you a waiver from electronic reporting per Part 1.4.2, you must complete the ESA worksheet in Appendix D to demonstrate you meet one of the criteria and submit it with your paper NOI (Appendix I).

1.1.6 You have completed the screening process in Appendix E relating to the protection of historic properties; and

1.1.7 You have complied with all requirements in Part 9 imposed by the applicable State, Indian Tribe, or Territory in which your construction activities and/or discharge will occur.

1.1.8 For "new sources" (as defined in Appendix A) only:

a. EPA has not, prior to authorization under this permit, determined that discharges from your site will not meet applicable water quality standards. Where such a determination is made prior to authorization, EPA may notify you that an individual permit application is necessary. However, EPA may authorize your coverage under this permit after you have included appropriate controls and implementation procedures designed to bring your discharge into compliance with this permit, specifically the requirement to meet water quality standards. In the absence of information demonstrating otherwise, EPA expects that compliance with the requirements of this permit, including the requirements applicable to such discharges in Part 3, will result in discharges that meet applicable water quality standards.

b. Discharges from your site to a Tier 2, Tier 2.5, or Tier 3 water[4] will not lower the water quality of the applicable water. In the absence of information demonstrating otherwise, EPA expects that compliance with the requirements of this permit, including the requirements applicable to such discharges in Part 3.2, will result in discharges that will not lower the water quality of such waters.

1.1.9 If you plan to add "cationic treatment chemicals" (as defined in Appendix A) to stormwater and/or authorized non-stormwater prior to discharge, you may not submit your NOI until you notify your applicable EPA Regional Office (see Appendix J) in advance and the EPA Regional Office authorizes coverage under this permit after you have included appropriate controls and implementation procedures designed to ensure that your use of cationic treatment chemicals will result in discharges that meet applicable water quality standards.

[4] Note: Your site will be considered to discharge to a Tier 2, Tier 2.5, or Tier 3 water if the first receiving water to which you discharge is identified by a State, Tribe, or EPA as a Tier 2, Tier 2.5, or Tier 3 water. For discharges that enter a storm sewer system prior to discharge, the first receiving water to which you discharge is the waterbody that receives the stormwater discharge from the storm sewer system. The current list of Tier 2, Tier 2.5, and Tier 3 waters located in the areas eligible for coverage under this permit can be found at https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates. You can also use EPA's Discharge Mapping Tool (https://www.epa.gov/npdes/epas-stormwater-discharge-mapping-tools) to assist you in identifying whether any receiving waters to which you discharge are listed as impaired (and the pollutant for which it is impaired) and whether an approved total maximum daily load (TMDL) exists for that waterbody.

1.2 TYPES OF DISCHARGES AUTHORIZED[5]

1.2.1 The following stormwater discharges are authorized under this permit provided that appropriate stormwater controls are designed, installed, and maintained (see Parts 2 and 3):

- **a.** Stormwater discharges, including stormwater runoff, snowmelt runoff, and surface runoff and drainage, associated with construction activity under 40 CFR § 122.26(b)(14) or § 122.26(b)(15)(i);
- **b.** Stormwater discharges designated by EPA as needing a permit under 40 CFR §122.26(a)(1)(v) or § 122.26(b)(15)(ii);
- **c.** Stormwater discharges from on or off-site construction support activities (e.g., concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas) provided that:
  - **i.** The support activity is directly related to the construction site required to have permit coverage for stormwater discharges;
  - **ii.** The support activity is not a commercial operation, nor does it serve multiple unrelated construction sites;
  - **iii.** The support activity does not continue to operate beyond the completion of the construction activity at the site it supports; and
  - **iv.** Stormwater controls are implemented in accordance with Part 2 and Part 3 for discharges from the support activity areas; and
- **d.** Stormwater discharges from earth-disturbing activities associated with the construction of staging areas and the construction of access roads conducted prior to active mining.

1.2.2 The following non-stormwater discharges associated with your construction activity are authorized under this permit provided that, with the exception of water used to control dust and to irrigate vegetation in stabilized areas, these discharges are not routed to areas of exposed soil on your site and you comply with any applicable requirements for these discharges in Parts 2 and 3:

- **a.** Discharges from emergency fire-fighting activities;
- **b.** Fire hydrant flushings;
- **c.** Landscape irrigation;
- **d.** Water used to wash vehicles and equipment, provided that there is no discharge of soaps, solvents, or detergents used for such purposes;
- **e.** Water used to control dust;
- **f.** Potable water including uncontaminated water line flushings;

[5] See "Discharge" as defined in Appendix A. Note: Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA Section 402(k) by disclosure to EPA, State, or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the SWPPP, or during an inspection.

g. External building washdown, provided soaps, solvents, and detergents are not used, and external surfaces do not contain hazardous substances (as defined in Appendix A) (e.g., paint or caulk containing polychlorinated biphenyls (PCBs));

h. Pavement wash waters, provided spills or leaks of toxic or hazardous substances have not occurred (unless all spill material has been removed) and where soaps, solvents, and detergents are not used. You are prohibited from directing pavement wash waters directly into any receiving water, storm drain inlet, or constructed or natural site drainage features, unless the feature is connected to a sediment basin, sediment trap, or similarly effective control;

i. Uncontaminated air conditioning or compressor condensate;

j. Uncontaminated, non-turbid discharges of ground water or spring water;

k. Foundation or footing drains where flows are not contaminated with process materials such as solvents or contaminated ground water; and

l. Uncontaminated construction dewatering water[6] discharged in accordance with Part 2.4.

1.2.3 Also authorized under this permit are discharges of stormwater listed above in Part 1.2.1, or authorized non-stormwater discharges listed above in Part 1.2.2, commingled with a discharge authorized by a different NPDES permit and/or a discharge that does not require NPDES permit authorization.

1.3 PROHIBITED DISCHARGES[7]

The discharges listed in this Part are prohibited outright or authorized only under the identified conditions. To prevent the discharges in Parts 1.3.1 through 1.3.5, operators must comply with the applicable pollution prevention requirements in Part 2.3 or ensure the discharge is authorized by another NPDES permit consistent with Part 1.2.3 for commingled discharges.

1.3.1 Wastewater from washout of concrete, unless managed by an appropriate control as described in Part 2.3.4;

1.3.2 Wastewater from washout and/or cleanout of stucco, paint, form release oils, curing compounds, and other construction materials;

1.3.3 Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance;

1.3.4 Soaps, solvents, or detergents used in vehicle and equipment washing or external building washdown; and

1.3.5 Toxic or hazardous substances from a spill or other release.

[6] EPA notes that operators may need to comply with additional procedures to verify that the dewatering discharge is uncontaminated. Operators should review Part 9 to determine if any of these requirements apply to their discharge and should ensure that they have complied with any State, Tribal, or local dewatering requirements that apply.

[7] EPA includes these prohibited non-stormwater discharges here as a reminder to the operator that the only non-stormwater discharges authorized by this permit are at Part 1.2.2. Any unauthorized non-stormwater discharges must be covered under an individual permit or alternative general permit.

1.4 SUBMITTING YOUR NOTICE OF INTENT (NOI)

All "operators" (as defined in Appendix A) associated with your construction site who meet the Part 1.1 eligibility conditions, and who seek coverage under this permit, must submit to EPA a complete and accurate NOI in accordance with the deadlines in Table 1 prior to commencement of construction activities (as defined in Appendix A).

Exception: If you are conducting construction activities in response to a public emergency (e.g., mud slides, earthquake, extreme flooding conditions, widespread disruption in essential public services), and the related work requires immediate authorization to avoid imminent endangerment to human health, public safety, or the environment, or to reestablish essential public services, you may discharge on the condition that a complete and accurate NOI is submitted within 30 calendar days after commencing construction activities (see Table 1) establishing that you are eligible for coverage under this permit. You must also provide documentation in your Stormwater Pollution Prevention Plan (SWPPP) to substantiate the occurrence of the public emergency pursuant to Part 7.2.3i.

1.4.1 Prerequisite for Submitting Your NOI

You must develop a SWPPP consistent with Part 7 before submitting your NOI for coverage under this permit.

1.4.2 How to Submit Your NOI

You must use EPA's NPDES eReporting Tool (NeT) to electronically prepare and submit your NOI for coverage under the 2022 CGP unless you received a waiver from your applicable EPA Regional Office.

To access NeT, go to https://cdx.epa.gov/cdx.

Waivers from electronic reporting may be granted based on one of the following conditions:

a. If your operational headquarters is physically located in a geographic area (i.e., ZIP code or census tract) that is identified as under-served for broadband Internet access in the most recent report from the Federal Communications Commission; or

b. If you have limitations regarding available computer access or computer capability.

If the EPA Regional Office grants you approval to use a paper NOI, and you elect to use it, you must complete the form in Appendix H.

1.4.3 Deadlines for Submitting Your NOI and Your Official Date of Permit Coverage

Table 1 provides the deadlines for submitting your NOI and the official start date of your permit coverage, which differ depending on when you commence construction activities.

Table 1 NOI Submittal Deadlines and Official Start Date for Permit Coverage.

Type of Operator	NOI Submittal Deadline[8]	Permit Authorization Date[9]
Operator of a new site (i.e., a site where construction activities commence on or after February 17, 2022)	At least 14 calendar days before commencing construction activities.	14 calendar days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization is delayed or denied.
Operator of an existing site (i.e., a site with 2017 CGP coverage where construction activities commenced prior to February 17, 2022)	No later than May 18, 2022.	14 calendar days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization is delayed or denied. Provided you submit your NOI no later than May 18, 2022, your authorization under the 2017 CGP is automatically continued until you have been granted coverage under this permit or an alternative NPDES permit, or coverage is otherwise terminated.
New operator of a permitted site (i.e., an operator that through transfer of ownership and/or operation replaces the operator of an already permitted construction site that is either a "new site" or an "existing site")	At least 14 calendar days before the date the transfer to the new operator will take place.	14 calendar days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization is delayed or denied.
Operator of an "emergency-related project" (i.e., a project initiated in response to a public emergency (e.g., mud slides, earthquake, extreme flooding conditions, disruption in essential public services), for which the related work requires immediate authorization to avoid imminent endangerment to human health or the environment, or to reestablish essential public services)	No later than 30 calendar days after commencing construction activities.	You are considered provisionally covered under the terms and conditions of this permit immediately, and fully covered 14 calendar days after EPA notifies you that it has received a complete NOI, unless EPA notifies you that your authorization is delayed or denied.

[8] If you miss the deadline to submit your NOI, any and all discharges from your construction activities will continue to be unauthorized under the CWA until they are covered by this or a different NPDES permit. EPA may take enforcement action for any unpermitted discharges that occur between the commencement of construction activities and discharge authorization.

[9] Discharges are not authorized if your NOI is incomplete or inaccurate or if you are not eligible for permit coverage.

1.4.4 Modifying your NOI

If after submitting your NOI you need to correct or update any fields, you may do so by submitting a "Change NOI" form using NeT. Waivers from electronic reporting may be granted as specified in Part 1.4.2. If the EPA Regional Office has granted you approval to submit a paper NOI modification, you may indicate any NOI changes on the same NOI form in Appendix H.

When there is a change to the site's operator, the new operator must submit a new NOI, and the previous operator must submit a Notice of Termination (NOT) form as specified in Part 8.3.

The following modifications to an NOI form will result in a 14-day review process:

- Changes to the name of the operator;
- Changes to the project or site name;
- Changes to the estimated area to be disturbed;
- Changes to the name of the receiving water[10], or additions to the applicable receiving waters;
- Changes to eligibility information related to endangered species protection or historic preservation;
- Changes to information provided related to the use of chemical treatment at your site; and
- Changes to answers provided regarding the demolition of structures over 10,000 square feet of floor space built or renovated before January 1, 1980.

During the 14-day review process, you may continue to operate based on the information provided in your original NOI, but you must wait until the review period has ended before you may commence or continue activities on any portion of your site that would be affected by any of the above modifications, unless EPA notifies you that the authorization is delayed or denied.

1.4.5 Your Official End Date of Permit Coverage

Once covered under this permit, your coverage will last until the date that:

a. You terminate permit coverage consistent with Part 8; or

b. You receive permit coverage under a different NPDES permit or a reissued or replacement version of this permit after expiring on February 16, 2027; or

c. You fail to submit an NOI for coverage under a reissued or replacement version of this permit before the deadline for existing construction sites where construction activities continue after this permit has expired.

1.5 REQUIREMENT TO POST A NOTICE OF YOUR PERMIT COVERAGE

You must post a sign or other notice of your permit coverage at a safe, publicly accessible location in close proximity to the construction site. The notice must be located so it is visible from the public road that is nearest to the active part of the construction

[10] As defined in Appendix A, a "receiving water" is "a "Water of the United States" as defined in 40 CFR §122.2 into which the regulated stormwater discharges.

site, and it must use a font large enough to be readily viewed from a public right-of-way.[11] At a minimum, the notice must include:

a. The NPDES ID (i.e., permit tracking number assigned to your NOI and the EPA webpage where a copy of the NOI can be found (https://permitsearch.epa.gov/epermit-search/ui/search));

b. A contact name and phone number for obtaining additional construction site information;

c. The Uniform Resource Locator (URL) for the SWPPP (if available), or the following statement: "If you would like to obtain a copy of the Stormwater Pollution Prevention Plan (SWPPP) for this site, contact the EPA Regional Office at [*include the appropriate CGP Regional Office contact information found at* https://www.epa.gov/npdes/contact-us-stormwater#regional];" and

d. The following statement "If you observe indicators of stormwater pollutants in the discharge or in the receiving water, contact the EPA through the following website: https://www.epa.gov/enforcement/report-environmental-violations."

2 TECHNOLOGY-BASED EFFLUENT LIMITATIONS

You must comply with the following technology-based effluent limitations in this Part for all authorized discharges.[12]

2.1 GENERAL STORMWATER CONTROL DESIGN, INSTALLATION, AND MAINTENANCE REQUIREMENTS

You must design, install, and maintain stormwater controls required in Parts 2.2, 2.3, and 2.4 to minimize the discharge of pollutants in stormwater from construction activities.[13] To meet this requirement, you must:

2.1.1 Account for the following factors in designing your stormwater controls:

a. The expected amount, frequency, intensity, and duration of precipitation;[14]

b. The nature of stormwater runoff (i.e., flow) and run-on at the site, including factors such as expected flow from impervious surfaces, slopes, and site drainage features. You must design stormwater controls to control stormwater volume, velocity, and peak flow rates to minimize discharges of pollutants in stormwater and to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points; and

c. The soil type and range of soil particle sizes expected to be present on the site.

[11] If the active part of the construction site is not visible from a public road, then place the notice of permit coverage in a position that is visible from the nearest public road and as close as possible to the construction site.

[12] For each of the effluent limits in Part 2, as applicable to your site, you must include in your SWPPP (1) a description of the specific control(s) to be implemented to meet the effluent limit; (2) any applicable design specifications; (3) routine maintenance specifications; and (4) the projected schedule for installation/implementation. See Part 7.2.6.

[13] The permit does not recommend or endorse specific products or vendors.

[14] Stormwater controls must be designed using the most recent data available to account for recent precipitation patterns and trends.

If your site is exposed to or has previously experienced major storms, such as hurricanes, storm surge, extreme/heavy precipitation, and flood events, you should also include consideration of and contingencies for whether implementing structural improvements, enhanced/resilient stormwater controls, and other mitigation measures may help minimize impacts from stormwater discharges from such major storm events.

2.1.2 Design and install all stormwater controls in accordance with good engineering practices, including applicable design specifications.[15]

2.1.3 Complete installation of stormwater controls by the time each phase of construction activities has begun.

a. By the time construction activity in any given portion of the site begins, install and make operational any downgradient sediment controls (e.g., buffers, perimeter controls, exit point controls, storm drain inlet protection) that control discharges from the initial site clearing, grading, excavating, and other earth-disturbing activities.[16]

b. Following the installation of these initial controls, install and make operational all stormwater controls needed to control discharges prior to subsequent earth-disturbing activities.

2.1.4 Ensure all stormwater controls are maintained and remain in effective operating condition during permit coverage and are protected from activities that would reduce their effectiveness.

a. Comply with any specific maintenance requirements for the stormwater controls listed in this permit, as well as any recommended by the manufacturer.[17]

b. If at any time you find that a stormwater control needs routine maintenance (i.e., minor repairs or other upkeep performed to ensure the site's stormwater controls remain in effective operating condition, not including significant repairs or the need to install a new or replacement control), you must immediately initiate the needed work, and complete such work by the close of the next business day. If it is infeasible to complete the routine maintenance by the close of the next business day, you must document why this is the case and why the repair or other upkeep to be performed should still be considered routine maintenance in your inspection report under Part 4.7.1c and complete such work no later than seven (7) calendar days from the time of discovery of the condition requiring maintenance.

c. If you must repeatedly (i.e., three (3) or more times) make the same routine maintenance fixes to the same control at the same location, even if the fix can be completed by the close of the next business day, you must either:

i. Complete work to fix any subsequent repeat occurrences of this same problem under the corrective action procedures in Part 5, including keeping any records

[15] Design specifications may be found in manufacturer specifications and/or in applicable erosion and sediment control manuals or ordinances. Any departures from such specifications must reflect good engineering practices and must be explained in your SWPPP. You must also comply with any additional design and installation requirements specified for the effluent limits in Parts 2.2, 2.3, and 2.4.

[16] Note that the requirement to install stormwater controls prior to each phase of construction activities for the site does not apply to the earth disturbance associated with the actual installation of these controls. Operators should take all reasonable actions to minimize the discharges of pollutants during the installation of stormwater controls.

[17] Any departures from such maintenance recommendations made by the manufacturer must reflect good engineering practices and must be explained in your SWPPP.

of the condition and how it was corrected under Part 5.4; or

ii. Document in your inspection report under Part 4.7.1c why the specific reoccurrence of this same problem should still be addressed as a routine maintenance fix under this Part.[18]

d. If at any time you find that a stormwater control needs a significant repair or that a new or replacement control is needed, you must comply with the corrective action deadlines for completing such work in in Part 5.2.1c.

2.2 EROSION AND SEDIMENT CONTROL REQUIREMENTS

You must implement erosion and sediment controls in accordance with the following requirements to minimize the discharge of pollutants in stormwater from construction activities.

2.2.1 Provide and maintain natural buffers and/or equivalent erosion and sediment controls for discharges to any receiving waters that is located within 50 feet of the site's earth disturbances.

a. Compliance Alternatives. For any discharges to receiving waters located within 50 feet of your site's earth disturbances, you must comply with one of the following alternatives:

i. Provide and maintain a 50-foot undisturbed natural buffer; or

ii. Provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by erosion and sediment controls that achieve, in combination, the sediment load reduction equivalent to a 50-foot undisturbed natural buffer; or

iii. If infeasible to provide and maintain an undisturbed natural buffer of any size, implement erosion and sediment controls to achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

See Appendix F, Part F.2 for additional conditions applicable to each compliance alternative.

b. Exceptions. See Appendix F, Part F.2 for exceptions to the compliance alternatives.

2.2.2 Direct stormwater to vegetated areas and maximize stormwater infiltration and filtering to reduce pollutant discharges, unless infiltration would be inadvisable due to the underlying geology (e.g., karst topography) and ground water contamination concerns, or infeasible due to site conditions.[19]

[18] Such documentation could include, for example, that minor repairs completed within the required timeframe are all that is necessary to ensure that the stormwater control continues to operate as designed and installed and that the stormwater control remains appropriate for the flow reaching it.

[19] Operators should consider whether factors such as specific contaminant concerns from the construction site, the underlying soils or geology, hydrology, depth to the ground water table, or proximity to source water or wellhead protection area(s) make the site unsuitable for infiltrating construction stormwater. Site conditions that may be of particular concern include proximity to: a current or future drinking water aquifer; a drinking water well or spring (including private/household wells); highly conductive geology such as karst; known pollutant hot spots, such as hazardous waste sites, landfills, gas stations, brownfields; an on-site sewage system or underground storage tank; or soils that do not allow for infiltration. Operators may find it helpful to consult EPA's Drinking Water Mapping Application to Protect Source Waters (DWMAPS). DWMAPS is an online mapping tool that can be used to locate drinking water providers, potential sources of contamination, polluted waterways, and information on protection initiatives in the site area.

2.2.3 Install sediment controls along any perimeter areas of the site that are downslope from any exposed soil or other disturbed areas.[20]

a. The perimeter control must be installed upgradient of any natural buffers established under Part 2.2.1, unless the control is being implemented pursuant to Part 2.2.1a.ii-iii;

b. To prevent stormwater from circumventing the edge of the perimeter control, install the perimeter control on the contour of the slope and extend both ends of the control up slope (e.g., at 45 degrees) forming a crescent rather than a straight line;

c. After installation, to ensure that perimeter controls continue to work effectively:

i. Remove sediment before it has accumulated to one-half of the above-ground height of any perimeter control; and

ii. After a storm event, if there is evidence of stormwater circumventing or undercutting the perimeter control, extend controls and/or repair undercut areas to fix the problem.

d. Exception. For areas at "linear construction sites" (as defined in Appendix A) where perimeter controls are infeasible (e.g., due to a limited or restricted right-of-way), implement other practices as necessary to minimize pollutant discharges to perimeter areas of the site.

2.2.4 Minimize sediment track-out.

a. Restrict vehicle use to properly designated exit points;

b. Use appropriate stabilization techniques[21] at all points that exit onto paved roads;

i. Exception: Stabilization is not required for exit points at linear utility construction sites that are used only episodically and for very short durations over the life of the project, provided other exit point controls[22] are implemented to minimize sediment track-out;

c. Implement additional track-out controls[23] as necessary to ensure that sediment removal occurs prior to vehicle exit; and

d. Where sediment has been tracked-out from your site onto paved roads, sidewalks, or other paved areas outside of your site, remove the deposited sediment by the end of the same business day in which the track-out occurs or by the end of the next business day if track-out occurs on a non-business day. Remove the track-out by sweeping, shoveling, or vacuuming these surfaces, or by using other similarly effective means of sediment removal. You are prohibited from hosing or sweeping tracked-out

[20] Examples of perimeter controls include filter berms; different types of silt fence such as wire-backed silt fence, super silt fence, or multi-layer geotextile silt fence; compost filter socks; gravel barriers; and temporary diversion dikes.

[21] Examples of appropriate stabilization techniques include the use of aggregate stone with an underlying geotextile or non-woven filter fabric, and turf mats.

[22] Examples of other exit point controls include preventing the use of exit points during wet periods; minimizing exit point use by keeping vehicles on site to the extent possible; limiting exit point size to the width needed for vehicle and equipment usage; using scarifying and compaction techniques on the soil; and avoiding establishing exit points in environmentally sensitive areas (e.g., *karst areas; steep slopes)*.

[23] Examples of additional track-out controls include the use of wheel washing, rumble strips, and rattle plates.

sediment into any constructed or natural site drainage feature, storm drain inlet, or receiving water.[24]

2.2.5 Manage stockpiles or land clearing debris piles composed, in whole or in part, of sediment and/or soil:[25]

a. Locate the piles outside of any natural buffers established under Part 2.2.1 and away from any constructed or natural site drainage features, storm drain inlets, and areas where stormwater flow is concentrated;

b. Install a sediment barrier along all downgradient perimeter areas of stockpiled soil or land clearing debris piles;[26]

c. For piles that will be unused for 14 or more days, provide cover[27] or appropriate temporary stabilization (consistent with Part 2.2.14);

d. You are prohibited from hosing down or sweeping soil or sediment accumulated on pavement or other impervious surfaces into any constructed or natural site drainage feature, storm drain inlet, or receiving water.

2.2.6 Minimize dust. On areas of exposed soil, minimize dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged in stormwater from the site.

2.2.7 Minimize steep slope disturbances. Minimize the disturbance of "steep slopes" (as defined in Appendix A).[28]

2.2.8 Preserve native topsoil, unless infeasible.[29]

2.2.9 Minimize soil compaction.[30] In areas of your site where final vegetative stabilization will occur or where infiltration practices will be installed:

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[24] Fine grains that remain visible (e.g., staining) on the surfaces of off-site streets, other paved areas, and sidewalks after you have implemented sediment removal practices are not a violation of Part 2.2.4.

[25] The requirements in Part 2.2.5 do not apply to the storage of rock, such as rip rap, landscape rock, pipe bedding gravel, and boulders. Refer to Part 2.3.3a for the requirements that apply to these types of materials.

[26] Examples of sediment barriers include berms, dikes, fiber rolls, silt fences, sandbags, gravel bags, or straw bale.

[27] Examples of cover include tarps, blown straw and hydroseeding.

[28] Where disturbance to steep slopes cannot be avoided, operators should consider implementing controls suitable for steep slope disturbances that are effective at minimizing erosion and sediment discharge (e.g., preservation of existing vegetation, hydraulic mulch, geotextiles and mats, compost blankets, earth dikes or drainage swales, terraces, velocity dissipation devices). To identify slopes and soil types that are of comparatively higher risk for sediment discharge in areas of the country where the CGP is in effect, operators can use the tables in Appendix F (see Tables F-2 thru F-6).

[29] Stockpiling topsoil at off-site locations, or transferring topsoil to other locations, is an example of a practice that is consistent with the requirements in Part 2.2.8. Preserving native topsoil is not required where the intended function of a specific area of the site dictates that the topsoil be disturbed or removed. For example, some sites may be designed to be highly impervious after construction, and therefore little or no vegetation is intended to remain, or may not have space to stockpile native topsoil on site for later use, in which case it may not be feasible to preserve topsoil.

[30] Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted.

a. Restrict vehicle and equipment use in these locations to avoid soil compaction; and

b. Before seeding or planting areas of exposed soil that have been compacted, use techniques that rehabilitate and condition the soils as necessary to support vegetative growth.

2.2.10 Protect storm drain inlets.

a. Install inlet protection measures that remove sediment from discharges prior to entry into any storm drain inlet that carries stormwater from your site to a receiving water, provided you have authority to access the storm drain inlet.[31] Inlet protection measures are not required for storm drain inlets that are conveyed to a sediment basin, sediment trap, or similarly effective control; and

b. Clean, or remove and replace, the inlet protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same business day in which it is found or by the end of the following business day if removal by the same business day is not feasible.

2.2.11 Control stormwater discharges, including both peak flowrates and total stormwater volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points.[32]

2.2.12 If you install a sediment basin or similar impoundment:

a. Situate the basin or impoundment outside of any receiving water. and any natural buffers established under Part 2.2.1;

b. Design the basin or impoundment to avoid collecting water from wetlands;

c. Design the basin or impoundment to provide storage for either:

i. The calculated volume of runoff from a 2-year, 24-hour storm;[33] or

ii. 3,600 cubic feet per acre drained.

d. Utilize outlet structures that withdraw water from the surface of the sediment basin or similar impoundment, unless infeasible;[34]

e. Use erosion controls and velocity dissipation devices to prevent erosion at inlets and outlets; and

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[31] Inlet protection measures can be removed in the event of flood conditions or to prevent erosion.

[32] Examples of stormwater controls that can be used to comply with this requirement include the use of erosion controls and/or velocity dissipation devices (e.g., check dams, sediment traps), within and along the length of a constructed site drainage feature and at the outfall to slow down stormwater.

[33] Operators may refer to https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates for guidance on determining the volume of precipitation associated with their site's local 2-year, 24-hour storm event.

[34] The circumstances in which it is infeasible to design outlet structures in this manner are rare. Exceptions may include areas with extended cold weather, where using surface outlets may not be feasible during certain time periods (although they must be used during other periods). If you determine that it is infeasible to meet this requirement, you must provide documentation in your SWPPP to support your determination, including the specific conditions or time periods when this exception will apply.

f. Remove accumulated sediment to maintain at least one-half of the design capacity and conduct all other appropriate maintenance to ensure the basin or impoundment remains in effective operating condition.

2.2.13 If using treatment chemicals (e.g., *polymers, flocculants, coagulants*):

a. Use conventional erosion and sediment controls before and after the application of treatment chemicals. Chemicals may only be applied where treated stormwater is directed to a sediment control *(e.g., sediment basin, perimeter control)* before discharge.

b. Select appropriate treatment chemicals*.* Chemicals must be appropriately suited to the types of soils likely to be exposed during construction and present in the discharges being treated *(i.e., the expected turbidity, pH, and flow rate of stormwater flowing into the chemical treatment system or area)*.

c. Minimize discharge risk from stored chemicals. Store all treatment chemicals in leak-proof containers that are kept under storm-resistant cover and surrounded by secondary containment structures *(e.g., spill berms, dikes, spill containment pallets),* or provide equivalent measures designed and maintained to minimize the potential discharge of treatment chemicals in stormwater or by any other means *(e.g., storing chemicals in a covered area, having a spill kit available on site and ensuring personnel are available to respond expeditiously in the event of a leak or spill)*.

d. Comply with State/local requirements. Comply with applicable State and local requirements regarding the use of treatment chemicals.

e. Use chemicals in accordance with good engineering practices and specifications of the chemical provider/supplier. Use treatment chemicals and chemical treatment systems in accordance with good engineering practices, and with dosing specifications and sediment removal design specifications provided by the provider/supplier of the applicable chemicals, or document in your SWPPP specific departures from these specifications and how they reflect good engineering practice.

f. Ensure proper training. Ensure all persons who handle and use treatment chemicals at the construction site are provided with appropriate, product-specific training prior to beginning application of treatment chemicals. Among other things, the training must cover proper dosing requirements.

g. Perform additional measures specified by the EPA Regional Office for the authorized use of cationic chemicals. If you have been authorized to use cationic chemicals at your site pursuant to Part 1.1.9, you must perform all additional measures as conditioned by your authorization to ensure the use of such chemicals will not result in discharges that do not meet water quality standards.

2.2.14 Stabilize exposed portions of the site. Implement and maintain stabilization measures (*e.g., seeding protected by erosion controls until vegetation is established,*[35] *sodding, mulching, erosion control blankets, hydromulch, gravel*) that minimize erosion from any areas of exposed soil on the site in accordance with Part.

[35] If you will be evaluating the use of some type of erosion control netting to the site as part of your site stabilization, EPA encourages you to consider employing products that have been shown to minimize

a. Stabilization Deadlines:[36]

Table 2 Deadlines for Initiating and Completing Site Stabilization.

Total Amount of Land Disturbance Occurring At Any One Time[37]	**Deadline**
i. Five acres or less (≤5.0) **Note: this includes sites disturbing more than five acres (>5.0) total over the course of a project, but that limit disturbance at any one time (i.e., *phase the disturbance*) to five acres or less (≤5.0)**	• Initiate the installation of stabilization measures immediately[38] in any areas of exposed soil where construction activities have permanently ceased or will be temporarily inactive for 14 or more calendar days;[39] and • Complete the installation of stabilization measures as soon as practicable, but no later than 14 calendar days

impacts on wildlife. For instance, the U.S. Fish & Wildlife Service provides recommendations on the type of netting practices that are considered "wildlife friendly," including those that use natural fiber or 100 percent biodegradable materials and that use a loose weave with a non-welded, movable jointed netting, as well as those products that are not wildlife friendly including square plastic netting that are degradable (e.g., photodegradable, UV-degradable, oxo-degradable), netting made from polypropylene, nylon, polyethylene, or polyester. Other recommendations include removing the netting product when it is no longer needed. See https://www.fws.gov/midwest/eastlansing/library/pdf/WildlifeFriendlyErosionControlProducts_revised.pdf for further information. There also may be State, Tribal, or local requirements about using wildlife friendly erosion control products.

[36] EPA may determine, based on an inspection carried out under Part 4.8 and corrective actions required under Part 5.3, that the level of sediment discharge on the site makes it necessary to require a faster schedule for completing stabilization. For instance, if sediment discharges from an area of exposed soil that is required to be stabilized are compromising the performance of existing stormwater controls, EPA may require stabilization to correct this problem.

[37] Limiting disturbances to five (5) acres or less at any one time means that at no time during the project do the cumulative earth disturbances exceed five (5) acres. The following examples would qualify as limiting disturbances at any one time to five (5) acres or less:

1. The total area of disturbance for a project is five (5) acres or less.
2. The total area of disturbance for a project will exceed five (5) acres, but the operator ensures that no more than five (5) acres will be disturbed at any one time through implementation of stabilization measures. In this way, site stabilization can be used to "free up" land that can be disturbed without exceeding the five (5)-acre cap to qualify for the 14-day stabilization deadline. For instance, if an operator completes stabilization of two (2) acres of land on a five (5)-acre disturbance, then two (2) additional acres could be disturbed while still qualifying for the longer 14-day stabilization deadline.

[38] The following are examples of activities that would constitute the immediate initiation of stabilization:

1. Prepping the soil for vegetative or non-vegetative stabilization as long as seeding, planting, and/or installation of non-vegetative stabilization products takes place as soon as practicable, but no later than one (1) calendar day of completing soil preparation;
2. Applying mulch or other non-vegetative product to the exposed area;
3. Seeding or planting the exposed area;
4. Starting any of the activities in # 1 – 3 on a portion of the entire area that will be stabilized; and
5. Finalizing arrangements to have stabilization product fully installed in compliance with the deadlines for completing stabilization.

[39] The requirement to initiate stabilization immediately is triggered as soon as you know that construction work on a portion of the site is temporarily ceased and will not resume for 14 or more days, or as soon as you know that construction work is permanently ceased. In the context of this provision, "immediately" means as soon as practicable, but no later than the end of the next business day, following the day when the construction activities have temporarily or permanently ceased.

Total Amount of Land Disturbance Occurring At Any One Time[37]	Deadline
	after stabilization has been initiated.[40]
ii. More than five acres (>5.0)	• Initiate the installation of stabilization measures immediately[41] in any areas of exposed soil where construction activities have permanently ceased or will be temporarily inactive for 14 or more calendar days;[42] and • Complete the installation of stabilization measures as soon as practicable, but no later than seven (7) calendar days after stabilization has been initiated.[43]

b. Exceptions:

i. Arid, semi-arid, and drought-stricken areas (as defined in Appendix A)**.** If it is the seasonally dry period (as defined in Appendix A)[44] or a period in which drought is occurring, and vegetative stabilization measures are being used:

(a) Immediately initiate and, within 14 calendar days of temporary or permanent cessation of work in any portion of your site, complete the installation of temporary non-vegetative stabilization measures to the extent necessary to prevent erosion;

(b) As soon as practicable, given conditions or circumstances on the site, complete all activities necessary to seed or plant the area to be stabilized; and

(c) If construction is occurring during the seasonally dry period, indicate in your SWPPP the beginning and ending dates of the seasonally dry period and your site conditions. Also include the schedule you will follow for initiating and completing vegetative stabilization.

ii. Unforeseen circumstances. Operators that are affected by unforeseen circumstances[45] that delay the initiation and/or completion of vegetative stabilization:

[40] If vegetative stabilization measures are being implemented, stabilization is considered "installed" when all activities necessary to seed or plant the area are completed, including the application of any non-vegetative protective cover (e.g., mulch, erosion control blanket), if applicable. If non-vegetative stabilization measures are being implemented, stabilization is considered "installed" when all such measures are implemented or applied.

[41] See footnote 38.

[42] See footnote 39.

[43] See footnote 40.

[44] The term "seasonally dry period" as defined in Appendix A refers to a month in which the long-term average total precipitation is less than or equal to 0.5 inches. Refer to EPA's Seasonally Dry Period Locator Tool at https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates and supporting maps for assistance in determining whether a site is operating during a seasonally dry period for the area.

[45] Examples include problems with the supply of seed stock or with the availability of specialized equipment and unsuitability of soil conditions due to excessive precipitation and/or flooding.

(a) Immediately initiate and, within 14 calendar days, complete the installation of temporary non-vegetative stabilization measures to prevent erosion;

(b) Complete all soil conditioning, seeding, watering or irrigation installation, mulching, and other required activities related to the planting and initial establishment of vegetation as soon as conditions or circumstances allow it on your site; and

(c) Document in the SWPPP the circumstances that prevent you from meeting the deadlines in Part 2.2.14a and the schedule you will follow for initiating and completing stabilization.

iii. Discharges to a sediment- or nutrient-impaired water or to a water that is identified by your State, Tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes. Complete stabilization as soon as practicable, but no later than seven (7) calendar days after stabilization has been initiated.

c. Final Stabilization Criteria (for any areas not covered by permanent structures)**:**

i. Establish uniform, perennial vegetation *(*i.e.*, evenly distributed, without large bare areas)* to provide 70 percent or more of the vegetative cover native to local undisturbed areas; and/or

ii. Implement permanent non-vegetative stabilization measures[46] to provide effective cover of any areas of exposed soil.

iii. Exceptions:

(a) **Arid, semi-arid, and drought-stricken areas** (as defined in Appendix A). Final stabilization is met if the area has been seeded or planted to establish vegetation that provides 70 percent or more of the vegetative cover native to local undisturbed areas within three (3) years and, to the extent necessary to prevent erosion on the seeded or planted area, non-vegetative erosion controls have been applied to provide cover for at least three years without active maintenance.

(b) **Disturbed areas on agricultural land that are restored to their preconstruction agricultural use.** The Part 2.2.14c final stabilization criteria do not apply.

(c) **Areas that need to remain disturbed.** In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed, and only the minimum area needed remains disturbed *(*e.g.*, dirt access roads, utility pole pads, areas being used for storage of vehicles, equipment, materials)*.

2.3 POLLUTION PREVENTION REQUIREMENTS[47]

You must implement pollution prevention controls in accordance with the following requirements to minimize the discharge of pollutants in stormwater and to prevent the discharge of pollutants from spilled or leaked materials from construction activities.

[46] Examples of permanent non-vegetative stabilization measures include riprap, gravel, gabions, and geotextiles.

[47] Under this permit, you are not required to minimize exposure for any products or materials where the exposure to precipitation and to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

2.3.1 For equipment and vehicle fueling and maintenance:

a. Provide an effective means of eliminating the discharge of spilled or leaked chemicals, including fuels and oils, from these activities;[48]

b. If applicable, comply with the Spill Prevention Control and Countermeasures (SPCC) requirements in 40 CFR part 112 and Section 311 of the CWA;

c. Ensure adequate supplies are available at all times to handle spills, leaks, and disposal of used liquids;

d. Use drip pans and absorbents under or around leaky vehicles;

e. Dispose of or recycle oil and oily wastes in accordance with other Federal, State, Tribal, or local requirements; and

f. Clean up spills or contaminated surfaces immediately, using dry clean up measures (do not clean contaminated surfaces by hosing the area down), and eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge.

2.3.2 For equipment and vehicle washing:

a. Provide an effective means of minimizing the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other types of wash waters;[49]

b. Ensure there is no discharge of soaps, solvents, or detergents in equipment and vehicle wash water; and

c. For storage of soaps, detergents, or solvents, provide either (1) cover *(*e.g., *plastic sheeting, temporary roofs)* to minimize the exposure of these detergents to precipitation and to stormwater, or (2) a similarly effective means designed to minimize the discharge of pollutants from these areas.

2.3.3 For storage, handling, and disposal of building products, materials, and wastes:[50]

a. *For building materials and building products*,[51] provide either (1) cover (e.g., *plastic sheeting, temporary roofs*) to minimize the exposure of these products to

[48] Examples of effective means include:

- Locating activities away from receiving waters, storm drain inlets, and constructed or natural site drainage feature so that stormwater coming into contact with these activities cannot reach waters of the U.S.;
- Providing secondary containment (e.g., *spill berms, dikes, spill containment pallets*) and cover where appropriate; and
- Having a spill kit available on site and ensuring personnel are available to respond expeditiously in the event of a leak or spill.

[49] Examples of effective means include locating activities away from receiving waters and storm drain inlets or constructed or natural site drainage features and directing wash waters to a sediment basin or sediment trap, using filtration devices, such as filter bags or sand filters, or using other similarly effective controls.

[50] Compliance with the requirements of this permit does not relieve compliance requirements with respect to Federal, State, or local laws and regulations governing the storage, handling, and disposal of solid, hazardous, or toxic wastes and materials.

[51] Examples of building materials and building products typically present at construction sites include asphalt sealants, copper flashing, roofing materials, adhesives, concrete admixtures, and gravel and mulch stockpiles.

precipitation and to stormwater, or (2) a similarly effective means designed to minimize the discharge of pollutants from these areas.

Exception: Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use).

b. *For pesticides, herbicides, insecticides, fertilizers, and landscape materials:*

i. In storage areas, provide either (1) cover (e.g., *plastic sheeting, temporary roofs*) to minimize the exposure of these chemicals to precipitation and to stormwater, or (2) a similarly effective means designed to minimize the discharge of pollutants from these areas; and

ii. Comply with all application and disposal requirements included on the registered pesticide, herbicide, insecticide, and fertilizer label (see also Part 2.3.5).

c. *For diesel fuel, oil, hydraulic fluids, other petroleum products, and other chemicals:* The following requirements apply to the storage and handling of chemicals on your site. If you are already implementing controls as part of an SPCC or other spill prevention plan that meet or exceed the requirements of this Part, you may continue to do so and be considered in compliance with these provisions provided you reference the applicable parts of the SPCC or other plans in your SWPPP as required in Part 7.2.6b.viii.

i. If any chemical container has a storage capacity of less than 55 gallons:

(a) The containers must be water-tight, and must be kept closed, sealed, and secured when not being actively used;

(b) If stored outside, use a spill containment pallet or similar device to capture small leaks or spills; and

(c) Have a spill kit available on site that is in good working condition (i.e., not damaged, expired, or used up) and ensure personnel are available to respond immediately in the event of a leak or spill.

ii. If any chemical container has a storage capacity of 55 gallons or more:

(a) The containers must be water-tight, and must be kept closed, sealed, and secured when not being actively used;

(b) Store containers a minimum of 50 feet from receiving waters, constructed or natural site drainage features, and storm drain inlets. If infeasible due to site constraints, store containers as far away from these features as the site permits. If site constraints prevent you from storing containers 50 feet away from receiving waters or the other features identified, you must document in your SWPPP the specific reasons why the 50-foot setback is infeasible, and how you will store containers as far away as the site permits;

(c) Provide either (1) cover (e.g., temporary roofs) to minimize the exposure of these containers to precipitation and to stormwater, or (2) secondary containment (e.g., curbing, spill berms, dikes, spill containment pallets, double-wall, above-ground storage tank); and

(d) Have a spill kit available on site that is in good working condition (i.e., not

damaged, expired, or used up) and ensure personnel are available to respond immediately in the event of a leak or spill. Additional secondary containment measures are listed at 40 CFR § 112.7(c)(1).

iii. Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly. You are prohibited from hosing the area down to clean surfaces or spills. Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge.

d. *For hazardous or toxic wastes:*[52]

i. Separate hazardous or toxic waste from construction and domestic waste;

ii. Store waste in sealed containers, constructed of suitable materials to prevent leakage and corrosion, and labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable Federal, State, Tribal, or local requirements;

iii. Store all outside containers within appropriately-sized secondary containment (e.g., *spill berms, dikes, spill containment pallets*) to prevent spills from being discharged, or provide a similarly effective means designed to prevent the discharge of pollutants from these areas *(*e.g., *storing chemicals in a covered area, having a spill kit available on site);*

iv. Dispose of hazardous or toxic waste in accordance with the manufacturer's recommended method of disposal and in compliance with Federal, State, Tribal, and local requirements;

v. Clean up spills immediately, using dry clean-up methods, and dispose of used materials properly. You are prohibited from hosing the area down to clean surfaces or spills. Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge; and

vi. Follow all other Federal, State, Tribal, and local requirements regarding hazardous or toxic waste.

e. *For construction and domestic wastes:*[53]

i. Provide waste containers *(*e.g., *dumpster, trash receptacle)* of sufficient size and number to contain construction and domestic wastes;

(a) For waste containers with lids, keep waste container lids closed when not in use, and close lids at the end of the business day and during storm events. For waste containers without lids, provide either (1) cover *(*e.g., *a tarp, plastic sheeting, temporary roof)* to minimize exposure of wastes to precipitation, or (2) a similarly effective means designed to minimize the discharge of pollutants *(*e.g., *secondary containment)*;

(b) On business days, clean up and dispose of waste in designated waste

[52] Examples of hazardous or toxic waste that may be present at construction sites include paints, caulks, sealants, fluorescent light ballasts, solvents, petroleum-based products, wood preservatives, additives, curing compounds, and acids.

[53] Examples of construction and domestic wastes include packaging materials, scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, styrofoam, concrete, demolition debris; and other trash or discarded materials.

containers; and

(c) Clean up immediately if containers overflow, and if there is litter elsewhere on the site from escaped trash.

ii. Waste containers are not required for the waste remnant or unused portions of construction materials or final products that are covered by the exception in Part 2.2.3a provided that:

(a) These wastes are stored separately from other construction or domestic wastes addressed by Part 2.3.3e.i (i.e., wastes not covered by the exception in Part 2.3.3a). If the wastes are mixed, they must be stored in waste containers as required in Part 2.3.3e.i; and

(b) These wastes are stored in designated areas of the site, the wastes are described in the SWPPP (see Part 7.2.6b.ix), and identified in the site plan (see Part 7.2.4i).

f. *For sanitary waste*, position portable toilets so they are secure and will not be tipped or knocked over, and are located away from receiving waters, storm drain inlets, and constructed or natural site drainage features.

2.3.4 For washing applicators and containers used for stucco, paint, concrete, form release oils, curing compounds, or other materials:

a. Direct wash water into a leak-proof container or leak-proof and lined pit designed so no overflows can occur due to inadequate sizing or precipitation;

b. Handle washout or cleanout wastes as follows:

i. For liquid wastes:

(a) Do not dump liquid wastes or allow them to enter into constructed or natural site drainage features, storm inlets, or receiving waters;

(b) Do not allow liquid wastes to be disposed of through infiltration or to otherwise be disposed of on the ground;

(c) Comply with applicable State, Tribal, or local requirements for disposal

ii. Remove and dispose of hardened concrete waste consistent with your handling of other construction wastes in Part 2.3.3e; and

c. Locate any washout or cleanout activities as far away as possible from receiving waters, constructed or natural site drainage features, and storm drain inlets, and, to the extent feasible, designate areas to be used for these activities and conduct such activities only in these areas.

2.3.5 For the application of fertilizers:

a. Apply at a rate and in amounts consistent with manufacturer's specifications, or document in the SWPPP departures from the manufacturer specifications where appropriate in accordance with Part 7.2.6b.x;

b. Apply at the appropriate time of year for your location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth;

c. Avoid applying before heavy rains that could cause excess nutrients to be discharged;

d. Never apply to frozen ground;

e. Never apply to constructed or natural site drainage features; and

f. Follow all other Federal, State, Tribal, and local requirements regarding fertilizer application.

2.3.6 Emergency Spill Notification Requirements

Discharges of toxic or hazardous substances from a spill or other release are prohibited, consistent with Part 1.3.5. Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR part 110, 40 CFR part 117, or 40 CFR part 302 occurs during a 24-hour period, you must notify the National Response Center (NRC) at (800) 424-8802 or, in the Washington, DC metropolitan area, call (202) 267-2675 in accordance with the requirements of 40 CFR part 110, 40 CFR part 117, and 40 CFR part 302 as soon as you have knowledge of the release. You must also, within seven (7) calendar days of knowledge of the release, provide a description of the release, the circumstances leading to the release, and the date of the release. State, Tribal, or local requirements may necessitate additional reporting of spills or discharges to local emergency response, public health, or drinking water supply agencies.

2.4 CONSTRUCTION DEWATERING REQUIREMENTS

Comply with the following requirements to minimize the discharge of pollutants from dewatering[54] operations.

2.4.1 Route dewatering water through a sediment control (e.g., sediment trap or basin, pumped water filter bag) designed to prevent discharges with visual turbidity; [55]

2.4.2 Do not discharge visible floating solids or foam;

2.4.3 The discharge must not cause the formation of a visible sheen on the water surface, or visible oily deposits on the bottom or shoreline of the receiving water. Use an oil-water separator or suitable filtration device (such as a cartridge filter) designed to remove oil, grease, or other products if dewatering water is found to or expected to contain these materials;

2.4.4 To the extent feasible, use well-vegetated (e.g., grassy or wooded), upland areas of the site to infiltrate dewatering water before discharge.[56] You are prohibited from using receiving waters as part of the treatment area;

2.4.5 To prevent dewatering-related erosion and related sediment discharges:

a. Use stable, erosion-resistant surfaces (e.g., well-vegetated grassy areas, clean filter stone, geotextile underlayment) to discharge from dewatering controls;

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[54] "Dewatering" is defined in Appendix A as "the act of draining accumulated stormwater and/or ground water from building foundations, vaults, and trenches, or other similar points of accumulation."

[55] For the purposes of this permit, visual turbidity is present where there is a sediment plume in the discharge or the discharge appears cloudy, or opaque, or has a visible contrast that can be identified by an observer.

[56] See footnote 19.

b. Do not place dewatering controls, such as pumped water filter bags, on steep slopes (as defined in Appendix A); and

c. At all points where dewatering water is discharged, comply with the velocity dissipation requirements of Part 2.2.11.

2.4.6 For backwash water, either haul it away for disposal or return it to the beginning of the treatment process;

2.4.7 Replace and clean the filter media used in dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications; and

2.4.8 Comply with dewatering-specific inspection requirements in Part 4.

3 WATER QUALITY-BASED EFFLUENT LIMITATIONS

3.1 GENERAL EFFLUENT LIMITATION TO MEET APPLICABLE WATER QUALITY STANDARDS

Discharges must be controlled as necessary to meet applicable water quality standards. Discharges must also comply with any additional State or Tribal requirements that are in Part 9.

In the absence of information demonstrating otherwise, EPA expects that compliance with the conditions in this permit will result in stormwater discharges being controlled as necessary to meet applicable water quality standards. If at any time you become aware, or EPA determines, that discharges are not being controlled as necessary to meet applicable water quality standards, you must take corrective action as required in Parts 5.1 and 5.2, and document the corrective actions as required in Part 5.4.

EPA may insist that you install additional controls (to meet the narrative water quality-based effluent limit above) on a site-specific basis, or require you to obtain coverage under an individual permit, if information in your NOI or from other sources indicates that your discharges are not controlled as necessary to meet applicable water quality standards. This includes situations where additional controls are necessary to comply with a wasteload allocation in an EPA-established or approved TMDL.

If during your coverage under a previous permit, you were required to install and maintain stormwater controls specifically to meet the assumptions and requirements of an EPA-approved or established TMDL (for any parameter) or to otherwise control your discharge to meet water quality standards, you must continue to implement such controls as part of your coverage under this permit.

3.2 WATER QUALITY-BASED CONDITIONS FOR SITES DISCHARGING TO CERTAIN IMPAIRED AND HIGH QUALITY RECEIVING WATERS

For any portion of the site that discharges to a sediment or nutrient-impaired water or to a water that is identified by your State, Tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes,[57] you must comply with the inspection frequency specified in Part 4.3 and you must comply with the stabilization deadline specified in Part 2.2.14b.iii.[58]

[57] Refer to Appendix A for definitions of "impaired water" and "Tier 2," "Tier 2.5," and "Tier 3" waters. For assistance in determining whether your site discharges to impaired waters, EPA has developed a tool that is available at https://www.epa.gov/npdes/epas-stormwater-discharge-mapping-tools. For assistance in determining whether your site discharges to a Tier 2, 2.5, or 3 water, refer to the list of such waters at https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates.

[58] If you qualify for any of the reduced inspection frequencies in Part 4.4, you may conduct inspections in

If you discharge to a water that is impaired for a parameter other than a sediment-related parameter or nutrients, EPA will inform you if any additional controls are necessary for your discharge to be controlled as necessary to meet water quality standards. These controls might include those necessary for your discharge to be consistent with the assumptions of any available wasteload allocation in any applicable TMDL. In addition, EPA may require you to apply for and obtain coverage under an individual NPDES permit.

In addition, on a case-by-case basis, EPA may notify operators of new sites or operators of existing sites with increased discharges that additional analyses, stormwater controls, and/or other measures are necessary to comply with the applicable antidegradation requirements, or notify you that an individual permit application is necessary.

If you discharge to a water that is impaired for polychlorinated biphenyls (PCBs) and are engaging in demolition of any structure with at least 10,000 square feet of floor space built or renovated before January 1, 1980, you must:

a. Implement controls[59] to minimize the exposure of PCB-containing building materials, including paint, caulk, and pre-1980 fluorescent lighting fixtures, to precipitation and to stormwater; and

b. Ensure that disposal of such materials is performed in compliance with applicable State, Federal, and local laws.

3.3 TURBIDITY BENCHMARK MONITORING FOR SITES DISCHARGING DEWATERING WATER TO PROTECT THE WATER QUALITY OF SENSITIVE WATERS

For sites discharging dewatering water to "sensitive waters" (i.e., receiving waters listed as impaired for sediment or a sediment-related parameter (as defined in Appendix A), or receiving waters designated as a Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes) you are required to comply with the benchmark monitoring requirements in this Part and document the procedures you will use at your site in your SWPPP pursuant to Part 7.2.8. A summary of these requirements is included in Table 1.

EPA notes that the benchmark threshold is not an effluent limitation, rather it is an indicator that the dewatering controls may not be working to protect water quality, which the operator must investigate and correct as appropriate. A benchmark exceedance is not a permit violation. However, if a benchmark exceedance triggers corrective action in Part 5.1.5a, failure to conduct any required action is a permit violation.

Where there are multiple operators associated with the same site, the operators may coordinate with one another to carry out the monitoring requirements of this Part in order to avoid duplicating efforts. Such coordinating arrangements must be described in the SWPPP consistent with Part 7.2.8. Regardless of how the operators divide the

accordance with Part 4.4 for any portion of your site that discharges to a sensitive water.

[59] Examples of controls to minimize exposure of PCBs to precipitation and stormwater include separating work areas from non-work areas and selecting appropriate personal protective equipment and tools, constructing a containment area so that all dust or debris generated by the work remains within the protected area, and using tools that minimize dust and heat (<212°F). For additional information, refer to Part 2.3.3 of the CGP Fact Sheet.

responsibilities for monitoring and reporting, each operator remains responsible for compliance with these requirements.[60]

3.3.1 Turbidity monitoring requirements[61]

a. **Sampling frequency.** You must collect at least one turbidity sample from your dewatering discharge each day a discharge occurs.

b. **Sampling location.** Samples must be taken at all points where dewatering water is discharged. Samples must be taken after the dewatering water has been treated by installed treatment devices pursuant to Parts 2.4.1 and 2.4.3 and prior to its discharge off site into a receiving water, constructed or natural site drainage feature, or storm drain inlet.

c. **Representative samples.** Samples taken must be representative of the dewatering discharge for any given day as required in Appendix G (standard permit conditions), Part G.10.2.

d. **Test methods.** Samples must be measured using a turbidity meter that reports results in nephelometric turbidity units (NTUs) and conforms with a Part 136-approved method (e.g., methods 180.1 and 2130). You are required to use the meter, and conduct a calibration verification prior to each day's use, consistent with the manufacturer's instructions.

3.3.2 Turbidity benchmark

a. The benchmark threshold for turbidity for this permit is 50 NTUs (referred to elsewhere in this permit as the "standard 50 NTU benchmark") unless EPA has authorized the use of an alternate benchmark in accordance with Part 3.3.2b.

b. **Request for alternate benchmark threshold.**

i. At any time prior to or during your coverage under this permit, you may request that EPA approve a benchmark for your site that is higher than 50 NTUs if you have information demonstrating the higher number is the same as your receiving water's water quality standard for turbidity. Unless EPA approves an alternate benchmark, you will be required to use the standard 50 NTU benchmark. To request approval of an alternate benchmark, you must submit the following information to your applicable EPA Regional Office (see Appendix K):
(a) The current turbidity water quality standard that applies to your receiving

[60] For instance, if Operator A relies on Operator B to meet the Part 3.3.1 turbidity monitoring requirements, the Part 3.3.4 reporting and recordkeeping requirements, and the Part 5.2.2 corrective action provisions when applicable, Operator A does not have to duplicate these same functions if Operator B is implementing them for both operators to be in compliance with the permit. However, Operator A remains responsible for complying with these permit requirements if Operator B fails to take actions that were necessary for Operator A to comply with the permit. See also footnote 83. EPA notes that both Operator A and B are required to submit turbidity monitoring reports as required under Part 3.3.4, however, Operator A's report does not need to include the data collected by Operator B as long as Operator B submits the required data and Operator A's report indicates that it is relying on Operator B to report the data. See Part 3.3.4a.

[61] Operators may find it useful to consult EPA's *Monitoring and Inspection Guide for Construction Dewatering*, available at https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates, which provides guidelines on how to correctly monitor for turbidity, determine if the weekly average exceeds the benchmark, and, if so, how to proceed with corrective action.

water and the source/citation.[62]

(b) If the applicable turbidity water quality standard requires information on natural or background turbidity levels (e.g., "no more than 10 NTU above natural turbidity levels") to determine the specific standard for the receiving water, include available data that can be used to establish the natural turbidity levels of your receiving water (including literature studies or Federal, State, Tribal, or local government data). Data must be representative of the natural turbidity levels of your specific receiving water. Identify the source(s) of all data provided, including if the data are from samples you collected of the receiving water.

ii. EPA will inform you of its decision on whether to approve the requested alternate benchmark within 30 days. EPA may approve your request, request additional time (e.g., if additional information is needed to substantiate the data you provided), or deny your request. Unless and until EPA approves your request to use an alternate benchmark, you are required to use the standard benchmark of 50 NTUs and take any required corrective actions if an exceedance occurs.

3.3.3 Comparison of turbidity samples to benchmark. Compare the weekly average[63] of your turbidity monitoring results to the standard 50 NTU benchmark, or alternate benchmark if approved by EPA.

a. If the weekly average of your turbidity monitoring results exceeds the standard benchmark (or your approved alternate benchmark), you are required to conduct follow-up corrective action in accordance with Part 5.2.2 and document any corrective action taken in your corrective action log in accordance with Part 5.4.

b. For averaging purposes, a "monitoring week" starts with a Monday and ends on Sunday. Once a new monitoring week starts, you will need to calculate a new average for that week of turbidity monitoring results.[64] A weekly average may consist of one or more turbidity monitoring results.

c. Although you are not required to collect and analyze more than one turbidity sample per day from your dewatering discharge, if you do collect and analyze more than one sample on any given day, you must include any additional results in the

[62] For instance, if your site is located in Washington, DC, and you are discharging to a Class B water, for which the water quality standard is that turbidity may not increase above ambient levels by more than 20 percent, you would reference "Water Quality Standards for the District of Columbia, Chapter 11, Section 1104.8."

[63] A "weekly average" is defined as the sum of all of the turbidity samples taken during a "monitoring week" divided by the number of samples measured during that week. Average values should be calculated to the nearest whole number.

[64] For example, if turbidity samples from your dewatering discharge in week 1 result in values of 30 NTU on Tuesday, 40 NTU on Wednesday, and 45 NTU on Thursday, your weekly average turbidity value would be 38.33 NTU ((30+40+45) ÷ 3 = 38 NTU). If in week 2, your turbidity samples resulted in values of 45 NTU on Monday, 30 NTU on Tuesday, 25 NTU on Wednesday, and 15 NTU on Thursday, you would calculate a new average for that week, which would yield an average turbidity value of 28.75 NTU ((45+30+25+15) ÷ 4 = 29 NTU). By comparison, if your samples on consecutive days from Friday to Monday were 60 NTU, 45 NTU, 40 NTU, and 43 NTU, respectively, and there are no other dewatering discharges for the remainder of the week, you would calculate one weekly average for the Friday to Sunday to be 48 NTU ((60+45+40) ÷ 3 = 48 NTU), and a separate weekly average for the one Monday to be 43 NTU (43 ÷ 1 = 43 NTU).

calculation of your weekly average (i.e., add all individual results for that monitoring week and divide by the total number of samples).[65]

d. If you are conducting turbidity monitoring for more than one dewatering discharge point, you must calculate a weekly average turbidity value for each discharge point and compare each to the turbidity benchmark.

3.3.4 Reporting and recordkeeping.

a. You must submit reports of your weekly average turbidity data to EPA no later than 30 days following the end of each monitoring quarter. If there are monitoring weeks in which there was no dewatering discharge, or if there is a monitoring quarter with no dewatering discharge, indicate this in your turbidity monitoring report. If another operator associated with your same site is conducting turbidity monitoring on your behalf pursuant to Part 3.3, indicate this in your turbidity monitoring report.

b. For the purposes of this permit, the following monitoring quarters and reporting deadlines apply:

Table 3. Monitoring Quarters and Deadlines for Reporting Turbidity Benchmark Monitoring Data.

Monitoring Quarter #	**Months**	**Reporting Deadline** (no later than 30 days after end of the monitoring quarter)
1	January 1 – March 31	April 30
2	April 1 – June 30	July 30
3	July 1 – September 30	October 30
4	October 1 – December 31	January 30

c. You must use EPA's NPDES eReporting Tool (NeT) to electronically submit your quarterly turbidity data, unless, consistent with Part 1.4.2, you received a waiver from your applicable EPA Regional Office. If the EPA Regional Office grants you approval to use a paper turbidity monitoring report form, and you elect to use it, you must complete the form in Appendix K. If EPA approves of your request to use an alternate turbidity benchmark pursuant to Part 3.3.2b, EPA will substitute the alternate benchmark in your NeT account.

d. For each day in which you are required to monitor, you must record the monitoring information required by Appendix G, Parts G.10.2 and G.10.3 and retain all such information for a period of at least three years from the date this permit expires or from the date your authorization is terminated.

[65] For example, if during a monitoring week you take two turbidity samples on Tuesday with a value of 30 NTU and 35 NTU, three samples on Wednesday with a value of 40 NTU, 45 NTU, and 48 NTU, and one sample on Thursday with a value of 45 NTU, your weekly average turbidity value for this week would be 41 NTU ((30+35+40+45+48+45) ÷ 6 = 41 NTU).

Table 4. Summary of Turbidity Benchmark Monitoring Requirements.

Applicability	Sampling Requirement	Turbidity Benchmark	Corrective Action	Reporting
Sites discharging dewatering water to a sediment-impaired water or to a water designated as a Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes.	Collect at least one turbidity sample per day, from each discharge point, on any day there is a dewatering discharge. Use turbidity sampling procedures specified in Part 3.3.1.	Compare the weekly average of your turbidity monitoring results to the 50 NTU benchmark (or alternate benchmark if approved by EPA).	If the weekly average of turbidity monitoring results exceeds the 50 NTU turbidity benchmark (or alternate benchmark if approved by EPA), you are required to take follow-up corrective action in accordance with Part 5.2.2.	Report all weekly average turbidity monitoring results on a quarterly basis via NeT-CGP (unless use of the paper monitoring form in Appendix K is approved by EPA) no later than 30 days following the end of each monitoring quarter.

4 INSPECTION REQUIREMENTS

4.1 PERSON(S) RESPONSIBLE FOR CONDUCTING SITE AND DEWATERING INSPECTIONS

The person(s) inspecting your site may be a person on your staff or a third party you hire to conduct such inspections. You are responsible for ensuring that any person conducting inspections pursuant to this Part is a "qualified person." A qualified person is someone who has completed the training required by Part 6.3.

4.2 FREQUENCY OF INSPECTIONS.[66]

At a minimum, you must conduct a site inspection in accordance with one of the two schedules listed below, unless you are subject to the Part 4.3 site inspection frequency for discharges to sediment or nutrient-impaired or high quality waters, or qualify for a Part 4.4 reduction in the inspection frequency:

4.2.1 At least once every seven (7) calendar days; *or*

4.2.2 Once every 14 calendar days *and* within 24 hours[67] of the occurrence of:

- **a.** A storm event that produces 0.25 inches or more of rain within a 24-hour period.
  - **i.** If a storm event produces 0.25 inches or more of rain within a 24-hour period (including when there are multiple, smaller storms that alone produce less than 0.25 inches but together produce 0.25 inches or more in 24 hours), you are required to conduct one inspection within 24 hours of when 0.25 inches of rain or more has fallen.

[66] Inspections are only required during the site's normal working hours.

[67] For the purposes of the inspection requirements in this Part, conducting an inspection "within 24 hours" means that once either of the two conditions in Parts 4.2.2a or 4.2.2b are met you have 24 hours from that time to conduct an inspection. For clarification, the 24 hours is counted as a continuous passage of time, and not counted by business hours (e.g., 3 business days of 8 hours each). When the 24-hour inspection time frame occurs entirely outside of normal working hours, you must conduct an inspection by no later than the end of the next business day.

ii. If a storm event produces 0.25 inches or more of rain within a 24-hour period on the first day of a storm and continues to produce 0.25 inches or more of rain on subsequent days, you must conduct an inspection within 24 hours of the first day of the storm and within 24 hours after the last day of the storm that produces 0.25 inches or more of rain (i.e., only two inspections would be required for such a storm event).[68]

b. A discharge caused by snowmelt from a storm event that produces 3.25 inches[69] or more of snow within a 24-hour period. You are required to conduct one inspection once the discharge of snowmelt from a 3.25-inch or more snow accumulation occurs. Additional snowmelt inspections are only required if following the discharge from the first snowmelt, there is a discharge from a separate storm event that produces 3.25 inches or more of snow.

4.2.3 To determine whether a storm event meets either of the thresholds in Parts 4.2.2a or 4.2.2b:

a. For rain, you must either keep a properly maintained rain gauge on your site, or obtain the storm event information from a weather station that is representative of your location. For any 24-hour period during which there is 0.25 inches or more of rainfall, you must record the total rainfall measured for that day in accordance with Part 4.7.1d.

b. For snow, you must either take measurements of snowfall at your site,[70] or rely on similar information from a local weather forecasting provider that is representative of your location.

4.3 INCREASE IN INSPECTION FREQUENCY FOR CERTAIN SITES.

The increased inspection frequencies established in this Part take the place of the Part 4.2 inspection frequencies for the portion of the site affected.

4.3.1 For any portion of the site that discharges to a sediment or nutrient-impaired water or to a water that is identified by your State, Tribe, or EPA as Tier 2, Tier 2.5, or Tier 3 for antidegradation purposes (see Part 3.2), you must conduct an once every seven (7) calendar days *and* within 24 hours of the occurrence of a storm event that produces 0.25 inches or more of rain within a 24-hour period, or within 24 hours of a snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period.

[68] For example, if 0.30 inches of rain falls on Day 1, 0.25 inches of rain falls on Day 2, and 0.10 inches of rain fall on Day 3, you would be required to conduct a first inspection within 24 hours of the Day 1 rainfall and a second inspection within 24 hours of the Day 2 rainfall, but a third inspection would not be required within 24 hours of the Day 3 rainfall.

[69] This is the amount of snow that is equivalent to 0.25 inches of rain, based on information from the National Oceanic and Atmospheric Administration (NOAA) indicating that 13 inches of snow is, on average, equivalent to 1 inch of rain. See https://www.nssl.noaa.gov/education/svrwx101/winter/faq/.

[70] For snowfall measurements, EPA suggests use of NOAA's National Weather Service guidelines at https://www.weather.gov/jkl/snow_measurement. These guidelines recommend use of a "snowboard" (a piece of wood about 16 inches by 16 inches) that is placed in an unobstructed part of the site on a hard surface.

Refer to Parts 4.2.3a and 4.2.3b for the requirements to determine if a storm event produces enough rain or snow to trigger the inspection requirement.

4.3.2 For sites discharging dewatering water, you must conduct an inspection in accordance with Part 4.6.3 during the discharge once per day on which the discharge occurs. The Part 4.2 inspection frequency still applies to all other portions of the site, unless the site is affected by either the increased frequency in Part 4.3.1 or the reduced frequency in Part 4.4.

4.4 REDUCTIONS IN INSPECTION FREQUENCY

4.4.1 Stabilized areas.

a. You may reduce the frequency of inspections to twice per month for the first month, no more than 14 calendar days apart, then once per month until permit coverage is terminated consistent with Part 8 in any area of your site where the stabilization steps in Part 2.2.14a have been completed. If construction activity resumes in this portion of the site at a later date, the inspection frequency immediately increases to that required in Parts 4.2 and 4.3, as applicable. You must document the beginning and ending dates of this period in your SWPPP.

b. Exception. For "linear construction sites" (as defined in Appendix A) where disturbed portions have undergone final stabilization at the same time active construction continues on others, you may reduce the frequency of inspections to twice per month for the first month, no more than 14 calendar days apart, in any area of your site where the stabilization steps in Part 2.2.14a have been completed. After the first month, inspect once more within 24 hours of the occurrence of a storm event that produces 0.25 inches of rain or more within a 24-hour period, or within 24 hours of a snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period. If there are no issues or evidence of stabilization problems, you may suspend further inspections. If "wash-out" of stabilization materials and/or sediment is observed, following re-stabilization, inspections must resume at the inspection frequency required in Part 4.4.1a. Inspections must continue until final stabilization is visually confirmed following a storm event that produces 0.25 inches of rain or more within a 24-hour period.

4.4.2 Arid, semi-arid, or drought-stricken areas (as defined in Appendix A). If it is the seasonally dry period[71] or a period in which drought is occurring, you may reduce the frequency of inspections to once per month and within 24 hours of the occurrence of a storm event that produces 0.25 inches of rain or more within a 24-hour period, or within 24 hours of a snowmelt discharge from a storm event that produces 3.25 inches or more of snow within a 24-hour period. You must document that you are using this reduced schedule and the beginning and ending dates of the seasonally dry period in your SWPPP. Follow the procedures in Part 4.2.3a and 4.2.3b, accordingly, to determine if a storm event occurs that produces 0.25 inches or more of rain or 3.25 inches or more of snow within a 24-hour period. For any 24-hour period during which there is 0.25 inches or more of rainfall, or 3.25 inches or more of snow, you must record the total rainfall or snow measured for that day in accordance with Part 4.7.1d.

[71] See footnote 44.

4.4.3 Frozen conditions:

a. If you are suspending construction activities due to frozen conditions, you may temporarily suspend inspections on your site until thawing conditions (as defined in Appendix A) begin to occur if:

i. Discharges are unlikely due to continuous frozen conditions that are likely to continue at your site for at least three (3) months based on historic seasonal averages.[72] If unexpected weather conditions (such as above freezing temperatures or rain events) make discharges likely, you must immediately resume your regular inspection frequency as described in Parts 4.2 and 4.3, as applicable;

ii. Land disturbances have been suspended; and

iii. All disturbed areas of the site have been stabilized in accordance with Part 2.2.14a.

b. If you are still conducting construction activities during frozen conditions, you may reduce your inspection frequency to once per month if:

i. Discharges are unlikely due to continuous frozen conditions that are likely to continue at your site for at least three (3) months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain events) make discharges likely, you must immediately resume your regular inspection frequency as described in Parts 4.2 and 4.3, as applicable; and

ii. Except for areas in which you are actively conducting construction activities, disturbed areas of the site have been stabilized in accordance with Part 2.2.14a.

You must document the beginning and ending dates of this period in your SWPPP.

4.5 AREAS THAT MUST BE INSPECTED

During your site inspection, you must at a minimum inspect the following areas of your site:

4.5.1 All areas that have been cleared, graded, or excavated and that have not yet completed stabilization consistent with Part 2.2.14a;

4.5.2 All stormwater controls, including pollution prevention controls, installed at the site to comply with this permit;[73]

4.5.3 Material, waste, borrow, and equipment storage and maintenance areas that are covered by this permit;

4.5.4 All areas where stormwater typically flows within the site, including constructed or natural site drainage features designed to divert, convey, and/or treat stormwater;

4.5.5 All areas where construction dewatering is taking place, including controls to treat the dewatering discharge and any channelized flow of water to and from those controls;

[72] Use data sets that include the most recent data available to account for recent precipitation patterns and trends.

[73] This includes the requirement to inspect for sediment that has been tracked out from the site onto paved roads, sidewalks, or other paved areas consistent with Part 2.2.4.

4.5.6 All points of discharge from the site; and

4.5.7 All locations where stabilization measures have been implemented.

You are not required to inspect areas that, at the time of the inspection, are considered unsafe to your inspection personnel.

4.6 REQUIREMENTS FOR INSPECTIONS

4.6.1 During each site inspection, you must at a minimum:

a. Check whether all stormwater controls *(*i.e.*, erosion and sediment controls and pollution prevention controls)* are properly installed, appear to be operational, and are working as intended to minimize pollutant discharges.

b. Check for the presence of conditions that could lead to spills, leaks, or other accumulations of pollutants on the site.

c. Identify any locations where new or modified stormwater controls are necessary to meet the requirements of Parts 2 and/or 3.

d. Check for signs of visible erosion and sedimentation *(*i.e.*, sediment deposits)* that have occurred and are attributable to your discharge at points of discharge and, if applicable, on the banks of any receiving waters flowing within or immediately adjacent to the site;

e. Check for signs of sediment deposition that are visible from your site and attributable to your discharge (e.g., sand bars with no vegetation growing on top in receiving waters or in other constructed or natural site drainage features, or the buildup of sediment deposits on nearby streets, curbs, or open conveyance channels).

f. Identify any incidents of noncompliance observed.

4.6.2 If a discharge is occurring during your inspection:

a. Identify all discharge points at the site; and

b. Observe and document the visual quality of the discharge, and take note of the characteristics of the stormwater discharge, including color; odor; floating, settled, or suspended solids; foam; oil sheen; and other indicators of stormwater pollutants. Check also for signs of these same pollutant characteristics that are visible from your site and attributable to your discharge in receiving waters or in other constructed or natural site drainage features.

4.6.3 For dewatering inspections conducted pursuant to Parts 4.3.2, record the following in a report within 24 hours of completing the inspection:

a. The inspection date;

b. Names and titles of personnel making the inspection;

c. Approximate times that the dewatering discharge began and ended on the day of inspection;[74]

d. Estimates of the rate (in gallons per day) of discharge on the day of inspection;

[74] If the dewatering discharge is a continuous discharge that continues after normal business hours, indicate that the discharge is continuous.

e. Whether or not any of the following indications of pollutant discharge were observed at the point of discharge to any receiving waters flowing through or immediately adjacent to the site and/or to constructed or natural site drainage features or storm drain inlets:[75]

i. a sediment plume, suspended solids, unusual color, presence of odor, decreased clarity, or presence of foam; and/or

ii. a visible sheen on the water surface or visible oily deposits on the bottom or shoreline of the receiving water; and

f. Photographs of (1) the dewatering water prior to treatment by a dewatering control(s) and the final discharge after treatment; (2) the dewatering control(s); and (3) the point of discharge to any receiving waters flowing through or immediately adjacent to the site and/or to constructed or natural site drainage features, storm drain inlets, and other conveyances to receiving waters.

You must also comply with the Part 4.7.2, 4.7.3, and 4.7.4 requirements for signing the reports, keeping them available on site, and retaining copies.

4.6.4 Based on the results of your inspection:

a. Complete any necessary maintenance repairs or replacements under Part 2.1.4 or under Part 5, whichever applies; and

b. Modify your SWPPP site map in accordance with Part 7.4.1 to reflect changes to your stormwater controls that are no longer accurately reflected on the current site map.

4.7 INSPECTION REPORT

4.7.1 You must complete an inspection report within 24 hours of completing any site inspection. Each inspection report (except for dewatering inspection reports, which are covered in Part 4.6.3) must include the following:

a. The inspection date;

b. Names and titles of personnel making the inspection;

c. A summary of your inspection findings, covering at a minimum the observations you made in accordance with Part 4.6, including any problems found during your inspection that make it necessary to perform routine maintenance pursuant to Part 2.1.4b or corrective action pursuant to Part 5. Include also any documentation as to why the corrective action procedures under Part 5 are unnecessary to fix a problem that repeatedly occurs as described in Part 2.1.4c;

d. If you are inspecting your site at the frequency specified in Part 4.2.2, Part 4.3, or Part 4.4.1b, and you conducted an inspection because of a storm event that produced rainfall measuring 0.25 inches or more within a 24-hour period, you must include the applicable rain gauge or weather station readings that triggered the inspection. Similarly, if you conducted an inspection because of a snowmelt discharge from a storm event that produced 3.25 inches or more of snow within a 24-hour period, you must include any measurements taken of snowfall at your site, or weather station information you relied on; and

[75] If the operator observes any of these indicators of pollutant discharge, corrective action is required consistent with Parts 5.1.5b and 5.2.2.

e. If you determined that it is unsafe to inspect a portion of your site, you must describe the reason you found it to be unsafe and specify the locations to which this condition applies.

4.7.2 Each inspection report must be signed by the operator's signatory in accordance with Appendix G, Part G.11 of this permit.

4.7.3 You must keep a copy of all inspection reports at the site or at an easily accessible location, so that it can be made immediately available at the time of an on-site inspection or upon request by EPA.[76]

4.7.4 You must retain all inspection reports completed for this Part for at least three (3) years from the date that your permit coverage expires or is terminated.

4.8 INSPECTIONS BY EPA

You must allow EPA, or an authorized representative of EPA, to conduct the following activities at reasonable times. To the extent that you are utilizing shared controls, that are not on site, to comply with this permit, you must make arrangements for EPA to have access at all reasonable times to those areas where the shared controls are located.

4.8.1 Enter onto all areas of the site, including any construction support activity areas covered by this permit, any off-site areas where shared controls are utilized to comply with this permit, discharge locations, adjoining waterbodies, and locations where records are kept under the conditions of this permit;

4.8.2 Access and copy any records that must be kept under the conditions of this permit;

4.8.3 Inspect your construction site, including any construction support activity areas covered by this permit (see Part 1.2.1c), any stormwater controls installed and maintained at the site, and any off-site shared controls utilized to comply with this permit; and

4.8.4 Sample or monitor for the purpose of ensuring compliance.

5 CORRECTIVE ACTIONS

5.1 CONDITIONS TRIGGERING CORRECTIVE ACTION.

You must take corrective action to address any of the following conditions identified at your site:

5.1.1 A stormwater control needs a significant repair or a new or replacement control is needed, or, in accordance with Part 2.1.4c, you find it necessary to repeatedly (i.e., three (3) or more times) conduct the same routine maintenance fix to the same control at the same location (unless you document in your inspection report under Part 4.7.1c that the specific reoccurrence of this same problem should still be addressed as a routine maintenance fix under Part 2.1.4); or

5.1.2 A stormwater control necessary to comply with the requirements of this permit was never installed, or was installed incorrectly; or

[76] Inspection reports may be prepared, signed, and kept electronically, rather than in paper form, if the records are: (a) in a format that can be read in a similar manner as a paper record; (b) legally dependable with no less evidentiary value than their paper equivalent; and (c) immediately accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form. For additional guidance on the proper practices to follow for the electronic retention of inspection report records, refer to the Fact Sheet discussion related to Part 4.7.3.

5.1.3 Your discharges are not meeting applicable water quality standards;

5.1.4 A prohibited discharge has occurred (see Part 1.3); or

5.1.5 During discharge from site dewatering activities:

a. The weekly average of your turbidity monitoring results exceeds the 50 NTU benchmark (or alternate benchmark if approved by EPA pursuant to Part 3.3.2b); or

b. You observe or you are informed by EPA, State, or local authorities of the presence of the conditions specified in Part 4.6.3e.

5.2 CORRECTIVE ACTION DEADLINES

5.2.1 If responding to any of the Part 5.1.1, 5.1.2, 5.1.3, or 5.1.4 triggering conditions, you must:

a. Immediately take all reasonable steps to address the condition, including cleaning up any contaminated surfaces so the material will not discharge in subsequent storm events; and

b. When the problem does not require a new or replacement control or significant repair, the corrective action must be completed by the close of the next business day; or

c. When the problem requires a new or replacement control or significant repair, install the new or modified control and make it operational, or complete the repair, by no later than seven (7) calendar days from the time of discovery. If it is infeasible to complete the installation or repair within seven (7) calendar days, you must document in your records why it is infeasible to complete the installation or repair within the 7-day timeframe and document your schedule for installing the stormwater control(s) and making it operational as soon as feasible after the 7-day timeframe. Where these actions result in changes to any of the stormwater controls or procedures documented in your SWPPP, you must modify your SWPPP accordingly within seven (7) calendar days of completing this work.

5.2.2 If responding to either of the Part 5.1.5 triggering conditions related to site dewatering activities, you must:

a. Immediately take all reasonable steps to minimize or prevent the discharge of pollutants until you can implement a solution, including shutting off the dewatering discharge as soon as possible depending on the severity of the condition[77] taking safety considerations into account;

b. Determine whether the dewatering controls are operating effectively and whether they are causing the conditions; and

c. Make any necessary adjustments, repairs, or replacements to the dewatering controls to lower the turbidity levels below the benchmark or remove the visible plume or sheen.

[77] For instance, if the weekly average of your turbidity monitoring results or a single sample is extremely high (e.g., a single turbidity sample results in 355 NTUs or higher), you should take action to safely shut off the discharge so that you can evaluate the cause of the high turbidity. Note: A single turbidity sample of 355 NTUs or higher means that the weekly average turbidity value will exceed 50 NTU regardless of the turbidity values the other days during the week.

When you have completed these steps and made any changes deemed necessary, you may resume discharging from your dewatering activities.

5.3 CORRECTIVE ACTION REQUIRED BY EPA

You must comply with any corrective actions required by EPA as a result of permit violations found during an inspection carried out under Part 4.8.

5.4 CORRECTIVE ACTION LOG

5.4.1 For each corrective action taken in accordance with this Part, you must record the following in a corrective action log:

- **a.** Within 24 hours of identifying the corrective action condition, document the specific condition and the date and time it was identified.
- **b.** Within 24 hours of completing the corrective action (in accordance with the deadlines in Part 5.2), document the actions taken to address the condition, including whether any SWPPP modifications are required.

5.4.2 Each entry into the corrective action log, consisting of the information required by both Parts 5.4.1a and 5.4.1b, must be signed by the operator's signatory in accordance with Appendix G, Part G.11.2 of this permit.

5.4.3 You must keep a copy of the corrective action log at the site or at an easily accessible location, so that it can be made immediately available at the time of an on-site inspection or upon request by EPA.[78]

5.4.4 You must retain the corrective action log for at least three (3) years from the date that your permit coverage expires or is terminated.

6 STORMWATER TEAM FORMATION/STAFF TRAINING REQUIREMENTS

6.1 STORMWATER TEAM

Each operator, or group of multiple operators, must assemble a "stormwater team" that will be responsible for carrying out activities necessary to comply with this permit. The stormwater team must include the following people:

- **a.** Personnel who are responsible for the design, installation, maintenance, and/or repair of stormwater controls (including pollution prevention controls);
- **b.** Personnel responsible for the application and storage of treatment chemicals (if applicable);
- **c.** Personnel who are responsible for conducting inspections as required in Part 4.1; and
- **d.** Personnel who are responsible for taking corrective actions as required in Part 5.

Members of the stormwater team must be identified in the SWPPP pursuant to Part 7.2.2.

[78] The corrective action log may be prepared, signed, and kept electronically, rather than in paper form, if the records are: (a) in a format that can be read in a similar manner as a paper record; (b) legally dependable with no less evidentiary value than their paper equivalent; and (c) immediately accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form. For additional guidance on the proper practices to follow for the electronic retention of corrective action log records, refer to the Fact Sheet discussion related to Part 4.7.3.

6.2 GENERAL TRAINING REQUIREMENTS FOR STORMWATER TEAM MEMBERS

Prior to the commencement of construction activities, you must ensure that all persons[79] assigned to the stormwater team understand the requirements of this permit and their specific responsibilities with respect to those requirements, including the following related to the scope of their job duties:

a. The permit requirements and deadlines associated with installation, maintenance, and removal of stormwater controls, as well as site stabilization;

b. The location of all stormwater controls on the site required by this permit and how they are to be maintained;

c. The proper procedures to follow with respect to the permit's pollution prevention requirements; and

d. When and how to conduct inspections, record applicable findings, and take corrective actions. Specific training requirements for persons conducting site inspections are included in Part 6.3.

You are responsible for ensuring that all activities on the site comply with the requirements of this permit. You are not required to provide or document formal training for subcontractors or other outside service providers (unless the subcontractors or outside service providers are responsible for conducting the inspections required in Part 4, in which case you must provide such documentation consistent with Part 7.2.2), but you must ensure that such personnel understand any requirements of this permit that may be affected by the work they are subcontracted to perform.

6.3 TRAINING REQUIREMENTS FOR PERSONS CONDUCTING INSPECTIONS

For projects that receive coverage under this permit on or after February 17, 2023, to be considered a qualified person under Part 4.1 for conducting inspections under Part 4, you must, at a minimum, either:

a. Have completed the EPA construction inspection course developed for this permit and have passed the exam; or

b. Hold a current valid construction inspection certification or license from a program that, at a minimum, covers the following:[80]

- **i.** Principles and practices of erosion and sediment control and pollution prevention practices at construction sites;
- **ii.** Proper installation and maintenance of erosion and sediment controls and pollution prevention practices used at construction sites; and
- **iii.** Performance of inspections, including the proper completion of required reports and documentation, consistent with the requirements of Part 4.

[79] If the person requiring training is a new employee who starts after you commence construction activities, you must ensure that this person has the proper understanding as required above prior to assuming particular responsibilities related to compliance with this permit. For emergency-related projects, the requirement to train personnel prior to commencement of construction activities does not apply, however, such personnel must have the required training prior to NOI submission.

[80] If one of the following topics (e.g., installation and maintenance of pollution prevention practices) is not covered by the non-EPA training program, you may consider supplementing the training with the analogous module of the EPA course (e.g., Module 4) that covers the missing topic.

For projects that receive coverage under this permit prior to February 17, 2023, any personnel conducting site inspections pursuant to Part 4 on your site must, at a minimum, be a person knowledgeable in the principles and practice of erosion and sediment controls and pollution prevention, who possesses the appropriate skills and training to assess conditions at the construction site that could impact stormwater quality, and the appropriate skills and training to assess the effectiveness of any stormwater controls selected and installed to meet the requirements of this permit.[81]

6.4 STORMWATER TEAM'S ACCESS TO PERMIT DOCUMENTS

Each member of the stormwater team must have easy access to an electronic or paper copy of applicable portions of this permit, the most updated copy of your SWPPP, and other relevant documents or information that must be kept with the SWPPP.

7 STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

7.1 GENERAL REQUIREMENTS

All operators associated with a construction site under this permit must develop a SWPPP consistent with the requirements in Part 7 prior to their submittal of the NOI.[82, 83, 84] The SWPPP must be kept up-to-date throughout coverage under this permit.

If a SWPPP was prepared under a previous version of this permit, the operator must review and update the SWPPP to ensure that this permit's requirements are addressed prior to submitting an NOI for coverage under this permit.

7.2 SWPPP CONTENTS

At a minimum, the SWPPP must include the information specified in this Part and as specified in other parts of this permit.

7.2.1 All Site Operators. Include a list of all other operators who will be engaged in construction activities at the site, and the areas of the site over which each operator has control.

[81] If you receive coverage for a project prior to February 17, 2023, and construction activities for the same project will continue after February 17, 2023, the personnel conducting inspections do not need to take the additional training specified in Parts 6.3a and 6.3b for inspections conducted on the project site. If the same operator obtains coverage for a different project on or after February 17, 2023, personnel conducting inspections would be required to meet the requirements for a qualified person by completing the training in either Part 6.3a or Part 6.3b.

[82] The SWPPP does not establish the effluent limits and/or other permit terms and conditions that apply to your site's discharges; these limits, terms, and conditions are established in this permit.

[83] Where there are multiple operators associated with the same site, they may develop a group SWPPP instead of multiple individual SWPPPs. Regardless of whether there is a group SWPPP or multiple individual SWPPPs, each operator is responsible for compliance with the permit's terms and conditions. In other words, if Operator A relies on Operator B to satisfy its permit obligations, Operator A does not have to duplicate those permit-related functions if Operator B is implementing them such that both operators are in compliance with the permit. However, Operator A remains responsible for permit compliance if Operator B fails to take actions necessary for Operator A to comply with the permit. In addition, all operators must ensure, either directly or through coordination with other operators, that their activities do not cause a violation or compromise any other operators' controls and/or any shared controls. See also footnote 60.

[84] There are a number of commercially available products to assist operators in developing the SWPPP, as well as companies that can be hired to help develop a site-specific SWPPP. The permit does not state which are recommended, nor does EPA endorse any specific products or vendors. Where operators choose to rely on these products or services, the choice of which ones to use to comply with the requirements of this Part is a decision for the operator alone.

7.2.2 Stormwater Team. Identify the personnel (by name and position) that you have made part of the stormwater team pursuant to Part 6.1, as well as their individual responsibilities, including which members are responsible for conducting inspections.

Include verification that each member of the stormwater team has received the training required by Part 6.2. Include documentation that members of the stormwater team responsible for conducting inspections pursuant to Part 4 have received the training required by Part 6.3. If personnel on your team elect to complete the EPA inspector training program pursuant to Part 6.3a, you must include copies of the certificate showing that the relevant personnel have completed the training and passed the exam. If personnel on your team elect to complete a non-EPA inspector training program pursuant to Part 6.3b, you must include documentation showing that these persons have successfully completed the program and their certification or license is still current. You must also confirm that the non-EPA inspector training program satisfies the minimum elements for such programs in Part 6.3b.

7.2.3 Nature of Construction Activities. Include the following:

- **a.** A description of the nature of your construction activities, including the age or dates of past renovations for structures that are undergoing demolition;
- **b.** The size of the property (in acres or length in miles if a linear construction site);
- **c.** The total area expected to be disturbed by the construction activities (to the nearest quarter acre or nearest quarter mile if a linear construction site);
- **d.** A description of any on-site and off-site construction support activity areas covered by this permit (see Part 1.2.1c);
- **e.** The maximum area expected to be disturbed at any one time, including on-site and off-site construction support activity areas;
- **f.** A description and projected schedule for the following:[85]
  - **i.** Commencement of construction activities in each portion of the site, including clearing and grubbing, mass grading, demolition activities, site preparation (i.e., excavating, cutting and filling), final grading, and creation of soil and vegetation stockpiles requiring stabilization;
  - **ii.** Temporary or permanent cessation of construction activities in each portion of the site;
  - **iii.** Temporary or final stabilization of exposed areas for each portion of the site; and
  - **iv.** Removal of temporary stormwater controls and construction equipment or vehicles, and the cessation of construction-related pollutant-generating activities.

[85] If plans change due to unforeseen circumstances or for other reasons, the requirement to describe the sequence and estimated dates of construction activities is not meant to "lock in" the operator to meeting these dates. When departures from initial projections are necessary, this should be documented in the SWPPP itself, or in associated records, as appropriate.

g. A list and description of all pollutant-generating activities[86] on the site. For each pollutant-generating activity, include an inventory of pollutants or pollutant constituents (e.g., *sediment, fertilizers, pesticides, paints, caulks, sealants, fluorescent light ballasts, contaminated substrates, solvents, fuels*) associated with that activity, which could be discharged in stormwater from your construction site. You must take into account where potential spills and leaks could occur that contribute pollutants to stormwater discharges, and any known hazardous or toxic substances, such as PCBs and asbestos, that will be disturbed or removed during construction;

h. Business days and hours for the project;

i. If you are conducting construction activities in response to a public emergency (see Part 1.4), a description of the cause of the public emergency *(*e.g., *mud slides, earthquake, extreme flooding conditions, widespread disruption in essential public services)*, information substantiating its occurrence *(*e.g., *State disaster declaration or similar State or local declaration)*, and a description of the construction necessary to reestablish affected public services.

7.2.4 Site Map. Include a legible map, or series of maps, showing the following features of the site:

a. Boundaries of the property;

b. Locations where construction activities will occur, including:

i. Locations where earth-disturbing activities will occur (note any phasing), including any demolition activities;

ii. Approximate slopes before and after major grading activities (note any steep slopes (as defined in Appendix A));

iii. Locations where sediment, soil, or other construction materials will be stockpiled;

iv. Any receiving water crossings;

v. Designated points where vehicles will exit onto paved roads;

vi. Locations of structures and other impervious surfaces upon completion of construction; and

vii. Locations of on-site and off-site construction support activity areas covered by this permit (see Part 1.2.1c).

c. Locations of any receiving waters within the site and all receiving waters within one mile downstream of the site's discharge point(s). Also identify if any of these receiving waters are listed as impaired or are identified as a Tier 2, Tier 2.5, or Tier 3 water;

d. Any areas of Federally listed critical habitat within the action area of the site as defined in Appendix A;

e. Type and extent of pre-construction cover on the site (e.g., vegetative cover, forest, pasture, pavement, structures);

f. Drainage patterns of stormwater and authorized non-stormwater before and after major grading activities;

[86] Examples of pollutant-generating activities include paving operations; concrete, paint, and stucco washout and waste disposal; solid waste storage and disposal; and dewatering activities.

g. Stormwater and authorized non-stormwater discharge locations, including:

i. Locations where stormwater and/or authorized non-stormwater will be discharged to storm drain inlets, including a notation of whether the inlet conveys stormwater to a sediment basin, sediment trap, or similarly effective control;[87]

ii. Locations where stormwater or authorized non-stormwater will be discharged directly to receiving waters (i.e., not via a storm drain inlet); and

iii. Locations where turbidity benchmark monitoring will take place to comply with Part 3.3, if applicable to your site.

h. Locations of all potential pollutant-generating activities identified in Part 7.2.3g;

i. Designated areas where construction wastes that are covered by the exception in Part 2.3.3e.ii because they are not pollutant-generating will be stored;

j. Locations of stormwater controls, including natural buffer areas and any shared controls utilized to comply with this permit; and

k. Locations where polymers, flocculants, or other treatment chemicals will be used and stored.

7.2.5 Non-Stormwater Discharges. Identify all authorized non-stormwater discharges in Part 1.2.2 that will or may occur.

7.2.6 Description of Stormwater Controls.

a. For each of the Part 2.2 erosion and sediment control requirements, Part 2.3 pollution prevention requirements, and Part 2.4 construction dewatering requirements, as applicable to your site, you must include the following:

i. A description of the specific control(s) to be implemented to meet these requirements;

ii. The design specifications for controls described in Part 7.2.6a.i (including references to any manufacturer specifications and/or erosion and sediment control manuals/ordinances relied upon);[88]

iii. Routine stormwater control maintenance specifications; and

iv. The projected schedule for stormwater control installation/implementation.

b. You must also include any of the following additional information as applicable.

i. **Natural buffers and/or equivalent sediment controls** (see Part 2.2.1 and Appendix F). You must include the following:

(a) The compliance alternative to be implemented;

(b) If complying with alternative 2, the width of natural buffer retained;

[87] The requirement to show storm drain inlets in the immediate vicinity of the site on your site map only applies to those inlets that are easily identifiable from your site or from a publicly accessible area immediately adjacent to your site.

[88] Design specifications may be found in manufacturer specifications and/or in applicable erosion and sediment control manuals or ordinances. Any departures from such specifications must reflect good engineering practice and must be explained in the SWPPP.

(c) If complying with alternative 2 or 3, the erosion and sediment control(s) you will use to achieve an equivalent sediment reduction, and any information you relied upon to demonstrate the equivalency;

(d) If complying with alternative 3, a description of why it is infeasible for you to provide and maintain an undisturbed natural buffer of any size;

(e) For "linear construction sites" where it is infeasible to implement compliance alternative 1, 2, or 3, a rationale for this determination, and a description of any buffer width retained and/or supplemental erosion and sediment controls installed; and

(f) A description of any disturbances that are exempt under Part 2.2.1 that occur within 50 feet of a receiving water.

ii. Perimeter controls for a "linear construction site" (see Part 2.2.3d). For areas where perimeter controls are not feasible, include documentation to support this determination and a description of the other practices that will be implemented to minimize discharges of pollutants in stormwater associated with construction activities.

Note: Routine maintenance specifications for perimeter controls documented in the SWPPP must include the Part 2.2.3c.i requirement that sediment be removed before it has accumulated to one-half of the above-ground height of any perimeter control.

iii. Sediment track-out controls (see Parts 2.2.4b and 2.2.4c). Document the specific stabilization techniques and/or controls that will be implemented to remove sediment prior to vehicle exit.

iv. Inlet protection measures (see Part 2.2.10a). Where inlet protection measures are not required because the storm drain inlets to which your site discharges are conveyed to a sediment basin, sediment trap, or similarly effective control, include a short description of the control that receives the stormwater flow from the site.

v. Sediment basins (see Part 2.2.12). In circumstances where it is infeasible to utilize outlet structures that withdraw water from the surface, include documentation to support this determination, including the specific conditions or time periods when this exception will apply.

vi. Treatment chemicals (see Part 2.2.13), you must include the following:

(a) A listing of the soil types that are expected to be exposed during construction in areas of the project that will drain to chemical treatment systems. Also include a listing of soil types expected to be found in fill material to be used in these same areas, to the extent you have this information prior to construction;

(b) A listing of all treatment chemicals to be used at the site and why the selection of these chemicals is suited to the soil characteristics of your site;

(c) If the applicable EPA Regional Office authorized you to use cationic treatment chemicals for sediment control, include the specific controls and implementation procedures designed to ensure that your use of cationic

treatment chemicals will not lead to a discharge that does not meet water quality standards;

(d) The dosage of all treatment chemicals to be used at the site or the methodology to be used to determine dosage;

(e) Information from any applicable Safety Data Sheet (SDS);

(f) Schematic drawings of any chemically enhanced stormwater controls or chemical treatment systems to be used for application of the treatment chemicals;

(g) A description of how chemicals will be stored consistent with Part 2.2.13c;

(h) References to applicable State or local requirements affecting the use of treatment chemicals, and copies of applicable manufacturer's specifications regarding the use of your specific treatment chemicals and/or chemical treatment systems; and

(i) A description of the training that personnel who handle and apply chemicals have received prior to permit coverage, or will receive prior to use of the treatment chemicals at your site.

vii. Stabilization measures (see Part 2.2.14). You must include the following:

(a) The specific vegetative and/or non-vegetative practices that will be used;

(b) The stabilization deadline that will be met in accordance with Part 2.2.14;

(c) If complying with the deadlines for sites in arid, semi-arid, or drought-stricken areas, the beginning and ending dates of the seasonally dry period (as defined in Appendix A)[89] and the schedule you will follow for initiating and completing vegetative stabilization; and

(d) If complying with deadlines for sites affected by unforeseen circumstances that delay the initiation and/or completion of vegetative stabilization, document the circumstances and the schedule for initiating and completing stabilization.

viii. Spill prevention and response procedures (see Parts 1.3.5, 2.3.3c, 2.3.3d, and 2.3.6). You must include the following:

(a) Procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases. Identify the name or position of the employee(s) responsible for detection and response of spills or leaks; and

(b) Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity consistent with Part 2.3.6 and established under either 40 CFR part 110, 40 CFR part 117, or 40 CFR part 302, occurs

[89] See footnote 44.

during a 24-hour period. Contact information must be in locations that are readily accessible and available to all employees.

You may also reference the existence of SPCC plans developed for the construction activity under Section 311 of the CWA, or spill control programs otherwise required by an NPDES permit for the construction activity, provided that you keep a copy of that other plan on site.[90]

ix. Waste management procedures (see Part 2.3.3). Describe the procedures you will follow for handling, storing, and disposing of all wastes generated at your site consistent with all applicable Federal, State, Tribal, and local requirements, including clearing and demolition debris, sediment removed from the site, construction and domestic waste, hazardous or toxic waste, and sanitary waste. You must also include the following additional information:

(a) If site constraints prevent you from storing chemical containers 50 feet away from receiving waters or the other site drainage features as required in Part 2.3.3c.ii(b), document in your SWPPP the specific reasons why the 50-foot setback is not feasible, and how you will store containers as far away as the site permits; and

(b) If there are construction wastes that are subject to the exception in Part 2.3.3e.ii, describe the specific wastes that will be stored on your site.

x. Application of fertilizers (see Part 2.3.5). Document any departures from the manufacturer specifications where appropriate.

7.2.7 Procedures for Inspection, Maintenance, and Corrective Action. Describe the procedures you will follow for maintaining your stormwater controls, conducting site inspections, and, where necessary, taking corrective actions, in accordance with Part 2.1.4, Part 4, and Part 5 of this permit, accordingly. Also include:

a. The inspection schedule you will follow, which is based on whether your site is subject to Part 4.2 or Part 4.3, or whether your site qualifies for any of the reduced inspection frequencies in Part 4.4;

b. If you will be conducting inspections in accordance with the inspection schedule in Part 4.2.2, Part 4.3, or Part 4.4.1b, the location of the rain gauge or the address of the weather station you will be using to obtain rainfall data;

c. If you will be reducing your inspection frequency in accordance with Part 4.4.1b, the beginning and ending dates of the seasonally defined arid period for your area or the valid period of drought;

d. If you will be reducing your inspection frequency in accordance with Part 4.4.3, the beginning and ending dates of frozen conditions on your site; and

e. Any maintenance or inspection checklists or other forms that will be used.

7.2.8 Procedures for Turbidity Benchmark Monitoring from Dewatering Discharges (if applicable). If you are required to comply with the Part 3.3 turbidity benchmark

[90] Even if you already have an SPCC or other spill prevention plan in existence, your plans will only be considered adequate if they meet all of the requirements of this Part, either as part of your existing plan or supplemented as part of the SWPPP.

monitoring requirements, describe the procedures you will follow to collect and evaluate samples, report results to EPA and keep records of monitoring information, and take corrective action when necessary. Include the specific type of turbidity meter you will use for monitoring, as well as any manuals or manufacturer instructions on how to operate and calibrate the meter. Describe any coordinating arrangement you may have with any other permitted operators on the same site with respect to compliance with the turbidity monitoring requirements, including which parties are tasked with specific responsibilities. If EPA has approved of an alternate turbidity benchmark pursuant to Part 3.3.2b, include any data and other documentation you relied on to request use of the specific alternative benchmark.

7.2.9 Compliance with Other Requirements.

a. Threatened and Endangered Species Protection. Include documentation required in the Endangered Species Protection section of the NOI in NeT, or the ESA worksheet in Appendix D, supporting your eligibility with regard to the protection of threatened and endangered species and designated critical habitat.

b. Historic Properties. Include documentation required in Appendix E supporting your eligibility with regard to the protection of historic properties.

c. Safe Drinking Water Act Underground Injection Control (UIC) Requirements for Certain Subsurface Stormwater Controls. If you are using any of the following stormwater controls at your site, document any contact you have had with the applicable State agency[91] or EPA Regional Office responsible for implementing the requirements for underground injection wells in the Safe Drinking Water Act and EPA's implementing regulations at 40 CFR § 144 -147. Such controls would generally be considered Class V UIC wells:

i. Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system);

ii. Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow; and

iii. Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system).

7.2.10 SWPPP Certification. Your signatory must sign and date your SWPPP in accordance with Appendix G, Part G.11.

7.2.11 Post-Authorization Additions to the SWPPP. Once you are authorized for coverage under this permit, you must include the following documents as part of your SWPPP:

a. A copy of your NOI submitted to EPA along with any correspondence exchanged between you and EPA related to coverage under this permit;

b. A copy of the acknowledgment letter you receive from NeT assigning your NPDES ID (i.e.*, permit tracking number*);

[91] For State UIC program contacts, refer to the following EPA website: https://www.epa.gov/uic.

c. A copy of this permit (an electronic copy easily available to the stormwater team is also acceptable).

7.3 ON-SITE AVAILABILITY OF YOUR SWPPP

You must keep a current copy of your SWPPP at the site or at an easily accessible location so that it can be made available at the time of an on-site inspection or upon request by EPA; a State, Tribal, or local agency approving stormwater management plans; the operator of a storm sewer system receiving discharges from the site; or representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).[92]

EPA may provide access to portions of your SWPPP to a member of the public upon request. Confidential Business Information (CBI) will be withheld from the public, but may not be withheld from EPA, USFWS, or NMFS.[93]

If an on-site location is unavailable to keep the SWPPP when no personnel are present, notice of the plan's location must be posted near the main entrance of your construction site.

7.4 SWPPP MODIFICATIONS

7.4.1 You must modify your SWPPP, including the site map(s), within seven (7) days of any of the following conditions:

a. Whenever new operators become active in construction activities on your site, or you make changes to your construction plans, stormwater controls, or other activities at your site that are no longer accurately reflected in your SWPPP. This includes changes made in response to corrective actions triggered under Part 5. You do not need to modify your SWPPP if the estimated dates in Part 7.2.3f change during the course of construction;

b. To reflect areas on your site map where operational control has been transferred (and the date of transfer) since initiating permit coverage;

c. If inspections or investigations by EPA or its authorized representatives determine that SWPPP modifications are necessary for compliance with this permit;

d. Where EPA determines it is necessary to install and/or implement additional controls at your site in order to meet the requirements of this permit, the following must be included in your SWPPP:

i. A copy of any correspondence describing such measures and requirements; and

[92] The SWPPP may be prepared, signed, and kept electronically, rather than in paper form, if the records are: (a) in a format that can be read in a similar manner as a paper record; (b) legally dependable with no less evidentiary value than their paper equivalent; and (c) immediately accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be, if the records were stored in paper form. For additional guidance on the proper practices to follow for the electronic retention of the SWPPP, refer to the Fact Sheet discussion related to Part 4.7.3.

[93] Information covered by a claim of confidentiality will be disclosed by EPA only to the extent of, and by means of, the procedures set forth in 40 CFR part 2, Subpart B. In general, submitted information protected by a business confidentiality claim may be disclosed to other employees, officers, or authorized representatives of the United States concerned with implementing the CWA. The authorized representatives, including employees of other executive branch agencies, may review CBI during the course of reviewing draft regulations.

ii. A description of the controls that will be used to meet such requirements.

e. To reflect any revisions to applicable Federal, State, Tribal, or local requirements that affect the stormwater controls implemented at the site; and

f. If applicable, if a change in chemical treatment systems or chemically enhanced stormwater control is made, including use of a different treatment chemical, different dosage rate, or different area of application.

7.4.2 You must maintain records showing the dates of all SWPPP modifications. The records must include the name of the person authorizing each change (see Part 7.2.9 above) and a brief summary of all changes.

7.4.3 All modifications made to the SWPPP consistent with Part 7.4 must be authorized by a person identified in Appendix G, Part G.11.b.

7.4.4 Upon determining that a modification to your SWPPP is required, if there are multiple operators covered under this permit, you must immediately notify any operators who may be impacted by the change to the SWPPP.

8 HOW TO TERMINATE COVERAGE

Until you terminate coverage under this permit, you must comply with all conditions and effluent limitations in the permit. To terminate permit coverage, you must submit to EPA a complete and accurate Notice of Termination (NOT), which certifies that you have met the requirements for terminating in Part 8.

8.1 MINIMUM INFORMATION REQUIRED IN NOT

8.1.1 NPDES ID (i.e*., permit tracking number)* provided by EPA when you received coverage under this permit;

8.1.2 Basis for submission of the NOT (see Part 8.2);

8.1.3 Operator contact information;

8.1.4 Name of site and address (or a description of location if no street address is available); and

8.1.5 NOT certification.

8.2 CONDITIONS FOR TERMINATING CGP COVERAGE

You may terminate CGP coverage only if one or more of the conditions in Parts 8.2.1, 8.2.2, or 8.2.3 has occurred. Until your termination is effective consistent with Part 8.5, you must continue to comply with the conditions of this permit.

8.2.1 You have completed all construction activities at your site and, if applicable, construction support activities covered by this permit (see Part 1.2.1c), and you have met all of the following requirements:

a. For any areas that (1) were disturbed during construction, (2) are not covered by permanent structures, and (3) over which you had control during the construction activities, you have met the requirements for final vegetative or non-vegetative stabilization in Part 2.2.14c.

To document that you have met these stabilization requirements, you must take either ground or aerial photographs that show your site's compliance with the Part 2.2.14 stabilization requirements and submit them with your NOT. If any portion of your

site is covered by one of the exceptions in Part 2.2.14c.iii, indicate which exception applies and include a supplementary explanation with your photographs that provides the necessary context for why this portion of the site is in compliance with the final stabilization criteria even though it appears to be unstabilized. You are not required to take photographs of every distinct part of your site that is being stabilized, however, the conditions of the site portrayed in any photographs that are submitted must be substantially similar[94] to those of the areas that are not photographed. You must also comply with the following related to these photographs:

i. Take photographs both before and after the site has met the final stabilization criteria in Part 2.2.14c;

ii. All photographs must be clear and in focus, and in the original format and resolution; and

iii. Include the date each photograph was taken, and a brief description of the area of the site captured by the photograph (e.g., photo shows application of seed and erosion control mats to remaining exposed surfaces on northeast corner of site).

b. You have removed and properly disposed of all construction materials, waste and waste handling devices, and have removed all equipment and vehicles that were used during construction, unless intended for long-term use following your termination of permit coverage;

c. You have removed all stormwater controls that were installed and maintained during construction, except those that are intended for long-term use following your termination of permit coverage or those that are biodegradable (as defined in Appendix A); and

d. You have removed all potential pollutants and pollutant-generating activities associated with construction, unless needed for long-term use following your termination of permit coverage; or

8.2.2 You have transferred control of all areas of the site for which you are responsible under this permit to another operator, and that operator has submitted an NOI and obtained coverage under this permit; or

8.2.3 Coverage under an individual or alternative general NPDES permit has been obtained.

8.3 HOW TO SUBMIT YOUR NOT

You must use EPA's NPDES eReporting Tool (NeT) to electronically prepare and submit an NOT for the 2022 CGP.

To access NeT, go to https://cdx.epa.gov/cdx.

Waivers from electronic reporting may be granted as specified in Part 1.4.2. If the EPA Regional Office grants you approval to use a paper NOT, and you elect to use it, you must complete the form in Appendix I.

[94] Stabilization conditions that are substantially similar would include areas that are using the same type of stabilization measures and that have similar slopes, soils, and topography, and have achieved the same level of stabilization.

8.4 DEADLINE FOR SUBMITTING THE NOT

You must submit an NOT within 30 calendar days after any one of the conditions in Part 8.2 occurs.

8.5 EFFECTIVE DATE OF TERMINATION OF COVERAGE

Your authorization to discharge under this permit terminates at midnight of the calendar day that a complete NOT is submitted to EPA.

9 PERMIT CONDITIONS APPLICABLE TO SPECIFIC STATES, INDIAN COUNTRY LANDS, OR TERRITORIES

The provisions in this Part provide additions to the applicable conditions of this permit to reflect specific additional conditions required as part of the State or Tribal CWA Section 401 certification process, or the Coastal Zone Management Act (CZMA) certification process, or as otherwise established by the permitting authority. The specific additional revisions and requirements only apply to activities in those specific States, Indian country, and areas in certain States with Federal Facilities or areas subject to construction projects by Federal Operators. States, Indian country, and other areas not included in this Part do not have any additions to the applicable conditions of this permit.

9.1 EPA REGION 1

9.1.1 NHR100000 State of New Hampshire

a. Should the permit coverage for an individual applicant be insufficient to achieve water quality standards, the New Hampshire Department of Environmental Services (NHDES) may prepare additional 401 certification conditions for that applicant. Any additional 401 certification conditions will follow all required NHDES public participation requirements.

b. If you disturb 100,000 square feet or more of contiguous area, you must also comply with RSA 485-A:17 and Env-Wq 1500, and, unless exempt, apply for an Alteration of Terrain (AoT) permit from NHDES. This requirement also applies to a lower disturbance threshold of 50,000 square feet or more when construction occurs within the protected shoreline under the Shoreland Water Quality Protection Act (see RSA 483-B and Env-Wq 1400). A permit application must also be filed if your project disturbs an area of greater than 2,500 square feet, is within 50 feet of any surface water, and has a flow path of 50 feet or longer disturbing a grade of 25 percent or greater. Project sites with disturbances smaller than those discussed above, that have the potential to adversely affect state surface waters, are subject to the conditions of an AoT General Permit by Rule (Env-Wq 1503.03).

c. You must determine that any excavation dewatering discharges are not contaminated before they will be authorized as an allowable non-stormwater discharge under this permit (see Part 1.2.2 of the Construction General Permit or CGP). In the absence of information demonstrating otherwise, the water is considered uncontaminated if there is no groundwater contamination within 1,000 feet of the groundwater dewatering location. Information on groundwater contamination can be generated over the Internet via the NHDES web site http:// des.nh.gov/ by using the One Stop Data Mapper. For a toxic substance included in the New Hampshire surface water quality standards, see Env-Wq 1703.21 (see https://www.des.nh.gov/sites/g/fi1es/ehbemt 341/files/documents/2020-01/Env-Wg

1700.pdf). If it is determined that the groundwater to be dewatered is near a remediation or other waste site, you must apply for the Remediation General Permit (see https://www3.epa.gov/region1/npdes/rgp.html)

d. As a minimum, you must treat any uncontaminated excavation "dewatering" discharges and "stormwater" discharges, as those terms are defined in Appendix A of the CGP, as necessary, to remove suspended solids and turbidity so that the surface waters receiving the construction discharges[95] meet New Hampshire surface water quality standards for turbidity (Env-Wq 1703.11 and Env-Wq 1703.03(c)(1)c), benthic deposits (Env-Wq 1703.03(c)(1)a), and Env-Wq 1703.08) and foam, debris, scum or other visible substances (i.e., plumes or visual turbidity)[96] (Env-Wq 1703.03(c)(1)b).

i. For all Construction Activities covered under this CGP, the following shall apply to ensure compliance with the aforementioned regulations for turbidity, benthic deposits and visible substances:

Unless otherwise specified, site inspection requirements shall comply with Part 4 of the CGP. As a minimum site inspection frequency shall be in accordance with Part 4.2.2 of the CGP (and Part 4.3.2 of the CGP for sites discharging dewatering water). Site inspection frequency may be reduced in accordance with Part 4.4 of the CGP (Reductions in Inspection Frequency). Monitoring of the receiving water for visible turbidity and benthic sediment deposits shall be conducted each site inspection and results reported in the Inspection Report required in Part 4.7 of the CGP. Should visible turbidity or benthic sediment deposits attributable or partly attributable to your construction activities be present in the receiving water, the "Corrective Actions" specified in Part 5 shall be immediately implemented to correct the water quality standard violations. In addition, daily monitoring (including photographs) of the receiving water shall be conducted until there is no visible turbidity or benthic deposits. Inspection Reports required in Part 4.7 of the CGP shall include, but not be limited to, the distance downstream and the percent of the river width[97] where visible turbidity was observed, and the period of time that the visible turbidity persisted. A copy of the Inspection Report(s) shall be made available to NHDES within 24 hours of receiving a written request from NHDES.

ii. For Construction Activities, disturbing 5 acres or more of land at any one time (excluding areas that have been completely stabilized in accordance with the final stabilization criteria specified in Part 2.2.14.c of the CGP), the following shall

[95] Construction Discharges include uncontaminated "dewatering" and "stormwater" discharges as those terms are defined in Appendix A of the CGP. Controlled construction discharges are construction discharges where the rate of flow can be regulated such as from a construction settling basin or NHDES approved flocculation system.

[96] For the definition of visual turbidity, see the definition for "Non-Turbid" in Appendix A of the CGP, which states the following:" "Non-Turbid" - a discharge that is free from visual turbidity. For the purposes of this permit, visual turbidity refers to a sediment plume or other cloudiness in the water caused by sediment that can be identified by an observer." *[EPA interprets the text of this footnote as intending to reference the Appendix A definitions of "visual turbidity" and "non-turbid" in the final permit.]*

[97] The distance downstream and the percent of river width where visible turbidity (i.e., plume) is observed is required to determine the extent of the river affected and to determine if there was a "zone of passage" (i.e., a portion of the receiving water where there was no visible turbidity where mobile organisms could pass without being adversely impacted). The percent of river width affected is equal 100 multiplied by the width of the plume (in feet) divided by the width of the receiving water (in feet).

apply to ensure compliance with the aforementioned regulations for turbidity, benthic deposits and visible substances.

Item 9.1.1.d.i) above shall apply to all construction discharges and the minimum site inspection frequency shall comply with Part 4.3.1 of the CGP (and Part 4.3.2 of the CGP for sites discharging dewatering water). Site inspection frequency may be reduced in accordance with Part 4.4 of the CGP (Reductions in Inspection Frequency).

With regards to controlled construction discharges, if there is no visible turbidity (i.e., plumes) or benthic deposits, and, in the absence of information demonstrating otherwise, turbidity measurements of less than or equal to 50 nephelometric turbidity units (NTU) in the controlled construction discharges at the outlet prior to mixing with the receiving surface waters, shall be presumed to meet New Hampshire surface water quality standards for the parameters listed above. As a minimum, the controlled construction discharges must be sampled at each site inspection.

If any controlled construction discharge exceeds 50 NTU, or if visible turbidity or benthic sediment deposits attributable or partly attributable to any construction discharge are observed in the receiving water, then the "Corrective Actions" specified in Part 5 of the CGP shall be immediately implemented.

In addition, should such violation occur, and, in order to determine compliance with surface water quality standards for turbidity (Env-Wq 1703.11 and Env-Wq 1703.03(c)(1)c), benthic deposits (Env-Wq 1703.03(c)(1)a), and Env-Wq 1703.08) and foam, debris, scum or other visible substances (Env-Wq 1703.03(c)(1)b)), turbidity monitoring shall be immediately implemented as specified below:

Turbidity samples of the receiving water shall be immediately taken in the receiving water upstream and beyond the influence of the construction activity, and, unless a mixing zone[98] is approved by NHDES, no more than 75 feet downstream of each controlled construction discharge that exceeded 50 NTU and no more than 75 feet downstream of each construction discharge that caused visible turbidity.

Downstream samples shall be taken at locations in the receiving water that are most likely influenced by the discharge (e.g., if visible turbidity (i.e., a plume) is present, the sample shall be taken in the plume). Samples shall be collected a minimum of 2 times per day during the daylight hours at times when construction activities are most likely to cause turbidity in the receiving water and shall continue until the turbidity water quality standards are met in the receiving water (i.e., the difference between the upstream and downstream turbidity level is no greater than 10 NTU).

[98] Permittees may request a distance greater than 75 feet downstream of a construction discharge for determining compliance with turbidity standards in Class B surface waters, by submitting a mixing zone request to NHDES that complies with Env-Wq 1707.02. If a mixing zone is approved, NHDES is required to include conditions to ensure that the criteria on which the approval is based are met (Env-Wq 1707.03).

If water quality standards are not met during daylight hours on any day, sampling shall resume the next day and continue no fewer than 2 times per day until water quality standards are met. The date, time, location and results of turbidity measurements, as well as a summary identifying the cause of the violations, corrective actions that were implemented, the period of time that the receiving water exceeded turbidity standards and the distance downstream and the percent of the river width where visible turbidity was observed, and the period of time that the visible turbidity persisted, shall be recorded and included in the Inspection Report required in Part 4.7 of the CGP. Turbidity measurements shall be conducted via a field meter in accordance with the requirements for turbidity specified in Table 1B in 40 CFR 136.3 (see 40 CFR §136.3 Identification of test procedures - Code of Federal Regulations ecfr.io). Field meters shall be calibrated every day sampling is conducted and prior to the first sample.

e. Construction site owners and operators are encouraged to consider opportunities for post- construction groundwater recharge using infiltration best management practices (BMPs) during site design and preparation of the SWPPP in order to assure compliance with Env-Wq 1703.03 and Env-Wq 1703.11. If your construction site is in a town that is required to obtain coverage under the NPDES General Permit for discharges from Municipal Separate Storm Sewer Systems (MS4) you may be required to use such practices. The SWPPP must include a description of any on-site infiltration that will be installed as a post-construction stormwater management measure or reasons for not employing such measures such as 1) The facility is located in a wellhead protection area as defined in RSA 485- C:2; or 2) The facility is located in an area where groundwater has been reclassified to GAA, GA1 or GA2 pursuant to RSA 485-C and Env-DW 901; or 3) Any areas that would be exempt from the groundwater recharge requirements contained in Env-Wq 1507.04, including all land uses or activities considered to be a "High-load Area" (see Env-Wq 1502.30). For design considerations for infiltration measures see Env-Wq 1508.06. Note that there may be additional local requirements that fall under the NH MS4 permittee's Authorization to Discharge Permit for those regulated areas.

f. Appendix F of the CGP contains information regarding Tier 2, or high quality waters in the various states. ***[EPA notes that this information has now been moved to https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates]*** Although there is no official list of tier 2 waters for New Hampshire, it can be assumed that all New Hampshire surface waters are tier 2 for turbidity unless 1) the surface water that you are proposing to discharge into is listed as impaired for turbidity in the states listing of impaired waters (see https://nhdes-surface-water-quality-assessment-site-nhdes.hub.arcgis.com/) or 2) sampling upstream of the proposed discharge location shows turbidity values greater than 10 NTU (Env-Wq 1703.11). A single grab sample collected during dry weather (no precipitation within 48 hours) is acceptable.

g. To ensure compliance with RSA 485-C, RSA 485-A, RSA 485-A:13, I(a), Env-Wq 1700 and Env-Wq 302, the following information may be requested by NHDES. This information must be kept on site unless you receive a written request from NHDES that it be sent to the address shown below in 9.1.1.h.

i. A list of all non-stormwater discharges that occur at the facility, including their source locations and the control measures being used (see Part 1.2.2 of the CGP).

ii. Records of sampling and analysis required for construction dewatering and stormwater discharges (see 9.1.1.d above).

h. All required or requested documents must be sent to: NH Department of Environmental Services, Watershed Management Bureau, P.O. Box 95 Concord, NH 03302-0095.

9.1.2 MAR100000 Commonwealth of Massachusetts (except Indian country)

a. All discharges covered by the Construction General Permit shall comply with the provisions pursuant to 314 CMR 3.00, 314 CMR 4.00, 314 CMR 9.00, including applicable construction stormwater standards and 310 CMR 10.00.

b. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05(5)(e) to maintain surface waters free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife, permittees are prohibited from discharging dewatering water under the CGP from sites that are designated as Superfund/CERCLA or RCRA, and must make accommodations to dispose of the dewatering discharges appropriately, such as coverage under the Remediation General Permit (RGP).

c. Pursuant to 314 CMR 3.11 (2)(a), and in accordance with MassDEP's obligation to protect Outstanding Resource Waters under 314 CMR 4.04(3), applicants seeking coverage under the 2022 CGP that propose to carry out construction activities near Outstanding Resource Waters as identified in 314 CMR 4.06, shall submit to MassDEP for review:

i. a copy of the Stormwater Pollution Prevention Plan (SWPPP),

ii. a copy of the EPA NOI, and

iii. MassDEP's Stormwater BMP Checklist.

For purposes of this review, the permittee shall submit these documents to MassDEP at the same time they are submitted to EPA. Instructions on how to submit these documents to MassDEP and where to find the MassDEP Stormwater BMP Checklist and obtain authorization to discharge can be found here: https://www.mass.gov/how-to/wm-15-npdes-general-permit-notice-of- intent.

d. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05(5)(e) to maintain surface waters free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife, applicants that propose to dewater under the 2022 CGP and plan to discharge to certain waters as described below, shall determine that any dewatering discharges are not contaminated by testing the proposed discharge as described below as part of the application for WM15 authorization. Unless otherwise specified, testing described in this section should be conducted using the methods in 40 CFR 136.

i. Applicants for sites that plan to discharge to Outstanding Resource Waters as identified in 314 CMR 4.06 shall test one sample of the proposed dewatering discharge water for pH, E. Coli (for discharges to freshwater), fecal coliform (for

discharges to salt water), Enterococci (for discharges to salt water), total suspended solids, oil and grease, total nitrogen, total phosphorus, and all parameters with numeric criteria listed in the Massachusetts Surface Water Quality Standards at 314 CMR 4.05(e). Results shall be reported to MassDEP as part of the WM15 application. To determine if the dewatering discharge could be covered under the 2022 CGP, the effluent at zero dilution must meet numeric water quality criteria. If the effluent does not meet numeric water quality criteria, the applicant shall contact EPA Region 1 to discuss coverage under the Remediation General Permit.

ii. Applicants for sites that propose to discharge to Public Water Supplies (314 CMR 4.06(1)(d)1) shall also test one sample of the proposed dewatering discharge water for per- and polyfluoroalkyl substances (PFAS), as outlined in the table below. Results shall be reported to MassDEP as part of the WM15 application. If any PFAS compounds are detected, the applicant shall apply for coverage under the NPDES Remediation General Permit for Massachusetts if required.

PFAS Testing Parameters for Discharges to Public Drinking Water Supplies[99]	
Perfluorohexanesulfonic acid (PFHxS), grab	Report ng/L
Perfluoroheptanoic acid (PFHpA), grab	Report ng/L
Perfluorononanoic acid (PFNA), grab	Report ng/L
Perfluorooctanesulfonic acid (PFOS), grab	Report ng/L
Perfluorooctanoic acid (PFOA), grab	Report ng/L
Perfluorodecanoic acid (PFDA), grab	Report ng/L

iii. Applicants for sites that propose to discharge to an impaired water as identified in the most recent final Massachusetts Integrated List of Waters,shall test one sample of the proposed dewatering discharge water for the parameter(s) for which the waterbody is impaired. To determine if the dewatering discharge could be covered under the 2022 CGP, the effluent at zero dilution must meet numeric water quality criteria. If the effluent does not meet numeric water quality criteria, the applicant shall contact EPA Region 1 to discuss coverage under the Remediation GeneralPermit and shall apply for RGP coverage if required.

iv. For dewatering discharges to all other waters, if any pollutants are knownor believed present in the proposed dewatering discharge water, the applicant shall apply for coverage under the NPDES Remediation General Permit for Massachusetts if required. For the purposes of this condition, a pollutant is "known present" if measured above the analytical detection limit using a sufficiently sensitive test method in an environmental sample, and "believed present" if a pollutant has not been measured in an environmental sample but will be added or generated prior to discharge, such as through a treatment process. Consequently, a pollutant is "known absent" if measured as non-detect relative to the analytical detection limit using a sufficiently sensitive test method in an environmental sample, and "believed absent" if a pollutant has not been measured in an environmentalsample but will not be added or generated prior to discharge and is not a parameter that applies to the applicable activity category for a site. If any pollutants are known or believed present in the

[99] PFAS testing shall follow established EPA methods 537 or 537.1 for drinking water until EPA Method 3512 for non-potable water becomes available.

proposed dewatering discharge water, the applicant shall test one sample of the proposed dewatering discharge water for the pollutants known or believed to be present. To determine if the dewatering discharge could be covered under the 2022 CGP, the effluent at zero dilution must meet numeric water quality criteria. If the effluent does not meet numeric water quality criteria, the applicant shall contact EPA Region 1 to discuss coverage under the Remediation General Permit.

e. Pursuant to 314 CMR 3.11 (2)(a), and in accordance with MassDEP's obligation to protect Outstanding Resource Waters under 314 CMR 4.04(3), applicants that propose to dewater under the 2022 CGP and discharge to Outstanding Resource Waters as identified in 314 CMR 4.06, shall submit the SWPPP and associated documents to MassDEP to review. MassDEP shall complete review within 30 daysof receipt.

f. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05 to maintain surface waters free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to the waterbody, permittees that have been authorized to dewater under the 2022 CGP and that discharge to Outstanding Resource Waters as identified in 314 CMR 4.06 shall carry out daily benchmark monitoring for turbidity[100] for the duration of dewatering. Permittees shall compare the weekly average of the turbidity monitoring results with the established benchmark turbidity value of 25 Nephelometric Turbidity Units (NTU). If a permittee's weekly average turbidity results exceed the benchmark, the operator shall conduct follow-up corrective action to determine the source of the problem and to make any necessary repairs or upgrades to the dewatering controls to lower the turbidity levels. The permittee shall document any corrective action taken in its corrective action log. Furthermore, permittees at these sites shall carry out inspections at higher frequency, specifically, daily inspections of the dewatering discharge treatment for the duration of the discharge. The permittee shall inspect the site for sediment plume or whether a hydrocarbon sheen is visible at the point of discharge, estimate the flow rate at the point of discharge, and inspect the site downstream to assess whether sedimentation is attributable to the dewatering discharges.

g. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05 to maintain surface waters free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to the waterbody, permittees shall store materials outside the Base Flood Elevation[101] when feasible to prevent displacing runoff and erosion.

h. Pursuant to 314 CMR 3.11 (2)(a), and in accordance with MassDEP's obligation to maintain surface waters free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses under 314 CMR 4.05(5)(c), all applicants who apply for coverage under the 2022 CGP shall follow guidelines on fertilizer application, including use of fertilizer containing no phosphorus, in accordance with 330 CMR 31.00 Plant Nutrient Application Requirements for

[100] Applicants shall follow EPA Method 180.1 to monitor for turbidity

[101] Base Flood Elevation (BFE) is the elevation of surface water resulting from a flood that has a 1% chance of equaling or exceeding that level in any given year. The BFE is shown on the Flood Insurance Rate Map (FIRM) for zones AE, AH, A1–A30, AR, AR/A, AR/AE, AR/A1– A30, AR/AH, AR/AO, V1–V30 and VE. (Source: https://www.fema.gov/node/404233).

Agricultural Land and Non-Agricultural Turf and Lawns. Further, fertilizer shall never be applied to a site when a rain event greater than 0.5 inches is forecast in the next 48 hours.

i. Pursuant to 314 CMR 3.11 (2)(a), all applicants who apply for coverage under the 2022 CGP and elect to carry out site inspections every 14 days shall also inspect sites within 24 hours of 0.25 inches of precipitation events or greater over 24 hours,or within 24 hours of a discharge that occurred due to snowmelt from 3.25 inches or greater of snow accumulation.[102] During the high flow periods in spring (i.e., months of April to June), inspection frequency shall be increased to once per week for all sites.

  i. To determine whether 3.25 inches or greater of snow accumulation has occurred at a site, snowfall measurements can be taken at the site,[103] or theoperator can rely on similar information from a local weather forecast.

j. Implementing structural improvements, enhanced/resilient pollution prevention measures, and other mitigation measures can help to minimize impacts from stormwater discharges from major storm events such as hurricanes, storm surge, extreme/heavy precipitation,[104] and flood events. Pursuant to 314 CMR 3.11 (2)(a), if such stormwater control measures are already in place due to existing requirements mandated by other state, local or federal agencies, the SWPPP shall include a brief description of the controls and a reference to the existing requirement(s). If the site may be exposed to or has previously experienced suchmajor storm events[105], additional stormwater control measures that may be considered, and implemented as necessary, include, but are not limited to:

  i. Reinforce materials storage structures to withstand flooding and additional exertion of force;

  ii. Prevent floating of semi-stationary structures by elevating to the Base Flood Elevation (BFE) level or securing with non-corrosive device;

  iii. When a delivery of exposed materials is expected, and a storm is anticipated within 48 hours, delay delivery until after the storm or storematerials as appropriate (refer to emergency procedures);

[102] This is the amount of snow that is equivalent to 0.25 inches of rain, based on information from the National Oceanic and Atmospheric Administration (NOAA) indicating that 13 inches of snow is, on average, equivalent to 1 inch of rain. See https://www.nssl.noaa.gov/education/svrwx101/winter/faq/.

[103] NOAA's National Weather Service has guidelines on snowfall measurements at https://www.weather.gov/jkl/snow_measurement. These guidelines recommend use of a "snowboard" (a piece of wood about 16 inches by 16 inches) that is placed in an unobstructed part of the site on a hard surface.

[104] Heavy precipitation refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal. What constitutes a period of heavy precipitation varies according to location and season. Heavy precipitation does not necessarily mean the total amount of precipitation at a location has increased— just that precipitation is occurring in more intense or more frequent events.

[105] To determine if your facility is susceptible to an increased frequency of major storm events that could impact the discharge of pollutants in stormwater, you may reference FEMA, NOAA, or USGS flood map products at https://www.usgs.gov/faqs/where-can-i-find-flood-maps?qt-news_science_products=0#qtnews_science_products.

iv. Temporarily store materials and waste above the Base Flood Elevation ***[EPA notes that it has deleted a footnote reference to the term "Base Flood Elevation" since the same footnote is already included in Part 9.1.2.g, above.]*** level;

v. Temporarily reduce or eliminate outdoor storage;

vi. Temporarily relocate any mobile vehicles and equipment to higher ground;

vii. Develop scenario-based emergency procedures for major storms that are complementary to regular stormwater pollution prevention planning andidentify emergency contacts for staff and contractors; and

viii. Conduct staff training for implementing your emergency procedures atregular intervals.

k. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05(5)(e) to maintain surface waters free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife, permittees who seek coverage under the 2022 CGP and anticipate to carry out dust control shall limit their dust control methodology to using water only and specifically avoid using other techniques, such as solutions containing calcium chloride.

l. If MassDEP requests a copy of the Stormwater Pollution Prevention Plan (SWPPP) for any construction site at any time, the permittee shall submit the SWPPP to MassDEP within 14 days of such a request. MassDEP may conduct an inspection of any site covered by this permit to ensure compliance with state lawrequirements, including state water quality standards.

9.1.3 MTR10F000 Areas in the State of Vermont located at a federal facility

a. Earth disturbance at any one time is limited to five acres.

b. All areas of earth disturbance must have temporary or final stabilization within 14 days of the initial disturbance. After this time, disturbed areas must be temporarily or permanently stabilized in advance of any runoff producing event. A runoff producing event is an event that produces runoff from the construction site. Temporary stabilization is not required if precipitation is not forecast and work is to continue in the next 24-hours or if the work is occurring in a self-contained excavation (i.e. no outlet) with a depth of two feet or greater (e.g. house foundation excavation, utility trenches). Areas of a construction site that drain to sediment basins are not considered eligible for this exemption, and the exemption applies only to the excavated area itself.

c. Site inspections on active construction sites shall be conducted daily during the period from October 15 through April 15.

d. The use of chemical treatments (e.g. polymers, flocculants, and coagulants) for the settling and/or removal of sediment from stormwater runoff associated with construction and construction-related activities requires prior written approval and an approved site and project-specific plan, from the Vermont Agency of Natural Resources. In addition, the use of cationic polymers is prohibited unless approved by the Vermont Agency of Natural Resources under a site and project-specific plan.

e. Any applicant under EPA's CGP shall allow authorized Vermont Agency of Natural Resources representatives, at reasonable times and upon presentation of credentials, to enter upon the project site for purposes of inspecting the project and determining

compliance with this Certification.

f. The Vermont Agency of Natural Resources may reopen and alter or amend the conditions of this Certification over the life of the EPA 2022 Construction General Permit when such action is necessary to assure compliance with the VWQS.

9.2 EPA REGION 2

9.2.1 NYR10I000 Indian country within the State of New York

a. Saint Regis Mohawk Tribe

i. Any Responsible-Person/Decision-Maker required under the CGP to submit a Notice of Intent (NOI) to EPA for coverage under the CGP, must concurrently submit an electronic copy of the NOI to the SRMT Environmental Division, Water Resource Program Manager. Additionally, an electronic copy of the Notice of Termination (NOT) must be provided within three business days after electronic confirmation is received from EPA that the NOT has been accepted. The NOI and NOT must be electronically provided to the following addresses:

Mr. Tieman W. Smith
Water Resources Program Manager Saint Regis Mohawk Tribe
449 Frogtown Road
Akwesasne, NY 13655 Tiernan.Smith@srmt-nsn.gov 518.358.2272 ext. 5073

ii. Any Responsible-Person/Decision-Maker that is required as part of the CGP to prepare a Discharge Management Plan (OMP) or Storm Water Management Plan (SWMP) and/or Storm Water Pollution Prevention Plan (SWPPP) must submit an electronic copy of the DMP, SWMP and/or SWPPP to the SRMT Environment Division, Water Resources Program Manager IO business days prior to the start of construction of any work to be conducted under the CGP. The applicable documents must be provided to the electronic address listed above.

iii. Any Responsible-Person/Decision-Maker that is required under the CGP to submit an annual report to EPA must submit an electronic copy of the annual report concurrently to the SRMT Water Resource Program. Additionally, any correspondences between the applicant and EPA related to analytical data, written reports, corrective action, enforcement, monitoring, or an adverse incident must likewise be routed to the SRMT Water Resources Program at the above electronic address.

iv. An "Authorization to Proceed Letter" with site-specific mitigation requirements may be sent out to the permittee when a review of the NOI and OMP, SWMP and /or SWPPP on a case-by-case basis, is completed by the SRMT Environment Division, Water Resource Program. This approval will allow the application to proceed if all mitigation requirements are met.

b. Seneca Nation

i. Under Part 1.1.5 of the CGP, the Seneca Nation requests that an applicant must demonstrate that they meet the eligibility criteria listed in Appendix D (certify in your Notice of Intent (NOI) that you meet one of the eligibility criteria [Criterion A-F]) as well as species and critical habitats that are listed under the Seneca Nation's "Fishing and Conservation Laws" and the "Seneca Nation of Indians Comprehensive Conservation Law".

ii. The Tribal Historic Preservation Office (THPO) was established in 2000 after the Seneca Nation received a recognition letter from the National Park Service (NPS); therefore under Part 1.1.6 of the CGP (Appendix E) and prior to submitting a Notice of Intent (NOI) operators must complete the Nation's TPHO, Project Review Form (https://sni.org/media/246603/sni-thpo-project-review-form.pdf) and submit the completed form with associated information to the Tribal Historic Preservation Officer at 90 Ohi:yo' Way, Salamanca, NY 14779. Federal agencies engaging in construction activities must provide for construction review by a certified construction reviewer in accordance with 7 Del. C. §§4010 & 4013 and 7 DE Admin. Code 5101, subsection 6.1.6.

iii. Under Part 1.2 of the CGP, discharges must also follow the Section 13 of the Guide for Construction (Seneca Nation of Indians Source Water Code) and respectively, Council Resolution, dated April 13, 2013 (CN: R-04-13-13-11) to ensure that the health, safety and welfare of the citizens of the Seneca Nation, and all other within the Lands and Territories of the Seneca Nation of Indians, and to facilitate the adequate provisions of water through the elimination or prevention of ground water contamination in the vicinity of wells that supply drinking water for the Nation. The area is known as the Source Water Protection Area (SWPA) and specified activities are regulated within this SWPA, as cited in Section 13 of the Guide for Construction and Section VI, of CN: R-04-13-13-11.

iv. Under Part 1.4, any operator who seeks coverage of the CGP, and is required to submit a notice of intent NOI and Notice of Termination (NOT) (as necessary) to the EPA for coverage, under Part 1.4.2 must also submit a copy of the NOI to the Seneca Nation's Environmental Protection Department (EPD) within three business days of submittal to the EPA, (address shown below). Respectively, a copy of the NOT (as described under Part 8.3 of the CGP), which certifies that you have met the requirements of Part 8, must be provided within three business days after electronic confirmation is received from the EPA that the NOT has been accepted. In addition to a NOI and NOT, the Seneca Nation (Environmental Protection Department [EPD]) would require an Environmental Impact Assessment (EA) (Long Form), as shown in Section 2 of the Seneca Nation of Indians Laws, Ordinances & Policies (Guide for Construction), to be completed and submitted to the EPD prior to any project to determine whether the impacts from a project would create significant and detrimental effects to the Nation's lands, water (violate WQS), and environment. The NOI, NOT, and EA must be submitted electronically to epd@sni.org and provided to the following address:

Seneca Nation
Environmental Protection Department (EPD) Attn: Director of EPD
12837 Route 438
Irving, NY 14081

v. Under Part 3.0 of the CGP, discharges must be controlled as necessary to meet applicable WQS. The Seneca Nation is working actively towards finalizing and implementing the; therefore, the EPD would require an applicant to submit or grant access to the permit to obtain information on the impact of effluents on receiving waters, including the capability of receiving waters to support future designated uses and achieve the WQS of the Nation; and to advise prospective dischargers of discharge requirements, and coordinate with the appropriate

permitting agencies. As stated in the Decision Document, under Section 303(c) of the CWA, 33 U.S.C. § 1313(c), states develop, review, and revise (as appropriate) water quality standards for surface waters of the United States. At a minimum, such standards are to include designated water uses, water quality criteria to protect such uses, and an antidegradation policy. 40 C.F.R. § 131.6. In addition, under Section 401 of the CWA states may grant, condition, or deny "certification" for federally permitted or licensed activities that may result in a discharge to the waters of the United States 33 U.S.C. § 1341.

vi. Under Part 7.2.8(a)(b)(c) and for Part 9 of the CGP, the following Sections of the Seneca Nation's Guide for Construction shall be considered, in conjunction with the CGP:

(a) Section 1. Executive Order - To Establish a Policy for Governing Access to Nation Territories and Facilities by Officials of Foreign Government, dated March 31, 2011

(b) Section 3. Natural Resources Committee, Sand and Gravel Law (CN: R-06-24-05-08)

(c) Section 4. Fishing and Conservation Laws - Part 1.1.5 of the CGP

(d) Section 5. Seneca Nation of Indians Comprehensive Conservation Law, adopted January 14, 2012

(e) Section 9. Food is Our Medicine (FIOM) Program/Native Planting Policy (CN: R-03- 08-14-14)

(f) Section 10. Forestry Management Plan (CN: R-08-14-10-23)

(g) Section 11. Timber Ordinance #411-092, dated May 8, 1982

(h) Section 14. Flood Damage Prevention Local Law, dated September 27, 1988

(i) Section 16. Utilities Ordinance No. 87-100

(j) Authorizing Emergency Action and Contingency Plan to Restrain Pollution of Nations Waters, (Council Resolution: R-03-01-18-10), dated March 10, 2018 Seneca Nation of Indians Permit Application for Construction within Waterways Permit, Form NR98-01.00

9.3 EPA REGION 3

9.3.1 DCR100000 District of Columbia

a. Discharges authorized by this permit shall comply with the District of Columbia Water Pollution Control Act of 1984, as amended (DC Official Code § 8-103.01 and § 8-103.06, et seq.) to ensure that District of Columbia waters, waters in adjacent and downstream states, and the beneficial uses of these waters will not be harmed or degraded by the discharges.

b. Discharges authorized by this permit must comply with §§ 1104.1 and 1104.8 of Chapter 11 and the provisions of Chapter 19 of Title 21of District of Columbia Municipal Regulations in order to attain and maintain designated uses of the District of Columbia waters.

c. The permittee shall comply with the District of Columbia Stormwater Management and Soil Erosion and Sediment Control regulations in Chapter 5 of Title 21 of the District of Columbia Municipal Regulations.

d. The permittee shall comply with the District of Columbia Flood Management Control regulations in Chapter 31 of Title 20 of the District of Columbia Municipal Regulations.

e. The permittee shall submit a copy of the Stormwater Pollution Prevention Plan (SWPPP) to the Regulatory Review Division, Department of Energy & Environment, Government of the District of Columbia, 1200 First Street, NE, 5th Floor, Washington, DC 20002, during the review and approval of the permittee's DOEE Erosion and Sediment Control Plan in accordance with the provisions of Chapter 542 of Title 21 of the District of Columbia Municipal Regulations.

f. Upon request, the permittee shall submit all inspection and monitoring reports as required by this permit and 40 CFR § 122.41 to the Associate Director, Inspection and Enforcement Division, Department of Energy & Environment, Government of the District of Columbia, 1200 First Street, NE, 5th Floor, Washington, DC 20002; telephone (202) 535-2226, or by email at Joshua.Rodriguez@dc.gov.

g. In the event the permittee intends to discharge dewatering water, groundwater, or groundwater comingled with stormwater from a known contaminated site, the permittee shall contact the Regulatory Review Division, Department of Energy & Environment, Government of the District of Columbia, 1200 First Street, NE, 5th Floor, Washington, DC 20002; telephone (202) 535-2600, or by email at MS4DischargeAuthorization@dc.gov to request authorization to discharge dewatering water, groundwater, or groundwater comingled with stormwater to the District's Municipal Separate Storm Sewer System (MS4) or to a surface water body pursuant to §§ 8-103.02, 8-103.06, and 8-103.07 of the District of Columbia Water Pollution Control Act of 1984, as amended.

9.3.2 DER10F000 Areas in the State of Delaware located at a federal facility (as defined in Appendix A)

a. Federal agencies must submit a sediment and stormwater management plan (SSMP) and receive Department approval prior to undertaking any land clearing, soil movement or construction activity unless conducting an exempt activity.

b. Federal construction activities are required to have a third-party Certified Construction Reviewer (CCR) perform weekly reviews to ensure the adequacy of construction activities pursuant to the approved SSMP and regulations.

Implementation of approved SSMPs requires the daily oversight of construction activity by certified responsible personnel.

c. Implementation of approved SSMPs requires the daily oversight of construction activity by certified responsible personnel.

d. A current copy of the SSMP must be maintained at the construction site.

e. Unless authorized by the Department, not more than 20 acres may be disturbed at any one time.

9.4 EPA REGION 4

No additional conditions

9.5 EPA REGION 5

9.5.1 MIR10I000 Indian country within the State of Minnesota

a. Fond du Lac Reservation

i. New dischargers wishing to discharge to an Outstanding Reservation Resource Water (ORRW)[106] must obtain an individual permit from EPA for storm water discharges from large and small construction activities.

ii. A copy of the Storm Water Pollution Prevention Plan (SWPPP) must be submitted to the Office of Water Protection at least fifteen (15) days in advance of sending the Notice of Intent to EPA. The SWPPP can be submitted electronically to richardgitar@FDLREZ.com or by hardcopy sent to:

Fond du Lac Reservation
Office of Water Protection
1720 Big Lake Road
Cloquet, MN 55720

iii. Copies of the Notice of Intent (NOI) and the Notice of Termination (NOT) must be sent to the Fond du Lac Office of Water Protection at the same time they are submitted to EPA. [The condition helps the Office of Water Protection keep track of when a project is about to start and when it has ended. FDL Water Quality Certification Ordinance, Section 204 (a) (2)).

iv. If the project will entail a discharge to any watercourse or open water body, the turbidity limit shall NOT exceed 10% of natural background within the receiving water(s) as determined by Office of Water Protection staff. For such discharges, turbidity sampling must take place within 24 hours of a ½-inch or greater rainfall event. The results of the sampling must be reported to the Office of Water Protection within 7 days of the sample collection. All sample reporting must include the date and time, location (GPS: UTM/Zone 15), and NTU. CGP applicants are encouraged to work with the Office of Water Protection in determining the most appropriate location(s) for sampling. [This condition helps both the Office of Water Protection and the project proponent in knowing whether or not their erosion control efforts are effective. FDL Water Quality Certification, Section 204 (b) (1)).

v. Receiving waters with open water must be sampled for turbidity prior to any authorized discharge as determined by Office of Water Protection staff. This requirement only applies to receiving waters which no ambient turbidity data exists. [This condition allows the Office of Water Protection to obtain a baseline turbidity sample in which to compare to other samples. FDL Water Quality Certification Ordinance, Section 204 (b) (2)].

vi. All work shall be carried out in such a manner as will prevent violations of water quality criteria as stated in the Water Quality Standards of the Fond du Lac Reservation, Ordinance #12/98, as amended. This includes, but is not limited to, the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of water of the Fond du Lac

[106] Although additional waters may be designated in the future, currently Perch Lake, Rice Portage Lake, Miller Lake, Deadfish Lake, and Jaskari Lake are designated as ORRWs.

Reservation for any of the uses designated in the Water Quality Standards of the Fond du Lac Reservation. These uses include wildlife, aquatic life, warm water fisheries, cold water fisheries, subsistence fishing (netting), primary contact recreation, secondary contact recreation, cultural, wild rice areas, aesthetic waters, agriculture, navigation, commercial and wetlands. It also includes the designated uses of wetlands including, but not limited to, baseflow discharge, cultural opportunities, flood flow attenuation, groundwater recharge, indigenous floral and fauna) diversity and abundance, nutrient cycling, organic carbon export/cycling, protection of downstream water quality, recreation, resilience against climactic effects, sediment/shoreline stabilization, surface water storage, wild rice, and water dependent wildlife. [In addition to listing the designated uses of waters of the Fond du Lac Reservation, this condition also limits the project proponent to discharges that will not violate our Water Quality Standards. FDL Water Quality Certification Ordinance, Section 204 (a) (7)).

vii. Appropriate steps shall be taken to ensure that petroleum products or other chemical pollutants are prevented from entering waters of the Fond du Lac Reservation. All spills must be reported to the appropriate emergency management Agency (National Response Center AND the State Duty Officer), and measures shall be taken immediately to prevent the pollution of waters of the Fond du Lac Reservation, including groundwater. The Fond du Lac Office of Water Protection must also be notified immediately of any spill regardless of size. [This condition helps protect water quality and also reminds project proponents of their responsibility in reporting spill events. FDL Water Quality Certification Ordinance, Section 204 (b) (3)).

viii. All seed mixes, whether used for temporary stabilization or permanent seeding, shall NOT contain any annual ryegrass (Lolium species). Wild rye (Elymus species) or Oats (Avena species) may be used as a replacement in seed mixes. [This condition prevents the use of annual ryegrass on the Reservation. Annual ryegrass is allelopathic, which means it produces biochemical in its roots that inhibit the growth of native plants. If used in seed mixes, annual ryegrass could contribute to erosion, especially on slopes. However, the condition also specifies substitute grasses that germinate almost as fast as annual ryegrass for use as a cover crop to help prevent erosion. FDL Water Quality Certification Ordinance, Section 204 (t) (1)).

ix. To prevent the introduction of invasive species, ALL contractors and subcontractors MUST disclose information stating prior equipment location(s) and ALL known invasive species potentially being transported from said location(s). All equipment MUST undergo a high pressure wash (including any equipment mats) BEFORE ENTERING the Fond du Lac Reservation. Personal equipment such as work boots, gloves, vest, etc. MUST be clean of debris, dirt and plant and animal material BEFORE ENTERING the Fond du Lac Reservation. Equipment being transported from known infested areas MUST undergo a high pressure wash as soon as possible after leaving the infested site and again BEFORE ENTERING the Fond du Lac Reservation, to avoid transport of invasive species into areas surrounding the Reservation. Written certification of equipment cleaning MUST be provided to the Fond du Lac Office of Water Protection. Upon arrival, ALL contractor and subcontractor equipment will be inspected by appointed Fond du Lac staff. If equipment is deemed unsatisfactory, the equipment MUST

undergo a high pressure washing until the equipment is cleared by the inspector, until such time, minimal travel will be allowed through the Reservation. The contractor shall be held responsible for the control of any invasive species introduced as a result of their project. [This condition requires the project proponent to prevent the inadvertent introduction of invasive species by taking an active role in cleaning all vehicles, equipment, and equipment mats before entering the Reservation. This condition has been placed in certifications since 2012, due to the introduction of Wild Parsnip in 2011 from a pipeline contractor. It is much easier to prevent the introduction of an invasive species than it is to eradicate it once it has been introduced. Many invasive plant species form monocultures, preventing native plants from growing. This situation often leads to cases of erosion, which in turn effects water quality. FOL Water Quality Certification Ordinance, Section 204 (g) (1)].

x. A copy of this certification MUST be kept by the contractor on-site at all times and be available for viewing by all personnel, including inspectors. [This condition ensures that the information contained in the certification, especially the conditions, is readily available onsite for reference. FOL Water Quality Certification Ordinance, Section 204 (a) (9)].

b. The Grand Portage Band of Lake Superior Chippewa

i. The CGP authorization is for construction activities that may occur within the exterior boundaries of the Grand Portage Reservation in accordance to the Grand Portage Land Use Ordinance. The CGP regulates stormwater discharges associated with construction sites of one acre or more in size. Only those activities specifically authorized by the CGP are authorized by this certification (the "Certification").

ii. All construction stormwater discharges authorized by the CGP must comply with the Water Quality Standards and Water Resources Ordinance, as well as Applicable Federal Standards (as defined in the Water Resources Ordinance).

iii. All appropriate steps must be taken to ensure that petroleum products or other chemical pollutants are prevented from entering the Waters of the Reservation. All spills must be reported to the appropriate emergency-management agency, and measures must be taken to prevent the pollution of the Waters of the Reservation, including groundwater.

iv. The 2022 CGP requires inspections and monitoring reports of the construction site stormwater discharges by a qualified person. Monitoring and inspection reports must comply with the minimum requirements contained in the 2022 CGP. The monitoring plan must be prepared and incorporated into the Storm Water Pollution Prevention Plan (the "SWPP"). A copy of the SWPP must be submitted to the Board at least 30 days in advance of sending the requisite Notice of Intent to EPA. The SWPP should be sent to:

Grand Portage Environmental Resources Board

P.O. Box 428

Grand Portage, MN 55605

Copies of the Notice of Intent and Notice of Termination required under the General Permit must be submitted to the Board at the address above at the same time they are submitted to the EPA.

v. If requested by the Grand Portage Environmental Department, the permittee must provide additional information necessary for a case-by-case eligibility determination to assure compliance with the Water Quality Standards and any Applicable Federal Standards. The burden is on the applicant to demonstrate compliance with the Water Quality Standards, the Water Resources Ordinance, and Applicable Federal Standards whether or not the application is ultimately eligible for the CGP.

vi. CGP discharges must not cause nuisance conditions as defined in Grand Portage Water Quality Standards.

vii. The Board retains full authority to ensure compliance with and to enforce the provisions of the Water Resource Ordinance and Water Quality Standards, Applicable Federal Standards, and these Certification conditions. Nothing herein affects the scope or applicability of other controlling tribal or federal requirements, including but not limited to impacts to cultural, historical, or archeological features or sites, or properties that may be eligible for listing on the National Register of Historic Places under the National Historic Preservation Act, 54 U.S.C. §§ 300101 et seq.

viii. Appeals related to Board actions taken in accordance with any of the preceding conditions may be heard by the Grand Portage Tribal Court.

c. Leech Lake Band of Ojibwe

i. The water quality standards that apply to the construction site are the standards at the time the operator submits its Notice of Intent (NOI) to EPA and the LLBO WRP (see conditions # 2 and # 3).

ii. A copy of the Stormwater Pollution Prevention Plan (SWPPP) must be submitted to the LLBO WRP at least 30 days in advance of sending the NOI for the project to EPA. See attached LLBO 401 Water Quality Certification Ordinance. Section 304(a)(1). The SWPPP should be submitted electronically to Jeff.Harper@llojibwe.net and by hardcopy sent to:

Leech Lake Band of Ojibwe
ATTN: Water Resources Program - 401 Cert
Division of Resource Management
190 Sailstar Drive NW
Cass Lake, Minnesota 56633

iii. Copies of the NOI and the Notice of Termination (NOT) must be submitted to the LLBO WRP at the same time they are submitted to EPA. See attached LLBO 401 Water Quality Certification Ordinance, Section 304(a)(2). The NOI and NOT should be submitted electronically to Jeff.Harper@llojibwe.net and sent by hardcopy to the address cited in condition # 2.

iv. Any and all other conditions listed in Section 304 of the attached LLBO 401 Water Quality Certification Ordinance shall be observed unless the LLBO WRP deems that certain conditions therein are not applicable to the project in need of a permit under this certification.

v. A copy of this certification MUST be kept by the contractor on-site at all times and be available for viewing by all personnel, including inspectors.

vi. Upon consideration of the NOI, if the LLBO WRP finds that the discharge will not be controlled as necessary to meet applicable water quality standards, the LLBO WRP may insist, consistent with Part 3.1 of the CGP, that additional controls are installed to meet applicable water quality standards, or recommend to EPA that the operator obtain coverage under an individual permit.

9.5.2 WIR10I000 Indian country within the State of Wisconsin

a. Bad River Band of Lake Superior Tribe of Chippewa Indians

i. Only those activities specifically authorized by the CGP are authorized by this Certification. This Certification does not authorize impacts to cultural properties, orhistorical sites, or properties that may be eligible for listing as such.

ii. All projects which are eligible for coverage under the CGP and are located within the exterior boundaries of the Bad River Reservation shall be implemented in such a manner that is consistent with the Tribe's Water Quality Standards (WQS). The Tribe's WQS can be viewed at: http://www.badriver-nsn.gov/wp-content/uploads/2020/01/NRD_WaterQualityStandards_2011.pdf

iii. Operators are not eligible to obtain authorization under the CGP for all new discharges to an Outstanding Tribal Resource Water (OTRW or Tier 3 water). OTRWs, or Tier 3 waters, include the following: Kakagon Slough and the lower wetland reaches of its tributaries that support wild rice, Kakagon River, Bad River Slough, Honest John Lake, Bog Lake, a portion of Bad River, from where it enters the Reservation through the confluence with the White River, and Potato River. OTRWs can be viewed at: https://www.arcgis.com/apps/View/index.html?appid=6f44c371217e4ee8b5f1c2c705c 7c7c5

iv. An operator proposing to discharge to an Outstanding Resource Water (ORW or Tier 2.5 water) under the CGP must comply with the antidegradation provisions of the Tribe's WQS. ORWs, or Tier 2.5 waters, include the following: a portion of Bad River, from downstream the confluence with the White River to Lake Superior, White River, Marengo River, Graveyard Creek, Bear Trap Creek, Wood Creek, Brunsweiler River, Tyler Forks, Bell Creek, and Vaughn Creek. ORWs can be viewed at: https://www.arcgis.com/apps/View/index.html?appid=6f44c371217e4ee8b5f1c2c705c 7c7c5. The antidegradation demonstration materials described in provision E.4.iii., and included on the antidegradation demonstration template found at: https://www.badriver-nsn.gov/natural-resources/projectreviews/, must be submitted to the following address:

Bad River Tribe's Natural Resources Department

Attn: Water Regulatory Specialist

P.O. Box 39 Odanah, WI 54861

WaterReg@badriver-nsn.gov

v. An operator proposing to discharge to an Exceptional Resource Water (ERW or Tier 2 water) under the CGP must comply with the antidegradation provisions of the Tribe's WQS. ERWs, or Tier 2 waters, include the following: any surface water within the exterior boundaries of the Reservation that is not specifically classified as an Outstanding Resource Water (Tier 2.5 water) or an Outstanding Tribal Resource Water (Tier 3 water). ERWs can be viewed at:

https://www.arcgis.com/apps/View/index.html?appid=6f44c371217e4ee8b5f1c2c705c 7c7c5. The antidegradation demonstration materials described in provision E.4.ii., and included on the antidegradation demonstration template found at: https://www.badriver-nsn.gov/natural-resources/projectreviews/, must be submitted to the following address:

Bad River Tribe's Natural Resources Department
Attn: Water Regulatory Specialist
P.O. Box 39 Odanah, WI 54861
WaterReg@badriver-nsn.gov

vi. Projects utilizing cationic treatment chemicals within the Bad River Reservation boundaries are not eligible for coverage under the CGP.

vii. A discharge to a surface water within the Bad River Reservation boundaries shall not cause or contribute to an exceedance of the turbidity criterion included in the Tribe's WQS, which states: Turbidity shall not exceed 5 NTU over natural background turbidity when the background turbidity is 50 NTU or less, or turbidity shall not increase more than 10% when the background turbidity is more than 50 NTU.

viii. All projects which are eligible for coverage under the CGP within the exterior boundaries of the Bad River Reservation must comply with the Bad River Reservation Wetland and Watercourse Protection Ordinance, or Chapter 323 of the Bad River Tribal Ordinances, including the erosion and sedimentation control, natural buffer, and stabilization requirements. Questions regarding Chapter 323 and requests for permit applications can be directed to the Wetlands Specialist in the Tribe's Natural Resources Department at (715) 682-7123 or wetlands@badriver-nsn.gov.

ix. An operator of a project, which is eligible for coverage under the CGP, that would result in an allowable discharge under the CGP occurring within the exterior boundaries of the Bad River Reservation must notify the Tribe prior to the commencing earth-disturbing activities. The operator must submit a copy of the Notice of Intent (NOI) to the following addresses at the same time it is submitted to the U.S. EPA:

Bad River Tribe's Natural Resources Department
Attn: Water Regulatory Specialist
P.O. Box 39 Odanah, WI 54861
WaterReg@badriver-nsn.gov

Bad River Tribe's Natural Resources Department
Attn: Tribal Historic Preservation Officer (THPO)
P.O. Box 39 Odanah, WI 54861
THPO@badriver-nsn.gov

The operator must also submit a copy of the Notice of Termination (NOT) to the above addresses at the same time it is submitted to the U.S. EPA. Photographs showing the current site conditions must be included as part of the NOT to document the stabilization requirements have been met.

x. The THPO must be provided 30 days to comment on the project.

xi. The operator must obtain THPO concurrence in writing. This written concurrence will outline measures to be taken to prevent or mitigate effects to historic properties. For more information regarding the specifics of the cultural resources process, see 36 CFR Part 800. A best practice for an operator is to consult with the THPO during the planning stages of an undertaking.

xii. An operator of a project, which is eligible for coverage under the CGP, that would result in an allowable discharge under the CGP occurring within the exterior boundaries of the Bad River Reservation must submit a copy of the Stormwater Pollution Prevention Plan (SWPPP) to the following address at the same time as submitting the NOI:

Bad River Tribe's Natural Resources Department
Attn: Water Regulatory Specialist
P.O. Box 39 Odanah, WI 54861
WaterReg@badriver-nsn.gov

xiii. Any corrective action reports that are required under the CGP must be submitted to the following address within one (1) working day of the report completion:

Bad River Tribe's Natural Resources Department
P.O. Box 39 Odanah, WI 54861
WaterReg@badriver-nsn.gov

xiv. An operator of a project, which is eligible for coverage under the CGP, that would result in an allowable discharge under the CGP occurring within the exterior boundaries of the Bad River Reservation must submit a copies of the inspection reports (including photographs) to the following address within 24 hours of completing any site inspection required:

Bad River Tribe's Natural Resources Department Attn: Water Regulatory Specialist
P.O. Box 39 Odanah, WI 54861
WaterReg@badriver-nsn.gov

xv. An operator shall be responsible for meeting any additional permit requirements imposed by the U.S. EPA necessary to comply with the Tribe's antidegradation policies if the discharge point is located upstream of waters designated by the Tribe.

9.6 EPA REGION 6

9.6.1 NMR100000 State of New Mexico, except Indian country

a. In Outstanding National Resource Waters (ONRWs) in New Mexico, no degradation is permitted except in limited, specifically defined instances. Therefore, Operators are not eligible to obtain authorization under this general permit for stormwater discharges to waters classified as ONRWs listed in Paragraph D of 20.6.4.9 New Mexico Administrative Code (NMAC), also referred to as "Tier 3 waters" as defined in Appendix A of this permit. Exception: When construction activities are in response to a public emergency (e.g., wildfire, extreme flooding, etc.) and the related work requires immediate authorization to avoid a threat to public health or safety.

i. Operators who conduct construction activities in response to a public emergency to mitigate an immediate threat to public health or safety shall

adhere to the requirements in 20.6.4.8(A)(3)(c) NMAC, including notifying the New Mexico Environment Department (NMED) within seven days of initiation of the emergency action and providing NMED with a summary of the action taken within 30 days of initiation of the emergency action.

ii. For all other scenarios, Operators with proposed discharges to ONRWs in New Mexico shall obtain coverage from EPA under an NPDES Individual Permit and will comply with the additional standards and regulations related to discharges to ONRWs in 20.6.4.8(A) NMAC. Additional information is available from:

New Mexico Environment Department Surface Water Quality Bureau
P.O. Box 5469
Santa Fe, NM 87502-5469 Telephone: 505-827-0187
https://www.env.nm.gov/surface-water-quality/wqs/
https://gis.web.env.nm.gov/oem/?map=swqb

b. If construction dewatering activities are anticipated at a construction site and non-stormwater discharges of groundwater, subsurface water, spring water, and/or other dewatering water are anticipated, the Operators/Permittees must complete the following steps:

1. Review the state's Ground Water Quality Bureau Mapper (https://gis.web.env.nm.gov/GWQB/) and Petroleum Storage Tank Bureau Mapper (https://gis.web.env.nm.gov/GWQB/).

   Check if the following sources are located within the noted distance from the anticipated construction dewatering activity. At a minimum, a list of the following potential sources of contaminants and pollutants at the noted distance is to be kept in the SWPPP.

Source of Potential Contamination or Pollutants*	Constituents likely to be required for testing*
Within 0.5 mile of an open Leaking Underground Storage Tank (LUST) site	BTEX (Benzene, Toluene, Ethylbenzene, and Xylene) plus additional parameters depending on site conditions**
Within 0.5 mile of an open Voluntary Remediation site	All applicable parameters or pollutants listed in 20.6.4.13, 20.6.4.52, 20.6.4.54, 20.6.4.97 thru 20.6.4.99, 20.6.4.101 through 20.6.4.899, and 20.6.4.900 NMAC (or an alternate list approved by the NMED-SWQB)*
Within 0.5 mile of an open RCRA Corrective Action Site	
Within 0.5 mile of an open Abatement Site	
Within 0.5 mile of an open Brownfield Site	
Within 1.0 mile or more of a Superfund site or National Priorities List (NPL) site with associated groundwater contamination.	
Construction activity contaminants and/or natural water pollutants	Additional parameters depending on site activities and conditions (Contact NMED- SWQB for an alternate list)*

*For further assistance determining whether dewatering may encounter contaminated sources, please contact the NMED Ground Water Quality Bureau at 505-827-2965 or NMED Surface Water Quality Bureau (SWQB) at 505-827-0187.

** EPA approved sufficiently sensitive methods must be used. For known PCB sources and analysis, EPA Method 1668C must be used (see https://www.epa.gov/cwa-methods).

2. If dewatering activities are anticipated, information on the flow rate and potential to encounter contaminated groundwater, subsurface water, spring water, or dewatering water must be provideddirectly to NMED at the following address:

   NMED Surface Water Quality Bureau

   Program Manager, Point Source Regulation
   SectionPO Box 5469, Santa Fe, NM 87502

   Please call the SWQB to obtain the appropriate email address (505-827-0187).

3. In addition, the Operator/Permittee must characterize the quality of the groundwater and subsurface water, spring water, or dewatering water being considered for discharge according to the table above and including dissolved hardness and pH. Considering the contaminant sources listed in the table above, water quality data may already be available. For further assistance, contactthe

NMED Surface Water Quality Bureau (505-827-0187), Ground Water Quality Bureau (505-827- 2965), Petroleum Storage Tank Bureau (505-476-4397), or Hazardous Waste Bureau (505-476- 6000).

i. The Operator/Permittee must submit recent analytical test results (i.e., within the past 5 years) according to the table above, and including dissolved hardness and pH, to the EPA Region 6 Stormwater Permit Contact and the NMED Surface Water Quality Bureau (see contact information in #2 above). If the test data exceed applicable water quality standards, then the groundwater, subsurface water, spring water, or dewatering water cannot be discharged into surface waters under this general permit. Operators/Permittees may submit an NPDES Individual Permit application to treat and discharge to waters of the U.S. or find alternative disposal measures. No discharges to surface waters are allowed until authorized.

ii. If the discharge has the potential to affect groundwater (e.g., land application), the Operator/Permittee must submit an NOI to the NMED Ground Water Quality Bureau (see 20.6.2.1201 NMAC – Notice of Intent to Discharge).

4. The Operator/Permittee must document any findings and all correspondence with NMED and EPA in the SWPPP.

c. Operators who intend to obtain authorization under this permit for new and existing storm water dischargesfrom construction sites must satisfy the following condition:

i. The SWPPP must include site-specific interim and permanent stabilization, managerial, and structural solids, erosion and sediment control best management practices (BMPs) and/or other controls that are designed to prevent to the maximum extent practicable an increase in the sediment yield and flow velocity from pre-construction, pre-development conditions to assure thatapplicable standards in 20.6.4 NMAC, including the antidegradation policy, and TMDL waste load allocations (WLAs) are met. This requirement applies to discharges both during construction and after construction operations have been completed. The SWPPP must identify and document the rationale for selecting these BMPs and/or other controls. The SWPPP must also describe design specifications, construction specifications, maintenance schedules (including a long-term maintenance plan), criteria for inspections, and expected performance and longevity of these BMPs.For sites greater than 5 acres in size, BMP selection must be made based on the use of appropriatesoil loss prediction models (i.e. SEDCAD, RUSLE, SEDIMOT, MULTISED, etc.) OR equivalent generallyaccepted (by professional erosion control specialists) soil loss prediction tools.

ii. For all sites, the Operator(s) must demonstrate, and include documentation in the SWPPP, that implementation of the site-specific practices will ensure that the applicable standards and TMDL WLAs are met, and will result in sediment yields and flow velocities that, to the maximum extent practicable, will not be greater than the sediment yield levels and flow velocities from preconstruction, pre-development conditions.

iii. All SWPPPs must be prepared in accordance with good engineering practices by qualified (e.g., CPESC certified, engineers with appropriate training) erosion control specialists familiar with the use of soil loss prediction models and design of erosion and sediment control systems based on these models (or equivalent soil

loss prediction tools). Qualifications of the preparer (e.g., professional certifications, description of appropriate training) must be documented in the SWPPP.The Operator(s) must design, implement, and maintain BMPs in the manner specified in the SWPPP.

NMED supports the use of EPA's small residential lot template if a site qualifies to use it as explained inthe permit, as long as it is consistent with the above requirements. NMED's requirement does not preclude small residential sites from using the template, but it may require an additional short paragraphto justify the selection of specific BMPs for the site.

d. Operators must notify NMED when discharges of toxic or hazardous substances or oil from a spill or other release occurs - see Emergency Spill Notification Requirements, Part 2.3.6 of the permit. For emergencies, Operators can call 505-827-9329 at any time. For non-emergencies, Operators can call 866-428-6535 (voice mail 24-hours per day) or 505-476-6000 during business hours from 8am-5pm, Monday through Friday. Operators can also call the NMED Surface Water Quality Bureau directly at 505-827-0187.

e. Operators of small construction activities (i.e., 1-5 acres) are not eligible to qualify for a waiver in lieu of needing to obtain coverage under this general permit based on Item C.3 of Appendix C (Equivalent Analysis Waiver) in the State of New Mexico.

9.6.2 NMR10I000 Indian country within the State of New Mexico, except Navajo Reservation Lands that are covered under Arizona permit AZR10000I and Ute Mountain Reservation Lands that are covered under Colorado permit COR10000I.

a. Nambe Pueblo

i. The operator must provide a copy of the Notice of Intent (NOI) and Notice of Termination (NOT) to the Nambe Pueblo Governor's Office at the same time it is provided to the US Environmental Protection Agency. The NOI and NOT should be provided to the following address:

Office of the Governor Nambe Pueblo

!SA NPI02 WEST

Nambe Pueblo, New Mexico 87506

ii. The operator must provide a copy of the Storm Water Pollution Prevention Plan (SWPPP) to Nambe Pueblo at the same time it is submitted to the EPA, either by email to governor@nambepueblo.org or mailed to the above address.

iii. The operator must provide copies of inspection reports, a copy of the corrective action log, and modifications made to the SWPPP as a result of inspection findings, upon request by the Nambe Pueblo Department of Environmental and Natural Resources or Nam be Governor.

b. Ohkay Owingeh Tribe

i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOI) to the Ohkay Owingeh Office of Environmental Affairs, a copy of NOI modifications and the Notice of Termination (NOT), must be provided within three business days after EPA provides electronic confirmation that the submission has been received. The NOI and NOT must be provided to the following address:

Naomi L. Archuleta - Environmental Programs Manager Ohkay Owingeh Office of Environmental Affairs
P.O. Box 717
Ohkay Owingeh, NM 87566
naomi.archuleta@ohkay.org

Noah Kaniatobe - Environmental Specialist Ohkay Owingeh, Office of Environmental Affairs
P.O. Box 717
Ohkay Owingeh, NM 87566
noah.kaniatohe@ohkay.org

ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copy of the Storm Water Pollution Prevention Plan (SWPPP) to Ohkay Owingeh Office of Environmental Affairsat the same time that the NOI is submitted to the tribe (see contact information listed above).

iii. Following each incident where the operator takes a corrective action the operator must provide thecorrective action log to the Ohkay Owingeh Office of Environmental Affairs.

iv. The operator must notify Ohkay Owingeh Office of Environmental Affairs within 24 hours, in the event of an emergency spill in addition to the notification requirements at Part 2.3.6 of the CGP. Please contact: Ohkay Owingeh Tribal Police Department at 505.852.2757.

Please contact:
Ohkay Owingeh
Tribal Police Department
505.852.2757

c. Pueblo of Isleta

i. All operators obtaining permit coverage under the EPA CGP must submit a copy of the certified Notice ofIntent (NOI) to the Pueblo of Isleta at the same time it is submitted to EPA for projects occurring within the exterior boundaries of the Pueblo of Isleta. Additionally, a copy of NOI modifications and the Notice of Termination (NOT), must be provided within three business days after EPA provides electronic confirmation that the submission has been received. The Notices must be provided to the following address:

Water Quality Control OfficerPueblo of Isleta
Environment DepartmentPO Box 1270
Isleta NM 87022
505-869-7565
WQCO@isletapueblo.com

ii. The operator must notify the Pueblo of Isleta's Dispatch at 505-869-3030 as soon as possible and thePueblo of Isleta Water Quality Control Officer within 10 hours, in the event of a spill of hazardous ortoxic substances or if health or the

environment become endangered in addition to the notification requirements at Part 2.3.6 and at I.12.6.1 of the CGP.

iii. All operators obtaining permit coverage under the EPA CGP must submit an electronic copy of the Stormwater Pollution Prevention Plan (SWPPP) to the Pueblo of Isleta Water Quality Control Officer atthe above address, 30 days prior to submitting the certified NOI to EPA. If the electronic file is too largeto send through e-mail, a zip file or flash drive may be submitted.

iv. All operators obtaining permit coverage under the EPA CGP must give 2 days advance notice to the Pueblo of Isleta Water Quality Control Officer of any planned changes in the permitted activity whichmay result in noncompliance with permit requirements.

v. All operators obtaining permit coverage under the EPA CGP must post a sign or other notice of permit coverage at a safe, publicly accessible location in close proximity to the construction site. The notice mustbe located so that it is visible from the public road or tribal road that is nearest to the active part of the construction site. The sign must be maintained on-site from the time construction activities begin until final stabilization is met.

vi. Erosion and sediment controls shall be designed to retain sediment on-site and project-generatedwaste materials that have the potential to discharge pollutants shall not be placed on open soil oron a surface that is not stabilized. Volumes of sediment over five (5) cubic yards must be removed from the active construction site; additionally, if sediment is placed for disposal withinthe exterior boundaries of the Pueblo of Isleta, disposal must be within a tribally approved sediment disposal site.

d. Pueblo of Laguna

i. All operators obtaining permit coverage under the EPA CGP must submit an electronic copy of the certified (signed) Notice of Intent (NOI) to the Pueblo of Laguna's Environmental & Natural Resources Department (ENRD) within three business days of submittal to the EPA. Additionally, a copy of NOI modifications and the Notice of Termination (NOT), must be provided within three business days after the EPA provides electronic confirmation that the submission has been received. The NOI and NOT must be electronically submitted to info.environmental@pol-nsn.gov.

ii. All operators obtaining permit coverage under the EPA CGP must submit an electronic copy of the Stormwater Pollution Prevention Plan (SWPPP) to the Pueblo of Laguna's ENRD 14 days prior to the submittal of the NOI (see contact information listed above).

iii. The operator must provide copies of corrective actions logs and modifications made to the SWPPP as a result of inspection findings to the Pueblo of Laguna ENRD (see contact information above).

iv. In addition to the notification requirements of Part 2.3.6 of the CPG ***[EPA interprets this intending to refer to the CGP]***, the operator must notify the Pueblo of Laguna ENRD at 505-552-7512 in the event of an emergency spill as soon as possible.

e. Pueblo of Sandia. The following conditions apply only to discharges on the Pueblo of Sandia Reservation:

i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOI) to the Pueblo of Sandia Environment Department concurrently with submittal to the EPA. Additionally, a copy of NOI modifications and the Notice of Termination (NOT), must be provided concurrently with submittal to the EPA. The NOI and NOT must be provided electronically to the following addresses:

Electronic Addresses:

Amy Rosebrough (Water Quality Manager): rosebrough@sanidapueblo.nsn.us
Greg Kaufman (Environment Director):gkaufman@sandiapueblo.nsn.us

ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copy of the Stormwater Pollution Prevention Plan (SWPPP) to the Pueblo of Sandia Environment. Department at least 14 days prior to submittal of the NOI to the Pueblo (see contact information listed above).

iii. If requested by the Pueblo of Sandia Environment Department, the permittee must provide additional information necessary on a case-by-case basis to assure compliance with the Pueblo of Sandia Water Quality Standards and/or applicable Federal Standards.

iv. An "Authorization to Proceed Letter" with site specific mitigation requirements may be sent out to the permittee when a review of the NOI and SWPPP, on a case-by-case basis, is completed by the Pueblo of Sandia Environment Department. This approval will allow the application to proceed if all mitigation requirements are met.

v. The Pueblo of Sandia will not allow Small Construction Waivers (Appendix C) to be granted for any small construction activities.

vi. The operator must provide copies of inspection reports, a copy of the corrective action log, and modifications made to the SWPPP as a result of inspection findings to the Pueblo of Sandia Environment Department upon request. An inspection report and corrective action log must be submitted to the Pueblo within 3 days of any inspection that results in corrective action (see contact information listed above).

vii. The operator must notify the Pueblo of Sandia within 24 hours in the event of an emergency spill, in addition to the notification requirements at Part 2.3.6 of the COP (see contact information listed above).

viii. Before submitting a Notice of Termination (NOT) to the EPA, permittees must clearly demonstrate to the Pueblo of Sandia Environment Department through a site visit or documentation that requirements for site stabilization have been met and any temporary erosion control structures have been removed. A short letter stating that the NOT is acceptable and all requirements have been met will be sent to the permittee to add to the permittee's NOT submission to the EPA.

f. Pueblo of Santa Ana. The following conditions apply only to discharges on the Pueblo of Santa Ana Reservation:

i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOI) to the Pueblo's Department of Natural Resources within three business days of submittal to EPA. Additionally, a copy of NOI modifications and the Notice of Termination (NOT), must be

provided within three business days after EPA provides electronic confirmation that the submission has been received. The NOI and NOT must be provided to the following address:

Regular U.S. Delivery Mail:
Pueblo of Santa Ana
Department of Natural Resources Water Resources Division
Attn: Andrew Sweetman 02 Dove Rd
Santa Ana Pueblo, NM 87004

Electronically:
Andrew Sweetman
Water Resources Division Manager Andrew.Sweetman@santaana-nsn.gov
Tammy Montoya Hydrologist
Tammy.Montoya@santaana-nsn.gov

ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copyof the Stormwater Pollution Prevention Plan (SWPPP) to the to the Pueblo's Department of Natural Resources at the same time that the NOI is submitted to the tribe (see contact information listed above).

iii. The operator must provide copies of inspection reports, a copy of the corrective action log, and modifications made to the SWPPP as a result of inspection findings, upon request by the Pueblo's Department of Natural Resources.

iv. The operator must notify the Pueblo's Department of Natural Resources within 24 hours in the event of an emergency spill, in addition to the notification requirements at Part 2.3.6 of the CGP.

g. Pueblo of Taos

i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOi) to the Taos Pueblo Environmental Office and Taos Pueblo Governor's Office within three business days of submittal to EPA. Additionally, a copy of NOi modifications and the Notice of Termination (NOT), must be provided within three business days after EPA provides electronic confirmation that the submission has been received. The NOi and NOTmust be provided to the following addresses:

Honorable Governor of Taos Pueblo PO Box 1846
Taos, New Mexico 87571

Taos Pueblo Environmental Office PO Box 1846
Taos, New Mexico 87571

ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copy of theStormwater Pollution Prevention Plan (SWPPP) to the Taos Pueblo Environmental Office when the NOI is submitted to the tribe. Electronic copy of SWPPP downloaded on flash drive may be sent to the above address for the Taos Pueblo Environmental Office.

iii. The operator must provide a copy of the corrective action log following each corrective action undertaken and modifications made to the SWPPP as a result of

a corrective action to the Taos Pueblo Environmental Office at address listed above.

h. Pueblo of Tesuque.

i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOI) to the Pueblo of Tesuque Department of Environment and Natural Resources (DENR) and the Pueblo's Governor within three business days of submittal to EPA. Additionally, a copy of any NOi modifications and the Notice of Termination (NOT), must be provided within three business days after EPA provides electronic confirmation that the submission has been received. The NOI and NOT must be provided to the following address:

Governor Mark Mitchell Pueblo of Tesuque
20 TP 828
Santa Fe, NM 87506 governor@puebloftesuque.org

Sage Mountain.flower Pueblo of Tesuque
Department of Environment and Natural Resources Director
20 TP 828

ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copyof the Stormwater Pollution Prevention Plan (SWPPP) to Pueblo of Tesuque DENR and the Pueblo's Governor at the same time that the NO! is submitted to the EPA (see contact information listed above).

iii. The operator must provide a copy of the corrective action log, and any modifications made tothe SWPPP as a result of inspection findings, or upon request by the Pueblo of Tesuque DENR.

iv. The operator must notify the Pueblo of Tesuque DENR within 24 hours in the event of an emergency spill, in addition to the notification requirements at Part 2.3.6 of the CGP (seecontact information listed above).

i. Santa Clara Indian Pueblo.

i. All operators obtaining permit coverage under the EPA CGP, must submit a copy of the certified (signed) Notice of Intent (NOI) to the Santa Clara Pueblo Office of Environmental Affairs at the same time the NOI is submitted to the U.S. EPA. Additionally, a copy of the NOI modifications and the Notice of Termination (NOT), must be provided at the same time after electronic confirmation is received from EPA that the NOT has been accepted. The NOI and NOT shall be provided to the following address in electronic format:

Dino Chavarria,
Santa Clara Pueblo
Office of Environmental Affairs
dinoc@santaclarapueblo.org

ii. All operators obtaining permit coverage under the EPA CGP, must submit an electronic copy of the Stormwater Pollution Prevention Plan to the Santa Clara Pueblo Office of Environmental Affairs at the same time the NOI is submitted to the U.S. EPA (see contact information listed above).

iii. The operator must notify the Santa Clara Pueblo Office of Environmental Affairs at the address above within 24 hours, in the event of an emergency spill, in addition to the notification requirements at Part 2.3.6 of the CGP

9.6.3 OKR10I000 Indian country within the State of Oklahoma, except areas of Indian country covered by an extension of state program authority pursuant to Section 10211 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA).

a. Pawnee Nation. The following conditions apply only to discharges within Pawnee Indian country:

i. Copies of the Notice of Intent (NOI) and Notice of Termination (NOT) must be provided to the Pawnee Nation at the same time it is submitted to the Environmental Protection Agency to the following address:

Pawnee Nation Department of Environmental Conservation and Safety
P.O. Box 470
Pawnee, OK 74058
Or email to dnrs@pawneenation.org

ii. An electronic copy of the Storm Water Pollution Prevention Plan (SWPPP) must be submitted to the Pawnee Nation Department of Environmental Conservation and Safety at the same time the NOI is submitted.

iii. The operator must provide access to the site for inspections and for copies of inspection reports, copy of the corrective action log and modifications, made to the SWPPP because of inspection findings, upon request by the Pawnee Nation DECS.

iv. The Pawnee Nation Department of Environmental Conservation and Safety must be notified at 918.762.3655 immediately upon discovery of any noncompliance with any provision of the permit conditions.

9.6.4 OKR10F000 Discharges in the State of Oklahoma that are not under the authority of the Oklahoma Department of Environmental Quality, or the Oklahoma Department of Agriculture and Forestry including activities associated with oil and gas exploration, drilling, operations, and pipelines (includes SIC Groups 13 and 46, and SIC codes 492 and 5171), and point source discharges associated with agricultural production, services, and silviculture (includes SIC Groups 01, 02, 07, 08, 09).

a. For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Lee Creek or any water or watershed designated "ORW" in Oklahoma's Water Quality Standards, this permit may only be used to authorize discharges from temporary construction activities. Certification is denied for any on-going activities such as sand and gravel mining or any other mineral mining.

b. For activities located within the watershed of any Oklahoma Scenic River, including the Illinois River, Flint Creek, Barren Fork Creek, Upper Mountain Fork, Little Lee Creek, and Lee Creek or any water or watershed designated "ORW" in Oklahoma's Water Quality Standards, certification is denied for any discharges originating from support activities, including, but not limited to, concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, or borrow areas.

c. Dewatering discharges into sediment or nutrient-impaired waters, and waters identified as Tier 2, Tier 2.5, or Tier 3 (OAC 785:46-13) shall be controlled to meet water quality standards for turbidity in those waters as follows:

i. Cool Water Aquatic Community/Trout Fisheries: 10 NTUs (OAC 785: 45-5-12(f)(7)(A)(i)

ii. Lakes: 25 NTUs (OAC 785: 45-5-12(f)(7)(A)(ii)

iii. In waters where background turbidity exceeds these values, turbidity from dewatering discharges should be restricted to not exceed ambient levels (OAC 785: 45-5-12(f)(7)(B)

9.7 EPA REGION 7

No additional conditions.

9.8 EPA REGION 8

9.8.1 MTR10I000 Indian country within the State of Montana

a. Blackfeet Nation.

i. The Applicant and applicants for projects authorized under the NWPs should obtain all other permits, licenses, and certifications that may be required by federal, state, or tribal authority. Primary relevant tribal permit will be ALPO (Ordinance 117). Others may apply. It is the applicant's responsibility to know the tribal and local ordinances and complete all necessary permissions before they can commence work.

ii. If a project is unable to meet the enclosed conditions, or if certification is denied for an applicable NWP, the Applicant may request an individual certification from Blackfeet. An individual certification request must follow the requirements outlined in 40 CFR 121.5 of EPA's CWA § 401 Certification Rule, effective September 11, 2020.

iii. Copies of this certification should be kept on the job site and readily available for reference.

iv. If the project is constructed and/or operated in a manner not consistent with the applicable NWP, general conditions, or regional conditions, the permittee may be in violation of this certification.

v. Blackfeet and EPA representatives may inspect the authorized activity and any mitigation areas to determine compliance with the terms and conditions of the NWP.

vi. This NWP Reissuance does not reduce Tribal authority under any other rule.

vii. The project, including any stream relocations and restoration, must be built as shown and as otherwise described in the application, the construction plans, cross sections, mitigation plans and other supporting documents submitted to this office. Impacts to aquatic systems and restoration efforts will be monitored by an appropriate aquatic resource professional to ensure that disturbed areas are restored to at least their original condition.

viii. All existing water uses will be fully maintained during and after the completion of the project. (If applicable)

ix. Where practicable, perform all in-channel and wetland work during periods of low flow or drawn—down or when dry

x. Equipment staging areas must be located out of all delineated wetlands

xi. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during and immediately after construction, and all exposed soil and other fills, as well as any work below the ordinary high-water mark or in a wetland, must be permanently stabilized as soon as possible

xii. Materials such as piling, culverts, sandbags, fabric, mats, timbers used for temporary facilities in wetlands or below the high- water mark of Waters of the US must be free from oil, gas, excess dirt, loose paint and other pollutants.

xiii. Equipment staging areas in wetlands or in stream or river channels must be placed on mats, or other measures must be taken to minimize soil disturbance and compaction.

xiv. Clearing of riparian or wetland vegetation for the sole purpose of constructing work bridges, detours, staging areas or other temporary facilities must be limited to the absolute minimum necessary. When temporary impacts to native riparian or wetland vegetation are unavoidable, it must be mowed or cut above ground with the topsoil and root mass left intact.

xv. Remove all temporary fills and structures in the entirety when they are no longer needed. Restore affected areas to the appropriate original and planned contours where possible. Re-vegetate disturbed areas with appropriate native species when native species are impacted.

xvi. Construction methods and best management practices (BMPs) must minimize aquatic resource impacts to the maximum extent possible. Any BMPs described in the Joint Application must be followed. BMPs should include installation and maintenance of sediment control measures; separation, storage and reuse of any topsoil; and recovery of all disturbed areas where possible. All best management practices must in place prior to the onset of construction or as soon as practicable during the construction process.

xvii. Best available technology and/or best management practices must be utilized to protect existing water uses and maintain turbidity and sedimentation at the lowest practical level.

xviii. Applicant/contractor should manage disturbed streambank topsoil in a manner that optimizes plant establishment for the site.

xix. When operating equipment or otherwise undertaking construction in wetlands and water bodies the following conditions apply:

(a) Work should be done in dry conditions if possible.

(b) All equipment is to be inspected for oil, gas, diesel, anti-freeze, hydraulic fluid or other petroleum leaks. All such leaks will be properly repaired and equipment cleaned prior to being allowed on the project site. Leaks that occur after the equipment is moved to the project site will be fixed the same day or the next day or removed from the project area. The equipment is not allowed to continue operation once a leak is discovered.

(c) All equipment is to be inspected and cleaned before and after use to minimize the spread or introduction of invasive or undesirable species.

(d) Construction equipment shall not operate below the existing water surface except as follows:

- Impacts from construction should be minimized through the use of best management practices submitted in the permit application.
- Essential work below the waterline shall be done in a manner to minimize impacts to aquatic system and water quality.

(e) Containment booms and/or absorbent material must be available onsite. Any spills of petroleum products must be reported to the Army Corps, Blackfeet Nation BEO Office and the US EPA within 24 hours.

xx. Upland, riparian and in-stream vegetation should be protected except where its removal is necessary for completion of work. Revegetation should be completed as soon as possible. Applicant/contractor should revegetate disturbed soil in a manner that optimizes plant establishment for the site. Revegetation must include topsoil replacement, planting, seeding, fertilization, liming and weed-free mulching as necessary. Applicant must use native plant material and soils where appropriate and feasible. This certification does not allow for the introduction of non-native flora and fauna. All disturbed surface areas must be restored to pre-construction contours and elevation.

xxi. Spoils piles should not be placed or stored within the delineated wetlands or streams unless protected by a temporary structure designed to divert and handle high flows that can be anticipated during permit activity. Spoils piles should be placed on landscaping fabric or some other material to separate spoils material and allow retrieval of spoils material with minimal impact.

xxii. Impacts to wetlands shall not exceed 4.92 acres.

xxiii. Any unexpected and additional impacts to waters of the US should be reported to the

xxiv. Army Corps, Blackfeet Environmental Office Water Quality Coordinator and the US EPA.

xxv. All instream and stream channel reconstruction work must be completed before the stream is diverted into the new channel.

xxvi. Any temporary crossings, bridge supports, cofferdams, or other structures that are necessary during permit activity should be designed to handle high flows that can be anticipated during permit activity. All temporary structures should be completely removed from the water body at the conclusion of the permitted activity and the area restored to a natural function and appearance.

xxvii. The certification does not authorize any unconfined discharge of liquid cement into the waters of the United States. Grouting riprap must occur under dry conditions with no exposure of wet concrete to the water body.

xxviii. BMPs shall include application of certified weed-free straw or hay across all disturbed wetland areas that are temporarily impacted; installation and maintenance of sediment control measures during construction and if necessary, after construction is completed; use of heavy mud mats if necessary; separation,

storage and reuse of all streambank topsoil and wetland topsoil, as appropriate; and recovery of all disturbed wetland and streambank areas where possible. All conditions set by the Blackfeet Tribe and US Army Corps must be followed.

xxix. All applicants, including federal agencies, must notify EPA and the Blackfeet Environmental Office of the use of all NWPs for which certification has been granted prior to commencing work on the project. Notifications must include:

(a) project location (lat. Long., exact point on map);

(b) NWP that will be used and the specific activity that will be authorized under the NWP;

(c) amount of permanent and temporary fills;

(d) a short summary of the proposed activity, and all other federal, state, tribal or local permits or licenses required for the project;

(e) complete contact information of both the applicant and contractor (name, name of the company or property if applicable, telephone, mobile, and email); and,

(f) Summary of best management practices that will be used.

(g) A summary of communications with the affected Tribe's water quality staff regarding the project, including any concerns or issues.

(h) Notify Blackfeet and EPA at least 7 days before the completion of construction and operations begin.

xxx. Point source discharges may not occur: (1) in fens, bogs or other peatlands; (2) within 100 feet of the point of discharge of a known natural spring source; or (3) hanging gardens.

xxxi. Except as specified in the application, no debris, silt, sand, cement, concrete, oil or petroleum, organic material, or other construction related materials or wastes shall be allowed to enter into or be stored where it may enter into waters of the U.S.

xxxii. Silt fences, straw wattles, and other techniques shall be employed as appropriate to protect waters of the U.S. from sedimentation and other pollutants.

xxxiii. Water used in dust suppression shall not contain contaminants that could violate water quality standards.

xxxiv. Erosion control matting that is either biodegradable blankets or loose-weave mesh must be used to the maximum extent practicable.

xxxv. All equipment used in waters of the U.S. must be inspected for fluid leaks and invasive species prior to use on a project. All fluid leaks shall be repaired and cleaned prior to use or when discovered, or if the fluid leak can't be repaired, the equipment shall not be used on site. Equipment used in waters with the possibility of aquatic nuisance species infestation must be thoroughly cleaned and effectively decontaminated before they are used on the project.

xxxvi. Vegetation should be protected except where its removal is necessary for completion of the work. Locations disturbed by construction activities should be revegetated with appropriate native vegetation in a manner that optimizes plant establishment for the specific site.

xxxvii. Revegetation may include topsoil replacement, planting, seeding, fertilization, liming, and weed-free mulching, as necessary. Where practical, stockpile weed- seed-free topsoil and replace it on disturbed areas. All revegetation materials, including plants and plant seed shall be on site or scheduled for delivery prior to or upon completion of the earth moving activities.

xxxviii. Activities may not result in any unconfined discharge of liquid cement into waters of the U.S. Grouting riprap must occur under dry conditions with no exposure of wet concrete to the waterbody.

xxxix. Activities that may result in a point source discharge shall occur during seasonal low flow or no flow periods to the extent practicable.

xl. The placement of material (discharge) for the construction of new dams is not certified, except for stream restoration projects.

xli. Any decision-maker that is required under 7.0 of the CGP to prepare a Stormwater Pollution Prevention Plan (SWPPP), must submit an electronic copy of the SWPPP to the Blackfeet Environmental Office at least 30 days before construction starts for review and approval. Any modifications to the SWPPP should be submitted to the Blackfeet Environmental Office.

xlii. Any Decision-maker required under Part 1.4 of the CGP to submit a Notice of Intent (NOI) to EPA for coverage under the CGP, must submit a copy of the NOI to the Blackfeet Environmental Office within three business days of submittal to EPA. Additionally, a copy of the Notice of Termination (NOT) must be provided within three business days after electronic confirmation is received from EPA that the NOT has been accepted. The NOI and NOT must be provided to the following address Gerald Wagner, Blackfeet Environmental Office Director.

62 Hospital Drive, Browning, MT 59417

beo.director@gmail.com

b. Fort Peck Tribes.

i. Any Decision-maker required under Part 1.4 of the CGP to submit a Notice of Intent (NOI) to EPA for coverage under the CGP, must submit a copy of the NOI to the Fort Peck Tribes Office of Environmental Protection within three business days of submittal to EPA. Additionally, a copy of the Notice of Termination (NOT) must be provided within three business days after electronic confirmation is received from EPA that the NOT has been accepted. The NOI and NOT must be provided to the following address:

Martina Wilson, Office of Environmental Protection Director

501 Medicine Bear Rd Poplar, MT 59255

martinawilson@fortpecktribes.net

ii. Any Decision-maker that is required under Part 7.0 of the CGP to prepare a Stormwater Pollution Prevention Plan (SWPPP), must submit an electronic copy of the SWPPP to the Fort Peck Tribes Office of Environmental Protection at least 30 days before construction starts for review and approval. Any modifications to the

SWPPP should be submitted to the Fort Peck Tribes Office of Environmental Protection.

iii. Any Decision-maker that is required under Part 8.0 of the CGP to submit a weekly, bi-weekly, and/or annual report to EPA, must submit an electronic copy of the annual report to the Fort Peck Tribes Office of Environmental Protection within three business days after submittal to EPA.

9.9 EPA REGION 9

9.9.1 CAR10I000 Indian country within the State of California

a. Morongo Band of Mission Indians

i. A copy of the Stormwater Pollution Prevention Plan (SWPPP) must be submitted (either mailed or electronically) to the MEPD no less than thirty (30) days before commencing construction activities:

Morongo Band of Mission Indians
Environmental Protection Department
12700 Pumarra Road
Banning, CA 92220
Email: epd@morongo-nsn.gov

ii. Copies of the Notice of Intent (NOI) and the Notice of Termination (NOT) must be sent to the MEPD at the same time they are submitted to EPA.

iii. Operators of an "emergency-related project" must submit notice to the MEPD within twenty- four (24) hours after commencing construction activities.

iv. Spills, leaks, or unpermitted discharges must be reported to the MEPD within twenty-four (24) hours of the incident, in addition to the reporting requirements of the CGP.

v. Projects utilizing cationic treatment chemicals (as defined in Appendix A of the CGP) within the Morongo Reservation are not eligible for coverage under this certification of the CGP.

vi. Facilities covered under the CGP will be subject to compliance inspections by MEPD staff, including compliance with final site stabilization criteria prior to submitting an NOI ***[EPA assumes this intended to refer to an NOT]***.

9.9.2 GUR100000 Island of Guam

a. For purposes of this Order, the term "Project Proponent" shall mean U.S. Environmental Protection Agency, and its agents, assignees, and contractors.

b. For purposes of this Order, the permit "Operator" shall mean any party associated with a construction project that meets either of the following two criteria:

i. The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications (e.g. in most cases this is the owner of the site); or

ii. The party has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the permit; in most cases this is the general contractor of the project).

Subcontractors generally are not considered operators for the purposes of this permit.

c. The Project Proponent shall enforce the proposed 2022 CGP and ensure that the Operator complies with the conditions of the permit at all times.[107] (40 CFR §121.11(c))

d. All submittals required by this Order shall be sent to the Guam Environmental Protection Agency Attn: 401 Federal Permit Manager, Non-Point Source Program, EMAS Division, 3304 Mariner Avenue, Bldg. 17-3304, Barrigada, Guam 96913, AND via email to jesse.cruz@epa.guam.gov. The submittals shall be identified with WQC Order #2021- 04 and include the COP Permit Number, certifying representative's name, title, mailing address and phone number. (§51060)(4) 2017 GWQS)

e. A copy of the Operator's signed Stormwater Pollution Prevention Plan (SWPPP) and signed Notice of Intent (NOI) and Notice of Termination (NOT) submitted to EPA for review and approval, shall concurrently be submitted to Guam EPA, consistent with condition A4. Coordination with Guam EPA is encouraged when the receiving water(s) for the proposed discharge is/are being identified. (§10105.B.5.d.) GSESCR; (§51060)(4) 2017 GWQS)

f. The Operator must comply with the conditions and requirements set forth in 22 GAR 10, Guam Soil Erosion and Sediment Control Regulations (GSESCR).

g. Before submitting the NOT to EPA, Operators shall comply with GSESC regulations at §10105.B10. (Stabilization of Affected Areas) and §10107.B. {Final Inspection and Approval)

h. All operators/owners shall comply with the general design criteria for best management practices (BMPs) acceptable for meeting the Construction and Post-construction stormwater criteria in the 2006 CNMI and Guam Stormwater Management Manual. (E.O. 2012-02)

i. Operating reports and monitoring and analytical data (e.g. Discharge Monitoring Reports (DMRs), follow-up monitoring reports, Exceedance Reports for Numerical Effluent Limits, etc.) submitted to EPA shall be concurrently submitted to Guam EPA, consistent with condition A4. §51060)(4) 2017 GWQS

j. The Operators who install a sediment basin or similar impoundment shall maintain the storage capacity of five thousand cubic feet {5,000 cu. ft.) per acre of project area tributary to the basin. (§10105.B.5.i.) GSESCR

k. (1) This Order does not authorize EPA to qualify Rainfall Erosivity Waivers to stormwater discharges associated with small construction activities (i.e. 1-5 acres). Operators are required to apply for an NOI for those projects eligible for coverage under the proposed 2022 CGP. An Erosion and Sediment Control Plan is required for every site that would be covered by the proposed 2022 CGP. (22 GAR §10104) The average annual rainfall for Guam and the CNMI exceeds I00 inches per year in many locations. These climatic conditions combined with the region's unique limestone, volcanic geologic formations, sensitive water resources and significant land

[107] By incorporating this condition into the permit, EPA acknowledges receipt of Guam's certification conditions.

development forces make stormwater discharges a very significant environmental and economic issue. (2006 CNMJ/Guam Stormwater Management Manual) E.O. 2012-02

(2) This Order does not authorize EPA to approve a Sediment TMDL Waiver for the Ugum River. Operators of construction activities eligible for a TMDL Waiver in lieu of coverage under the proposed 2022 CGP, shall submit a complete and accurate waiver certification as described in C.2., Appendix C - (Small Construction Waivers) to Guam EPA per condition A4., prior to notifying EPA of its intention to obtain a waiver. §51060)(4) 2017 GWQS

l. The Project Proponent shall submit to Guam EPA a signed Statement of Understanding of Water Quality Certification Conditions.[108] (see Attachment A for an example) per condition A4. §51060)(4) 2017 GWQS

m. The Operator shall comply with applicable provisions of the Guam Pesticides Act of2007 (10 GCA Chapter 50) and implementing regulations at Title 22 GAR Chapter 15 for any use and application of pesticides.

n. Point source discharge(s) to waterbodies under the jurisdiction of Guam EPA must be consistent with the antidegradation policy in 22 GAR §510l(b).

o. The operator shall carry out construction activities in such a manner that will not violate Guam Water Quality Standards (GWQS). Proposed 2022 CGP discharges are prohibited as follows:

- **i.** In Marine Waters, Category M-1 Excellent 22 GAR Chapter 5 §5102(b)(I); and
- **ii.** In Surface Waters, Category S-1 High 22 GAR Chapter 5 §5102(c)(I)

p. In addition to complying with construction dewatering requirements in Part 2.4 and site inspection requirements for all areas where construction dewatering is taking place in Part 4 of the proposed 2022 CGP, Operators shall comply with all dewatering conditions and requirements set forth in 22 GAR 7, Water Resources Development and Operating Regulations, to include securing Guam EPA permits prior to any dewatering activities.

q. The Operator shall develop and implement a Spill Prevention and Containment Plan.

r. The Operator shall have adequate and appropriate spill response materials on hand to respond to emergency release of oil, petroleum or any other material into waters of the territory.

s. Any unpermitted discharge into territorial waters or onto land with a potential for entry into territorial waters, is prohibited. If this occurs, the Operator shall immediately take the following actions:

- **i.** Cease operations at the location of the violation or spill.
- **ii.** Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.
- **iii.** Notify Guam EPA of the failure to comply. All petroleum spills shall be reported immediately to:

[108] By incorporating this condition into the permit, EPA acknowledges receipt of Guam's certification conditions.

(a) Guam's Emergency 911 system

(b) Guam EPA's 24-Hour Spill Response Team at (671) 888-6488 or during working hours (671) 300-4751

(c) US Coast Guard Sector Guam (671) 355-4824

(d) National Response Center 1-800-424-8802

iv. Submit a detailed written report to Guam EPA within five days of noncompliance that describes the nature of the event corrective action taken and/or planned, steps to be taken to prevent a recurrence, results of any samples taken, and any other pertinent information.

t. Compliance with this condition does not relieve the Operator from responsibility to maintain continuous compliance with the terms and conditions of this Order or the resulting liability from failure to comply.

u. Submittal or reporting of any of this information does not provide relief from any subsequent enforcement actions for unpermitted discharges to waters of the United States.

v. This Order is valid for five (5) Years from Date of Certification, unless otherwise approved by the Guam EPA Administrator.

w. The Operator shall be required to adhere to the current Guam Coral Spawning Moratorium dates for both hard and soft corals where in-water activities and/or construction activity in close proximity with marine waters may impair water quality. These dates can be obtained from the Guam Department of Agriculture, Division of Aquatic and Wildlife Resources, or the NOAA NMFS Pacific Islands Regional Office Habitat Conservation Division.

x. The Operator shall provide notice to Guam EPA consistent with Condition A4:

(a) Immediately upon discovery of noncompliance with the provisions of this Order.

y. A Notice of Violation/Work Stop Order will be issued if certification conditions are not adhered to or when significant or sustained water quality degradation occurs. Work or discharge shall be suspended or halted until the Operator addresses environmental problems/concerns to Guam EPA's satisfaction. Guam EPA may also levy penalties and fines (10 GCA §47111). Invalidity or enforceability of one or more provisions of this certification shall not affect any other provision of this certification.

9.10 EPA REGION 10

9.10.1 IDR10I000 Indian country within the State of Idaho, except Duck Valley Reservation lands (see Region 9)

a. Shoshone-Bannock Tribes

i. Copies of the following information must be sent to the SBT-WRD:

(a) Notice of Intents (NOI)

The Notice of Intent shall be forwarded to the SBT-WRD within thirty (30) days of receipt of submitting NOI to the USEPA.

Shoshone-Bannock Tribes Water Resources Department
PO Box 306 Pima Drive
Fort Hall, ID 83203 Phone: (208) 239-4582
Fax: (208) 239-4592
Or Email ctanaka@sbtribes.com

b. If requested by the SBT-WRD, the permittee must submit a copy of the SWPPP to SBT-WRD within fourteen (14) days of the request.

9.10.2 ORR10I000 Indian country within the State of Oregon, except Fort McDermitt Reservation lands (see Region 9)

a. Confederated Tribes of Coos, Lower Umpqua, and Siuslaw

i. No activities allowed under the CGP shall result in the degradation of any Tribal waters or affect resident aquatic communities or resident or migratory wildlife species at any life stage.

ii. The operator shall be responsible for achieving compliance with CTCLUSI Water Quality Standards and all other tribal codes, regulations, and laws as they exist at the time that the permit is submitted.

iii. The operator shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the CTCLUSI Water Quality Program before, or at the same time as, it is submitted to EPA.

iv. The operator shall be responsible for submitting all Stormwater Pollution Prevention Plans (SWPPP) required under this general permit to the CTCLUSI Water Quality Program for review and determination that the SWPPP is sufficient to meet Tribal Water Quality Standards, prior to the beginning of any discharge activities taking place.

v. The operator shall be responsible for reporting an exceedance to Tribal Water Quality Standards to the CTCLUSI Water Quality Program at the same time it is reported to EPA.

vi. The THPO will be provided 30 days to comment on the APE as defined in the permit application.

vii. If the project is an undertaking, a cultural resource assessment must occur. All fieldwork must be permitted by the THPO (as appropriate), conducted by qualified personnel (as outlined by the Secretary of Interior's Standards and Guidelines; http://www.nps.gov/history/local-law/arch_stnds_O.htm) and documented according to Oregon Reporting Standards (Reporting_Guidelines.pdf) (oregon.gov). The resulting report must be submitted to the THPO and the THPO must concur with the finding of effect and recommendations before any ground disturbing work can occur. The THPO requires 30 days to review all reports.

viii. The operator must obtain THPO concurrence in writing. If historic properties are present, this written concurrence will outline measures to be taken to prevent or mitigate adverse effects to historic properties.

b. Confederated Tribes of the Umatilla Indian Reservation

i. The operator shall be responsible for achieving compliance with the

Confederated Tribes of the Umatilla Indian Reservation's (CTUIR) Water Quality Standards.

ii. The operator shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to the CTUIR Water Resources Program at the address below, at the same time it is submitted to EPA.

iii. The operator shall be responsible for submitting all Stormwater Pollution Prevention Plans (SWPPP) required under this general permit to the CTUIR Water Resources Program for review and determination that the SWPPP is sufficient to meet Tribal Water Quality Standards, prior to the beginning of any discharge activities taking place.

iv. The operator shall be responsible for reporting an exceedance to Tribal Water QualityStandards to the CTUIR Water Resources Program at the same time it is reported to EPA.

Confederated Tribes of the Umatilla Indian Reservation
Water Resources Program
46411 Timíne Way
Pendleton, OR 97801
(541) 429-7200

v. The THPO will be provided 30 days to comment on the APE as defined in the permit application.

vi. If the project is an undertaking, a cultural resource assessment must occur. All fieldwork must be permitted by the Tribal Historic Preservation Office (as appropriate), conducted by qualified personnel (as outlined by the Secretary of Interior's Standards and Guidelines; http://www.nps.gov/history/local-law/arch_stnds_0.htm) and documented according to Oregon Reporting Standards (Reporting_Guidelines.pdf (oregon.gov). The resulting report must be submitted to the THPO and the THPO must concur with the finding of effect and recommendations before any ground disturbing work can occur. The THPO requires 30 days to review all reports.

vii. The operator must obtain THPO concurrence in writing. If historic properties are present, this written concurrence will outline measures to be taken to prevent or mitigate adverse effects to historic properties.

9.10.3 WAR10F000 Areas in the State of Washington, except those located on Indian country, subject to construction activity by a Federal Operator

a. For purposes of this Order, the term "Project Proponent" shall mean those that are seeking coverage under this permit, and its agents, assignees and contractors.

b. The Federal Agency shall mean the US Environmental Protection Agency. The Federal Agency shall enforce the permit and ensure that the Project Proponent complies with the conditions of the permits at all times.

c. Failure of any person or entity to comply with this Certification may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Certification.

d. The Certification conditions within this Order must be incorporated into EPA's final NPDES permit. Per 40 CFR 121.10(a), all certification conditions herein that satisfy the

requirements of 40 CFR 121.7(d) must be incorporated into the permit. Per 40 CFR 121.10(b), the permit must clearly identify all certification conditions.

e. This Certification does not authorize exceedances of water quality standards established in chapter 173-201A WAC.

f. Discharges from construction activity must not cause or contribute to violations of the Water Quality Standards for Surface Water of the State of Washington (chapter 173-201A WAC), Ground Water Quality Standards (chapter 173- 200 WAC), Sediment Management Standards (chapter 173-204 WAC), and standards in the EPA's Revision of certain Federal water quality criteria applicable to Washington (40 CFR 131.45). Discharges that do not comply with these standards are prohibited.

g. Prior to discharge of stormwater and non-stormwater to waters of the State, the Permittee must apply all known, available, and reasonable methods of prevention, control, and treatment (AKART). This includes the preparation and implementation of an adequate Stormwater Pollution Prevention Plan (SWPPP), with all appropriate Best Management Practices (BMPs) installed and maintained in accordance with the SWPPP and the terms and conditions of the permit.

i. BMPs must be consistent with:

(a) The Stormwater Management Manual for Western Washington (most current approved edition at the time this permit was issued), for sites west of the crest of the Cascade Mountains; or

(b) The Stormwater Management Manual for Eastern Washington (most current approved edition at the time this permit was issued), for sites east of the crest of the Cascade Mountains; or

(c) Revisions to either manual, or other stormwater management guidance documents or manuals which provide equivalent level of pollution prevention, that are approved by Ecology and incorporated into this permit in accordance with the permit modification requirements of WAC 173-226-230. (For purposes of this section, the stormwater manuals listed in Appendix 10 of the Phase I Municipal Stormwater Permit are approved by Ecology); or

(d) Documentation in the SWPPP that the BMPs selected provided an equivalent level of pollution prevention, compared to the applicable stormwater management manuals, including:

- The technical basis for the selection of all stormwater BMPs (scientific, technical studies, and/or modeling) that support the performance claims for the BMPs being selected.
- An assessment of how the selected BMP will satisfy AKART requirements and the applicable federal technology-based treatment requirements under 40 CFR part 125.3.

The Stormwater Management Manuals for Eastern and Western Washington can be found at: https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals.

ii. An adequate SWPPP must include a narrative and drawings. All BMPs must be clearly referenced in the narrative and marked on the drawings. The SWPPP

narrative must include documentation to explain and justify the pollution prevention decisions made for the project. Documentation must include:

(a) Information about existing site conditions (topography, drainage, soils, vegetation, etc.).

(b) Potential erosion problem areas.

(c) The 13 elements of a SWPPP, including BMPs used to address each element. Unless site conditions render the element unnecessary and the exemption is clearly justified in the SWPPP, the 13 elements are as follows:

- Preserve Vegetation/Mark Clearing Limits
- Establish Construction Access
- Control Flow Rates
- Install Sediment Controls
- Stabilize Soils
- Protect Slopes
- Protect Drain Inlets
- Stabilize Channels and Outlets
- Control Pollutants
- Control Dewatering
- Maintain BMPs
- Manage the Project
- Protect Low Impact Development (LID) BMPs

h. Discharges of stormwater and authorized non-stormwater must be monitored for turbidity (or transparency) and, in the event of significant concrete work or engineered soils, pH must also be monitored. As applicable based on project specifics, monitoring, benchmarks, and reporting requirements contained in Condition S.4. (pp.10-16) of the Washington State Construction Stormwater General Permit, effective January 1, 2021, shall apply.

i. Discharges to segments of waterbodies listed as impaired by the State of Washington under Section 303(d) of the Clean Water Act for turbidity, fine sediment, phosphorus, or pH must comply with the following numeric effluent limits:

Parameter identified in 303(d) listing	Parameter Sampled	Unit	Analytical Method	Numeric Effluent Limit
• Turbidity • Fine Sediment • Phosphorus	Turbidity	NTU	SM2130	25 NTUs at the point where the stormwater is discharged from the site.
High pH	pH	su	pH meter	In the range of 6.5 – 8.5

All references and requirements associated with Section 303(d) of the Clean Water Act mean the most current EPA-approved listing of impaired waters that exists on the

effective date of the permit, or the date when the operator's complete permit application is received by EPA, whichever is later.

The EPA approved WQ Assessment can be found at: https://ecology.wa.gov/Water-Shorelines/Water-quality/Water-improvement/Assessment-of-state-waters-303d

j. Discharges to a waterbody that is subject to a Total Maximum Daily Load (TMDL) for turbidity, fine sediment, high pH, or phosphorus must be consistent with the TMDL.

- **i.** Where an applicable TMDL sets specific waste load allocations or requirements for discharges covered by this permit, discharges shall be consistent with any specific waste load allocations or requirements established by the applicable TMDL.
- **ii.** Where an applicable TMDL has established a general waste load allocation for construction stormwater discharges, but no specific requirements have been identified, compliance with this permit will be assumed to be consistent with the approved TMDL.
- **iii.** Where an applicable TMDL has not specified a waste load allocation for construction stormwater discharges, but has not excluded these discharges, compliance with this permit will be assumed to be consistent with the approved TMDL.
- **iv.** Where an applicable TMDL specifically precludes or prohibits discharges from construction activity, the operator is not eligible for coverage under this permit.

Applicable TMDL means a TMDL for turbidity, fine sediment, high pH, or phosphorus which has been completed and approved by EPA as of the effective date of the permit, or prior to the date of the operator's complete application for permit coverage is received by EPA, whichever is later.

k. Discharges to waters of the state from the following activities are prohibited:

- **i.** Concrete wastewater.
- **ii.** Wastewater from washout and clean-up of stucco, paint, form release oils, curing compounds and other construction materials.
- **iii.** Process wastewater as defined by 40 Code of Federal Regulations (CFR) 122.2.
- **iv.** Slurry materials and waste from shaft drilling, including process wastewater from shaft drilling for construction of building, road, and bridge foundations unless managed to prevent discharge to surface water.
- **v.** Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance.
- **vi.** Soaps or solvents used in vehicle and equipment washing.
- **vii.** Wheel wash wastewater, unless managed to prevent discharge to surface water.
- **viii.** Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, unless managed according to appropriate controls described within the permit.

l. This Certification is valid until the expiration date including any administrative extension or termination date of the NPDES 2022 Construction General Permit. (40 CFR § 122.46)

m. The Federal Agency shall enforce and the Project Proponent must comply with all the reporting and notification conditions of the NPDES 2022 Construction General Permit in order to comply with this Order and the certification conditions herein (40 CFR § 121.11).

n. You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by chapter 43.21B RCW and chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do all of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person (see addresses below). E-mail is not accepted.

You must also comply with other applicable requirements in chapter 43.21B RCW and chapter 371-08 WAC.

ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503 **Pollution Control Hearings Board** 1111 Israel RD SW STE 301 Tumwater, WA 98501	**Department of Ecology** Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608 **Pollution Control Hearings Board** PO Box 40903 Olympia, WA 98504-0903

CONTACT INFORMATION

Please direct all questions about this Order to:

Noel Tamboer
Department of Ecology
P.O. Box 47600
Olympia, WA 98503-7600

(360) 701-6171
noel.tamboer@ecy.wa.gov

9.10.4 WAR10I000 Indian country within the State of Washington

a. Lummi Nation

i. This certification does not exempt and is provisional upon compliance with other applicable statutes and codes administered by federal and Lummi tribal agencies. Pursuant to Lummi Code of Laws (LCL) 17.05.020(a), the operator must also obtaina land use permit from the Lummi Planning Department as provided in Title 15 of theLummi Code of Laws and regulations adopted thereunder.

ii. Pursuant to LCL 17.05.020(a), each operator shall develop and submit a Storm WaterPollution Prevention Plan to the Lummi Water Resources Division for review and approval by the Water Resources Manager prior to beginning any discharge activities.

iii. Pursuant to LCL Title 17, each operator shall be responsible for achieving compliance with the Water Quality Standards for Surface Waters of the Lummi

iv. Indian Reservation (Lummi Administrative Regulations [LAR] 17 LAR 07.010 through 17 LAR 07.210 together with supplements and amendments thereto).

v. Each operator shall submit a signed copy of the Notice of Intent (NOI) to the Lummi Water Resources Division at the same time it is submitted electronically to the Environmental Protection Agency (EPA) and shall provide the Lummi Water Resources Division the acknowledgement of receipt of the NOI from the EPA and the associated NPDES tracking number provided by the EPA within 7 calendar days of receipt from the EPA.

vi. Each operator shall submit a signed copy of the Notice of Termination (NOT) to the Lummi Water Resources Division at the same time it is submitted electronically to the EPA and shall provide the Lummi Water Resources Division the EPA acknowledgement of receipt of the NOT.

vii. Storm Water Pollution Prevention Plans, Notice of Intent, Notice of Termination and associated correspondence with the EPA shall be submitted to:

Lummi Natural Resources Department
ATTN: Water Resources Manager 2665 Kwina Road
Bellingham, WA 98226-9298

b. Port Gamble S'Klallam Tribe

i. No discharge from the project site shall cause exceedances of Port Gamble S'KlallamSurface Water Quality Standards narrative or numeric criteria in Tribal waters. This includes activities outside of Tribal lands that occur upstream of Tribal waters.

(a) If any exceedance of these water quality standards occurred, the Natural Resources Department shall be notified immediately.

- The Department shall additionally be provided a complete draft of the proposed corrective action within a reasonable timeframe and its approval will be required before any corrective action may be taken.

ii. Operators performing activities under the CGP that may affect Tribal waters will requirea permit and shall submit their plans to the Port Gamble S'Klallam Natural Resources Department for review.

- The Department has the right to require conditions outside of this Water QualityCertification prior to permit approval.

iii. No activities allowed under the CGP shall result in the degradation of any Tribal watersor change in designated uses.

iv. No activities allowed under the CGP shall affect resident aquatic communities or resident/migratory wildlife species at any life stage.

- Biological assessment methods used to determine the effect of an activity allowedunder the CGP shall be approved by the PGST Natural Resources Department.

v. No activities allowed under the CGP shall be conducted within wetland and stream bufferzones, nor shall said activities affect in any way wetland or stream buffers, as defined by *PGST Law and Order Code 24.08.01(c)*.

vi. Concentrations for substances listed within the table in *Water Quality Standards for Surface Waters* sec. 7(7) shall not be exceeded by activities allowed under the CGP.

c. Spokane Tribe of Indians

i. Pursuant to Tribal Law and Order Code (TLOC) Chapter 30 each operator shall be responsible for achieving compliance with the Surface Water Quality Standards of the Spokane Tribe. The operator shall notify the Spokane Tribe, Water Control Board (WCB) of any spills of hazardous material and;

ii. Each operator shall submit a signed hard copy of the Notice of Intent (NOI) to the WCB at the same time it is submitted to EPA.

iii. The permittee shall allow the Tribal Water Control Board or its designee to inspect and sample at the construction site as needed.

iv. Each operator shall submit a signed copy of the Notice of Termination (NOT) to the WCB at the same time it is submitted to EPA

The correspondence address for the Spokane Tribe Water Control Board is:

Water Control Board c/o Brian Crossley PO Box480
Wellpinit WA 99040
(509)626-4409
crossley@spokanetribe.com

d. Swinomish Tribe

i. Owners and operators seeking coverage under this permit must submit a copy of the Notice of Intent (NOI) to the DEP at the same time the NOI is submitted to EPA.

ii. Owners and operators must also submit to the DEP changes in NOI and/or Notices of Termination at the same time they are submitted to EPA.

iii. Owners and operators seeking coverage under this permit must also submit a Stormwater Pollution Prevention Plan to the DEP for review and approval by DEP prior to beginning any discharge activities.

e. Tulalip Tribes

i. Submission of NOI: Copies of the Notice of Intent (NOI),) Certification shall be submitted to the Tribe's Natural Resources Department to notify the Tribes of the

pending project and in order for the Tribes to review the projects potential impacts to endangered or threatened species.

ii. Submission of SWPPP: A copy of the Stormwater Pollution Plans (SWPPPs) shall be submitted to the Tribe's Natural Resources Department along with the NOI during the 30 day waiting period.

iii. Submission of Monitoring Data and Reports: The results of any monitoring required by this permit and reports must be sent to the Tribe's Natural Resources Depa1tment,

iv. The Tulalip Tribes are federally recognized successors in the interest to the Snohomish, Snoqualmie, Skykomish, and other allied tribes and bands signatory to the Treaty of Point Elliott.

v. including a description of the corrective actions required and undertaken to meet effluent limits or benchmarks (as applicable).

vi. Authorization to Inspect: The Tribe's Natural Resources Department may conduct an inspection of any facility covered by this permit to ensure compliance with tribal water quality standards. The Department may enforce its certification conditions.

vii. Submission of Inspection Reports: Inspection reports must be sent to the Tribe's Natural Resources Department, including a description of the corrective actions required and undertaken to meet effluent limits or benchmarks (as applicable).

viii. Permits on-site: A copy of the pe1mit shall be kept on the job site and readily available for reference by the construction supervisor, construction managers and foreman, and Tribal inspectors.

ix. Project Management: The applicant shall ensure that project managers, construction managers and foreman, and other responsible parties have read and understand conditions of the permit, this certification, and other relevant documents, to avoid violations or noncompliance with this certification.

x. Emergency Spill Notification Requirements: In the event of a spill or the contractor shall immediately take action to stop the violation and correct the problem, and immediately repo1t spill to the Tulalip Tribes Police Department (425) 508-1565. Compliance with this condition does not relieve the applicant from responsibility to maintain continuous compliance with the tem1S and conditions of this certification or the resulting liability from failure to comply.

xi. Discharges to CERCLA Sites: This permit does not autho1ize direct stormwater discharges to certain sites undergoing remedial cleanup actions pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) unless first approved by the appropriate EPA Regional office. In the case of the Tulalip Landfill site (WAD980639256), the Tulalip Tribes also requests notification by the facility and consultation with EPA prior to discharge. Contaminants at this site may include but are not limited to: dioxins, furans, arsenic, copper, lead, zinc, 4- methyl-phenol, Hex-CB, HPAHs, PCBs, PCE, cadmium, mercury, and LPAHs.

xii. Discharge-related Activities that have Potential to Cause an Adverse Effect on Historic Properties: Installation of stormwater controls that involve subsurface disturbances may potentially have an adverse impact on historic properties.

xiii. Procedures detailed in the permit shall be completed. Richard Young, of the Tulalip Tribe's Cultural Resources Department shall be contacted prior to initiating discharge- related activities that may have an impact on historic properties. His contact information is (360) 716-2652, ryoung@tulaliptribes-nsn.gov.

xiv. Invalidation: This certification will cease to be valid if the project is constructed and/or operated in a manner not consistent with the project description contained in

xv. the permit. This certification will also cease to be valid and the applicant must reapply with an updated application if info1mation contained in the permit is voided by subsequent submittals.

xvi. Modification: Nothing in this certification waives the Tulalip Tribes of Washington's authority to issue modifications to this ce1iification if additional impacts due to operational changes are identified, or if additional conditions are necessary to protect water quality or further protect the Tribal Communities interest.

xvii. incorporation by reference: TI1is certification does not exempt the applicant from compliance with other statues and codes administered by the Tribes, county, state and federal agencies.

xviii. Compliance with Tribe's I996 Water Quality Standards: Each permittee shall be responsible for controlling discharges and achieving compliance with the T1ibe's Water Quality Standards.

xix. Compliant with Tulalip Tribes Tidelands Management Policy: Permittee shall be responsible for achieving compliance with applicable sections of the Tulalip Tribe's Tidelands Management Policy. (Tulalip Tribal Code Title 8 Chapter 8.30).

xx. Compliant with Tulalip Tribes Environmental Infractions: Permittee shall be responsible for achieving compliance with applicable sections of the Tulalip Tribe's Environmental Infractions. (Tulalip Tribal Code Title 8 Chapter 8.20).

xxi. Where to Submit information and for further Coordination: All requested documents should be sent to the: Tulalip Tribes Natural Resources Environmental Department c/o Kurt Nelson and Valerie Streeter, 6704 Marine Drive, Tulalip, Washington 98271. For further 40 I Certification coordination with the Tulalip Tribes Natural Resources Department, please contact Mr. Kurt Nelson (360) 716-4617 knelson@tu1aliptribes- nsn.gov. 6406 Marine Dr., Tulalip WA 98271.

f. Makah Tribe

i. The permittee shall be responsible for meeting any additional permit requirements imposed by EPA necessary to comply with the Makah Tribe's Water Quality Standards if the discharge point is located within the Makah's U&A treaty reserved areas.

ii. Each permittee shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to Makah Fisheries Management, Water Quality Department at the address listed below at the same time it is submitted to the EPA.

Makah Water Quality
Makah Fisheries Management (MFM)
ray.colby@makah.com

PO Box 115
Neah bay, WA 98357

iii. All supporting documentation and certifications in the NOI related to coverage under the general permit for Endangered Species Act purposes shall be submitted to the Tribe's Habitat programs for their review.

iv. If EPA requires coverage under an individual or alternative permit, the permittee shall submit a copy of the permit to Assistant Fisheries Director, ray.colby@makah.com.

v. The permittee shall submit all Stormwater Pollution Prevention plan (SWPP) to MFM for review and approval prior to beginning any activities resulting in a discharge to Makah tribal waters.

vi. The permittee shall notify Ray Colby, ray.colby@makah.com (360) 645-3150 prior to conducting inspections at construction sites generating stormwater discharges to tribal waters.

vii. The operator shall treat dewatering discharges with controls necessary to minimize discharges of pollutants to surface waters, or ground waters, and from stormwater runoff onsite from excavations, trenches, foundations, or storage areas. To the extent feasible, at all points where dewatering is discharged, comply with the velocity dissipation using check dams, sediment traps, and grouted outlets.

g. Puyallup Tribe of Indians

i. The permittee shall be responsible for meeting any additional permit requirements imposed by EPA necessary to comply with the Puyallup Tribe's antidegradation procedures.

ii. Each permittee shall submit a copy of the Notice of Intent (NOI) to be covered by the general permit to Char Naylor, Tribal Water Quality Manager at the following e-mail address: (char.naylor@puyalluptribe-nsn.gov) at the same time it is submitted to EPA.

iii. All supporting documentation and certifications in the NOI related to coverage under the general permit for Endangered Species Act purposes shall be submitted to Char Naylor, Tribal Water Quality Manager/Assistant Fisheries Director (char.naylor@puyalluptribe-nsn.gov) for review.

iv. If EPA requires coverage under an individual or alternative permit, the permittee shall submit a copy of the permit to Char Naylor at the email address listed above.

v. The permittee shall submit all stormwater pollution prevention plans to Char Naylor for review and approval prior to beginning any activities resulting in a discharge to Puyallup tribal waters.

vi. The permittee shall contact Brandon Reynon (Brandon.reynon@puyalluptribe-nsn-gov), Tribe's Historic Preservation Officer or Jennifer Keating (Jennifer.keating@puyalluptribe-nsn.gov), Tribe's Assistant Historic Preservation Officer regarding historic properties and cultural resources.

vii. To minimize the discharge of pollutants to groundwater or surface waters from stormwater that is removed from excavations, trenches, foundations, vaults, or

other storage areas, treat dewatering discharges with controls necessary to minimize discharges of pollutants. Examples of appropriate controls include sediment basins or sediment traps, sediment socks, dewatering tanks, tube settlers, weir tanks, and filtration systems (e.g., bag or sand filters) that are designed to remove sediment.

To the extent feasible, utilize vegetated, upland areas of the site to infiltrate dewatering water before discharge. At all points where dewatering water is discharged, utilize velocity dissipation controls. Examples of velocity dissipation devices include check dams, sediment traps, riprap, and grouted riprap at outlets.

viii. The permittee shall provide and maintain natural buffers to the maximum extent possible (and/or equivalent erosion and sediment controls) when tribal waters are located within 100 feet of the boundaries. If infeasible to provide and maintain an undisturbed 100 foot natural buffer, erosion and sediment controls to achieve the sediment load reduction equivalent to a 100-foot undisturbed natural buffer shall be required.

Appendix C – Notice of Intent

NPDES FORM 3510-9		UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 NOTICE OF INTENT (NOI) FOR THE 2022 NPDES CONSTRUCTION PERMIT	FORM Approved OMB No. 2040-0305 Expires on 02/28/2025

This collection of information is approved by OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. (OMB Control No. 2040-0305). Responses to this collection of information are mandatory in accordance with this permit and EPA NPDES regulations (40 CFR 122.28(b)(2)). An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The public reporting and recordkeeping burden for this collection of information are estimated to average 1.1 to 19.6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden to the Regulatory Support Division Director, U.S. Environmental Protection Agency (2821T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Permit Information

This form has not yet been certified.

NPDES ID:

State/Territory to which your project/site is discharging: NH

Is your project/site located on federally recognized Indian Country lands? No

Is your project/site located on Lands of Exclusive Federal Jurisdiction? No

Are you requesting coverage under this NOI as a *"Federal Operator"* or a *"Federal Facility"* as defined in Appendix A (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-a-definitions.pdf)? No

Have stormwater discharges from your current construction site been covered previously under an NPDES permit? No

Will you use polymers, flocculants, or other treatment chemicals at your construction site? No

Has a Stormwater Pollution Prevention Plan (SWPPP) been prepared in advance of filling this NOI, as required? Yes

Are you able to demonstrate that you meet one of the criteria listed in Appendix D (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-d-endangered-species-protection.pdf) with respect to protection of threatened or endangered species listed under the Endangered Species Act (ESA) and federally designated critical habitat?

Yes

Have you completed the screening process in Appendix E (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-e-historic-properties.pdf) relating to the protection of historic properties? Yes

Indicating "Yes" below, I confirm that I understand that CGP only authorized the allowable stormwater discharges in Part 1.2.1 and the allowable non-stormwater discharges listed in Part 1.2.2. Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state or local authorities after issuance of this permit via any means, Including the Notice of Intent (NOI) to be covered by the permit, the Stormwater Pollution Prevention Plan (SWPPP), during an Inspection, etc. If any discharges requiring NPDES permit coverage other than the allowable stormwater and non-stormwater discharges listed in Parts 1.2.1 and 1.2.2 will be discharged, they must be covered under another NPDES permit.

Yes

Operator Information

Operator Information

Operator Name: Baumer Construction

Operator Mailing Address:

Address Line 1: 285 South Ohio Street

Address Line 2: PO Box 3

City: Minster

ZIP/Postal Code: 45865

State/Province: OH

County or Similar Division: Auglaize

Country: US

Operator Point of Contact Information

First Name **Middle Initial** **Last Name:** Matthew J Quinter

Title: Project Engineer/Surveyor

Phone: 419-628-3364

Ext.:

Email: matt@baumerconstruction.com

NOI Preparer Information

☑ **This NOI is being prepared by someone other than the certifier.**

First Name **Middle Initial** **Last Name:** Bryan L Levesque

Organization: TF Moran

Phone: 603-472-4488

Ext.:

Email: blevesque@tfmoran.com

Project/Site Information

Project/Site Name: New Digester Facility

Project/Site Address

Address Line 1: North Wentworth Avenue

Address Line 2:

City: Londonderry

ZIP/Postal Code: 03053

State: NH

County or Similar Division: Rockingham

Latitude/Longitude: 42.905442°N, 71.431632°W

Latitude/Longitude Data Source: Google Maps **Horizontal Reference Datum:** NAD 83

Project Start Date: 12/02/2026 **Project End Date:** 12/31/2028 **Estimated Area to be Disturbed:** 11.25

Types of Construction Sites:

- Commercial
- Industrial
- Utility

Will there be demolition of any structure built or renovated before January 1, 1980? No

Will you be discharging dewatering water from your site? No

Was the pre-development land use used for agriculture? No

Are there other operators that are covered under this permit for the same project site? No

Have earth-disturbing activities commenced on your project/site? No

Is your project/site located on federally recognized Indian Country lands? No

Is your project/site located on a property of religious or cultural significance to an Indian tribe? No

Discharge Information

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)? Yes

Are there any waters of the U.S. within 50 feet of your project's earth disturbances? No

Are any of the waters of the U.S. to which you discharge designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water) or as a Tier 3 water (Outstanding National Resource Water)? See Resources, Tools and Templates (https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates)

No

ID: 001 **Name:** Watts Brook **Description:** Watts Brook

Latitude/Longitude: 42.903°N, 71.434°W

Tier Designation: N/A

Is this receiving water impaired (on the CWA 303(d) list)? No

Has a TMDL been completed for this receiving waterbody? No

Stormwater Pollution Prevention Plan (SWPPP)

Will all required personnel, including those conducting inspections at your site, meet the training requirements in Part 6 of this permit? Yes

First Name Middle Initial Last Name: Matthew J Quinter

Title: Project Engineer/Surveyor

Phone: 419-628-3364 **Ext.:**

Email: matt@baumerconstruction.com

Endangered Species Protection Worksheet: Criterion A

Determine ESA Eligibility Criterion

Are your discharges and discharge-related activities already addressed in another operator's valid certification of eligibility for your "action area" under the current 2022 CGP? No

Has consultation between you, a Federal Agency, and the USFWS and/or the NMFS under section 7 of the Endangered Species Act (ESA) concluded? No

Are your construction activities the subject of a permit under section 10 of the ESA by the USFWS and/or NMFS, and this authorization addresses the effects of your site's discharges and discharge-related activities on ESA-listed species and/or designated critical habitat?

No

You must determine whether species listed as either threatened or endangered, or their critical habitat(s) are located in your site's action area (i.e., all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action, including areas beyond the footprint of the site that are likely to be affected by stormwater discharges, discharge-related activities, and authorized non-stormwater discharges).

Determine your Action Area

You must consider the following in determining the action area for your site, and **confirm that all the following are true**:

- **In determining my "action area", I have considered that discharges of pollutants into downstream areas can expand the action area well beyond the footprint of my site and the discharge point(s). I have taken into account the controls I will be implementing to minimize pollutants and the receiving waterbody characteristics (e.g., perennial, intermittent, ephemeral) in determining the extent of physical, chemical, and/or biotic effects of the discharges. I confirm that all receiving waterbodies that could receive pollutants from my site are included in my action area.**

  True

-

In determining my "action area", I have considered that discharge-related activities must also be accounted for in determining my action area. I understand that discharge-related activities are any activities that cause, contribute to, or result in stormwater and authorized non-stormwater point source discharges, and measures such as the siting, construction timing, and operation of stormwater controls to control, reduce, or prevent pollutants from being discharged. I understand that any new or modified stormwater controls that will have noise or other similar effects, and any disturbances associated with construction of controls, are part of my action area.

True

Determine is ESA-listed species and/or critical habitat are in your site action area.

ESA-listed species and designated critical habitat are under the purview of the NMFS and the USFWS, and in many cases, you will need to acquire species and critical habitat lists from both federal agencies.

National Marine Fisheries Service (NMFS)

For NMFS species and designated critical habitat information, use the following webpage:

- https://www.epa.gov/npdes/construction-general-permit-cgp-threatened-and-endangered-species-eligibility (https://www.epa.gov/npdes/construction-general-permit-cgp-threatened-and-endangered-species-eligibility)

I have checked the webpage listed above and confirmed that:

- (●) There are no NMFS-protected species and/or designated critical habitat in my action area.
- ( ) There are NMFS-protected species and/or designated critical habitat in my action area.

U.S. Fish and Wildlife Service (USFWS)

For USFWS species and critical habitat information, use the following webpage:

- https://www.epa.gov/npdes/construction-general-permit-cgp-threatened-and-endangered-species-eligibility (https://www.epa.gov/npdes/construction-general-permit-cgp-threatened-and-endangered-species-eligibility)

I have checked the webpage listed above and confirmed that:

- (●) There are no FWS-protected species and/or designated critical habitat in my action area.
- ( ) There are FWS-protected species and/or designated critical habitat in my action area.

You are eligible under **Criterion A**.

Identify the USFWS information sources used (Note: state resources are not acceptable):

IPAC search

Identify the NMFS information sources used (Note: state resources are not acceptable):

IPAC search

You must attach:

- Aerial image(s) of the site.
- A printout of the species' list(s) showing no ESA-listed species or designated critical habitat in my action area.

Name	Uploaded Date	Size
Species List_ New England Ecological Services Field Office.pdf (attachment/2143583)	12/19/2025	252.03 KB
18252-00 NRCS Soils Report_2025-05-13.pdf (attachment/2143584)	12/19/2025	1.16 MB

Have you attached aerial image(s) of the site? Yes

Have you attached a printout of the species' list(s) showing no ESA-listed species or designated critical habitat in my action area? Yes

Have you provided documentation in your SWPPP supporting your eligibility under Criterion A? Yes

Historic Preservation

Are you installing any stormwater controls as described in Appendix E (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-e-historic-properties.pdf) that require subsurface earth disturbances? (Appendix E (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-e-historic-properties.pdf), Step 1)

Yes

↳ **Have prior surveys or evaluations conducted on the site already determined historic properties do not exist, or that prior disturbances have precluded the existence of historic properties? (Appendix E (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-e-historic-properties.pdf), Step 2):**

Yes

Certification Information

Form has not been certified yet.

NPDES FORM 3510-9		UNITED STATES ENVIRONMENTAL PROTECTION AGENCY WASHINGTON, DC 20460 NOTICE OF INTENT (NOI) FOR THE 2022 NPDES CONSTRUCTION PERMIT	FORM Approved OMB No. 2040-0305 Expires on 02/28/2025

This collection of information is approved by OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. (OMB Control No. 2040-0305). Responses to this collection of information are mandatory in accordance with this permit and EPA NPDES regulations (40 CFR 122.28(b)(2)). An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The public reporting and recordkeeping burden for this collection of information are estimated to average 1.1 to 19.6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden to the Regulatory Support Division Director, U.S. Environmental Protection Agency (2821T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Permit Information

This form has not yet been certified.

NPDES ID:

State/Territory to which your project/site is discharging: NH

Is your project/site located on federally recognized Indian Country lands? No

Is your project/site located on Lands of Exclusive Federal Jurisdiction? No

Are you requesting coverage under this NOI as a *"Federal Operator"* or a *"Federal Facility"* as defined in Appendix A (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-a-definitions.pdf)? No

Have stormwater discharges from your current construction site been covered previously under an NPDES permit? No

Will you use polymers, flocculants, or other treatment chemicals at your construction site? No

Has a Stormwater Pollution Prevention Plan (SWPPP) been prepared in advance of filling this NOI, as required? Yes

Are you able to demonstrate that you meet one of the criteria listed in Appendix D (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-d-endangered-species-protection.pdf) with respect to protection of threatened or endangered species listed under the Endangered Species Act (ESA) and federally designated critical habitat?

Yes

Have you completed the screening process in Appendix E (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-e-historic-properties.pdf) relating to the protection of historic properties? Yes

Indicating "Yes" below, I confirm that I understand that CGP only authorized the allowable stormwater discharges in Part 1.2.1 and the allowable non-stormwater discharges listed in Part 1.2.2. Any discharges not expressly authorized in this permit cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to EPA, state or local authorities after issuance of this permit via any means, including the Notice of Intent (NOI) to be covered by the permit, the Stormwater Pollution Prevention Plan (SWPPP), during an Inspection, etc. If any discharges requiring NPDES permit coverage other than the allowable stormwater and non-stormwater discharges listed in Parts 1.2.1 and 1.2.2 will be discharged, they must be covered under another NPDES permit.

Yes

Operator Information

Operator Information

Operator Name: PurposeEnergy - Londonderry, LLC

Operator Mailing Address:

Address Line 1: 25 Pelham Road Suite 102

Address Line 2:

City: Salem

ZIP/Postal Code: 03079

State/Province: NH

County or Similar Division: Rockingham

Country: US

Operator Point of Contact Information

First Name **Middle Initial** **Last Name:** Sean . ONeill

Title: Project Manager

Phone: 617-202-9156 **Ext.:** 706

Email: ONeill@purposeenergy.com

NOI Preparer Information

☑ **This NOI is being prepared by someone other than the certifier.**

First Name **Middle Initial** **Last Name:** Bryan L Levesque

Organization: TF Moran

Phone: 603-472-4488 **Ext.:**

Email: blevesque@tfmoran.com

Project/Site Information

Project/Site Name: New Digester Facility

Project/Site Address

Address Line 1: North Wentworth Avenue

Address Line 2:

City: Londonderry

ZIP/Postal Code: 03053

State: NH

County or Similar Division: Rockingham

Latitude/Longitude: 42.905442°N, 71.431632°W

Latitude/Longitude Data Source: Google Maps **Horizontal Reference Datum:** NAD 83

Project Start Date: 06/30/2025 **Project End Date:** 12/31/2028 **Estimated Area to be Disturbed:** 11.25

Types of Construction Sites:

- Commercial
- Industrial
- Utility

Will there be demolition of any structure built or renovated before January 1, 1980? No

Will you be discharging dewatering water from your site? No

Was the pre-development land use used for agriculture? No

Are there other operators that are covered under this permit for the same project site? No

Have earth-disturbing activities commenced on your project/site? No

Is your project/site located on federally recognized Indian Country lands? No

Is your project/site located on a property of religious or cultural significance to an Indian tribe? No

Discharge Information

Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)? Yes

Are there any waters of the U.S. within 50 feet of your project's earth disturbances? No

Are any of the waters of the U.S. to which you discharge designated by the state or tribal authority under its antidegradation policy as a Tier 2 (or Tier 2.5) water (water quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water) or as a Tier 3 water (Outstanding National Resource Water)? See Resources, Tools and Templates (https://www.epa.gov/npdes/construction-general-permit-resources-tools-and-templates)

No

ID: 001 **Name:** Watts Brook **Description:** Watts Brook

Latitude/Longitude: 42.903°N, 71.434902°W

Tier Designation: N/A

Is this receiving water impaired (on the CWA 303(d) list)? No

Has a TMDL been completed for this receiving waterbody? No

Stormwater Pollution Prevention Plan (SWPPP)

Will all required personnel, including those conducting inspections at your site, meet the training requirements in Part 6 of this permit? Yes

First Name Middle Initial Last Name: Sean . ONeill

Title: Project Manager

Phone: 617-202-9156 **Ext.:**

Email: ONeill@purposeenergy.com

Endangered Species Protection Worksheet: Criterion A

Determine ESA Eligibility Criterion

Are your discharges and discharge-related activities already addressed in another operator's valid certification of eligibility for your "action area" under the current 2022 CGP? No

Has consultation between you, a Federal Agency, and the USFWS and/or the NMFS under section 7 of the Endangered Species Act (ESA) concluded? Yes

Are your construction activities the subject of a permit under section 10 of the ESA by the USFWS and/or NMFS, and this authorization addresses the effects of your site's discharges and discharge-related activities on ESA-listed species and/or designated critical habitat?

No

You must determine whether species listed as either threatened or endangered, or their critical habitat(s) are located in your site's action area (i.e., all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action, including areas beyond the footprint of the site that are likely to be affected by stormwater discharges, discharge-related activities, and authorized non-stormwater discharges).

Determine your Action Area

You must consider the following in determining the action area for your site, and **confirm that all the following are true**:

- **In determining my "action area", I have considered that discharges of pollutants into downstream areas can expand the action area well beyond the footprint of my site and the discharge point(s). I have taken into account the controls I will be implementing to minimize pollutants and the receiving waterbody characteristics (e.g., perennial, intermittent, ephemeral) in determining the extent of physical, chemical, and/or biotic effects of the discharges. I confirm that all receiving waterbodies that could receive pollutants from my site are included in my action area.**

  True

-

In determining my "action area", I have considered that discharge-related activities must also be accounted for in determining my action area. I understand that discharge-related activities are any activities that cause, contribute to, or result in stormwater and authorized non-stormwater point source discharges, and measures such as the siting, construction timing, and operation of stormwater controls to control, reduce, or prevent pollutants from being discharged. I understand that any new or modified stormwater controls that will have noise or other similar effects, and any disturbances associated with construction of controls, are part of my action area.

True

Determine is ESA-listed species and/or critical habitat are in your site action area.

ESA-listed species and designated critical habitat are under the purview of the NMFS and the USFWS, and in many cases, you will need to acquire species and critical habitat lists from both federal agencies.

National Marine Fisheries Service (NMFS)

For NMFS species and designated critical habitat information, use the following webpage:

- https://www.epa.gov/npdes/construction-general-permit-cgp-threatened-and-endangered-species-eligibility (https://www.epa.gov/npdes/construction-general-permit-cgp-threatened-and-endangered-species-eligibility)

I have checked the webpage listed above and confirmed that:

- (●) There are no NMFS-protected species and/or designated critical habitat in my action area.
- ( ) There are NMFS-protected species and/or designated critical habitat in my action area.

U.S. Fish and Wildlife Service (USFWS)

For USFWS species and critical habitat information, use the following webpage:

- https://www.epa.gov/npdes/construction-general-permit-cgp-threatened-and-endangered-species-eligibility (https://www.epa.gov/npdes/construction-general-permit-cgp-threatened-and-endangered-species-eligibility)

I have checked the webpage listed above and confirmed that:

- (●) There are no FWS-protected species and/or designated critical habitat in my action area.
- ( ) There are FWS-protected species and/or designated critical habitat in my action area.

You are eligible under **Criterion A**.

Identify the USFWS information sources used (Note: state resources are not acceptable):

```
IPAC search
```

Identify the NMFS information sources used (Note: state resources are not acceptable):

```
IPAC Search
```

You must attach:

- Aerial image(s) of the site.
- A printout of the species' list(s) showing no ESA-listed species or designated critical habitat in my action area.

Name	Uploaded Date	Size
Species List_ New England Ecological Services Field Office.pdf (attachment/2046080)	06/05/2025	252.03 KB

Have you attached aerial image(s) of the site? Yes

Have you attached a printout of the species' list(s) showing no ESA-listed species or designated critical habitat in my action area? Yes

Have you provided documentation in your SWPPP supporting your eligibility under Criterion A? Yes

Historic Preservation

Are you installing any stormwater controls as described in Appendix E (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-e-historic-properties.pdf) that require subsurface earth disturbances? (Appendix E (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-e-historic-properties.pdf), Step 1)

Yes

↳ **Have prior surveys or evaluations conducted on the site already determined historic properties do not exist, or that prior disturbances have precluded the existence of historic properties? (Appendix E (https://www.epa.gov/system/files/documents/2022-01/2022-cgp-final-appendix-e-historic-properties.pdf), Step 2):**

Yes

Certification Information

Form has not been certified yet.

Appendix D – Sample SWPPP Inspection Form

Stormwater Inspection Report # SAMPLE
PurposeEnergy – Londonderry, LLC
North Wentworth Avenue
Londonderry, NH

General Information			
Project Name	New Digester Facility		
NPDES Tracking No.	TBD	**Location:**	North Wentworth Avenue Londonderry, NH
Date of Inspection:	M/D/YR		
Inspector's Name(s)			
Inspector's Title(s)			
Inspector's Contact Information			
Inspector's Qualifications			
Describe present phase of construction			
Type of Inspection: ❑ Regular ❑ Pre-storm event ❑ During storm event ❑ Post-storm event			

Weather Information
Weather since the last inspection? Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in): *Weather Data from Weather Underground Station KMNHLONDO3*
Has there been a storm event since the last inspection? ❑Yes ❑No **If yes, provide:** Storm Start Date & Time: Storm Duration (hrs): Approximate Amount of Precipitation (in): *Weather Data from Weather Underground Station KNNHLONDO3*
Weather at time of this inspection? ☒ Clear ❑Cloudy ❑ Rain ❑ Sleet ❑ Fog ❑ Snowing ❑ High Winds ❑ Other: Temperature: XX °F
Have any discharges occurred since the last inspection? ❑Yes ❑No **If yes, describe:**
Are there any discharges at the time of inspection? ❑Yes ❑No **If yes, describe:**
Comments:

Overall Site Issues

	BMP/activity	Implemented?	Maintenance Required?	Corrective Action Needed and Notes
1	Are all slopes and disturbed areas not actively being worked properly stabilized?	☐Yes ❑No	❑Yes ☐No	
2	Are natural resource areas (e.g., streams, wetlands, mature trees, etc.) protected with barriers or similar BMPs?	☐Yes ❑No	❑Yes ☐No	
3	Are perimeter controls and sediment barriers adequately installed (keyed into substrate) and maintained?	☐Yes ❑No	❑Yes ☐No	
4	Are discharge points and receiving waters free of any sediment deposits?	☐Yes ❑No	❑Yes ☐No	
5	Are storm drain inlets properly protected?	☐Yes ❑No	❑Yes ☐No	
6	Is the construction exit preventing sediment from being tracked into the street?	☐Yes ❑No	❑Yes ☐No	
7	Is trash/litter from work areas collected and placed in covered dumpsters?	☐Yes ❑No	❑Yes ☐No	
8	Are washout facilities (e.g., paint, stucco, concrete) available, clearly marked, and maintained?	☐Yes ❑No	❑Yes ☐No	
9	Are vehicle and equipment fueling, cleaning, and maintenance areas free of spills, leaks, or any other deleterious material?	☐Yes ❑No	❑Yes ☐No	
10	Are materials that are potential stormwater contaminants stored inside or under cover?	☐Yes ❑No	❑Yes ☐No	
11	Are non-stormwater discharges (e.g., wash water, dewatering) properly controlled?	☐Yes ❑No	❑Yes ☐No	
12	(Other)	☐Yes ❑No	❑Yes ☐No	

Non-Compliance

Describe any incidents of non-compliance not described above:

CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

For PurposeEnergy – Londonderry, LLC or their Assigned:

Print name and title: _____

Signature:_____ Date:_____

Representative Photographs

Photo 1

DESCRIPTION

Photo 2

DESCRIPTION

Appendix E – Copy of Corrective Action Form

No.	Description of the Corrective Action	Date of Action	Prepared by [Name(s) and Title]

Appendix F – SWPPP Amendment Log

No.	Description of the Amendment	Date of Amendment	Amendment Prepared by [Name(s) and Title]
1	SWPPP Rev. 0 Initial Draft	06/02/2025	B. Levesque, PE, CPESC
2	Rev.1 Update Active Areas Baumer CGP	12/17/2025	B. Levesque, PE, CPESC
3			
4			
5			
6			

Appendix G – Subcontractor Certifications/Agreements

SUBCONTRACTOR CERTIFICATION
STORMWATER POLLUTION PREVENTION PLAN

Project Number: _____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP.

This certification is hereby signed in reference to the above-named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

_____

_____

Signature: _____

Title: _____

Date: _____

Appendix H – Grading and Stabilization Activities Log

Date Grading Activity Initiated	**Description of Grading Activity**	**Description of Stabilization Measure and Location**	**Date Grading Activity Ceased** (Indicate Temporary or Permanent)	**Date When Stabilization Measures Initiated**
	PLEASE SEE THE DAILY LOGS FOR GRADING & STABILIZATION ACTIVITIES			

Appendix I – SWPPP Training Log

Stormwater Pollution Prevention Training Log

Project Name:

Project Location:

Instructor's Name(s):

Instructor's Title(s):

Course Location: _____ Date: _____

Course Length (hours): _____

Stormwater Training Topic: *(check as appropriate)*

- ❑ **Sediment and Erosion Controls**
- ❑ **Emergency Procedures**
- ❑ **Stabilization Controls**
- ❑ **Inspections/Corrective Actions**
- ❑ **Pollution Prevention Measures**

Specific Training Objective:_____

_____

Attendee Roster: *(attach additional pages as necessary)*

No.	Name of Attendee	Company
1		
2		
3		
4		
5		
6		
7		
8		

Appendix J – Delegation of Authority Form

Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit, at the _____ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans, and all other documents required by the permit.

_____ (name of person or position)
_____ (company)
_____ (address)
_____ (city, state, zip)
_____ (phone)

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix I of EPA's Construction General Permit (CGP), and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix I.

I certify under the law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____

Company: _____

Title: _____

Signature: _____

Date: _____

Appendix K – Endangered Species Documentation

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To: 06/03/2025 22:58:18 UTC
Project Code: 2025-0105075
Project Name: PurposeEnergy Londonderry, NH Green Energy Campus

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Updated 4/12/2023 - Please review this letter each time you request an Official Species List, we will continue to update it with additional information and links to websites may change.

About Official Species Lists

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Federal and non-Federal project proponents have responsibilities under the Act to consider effects on listed species.

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested by returning to an existing project's page in IPaC.

Endangered Species Act Project Review

Please visit the "**New England Field Office Endangered Species Project Review and Consultation**" website for step-by-step instructions on how to consider effects on listed

species and prepare and submit a project review package if necessary:

https://www.fws.gov/office/new-england-ecological-services/endangered-species-project-review

NOTE Please do not use the **Consultation Package Builder** tool in IPaC except in specific situations following coordination with our office. Please follow the project review guidance on our website instead and reference your **Project Code** in all correspondence.

Northern Long-eared Bat - (**Updated 4/12/2023**) The Service published a final rule to reclassify the northern long-eared bat (NLEB) as endangered on November 30, 2022. The final rule went into effect on March 31, 2023. You may utilize the **Northern Long-eared Bat Rangewide Determination Key** available in IPaC. More information about this Determination Key and the Interim Consultation Framework are available on the northern long-eared bat species page:

https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis

For projects that previously utilized the 4(d) Determination Key, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective. If your project was not completed by March 31, 2023, and may result in incidental take of NLEB, please reach out to our office at newengland@fws.gov to see if reinitiation is necessary.

Additional Info About Section 7 of the Act
Under section 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether projects may affect threatened and endangered species and/or designated critical habitat. If a Federal agency, or its non-Federal representative, determines that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Federal agency also may need to consider proposed species and proposed critical habitat in the consultation. 50 CFR 402.14(c)(1) specifies the information required for consultation under the Act regardless of the format of the evaluation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/service/section-7-consultations

In addition to consultation requirements under Section 7(a)(2) of the ESA, please note that under sections 7(a)(1) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Please contact NEFO if you would like more information.

Candidate species that appear on the enclosed species list have no current protections under the ESA. The species' occurrence on an official species list does not convey a requirement to

consider impacts to this species as you would a proposed, threatened, or endangered species. The ESA does not provide for interagency consultations on candidate species under section 7, however, the Service recommends that all project proponents incorporate measures into projects to benefit candidate species and their habitats wherever possible.

Migratory Birds

In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see:

https://www.fws.gov/program/migratory-bird-permit

https://www.fws.gov/library/collections/bald-and-golden-eagle-management

Please feel free to contact us at **newengland@fws.gov** with your **Project Code** in the subject line if you need more information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Attachment(s): Official Species List

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

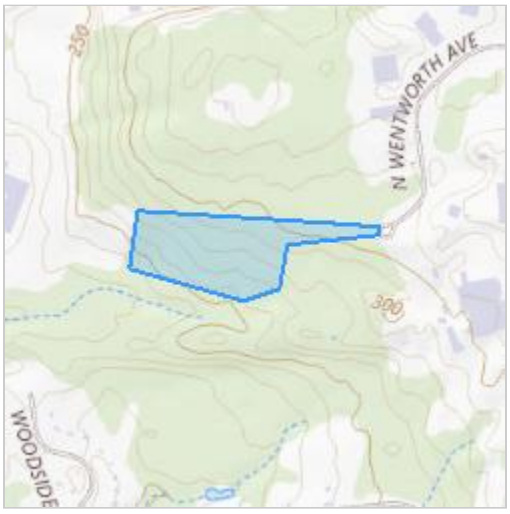
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

PROJECT SUMMARY

Project Code: 2025-0105075
Project Name: PurposeEnergy Londonderry, NH Green Energy Campus
Project Type: Commercial Development
Project Description: Project involves the construction of a biogas production facility to generate methane gas from organic waste that would otherwise be landfilled. The facility will include several digester tanks, systems to hand the reception and depacking wastes to be used in the production process, buildings, paved areas, new site utilities including stormwater, sanitary, gas and electric, lighting and other appurtenances required for the project.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.9054294,-71.43254828257923,14z



Counties: Rockingham County, New Hampshire

ENDANGERED SPECIES ACT SPECIES

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: T.F. Moran, Inc.
Name: b levesque
Address: 48 constitution drive
City: bedford
State: NH
Zip: 03110
Email blevesque@tfmoran.com
Phone: 6034724488

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

To: Jeremy Belanger
48 Consitution Dr
Bedford, NH 03110
jbelanger@tfmoran.com

From: NHB Review
NH Natural Heritage Bureau
Main Contact: Ashley Litwinenko - nhbreview@dncr.nh.gov

cc: NHFG Review

Date: 06/11/2024 (valid until 06/11/2025)
Re: DataCheck Review by NH Natural Heritage Bureau and NH Fish & Game
Permits: MUNICIPAL POR - Londonderry, NHDES - Alteration of Terrain Permit, NHDES - Standard Dredge & Fill - Major, USACE - General Permit, USEPA - Stormwater Pollution Prevention

NHB ID: NHB24-1680

Town: Londonderry
Location: 162 Litchfield Road & North Wentworth Ave

Project Description: The project proposes to construct a receiving station for trucked organic waste that would otherwise be directed to NH landfills. The facility will consist of equipment for de-packaging off-spec organic products that did not meet commercial standards for sale or otherwise have passed sell by dates. This equipment will be fully enclosed, and the structure designed with charcoal filtering for odor control. The facility is best defined as a food processing use. The project will also include accommodations for access, parking, and stormwater management.

Next Steps for Applicant:

NHB's database has been searched for records of rare species and exemplary natural communities. Please carefully read the comments and consultation requirements below.

NHB Comments: Please send NHB proposed plans and representative photos during the growing season of the proposed impact areas.

NHFG Comments: Please refer to NHFG consultation requirements below.

NHB Consultation

If this NHB DataCheck letter includes records of rare plants and/or natural communities/systems, please contact NHB and provide any requested supplementary materials by emailing nhbreview@dncr.nh.gov.

If this NHB DataCheck letter DOES NOT include any records of rare plants and/or natural communities/systems, no further consultation with NHB is required.

NH Fish and Game Department Consultation

If this NHB DataCheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB DataCheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://www.wildlife.nh.gov/wildlife-and-habitat/nongame-and-endangered-species/environmental-review. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB DataCheck results letter number and "Fis 1004 consultation request" in the subject line**.

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule*), coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email NHFGreview@wildlife.nh.gov, and include the NHB DataCheck results letter number and "review request" in the email subject line.
Contact NH Fish & Game at (603) 271-0467 with questions.

NHB Database Records:
The following record(s) have been documented in the vicinity of the proposed project.
Please see the map and detailed information about the record(s) on the following pages.

Plant species	**State[1]**	**Federal**	**Notes**
long-leaved bluet (*Houstonia longifolia*)	E	--	Occurs on talus slopes, sandplains/disturbed openings, and dry forests/thin woods. Threats would include recreational or development activities that would trample the plants or disturb their habitat.

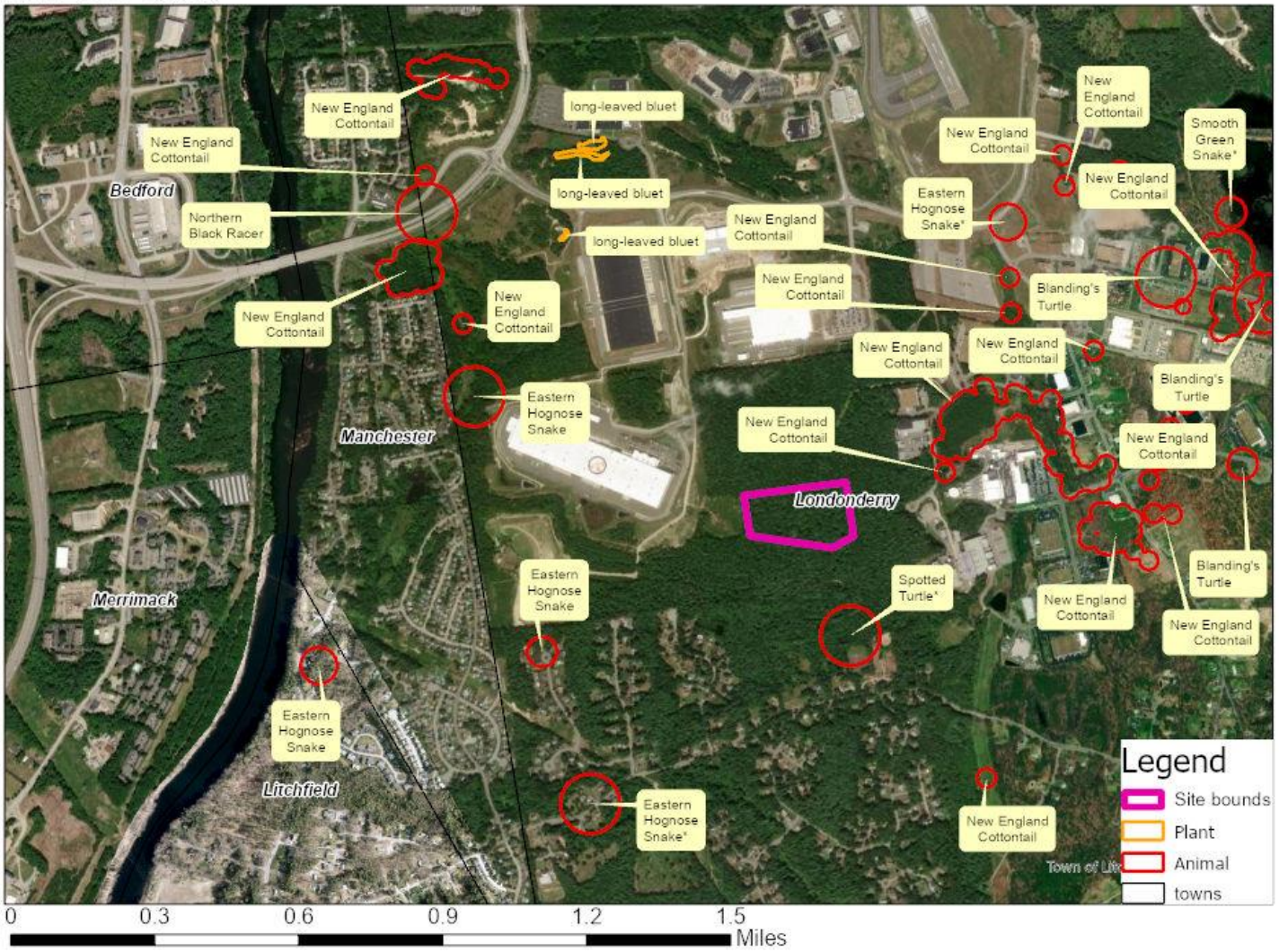
Vertebrate species	**State[1]**	**Federal**	**Notes**
Blanding's Turtle (*Emydoidea blandingii*)	E	--	Contact the NH Fish & Game Dept (see below).
Eastern Hognose Snake (*Heterodon platirhinos*)	E	--	Contact the NH Fish & Game Dept (see above).
New England Cottontail (*Sylvilagus transitionalis*)	E	--	Contact the NH Fish & Game Dept (see above).
Northern Black Racer (*Coluber constrictor constrictor*)	T	--	Contact the NH Fish & Game Dept (see above).
Smooth Green Snake (*Opheodrys vernalis*)*	SC	--	Contact the NH Fish & Game Dept (see above).
Spotted Turtle (*Clemmys guttata*)*	T	--	Contact the NH Fish & Game Dept (see below).

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list.
An asterisk (*) indicates that the most recent report for that occurrence was 20 or more years ago.

For all animal reviews, refer to 'IMPORTANT: NHFG Consultation' section above.

Disclaimer: NHB's database can only tell you of known occurrences that have been reported to NHFG/NHB. Known occurrences are based on information gathered by qualified biologists or members of the public, reported to our offices, and verified by NHB/NHFG.
However, many areas have never been surveyed, or have only been surveyed for certain species.
NHB recommends surveys to determine what species/natural communities are present onsite.

NHB24-1680


New England Cottontail
long-leaved bluet
Smooth Green Snake*
Eastern Hognose Snake*
Bedford
Northern Black Racer
Blanding's Turtle
Manchester
Eastern Hognose Snake
Londonderry
Spotted Turtle*
Merrimack
Litchfield
Legend
Site bounds
Plant
Animal
towns
0
0.3
0.6
0.9
1.2
1.5
Miles

NHB24-1680 EOCODE: PDRUB1T0E0*001*NH

New Hampshire Natural Heritage Bureau - Plant Record

long-leaved bluet (*Houstonia longifolia*)

Legal Status	Conservation Status
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2023: Area 1, northern polygon: over 300 plants in clumps within an area measuring approximately 1,555 m. Some large clumps with 70+ stems; majority of plants with 2-5 stems. 2014: Area 2: Approximately 10-12 plants at three locations. Plants growing in tight clumps. 1999: Several hundred plants in flower, in small patches over ca. one-half acre. No date: Specimen collected. 1902: Specimen 45353 at NHA.

General Area: 2023: Area 1, northern polygon: Plants were located along the sandy drive in mostly open areas and in partial sun. No plants located within forest edge, only up to it. Habitat west of the population very dense with understory vegetation and grass. Associated species include sweet-fern, yarrow (*Achillea millefolium*), oak (*Quercus* sp.), and haircap moss (*Polytrichum commune*). 2014: Area 2: Plants are located at the edge of an old sand pit with a sapling layer of gray birch (*Betula populifolia*) and quaking aspen (*Populus tremuloides*), and a shrub layer of sweet-fern (*Comptonia peregrina*). 1999: Edge habitat between grassy field and encroaching second-growth hardwoods.

General Comments: Original 1902 specimen placed in Manchester. Site discovered in 1999 is in Londonderry, 1.75 km south and 0.5 km east of the Manchester town line.

Management Comments: 2023: Excavator observed parked on plant. Sandy road cutting through area. Site visited for environmental review. 2014: Protection measures were put into place for cutting of the adjacent lot. 1999: Area may have burned not long ago (cinders present), helping to create open to lightly-shaded setting.

Location

Survey Site Name: Manchester Airport, south of
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 1.2 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2023: Area 1: Site is north of Pettengill Road and west of Innovation Way (42.916857, -71.440852). 2014: Area 2: Site is immediately adjacent to recently constructed Pettengill Road.

1999: Travel south on Brown Avenue past its point of divergence with Rte 3A. Stay left and park just before Brown Avenue rejoins 3A in an empty lot at a gate to the entrance of a sandpit. Walk due east to the eastern edge of the sandpit, near the tip of an elongated extension of grassland into the woods.

Dates documented

First reported:	1902-06-30	Last reported:	2023-06-20

NHB24-1680 EOCODE: ARAAD04010*387*NH

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2009: Area 12308: 1 observed.
General Area: 2009: Area 12308: In residential building.
General Comments: --
Management Comments: --

Location

Survey Site Name: Nesenkeag Brook
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2009: Area 12308: 13 Delta Drive, Suite 7, Londonderry.

Dates documented

First reported: 2009-09-23 Last reported: 2009-09-23

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARAAD04010*724*NH

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status	**Conservation Status**
Federal: Not listed	Global: Apparently secure but with cause for concern
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2012: Area 13045: 1 adult observed.
General Area: 2012: Area 13045: Gravel road shoulder near wetland forest.
General Comments: --
Management Comments: --

Location

Survey Site Name: Nesenkeag Brook
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2012: Area 13045: Aviation Park Drive, Londonderry, just before cul-de-sac at end of road.

Dates documented

First reported: 2012-06-07 Last reported: 2012-06-07

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARAAD04010*949*NH

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status	**Conservation Status**
Federal: Not listed	Global: Apparently secure but with cause for concern
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2014: Area 13919: 1 adult observed, sex unknown.
General Area: 2014: Area 13919: Office park just west of Little Cohas Brook
General Comments: --
Management Comments: --

Location

Survey Site Name: Nesenkeag Brook
Managed By:

County: Rockingham
Town(s): Londonderry
Size: .4 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2014: Area 13919: Outside of office building on Delta Drive, Londonderry (42.91197, -71.41648).

Dates documented

First reported: 2014-06-12 Last reported: 2014-06-12

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARAAD04010*139*NH

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2004: Area 9278: 1 turtle.
General Area: --
General Comments: --
Management Comments: --

Location

Survey Site Name: Nesenkeag Brook
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2004: Area 9278: End of Delta Road off of Harvey Road behind the Londonderry Armed Forces Reserve Center.

Dates documented

First reported: 2004-05-15 Last reported: 2004-05-15

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARADB17020*008*NH

New Hampshire Natural Heritage Bureau - Animal Record

Eastern Hognose Snake (*Heterodon platirhinos*)

Legal Status	**Conservation Status**
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2012: Area 13089: 1 adult observed, 18-20" in length. 2008: Area 11548: 1 adult seen. 1984: Area 12169M: 1 observed. 1979: Area 11548a: 1 snake found in garden and killed. 1972: Area 6596: 1 seen. Adult. Area 12169M: 1 individual observed, 16-18 inches long.

General Area: 2012: Area 13089: Residential yard in wooded area. 2008: Area 11548: It was located just to the north and east of the bigger pond on the north end of the parcel. 1979: Area 11548a: Snake found in garden. 1972: Area 12169M: In a small cemetary. Area shaded and grassy.

General Comments: 2003: Area 12169M: Formerly Pettengill Cemetery. Now busy road. NHNHB was contacted on 29 June 1984 by a neighbor of individual who killed the snake.

Management Comments: --

Location

Survey Site Name: Litchfield
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 12.5 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2012: Area 13089: End of Sunflower Lane in Londonderry. The woods in the back border the Manchester town line. 1979: Litchfield. About 4 houses over town line from Manchester on Rte. 3. 1972: Area 6596: Bill Boucher residence, 272 Litchfield Road, 1/2 mile east of Route 3A at the junction of Watts Brook. Area 12169M: Londonderry. Found in a small old cemetary on north side of Pettingill Road which runs west off of Harvey Road. Near Little Cohas Marsh.

Dates documented

First reported: 1972-07-01 Last reported: 2012-09-02

NHB24-1680 EOCODE: ARADB17020*008*NH

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARADB17020*012*NH

New Hampshire Natural Heritage Bureau - Animal Record

Eastern Hognose Snake (*Heterodon platirhinos*)

Legal Status	**Conservation Status**
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 1984: Area 12169M: 1 observed. 1972: Area 12169M: 1 individual observed, 16-18 inches long.
General Area: 1971: Area 12169M: In a small cemetary. Area shaded and grassy.
General Comments: 2003: Area 12169M: Formerly Pettengill Cemetery. Now busy road. More field work needed.
Management Comments: --

Location

Survey Site Name: Londonderry Cemetary
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 2.8 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 1972: Area 12169M: Londonderry. Found in a small old cemetary on north side of Pettingill Road which runs west off of Harvey Road. Near Little Cohas Marsh.

Dates documented

First reported: 1971 Last reported: 1984-07-01

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARADB17020*022*NH

New Hampshire Natural Heritage Bureau - Animal Record

Eastern Hognose Snake (*Heterodon platirhinos*)

Legal Status	**Conservation Status**
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 1972: Area 6596: 1 seen. Adult.
General Area: --
General Comments: --
Management Comments: --

Location

Survey Site Name: Watts Brook
Managed By: The Pathway Common Land

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 1972: Area 6596: Bill Boucher residence, 272 Litchfield Road, 1/2 mile east of Route 3A at the junction of Watts Brook.

Dates documented

First reported: 1972-07-01 Last reported: 1972-07-01

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: AMAEB01110*020*NH

New Hampshire Natural Heritage Bureau - Animal Record

New England Cottontail (*Sylvilagus transitionalis*)

Legal Status	Conservation Status
Federal: Not listed	Global: Rare or uncommon
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2020: Buckthorn: Winter observations at 8 points. Charlotte: Winter observations at 4 points. Pettengill: Winter observations at 5 points. Stonyfield: Winter observations at 9 points. 2019: Buckthorn: Winter observations at 38 points. Charlotte: Winter observations at 2 points. Pettengill: Winter observations at 4 points. Stonyfield: Winter observations at 39 points. 2018: Buckthorn: Winter observations at 32 points. Charlotte: Winter observations at 2 points. Stonyfield: Winter observations at 21 points. 2017: Buckthorn: Winter observations at 5 points. Charlotte: Winter observations at 33 points. Pettengill: Winter observations at 2 points. Stonyfield: Winter observations at 55 points. 2016: Buckthorn: Winter observations at 42 points. Pettengill: Winter observation at 1 point. Stonyfield: Winter observations at 38 points. 2015: Winter observations at 5 points. 2014: Winter observations at 3 points. 2013: Winter observations at 13 points. 2011: Winter observations at 32 points. 2002: 1+ age and sex unknowns (Obs_id 744).
General Area: 2002: Terrestrial: grassland / field (Obs_id 744).
General Comments: 2002: Results of J. Litvaitis Regional NEC Survey - 2003 (Obs_id 744).
Management Comments: --

Location

Survey Site Name: Little Cohas Brook, south of
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 88.6 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2017: Charlotte: [Points on NH DOT property at north end of Charlotte Street, Manchester, south of Raymond Wieczorek Drive.] 2016: Pettengill: [6 Pettengill Road, Manchester]. Buckthorn: [Points east of Manchester Airport and west of Mammoth Road]. Stonyfield:

NHB24-1680 EOCODE: AMAEB01110*020*NH

[Points in the vicinity of the Stonyfield yogurt facility off Burton Drive, Londonderry]. 2002: Stonyfield Farm (Obs_id 744).

Dates documented

First reported:	2002-02-02	Last reported:	2020-02-28

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARADB0701D*019*NH

New Hampshire Natural Heritage Bureau - Animal Record

Northern Black Racer (*Coluber constrictor constrictor*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2004: 1 seen. Adult. (Obs_id 2004.0054).
General Area: 2004: Dirt road next to field with old grass, near beaver pond. Restored gravel pit. Lots of dirt bike/ATV trails. Big housing development nearby. (Obs_id 2004.0054).
General Comments: --
Management Comments: --

Location

Survey Site Name: Manchester Industrial Park, south of
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2004: Rehabilitated gravel pit on west end of Pettingil Road (Obs_id 2004.0054).

Dates documented

First reported: 2004-04-27 Last reported: 2004-04-27

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARADB47010*030*NH

New Hampshire Natural Heritage Bureau - Animal Record

Smooth Green Snake (*Opheodrys vernalis*)

Legal Status	**Conservation Status**
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Special Concern	State: Rare or uncommon

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2003: Area 1044: 1 observed.
General Area: 2003: Area 1044: Marsh.
General Comments: --
Management Comments: --

Location

Survey Site Name: Little Cohas Marsh
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2003: Area 1044: West shore of marsh, 1/4 mile south of the dam, on the perimeter of the Army National Guard detention pond

Dates documented

First reported: 2003-09-17 Last reported: 2003-09-17

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARAAD02010*079*NH

New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: --

Detailed Description: 1997: Area 9260: 1 adult (8-9 years old) turtle observed, 7-8 inches long.
General Area: --
General Comments: 1997: Area 9620: Airport mitigation site review. Land to be an industrial development.
Management Comments: --

Location

Survey Site Name: Watts Brook
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 1997: Area 9260: Small stream running west from Stonyfield Farm Yogurt.

Dates documented

First reported:	1997-05-01	Last reported:	1997-05-01

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

Appendix L – Permits

State of New Hampshire
DEPARTMENT OF NATURAL & CULTURAL RESOURCES
DIVISION OF HISTORICAL RESOURCES

172 Pembroke Road Concord, New Hampshire 03301
Phone: 603-271-3483 Fax: 603-271-3433
TDD Access: Relay NH 1-800-735-2964
nhdhr.dncr.nh.gov

March 27, 2025

TFMoran Bedford

Re: 2025PR00341 - Resource Recovery Center

Dear TFMoran Bedford,

In accordance with state and federal statutes [New Hampshire RSA 227C:9 and Section 106 of the National Historic Preservation Act (16 U.S.C. 470)] and with federal Advisory Council on Historic Preservation regulations, Protection of Historic Properties (36 CFR Part 800), the New Hampshire Division of Historical Resources/State Historic Preservation Office (NHSHPO) has reviewed information regarding the above-referenced project.

Based upon this review, no known historic resources appear to be affected by the project. Therefore, it is the opinion of the NHSHPO that the project will result in ***No Historic Properties Affected*** under 36 CFR Part 800.4(d)(1).

No further consultation is required unless there are any changes in approved plans, the need for additional work is identified, or an unanticipated discovery occurs. If further correspondence is required, please refer to the project review number noted above.

If you have any questions, please email Elizabeth Schneible at: elizabeth.a.schneible@dncr.nh.gov

Thank you for the opportunity to comment.

Sincerely,

Nadine Miller

Nadine Miller
Deputy State Historic Preservation Officer
NH Division of Historical Resources

Appendix M – Project Schedule (to be attached by the Contractor)

Appendix N – NRCS and Project Specific Soils Maps

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Rockingham County, New Hampshire

18252-00 NRCS Soils Report



May 13, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

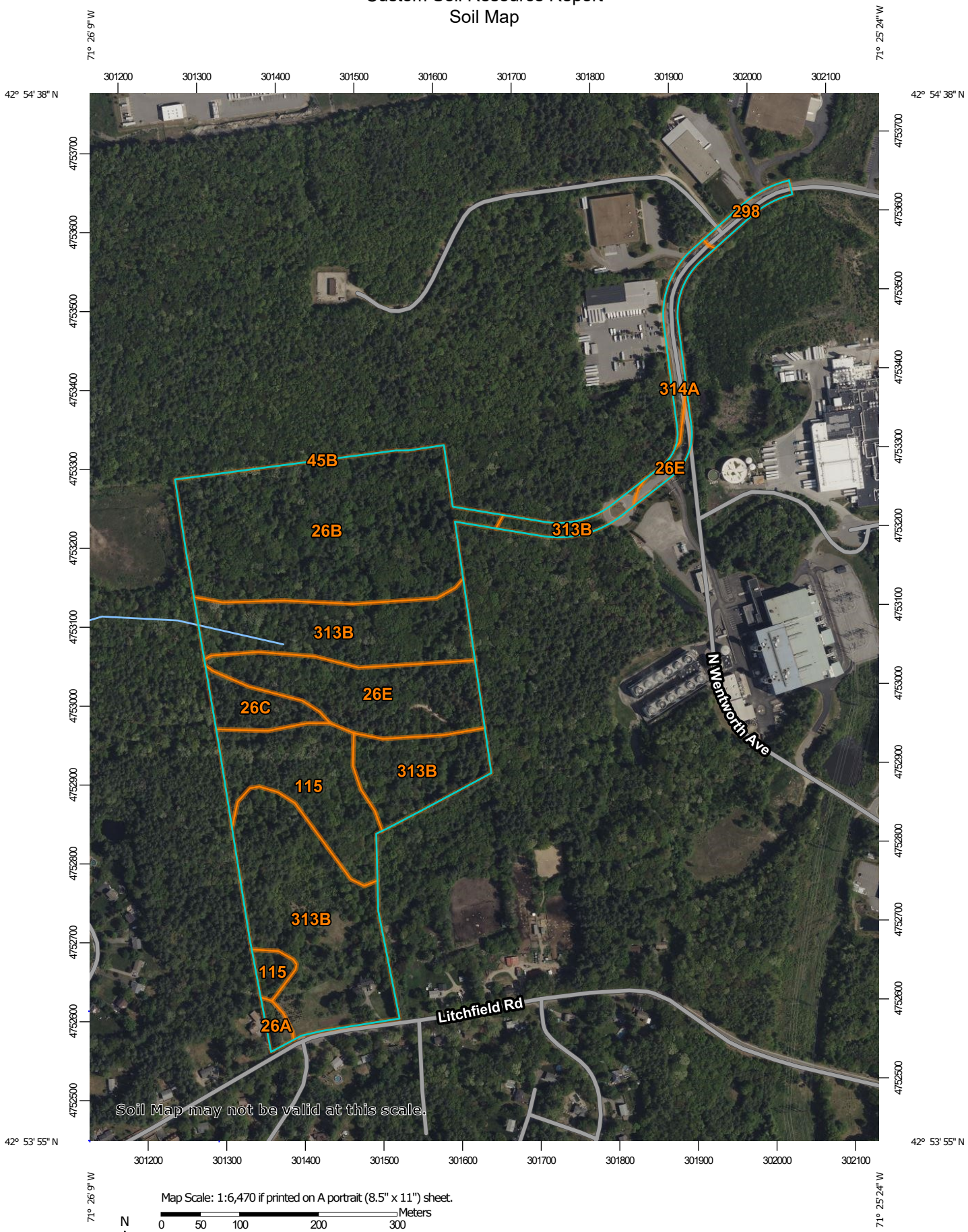
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:6,470 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 27, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
26A	Windsor loamy sand, 0 to 3 percent slopes	0.4	0.7%
26B	Windsor loamy sand, 3 to 8 percent slopes	15.4	29.1%
26C	Windsor loamy sand, 8 to 15 percent slopes	1.7	3.2%
26E	Windsor loamy sand, 15 to 60 percent slopes	6.6	12.5%
45B	Montauk fine sandy loam, 0 to 8 percent slopes, very stony	0.0	0.0%
115	Scarboro muck, coastal lowland, 0 to 3 percent slopes	6.1	11.6%
298	Pits, sand and gravel	0.6	1.1%
313B	Deerfield loamy fine sand, 3 to 8 percent slopes	21.0	39.7%
314A	Pipestone sand, 0 to 5 percent slopes	1.1	2.0%
Totals for Area of Interest		**52.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the

scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Rockingham County, New Hampshire

26A—Windsor loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svkg
Elevation: 0 to 990 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of local importance

Map Unit Composition

Windsor, loamy sand, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor, Loamy Sand

Setting

Landform: Outwash plains, outwash terraces, deltas, dunes
Landform position (three-dimensional): Tread, riser
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

O - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Deerfield, loamy sand

Percent of map unit: 10 percent
Landform: Deltas, terraces, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Hinckley, loamy sand

Percent of map unit: 5 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, crest, side slope, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

26B—Windsor loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svkf
Elevation: 0 to 1,210 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Farmland of local importance

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: Outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or schist and/or gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand

C - 25 to 65 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Eskers
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Deerfield, loamy sand

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

26C—Windsor loamy sand, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2svkq
Elevation: 0 to 1,260 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: — error in exists on —
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, riser
Down-slope shape: Convex
Across-slope shape: Convex, linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
Ap - 1 to 11 inches: loamy sand
Bw - 11 to 31 inches: loamy sand
C - 31 to 65 inches: sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Deerfield

Percent of map unit: 5 percent
Landform: Deltas, terraces, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

26E—Windsor loamy sand, 15 to 60 percent slopes

Map Unit Setting

National map unit symbol: 2w2ws
Elevation: 0 to 760 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: Dunes, deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 15 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Deerfield

Percent of map unit: 5 percent
Landform: Deltas, terraces, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

45B—Montauk fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w80v
Elevation: 0 to 1,070 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of local importance

Map Unit Composition

Montauk, very stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montauk, Very Stony

Setting

Landform: Recessionial moraines, ground moraines, hills, drumlins

Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Scituate, very stony

Percent of map unit: 6 percent
Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Canton, very stony

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, very stony

Percent of map unit: 4 percent

Landform: Depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

115—Scarboro muck, coastal lowland, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svkw
Elevation: 0 to 650 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Scarboro, coastal lowland, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scarboro, Coastal Lowland

Setting

Landform: Depressions, outwash deltas, outwash terraces, drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave, linear
Parent material: Sandy glaciofluvial deposits derived from schist and/or gneiss and/or granite

Typical profile

Oa - 0 to 8 inches: muck
A - 8 to 14 inches: mucky fine sandy loam
Cg1 - 14 to 22 inches: sand
Cg2 - 22 to 65 inches: gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: About 0 to 2 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F144AY031MA - Very Wet Outwash
Hydric soil rating: Yes

Minor Components

Swansea

Percent of map unit: 10 percent
Landform: Bogs, swamps
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Mashpee

Percent of map unit: 5 percent
Landform: Depressions, terraces, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

298—Pits, sand and gravel

Map Unit Composition

Pits: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

313B—Deerfield loamy fine sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2xfg9
Elevation: 0 to 1,190 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Deerfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deerfield

Setting

Landform: Outwash deltas, outwash terraces, outwash plains, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand
Bw - 9 to 25 inches: loamy fine sand
BC - 25 to 33 inches: fine sand
Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: About 15 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 11.0
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 7 percent
Landform: Outwash terraces, outwash plains, kame terraces, outwash deltas
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Wareham

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sudbury

Percent of map unit: 2 percent
Landform: Kame terraces, outwash deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread

Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Ninigret

Percent of map unit: 1 percent
Landform: Outwash plains, outwash terraces, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Convex, concave
Hydric soil rating: No

314A—Pipestone sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 9cn2
Elevation: 0 to 2,100 feet
Mean annual precipitation: 28 to 55 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Pipestone and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pipestone

Setting

Landform: Outwash terraces

Typical profile

H1 - 0 to 6 inches: sand
H2 - 6 to 33 inches: sand
H3 - 33 to 60 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: Yes

Minor Components

Chocorua
Percent of map unit: 5 percent
Landform: Bogs
Hydric soil rating: Yes

Not named wet
Percent of map unit: 5 percent
Landform: Outwash terraces
Hydric soil rating: Yes

Squamscott
Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Scarboro
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Deerfield
Percent of map unit: 5 percent
Hydric soil rating: No

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B A G
LAND CONSULTANTS

January 3, 2025

Nicholas Golan, P.E.
TF Moran Inc.
48 Constitution Drive
Bedford, NH 03110

RE: Purpose Energy Project [Map 14; Lot 39]
162 Litchfield Road, Londonderry, NH (17.0 Ac +/-)

Dear Nick:

Site Specific Soil Survey Technical Letter Report

At your request, we visited the above-referenced property to perform Site-Specific Soil Map (SSSM) services that will assist in the planning / design of a proposed land development project. Below is a summary report that details the standards utilized, mapped soil descriptions, and any limiting soil features encountered on the property.

Standards

The criteria under which the soil map was prepared is the *Site-specific Soil Mapping Standards for New Hampshire and Vermont*, Version 4.0, February 2011. The standards are based on a universally recognized taxonomic system of soil classification and are supported by national soil mapping standards established by the USDA National Cooperative Soil Survey. They allow for the development of multi-purpose soil map products that are carefully controlled and monitored through a state, regional and national quality assessment program. The SSSM's have been developed by the Society of Soil Scientists of Northern New England (SSSNNE) in cooperation with the USDA Natural Resources Conservation Service (NRCS). This map is a special product, intended for submission to NH DES Alteration of Terrain. This map is not a product of the USDA Natural Resource Conservation Service.

The Site-specific Soil Map Units identified on this property come from the *New Hampshire State-wide Numerical Soils Legend*, Issue 10, January 2011. This document represents the latest release of the permanent New Hampshire State-Wide Numerical Soils Legend since originally developed and adopted by the NRCS of NH in 1985.

Base Map

The soil map was developed on a base map of 1"= 100', with contour intervals of two (2') feet, and ground control indicators provided with detail of existing wetland flag locations, existing stonewalls, and recently established survey traverse stations. The highest elevations are

positioned in the extremely northeast section of our study area. The lowest elevation, on the property, is located in the extreme southwest corner of the study area. Topographic & boundary survey information was compiled onto our base map by your office – TF Moran, Inc., Bedford, NH.

Location

The study site has no road frontage and is located north of Litchfield Road, west of Burton Drive and south of North Wentworth Avenue in the Town of Londonderry, NH. There are no abandoned concrete slabs or any evidence of any building structures on the subject parcel. The entire project study area is approximately 17.0 Ac.+/-. All proposed land improvements will be outside of any shoreland protection zone.

Geomorphology

The site is situated in an area of predominant upland glacial outwash parent materials. There is an intermittent stream flowing from east to west and entering our property along the eastern property line. The observed soil had very good deep depth to ledge. This glaciofluvial parent material onsite was deposited when the last glacial ice started receding / melting over 10,000 years ago.

Legend

The following is the soil identification legend for the site-specific soil map units used in the preparation of the map.

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	SOIL TAXONOMIC NAME	HSG CLASS	DRAINAGE CLASS
26	Windsor	A	Well Drained
313	Deerfield	B	Moderately-well Drained
546 /P	Walpole	C	Poorly Drained

Slope

Slope Designation	Percent Slope
B	0 to 8%
C	8 to 15%
D	15 to 25%
E	> 25%

Limiting Soil Features

Most of the upland areas on this property are in natural undisturbed condition. Very little evidence of any prior earth moving excavations or timber clear cutting activities observed. The soils are capable of providing for excellent Gateway Business zone developmental improvements. The majority of soils mapped are **26** – Windsor a well-drained to excessively

well drained glacial outwash with no restrictive layers in the subsoil or substratum horizons below the soil surface. These soils are very deep to ledge and have a high infiltration rate due to their fine to coarse sandy texture, with a single grain structure and loose consistence. The soils would fall into a hydrologic soil group 'A'.

In the slightly lower dry land elevations we mapped moderately-well drained **313** - Deerfield soils. These soil also have no restrictive features in subsoils or substratum horizons. These soils would fall under a hydrologic soil grouping 'B' category. Some of the lowest elevation soil areas are mapped as **546B**/P – Walpole soil series. These poorly drained soils have no restrictive features and still drain. They would have a slow infiltration rate when thoroughly wetted and fall into a HSG "C" category.

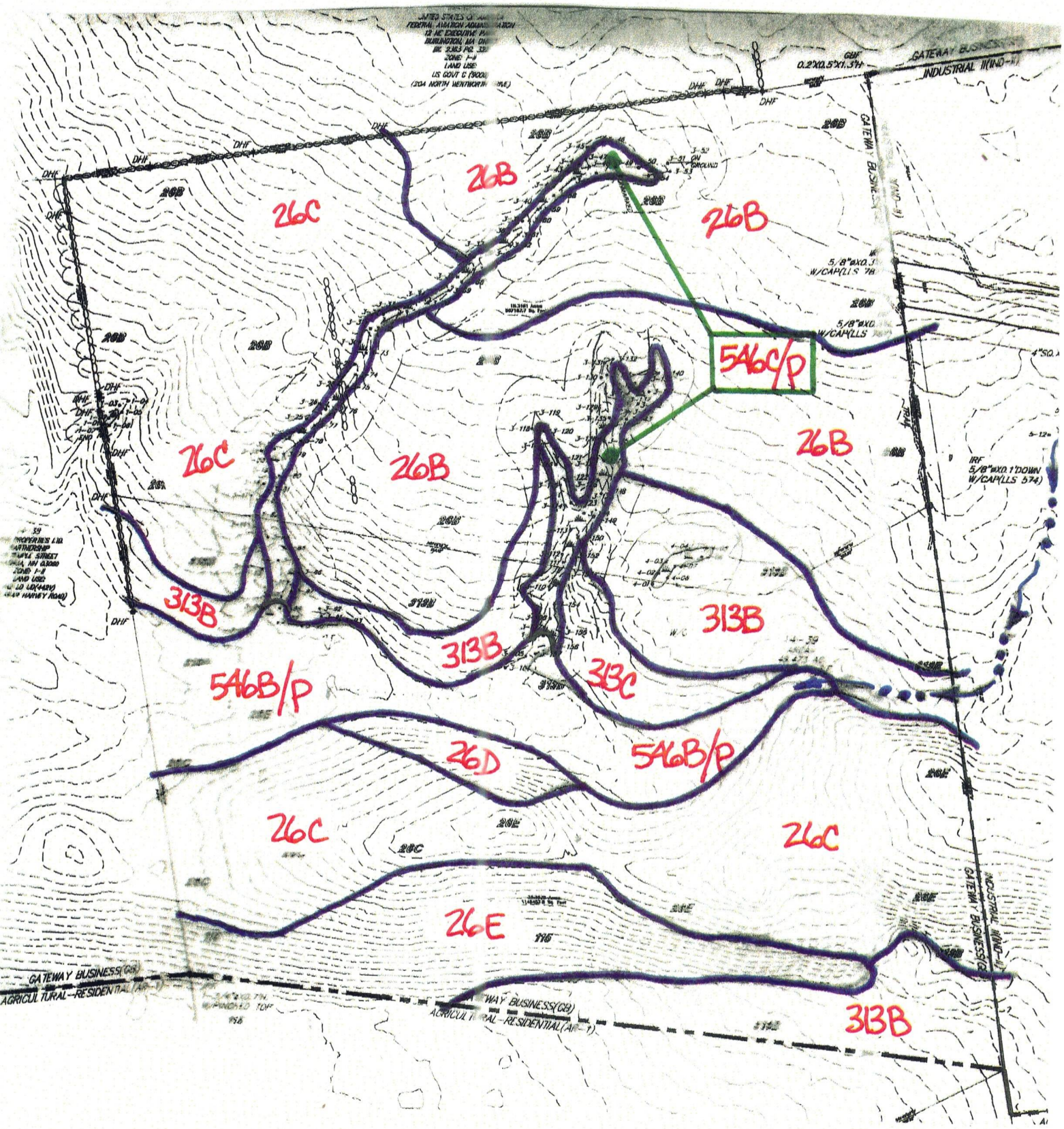
Sincerely,

Bruce A. Gilday

Bruce A. Gilday
Certified Soil Scientist



BAG:35104
Attachment



N.t.s.

BAS # 35104

Appendix O - Completed SWPPP Inspections

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE. LONDONDERRY, NEW HAMPSHIRE

GENERAL INFORMATION

OWNER
MAP 14 LOT 39
CODNER NICHOLAS F TRUST 2012
162 LITCHFIELD ROAD
LONDONDERRY, NH 03053
603-432-1100

APPLICANT
PUPROSEENERGY-LONDONDERRY, LLC
C/O SEAN O'NEIL
25 PELHAM ROAD, SUITE 102
SALEM, NH 03079
6172029156

PREPARED FOR
PUPROSEENERGY-LONDONDERRY, LLC
C/O SEAN O'NEIL
25 PELHAM ROAD, SUITE 102
SALEM, NH 03079
6172029156

RESOURCE LIST
TOWN MANAGER
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 151
SHAUN MULHOLLANDI, TOWN MANAGER

PLANNING & ECONOMIC DEVELOPMENT
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 149
KELLIE CARON, ASST. TOWN MANAGER, DIRECTOR OF ECONOMIC DEVELOPMENT

BUILDING, HEALTH, ZONING AND CODE ENFORCEMENT
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 161
NICK CODNER, CHIEF BUILDING INSPECTOR
& CODE ENFORCEMENT OFFICER

HEALTH DIVISION
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 151

PUBLIC WORKS & ENGINEERING
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 139
DAVE WHOLLEY, DIRECTOR PUBLIC WORKS & MUNICIPAL FACILITIES
JOHN TROTTIER, DIRECTOR OF ENGINEERING & ENVIRONMENTAL SERVICES

HIGHWAY DIVISION
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 152
DAVE WHOLLEY, DIRECTOR PUBLIC WORKS & MUNICIPAL FACILITIES

POLICE DEPARTMENT
268A MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1118
KIM ALAN BERNARD, CHIEF OF POLICE

FIRE DEPARTMENT
280 MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1124
PHIL LEBLANC, ACTING CHIEF

NHDES AOT
29 HAZEN DRIVE
CONCORD, NH 03302-0095
(603) 271-2303
AMY CLARK, PE, AOT SUPERVISOR

ASSOCIATED PROFESSIONALS
GEOTECHNICAL SERVICES
ARIES ENGINEERING
104 PLEASANT STREET
CONCORD, NH 03301
(603) 226-0374
GEORGE C. HOLT, P.G.

TRAFFIC ENGINEER
TFMORAN, INC.
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
ROBERT DUVAL, PE, PRINCIPAL

WETLAND SCIENTIST
TFMORAN, INC.
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
CHRISTOPHER K. DANFORTH, CWS

SOIL SCIENTIST
BAG LAND CONSULTANTS
43 ROCKINGHAM STREET
CONCORD, NH 03301
BRUCE A. GILDAY, CSS

ABUTTERS
R014-039-0
NICHOLAS F CODNER TRUST 2012
162 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-047-0
US OF AMERICA FED AVIATION ADMIN
12 NE EXECUTIVE PARK
BURLINGTON, MA 01803

R01-044-38
STATE OF NEW HAMPSHIRE
PO BOX 483, 1 HAZEN DRIVE
CONCORD, NH 03302-0483

R014-44-0
GRANITE RIDGE ENERGY, LLC
21 NORTH WENTWORTH AVE
LONDONDERRY, NH 03053

R014 LOTS 044-3 & 040-0
TRACIE L & BRUCE A LEMIEUX
154 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-039-1
VICTOR D & CECILIA C REIS
158 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-13
RICHARD A BELANGER
149 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-12
NICOLE M THOMAS
151 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-11JUSTIN M QUISH
153 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-10
SHARON B BARTHOLOMEW
155 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-9
SAHIN B DAYIOGLU
157 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-8
ERIC J AND AMBER E POMER
159 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-7
JOHN ALBERT & LISA MARIE KIRCALDIE
51 YELLOWSTONE ROAD
LONDONDERRY, NH 03053-2502

R011-020-6
MICHAEL A ST. PIERRE
163 LITCHFIELD ROAD
LONDONDERRY, NH 03053-7408

R011-020-5
CLARK FAMILY TRUST OF 2011
165 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-015-0
ERICK MENDONSA
167 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-051-0
CLAIRE M KELLY
166 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-050-0
BRUCE ALLAN & CINDY LOUISE GOODWIN
168 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-007-0
MICHAEL W SIRACUSE III
170 LITCHFIELD ROAD
LONDONDERRY, NH 03053

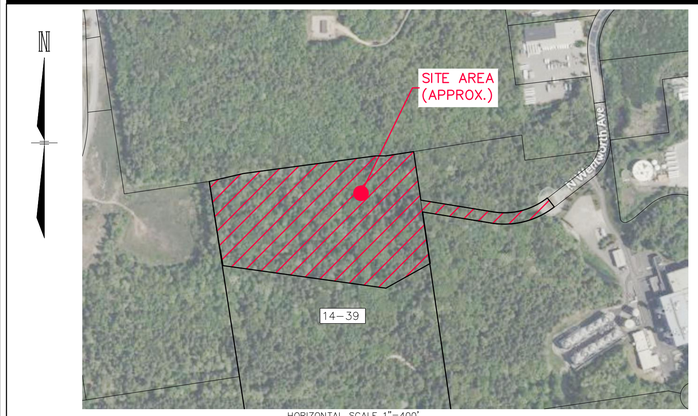
R014-005-0
ARIANNA ONEIL
172 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-048-1
STATE OF NEW HAMPSHIRE
PO BOX 483
CONCORD, NH 03302-0483

R-014-003-26
GYPSUM CONSTRUCTION CORP.
184 ROCKINGHAM ROAD
LONDONDERRY, NH 03053

R014-038-0
TANA PROPERTIES LTD. PARTNERSHIP
40 TEMPLE STREET
NASHUA, NH 03060

LOCATION PLAN



INDEX OF SHEETS

SHEET	SHEET TITLE
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C-03	NOTES
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C-04	SITE PREPARATION & DEMOLITION PLAN
C-05	OVERALL SITE PLAN
C-06	SITE LAYOUT PLAN
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C-08	DRAINAGE STRUCTURE TABLES
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PERMITS/APPROVALS

	NUMBER	APPROVED	EXPIRES
TOWN PLANNING BOARD SUBDIVISION APPROVAL			
TOWN PLANNING BOARD SITE PLAN REVIEW APPROVAL			
TOWN PLANNING BOARD DRIVEWAY PERMIT			
TOWN PLANNING BOARD CUP (WETLAND BUFFERS)			
TOWN PLANNING BOARD CUP (FRONTAGE)			
TOWN STORMWATER PERMIT			
TOWN SEWER DISCHARGE PERMIT			
TOWN INDUSTRIAL DISCHARGE PERMIT			
TOWN INDUSTRIAL DISCHARGE PERMIT			
US EPA CGP			
NHDES SOLID WASTE PERMIT			
NHDES INDUSTRIAL WASTEWATER DICHARGE PERMIT			
NHDES INDUSTRIAL WASTEWATER DICHARGE PERMIT			
NHDES AOT PERMIT			
NHDES SEWER CONNECTION PERMIT			
NHDES WETLAND PERMIT (MAJOR)			
NH NHB DATA CHECK	NHB24-1680	6/11/24	6/11/25
NH DHR RPR	2025PR00341	3/27/25	
FAA			

NHF&G AOT PERMIT CONDITIONS

1. BLANDING'S TURTLE (STATE ENDANGERED), EASTERN HOGNOSE SNAKE (STATE ENDANGERED), NEW ENGLAND COTTONTAIL (STATE ENDANGERED), SMOOTH GREEN SNAKE (SPECIAL CONCERN), SPOTTED TURTLE (STATE THREATENED), northern BLACK RACER (STATE THREATENED) OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. ALL OPERATORS AND PERSONNEL WORKING ON OR ENTERING THE SITE SHALL BE MADE AWARE OF THE POTENTIAL PRESENCE OF THESE SPECIES AND SHALL BE PROVIDED FLYERS THAT HELP TO IDENTIFY THESE SPECIES, ALONG WITH NHFG CONTACT INFORMATION. SEE FLYERS ON PLAN SHEET D-17.
2. RARE SPECIES INFORMATION (E.G. IDENTIFICATION, OBSERVATION AND REPORTING OF OBSERVATIONS, WHEN TO CONTACT NHFG IMMEDIATELY AND NHFG CONTACT INFORMATION) SHALL BE COMMUNICATED DURING MORNING TAILGATE MEETINGS PRIOR TO WORK COMMENCEMENT WHILE THE PROJECT IS UNDER ACTIVE CONSTRUCTION. SEE FLYERS ON PLAN SHEET D-17.
3. OBSERVATIONS OF EASTERN HOGNOSE SNAKE AND NORTHERN BLACK RACER SHALL BE REPORTED IMMEDIATELY TO NHFG WILDLIFE BIOLOGISTS MELISSA WINTERS (603-479-1129) AND BRENDAN CLIFFORD (603-944-0885) VIA GROUP TEXT. A PHOTOGRAPH WITH THE TEXT WILL BE PROVIDED IF FEASIBLE. IMMEDIATE REPORTING OF OBSERVATIONS IS CRITICAL AS NHFG BIOLOGISTS WILL NEED TO COLLECT DATA ON THE INDIVIDUAL. SEE FLYERS ON PLAN SHEET D-17.
4. NHFG SHALL HAVE THE OPPORTUNITY TO ATTEMPT TO TRAP AND RELOCATE ANY RABBITS THAT MAY BE ON SITE. ENTRAPMENT AND RELOCATION OF RABBITS SHALL BE COORDINATED NO LESS THAN THREE WEEKS IN ADVANCE WITH NHFG BEFORE WORK BEGINS.
5. ALL MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS, WITH THE EXCEPTION OF TURF REINFORCEMENT MATS, UTILIZED FOR, BUT NOT LIMITED TO, SLOPE PROTECTION, RUNOFF DIVERSION, SLOPE INTERRUPTION, PERIMETER CONTROL, INLET PROTECTION, CHECK DAMS, AND SEDIMENT TRAPS SHALL NOT CONTAIN PLASTIC, OR MULTIFILAMENT OR MONOFILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8 INCHES. SEE DETAILS ON SHEET D-01 AND D-02.
6. TURTLES MAY BE ATTRACTED TO DISTURBED GROUND DURING NESTING SEASON. TURTLE NESTING SEASON OCCURS APPROXIMATELY MAY 15TH – JULY 30TH. ALL TURTLE SPECIES NESTS AND NORTHERN BLACK RACER NESTS ARE PROTECTED BY NH LAWS. IF A NEST IS OBSERVED OR SUSPECTED, OPERATORS SHALL CONTACT JOSH MEGYESY AT NHFG IMMEDIATELY FOR FURTHER CONSULTATION. THE NEST OR SUSPECTED NEST SHALL BE MARKED (SURROUNDING ROPED OFF OR CONE BUFFER DEPLOYED) AND AVOIDED; THIS SHALL BE COMMUNICATED TO ALL PERSONNEL ONSITE. SITE ACTIVITIES SHALL NOT OCCUR IN THE AREA SURROUNDING THE NEST OR SUSPECTED NEST UNTIL FURTHER GUIDANCE IS PROVIDED BY NHFG.
10. ALL OBSERVATIONS OF THREATENED OR ENDANGERED SPECIES ON THE PROJECT SITE SHALL BE REPORTED IMMEDIATELY TO THE NHFG NONGAME AND ENDANGERED WILDLIFE ENVIRONMENTAL REVIEW PROGRAM BY PHONE AT 603-271-2461 AND BY EMAIL AT NHFGREVIEW@WILDLIFE.NH.GOV, WITH THE EMAIL SUBJECT LINE: NHB24-1680, DCT25-2647 LONDONDERRY GREEN ENERGY CAMPUS, WILDLIFE SPECIES OBSERVATION.
1. PHOTOGRAPHS OF THE OBSERVED SPECIES AND NEARBY ELEMENTS OF HABITAT OR AREAS OF LAND DISTURBANCE SHALL BE PROVIDED TO NHFG IN DIGITAL FORMAT AT THE ABOVE EMAIL ADDRESS FOR VERIFICATION, AS FEASIBLE.
11. IN THE EVENT A THREATENED OR ENDANGERED SPECIES IS OBSERVED ON THE PROJECT SITE DURING THE TERM OF THE PERMIT, THE SPECIES SHALL NOT BE DISTURBED, HANDLED, OR HARMED IN ANY WAY PRIOR TO CONSULTATION WITH NHFG AND IMPLEMENTATION OF CORRECTIVE ACTIONS RECOMMENDED BY NHFG.
   A. SITE OPERATORS SHALL BE ALLOWED TO RELOCATE WILDLIFE ENCOUNTERED IF DISCOVERED WITHIN THE ACTIVE WORK ZONE IF IN DIRECT HARM FROM PROJECT ACTIVITIES. WILDLIFE SHALL BE RELOCATED IN CLOSE PROXIMITY TO THE CAPTURE LOCATE BUT OUTSIDE OF THE WORK ZONE AND IN THE DIRECTION THE INDIVIDUAL WAS HEADING. NHFG SHALL BE CONTACTED IMMEDIATELY IF THIS ACTION OCCURS.
12. THE NHFG, INCLUDING ITS EMPLOYEES AND AUTHORIZED AGENTS, SHALL HAVE ACCESS TO THE PROPERTY DURING THE TERM OF THE PERMIT, ALONG WITH NHFG CONTACT INFORMATION. THE APPLICANT SHOULD NOTIFY NHFG 30 DAYS PRIOR TO STARTING SONSTRUCTION ACTIVITIES. NHFG SHOULD HAVE THE OPPURTUNITY TO ATTEMPT TO TRAP ANDD RELOCATE ANY RABBITS THAT MAY BE ON SITE.
13. SMOOTH GREEN SNAKE (SPECIAL CONCERN) OCCUR WITHIN THE VICINITY OF THE PROJECT AREA. ALL OPERATORS AND PERSONNEL WORKING ON OR ENTERING THE SITE SHOULD BE MADE AWARE OF THE POTENTIAL PRESENCE OF THIS SPECIES AND SHOULD BE PROVIDED FLYERS THAT HELP TO IDENTIFY THIS SPECIES, ALONG WITH NHFG CONTACT INFORMATION. SEE FLYER ON PLAN SHEET D-17.
14. A WILDLIFE EXCLUSIONARY BARRIER SHOULD BE INSTALLED AROUND THE PERIMETER OF THE SITE PRIOR TO APRIL 15TH AND MAINTAINED BETWEEN APRIL 15TH AND OCTOBER 15TH THROUGHOUT THE LIFE OF THE ACTIVE PROJECT/CONSTRUCTION ACTIVITES. THE WILDLIFE EXLUSIONARY BARRIER SHOULD BE BURIED TO A DEPTH OF NO LESS THAN 6-8" AND EXTEND NO LESS THAN 18" ABOVE EXISTING GRADE. THE WILDLIFE EXCULSIONARY BARRIER SHOULD BE INSPECTED DAILY FOR ANY DEFECTS AS WELL AS POSSIBLE TRAPPED WILDLIFE PRIOR TO SITE CONSTRUCTION ACTIVITIES.
15. WETLAND IMPACT SHOULD OCCUR BETWEEN APRIL 15TH AND OCTOBER 15TH TO AVOID IMPACTING OVERWINTERING TURTLES.
16. STAGING OF CONSTRUCTION EQUIPMENT/MATERIAL AND VEHICLE PARKING SHOULD NOT OCCUR IN SHRUB COVER OR WETLANDS AND SHRUB CONVER SHOULD NOT BE REMOVED.
17. CATCH BASINS AND OUTLET CONTROL STRUCTURES SHOULD NOT CONTAIN SUMPS AND SHOULD HAVE GRATE OPENINGS NO LARGER THAN 2" X 2".
18. OUTLET CONTROL STRUCTURES SHOULD BE A MINIMUM OF 12-18" ABOVE GRADE AND SET BACK AT LEAST 3' FROM ADJACENT SLOPES.
19. RIP-RAP SHOULD BE FILLED WITH FINER MATERIAL (NATIVE WETLAND MATERIAL, NATIVE WETLAND SEED MIX, OR GRAVEL IN BETWEEN RIP-RAP) TO CREATE A RELATIVELY SMOOTH SURFACE FOR WILDLIFE TO TRAVERSE.
20. IF HYDROSEEDING IS DEEMED NECESARY, THE MIX SHOULD NOT CONTAIN MICROPLASTICS AND DYES SHOULD BE WATER-SOLUABLE AND ECO-FRIENDLY. HYDROSEEDING SHOULD NOT OCCUR WITHIN 75 FEET OF WETLANDS. SEE PLAN SHEETS C-06.
21. AVOID OR MINIMIZE THE USE OF FERTILIZERS IN UPLAND AREAS OR TRANSITION ZONES. IF FERTILIZERS ARE NECESSARY, USE ORGANIC VERSUS SYNTHETIC FERTILIZER OPTIONS. SYNTHETIC OPTIONS SHOULD BE AVOIDED; HOWEVER, IF CHOSEN, THEY SHOULD BE CONTROLLED-RELEASED/SLO-RELEASED AND AT LOW STRENGTHS. SEE PLAN SHEETS C-06.
22. A NATIVE SEED MIXTURE SHOULD BE APPLIED TO ALL AREAS AFFECTED BY CONSTRUCTION. PLEASE SEE THE MODIFIED NEW ENGLAND CONSERVATION/WETLAND MIX BY NEW ENGLAND WETLAND PLANTS, INC AS A SEED MIXTURE OPTION THAT MAY BE USED IN AREA AFFECTED BY CONSTRUCTION. THE SEED MIXES SHALL NOT CONTAIN INVASIVE SPECIES SUCH AS CROWN VETCH, BIRD'S-FOOT TRFOIL, OXEYE DAISY, ALSIKE CLOVER, AND FLATPEA. SEE PLAN SHEET C-03 OR D-18
23. MITIGATION REQUIREMENTS INCLUDED WITH NHFG'S REVIEW AND RECOMMENDATIONS ARE CONSISTEN WITH AN AGREEMENT BETWEEN THE TOWN OF LONDONDERRY AND NHFG THAT WAS ENTERED INTO EFFECT ON MAY 28, 2019 THAT REQUIRES A MITIGATION FEE FOR EACH INDIVIDUAL PROJECT THAT OCCURS WITHIN A PREDEFINED AREA WITHIN LONDONDERRY. PER RSA 212-A:16, A MITIGATION FEE BASED ON A DISTURBANCE AREA SHOULD BE MADE PAYABLE TO THE NEW HAMPSHIRE FISH AND GAME DEPARTMENT FOR NEGATIVE IMPACTS TO NEW ENGLAND COTTONTAIL, A STATE-ENDANGERED SPECIES. THE MEMO FIELD SHOULD IDENTIFY "NONGAME AND ENDANGERED WILDLIFE PROGRAM, NHB24-1680, DCT25-2647". THIS CHECK SHOULD BE ISSUED AND SUBMITTED TO NHFG FOLLOWING PERMIT APPROVAL AND MUST BE RECEIVED PRIOR TO ANY WORK OCCURRING ON THE SITE.
24. THESE CONSERVATION MEASURES DO NOT CONSTIUTION COMPLIANCE WITH THE FEDERAL ENGANGED SPECIES ACT (ESA). THERE MAY BE OCCURRENCES OF FEDERALLY LISTED SPECIES IN NEW HAMPSHIRE THAT ARE NOT INCLUDED ON THE DATACHECK LETTER. PLEASE VISIT THE US FISH AND WILDLIFE SERVICES'S (USFWS) INFORMATION FOR PLANNING AND CONSULTATION WEBSITE (IPAC; HTTPS://IPAC.ECOSPHERE.FWS.GOV/) FOR AN OFFICIAL LIST OF FEDERALLY LISTED SPECIES THAT MAY BE PRESENT IN YOUR PROJECT AREA. IF A FEDERAL AGENCY IS INVOLVED IN YOUR PROJECT THROUGH FUNDING, PERMIT, OR OTHER AUTHORIZATION, COORDINATE YOUR IPAC RESULTS WITH YOUR POINT OF CONTACT AT THAT AGENCY FOR FURTHER ESA REVIEW. IF THERE IS NO FEDERAL AGENCY NEXUS TO YOUR PROJECT AND YOU DETERMINE THOUGH IPAC, HABITAT EVALUATIONS, ECT. THAT A PROJECT MAY CAUSE TAKE OF FEDERALLY LISTED SPECIES, WE RECOMMENT COORDIANTION WITH THE USFWS' NEW ENGLAND GFIELD OFFICE (NEWENGLAND@FWS.GOV; 603-223-2541)

WAIVERS

THE FOLLOWING WAIVERS FROM THE TOWN OF LONDONDERRY SITE REVIEW REGULATIONS IS REQUESTED FROM THE PLANNING BOARD:

1. TOWN OF LONDONDERRY SITE REVIEW REGULATIONS SECTION 3.09(d)(TABLE B) – TO USE ITE GENERATION MANAUL FOR PARKING CALCULATION.
2. TOWN OF LONDONDERRY SITE REVIEW REGULATIONS SECTION 3.10(g)(1) – TO WAIVE AN INTERIOR PARKING LANDSCAPE AREA.
2. TOWN OF LONDONDERRY SITE REVIEW REGULATIONS SECTION 4.12.c.19.viii – TO WAIVE DELINEATING TREES WITH GREATER THEN 15" DIAMETER

Approved by the Londonderry, NH Planning Board for Phase _____

on Date:_____

Certified by:

_____

_____

OWNER'S SIGNATURE

_____ 12/22/2025

OWNER OR AUTHORIZED AGENT *DATE*

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

COVER SHEET

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER STATE OF NEW HAMPSHIRE
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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48 Constitution Drive, Bedford, N.H. 03110

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

DIG SAFE NH 811 – CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE		DR		FB	–	
18252-02		CK		CADFILE	18252-02 COVER & DETAILS	C-01

Dec 23, 2025 - 2:14pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 Cover & Details.dwg

LEGEND

PROPOSED

- PROPERTY LINE
- ZONING LINE
- EASEMENT
- BASELINE
- FLOODPLAIN
- EDGE OF WATERBODY
- EDGE OF WETLAND
- SETBACK (WETLAND)
- SETBACK (STRUCTURE)
- SETBACK (PARKING)
- SETBACK (LANDSCAPE)
- GRAVEL ROAD
- EOP — EDGE OF PAVEMENT
- VGC — VERTICAL GRANITE CURB
- SGC — SLOPED GRANITE CURB
- CC — CONCRETE CURB
- ICC — INTEGRATED CONCRETE CURB
- BIT — BITUMINOUS ASPHALT CURB
- CCB — CAPE COD BERM
- SAWCUT
- BUILDING
- BUILDING ROOF OVERHANG
- BUILDING FOUNDATION
- BUILDING ENTRANCE
- OVERHEAD DOOR
- TREE LINE
- FENCE (CHAIN LINK)
- FENCE (WIRE)
- FENCE (STOCKADE)
- GUARDRAIL
- BLANKET SLOPE PROTECTION
- RETAINING WALL
- SILT FENCE
- SILT SOCK
- SOIL BOUNDARY
- LIMIT OF GRADING
- 100 — CONTOUR
- TC100.50 / BC100.00 OR 100.00 — SPOT GRADE
- ## — PARKING COUNT
- DSLY — YELLOW DOUBLE SOLID LINE
- SSLY — YELLOW SINGLE SOLID LINE
- SSLW — WHITE SINGLE SOLID LINE
- SBLW — WHITE SINGLE BROKEN LINE
- STOP — STOP BAR
- CROSSWALK
- ACCESSIBLE PARKING SYMBOL
- PAVEMENT ARROW
- TRAFFIC FLOW ARROW (NOT PAINTED)
- SIGN (SINGLE POST)
- SIGN (DOUBLE POST)
- SIGN (PYLON)
- SIGN (MONUMENT)
- BOLLARD
- D — DUMPSTER PAD

PROPOSED

- CONCRETE
- GRAVEL
- WETLAND IMPACT
- CONSTRUCTION ENTRANCE
- SNOW STORAGE
- RIPRAP
- INLET PROTECTION
- FLOW ARROW
- RIDGE — GRADE BREAK RIDGE
- DRAIN LINE
- DRAINAGE SWALE
- STORMWATER BMP
- S — SEWER LINE
- FM — SEWER FORCE MAIN LINE
- W — WATER LINE
- G — GAS LINE
- OHE — OVERHEAD UTILITY LINE
- UGE — UNDERGROUND UTILITY LINE
- CATCH BASIN
- DRAIN INLET
- OUTLET CONTROL STRUCTURE
- ROOF DRAIN
- DRAIN CLEANOUT
- DRAIN MANHOLE
- FARED END SECTION
- SEWER CLEAN OUT
- SEWER MANHOLE
- SEWER VENT
- DRAIN/SEWER/WATER PLUG OR CAP
- HYDRANT
- FIRE DEPARTMENT CONNECTION
- WATER GATE VALVE
- WATER SHUTOFF
- THRUST BLOCK
- WATER METER
- WATER MANHOLE
- WELL
- GAS GATE VALVE
- GAS SHUT OFF
- GAS METER
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- TRAFFIC CONTROL CABINET
- ELECTRIC HANDHOLE
- ELECTRIC PULL BOX
- ELECTRIC METER
- FLOOD LIGHT
- LIGHT POLE
- UTILITY POLE
- GUY POLE
- T — TRANSFORMER PAD
- B-# — BORING LOCATION
- TP-# — TEST PIT LOCATION
- IT-# — INFILTRATION TEST LOCATION
- MW-# — MONITORING WELL

ABBREVIATIONS

GENERAL

ABAN	ABANDON
AC	ACRES
ADJ	ADJUST
APPROX	APPROXIMATE
BC	BOTTOM OF CURB
BIT	BITUMINOUS
BK/PG	BOOK & PAGE
BLDG	BUILDING
BMP	BEST MANAGEMENT PRACTICE
BS	BOTTOM OF SLOPE
BW	BOTTOM OF WALL
CONC	CONCRETE
COORD	COORDINATE
DIA	DIAMETER
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EXIST	EXISTING
FFE	FINISHED FLOOR ELEVATION
FND	FOUNDATION
HP	HIGH POINT
INV	INVERT ELEVATION
IT	INFILTRATION TEST
L	LENGTH
LF	LINEAR FEET
LSA	LANDSCAPE AREA
MAX	MAXIMUM
MIN	MINIMUM
N/F	NOW OR FORMERLY
NHFG	NEW HAMPSHIRE FISH & GAME
NTS	NOT TO SCALE
OC	ON CENTER
PAVE	PAVEMENT
PERF	PERFORATED
PROP	PROPOSED
R	RADIUS
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
REM	REMOVE
RET	RETAIN
RIM	RIM ELEVATION
ROW	RIGHT OF WAY
S	SLOPE
SF	SQUARE FEET
SW	SIDEWALK
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TP	TEST PIT
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
WCR	ACCESSIBLE WHEELCHAIR RAMP
W/	WITH

UTILITIES

CB	CATCH BASIN
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
COND	CONDUIT
DCB	DOUBLE CATCH BASIN
DIP	DUCTILE IRON PIPE
DMH	DRAIN MANHOLE
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FES	FLARED END SECTION
GT	GREASE TRAP
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HH	HANDHOLE
HW	HEADWALL
HYD	HYDRANT
LP	LIGHT POLE
OCS	OUTLET CONTROL STRUCTURE
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
SMH	SEWER MANHOLE
SOS	SEDIMENT OIL SEPARATOR
TSV	TAPPING SLEEVE, VALVE, AND BOX
UP	UTILITY POLE

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GENERAL NOTES

1. THESE PLANS ARE PERMIT DRAWINGS ONLY AND HAVE NOT BEEN DETAILED FOR CONSTRUCTION OR BIDDING.
2. THESE PLANS WERE PREPARED UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER. TFMORAN, INC. ASSUMES NO LIABILITY AS A RESULT OF ANY CHANGES OR NON-CONFORMANCE WITH THESE PLANS EXCEPT UPON THE WRITTEN APPROVAL OF THE ENGINEER OF RECORD.
3. ALL IMPROVEMENTS SHOWN ON THE SITE PLAN SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE PLAN BY THE PROPERTY OWNER AND ALL FUTURE PROPERTY OWNERS. NO CHANGES SHALL BE MADE TO THIS SITE PLAN WITHOUT THE EXPRESS APPROVAL OF THE LONDONDERRY PLANNING BOARD.
4. ALL WORK SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS OF THE TOWN OF LONDONDERRY, AND SHALL BE BUILT IN A WORKMANLIKE MANNER IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. ALL WORK TO CONFORM TO TOWN OF LONDONDERRY DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS. ALL WORK WITHIN THE RIGHT-OF-WAY OF THE LONDONDERRY AND/OR STATE SHALL COMPLY WITH APPLICABLE STANDARDS. COORDINATE ALL WORK WITHIN THE RIGHT-OF-WAY WITH APPROPRIATE LONDONDERRY, COUNTY, AND/OR STATE AGENCY.
5. THE SITE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH APPLICABLE SECTIONS OF ENV-WQ 1500. THE SITE CONTRACTOR SHALL NOTIFY THE ENGINEER IN ADVANCE OF CONSTRUCTION OF EACH STORMWATER FACILITY TO COORDINATE REQUIRED INSPECTIONS. THE CONTRACTOR SHALL TAKE PROGRESS PHOTOS DURING CONSTRUCTION OF ALL STORMWATER DRAINAGE COMPONENTS AND SEND TO THE ENGINEER.
6. SEE EXISTING CONDITIONS PLAN FOR THE HORIZONTAL AND VERTICAL DATUM.
7. SEE EXISTING CONDITIONS PLAN FOR BENCHMARK INFORMATION. VERIFY TBM ELEVATIONS PRIOR TO CONSTRUCTION.
8. CONTACT EASEMENT OWNERS PRIOR TO COMMENCING ANY WORK WITHIN THE EASEMENTS.
9. PRIOR TO COMMENCING ANY SITE WORK, ALL LIMITS OF WORK SHALL BE CLEARLY MARKED IN THE FIELD.
10. SITE WORK SHALL BE CONSTRUCTED FROM A COMPLETE SET OF PLANS, NOT ALL FEATURES ARE DETAILED ON EVERY PLAN. THE ENGINEER IS TO BE NOTIFIED OF ANY CONFLICT WITHIN THIS PLAN SET.
11. TFMORAN, INC. ASSUMES NO LIABILITY FOR WORK PERFORMED WITHOUT AN ACCEPTABLE PROGRAM OF TESTING AND INSPECTION AS APPROVED BY THE ENGINEER OF RECORD.
12. TEMPORARY FENCING SHALL BE PROVIDED AND COVERED WITH A FABRIC MATERIAL TO CONTROL DUST MITIGATION.
13. ALL DEMOLITION SHALL ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKWAYS, AND ANY OTHER ADJACENT OPERATING FACILITIES. PRIOR WRITTEN PERMISSION FROM THE OWNER/DEVELOPER AND LOCAL PERMITTING AUTHORITY IS REQUIRED IF CLOSURE/OBSTRUCTIONS TO ROADS, STREET, WALKWAYS, AND OTHERS IS DEEMED NECESSARY. CONTRACTOR TO PROVIDE ALTERNATE ROUTES AROUND CLOSURES/OBSTRUCTIONS PER LOCAL/STATE/FEDERAL REGULATIONS.
14. REFER TO ARCHITECTURAL PLANS FOR LAYOUT OF BUILDING FOUNDATIONS AND CONCRETE ELEMENTS WHICH ABUT THE BUILDING SUCH AS STAIRS, SIDEWALKS, LOADING DOCK RAMPS, PADS, AND COMPACTOR PADS. DO NOT USE SITE PLANS FOR LAYOUT OF FOUNDATIONS.
15. IN THE EVENT OF A CONFLICT BETWEEN PLANS, SPECIFICATIONS, AND DETAILS, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATION.
16. IF CONDITIONS AT THE SITE ARE DIFFERENT THAN SHOWN ON THE PLANS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH THE AFFECTED WORK.
17. CONTRACTOR'S GENERAL RESPONSIBILITIES:
    - A. BID AND PERFORM THE WORK IN ACCORDANCE WITH ALL LOCAL, STATE, AND NATIONAL CODES, SPECIFICATIONS, REGULATIONS, AND STANDARDS AND CONDITIONS OF ALL PROJECT-SPECIFIC PERMITS AND APPROVALS AS LISTED ON THE COVER SHEET TO THESE PLANS OR OTHERWISE REQUIRED.
    - B. NOTIFY ENGINEER IN WRITING OF ANY DISCREPANCIES OF PROPOSED LAYOUT AND/OR EXISTING FEATURES.
    - C. EMPLOY A LICENSED SURVEYOR TO DETERMINE ALL LINES AND GRADES AND LAYOUT OF SITE ELEMENTS AND BUILDINGS.
    - D. THE CONTRACTOR SHALL BE RESPONSIBLE TO BECOME FAMILIAR WITH THE SITE AND ALL SURROUNDING CONDITIONS. THE CONTRACTOR SHALL ADVISE THE APPROPRIATE AUTHORITY OF INTENTIONS AT LEAST 48 HOURS IN ADVANCE.
    - E. MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY WORK AT ALL TIMES.
    - F. IN ACCORDANCE WITH RSA 430:53 AND AGR 3800, THE CONTRACTOR SHALL NOT TRANSPORT INVASIVE SPECIES OFF THE PROPERTY, AND SHALL DISPOSE OF INVASIVE SPECIES ON-SITE IN A LEGAL MANNER.
    - G. COORDINATE WITH ALL UTILITY COMPANIES AND CONTACT DIGSAFE (811 OR 888-344-7233) AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION.
    - H. PROTECT NEW AND EXISTING BURIED UTILITIES DURING INSTALLATION OF ALL SITE ELEMENTS. DAMAGED UTILITIES SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
    - I. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR CONDITIONS AT THE SITE. THESE PLANS, PREPARED BY TFMORAN, INC., DO NOT EXTEND TO OR INCLUDE SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR THEIR EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE SURVEYOR OR ENGINEER HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED INTO THESE PLANS. THE CONSTRUCTION CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS WHICH MAY BE REQUIRED BY THE US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND/OR LOCAL REGULATIONS.
    - J. WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN CASE OF CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWING AND/OR SPECIFICATION, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR CLARIFICATIONS.
    - K. VERIFY LAYOUT OF PROPOSED BUILDING FOUNDATIONS WITH ARCHITECT AND THAT PROPOSED FOUNDATION MEETS PROPERTY LINE AND/OR WETLAND SETBACKS PRIOR TO COMMENCING ANY FOUNDATION CONSTRUCTION.
    - L. PROVIDE AN AS-BUILT PLAN AT THE COMPLETION OF THE PROJECT TO THE TOWN PLANNER AND PER LONDONDERRY REGULATIONS.
    - M. IF ANY DEVIATIONS FROM THE APPROVED PLANS AND SPECIFICATIONS HAVE BEEN MADE, THE SITE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS STAMPED BY A LICENSED SURVEYOR OR QUALIFIED ENGINEER ALONG WITH A LETTER STAMPED BY A QUALIFIED ENGINEER DESCRIBING ALL SUCH DEVIATIONS, AND BEAR ALL COSTS FOR PREPARING AND FILING ANY NEW PERMITS OR PERMIT AMENDMENTS THAT MAY BE REQUIRED.
    - N. AT COMPLETION OF CONSTRUCTION, THE SITE CONTRACTOR SHALL PROVIDE A LETTER CERTIFYING THAT THE PROJECT WAS COMPLETED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND A LETTER STAMPED BY A QUALIFIED ENGINEER THAT THEY HAVE OBSERVED ALL UNDERGROUND DETENTION SYSTEMS, INFILTRATION SYSTEMS, OR FILTERING SYSTEMS PRIOR TO BACKFILL, AND THAT SUCH SYSTEMS CONFORM TO THE APPROVED PLANS AND SPECIFICATIONS.
    - O. THIS PROJECT IS SUBJECT TO THE AOT PERMIT LISTED ON THE COVER SHEET. THE CONTRACTOR SHALL CONFORM TO ALL CONDITIONS OF THE PERMIT AND PROVIDE THE FOLLOWING DOCUMENTATION TO OWNER AND ENGINEER.
    - – ADVANCE WRITTEN NOTICE AT LEAST ONE WEEK PRIOR TO COMMENCING ANY WORK UNDER THE PERMIT AND NOTIFICATION TO AOT VIA THE START OF CONSTRUCTION FORM.
    - – UPON COMPLETION OF CONSTRUCTION, NOTIFICATION TO AOT VIA THE COMPLETION OF CONSTRUCTION FORM AND WRITTEN CERTIFICATION THAT:
      - A) ALL WORK UNDER THE PERMIT HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATION.
      - B) IF ANY DEVIATION FROM THE APPROVED PLANS WERE MADE, WRITTEN DESCRIPTIONS AND AS-BUILT DRAWINGS OF ALL SUCH DEVIATIONS, STAMPED BY A QUALIFIED ENGINEER, SHALL BE PROVIDED.
    - P. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT DEFICIENCIES EXIST IN THE APPROVED DESIGN DRAWINGS, THE OWNER SHALL BE REQUIRED TO CORRECT THE DEFICIENCIES TO MEET THE REQUIREMENTS OF THE REGULATIONS AT NO EXPENSE TO THE TOWN.
    - Q. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE TOWN.
    - R. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO TOWN OF LONDONDERRY SUBDIVISION REGULATIONS AND THE LATEST EDITION OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
    - S. IN ACCORDANCE WITH SECTION 6.01 OF THE LONDONDERRY SITE PLAN REGULATIONS AND RSA § 676:13, ALL IMPROVEMENTS SPECIFIED ON THESE SITE PLANS SHALL BE CONSTRUCTED, COMPLETED, AND INSPECTED AND APPROVED BY THE TOWN OF LONDONDERRY PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
    - T. IN ACCORDANCE WITH SECTION 6.01 OF THE LONDONDERRY SITE PLAN REGULATIONS AND RSA § 676:12, ALL OFF-SITE IMPROVEMENTS SPECIFIED ON THESE SITE PLANS SHALL BE CONSTRUCTED, COMPELTED, AND INSPECTED AND APPROVED BY THE TOWN OF LONDONDERRY (AND/OR THE NHDOT, IF APPLICABLE) PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

UTILITY NOTES

1. LENGTH OF PIPE IS FOR CONVENIENCE ONLY. ACTUAL PIPE LENGTH SHALL BE DETERMINED IN THE FIELD.
2. ALL PROPOSED UTILITY WORK, INCLUDING MATERIAL, INSTALLATION, TERMINATION, EXCAVATION, BEDDING, BACKFILL, COMPACTION, TESTING, CONNECTIONS, AND CONSTRUCTION SHALL BE COORDINATED WITH AND COMPLETED IN ACCORDANCE WITH THE APPROPRIATE REQUIREMENTS, CODES, AND STANDARDS OF ALL CORRESPONDING UTILITY ENTITIES AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING AND DETERMINING THE LOCATION, SIZE, AND ELEVATION OF ALL EXISTING UTILITIES, SHOWN OR NOT SHOWN ON THESE PLANS, PRIOR TO THE START OF ANY CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES FOUND INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION BE AGREED TO BY THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT "DIGSAFE" (811) AT LEAST 72 HOURS BEFORE DIGGING.
4. COORDINATE ALL WORK ADJACENT TO PROPOSED BUILDINGS WITH ARCHITECTURAL BUILDING DRAWINGS. CONFIRM UTILITY PENETRATIONS AND INVERT ELEVATIONS ARE COORDINATED PRIOR TO INSTALLATION.
5. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
6. THE EXACT LOCATION OF NEW UTILITY CONNECTIONS SHALL BE DETERMINED BY THE CONTRACTOR IN COORDINATION WITH UTILITY COMPANY, COUNTY AGENCY, AND/OR PRIVATE UTILITY COMPANY.
7. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MANHOLES, BOXES, FITTINGS, CONNECTORS, COVER PLATES, AND OTHER MISCELLANEOUS ITEMS NOT NECESSARILY DETAILED ON THESE DRAWINGS TO RENDER THE UTILITY INSTALLATION COMPLETE AND OPERATIONAL.
8. ALL UTILITY COMPANIES REQUIRE INDIVIDUAL CONDUITS. CONTRACTOR TO COORDINATE WITH TELEPHONE, CABLE, AND ELECTRIC COMPANIES REGARDING NUMBER, SIZE, AND TYPE OF CONDUITS REQUIRED PRIOR TO INSTALLATION OF ANY CONDUIT.
9. SANITARY SEWER SHALL BE CONSTRUCTED TO THE TOWN OF LONDONDERRY STANDARDS AND SPECIFICATIONS AS SHOWN ON THESE PLANS. ALL SEWER MAINS AND FITTINGS SHALL BE PVC AND SHALL CONFORM TO ASTM F 679 (SDR 35 MINIMUM). FORCE MAINS AND FITTINGS SHALL CONFORM TO NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. ALL SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH NH CODE OF ADMINISTRATIVE RULES ENV-WQ 700. SANITARY MANHOLES SHALL CONFORM TO NHDES WATER DIVISION WASTEWATER ENGINEERING BUREAU STANDARDS AND SPECIFICATIONS SHOWN HEREON.
10. ON-SITE WATER DISTRIBUTION SHALL BE TO MANCHESTER WATER WORKS STANDARDS AND SPECIFICATIONS. WATER MAINS SHALL HAVE A MINIMUM OF 5.5' COVER. WHERE WATER PIPES CROSS SEWER LINES A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. HORIZONTAL SEPARATION BETWEEN WATER AND SEWER SHALL BE 10' MINIMUM. WHERE A SANITARY LINE CROSSES A WATER LINE, SEWER LINE MUST BE CONSTRUCTED OF FORCE MAIN MATERIALS (PER ENV-WQ 704.08) FROM BUILDING OR MANHOLE TO MANHOLE, OR SUBSTITUTE RUBBER-GASKETED PRESSURE PIPE FOR THE SAME DISTANCE. WHEN SANITARY LINES PASS BELOW WATER LINES, LAY PIPE SO THAT NO JOINT IN THE SANITARY LINE WILL BE CLOSER THAN 6' HORIZONTALLY TO THE WATER LINE.
11. THRUST BLOCKS SHALL BE PROVIDED AT ALL LOCATIONS WHERE WATER LINE CHANGES DIRECTIONS OR CONNECTS TO ANOTHER WATER LINE.
12. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND WIRING TO ALL SIGNS AND LIGHTS. CONDUIT TO BE A MINIMUM OF 24" BELOW FINISH GRADE.
13. ALL PROPOSED UTILITIES SHALL BE UNDERGROUND. ALL UNDERGROUND CONDUITS SHALL HAVE NYLON PULL ROPES.
14. THE CONTRACTOR SHALL ARRANGE AND PAY FOR ALL INSPECTIONS, TESTING, AND RELATED SERVICES AND SUBMIT COPIES OF ACCEPTANCE TO THE OWNER, UNLESS OTHERWISE INDICATED.
15. PROVIDE PERMANENT PAVEMENT REPAIR FOR ALL UTILITY TRENCHES IN EXISTING ROAD OR PAVEMENT TO REMAIN. SAW CUT TRENCH, PAVEMENT, AND GRANULAR BASE THICKNESS TO MATCH EXISTING PAVEMENT. OBTAIN ALL PERMITS REQUIRED FOR TRENCHING.
16. UNLESS OTHERWISE SPECIFIED, ALL UNDERGROUND STRUCTURES, PIPES, CHAMBERS, ETC. SHALL BE COVERED WITH A MINIMUM OF 18" OF COMPACTED SOIL BEFORE EXPOSURE TO VEHICLE LOADS.
17. THE PROPERTY WILL BE SERVICED BY THE FOLLOWING:

DRAINAGE	PRIVATE
SEWER	MUNICIPAL
WATER	MUNICIPAL
GAS	LIBERTY UTILITIES
ELECTRIC	EVERSOURCE ENERGY
TELECOMM.	COMCAST XFINITY

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

NOTES & LEGEND

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Traffic Engineers
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Landscape Architects
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FILE	18252-02	DR		FB	–	C-02
		CK		CADFILE	18252-02 COVER & DETAILS	

Dec 23, 2025 - 2:14pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_CSD\PRODUCTION\18252-02 Cover & Details.dwg

CONSTRUCTION SEQUENCE NOTES

1. TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, CONSTRUCTION SHALL FOLLOW THIS GENERAL CONSTRUCTION SEQUENCE.
2. MODIFICATIONS TO THE SEQUENCE NECESSARY DUE TO THE CONTRACTOR'S SCHEDULE SHALL INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.
3. CONDUCT A PRE-CONSTRUCTION MEETING WITH THE OWNER, CONTRACTOR, TOWN ENGINEER, AND OTHER TOWN DEPARTMENTS. TOWN INSPECTIONS SHALL BE CONDUCTED AT INTERVALS AS REQUIRED BY THE TOWN OF LONDONDERRY PUBLIC WORKS AND ENGINEERING DEPARTMENT.
4. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
5. CUT AND CLEAR TREES WITHIN AREA OF DISTURBANCE UNLESS OTHERWISE NOTED.
6. CONSTRUCT TEMPORARY AND PERMANENT EROSION CONTROL FACILITIES, AND BASINS PRIOR TO ANY ROUGH GRADING.
7. CONSTRUCT PERMANENT SWALES PRIOR TO ANY ROUGH GRADING. SWALES SHALL BE STABILIZED PRIOR TO DIRECTING RUNOFF TO THEM.
8. GRUB & ROUGH GRADE SITE FOR PHASED WORK AREA. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING. ALL DISTURBED AREAS SHALL BE STABILIZED NO LATER THAN 72 HOURS AFTER CONSTRUCTION ACTIVITY CEASES. IF EARTHWORK TEMPORARILY CEASES ON A PORTION OF OR THE ENTIRE SITE, AND WILL NOT RESUME WITHIN 21 DAYS, THE AREA SHALL BE STABILIZED.
9. AN AREA SHALL BE CONSIDERED STABILIZED IF:
   A) BASE COURSE GRAVELS HAVE BEEN INSTALLED IN AREAS TO BE PAVED;
   B) A MINIMUM OF 85% VEGETATED GROWTH HAS BEEN ESTABLISHED;
   C) A MINIMUM OF 3" OF NON-EROSIVE MATERIAL SUCH STONE OR RIPRAP HAS BEEN INSTALLED, OR
   D) EROSION CONTROL BLANKETS HAVE BEEN PROPERLY INSTALLED.
10. CONSTRUCT CULVERTS, STORMWATER MANAGEMENT AREAS, AND SWALES. PLACE FLARED END SECTIONS, RIP-RAP AND OTHER DRAINAGE FACILITIES ACCORDING TO PLAN. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND BASINS PRIOR TO DIRECTING FLOW TO THEM.
11. INSTALL ALL UNDERGROUND UTILITIES.
12. CONSTRUCT BUILDINGS AND STRUCTURES.
13. CONSTRUCT PARKING AND FINISH GRADE SITE ACCORDING TO PLAN. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER GRADING.
14. THE CONTRACTOR SHALL INSPECT ALL TEMPORARY EROSION CONTROL MEASURES AT LEAST ONCE A WEEK AND WITHIN TWENTY-FOUR (24) HOURS OF THE END OF A STORM WITH RAINFALL AMOUNT GREATER THAN 0.5 INCHES. THE INSPECTIONS SHALL VERIFY THAT THE STRUCTURAL BMPS SHOWN AND DESCRIBED ON THE PLANS ARE IN GOOD CONDITION AND ARE MINIMIZING EROSION. A MAINTENANCE AND INSPECTION REPORT SHALL BE MADE WITH EACH INSPECTION.
15. COMPLETE PERMANENT SEEDING.
16. REMOVE TEMPORARY EROSION CONTROL MEASURES ONCE ALL AREAS ARE STABILIZED WITH A SUITABLE STAND OF GRASS, PAVEMENT OR COMPACTED GRAVELS.
17. REFER TO THE STORMWATER MANAGEMENT PLAN FOR EROSION CONTROL MEASURES AND SPECIFIC INFORMATION.

GENERAL NOTES

1. WHERE DEPTH OF COVER IS LESS THAN 3 FEET CLASS V REINFORCED CONCRETE PIPE SHALL BE USED.
2. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES OWNING UTILITIES, EITHER OVERHEAD OR UNDERGROUND, WITHIN THE CONSTRUCTION AREA AND SHALL COORDINATE AS NECESSARY WITH THE UTILITY COMPANIES OF SAID UTILITIES. THE PROTECTION OR RELOCATION OF UTILITIES IS ULTIMATELY THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
4. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
5. EROSION CONTROL SYSTEMS SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT IN ACCORDANCE WITH APPLICABLE NHDES STANDARDS. THESE DETAILS SERVE AS A GUIDE ONLY.
6. REFER TO THE TOWN STANDARD DETAILS, LATEST REVISION, FOR THE APPLICABLE REGULATIONS AND STANDARDS.
7. THE CONTRACTOR SHALL STABILIZE ALL DITCHES, SWALES, AND BASINS PRIOR TO DIRECTING FLOW TO THEM.
8. THE SMALLEST PRACTICAL AREA SHALL BE DISTURBED DURING CONSTRUCTION, BUT IN NO CASE SHALL EXCEED 5 ACRES AT ANY ONE TIME BEFORE DISTURBED AREAS ARE STABILIZED. SEE PHASING PLAN FOR ADDITIONAL INFORMATION ON ALLOWABLE AREAS OF DISTURBANCE.

WINTER CONSTRUCTION

IN ADDITION TO THE OTHER NOTES CONTAINED ON THIS PLAN, THE FOLLOWING MUST BE IMPLEMENTED:

1. WINTER EXCAVATION AND EARTHWORK SHALL BE COMPLETED AS SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
2. ANY AREA WITHIN 50 FEET OF A PROTECTED NATURAL RESOURCE MUST BE PROTECTED WITH A DOUBLE ROW OF SEDIMENT BARRIER.
3. TEMPORARY MULCH MUST BE APPLIED WITHIN 7 DAYS OF SOIL EXPOSURE OR PRIOR TO ANY STORM EVENT, BUT AFTER EVERY WORKDAY IN AREAS WITHIN 100 FEET FROM A PROTECTED NATURAL RESOURCE.
4. AREAS THAT HAVE BEEN BROUGHT TO FINAL GRADE MUST BE PERMANENTLY MULCHED THE SAME DAY.
5. IN THE EVENT OF A SNOWFALL GREATER THAN 1 INCH (FRESH OR CUMULATIVE), THE SNOW SHALL BE REMOVED FROM THE AREAS DUE TO BE SEEDED AND MULCHED.
6. LOAM SHALL BE FREE OF FROZEN CLUMPS BEFORE IT IS APPLIED.
7. A DITCH THAT WILL BE CONSTRUCTED DURING THE WINTER MUST BE STABILIZED WITH RIPRAP.
8. ALL PROPOSED VEGETATIVE AREAS THAT DO NOT EXHIBIT A MINIMUM OF 85% VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED BY SEEDING AND INSTALLING EROSION CONTROL BLANKETS ON SLOPES GREATER THAN 3:1, AND SEEDING AND PLACING 3 TO 4 TONS OF MULCH PER ACRE, SECURED WITH ANCHORED NETTING, ELSEWHERE. THE INSTALLATION OF EROSION CONTROL BLANKETS OR MULCH AND NETTING SHALL NOT OCCUR OVER ACCUMULATED SNOW OR ON FROZEN GROUND AND SHALL BE COMPLETED IN ADVANCE OF THAW OR SPRING MELT EVENTS.
9. ALL DITCHES OR SWALES WHICH DO NOT EXHIBIT A MINIMUM OF 85 PERCENT VEGETATIVE GROWTH BY OCTOBER 15, OR WHICH ARE DISTURBED AFTER OCTOBER 15, SHALL BE STABILIZED TEMPORARILY WITH STONE OR EROSION CONTROL BLANKETS APPROPRIATE FOR THE DESIGN FLOW CONDITIONS.
10. AFTER OCTOBER 15, INCOMPLETE ROAD OR PARKING SURFACES, WHERE WORK HAS STOPPED FOR THE WINTER SEASON, SHALL BE PROTECTED WITH A MINIMUM OF 3 INCHES OF GRAVEL PER NHDOT ITEM 304.3.
11. ALL TEMPORARY AND PERMANENT STABILIZATION REQUIREMENTS DENOTED IN ADDITIONAL PLAN NOTES SHALL BE APPLICABLE DURING WINTER CONSTRUCTION.

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EROSION CONTROL NOTES

DURING CONSTRUCTION AND THEREAFTER, EROSION CONTROL MEASURES ARE TO BE IMPLEMENTED AS NOTED:

1. INSTALLATION OF SILTATION FENCES AND/OR OTHER EROSION CONTROL MEASURES SHALL BE COMPLETED PRIOR TO THE START OF SITE WORK IN ANY GIVEN AREA. PREFABRICATED SILTATION FENCES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
2. SILTATION FENCES AND/OR OTHER EROSION CONTROL MEASURES SHALL BE KEPT CLEAN DURING CONSTRUCTION AND REMOVED WHEN ALL SLOPES HAVE A VEGETATIVE COVER OF GREATER THAN 85%. EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE A WEEK AND WITHIN TWENTY-FOUR (24) HOURS OF THE END OF A STORM WITH RAINFALL AMOUNT GREATER THAN 0.5 INCHES.
3. EXISTING VEGETATION IS TO REMAIN UNDISTURBED WHEREVER POSSIBLE.
4. THE AREA OF LAND EXPOSED AND THE TIME OF EXPOSURE SHALL BE MINIMIZED. UNLESS A LARGER AREA IS ALLOWED UNDER ENV-WQ 1505.03(c), NO MORE THAN 5 ACRES SHALL BE DISTURBED (NOT STABILIZED) AT ANY TIME. DISTURBED AREAS MUST BE STABILIZED AS SOON AS PRACTICABLE BUT NO LATER THAN 45 DAYS AFTER INTIAL DISTURBANCE. CUT AND FILL SLOPES SHALL BE STABILIZED WITHIN 72 HOURS AFTER FINAL GRADING.
5. ALL DISTURBED AREAS SHALL HAVE A MINIMUM OF 6" OF LOAM. ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

   PARK SEED MIX (NHDOT TYPE 44) MIN. 135 LBS/ACRE:
   33% CREEPING RED FESCUE (MIN. 45 LBS/ACRE)
   42% PERENNIAL RYEGRASS (MIN. 55 LBS/ACRE)
   21% KENTUCKY BLUEGRASS (MIN. 30 LBS/ACRE)
   4% REDTOP (MIN. 5 LBS/ACRE)

   MODIFIED NEW ENGLAND CONSERVATION WILDLIFE MIX (MIN. 25 LBS/ACRE)*
   CONTAINS: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), BLUE VERVAIN (VERBENA HASTATA), BLACK EYED SUSAN (RUDBECKIA HIRTA), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).
   *SEED MIX SHALL NOT CONTAIN INDIAN GRASS (SORGHASTRUM NUTANS), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), OR COMMON SNEEZEWEED (HELENIUM AUTUNALE).

   TEMPORARY LAWN MIX: (MIN. 47 LBS/ACRE)
   100% ANNUAL RYE

   A. PLACING LOAM ON SITE
      a. ALL SUBGRADE ELEVATIONS SHOULD BE UNIFORMLY GRADED TO RECEIVE LOAM AND SHALL BE INSPECTED AND APPROVED BY THE GENERAL CONTRACTOR PRIOR TO PLACEMENT OF LOAM.
      b. PLACE LOAM TO FORM A MINIMUM DEPTH OF 4" WHEN ROLLED, UNLESS OTHERWISE INDICATED.
      c. ALL DEPRESSIONS EXPOSED DURING THE ROLLING SHALL BE FILLED WITH ADDITIONAL LOAM.

   B. SEED BED PREPARATION
      AFTER FINISH GRADING AND JUST BEFORE SEEDING, THE AREAS TO BE SEEDED SHALL BE LOOSENED TO PROVIDE A ROUGH, FIRM BUT FINELY PULVERIZED SEEDBED. THE INTENT IS A TEXTURE CAPABLE OF RETAINING WATER, SEED AND FERTILIZER WHILE REMAINING STABLE AND ALLOWING SEED TIME TO GERMINATE. SEED SHALL BE APPLIED TO THE CONDITIONED SEEDBED NOT MORE THAN 48 HOURS AFTER THE SEEDBED HAS BEEN PREPARED.
6. LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE SOIL PRIOR TO OR AT THE TIME OF AT THE TIME OF SEEDING. A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS. PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. SEEDING PRACTICES SHALL COMPLY WITH LOCAL USDA SOIL CONSERVATION SERVICES RECOMMENDATIONS.
7. HAY OR STRAW MULCH OR JUTE MATTING SHALL BE USED WHERE INDICATED ON THE PLANS. IF JUTE MATTING IS USED, IT SHALL BE LAID IN THE DIRECTION OF RUNOFF FLOW AND APPLIED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
8. MULCHING SHALL COMPLY WITH:
   ENV-WQ 1506.01 EROSION CONTROL METHODS: TEMPORARY AND PERMANENT MULCHING.
   (a) HAY AND STRAW MULCHES SHALL BE ANCHORED WITH MULCH NETTING OR TACKIFIER SO THAT THEY ARE NOT BLOWN AWAY BY WIND OR WASHED AWAY BY FLOWING WATER;
   (b) MULCH MATERIALS SHALL BE SELECTED BASED UPON SOILS, SLOPE, FLOW CONDITIONS, AND TIME OF YEAR;
   (c) HAY OR STRAW MULCH SHALL BE APPLIED AT A RATE OF 1.5 TO 2 TONS PER ACRE, EQUIVALENT TO 70 TO 90 POUNDS PER 1,000 SQUARE FEET.
   ENV-WQ 1506.02 EROSION CONTROL METHODS: VEGETATION. VEGETATING DISTURBED AREAS SHALL BE COMPLETED ONLY AS SPECIFIED BELOW:
   (h) AREAS SEEDED BETWEEN MAY 15TH TO AUGUST 15TH SHALL BE COVERED WITH HAY OR STRAW MULCH MEETING THE CRITERIA OF ENV-WQ 1506.01(a) THROUGH (c).
9. PERMANENT OR TEMPORARY COVER MUST BE IN PLACE BEFORE THE GROWING SEASON ENDS. SEEDED AREAS SHALL BE MULCHED AND PLANTINGS MAY BE MADE FROM EARLY SPRING TO EARLY OCTOBER. NO DISTURBED AREA SHALL BE LEFT EXPOSED DURING WINTER MONTHS.
10. WATER SHALL BE USED FOR DUST CONTROL IN APPROPRIATE AREAS.
11. TEMPORARY DIVERSION SWALES, SEDIMENT TRAPS AND/OR BASINS MUST BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL SOILS ARE STABILIZED. TACKIFIER SHALL BE APPLIED IN ALL TEMPORARY STABILIZATION UTILIZING SEEDING. SEE PHASING PLAN, FOR ADDITIONAL INFORMATION.
12. OWNER SHALL MAINTAIN AT LEAST 85% COVERAGE OF VEGETATION IN GOOD CONDITION (EVENLY DISTRIBUTED, WITH NO BARE AREAS) AND REPAIR AREAS OF EROSION.

OVERWINTER STABILIZATION

1. PERMANENT STABILIZATION CONSISTS OF AT LEAST 85% VEGETATION, PAVEMENT/GRAVEL BASE OR RIPRAP.
2. DO NOT EXPOSE SLOPES OR LEAVE SLOPES EXPOSED OVER THE WINTER OR FOR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS FULLY PROTECTED WITH MULCH.
3. APPLY HAY MULCH AT TWICE THE STANDARD RATE (150 LBS. PER 1,000 SF). THE MULCH MUST BE THICK ENOUGH SUCH THAT THE GROUND SURFACE WILL NOT BE VISIBLE AND MUST BE ANCHORED.
4. USE MULCH AND MULCH NETTING OR AN EROSION CONTROL MULCH BLANKET OR MIX FOR ALL SLOPES GREATER THAN 8% OR OTHER AREAS EXPOSED TO DIRECT WIND.
5. INSTALL AN EROSION CONTROL BLANKET IN ALL DRAINAGE WAYS (BOTTOM AND SIDES) WITH A SLOPE GREATER THAN 3%.
6. SEE THE VEGETATION MEASURES FOR MORE INFORMATION ON SEEDING DATES AND TYPES.

CONSTRUCTION SEQUENCE NOTES (FOR ALTERATION OF TERRAIN)

1. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO BMP'S DURING ANY STAGE OF CONSTRUCTION.
2. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
3. AFTER INFILTRATION SYSTEMS ARE EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
4. DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
5. DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE BMP HAS BEEN PLANTED, IF NECESSARY, AND ITS CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

GRADING & DRAINAGE NOTES

1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV-WQ 1500 AND THE TOWN OF LONDONDERRY AS APPLICABLE.
2. THE CONTRACTOR SHALL PREPARE, MAINTAIN, AND EXECUTE A S.W.P.P.P. IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
5. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEER'S RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE, INCLUDING AND NOT LIMITED TO DEWATERING METHODS, PERIMETER DRAINS AND TIE INTO STORMWATER MANAGEMENT SYSTEM, ETC.
6. COORDINATE WITH GEOTECHNICAL/STRUCTURAL PLANS FOR SITE PREPARATION AND OTHER BUILDING INFORMATION.
7. COORDINATE WITH ARCHITECTURAL PLANS FOR DETAILED GRADING AT BUILDING, AND SIZE AND LOCATION OF ALL BUILDING SERVICES.
8. COORDINATE WITH MECHANICAL AND PLUMBING PLANS FOR ROOF DRAIN INFORMATION.
9. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, PAVEMENT, CURBING, SIDEWALKS, AND ALIGNMENTS.
10. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS, AND LOADING AREAS.
11. THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER DEEPER THAN 1/4" FOR A PERIOD OF MORE THAN 15 MINUTES AFTER FLOODING.
12. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
13. ALL SIDEWALK AND OTHER CURB REVEALS SHALL BE 6" WITH A TOLERANCE OF PLUS OR MINUS 3/8". WHERE SIDEWALK IS TO BE FLUSH, THE PAVEMENT REVEAL SHALL BE 1/4" WITH A TOLERANCE OF 1/8".
14. THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
15. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
16. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND SHALL MEET TOWN OF LONDONDERRY STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
17. STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO TOWN OF LONDONDERRY & NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
18. NO FILL SHALL BE PLACED IN ANY WETLAND AREA.
19. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
20. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
21. DENSITY REQUIREMENTS:

MINIMUM DENSITY*	LOCATION
95%	BELOW PAVED OR CONCRETE AREAS
95%	TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL
90%	BELOW LOAM AND SEED AREAS

   *ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D-1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM ASTM D-6938 OR EQUIVOLENT METHOD.
22. PER THE GEOTECHNICAL REPORT: STRUCTURAL FILL SHOULD BE USED FOR ENGINEERED FILLS BELOW PROPOSED BUILINGS, BIOREACTORS, TANKS, RETAINING WALLS, AND FOUNDATION BACKFILL.
23. PER THE GEOTECHNICAL REPORT: COMMON FILL SHOULD BE USED FOR ENGINEERED FILLS BELOW ROADWAY, PARKING, AND OTHER NON-STRUCTURAL AREAS.

Type	Sieve Size	% Passing
Structural Fill, NHDOT 304.3 (Crushed Gravel)	3" (75 mm) 2" (50 mm) 1" (25 mm) No. 4 (4.75 mm) No. 200 (75 µm)	100 95-100 55-85 27-52 0-12* (in sand portion)
Common Fill	8" No. 200 (75 µm)	100 0-15 when placed within 3 feet of finished grade in paved areas

SITE PREPARATION NOTES

1. LONDONDERRY EMERGENCY SERVICES (POLICE/FIRE) SHALL HAVE ACCESS TO THE SITE AT ALL TIMES DURING CONSTRUCTION.
2. THE CONTRACTOR SHALL MAINTAIN EMERGENCY ACCESS TO ALL AREAS AFFECTED BY HIS WORK AT ALL TIMES.
3. THE CONTRACTOR SHALL VERIFY ALL SURVEY INFORMATION IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
4. EXISTING UTILITY SERVICES TO BE DISCONTINUED ARE TO BE CAPPED AS REQUIRED BY THE RESPECTIVE UTILITY COMPANIES.
5. ALL DEMOLITION AND CONSTRUCTION DEBRIS SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
6. IN THAT THE PROJECT WILL DISTURB MORE THAN 5-ACRES AT ONE TIME A CERTIFIED PROFESSIONAL IN EROSION AND SEDIMENT CONTROL OR A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF NEW HAMPSHIRE ("MONITOR") SHALL BE EMPLOYED TO INSPECT THE SITE FROM THE START OF ALTERATION OF TERRAIN ACTIVITIES UNTIL THE SITE IS IN FULL COMPLIANCE WITH THE ALTERATION OF TERRAIN PERMIT ("PERMIT").
   A. DURING THIS PERIOD, THE MONITOR SHALL INSPECT THE SUBJECT SITE AT LEAST ONCE A WEEK, AND IF POSSIBLE, DURING ANY ½ INCH OR GREATER RAIN EVENT (I.E. ½ INCH OF PRECIPITATION OR MORE WITHIN A 24 HOUR PERIOD). IF UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THIS EVENT.
   B. THE MONITOR SHALL PROVIDE TECHNICAL ASSISTANCE AND RECOMMENDATION TO THE CONTRACTOR ON THE APPROPRIATE BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROLS REQUIRED TO MEET THE REQUIREMENTS OF RSA 485-A:17 AND ALL APPLICABLE DES PERMIT CONDITIONS.
   C. WITHIN 24 HOURS OF EACH INSPECTION, THE MONITOR SHALL SUBMIT A REPORT TO DES VIA EMAIL (TO KEVIN THATCHER AT KEVIN.D.THATCHER@DES.NH.GOV).
7. CONTRACTOR TO INSTALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO SITE WORK. REFER TO THE STORMWATER MANAGEMENT PLAN FOR SPECIFIC INFORMATION.
8. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN OF LONDONDERRY'S CONSTRUCTION STANDARDS AND DETAILS (LATEST ADDITION), AND THE TOWN STANDARDS SHALL TAKE PRECEDENCE IN CASE OF ANY DETAILS OR PLANS IN CONFLICT.
8. FINAL CONSTRUCTION SEQUENCING SUBJECT TO CONTRACTOR AND OWNER CONFIRMATION.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

NOTES

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/30/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
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Land Surveyors
Landscape Architects
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FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 COVER & DETAILS	C-03

Dec 23, 2025 - 2:14pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_CSD\PRODUCTION\18252-02 Cover & Details.dwg

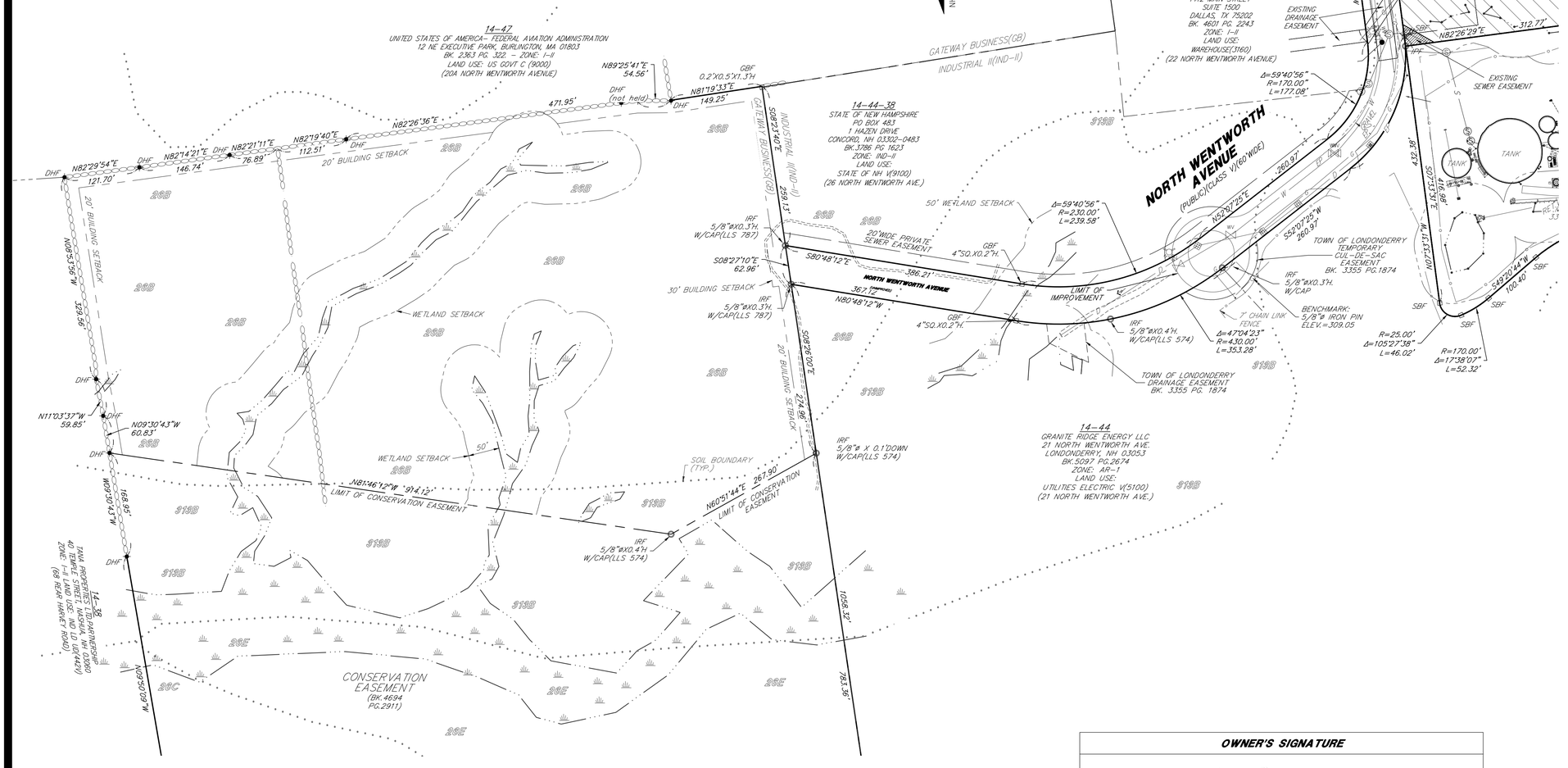
LEGEND

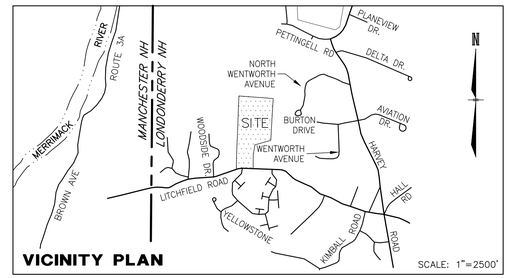
STONE BOUND (FOUND)	SAC	SLOPED ASPHALT CURB	ABUTTING PROPERTY LINE
IRON PIN (FOUND)	OHW	OVERHEAD WIRES	BUILDING SETBACK
DRILL HOLE (FOUND)		STONEWALL	EDGE OF PAVEMENT
UTILITY POLE	302	2' CONTOUR	ZONING DISTRICT BOUNDARY
GUY WIRE		10' CONTOUR	PROPERTY BOUNDARY
BENCHMARK	280	SOILS BOUNDARY	EASEMENT LINE
WATER VALVE	26A	SOILS MAP UNIT SYMBOL	W WATER LINE
HYDRANT		WETLAND DELINEATION	G GAS LINE
CATCH BASIN	5-12	WETLAND FLAG LOCATION	D DRAIN LINE
DIRECTION OF DRAINAGE FLOW		WETLAND SETBACK	S SEWER LINE

N

TFM

NH-SPC 83/86





NOTES

1. OWNER OF RECORD OF MAP 14 LOT 39: CRAIG FOWLER (TRUSTEE)
   NICHOLAS F. CODNER 2012 TRUST
   162 LITCHFIELD ROAD
   LONDONDERRY, NH 03053
   DEED REFERENCE: BK. 5336 PG. 1874
   AREA = 2,155,033 S.F. OR 49.473 ACRES
2. 14-39 INDICATES TAX MAP AND LOT NUMBER.
3. THE PURPOSE OF THIS PLAN IS TO SHOW THE EXISTING CONDITIONS PRESENT ON TAX MAP 14, LOT 39, LOCATED AT 162 LITCHFIELD ROAD AND THE WESTERLY PORTION OF NORTH WENTWORTH AVENUE IN LONDONDERRY, NEW HAMPSHIRE, AS SHOWN HEREON, AND NO OTHER PURPOSE.
4. CURRENT ZONING:
   GATEWAY BUSINESS (GB)
   MINIMUM LOT SIZE: 43,560 S.F./1 ACRE (SUBJECT TO PLANNING BOARD APPROVAL)
   MINIMUM LOT FRONTAGE: 150 FEET
   MAXIMUM BUILDING HEIGHT: 50 FEET
   MINIMUM GREEN SPACE: 25 PERCENT
   MINIMUM BUILDING SETBACKS: FRONT 30 FEET. SIDE & REAR 20 FEET.

   AGRICULTURAL/RESIDENTIAL (AR-1)
   MINIMUM LOT SIZE: (MUNICIPAL WATER & SEWER)
   SINGLE FAMILY (1-2 BEDROOMS): 35,000 S.F.
   SINGLE FAMILY (3 OR MORE BEDROOMS): 40,000 S.F.
   DUPLEX (2-4 BEDROOMS)(BOTH DWELLINGS): 52,500 S.F.
   DUPLEX (5 OR MORE BEDROOMS): 60,000 S.F.
   (NO MUNICIPAL SEWER)
   SINGLE OR TWO FAMILY RESIDENCE: 43,560 S.F./1 ACRE
   MINIMUM LOT FRONTAGE (CLASS V OR BETTER)
   SINGLE FAMILY: 150 FEET
   TWO FAMILY: 200 FEET
   MAXIMUM BUILDING HEIGHT: 35 FEET
   MINIMUM BUILDING SETBACKS: FRONT 40 FEET, SIDE & REAR 15 FEET.

   INDUSTRIAL II (IND-II)
   MINIMUM LOT SIZE: 43,560 S.F. (SUBJECT TO PLANNING BOARD APPROVAL)
   MINIMUM LOT FRONTAGE (CLASS V OR BETTER): 150 FEET
   MAXIMUM BUILDING HEIGHT: 50 FEET
   MINIMUM BUILDING SETBACKS: FRONT 30 FEET, SIDE & REAR 20 FEET.
5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER: 33015C0318E, EFFECTIVE DATE: MAY 17, 2005, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.
6. HORIZONTAL DATUM: NAD 83/86. VERTICAL DATUM: NGVD 29. BENCHMARKS SET: AS NOTED
7. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL MAY DETERMINE.
8. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. TFMORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 811.
9. SEE SHEETS S-03 THROUGH S-09 FOR BENCHMARK INFORMATION.
10. SEE SHEETS S-03 THROUGH S-09 FOR DETAILED UTILITY INFORMATION.

Graphic Scale

100' 50' 0' 100' 200' 300' 400'

1" = 100'

TAX MAP 14 LOT 39

EXISTING CONDITIONS PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
ARCO/MURRAY
113 NORTH MAY STREET, CHICAGO, IL 60607

SCALE: 1" = 100' **JUNE 12, 2024**

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

REV.	DATE	DESCRIPTION	DR	CK
2	12-18-25	PER REVIEW COMMENTS FROM TOWN	MRD	MRD
1	11-17-25	REVISE SEWER EASEMENT DEED REFERENCE	MRD	MRD

CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION "IT'S THE LAW"
811 Dig Safe MA-ME-NH-RI-VT

WETLAND SCIENTIST CERTIFICATION

JURISDICTIONAL WETLANDS SHOWN ON THIS PLAN WERE DELINEATED ON AUGUST 16, 2024 BY CHRISTOPHER K. DANFORTH CWS #077. THE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2, JANUARY 2012. DOMINANT HYDRIC SOILS WITHIN THE WETLAND(S) WERE IDENTIFIED USING "FIELD INDICATORS OF HYDRIC SOILS OF THE UNITIED STATES" A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, NRCS, VERSION 8.1, 2017. DOMINANCE OF HYDROPHYTIC VEGETATION WAS DETERMINED USING THE USACE NATIONAL WETLAND PLANT LIST, NWPL 2016 VERSION 3.3 HTTP://WETLAND_PLANTS.USACE.ARMY.MIL.

STATE OF NEW HAMPSHIRE
CHRISTOPHER K. DANFORTH
No. 077
8/28/2024
CERTIFIED WETLAND SCIENTIST

OWNER'S SIGNATURE

OWNER OR AUTHORIZED AGENT — 12/22/2025 DATE

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. FURTHER, THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY MADE BY THIS OFFICE IN MAY OF 2024. SAID SURVEY HAS AN ERROR OF CLOSURE OF NOT LESS ACCURACY THAN ONE PART IN TEN THOUSAND (1:10,000).

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Michael R Dahlberg — 12-22-25
LICENSED LAND SURVEYOR — DATE

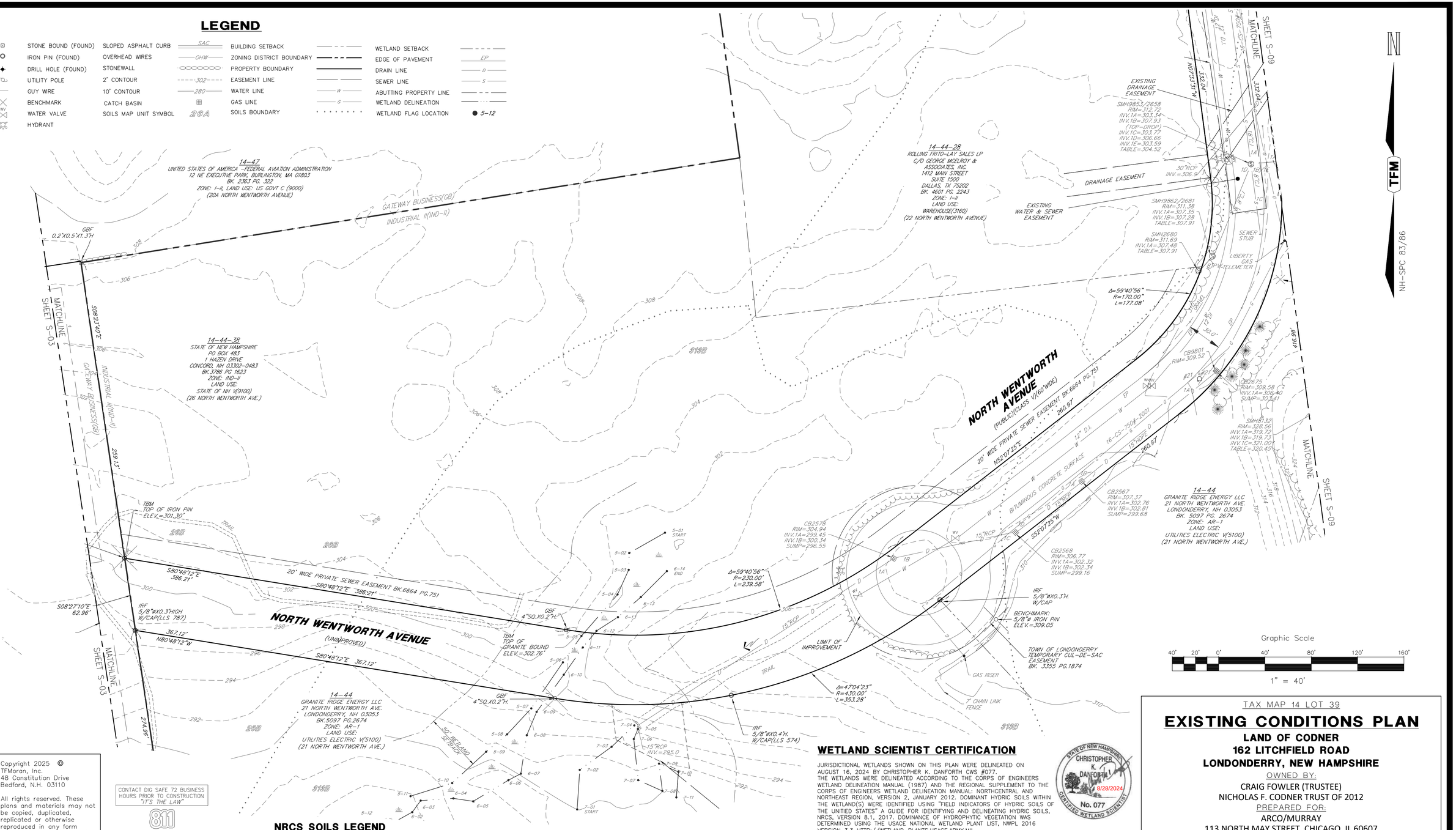
STATE OF NEW HAMPSHIRE No. 714 MICHAEL R. DAHLBERG LICENSED LAND SURVEYOR
Michael R Dahlberg SIGNATURE

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE		DR	TNB	FB	2229/2230	
	18252.01	CK	MRD	CADFILE	18252-01 Survey	S-01

LEGEND

STONE BOUND (FOUND)	SLOPED ASPHALT CURB	SAC	BUILDING SETBACK	WETLAND SETBACK	
IRON PIN (FOUND)	OVERHEAD WIRES	OHW	ZONING DISTRICT BOUNDARY	EDGE OF PAVEMENT	EP
DRILL HOLE (FOUND)	STONEWALL		PROPERTY BOUNDARY	DRAIN LINE	D
UTILITY POLE	2' CONTOUR	302	EASEMENT LINE	SEWER LINE	S
GUY WIRE	10' CONTOUR	280	WATER LINE	ABUTTING PROPERTY LINE	
BENCHMARK	CATCH BASIN		GAS LINE	WETLAND DELINEATION	
WATER VALVE	SOILS MAP UNIT SYMBOL	26A	SOILS BOUNDARY	WETLAND FLAG LOCATION	5-12
HYDRANT					



Graphic Scale

40' 20' 0' 40' 80' 120' 160'

1" = 40'

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CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION "IT'S THE LAW"

811 Dig Safe MA-ME-NH-RI-VT

REV.	DATE	DESCRIPTION	DR	CK
2	12-18-25	PER REVIEW COMMENTS FROM TOWN	MRD	MRD
1	11-17-25	REVISE SEWER EASEMENT DEED REFERENCE	MRD	MRD

NRCS SOILS LEGEND

SOILS INFORMATION SHOWN HEREON IS GRAPHICALLY REPRODUCED FROM THE USDA NATURAL RESOURCES CONSERVATION SERVICE, NATIONAL COOPERATIVE SOIL SURVEY OF ROCKINGHAM COUNTY, NEW HAMPSHIRE.

26A	WINDSOR LOAMY SAND, 0 TO 3 PERCENT SLOPES
26B	WINDSOR LOAMY SAND, 3 TO 8 PERCENT SLOPES
26C	WINDSOR LOAMY SAND, 8 TO 15 PERCENT SLOPES
26E	WINDSOR LOAMY SAND, 15 TO 60 PERCENT SLOPES
45B	MONTAUK FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES, VERY STONY
116	SCARBORO MUCK, COASTAL LOWLAND, 0 TO 3 PERCENT SLOPES
319B	DEERFIELD LOAMY FINE SAND, 3 TO 8 PERCENT SLOPES

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STATE OF NEW HAMPSHIRE · CHRISTOPHER K. DANFORTH · No. 077 · 8/28/2024 · CERTIFIED WETLAND SCIENTIST

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Michael R Dahlberg — 12-22-25
LICENSED LAND SURVEYOR — DATE

STATE OF NEW HAMPSHIRE · LICENSED LAND SURVEYOR · No. 714 · MICHAEL R. DAHLBERG · SIGNATURE

TAX MAP 14 LOT 39

EXISTING CONDITIONS PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
ARCO/MURRAY
113 NORTH MAY STREET, CHICAGO, IL 60607

SCALE: 1" = 40' **JUNE 12, 2024**

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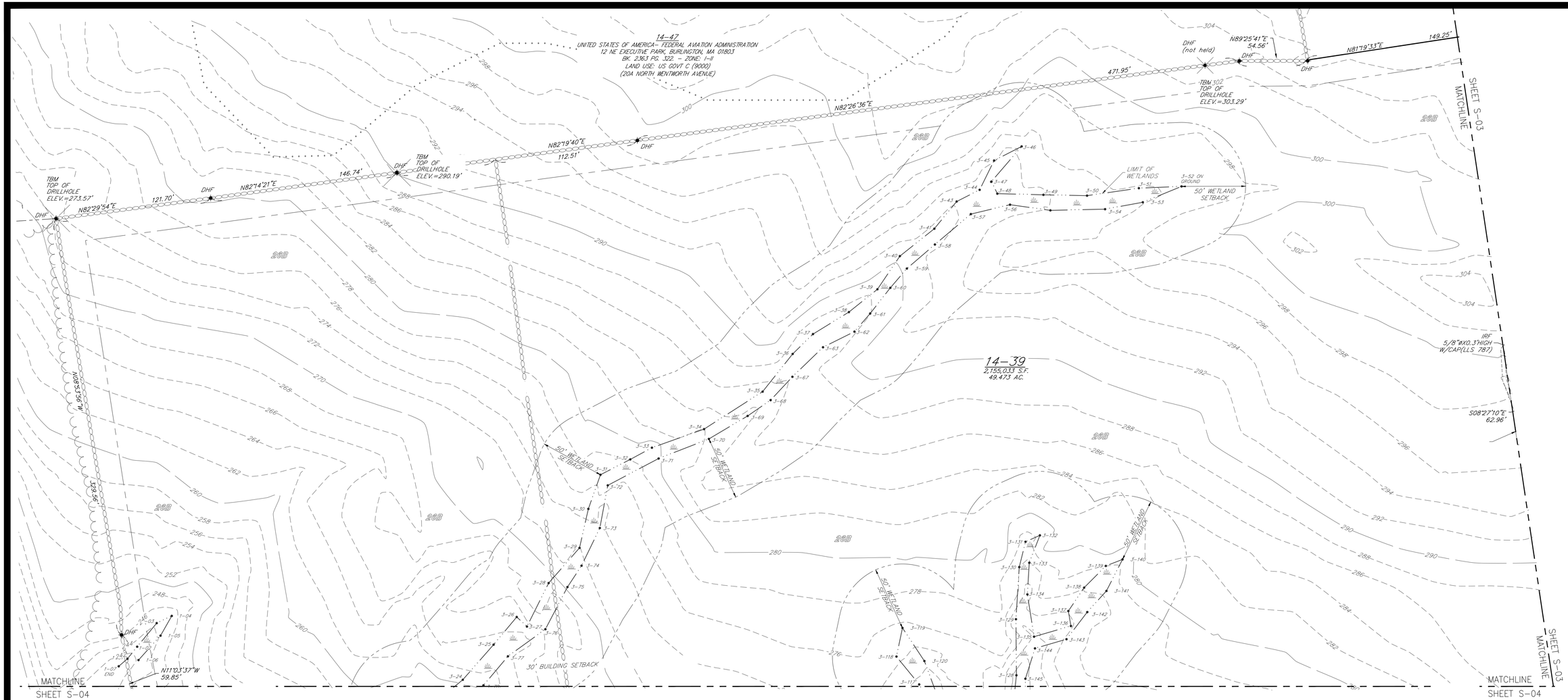
FILE		DR	TNB	FB	2229/2230	
	18252.01	CK	MRD	CADFILE	18252-01 Survey	S-02



LEGEND

STONE BOUND (FOUND)	SLOPED ASPHALT CURB	SAC	BUILDING SETBACK
IRON PIN (FOUND)	OVERHEAD WIRES	OHW	ZONING DISTRICT BOUNDARY
DRILL HOLE (FOUND)	STONEWALL		PROPERTY BOUNDARY
UTILITY POLE	2' CONTOUR	302	EASEMENT LINE
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CATCH BASIN	WETLAND FLAG LOCATION	5-12	ABUTTING PROPERTY LINE
MAILBOX	WETLAND SETBACK		
EDGE OF PAVEMENT	DIRECTION OF DRAINAGE FLOW		

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STATE OF NEW HAMPSHIRE CHRISTOPHER K. DANFORTH No. 077 CERTIFIED WETLAND SCIENTIST 8/28/2024

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Michael R Dahlberg 12-22-25
LICENSED LAND SURVEYOR DATE

STATE OF NEW HAMPSHIRE No. 714 MICHAEL R. DAHLBERG LICENSED LAND SURVEYOR
Michael R Dahlberg
SIGNATURE

TAX MAP 14 LOT 39

EXISTING CONDITIONS PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
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NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
ARCO/MURRAY
113 NORTH MAY STREET, CHICAGO, IL 60607

SCALE: 1" = 40' **JUNE 12, 2024**

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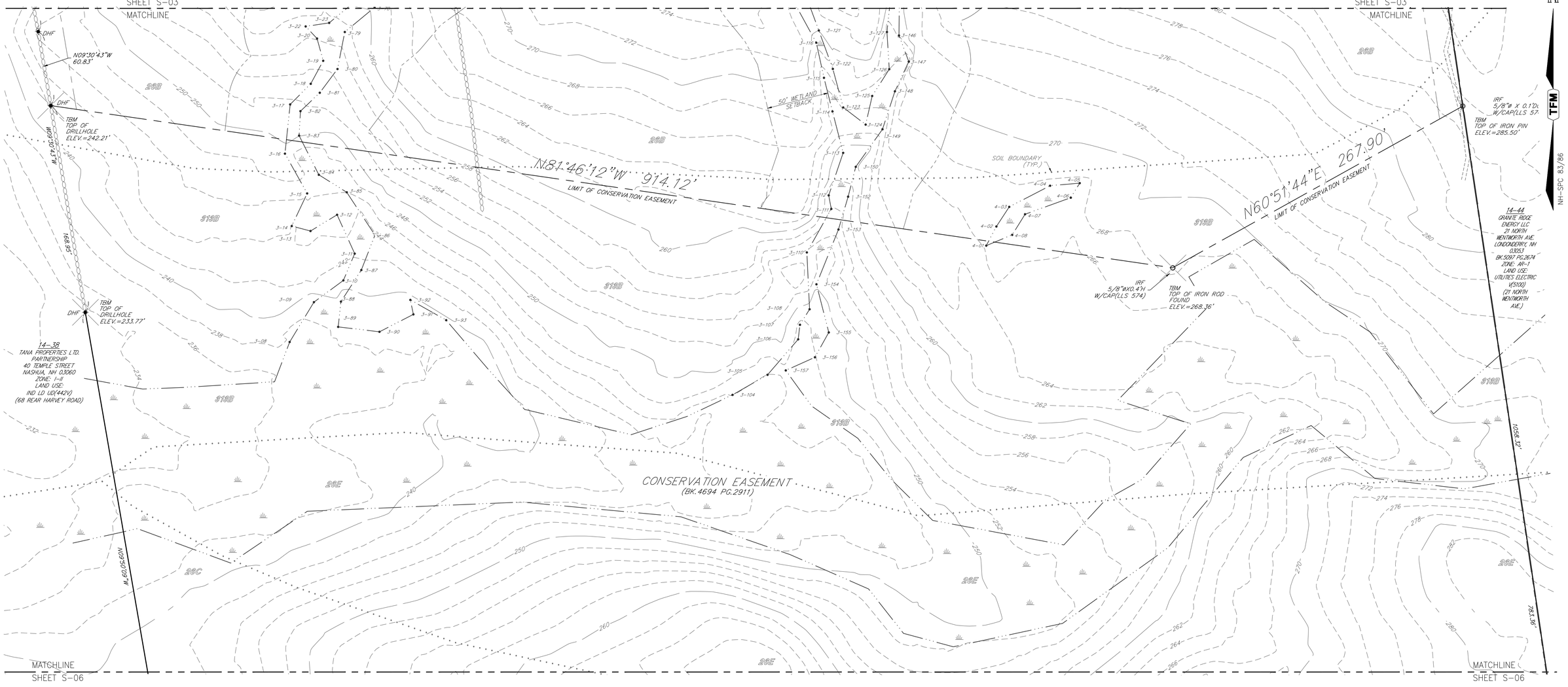
FILE		DR		FB		
18252.01		TNB		2229/2230		S-03
		CK	MRD	CADFILE	18252-01 Survey	



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REV.	DATE	DESCRIPTION	DR	CK
2	12-18-25	PER REVIEW COMMENTS FROM TOWN	MRD	MRD
1	11-17-25	REVISE SEWER EASEMENT DEED REFERENCE	MRD	MRD

WETLAND NOTE

THE WETLANDS DEPICTED ON THIS SHEET AND THOSE LOCATED WITHIN THE EXISTING CONSERVATION EASEMENT WERE DIGITIZED FROM PLANS OF RECORD PREPARED FOR THE STATE OF NEW HAMPSHIRE AND RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAN #

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STATE OF NEW HAMPSHIRE
CHRISTOPHER K. DANFORTH
8/28/2024
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Michael R Dahlberg 12-22-25
LICENSED LAND SURVEYOR DATE

STATE OF NEW HAMPSHIRE
No. 714
MICHAEL R. DAHLBERG
LICENSED LAND SURVEYOR
SIGNATURE

TAX MAP 14 LOT 39

EXISTING CONDITIONS PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
ARCO/MURRAY
113 NORTH MAY STREET, CHICAGO, IL 60607

SCALE: 1" = 40' **JUNE 12, 2024**

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FILE		DR	TNB	FB	2229/2230	
	18252.01	CK	MRD	CADFILE	18252-01 Survey	S-04

NOTES

1. SITE PREP. NOTES ON SHEET C-03.
2. SEE GRADING AND DRAIANGE NOTES ON SHEET C-03
3. SEE CONSTRUCTION SEQUENCING AND EROSION CONTROL NOTES ON SHEET C-03
4. SEE STORMWATER MANAGEMENT NOTES ON C-12
5. SEE CONSTRUCTION PHASING NOTES ON SHEET PH-1.
6. THE EDGE OF THE CONSERVATION OVERLAY AND NON-DISTURBANCE (NO-CUT) ZONES SHALL BE APPROPRIATELY DELINEATED IN THE FIELD PRIOR TO CONSTUCTION.

SITE SPECIFIC SOILS LEGEND

SYMBOL	MAP UNIT	DRAINAGE	HSG
26	WINDSOR	WELL	A
313	DEERFIELD	MODERATELY WELL	B
546/P	WALPOLE	VERY POORLY	C

SLOPE DESIGNATION	PERCENT SLOPE
B	0 TO 8%
C	8 TO 15%
D	15 TO 25%
E	>25%

STATE OF NEW HAMPSHIRE
BRUCE A. GILDAY
No. 012
CERTIFIED SOIL SCIENTIST

SOILS CERTIFICATION

THE SITE SPECIFIC SOIL MAPPING WAS PERFORMED DECEMBER 2024 BY BRUCE A. GILDAY, CERTIFIED SOIL SCIENTIST #012, OF BAG LAND CONSULTANTS, IN CONCORD, NH. THIS MAPPING WAS PERFORMED ACCORDING TO THE STANDARDS OF THE "SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEW HAMPSHIRE AND VERMONT," VERSION 7.0, JULY 2021. THESE STANDARDS ARE PUBLISHED BY THE SOCIETY OF SOIL SCIENTISTS OF NORTHERN NEW ENGLAND (SSSNNE).

WILDLIFE EXCLUSIONARY FENCING (POSTS INTERIOR TO SITE)

STONEWALL TO BE RELOCATED WITHIN LIMITS OF WORK WHERE PRACTICAL, COORDINATE WITH OWNER (TYP.)

PROPOSED TREELINE

CLEAR AND GRUB

81,954 SF 50' WETLAND BUFFER IMPACT AREA

APPROX. LIMITS OF DISTURBANCE

WETLAND IMPACT AREA
199 SF. TEMPORARY IMPACT
8,132 SF. PERMANENT IMPACT

25,298 SF 50' WETLAND BUFFER IMPACT AREA

WETLAND IMPACT AREA
65 SF. TEMPORARY IMPACT
439 SF. PERMANENT IMPACT

SILT SOCK OR MULCH BERM WITH SILT FENCE WITHIN 50' OF WETLAND BOUNDARY (TYP.)

SILT SOCK OR MULCH BERM (INTERIOR) WITH SILT FENCE (TYP.)

INSTALL CONSERVATION OVERLAY DISTRICT SIGN 50' O.C. (MAX)

PROPOSED TREELINE (TYP.)

INSTALL PERIMETER CONTROL WITH INTERIOR WILDLIFE RAMPS EVERY 75' (SEE DETAIL)

LIMIT OF CONSERVATION EASEMENT

NORTH WENTWORTH AVENUE

MATCHLINE

STABILIZED CONSTRUCTION ENTRANCE

RIGHTS TO BUILD AND MAINTAIN ACCESS, UTILITIES, AND WAYFINDING SIGNAGE TO BE CONVEYED TO TAX MAP 14 LOT 39-2. FINAL FORM OF CONVEYENCE TO BE DETERMINED. AREA =38,7±

20' WIDE PRIVATE SEWER EASEMENT B. 3355 P. 1872

TOWN OF LONDONDERRY TEMPORARY CUL-DE-SAC EASEMENT BOOK 3355, PAGE 1874

AREA OF WETLAND TO BE CLEARED WITH STUMPS LEFT IN PLACE

WETLAND IMAPCT
366 SF. PERMANENT
84 SF. TEMPORARY

4,470 SF 50' WETLAND BUFFER IMPACT AREA
STREAM BED SCOUR PROTECTION

5,488 SF 50' WETLAND BUFFER IMPACT AREA

HORIZONTAL SCALE 1"=50'
50 25 0 50

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SITE PREPARATION & DEMOLITION PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 50' **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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FILE	DR		FB		
18252-02		CK		CADFILE	18252-02 SITE PLAN

C-04

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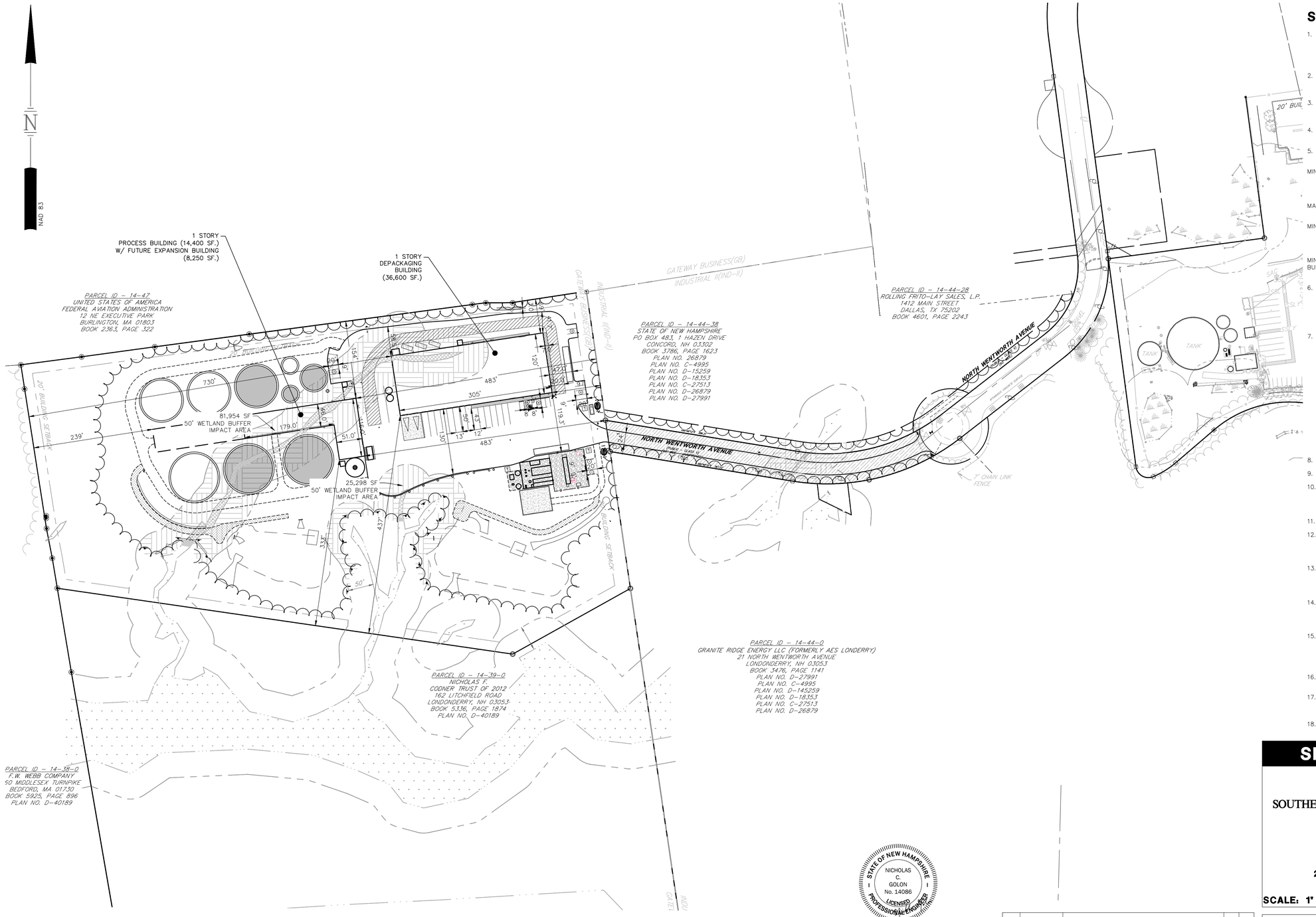
Dec 23, 2025 - 2:15pm
P:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 SITE PLAN.dwg



SITE DATA

1. OWNER OF RECORD OF MAP 14 LOT 39:

   CRAIG FOWLER (TRUSTEE) NICHOLAS F. CODNER TRUST 2012, 162 LITCHFIELD ROAD
   DEED REFERENCE TO PARCEL IS BK 5336 PG 1874
   AREA OF PARCEL = 2,155,033± SF OR 49.473± ACRES

2. ZONED: GATEWAY BUSINESS (GB)
   EXISTING USE: UNDEVELOPED
   PROPOSED USE: ORGANIC WASTE PROCESSING FACILITY

3. THE PURPOSE OF THIS PLAN IS TO CONSTRUCT A RESOURCE RECOVERY CENTER. ASSOCIATED IMPROVEMENTS INCLUDE AND ARE NOT LIMITED TO ACCESS, GRADING, STORMWATER MANAGEMENT SYSTEMS, UTILITIES, LIGHTING, AND LANDSCAPING.

4. TYPICAL HOURS OF OPERATION (OFFICE): 7 AM TO 4 PM MONDAY TO FRIDAY. FACILTY RUNS 24–7 YEAR ROUND WITH EXCEPTIONS FOR MAINTENANCE.

5. DIMENSIONAL REQUIREMENTS (CURRENT ZONING)

	REQUIRED:	PROVIDED:
MINIMUM LOT DIMENSIONS:		
LOT AREA	43,560 SF (1.00± AC)	667,167.7 SF* (15.316± AC)
LOT FRONTAGE	150 FT	60 FT
MAXIMUM STRUCTURE DIMENSIONS:		
STRUCTURE HEIGHT	50 FT	39.5 FT
MINIMUM SETBACKS/BUFFER:		
BUILDING FRONT	30 FT	96.6 FT
BUILDING SIDE	20 FT	69.4 FT
BUILDING REAR	20 FT	351.9 FT
MINIMUM GREEN SPACE	25%	64%%
BUILDING COVERAGE	N/A	

   * UPON FINALIZATION AND RECORDING OF LOT SUBDIVISION

6. PARKING REQUIREMENTS

PARKING SPACES (SEE CALCULATION)	1 PER 800 SF FA	64 SPACES
ACCESSIBLE SPACES (REQ'D BY ADA)	3 FOR 51–75 SPACES	3 SPACES
PARKING SPACE SIZE	9 FT X 20 FT	9 FT X 20 FT
AISLE WIDTH	22 FT	22 FT

7. PARKING CALCULATIONS

   REQUIRED PARKING RATIO:
   RESOURCE RECOVERY CETNER: 1 SPACE PER 800 SF FLOOR AREA

TOTAL REQUIRED = 50,700 SF FA/800 SF	= 64	SPACES
TOTAL	= 64	SPACES

   PARKING PROVIDED PER ITE:

   LAND USE CODE (LUC) 110 – GENERAL LIGHT INDUSTRIAL

   AVG. RATE = 0.76 SPACES/EMPLOYEE

   30 EMPLOYEES x 0.76 SPACES/EMPLOYEES = 23 SPACES

   THE SITE PROVIDES 23 CAR PARKING SPACES AND 6 TRUCK PARKING SPACES.

8. THIS PLANSET IS ON FILE AT THE TOWN OF LONDONDERRY PLANNING DEPARTMENT

9. THE SITE WILL BE SERVICED BY MUNICIPAL SEWER AND WATER.

10. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0318E, EFFECTIVE DATE OF MAY 17, 2005, INDICATES THAT THE SUBJECT PARCEL IS NOT LOCATED WITHIN A FLOOD HAZARD AREA.

11. ALL BUILDINGS ON SITE SHALL BE 1 STORY.

12. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEAUSRES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE TOWN.

13. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO TOWN OF LONDONDERRY SUBDIVISION REGULATIONS AND THE LATEST EDITION OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION.

14. IN ACCORDANCE WITH SECTION 6.01 OF THE LONDONDERRY SITE PLAN REGUALTIONS AND RSA 676.13, ALL IMPROVMENTS SPECIFIED ON THESE SITE PLAN SHALL BE CONSTRUCTED, COMPLETED, INSPECTED AND APPROVED BY THE TOWN OF LONDONDERRY PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

15. IN ACCORDANCE WITH SECTION 6.01 OF THE LONDONDERRY SITE PLAN REGULATIONS AND RSA 676:12, ALL OFF–SITE IMPROVEMENTS SPECIFIED ON THESE SITE PLAN SHALL BE CONSTRUCTED, COMPLETED, INSPECTED AND APPROVED BY THE TOWN OF LONDONDERRY (AND/OR THE NHDOT, IF APPLICABLE) PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.

16. APPLICANT SHALL COORDINATE TRAINING MEETING WITH LONDONDERRY POLICE & FIRE DEPARTMENTS.

17. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT DEFINCIENCIES EXIST IN THE APPROVED DESIGN DRAWINGS, THE OWNER SHALL BE REQUIRED TO CORRECT THE DEFICIENCIES TO MEET THE REGULATIONS AT NO EXPENSE TO THE TOWN.

18. THIS PLAN SET HAS BEEN PREPARED FOR THE FULL BUILDOUT OF THE FACILITY NOTING A PHASED CONSTRUCTION SCHEDULE.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

OVERALL SITE PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 100' **SEPTEMBER 8, 2025**

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OWNER'S SIGNATURE

OWNER OR AUTHORIZED AGENT — DATE 12/22/2025

Approved by the Londonderry, NH Planning Board for Phase _____

on Date: _____

Certified by:

_____

_____

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=100'
100 50 0 100

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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48 Constitution Drive
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Fax (603) 472-9747
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FILE 18252-02 | DR | FB | CK | CADFILE 18252-02 SITE PLAN | C-05

Dec 23, 2025 - 2:15pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 SITE PLAN.dwg

14-47
UNITED STATES OF AMERICA- FEDERAL AVIATION ADMINISTRATION
12 NE EXECUTIVE PARK, BURLINGTON, MA 01803
BK. 2363 PG. 322 - ZONE: I-II
LAND USE: US GOVT C (9000)
(20A NORTH WENTWORTH AVENUE)

N
NAD 83

NOTES

1. SEE NOTES ON SHEET C-03.
2. ALL DIMENSIONS ARE TO THE FACE OF CURB UNLESS NOTED OTHERWISE.
3. LIGHTING, SIGNAGE, LANDSCAPING, AND SCREENING SHALL MEET THE REQUIREMENTS OF THE LONDONDERRY ZONING ORDINANCE AND SITE PLAN REGULATIONS.
4. SNOW SHALL NOT BE STOCKPILED IN STORMWATER BMP'S, WETLAND BUFFERS, OR WETLANDS. SEE SNOW STORAGE LOCATIONS. IN THE EVENT THAT THE SNOW STORAGE AREAS PROVIDED ON THE SITE ARE COMPLETELY UTILIZED, EXCESS SNOW SHALL BE TRANSPORTED OFF SITE FOR DISPOSAL IN ACCORDANCE WITH NHDES REGULATION. IF SNOW IS STORED WITHIN PARKING AREA, KEEP CATCH BASINS CLEAR.

MODULAR BLOCK RETAINING WALL
NATURAL GAS GENERATOR PAD
10,000 GAL LIFT STATION
26' x 32' SCREENING ROOM (RECEIVIING)
DETENTION BASIN #1
20' BUILDING SETBACK
50' NHDES P/T SETBACK
EOG
FUTURE FET
FUTURE 81' TRIBRID-BIOREACTOR
81' TRIBRID-BIOREACTOR
FET 1
FET 2
CB5
CB4
CCB
NO PARKING FIRE ACCESS
50' WETLAND BUFFER
ROLL UP DOOR
DOWN CAST WALL PACK (TYP.)
PFO1B
ODOR CONTROL PAD
DUMPSTER/COMPACTOR AREA
1 STORY DEPACKAGING BUILDING (36,600 SF)
FF=297
H=39.5'
15,000 GAL TANK
6' DIA RE-AERATION TANK
1 STORY PROCESS BUILDING (±14,100 SF)
FF=296
H=24.5'
TIPPING TRUCK GARAGE DOORS (RECEIVING)
LOADING DOCK DOOR (TYP.)
R7-8
R7-8a
(BUILDING MOUNTED)
CONC. WHEEL STOP (TYP.)
ROLL UP DOOR
RECEIVING
ACCESS DRIVE
CONCRETE APRON (SEE DETAILS)
CONCRETE RETAINING WALL (BY OTHERS)
11' X 26' BIOSOLIDS STORAGE BIN (ELEVATED)
BIT. CONC. PAVEMENT (TYP.)
OUTBOUND SCALE
INBOUND SCALE
SNOW STORAGE (TYP.)
18' DOWN CAST LIGHT POLE (TYP.)
INDUSTRIAL PARK DRIVE (PUBLIC)
TRANSFORMER PAD 20'L X 8'W CONC. PAD FOR SEWER PUMP STATION AND BACK UP GENERATOR
RELOCATED STONES
TRANSFORMER P
INTERCONNECTION FACILITY YARD
LOAM AND SEED (TYP.)
FUTURE PROCESS BUILDING (±8,250 SF)
WETLAND IMPACT AREA
199 SF. TEMPORARY IMPACT
8,132 SF. PERMANENT IMPACT
FUTURE 96' TRIBRID-BIOREACTOR
96' TRIBRID-BIOREACTOR
20' GRAVEL DRIVE
BIOGAS WATER KO
ENCLOSED FLARE AND CLEAR RADIUS
GUARDRAIL
BIOGAS UPGRADING YARD
TRANSFORMER PAD
H_2S MEDIA LAYDOWN AREA (CONC. PAD)
12' MAINTENANCE DRIVE
WETLAND IMPACT AREA
65 SF. TEMPORARY IMPACT
439 SF. PERMANENT IMPACT
REINFORCED MODULAR BLOCK RETAINING WALL
FILTRATION BASIN #1 AREA
FILTRATION BASIN #2 AREA
PROPOSED TREELINE (TYP.)
WETLAND CONSERVATION BOUNDARY SIGNS (TYP.)
LIMIT OF CONSERVATION EASEMENT
LIMIT OF CONSERVATION EASEMENT
CONSERVATION EASEMENT (BOOK 4634, PAGE 2911)
20' BUILDING SETBACK

HORIZONTAL SCALE 1"=40'
40 20 0 40

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SITE LAYOUT PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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OWNER OR AUTHORIZED AGENT — DATE 12/22/2025

Approved by the Londonderry, NH Planning Board for Phase _____
on Date:_____
Certified by:
_____
_____

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
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4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Structural Engineers
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Land Surveyors
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Fax (603) 472-9747
www.tfmoran.com

FILE: 18252-02 | DR: | FB: | CK: | CADFILE: 18252-02 SITE PLAN | C-06

Dec 23, 2025 - 2:16pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 SITE PLAN.dwg

14-47
UNITED STATES OF AMERICA- FEDERAL AVIATION ADMINISTRATION
12 NE EXECUTIVE PARK, BURLINGTON, MA 01803
BK. 2363 PG. 322 - ZONE: I-A
LAND USE: US GOVT C (9000)
(20A NORTH WENTWORTH AVENUE)

N
NAD 83

DETENTION BASIN 1
W/ LINER SEE DETAIL
BOTTOM = 294.00
BERM = 296.00
EMERGENCY SPILLWAY = 295.50
3'Wx5'L RIPRAP SPILLWAY
ELEV=295.50

TBM
TOP OF DRILLHOLE
ELEV=290.12'

20' BUILDING SETBACK

50' NHDES P/T SETBACK

81'
TRIBRID-BIOREACTOR

FUTURE 81'
TRIBRID-BIOREACTOR

FUTURE 81'
TRIBRID-BIOREACTOR

FUTURE PROCESS
BUILDING
(±8,250 SF)

INV.O ROOF DRAIN = 289.50

1 STORY
PROCESS
BUILDING
(±14,100 SF)
FF=296
H=24.5'

96'
TRIBRID-BIOREACTOR

96'
TRIBRID-BIOREACTOR

FUTURE 96'
TRIBRID-BIOREACTOR

1 STORY
DEPACKAGING BUILDING
(36,600 SF)
FF=297
H=39.5'

TRENCH DRAIN TD1
RIM = 294.0
INV.O = 289.5

MODULAR BLOCK
RETAINING WALL
TOW=303.0
BOW=300.0

MODULAR BLOCK
RETAINING WALL
TOW=300.0
BOW=297.5

TBM
TOP OF DRILLHOLE
ELEV=303.29'

MATCHLINE (C-13)

RIP RAP PLUNGE POOL
BOT. = 276.00
SEE SHEET D22

HEADWALL #1
INV=277.0

CUTOFF SWALE W/
UNDERDRAINED TRENCH
W=3'
D=0.25'
S=0.065

HEADWALL #2
INV=274.0

10.4'Wx15.6'L
RIPRAP OUTLET
ELEV=276.40

REINFORCED MODULAR
BLOCK RETAINING WALL
TOW=279.0
BOW=262.0

TOW=279
BOW=262

TOW=278
BOW=262

TOW=270
BOW=264

TOW=260
BOW=257

HEADWALL 3
INV.O = 265.75

OS1
RIM=277.30

6'Wx9'L RIPRAP SPILLWAY
ELEV=277.50

FILTRATION BASIN 1
BOTTOM = 273.00
FILTER MEDIA = 271.50
BERM = 278.00
EMERGENCY SPILLWAY = 277.50

LIMIT OF CONSERVATION EASEMENT

FOREBAY 1
BOTTOM = 274.00
BERM = 278.00

HEADWALL 5
INV.O = 277.00

HEADWALL 4
INV.O = 277.00

OS2
RIM=279.00

FILTRATION BASIN 2
BOTTOM = 277.00
FILTER MEDIA = 275.50
BERM = 280.00
EMERGENCY SPILLWAY = 279.50
6'Wx9'L RIPRAP SPILLWAY
ELEV=279.50

RIPRAP
APRON
(TYP.)

FOREBAY 2
6' x 122' BOTTOM = 276.50
BERM = 280.00
21'W x 9'L RIPRAP WEIR
ELEV=278.80

RIPRAP SWALE
W=8'
D=6"
S=0.06 '/'

20' BUILDING SETBACK

CB1, CB2, CB3 5'Ø, CB4, CB5, CB6, CB8A 5'Ø, CB10, CB12, CB13, CB13A 5'Ø, CB14 5'Ø, CB15, CB16, CB17 5'Ø, CB18, CB19, CB20, CB21, CB22, CB23, CB24, CB27, CB28, CB30
DMH1, DMH3, DMH5, DMH5A, DMH6, DMH9 5'Ø, DMH11 5'Ø, DMH23, DMH24, DMH25, DMH 26, DMH RD

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

GRADING & DRAINAGE PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=40'
40 20 0 40

REV	DATE	DESCRIPTION	DR	CK
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4	10/24/2025	NHF&G APPROVAL	JD	NG
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Civil Engineers
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FILE	18252-02	DR		FB		C-07
		CK		CADFILE	18252-02 SITE PLAN	

Dec 23, 2025 - 2:16pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_CSD\PRODUCTION\18252-02 SITE PLAN.dwg

Pipe Table				
Pipe Name	SIZE	MATERIAL	Length	Slope
CB10–CB12	15"	HDPE PIPE	169 LF	0.010
DMH1–CB12	15"	HDPE PIPE	65 LF	0.010
CB14–DMH9	24"	HDPE PIPE	81 LF	0.010
CB13–CB14	15"	HDPE PIPE	71 LF	0.012
CB1–CB2	15"	HDPE PIPE	22 LF	0.010
CB2–DMH1	15"	HDPE PIPE	156 LF	0.010
CB12–CB18	15"	HDPE PIPE	60 LF	0.010
CB6–CB8A	24"	HDPE PIPE	153 LF	0.008
CB8A–CB14	18"	HDPE PIPE	131 LF	0.010
DMH9–POND2	30"	HDPE PIPE	24 LF	0.005
CB30–DMH11	24"	HDPE PIPE	92 LF	0.010
DMH11–POND1	24"	HDPE PIPE	46 LF	0.005
CB28–DMH11	15"	HDPE PIPE	25 LF	0.008
CB27–DMH26	15"	HDPE PIPE	28 LF	0.010
CB20–CB21	15"	HDPE PIPE	94 LF	0.025
CB21–CB22	15"	HDPE PIPE	44 LF	0.009
CB22–DMH23	15"	HDPE PIPE	73 LF	0.010
DMH23–DMH24	15"	HDPE PIPE	58 LF	0.010
CB24–DMH25	15"	HDPE PIPE	82 LF	0.011
DMH25–DMH26	15"	HDPE PIPE	113 LF	0.009
DMH26–DMH11	18"	HDPE PIPE	126 LF	0.010
DMH6–CB8A	24"	HDPE PIPE	80 LF	0.010
DMH24–CB23	15"	HDPE PIPE	37 LF	0.009
OS3–DMH5	18"	HDPE PIPE	199 LF	0.010
DMH5–DMH5A	24"	HDPE PIPE	132 LF	0.010

Pipe Table				
Pipe Name	SIZE	MATERIAL	Length	Slope
CB4–DMH5	18"	HDPE PIPE	191 LF	0.010
CB23–CB24	15"	HDPE PIPE	110 LF	0.010
CB13A–CB13	15"	HDPE PIPE	102 LF	0.010
CB17–DMH9	18"	HDPE PIPE	108 LF	0.015
CB5–CB4	15"	HDPE PIPE	14 LF	0.007
TD–CB13A	24"	HDPE PIPE	56 LF	0.010
CB18–CB17	18"	HDPE PIPE	45 LF	0.010
CB19–CB17	15"	HDPE PIPE	50 LF	0.010
CB3–DMH3	15"	HDPE PIPE	90 LF	0.010
DMH3–CB10	15"	HDPE PIPE	82 LF	0.010
OS2–OUT	15"	HDPE PIPE	31 LF	0.016
OS1–OUT	15"	HDPE PIPE	60 LF	0.004
CB16–HW2	15"	HDPE PIPE	61 LF	0.030
CB15–OS3	15"	HDPE PIPE	38 LF	0.009
DMH RD–CB28	15"	HDPE PIPE	39 LF	0.005
PROCESS –DMH RD	15"	CORRUGATED HDPE PIPE	72 LF	0.005
DMH5A–DMH6	24"	CORRUGATED HDPE PIPE	114 LF	0.010

NOTES

1. SEE NOTES ON SHEET C-02.
2. SEE GRADING AND DRAINAGE PLAN ON SHEET C-07

STRUCTURE TABLE		
STRUCTURE NAME	STRUCTURE DETAILS	SUMP
CB1	RIM = 297.43 CB1–CB2 INV OUT = 293.18	0.0
CB2	RIM = 297.43 CB1–CB2 INV IN = 292.96 CB2–DMH1 INV OUT = 292.64	0.0
CB3 5'Ø	RIM = 296.74 CB4–DMH5 INV IN = 289.15 CB3–DMH3 INV OUT = 289.05	0.0
CB4	RIM = 297.46 CB5–CB4 INV IN = 291.16 CB4–DMH5 INV OUT = 291.06	0.0
CB5	RIM = 296.65 CB5–CB4 INV OUT = 291.26	0.0
CB6	RIM = 294.80 CB6–CB8A INV OUT = 288.00	0.0
CB8A 5'Ø	RIM = 293.10 CB6–CB8A INV IN = 286.82 CB8A–CB14 INV IN = 284.69	0.0
CB10	RIM = 296.00 DMH3–CB10 INV IN = 286.15 CB10–CB12 INV OUT = 285.94	0.0
CB12	RIM = 296.75 CB10–CB12 INV IN = 284.25 CB12–CB18 INV OUT = 284.15	0.0
CB13	RIM = 294.50 CB13A–CB13 INV IN = 289.66 CB13–CB14 INV OUT = 288.00	0.0
CB13A 5'Ø	RIM = 294.95 TD–CB13A INV IN = 288.94 CB13A–CB13 INV OUT = 290.70	0.0
CB14 5'Ø	RIM = 293.10 CB13–CB14 INV IN = 287.13 CB8A–CB14 INV OUT = 286.00 CB14–DMH9 INV OUT = 280.06	0.0
CB15	RIM = 296.08 CB15–OS3 INV OUT = 291.94	0.0
CB16	RIM = 281.80 CB16–HW2 INV OUT = 277.55	0.0
CB17 5'Ø	RIM = 298.57 CB18–CB17 INV OUT = 282.45 CB17–DMH9 INV OUT = 279.72 CB19–CB17 INV OUT = 285.00	0.0
CB18	RIM = 298.57 CB18–CB17 INV IN = 282.00 CB12–CB18 INV IN = 283.55	0.0
CB19	RIM = 293.00 CB19–CB17 INV IN = 284.50	0.0
CB20	RIM = 293.44 CB20–CB21 INV OUT = 289.20	0.0
CB21	RIM = 291.69 CB20–CB21 INV IN = 286.90 CB21–CB22 INV OUT = 286.80	0.0
CB22	RIM = 293.45 CB21–CB22 INV IN = 286.41 CB22–DMH23 INV OUT = 286.31	0.0

STRUCTURE TABLE		
STRUCTURE NAME	STRUCTURE DETAILS	SUMP
CB23	RIM = 293.50 DMH24–CB23 INV IN = 284.46 CB23–CB24 INV OUT = 284.31	0.0
CB24	RIM = 293.40 CB23–CB24 INV IN = 283.20 CB24–DMH25 INV OUT = 283.10	0.0
CB27	RIM = 292.34 CB27–DMH26 INV OUT = 288.15	0.0
CB28	RIM = 293.39 DMH RD–CB28 INV IN = 288.85 CB28–DMH11 INV OUT = 288.75	0.0
CB30	RIM = 295.91 DMH6–CB8A INV IN = 285.92 CB30–DMH11 INV OUT = 285.80	0.0
DMH RD	RIM = 294.18 PROCESS –DMH RD INV IN = 289.15 DMH RD–CB28 INV OUT = 289.05	0.0
DMH1	RIM = 300.00 DMH1–CB12 INV IN = 289.30 CB2–DMH1 INV IN = 291.08	0.0
DMH3	RIM = 296.65 CB3–DMH3 INV IN = 288.15 DMH3–CB10 INV OUT = 286.97	0.0
DMH5	RIM = 296.65 OS3–DMH5 INV IN = 289.51 DMH5–DMH5A INV OUT = 289.40	0.0
DMH5A	RIM = 293.04 DMH5–DMH5A INV IN = 288.13 DMH5A–DMH6 INV OUT = 288.00	0.0
DMH6	RIM = 294.50 DMH5A–DMH6 INV IN = 286.82 DMH6–CB8A INV OUT = 286.72	0.0
DMH9 5'Ø	RIM = 292.03 CB17–DMH9 INV IN = 278.10 CB14–DMH9 INV IN = 279.25 DMH9–POND2 INV OUT = 278.12	0.0
DMH11 5'Ø	RIM = 292.73 CB30–DMH11 INV IN = 284.88 CB28–DMH11 INV IN = 288.54 DMH26–DMH11 INV IN = 279.54 DMH11–POND1 INV OUT = 277.23	0.0
DMH23	RIM = 293.73 CB22–DMH23 INV IN = 285.59 DMH23–DMH24 INV OUT = 285.49	0.0
DMH24	RIM = 293.70 DMH23–DMH24 INV IN = 284.91 DMH24–CB23 INV OUT = 284.81	0.0
DMH25	RIM = 293.90 CB24–DMH25 INV IN = 282.23 DMH25–DMH26 INV OUT = 282.10	0.0
DMH26	RIM = 293.70 DMH25–DMH26 INV IN = 281.05 CB27–DMH26 INV IN = 287.87 DMH26–DMH11 INV OUT = 280.80	0.0
OS1	RIM = 277.30 OS1–OUT INV OUT = 266.00	0.0
OS2	RIM = 279.00 OS2–OUT INV OUT = 272.00	0.0
OS3	RIM = 295.90 CB15–OS3 INV IN = 291.60 OS3–DMH5 INV OUT = 291.50	0.0

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DRAINAGE STRUCTURE TABLES

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NONE **SEPTEMBER 8, 2025**

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NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
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FILE 18252-02 | DR | FB | CADFILE | 18252-02 SITE PLAN | C-08

Dec 23, 2025 - 2:16pm
P:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 SITE PLAN.dwg

14-47
UNITED STATES OF AMERICA- FEDERAL AVIATION ADMINISTRATION
12 NE EXECUTIVE PARK, BURLINGTON, MA 01803
BK. 2363 PG. 322 – ZONE: I-A
LAND USE: US GOVT C (9000)
(20A NORTH WENTWORTH AVENUE)

B

N
NAD 83

NOTES

1. SEE NOTES ON SHEET C-02.

HYDRANT
CB5
CB4
CB3 5'Ø
DMH3
OS3
DMH5
CB21
CB15
CB20
CB22
DMH23
DMH24
CB23
81' TRIBRID-BIOREACTOR
FUTURE 81' TRIBRID-BIOREACTOR
FUTURE 81' TRIBRID-BIOREACTOR
HYDRANT
SMH2
SMH1
SANITARY SEWER 8" PVC INV.O=289.33
INDUSTRIAL SEWER 8" PVC INV.O=289.33
DMH5A
1 STORY PROCESS BUILDING (±14,100 SF) FF=296 H=24.5'
FUTURE PROCESS BUILDING (±8,250 SF)
CB6
SMH10
INDUSTRIAL WASTE WATER TANK POINT OF COMPLIANCE RIM=295.6± INV.I = 289.28 INV.O = 289.20
4" STORZ FIRE DEPARTMENT CONNECTION
2" DEOMESTIC SERVICE WITH CURB STOP & BOX
96' TRIBRID-BIOREACTOR
96' TRIBRID-BIOREACTOR
DMH RD
HYDRANT
CB24
FUTURE 96' TRIBRID-BIOREACTOR
CB27
CB28
DMH25
DMH26
DMH11 5'Ø
CB30
DMH6
CB8A 5'Ø
CB14 5'Ø
CB16
1 STORY DEPACKAGING BUILDING (36,600 SF.)
FF=297 H=39.5'
INDUSTRIAL WASTE WATER TANK POINT OF COMPLIANCE RIM=296.4± INV.I = 289.21 INV.O = 289.13
4" STORZ FIRE DEPARTMENT CONNECTION
2" DEOMESTIC SERVICE WITH CURB STOP & BOX
SANITARY SEWER 8" PVC INV.O=289.33
HYDRANT W/ BOLLARD
CB10
6" DI FIRE SERVICE
6"X6"X2" DI MJ TEE
8"X8"X6" DI MJ ANCHOR TEE WITH 6" GATE VALVE
FEEDSTOCK FM SHOWN FOR COORDINATION (DESIGN BY OTHERS)
CB13A 5'Ø
SMH5
SMH3
SMH11
8" DI
8"X8"X6" MJ ANCHOR TEE WITH 6" GATE VALVE
CB12
CB13
CB17 5'Ø
CB18
CB19
DMH9 5'Ø
6" SDR35, PUMP STATION VENT (3-FT TALL)
SEWER PUMP STATION (6'DIA) RIM=298.5 INV IN=294.2
VALVE PIT (8'DIA)
MASTER ELECTRICAL ENCLOSURE (FINAL DESIGN/SELECTION BY OTHERS)
DIESEL EMERGENCY GENERATOR (FINAL DESIGN/SELECTION BY OTHERS)
8"X8"X6" MJ ANCHOR TEE WITH 6" GATE VALVE
HYDRANT
DMH1
OHE
6"X6"X6" MJ ANCHOR TEE WITH 6" GATE VALVE
COORDINATE SIZE AND MATERIALS OF GAS LINE WITH LIBERTY UTILITY
8"X8"X2" MJ ANCHOR TEE WITH 2" GATE VALVE
UGE
UGE/T/C
W
T
LIMIT OF CONSERVATION EASEMENT

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

UTILITY PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=40'
40 20 0 40

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C-09

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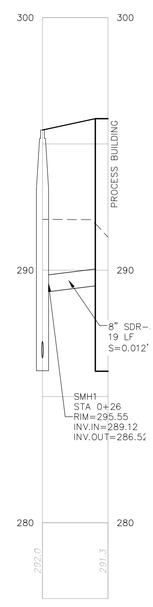
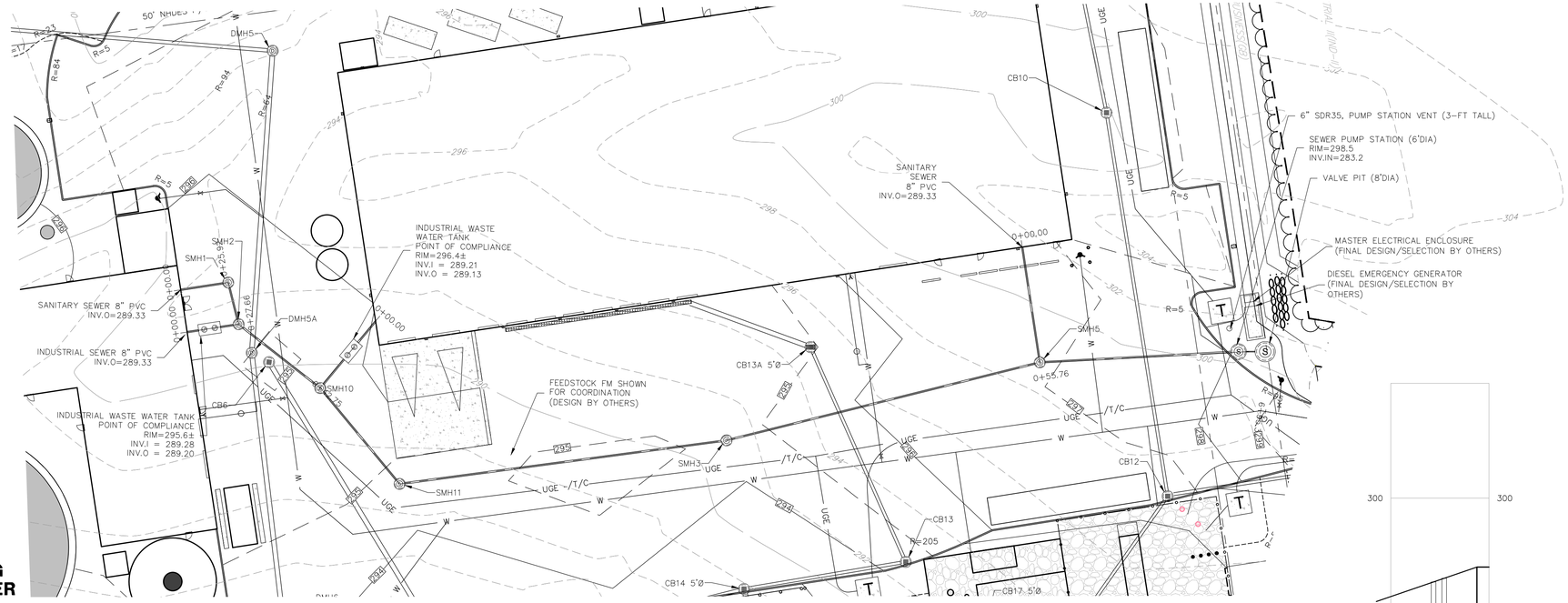
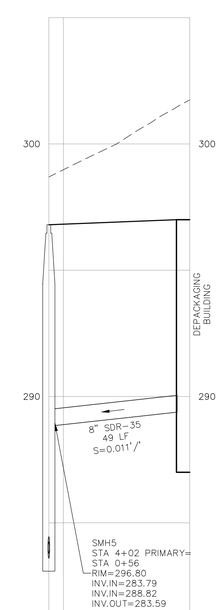
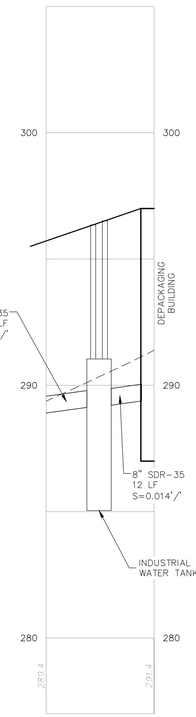


PROCESS BLDG SANITARY SEWER

SCALE: 1"=30'H / 1"=3'V

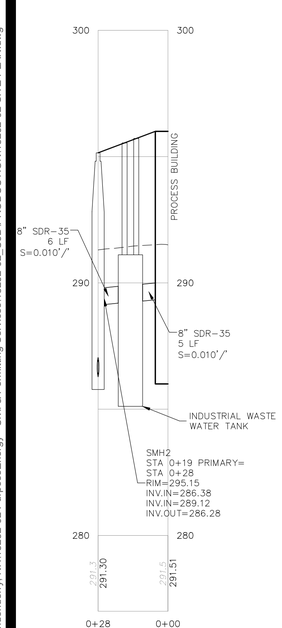






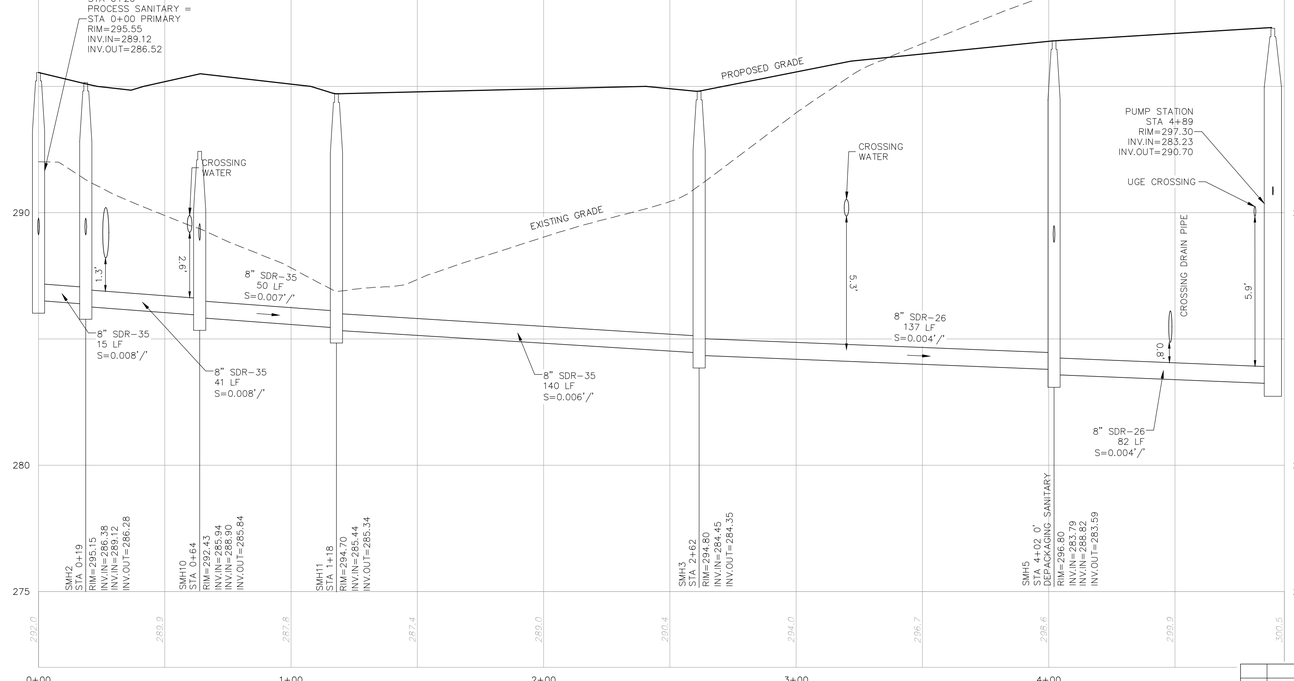
DEPACKING BLDG INDUSTRIAL SEWER

SCALE: 1"=30'H / 1"=3'V



PROCESS BLDG INDUSTRIAL SEWER

SCALE: 1"=30'H / 1"=3'V



PRIMARY SITE SEWER

SCALE: 1"=30'H / 1"=3'V

HORIZONTAL SCALE 1"=30'

VERTICAL SCALE 1"=3'

NOTES

1. SEE NOTES ON SHEET C-02.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SITE SEWERS PLAN AND PROFILE

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.

LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC

25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

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PROJ.	18252-02	DR		FB		C-10
		CK		CADFILE	18252-02 SITE PLAN	

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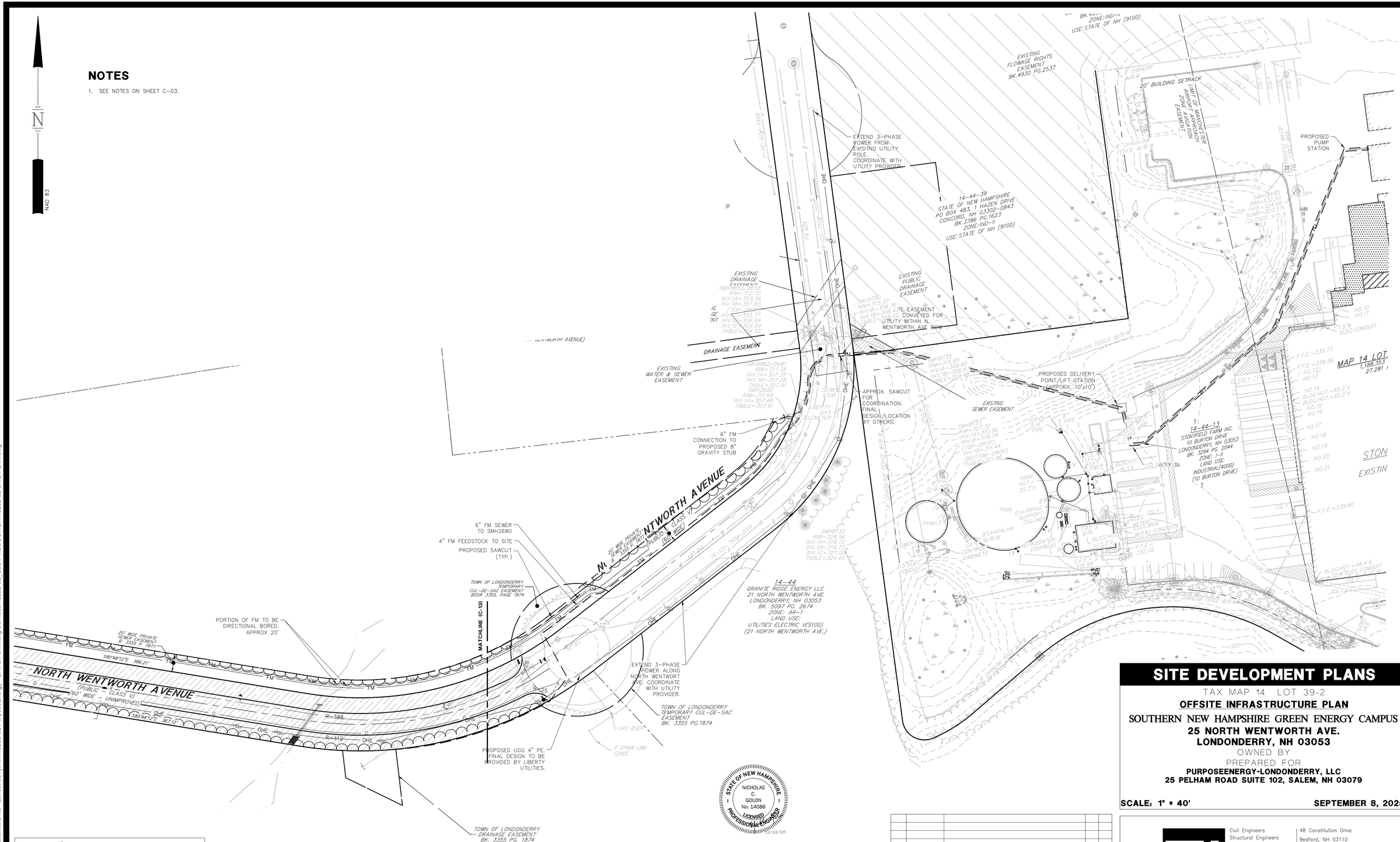
NOTES

1. SEE NOTES ON SHEET C-03.



SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

OFFSITE INFRASTRUCTURE PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

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LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC

25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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FILE	18252-02	DR		FB		C-11
		CK		CADFILE	18252-02 SITE PLAN	

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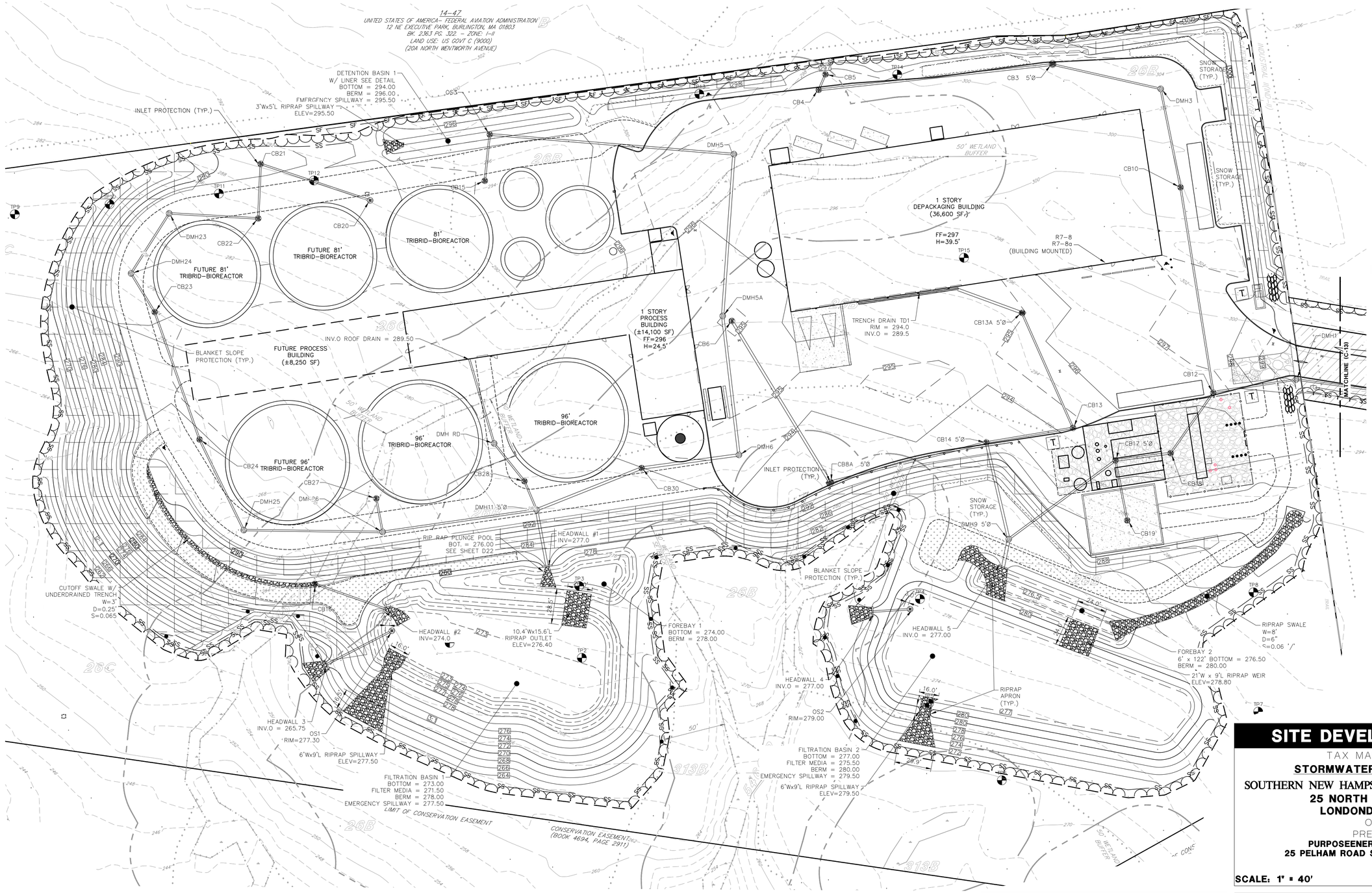

NOTES

1. SEE SHEET D-01 FOR STORMWATER MANAGMENT AND CONSTRUCTION GENERAL PERMIT NOTES.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

STORMWATER MANAGEMENT PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.

LONDONDERRY, NH 03053

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PURPOSEENERGY-LONDONDERRY, LLC

25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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HORIZONTAL SCALE 1"=40'
40 20 0 40

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18252-02	CK		CADFILE	18252-02 SITE PLAN	C-12

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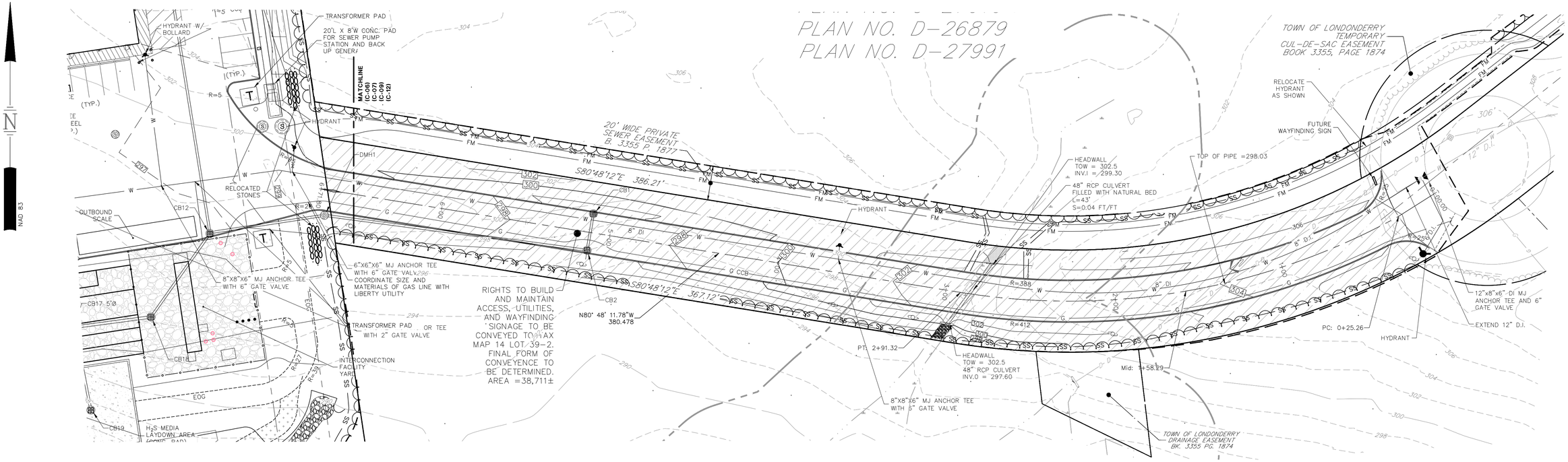

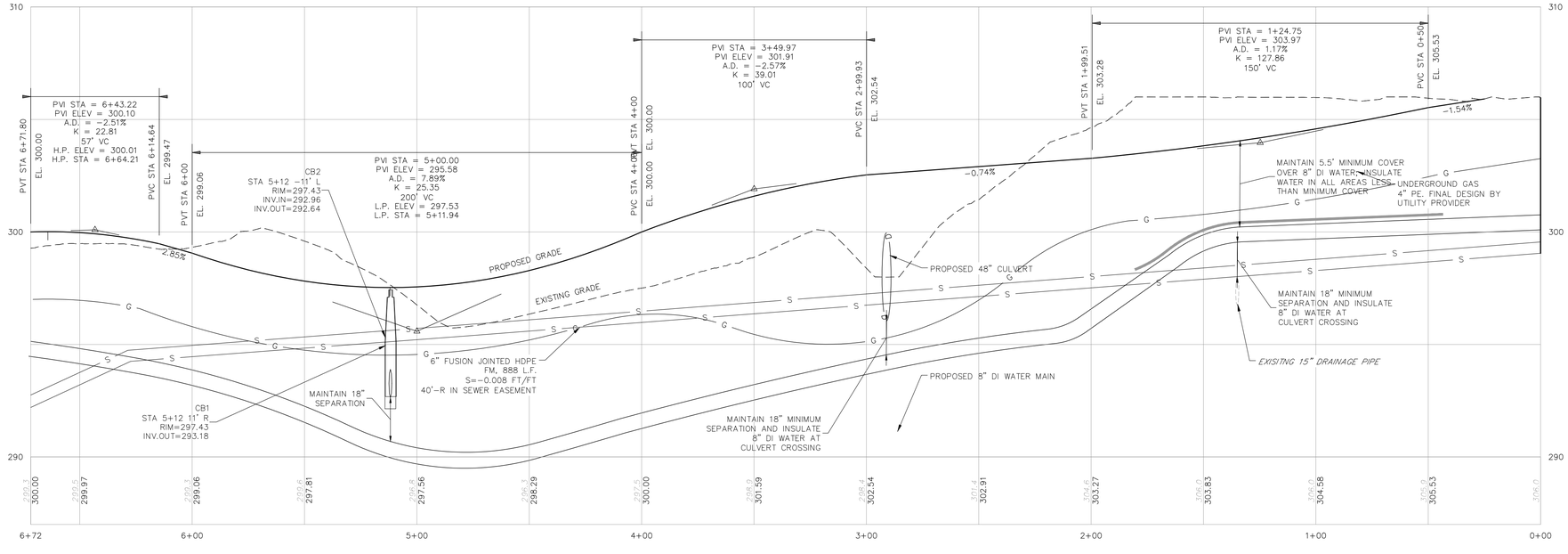

PROPOSED DRIVEWAY

HORIZONTAL SCALE 1"=30'
30 15 0 30
VERTICAL SCALE 1"=3'
3 0 3

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DRIVEWAY PLAN & PROFILE

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25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

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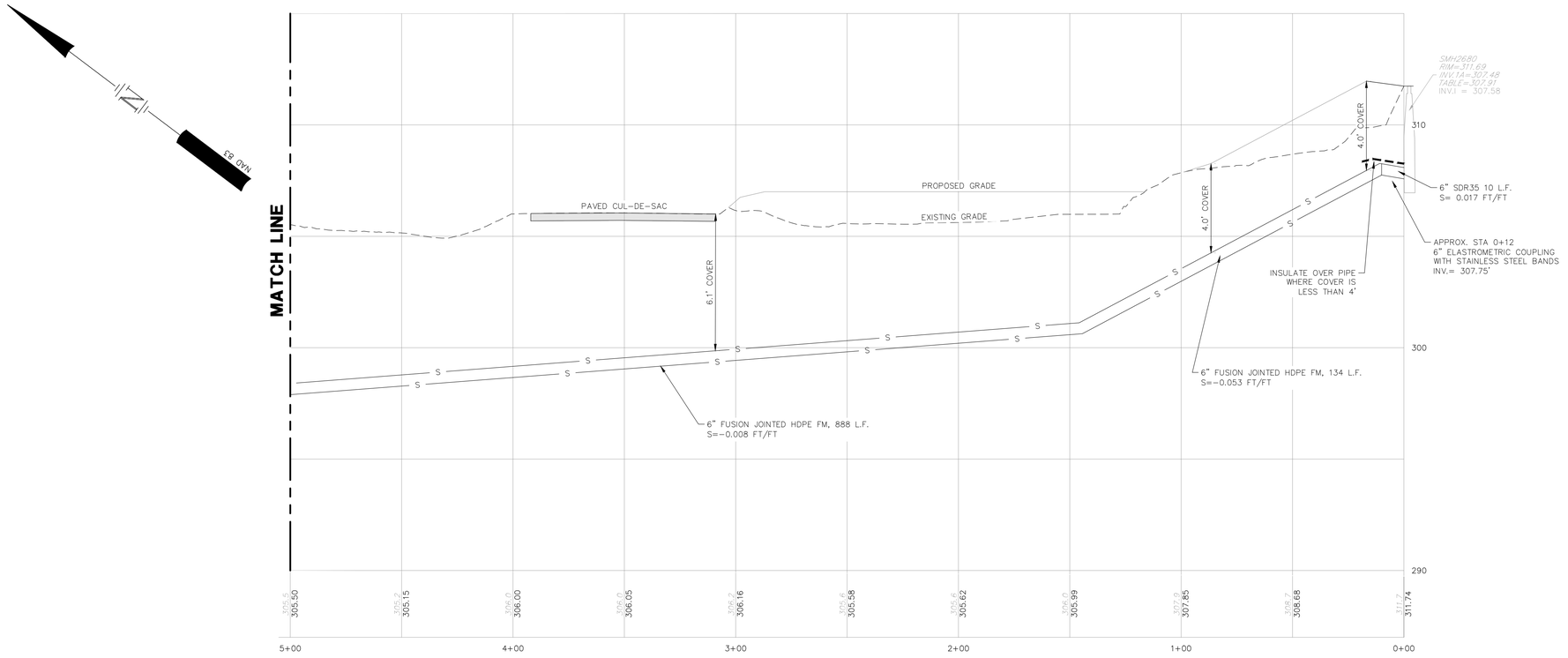
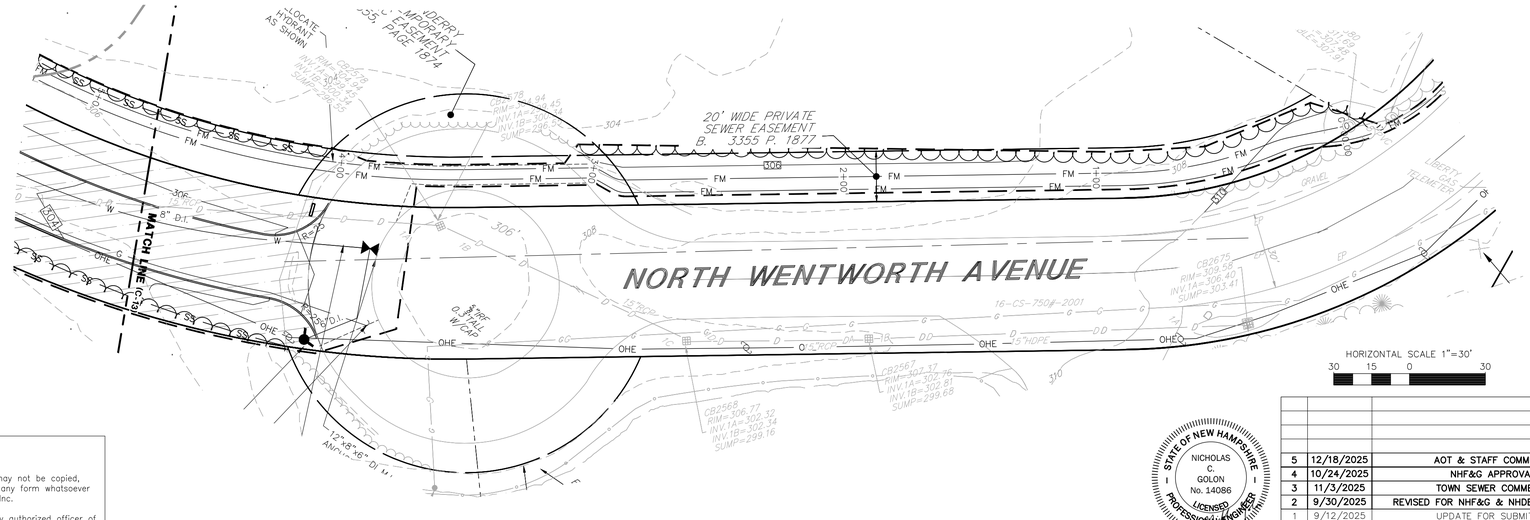
NOTES

1. SEE NOTES ON SHEET C-03.



SEWER FORCEMAIN TO MUNICIPAL SYSTEM

SCALE: 1" = 30' H/1"=3' V



HORIZONTAL SCALE 1"=30'

30 15 0 30

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

FORCEMAIN PLAN AND PROFILE

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

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FILE	18252-02	DR		FB		C-14
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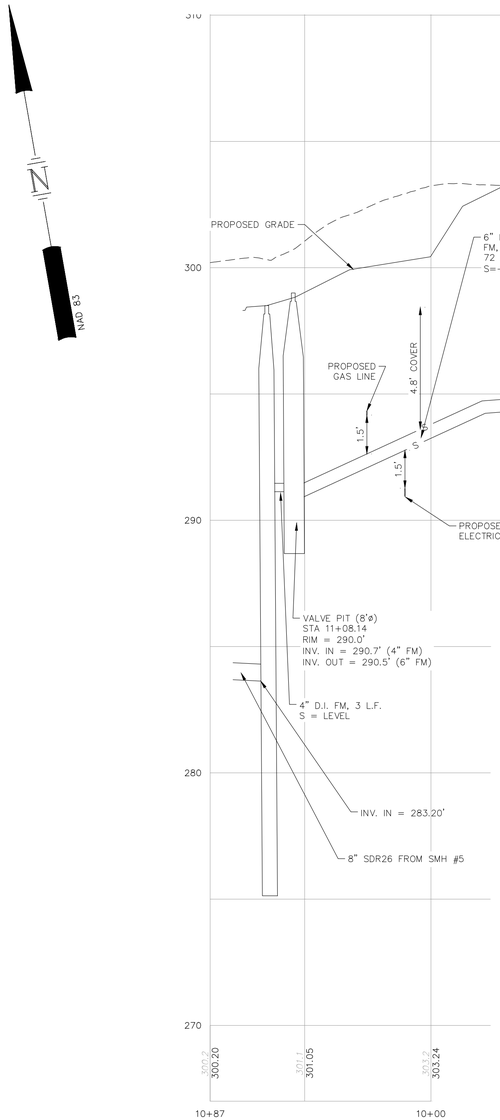

SEWER FORCEMAIN TO MUNICIPAL SYSTEM

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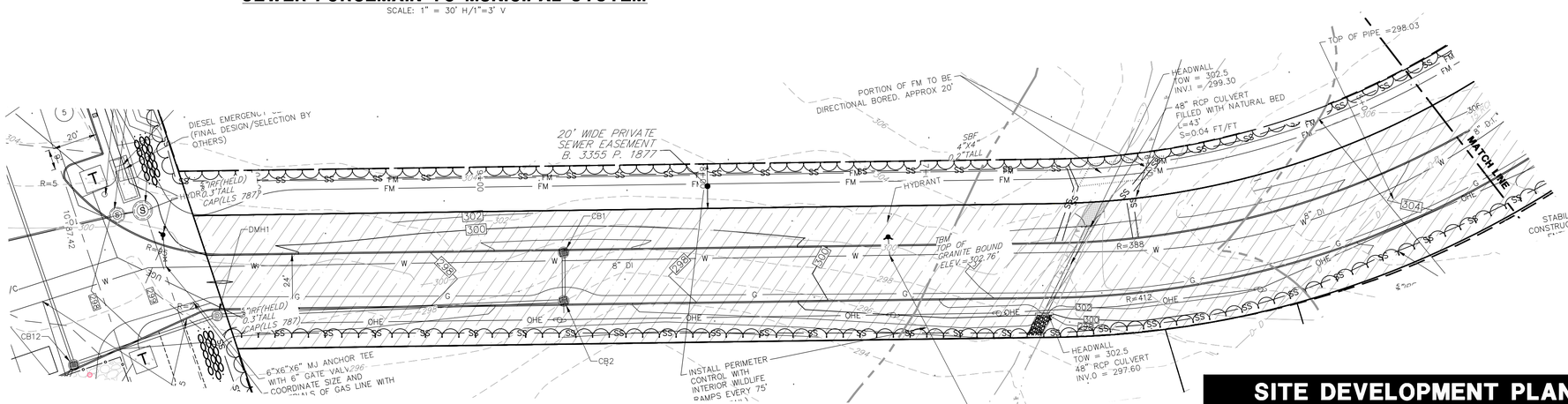

HORIZONTAL SCALE 1"=30'

30 15 0 30

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

FORCEMAIN PLAN AND PROFILE

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FILE	DR		FB		
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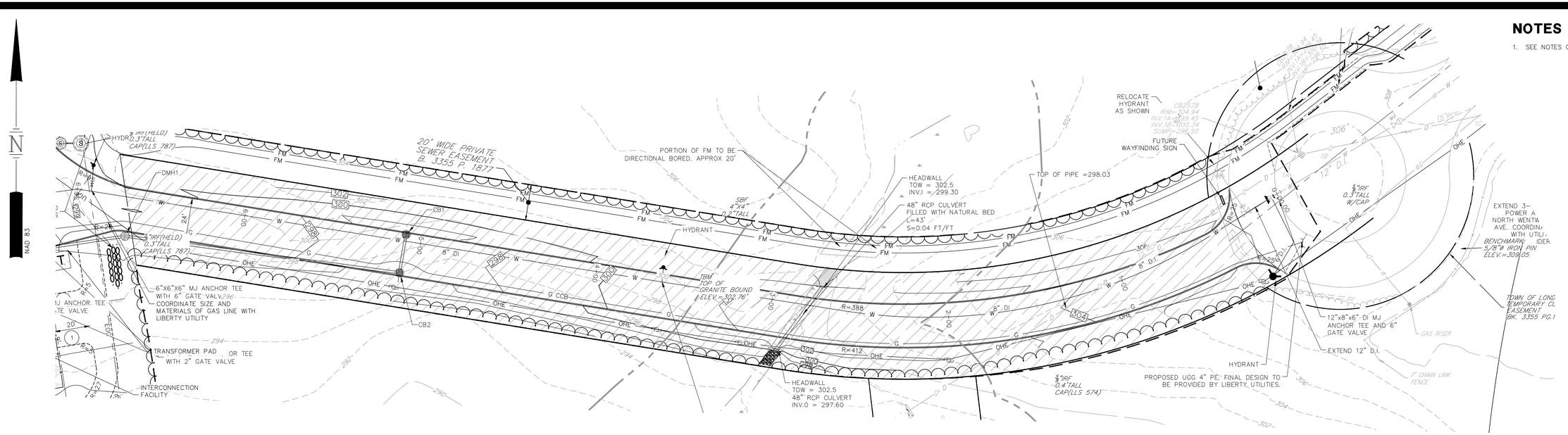

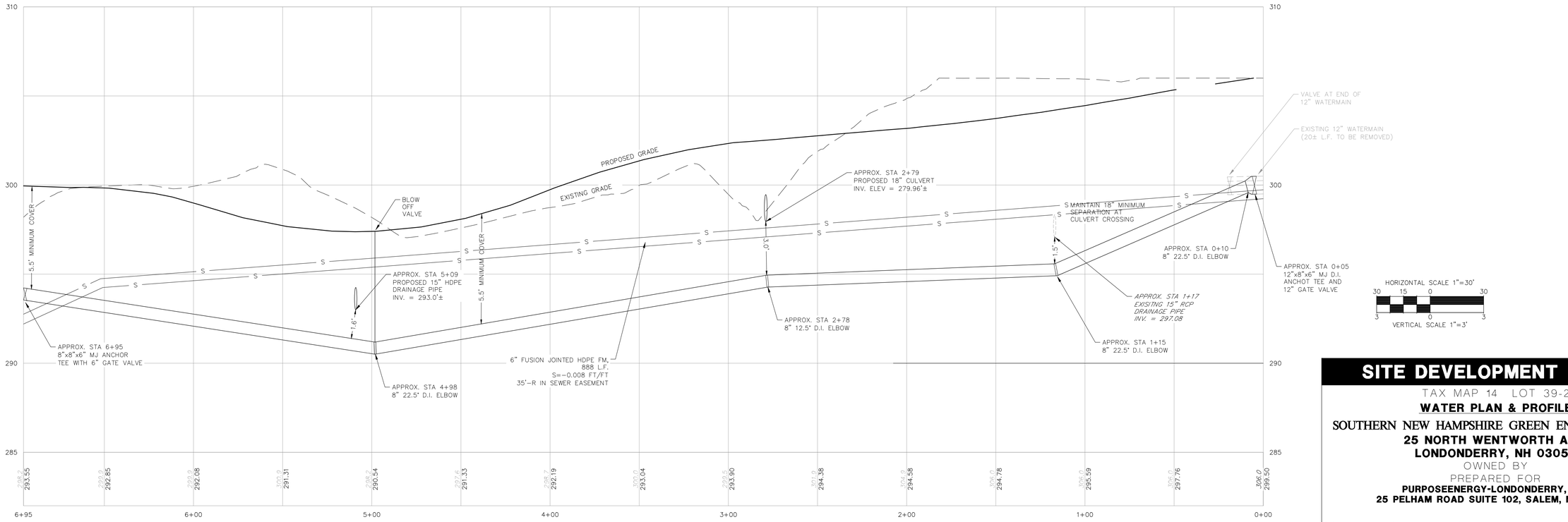

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

WATER PLAN & PROFILE

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25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	18252-02	DR		FB		C-16
		CK		CADFILE	18252-02 SITE PLAN	

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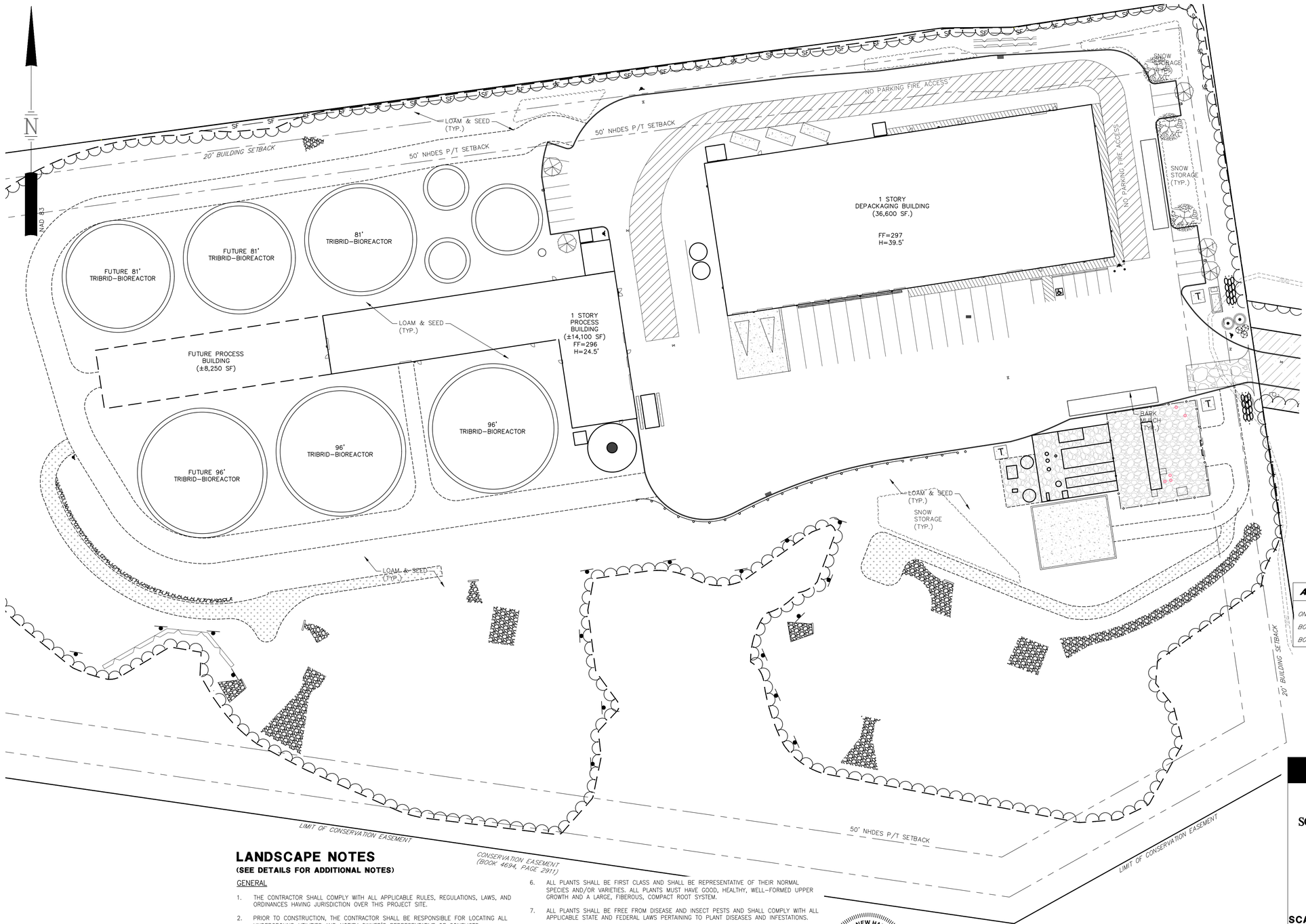

LANDSCAPE LEGEND

SYMBOL	QTY	BOTANICAL NAME COMMON NAME	SIZE	REMARKS
	3	QUERCUS RUBRA RED OAK	2 1/2" TO 3" CAL.	B&B
	5	QUERCUS P. 'GREEN PILLAR' GREEN PILLAR PIN OAK	2 1/2" TO 3" CAL.	B&B
	3	JUNIPERUS VIRGINIANA HILLSPIRE' HILLSPIRE EASTERN RED CEDAR	6' TO 7'	B&B
	3	SYRINGA VULGARIS 'NEW AGE LAVENDER' NEW AGE LAVENDER LILAC	5 GAL.	CONT.

LANDSCAPE REQUIREMENTS

GREEN SPACE REQUIREMENT:
REQUIRED: 25%
PROVIDED: 64%

INTERIOR PARKING LANDSCAPE AREA REQUIREMENTS:
(3.10g1. OF SITE PLAN REG.'S) *WAIVER REQUIRED

INTERNAL PARKING LOT LANDSCAPING:
(3.10g3. OF SITE PLAN REG.'S)
1 TREE/15 PARKING SPACES (19 SPACES/15) = 1.2 TREES
TOTAL TREES REQUIRED = 1
TREES PROVIDED = 2 TREES

PARKING LOT PERIMETER LANDSCAPING:
(3.10g5. OF SITE PLAN REG.'S)
1 SHADE TREE/20' OF PARKING PERIMETER = 117 SF/20' = 5.8 SHADE TREES
TOTAL TREES REQUIRED = 6
TREES PROVIDED = 6 TREES

SCREENING FROM PUBLIC RIGHT-OF-WAY:
(3.10g6. OF SITE PLAN REG.'S)
EXISTING VEGETATION TO SATISFY REQUIREMENT.

ACCORDING TO THE USDA PLANT HARDINESS ZONE MAP THE ANNUAL MINIMUM TEMERATURE ZONES FOR SOUTHERN NH ARE BETWEEN ZONE 4 (−30 TO −20 DEGREES) AND ZONE 5 (−20 TO −10 DEGREES). THE PLANT MATERIALS SHOWN ON THIS PLAN HAVE A HARDINESS ZONE TO MEET THAT OF SOUTHERN NH.

THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION AND MAINTENANCE THROUGHOUT CONSTRUCTION OF PROTECTIVE TREE FENCING LOCATED 12" INCHES OFF THE THE DRIPLINE OF ALL TREES TO BE PROTECTED. PRIOR TO CONSTRUCTION THE CONTRACTOR IS REQUIRED TO HAVE ALL NO-CUT ZONES DELINEATED IN THE FIELD.

THE CONTRACTOR/APPLICANT IS RESPONSIBLE FOR REPLACEMENT OF "ANY TREES DESIGNATED TO REMAIN, WHICH HAVE BEEN DAMAGED, KILLED OR REMOVED AS A RESULT OF CONSTRUCTION ACTIVITIES". SEE TOWN OF LONDONDERRY "LANDSCAPE DESIGN STANDARDS" SECTION 3.10.D OF THE SITE PLAN REGULATIONS.

THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF ALL LANDSCAPE AREAS ONCE CONSTRUCTION IS COMPLETED AS OUTLINED IN THE TOWN OF LONDONDERRY, "LANDSCAPE DESIGN STANDARDS" SECTION 3.10.F OF THE SITE PLAN REGULATIONS.

APPROVED BY THE TOWN OF LONDONDERRY PLANNING BOARD

ON _____

BOARD MEMBER _____ AND

BOARD MEMBER _____

LANDSCAPE NOTES

(SEE DETAILS FOR ADDITIONAL NOTES)

GENERAL

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE RULES, REGULATIONS, LAWS, AND ORDINANCES HAVING JURISDICTION OVER THIS PROJECT SITE.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND NOTIFY OWNER'S REPRESENTATIVE OF CONFLICTS.
3. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON PLANS BEFORE PRICING THE WORK. ANY DIFFERENCE IN QUANTITIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR CLARIFICATION. LANDSCAPE QUANTITIES SHOWN ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN LANDSCAPE LEGEND.
4. THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT PRIOR TO STARTING WORK AND VERIFY THAT THE PLANS IN THE CONTRACTOR'S POSSESSION ARE THE MOST CURRENT PLANS AVAILABLE AND ARE THE APPROVED PLAN SET FOR USE IN CONSTRUCTION.
5. ALL PLANT MATERIALS INSTALLED SHALL MEET OR EXCEED THE SPECIFICATIONS OF THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION (ANLA) [FORMERLY THE AMERICAN ASSOCIATION OF NURSERYMEN] IN THE AMERICAN STANDARD FOR NURSERY STOCK (AS AMENDED) [ANSI Z60.1–1996].
6. ALL PLANTS SHALL BE FIRST CLASS AND SHALL BE REPRESENTATIVE OF THEIR NORMAL SPECIES AND/OR VARIETIES. ALL PLANTS MUST HAVE GOOD, HEALTHY, WELL-FORMED UPPER GROWTH AND A LARGE, FIBEROUS, COMPACT ROOT SYSTEM.
7. ALL PLANTS SHALL BE FREE FROM DISEASE AND INSECT PESTS AND SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL LAWS PERTAINING TO PLANT DISEASES AND INFESTATIONS.
8. ALL TREES SHALL BE BALLED AND BURLAPPED (B & B) UNLESS OTHERWISE NOTED OR APPROVED BY LANDSCAPE ARCHITECT.
9. IF APPLICABLE, THE CONTRACTOR SHALL HAVE ALL FALL TRANSPLANTING HAZARD PLANTS DUG IN THE SPRING AND STORED FOR FALL PLANTING.
10. ALL INVASIVE PLANT SPECIES FROM THE "NEW HAMPSHIRE PROHIBITED INVASIVE PLANT SPECIES LIST", TO BE REMOVED SHALL BE DONE SO IN ACCORDANCE WITH THE "INVASIVE SPECIES ACT, HB 1258–FN."
11. LANDSCAPING SHALL NOT CONFLICT WITH SNOW STORAGE, LIGHT FIXTURES, OR SIGHT DISTANCE.

GUARANTEE

1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE WORK FOR A PERIOD OF ONE

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 12/22/25

HORIZONTAL SCALE 1"=40'
40 20 0 40

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SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

LANDSCAPE PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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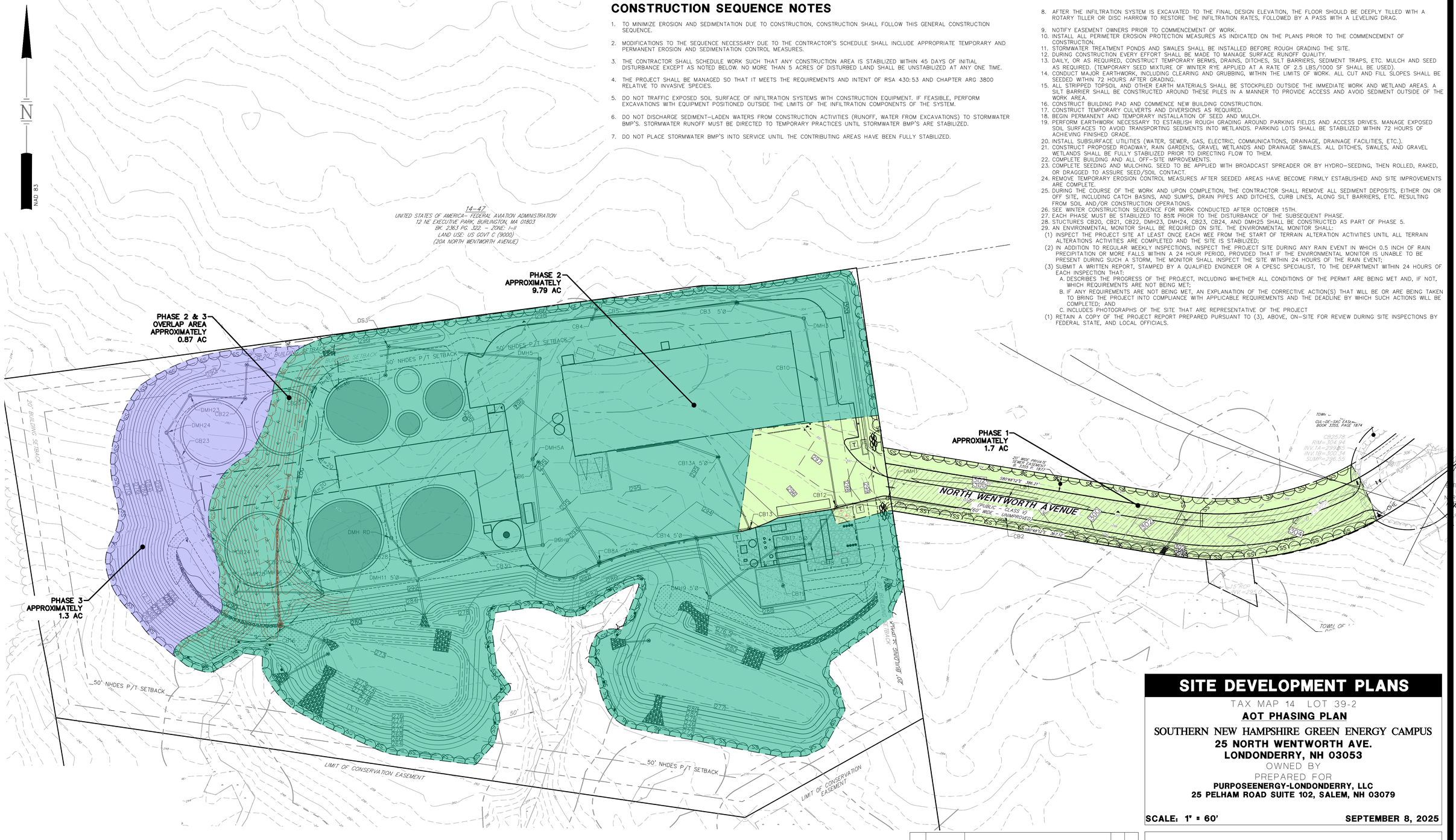
CONSTRUCTION SEQUENCE NOTES

1. TO MINIMIZE EROSION AND SEDIMENTATION DUE TO CONSTRUCTION, CONSTRUCTION SHALL FOLLOW THIS GENERAL CONSTRUCTION SEQUENCE.
2. MODIFICATIONS TO THE SEQUENCE NECESSARY DUE TO THE CONTRACTOR'S SCHEDULE SHALL INCLUDE APPROPRIATE TEMPORARY AND PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES.
3. THE CONTRACTOR SHALL SCHEDULE WORK SUCH THAT ANY CONSTRUCTION AREA IS STABILIZED WITHIN 45 DAYS OF INITIAL DISTURBANCE EXCEPT AS NOTED BELOW. NO MORE THAN 5 ACRES OF DISTURBED LAND SHALL BE UNSTABILIZED AT ANY ONE TIME.
4. THE PROJECT SHALL BE MANAGED SO THAT IT MEETS THE REQUIREMENTS AND INTENT OF RSA 430:53 AND CHAPTER ARG 3800 RELATIVE TO INVASIVE SPECIES.
5. DO NOT TRAFFIC EXPOSED SOIL SURFACE OF INFILTRATION SYSTEMS WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION COMPONENTS OF THE SYSTEM.
6. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO STORMWATER BMP'S. STORMWATER RUNOFF MUST BE DIRECTED TO TEMPORARY PRACTICES UNTIL STORMWATER BMP'S ARE STABILIZED.
7. DO NOT PLACE STORMWATER BMP'S INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
8. AFTER THE INFILTRATION SYSTEM IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE THE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
9. NOTIFY EASEMENT OWNERS PRIOR TO COMMENCEMENT OF WORK.
10. INSTALL ALL PERIMETER EROSION PROTECTION MEASURES AS INDICATED ON THE PLANS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
11. STORMWATER TREATMENT PONDS AND SWALES SHALL BE INSTALLED BEFORE ROUGH GRADING THE SITE.
12. DURING CONSTRUCTION EVERY EFFORT SHALL BE MADE TO MANAGE SURFACE RUNOFF QUALITY.
13. DAILY, OR AS REQUIRED, CONSTRUCT TEMPORARY BERMS, DRAINS, DITCHES, SILT BARRIERS, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED. (TEMPORARY SEED MIXTURE OF WINTER RYE APPLIED AT A RATE OF 2.5 LBS/1000 SF SHALL BE USED).
14. CONDUCT MAJOR EARTHWORK, INCLUDING CLEARING AND GRUBBING, WITHIN THE LIMITS OF WORK. ALL CUT AND FILL SLOPES SHALL BE SEEDED WITHIN 72 HOURS AFTER GRADING.
15. ALL STRIPPED TOPSOIL AND OTHER EARTH MATERIALS SHALL BE STOCKPILED OUTSIDE THE IMMEDIATE WORK AND WETLAND AREAS. A SILT BARRIER SHALL BE CONSTRUCTED AROUND THESE PILES IN A MANNER TO PROVIDE ACCESS AND AVOID SEDIMENT OUTSIDE OF THE WORK AREA.
16. CONSTRUCT BUILDING PAD AND COMMENCE NEW BUILDING CONSTRUCTION.
17. CONSTRUCT TEMPORARY CULVERTS AND DIVERSIONS AS REQUIRED.
18. BEGIN PERMANENT AND TEMPORARY INSTALLATION OF SEED AND MULCH.
19. PERFORM EARTHWORK NECESSARY TO ESTABLISH ROUGH GRADING AROUND PARKING FIELDS AND ACCESS DRIVES. MANAGE EXPOSED SOIL SURFACES TO AVOID TRANSPORTING SEDIMENTS INTO WETLANDS. PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISHED GRADE.
20. INSTALL SUBSURFACE UTILITIES (WATER, SEWER, GAS, ELECTRIC, COMMUNICATIONS, DRAINAGE, DRAINAGE FACILITIES, ETC.).
21. CONSTRUCT PROPOSED ROADWAY, RAIN GARDENS, GRAVEL WETLANDS AND DRAINAGE SWALES. ALL DITCHES, SWALES, AND GRAVEL WETLANDS SHALL BE FULLY STABILIZED PRIOR TO DIRECTING FLOW TO THEM.
22. COMPLETE BUILDING AND ALL OFF-SITE IMPROVEMENTS.
23. COMPLETE SEEDING AND MULCHING. SEED TO BE APPLIED WITH BROADCAST SPREADER OR BY HYDRO-SEEDING, THEN ROLLED, RAKED, OR DRAGGED TO ASSURE SEED/SOIL CONTACT.
24. REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SEEDED AREAS HAVE BECOME FIRMLY ESTABLISHED AND SITE IMPROVEMENTS ARE COMPLETE.
25. DURING THE COURSE OF THE WORK AND UPON COMPLETION, THE CONTRACTOR SHALL REMOVE ALL SEDIMENT DEPOSITS, EITHER ON OR OFF SITE, INCLUDING CATCH BASINS, AND SUMPS, DRAIN PIPES AND DITCHES, CURB LINES, ALONG SILT BARRIERS, ETC. RESULTING FROM SOIL AND/OR CONSTRUCTION OPERATIONS.
26. SEE WINTER CONSTRUCTION SEQUENCE FOR WORK CONDUCTED AFTER OCTOBER 15TH.
27. EACH PHASE MUST BE STABILIZED TO 85% PRIOR TO THE DISTURBANCE OF THE SUBSEQUENT PHASE.
28. STUCTURES CB20, CB21, CB22, DMH23, DMH24, CB23, CB24, AND DMH25 SHALL BE CONSTRUCTED AS PART OF PHASE 5.
29. AN ENVIRONMENTAL MONITOR SHALL BE REQUIRED ON SITE. THE ENVIRONMENTAL MONITOR SHALL:
    (1) INSPECT THE PROJECT SITE AT LEAST ONCE EACH WEE FROM THE START OF TERRAIN ALTERATION ACTIVITIES UNTIL ALL TERRAIN ALTERATIONS ACTIVITIES ARE COMPLETED AND THE SITE IS STABILIZED;
    (2) IN ADDITION TO REGULAR WEEKLY INSPECTIONS, INSPECT THE PROJECT SITE DURING ANY RAIN EVENT IN WHICH 0.5 INCH OF RAIN PRECIPITATION OR MORE FALLS WITHIN A 24 HOUR PERIOD, PROVIDED THAT IF THE ENVIRONMENTAL MONITOR IS UNABLE TO BE PRESENT DURING SUCH A STORM, THE MONITOR SHALL INSPECT THE SITE WITHIN 24 HOURS OF THE RAIN EVENT;
    (3) SUBMIT A WRITTEN REPORT, STAMPED BY A QUALIFIED ENGINEER OR A CPESC SPECIALIST, TO THE DEPARTMENT WITHIN 24 HOURS OF EACH INSPECTION THAT:
        A. DESCRIBES THE PROGRESS OF THE PROJECT, INCLUDING WHETHER ALL CONDITIONS OF THE PERMIT ARE BEING MET AND, IF NOT, WHICH REQUIREMENTS ARE NOT BEING MET;
        B. IF ANY REQUIREMENTS ARE NOT BEING MET, AN EXPLANATION OF THE CORRECTIVE ACTION(S) THAT WILL BE OR ARE BEING TAKEN TO BRING THE PROJECT INTO COMPLIANCE WITH APPLICABLE REQUIREMENTS AND THE DEADLINE BY WHICH SUCH ACTIONS WILL BE COMPLETED; AND
        C. INCLUDES PHOTOGRAPHS OF THE SITE THAT ARE REPRESENTATIVE OF THE PROJECT
    (1) RETAIN A COPY OF THE PROJECT REPORT PREPARED PURSUANT TO (3), ABOVE, ON-SITE FOR REVIEW DURING SITE INSPECTIONS BY FEDERAL STATE, AND LOCAL OFFICIALS.



SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

AOT PHASING PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.

LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC

25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 60' **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

HORIZONTAL SCALE 1"=60'
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PH-1

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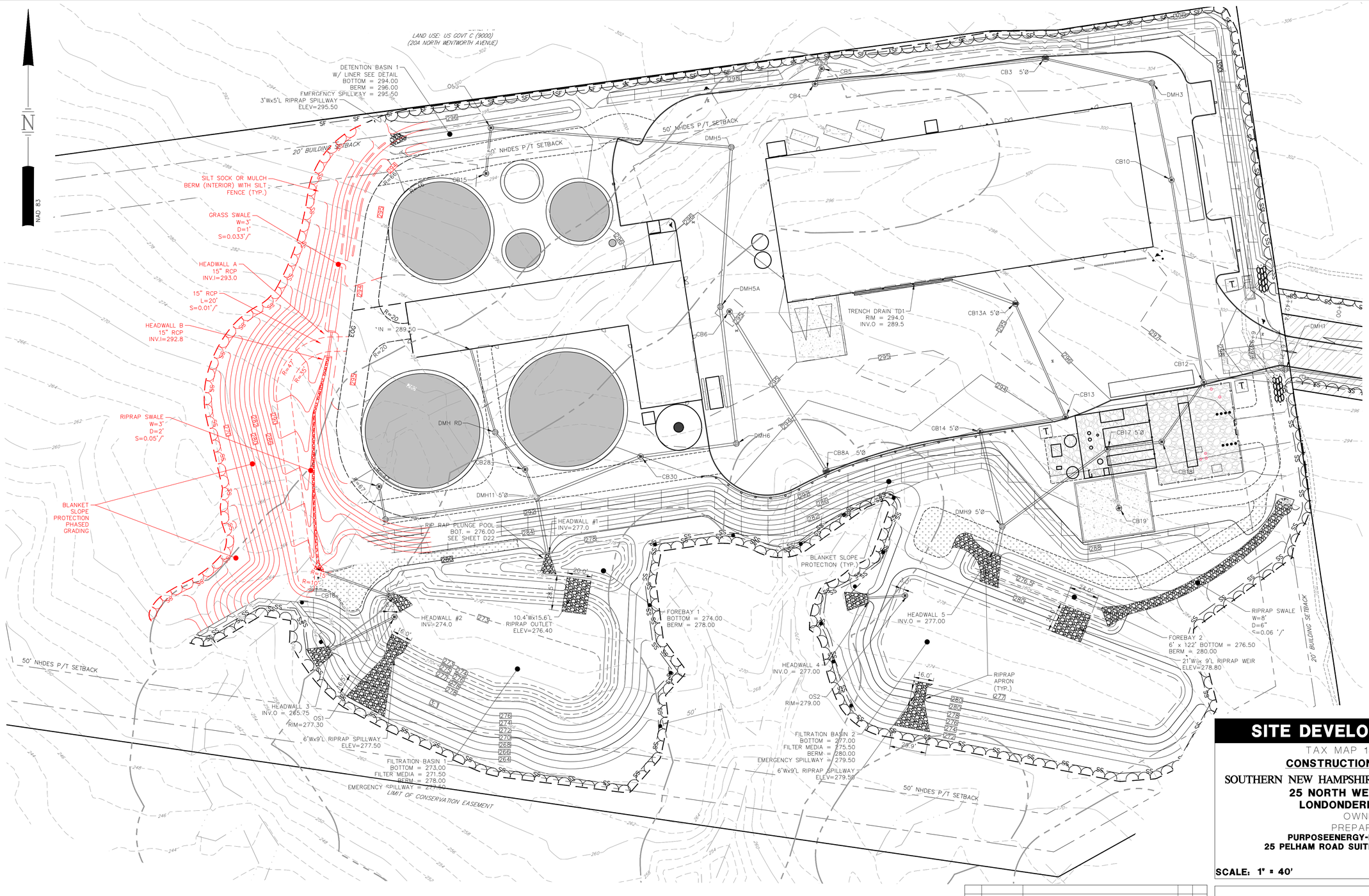

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

CONSTRUCTION PHASING PLAN

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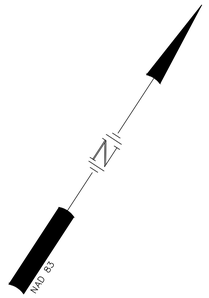
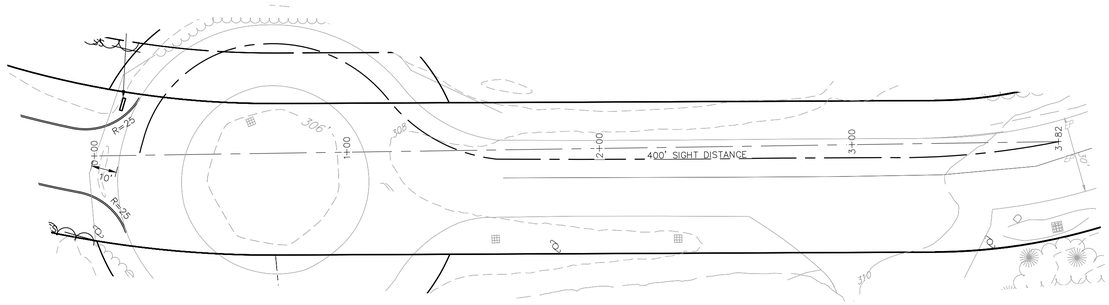
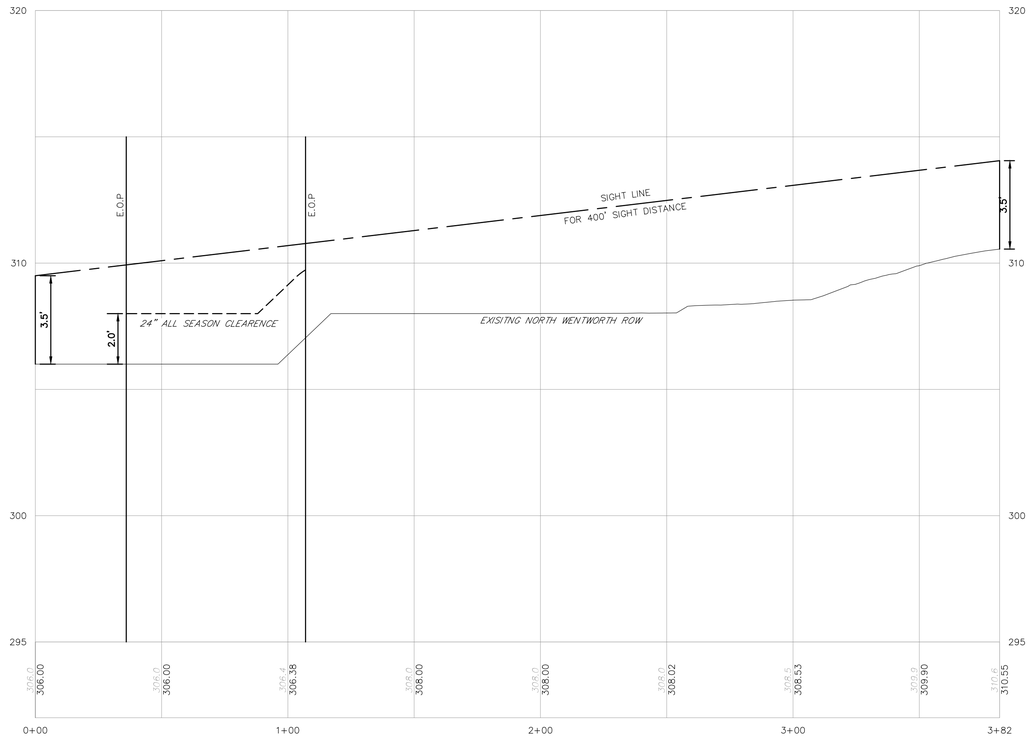
NOTES

1. POSTED SPEED LIMIT ON NORTH WENTWORTH AVE. IS 30 MPH.
2. TOWN OF LONDONDERRY SIGHT DISTANCE CALCULATIONS:

   SUBDIVISION REGULATIONS SECTION 3.09.F.2 & EHXIBIT D3
   MINIMUM ALL SEASON SIGHT DISTANCE = 365–FEET (NON–RESIDNETIAL) WHICH IS EXCEEDED.







SITE DISTANCE

HORIZONTAL SCALE 1"=30'
30 15 0 30
VERTICAL SCALE 1"=3'
3 0 3

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SIGHT DISTANCE

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CONSTRUCTION GENERAL PERMIT

1. THE OWNER, IN CONJUNCTION WITH THE CONTRACTOR (OPERATORS), MUST OBTAIN A CONSTRUCTION GENERAL PERMIT (CGP) FOR LARGE CONSTRUCTION ACTIVITIES (FIVE OR MORE ACRES) OR SMALL CONSTRUCTION ACTIVITIES (GREATER THAN ONE ACRE BUT LESS THAN FIVE ACRES) FROM THE ENVIRONMENTAL PROTECTION AGENCY (EPA). AS PART OF THE CGP, A STORMWATER NOTICE OF INTENT (NOI) MUST BE SUBMITTED TO THE EPA AT LEAST 7 DAYS PRIOR TO COMMENCING CONSTRUCTION. THE NOI MUST BE SUBMITTED TO STORM WATER NOTICE OF INTENT (4203M), USEPA, 1200 PENNSYLVANIA AVE. NW, WASHINGTON, DC 20460.

2. THE CGP OUTLINES A SET OF PROVISIONS MANDATING THE OWNER AND CONTRACTOR TO COMPLY WITH THE REQUIREMENTS OF THE NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER REGULATIONS, INCLUDING, BUT NOT LIMITED TO, STORM WATER POLLUTION PREVENTION PLANS (SWPPP'S), IMPLEMENTATION OF EROSION AND SEDIMENTATION CONTROLS, EQUIPMENT MAINTENANCE GUIDELINES, ETC. PLEASE CONTACT USEPA OFFICE OF WASTEWATER MANAGEMENT AT 202-564-9545 OR AT WWW.EPA.GOV/NPDES/STORMWATER FOR ADDITIONAL INFORMATION. FOR FURTHER ASSISTANCE, CONTACT ABBY SWAINE OF NEW ENGLAND'S EPA REGION 1 AT 617-918-1841.

NOTES

1. IT IS BEING PROPOSED TO CONSTRUCT AN ORGANIC WASTE PROCESSING FACILITY INCLUDING ACCESS, GRADING, STORMWATER MANAGEMENT SYSTEMS, UTILITIES, AND LANDSCAPING.

TOTAL SITE AREA: 15.3 AC (SITE PARCEL)
TOTAL PROPOSED AREA OF DISTURBANCE: 13.0 AC

SOILS SHOWN WERE PREPARED IN ACCORDANCE WITH THE SITE-SPECIFIC SOIL MAPPING STANDARDS FOR NEWHAMPSHIRE AND VERMONT, VERSION 7.0, HULY 2021.
26 – WINDSOR
313 – DEERFIELD
546/P – WALPOLE

2. STORM WATER DRAINAGE SYSTEM IS SHOWN ON THE PLAN. SEE GRADING & DRAINAGE PLAN AND INVERT TABLES FOR RIM, INVERT, PIPE LENGTH, AND SLOPE INFORMATION.
POST-CONSTRUCTION RUNOFF COEFFICIENT: C=0.37
IMPERVIOUS SURFACE AREA: 5.9± AC
*IMPERVIOUS AREA AND POST-DEVELOPMENT RUNOFF COEFFICIENT DO NOT INCLUDE OFFSITE RUN-ON AREAS

3. STABILIZATION PRACTICES FOR EROSION AND SEDIMENTATION CONTROLS:

TEMPORARY STABILIZATION – TOPSOIL STOCKPILES AND DISTURBED AREAS OF THE CONSTRUCTION SITE THAT WILL NOT BE REDISTURBED FOR 14 DAYS OR MORE MUST BE STABILIZED BY THE 14TH DAY AFTER THE LAST DISTURBANCE. THE TEMPORARY SEED SHALL BE ANNUAL RYE APPLIED AT THE RATE OF 1.1 LBS PER 1,000 SF. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE OF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY. AREAS OF THE SITE THAT WILL BE PAVED WILL BE TEMPORARILY STABILIZED BY APPLYING GEOTEXTILES AND A STONE SUB-BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED. CALCIUM CHLORIDE SHALL BE USED FOR DUST CONTROL IF NEEDED.

PERMANENT STABILIZATION – DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASES SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 3 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. THE PERMANENT SEED MIX SHALL BE AS SPECIFIED BY THE LANDSCAPE PLAN NOTES OR MAY OTHERWISE CONSIST OF 0.45 LBS/1,000 SF TALL FESCUE, 0.20 LBS/1,000 SF CREEPING RED FESCUE, AND 0.20 LBS/1,000 SF BIRDSFOOT TREFOIL. PRIOR TO SEEDING, A MINIMUM OF 2 TONS PER ACRE OF AGRICULTURAL LIMESTONE AND 500 LBS PER ACRE IF 10-20-20 FERTILIZER SHALL BE APPLIED. AFTER SEEDING, EACH AREA SHALL BE MULCHED WITH 1.5 TONS PER ACRE OF HAY MULCH. MULCH TO BE ANCHORED IN PLACE WHERE NECESSARY.

4. STRUCTURAL PRACTICES FOR EROSION AND SEDIMENTATION CONTROL

SILT SOCK – WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE DISTURBED AREAS AND WILL DELINEATE THE LIMITS OF WORK FOR THE PROPOSED CONSTRUCTION. THE SILT SOCK WILL BE INSTALLED BY OTHERS. POSTS SHALL BE USED WITH AT LEAST 6" OF THE POST BURIED BELOW THE GROUND SURFACE TO PREVENT THE SILT SOCK FROM FORMING GAPS NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE SILT SOCK WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

SILT FENCE – WILL BE CONSTRUCTED AROUND THE PERIMETER OF THE DISTURBED AREAS AND WILL DELINEATE THE LIMITS OF WORK FOR THE PROPOSED CONSTRUCTION. THE SILT FENCE WILL BE INSTALLED BY STRETCHING REINFORCED FILTER FABRIC BETWEEN POSTS WITH AT LEAST 8" OF THE FABRIC BURIED BELOW THE GROUND SURFACE TO PREVENT GAPS FROM FORMING NEAR THE GROUND SURFACE. RUNOFF WILL FLOW THROUGH THE OPENINGS IN THE FILTER FABRIC WHILE RETAINING THE SEDIMENT WITHIN THE CONSTRUCTION AREA.

STABILIZED CONSTRUCTION ENTRANCE – WILL BE INSTALLED IN ACCORDANCE WITH THE DETAIL AT THE ENTRANCE TO THE CONSTRUCTION SITE TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS OFF THE SITE. THE STABILIZED ENTRANCE WILL BE 20'-WIDE AND FLARE AT THE ENTRANCE TO THE PAVED ROAD AND HAVE A DEPTH OF 12" OF STONE. THE STABILIZED ENTRANCE SHALL BE MAINTAINED UNTIL THE REMAINDER OF THE CONSTRUCTION SITE HAS BEEN FULLY STABILIZED. THE PAVED STREET ADJACENT TO THE SITE SHALL BE SWEPT ON A WEEKLY BASIS TO REMOVE EXCESS MUD AND DIRT FROM BEING TRACKED FROM THE SITE. TRUCKS HAULING MATERIAL TO AND/OR FROM THE SITE SHALL BE COVERED WITH A TARPAULIN.

CATCH BASINS – WILL BE CLEANED ON AN ANNUAL BASIS TO REMOVE ALL SEDIMENTS FROM THE CATCH BASIN SUMPS.

CATCH BASIN PROTECTION – WILL BE INSTALLED AT ALL CATCH BASINS WITHIN THE CONSTRUCTION AREA. FILTER FABRIC WILL BE INSTALLED AROUND THE GRATES OF CATCH BASINS THAT ARE LOCATED IN THE TRAVEL WAY AND STONE/FILTER FABRIC PROTECTION WILL BE INSTALLED AT THE CATCH BASINS FOUND WITHIN THE PARKING AREA AND GRASS.

BLANKET SLOPE PROTECTION – SHALL BE INSTALLED ON ALL 2:1 SLOPES OR STEEPER ON SITE. ANCHOR THE TOP OF THE BLANKET BY ANCHORING THE BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING. ROLL THE BLANKET IN THE DIRECTION OF STORM WATER FLOW. WHERE 2 OR MORE STRIPS OF BLANKET ARE REQUIRED, A MINIMUM OF 4" OF OVERLAP SHALL BE PROVIDED.

STONE CHECK DAMS – WILL BE INSTALLED IN EXISTING AND PROPOSED GRASS SWALES TO REDUCE THE VELOCITY OF CONCENTRATED STORM WATER FLOWS AND PREVENT EROSION OF THE SWALE.

5. STORM WATER MANAGEMENT

STORM WATER DRAINAGE FOR DEVELOPED AREAS WILL BE COLLECTED BY A PIPE AND CATCH BASIN CLOSED DRAINAGE SYSTEM. APPROXIMATELY 3.6 ACRES OF THE 15.3 ACRE SITE WILL REMAIN UNTOUCHED AND IN ITS NATURAL STATE. WHEN CONSTRUCTION IS COMPLETE THE FACILITY AND PARKING AREA WILL BE ROUTED TO TWO (2) SURFACE STORMWATER TREATMENT FILTER BASINS.

6. ALL CONSTRUCTION DEBRIS AND WASTE MATERIALS SHALL BE COLLECTED AND STORED IN SECURE DUMPSTERS OR APPROVED ENCLOSURE AND REMOVED FROM THE SITE ON A WEEKLY BASIS. NO CONSTRUCTION WASTE SHALL BE BURIED ON SITE. PORTABLE TOILET SANITARY WASTE FACILITIES WILL BE PROVIDED DURING CONSTRUCTION AND MAINTAINED/DISPOSED OF ON A REGULAR BASIS IN ACCORDANCE WITH TOWN AND STATE REGULATIONS.

7. A LIST OF CONSTRUCTION ITEMS AND OTHER PRODUCTS USED ON THIS PROJECT SHALL BE KEPT ON RECORD WITH THIS PLAN ONSITE. ALL CHEMICALS, PETROLEUM PRODUCTS AND OTHER MATERIALS USED DURING CONSTRUCTION SHALL BE STORED IN A SECURE AREA, AND PRECAUTIONS USED TO PREVENT POTENTIAL SOURCES OF CONTAMINATION OR POLLUTION. ANY SPILL OF THESE TYPES OF SUBSTANCES SHALL BE CLEANED UP AND DISPOSED OF IN A LEGAL MANNER AS SPECIFIED BY STATE REGULATIONS AND THE MANUFACTURER. ANY SPILL IN AMOUNTS EQUAL TO OR EXCEEDING REPORTABLE QUANTITY AS DEFINED BY THE EPA SHALL TAKE THE FOLLOWING STEPS:
- NOTIFY THE NATIONAL RESPONSE CENTER IMMEDIATELY AT (888) 424-8802; IN WASHINGTON, D.C., CALL (202) 426-2675.
- WITHIN 14 DAYS, SUBMIT A WRITTEN DESCRIPTION OF THE RELEASE TO THE EPA REGIONAL OFFICE PROVIDING THE DATE AND CIRCUMSTANCES OF THE RELEASE AND THE STEPS TO BE TAKEN TO PREVENT ANOTHER RELEASE.
- MODIFY THE POLLUTION PREVENTION PLAN TO INCLUDE THE INFORMATION LISTED ABOVE.

GOOD HOUSEKEEPING:
THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT.
- AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB;
- ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE;
- PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL;
- SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER;
- WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER;
- MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED;
- TRASH DUMPSTERS SHALL BE GASKETED OR HAVE A SECURE WATERTIGHT LID AND BE PLACED AWAY FROM STORMWATER CONVEYANCES AND DRAINS;
- THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.

HAZARDOUS PRODUCTS:
THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS:
- PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE;
- ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION;
- IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

PRODUCT SPECIFIC PRACTICES:
THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON SITE:
PETROLEUM PRODUCTS:
ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS:
FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

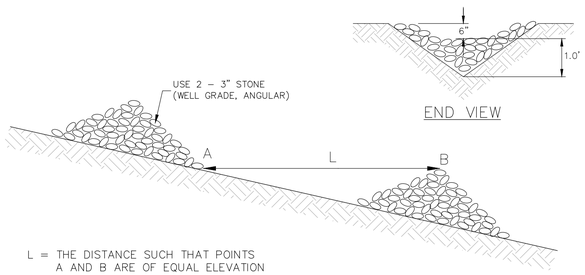
PAINTS:
ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS:
EXCESS CONCRETE SHALL BE USED IN AREAS DESIGNATED BY THE SITE CONTRACTOR. WASH WATER SHALL BE DISPOSED OF USING BEST MANAGEMENT PRACTICES. BUILDING CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL DRUM WASH WATER ASSOCIATED WITH CONCRETE FOR THE BUILDING PAD. SITE CONTRACTOR TO COORDINATE AND PROVIDE BUILDING CONTRACTOR WITH AN AREA FOR DRUM WASH WATER.

SPILL CONTROL PRACTICES:
IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:
- MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
- MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, KITTY LITTER, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
- ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
- THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
- SPILLS OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF SIZE.
- THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.
- THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THEY WILL DESIGNATE AT LEAST THREE OTHER SITE PERSONNEL WHO WILL EACH RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.

11. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN RECORDS OF CONSTRUCTION ACTIVITIES, INCLUDING DATES OF MAJOR GRADING ACTIVITIES, DATES WHEN CONSTRUCTION ACTIVITIES HAVE TEMPORARILY CEASED ON A PORTION OF THE SITE, DATES WHEN WORK IS COMPLETED ON A PORTION OF THE SITE, AND DATES WHEN STABILIZATION MEASURES ARE INITIATED ONSITE.

12. THE CONTRACTOR SHALL PERFORM INSPECTIONS OR HAVE A CONSULTING ENGINEER PERFORM INSPECTIONS EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS AFTER A STORM OF 0.5" OR GREATER. INSPECTIONS REPORTS ARE TO BE KEPT ON FILE AT THE SITE WITH THIS PLAN. MAINTENANCE OR MODIFICATION SHALL BE IMPLEMENTED AND ADDED TO THE PLAN AS RECOMMENDED BY THE QUALIFIED INSPECTOR.



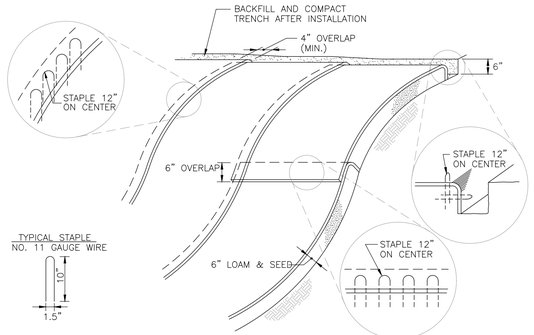
END VIEW

L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

CHECK DAM

STONE CHECK DAM

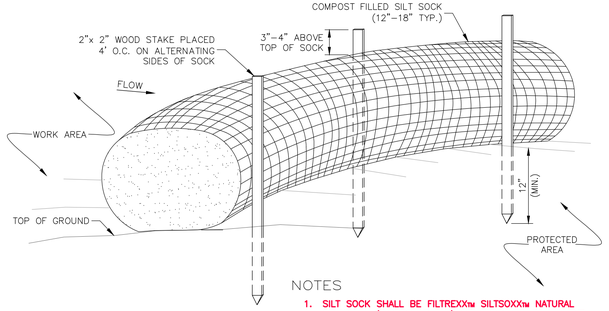
IN SWALE NOT TO SCALE



1. BLANKET SLOPE PROTECTION SHALL MEET REQUIREMENTS OF ENV-WQ 1506.15 MANUFACTURED EROSION AND SEDIMENT CONTROL PRODUCTS.
2. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING.
3. ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
4. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SWALE, PLACE BLANKET END OVER END WITH 6 INCH (MIN.) OVERLAP AND ANCHOR DOWN SLOPE BLANKET IN A 6 INCH DEEP TRENCH.
6. BLANKET SHALL BE NORTH AMERICAN GREEN C125BN, EAST COAST EROSION CONTROL ECC-2B, AMERICAN EXCELSIOR COMPANY CURLEX III FIBRENET, ROLANKA GEONATURAL EROSION & SEDIMENT CONTROL MATTE JUTEMAT OR BIOD-OCF 30, OR APPROVED EQUAL.
7. **BLANKET SHALL NOT CONTAIN WELDED PLASTIC, PLASTIC, MULTI-FILAMENT, OR MONO-FILAMENT POLYPROPYLENE NETTING OR MESH WITH AN OPENING SIZE OF GREATER THAN 1/8".**

BLANKET SLOPE PROTECTION

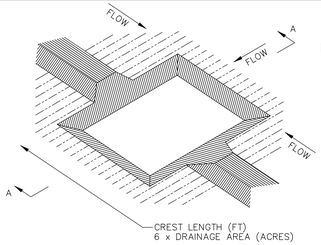
FOR EROSION CONTROL NOT TO SCALE



NOTES
1. **SILT SOCK SHALL BE FILTREXX™ SILTSOXX™ NATURAL ORIGINAL™ (BIODEGRADABLE) OR APPROVED EQUIVALENT.**
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.

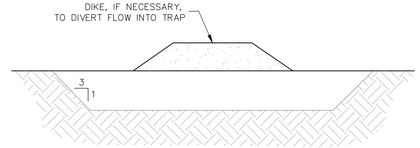
SILT SOCK

NOT TO SCALE



NOTES
1. SEDIMENT TRAP TO BE USED AS NECESSARY TO CONTAIN RUNOFF UNTIL BASINS/PONDS ARE STABILIZED. IF IT IS DETERMINED THAT CONSTRUCTION OF A SEDIMENT TRAP IS WARRANTED, CONSULT WITH ENGINEER TO DETERMINE APPROPRIATE NUMBER AND DIMENSIONS.

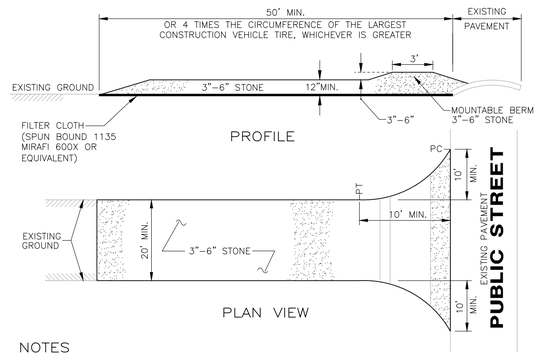
SEDIMENT TRAP – ISOMETRIC VIEW



SECTION A-A

SEDIMENT TRAP

NOT TO SCALE



PROFILE

PLAN VIEW

NOTES
1. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE SURFACE.
2. NO SURFACE WATER SHALL BE DIRECTED TOWARD CONSTRUCTION ENTRANCES.
3. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
4. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
5. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN STORM EVENT.

STABILIZED CONSTRUCTION ENTRANCE

SEE PLAN FOR PROPOSED LOCATION NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

STATE OF NEW HAMPSHIRE – NICHOLAS C. GOLON No. 14086 – LICENSED PROFESSIONAL ENGINEER – 12/22/25

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE 18252-02 | DR | | FB | – | D-01
CK | | CADFILE | 18252-02 COVER & DETAILS

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48 Constitution Drive, Bedford, N.H. 03110

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Dec 23, 2025 - 2:23pm
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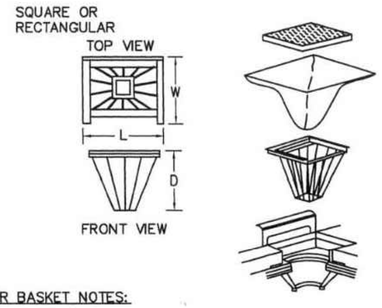
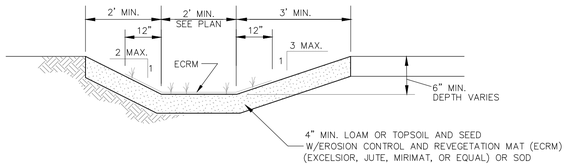


FILTER BASKET NOTES:

1. INLET BASKETS SHALL BE USED ON ALL CATCH BASINS WITHIN THE PROJECT LIMITS WITHIN PAVED AREAS. INLET FILTER BASKETS SHALL BE "SILT SACK®" OR APPROVED EQUAL.
2. FILTER FABRIC SHALL BE PUSHED DOWN AND FORMED TO THE SHAPE OF THE BASKET. THE SHEET OF FABRIC SHALL BE LARGE ENOUGH TO BE SUPPORTED BY THE BASKET FRAME WHEN HOLDING SEDIMENT AND EXTEND AT LEAST 6 INCHES PAST THE FRAME. THE INLET GRATE SHALL BE PLACED OVER THE BASKET/FRAME AND WILL SERVE AS THE FABRIC ANCHOR.
3. THE FILTER FABRIC SHALL BE A GEO-TEXTILE FABRIC: POLYESTER, POLYPROPYLENE, STABILIZED NYLON, POLYETHYLENE OR POLYVINYLIDENE CHLORIDE MEETING THE FOLLOWING SPECIFICATIONS:
   GRAB STRENGTH: 300 lb. MINIMUM IN ANY PRINCIPAL DIRECTION (ASTM D-4632).
   MULLEN BURST STRENGTH: MINIMUM 800 psi (ASTM D-3786).
4. THE FABRIC SHALL HAVE AN OPENING NO GREATER THAN A NUMBER 40 U.S. STANDARD SIEVE AND MINIMUM PERMEABILITY OF 40 gpm/sq. ft.
5. THE INLET BASKET SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL OR DAILY DURING EXTENDED PERIODS OF PRECIPITATION. REPAIRS SHALL BE MADE IMMEDIATELY, AS NECESSARY, TO PREVENT PARTICLES FROM ENTERING THE DRAINAGE PIPING SYSTEM AND/OR CAUSING SURFACE FLOODING.
6. INLET BASKETS SHALL BE MAINTAINED IN PLACE UNTIL ALL PAVING IS COMPLETED AND ALL UNPAVED AREAS HAVE BEEN STABILIZED WITH VEGETATION.

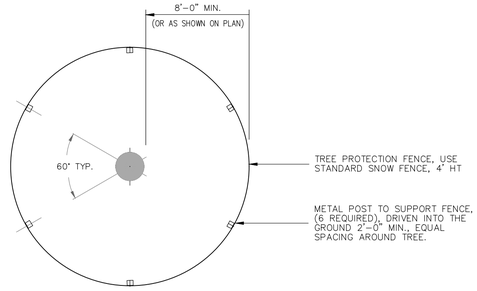
INLET FILTER BASKET

NOT TO SCALE



GRASS LINED SWALE

FOR USE WHERE VELOCITIES ARE 3 FPS OR LESS NOT TO SCALE

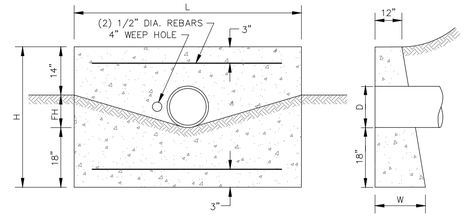


NOTES:
EXCAVATING WITHIN 10 FEET OF EXISTING TREES SHALL BE PERFORMED BY HAND DIGGING, HYDRAULIC, OR PNEUMATIC TOOLS METHODS. THE USE OF HEAVEY EQUIPMENT SHALL BE AVOIDED. NO ROOTS GREATER THAN 2 INCHES IN DIAMETER SHALL BE CUT WITHOUT APPROVAL OF AN ARBORIST. WHEN ROOTS MUST BE CUT, THEY SHALL BE CUT CLEANLY WITH A SHARP SAW TO SOUND WOOD AND FLUSH WITH THE TRENCH SITE. AVOID EXPOSING ROOTS DURING HOT, DRY WEATHER. BACKFILL TRENCHES AS SOON AS POSSIBLE WITH SOIL AND SOAK WITH WATER THE SAME DAY. IF THE TRENCH MUST BE LEFT OPEN FOR AN EXTENDED AMOUNT OF TIME, ALL ROOTS MUST BE KEPT MOIST BY WRAPPING THEM IN PEAT MOSS AND BURLAP.

TREE PROTECTION

NOT TO SCALE

NOMINAL PIPE SIZE D	LENGTH OF BARS	L	H	FH	W
12	3'-2"	3'-6"	3'-6"	0'-10"	1'-10.5"
15	4-2	4-6	3-9	1-1	1-11.25
18	5-2	5-6	4-0	1-4	2-0
24	7-2	7-6	4-6	1-10	2-1.5
30	9-2	9-6	5-0	2-4	2-3
36	11-2	11-6	5-6	2-10	2-4.5
42	13-2	13-6	6-0	3-4	2-6
48	15-2	15-6	6-6	3-10	2-7.5



CONCRETE HEADWALL

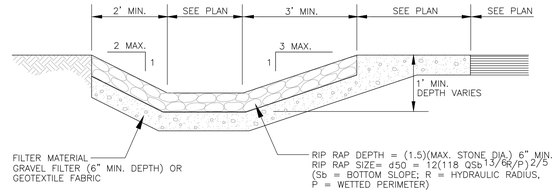
SINGLE PIPE SYSTEM NOT TO SCALE

RIP-RAP GRADATION

STONE SIZE	% FINER BY WEIGHT D 50 = 6"	D50 = 9"	D 50 = 12"	D50 = 18"	D 50 = 24"
2"	0-15%	0%	–	–	–
4"	20-35%	10-20%	0-10%	–	–
6"	35-50%	25-35%	10-25%	0-10%	–
8"	50-65%	30-50%	20-30%	10-20%	0-10%
10"	60-80%	40-60%	30-40%	15-30%	5-15%
12"	75-100%	–	–	–	–
15"	–	70-100%	45-60%	25-40%	20-30%
20"	–	–	70-100%	40-60%	30-45%
30"	–	–	–	70-100%	50-70%
40	–	–	–	–	70-100%

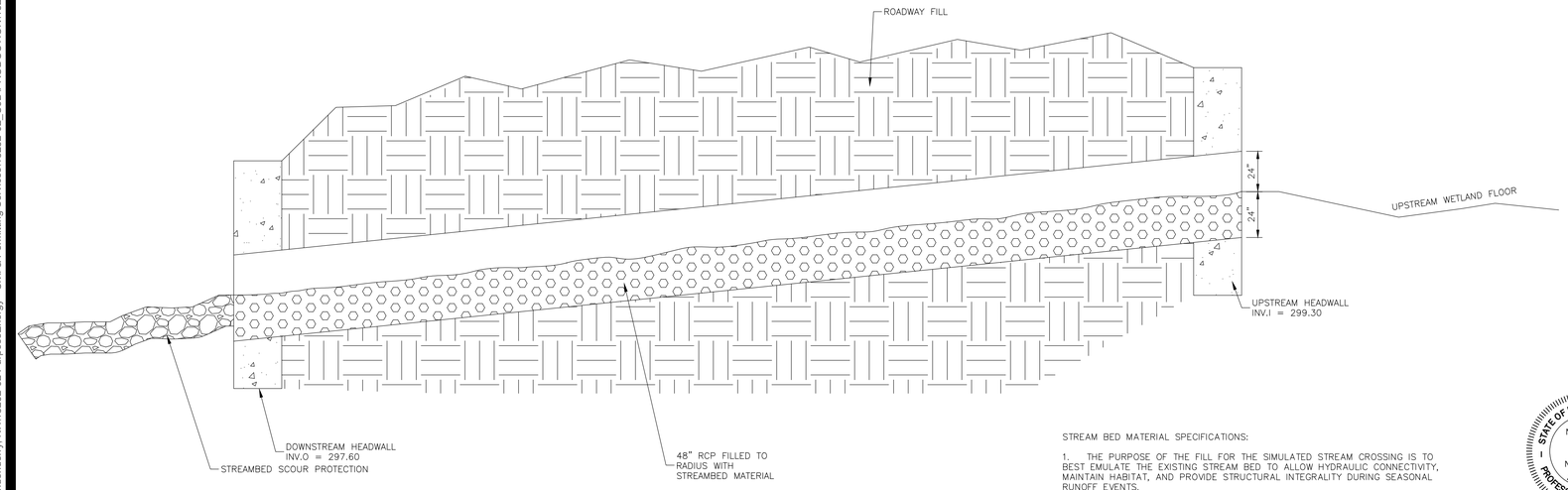
GRAVEL FILTER GRADATION

SIEVE SIZE	% PASSING BY WEIGHT
3½"	100
3"	85-100
1½"	60-90
¾"	40-70
⅜"	20-50
NO. 4	10-40
NO. 200	0-8



RIP RAP SWALE

FOR USE WHERE VELOCITIES EXCEED 3 FPS NOT TO SCALE



STREAM BED MATERIAL SPECIFICATIONS:

1. THE PURPOSE OF THE FILL FOR THE SIMULATED STREAM CROSSING IS TO BEST EMULATE THE EXISTING STREAM BED TO ALLOW HYDRAULIC CONNECTIVITY, MAINTAIN HABITAT, AND PROVIDE STRUCTURAL INTEGRALITY DURING SEASONAL RUNOFF EVENTS.
2. THE STREAMBED MATERIAL SHALL CONSIST OF WELL GRADED, ROUNDED, FLAT BOTTOM, NATURAL RIVER BED MATERIAL. NO ANGULAR ROCK TO BE USED.
3. COBBLES, STONES, AND GRAVELS:

STONE SIZE	PERCENT PASSING BY WEIGHT
8"	50%
4"	40%
2"	10%

CROSS CULVERT SECTION

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
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25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

PROJECT	DR	FB	–	D-02
18252-02	CK	CADFILE	18252-02 COVER & DETAILS	

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Dec 23, 2025 - 2:23pm
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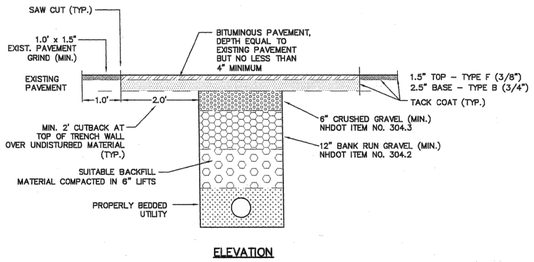
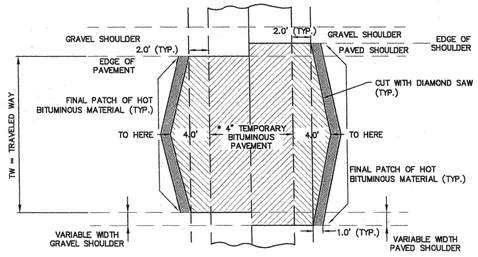


ELEVATION

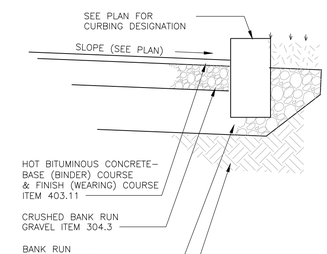


PLAN

* TO BE REMOVED FOR PERMANENT REPAIR

PAVEMENT TRENCH PATCH

FLUSH NOT TO SCALE



LAYER	STANDARD DUTY
TOP	1.5"
BINDER	2.5"
CRUSHED GRAVEL	6"
BANK RUN GRAVEL	12"

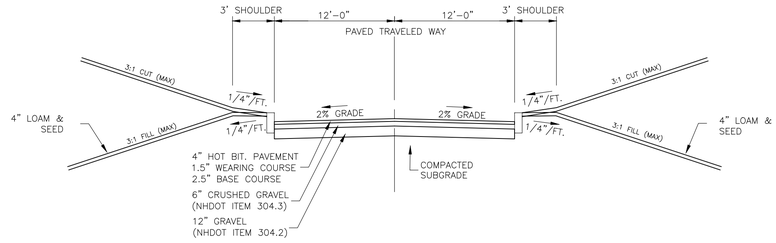
ROAD CONSTRUCTION NOTES

REMOVE ALL LOAM, CLAY, MUCK, STUMPS, AND OTHER IMPROPER PAVEMENT FOUNDATION MATERIAL WITHIN 2' OF SUBGRADE. REPLACE WITH COMPACTED GRANULAR FILL MATERIAL ACCEPTABLE TO APPROVING AGENCY. COMPACTION TO BE AT LEAST 95% OF STANDARD PROCTOR.

ALL PAVEMENT, BASE MATERIALS AND WORKMANSHIP TO BE IN COMPLIANCE WITH N.H.D.O.T. "STANDARDS FOR ROAD AND BRIDGE CONSTRUCTION" LATEST EDITION.

PAVEMENT SECTION

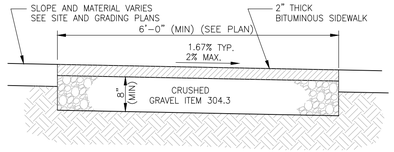
NOT TO SCALE



1. ALL ROADWAY MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE LATEST NHDOT SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. PROVIDE 4" MIN. COMPACTED LOAM AND SEED ON ALL SIDE SLOPES AND DRAINAGE SWALES UNLESS OTHERWISE NOTED.
3. ALL LEDGE SHALL BE REMOVED TO 6" BELOW SUBGRADE.
4. CURBING SHALL BE BITUMINOUS CONCRETE CURB.

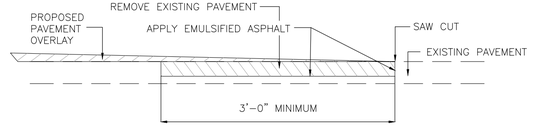
DRIVEWAY SECTION

NOT TO SCALE



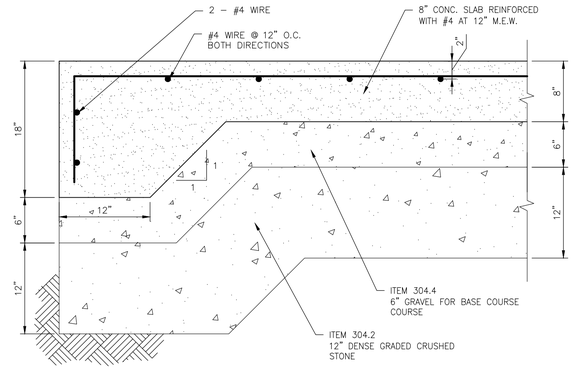
BITUMINOUS SIDEWALK

NOT TO SCALE



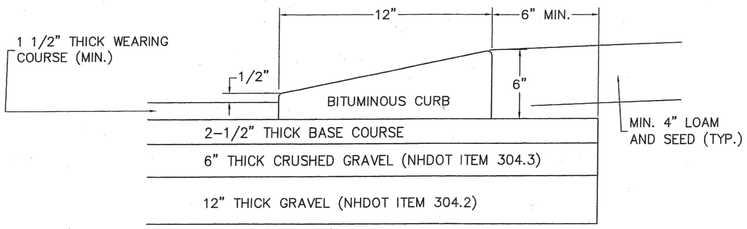
PAVEMENT SAWCUT

NOT TO SCALE



CONCRETE PAD DETAIL

NOT TO SCALE

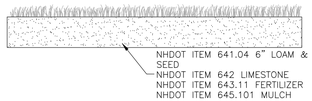


NOTES:

1. APPLY TACK COAT PRIOR TO PLACEMENT OF CURB
2. BITUMINOUS CURB MATERIAL SHALL MEET THE REQUIREMENTS OF NHDOT SECTION 609.
3. CAPE COD BERM DIMENSIONS SHALL MATCH THOSE GIVEN IN THIS DETAIL.

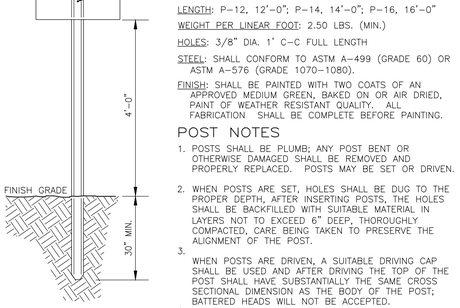
BITUMINOUS CONCRETE CURB

NOT TO SCALE



LOAM & SEED DETAIL

NOT TO SCALE



LENGTH: P-12, 12'-0"; P-14, 14'-0"; P-16, 16'-0"

WEIGHT PER LINEAR FOOT: 2.50 LBS. (MIN.)

HOLES: 3/8" DIA. 1' C-C FULL LENGTH

STEEL: SHALL CONFORM TO ASTM A-499 (GRADE 60) OR ASTM A-576 (GRADE 1070-1080).

FINISH: SHALL BE PAINTED WITH TWO COATS OF AN APPROVED MEDIUM GREEN, BAKED ON OR AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

POST NOTES

1. POSTS SHALL BE PLUMB; ANY POST BENT OR OTHERWISE DAMAGED SHALL BE REMOVED AND PROPERLY REPLACED. POSTS MAY BE SET OR DRIVEN.
2. WHEN POSTS ARE SET, HOLES SHALL BE DUG TO THE PROPER DEPTH, AFTER INSERTING POSTS, THE HOLES SHALL BE BACKFILLED WITH SUITABLE MATERIAL IN LAYERS NOT TO EXCEED 6" DEEP, THOROUGHLY COMPACTED, CARE BEING TAKEN TO PRESERVE THE ALIGNMENT OF THE POST.
3. WHEN POSTS ARE DRIVEN, A SUITABLE DRIVING CAP SHALL BE USED AND AFTER DRIVING THE TOP OF THE POST SHALL HAVE SUBSTANTIALLY THE SAME CROSS SECTIONAL DIMENSION AS THE BODY OF THE POST; BATTERED HEADS WILL NOT BE ACCEPTED.
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6. WHEN SIGN IS IN PLACE NO PART OF POST SHALL EXTEND ABOVE THE SIGN.
7. DIMENSIONS SHOWN ARE NOMINAL.
8. ALTERNATE SECTIONS MUST BE APPROVED PRIOR TO USE.

PROTECTED CONSERVATION AREA

DO NOT DISTURB SOILS OR VEGETATION

VIOLATORS WILL BE PROSECUTED

For Information Or To Report A Violation Call The Code Enforcement Officer At 432-1100 Ext. 125

SIGN NOTE

SIGNS SHALL BE PLACED ON TREES IN BUFFER LINE OR SHALL BE INSTALLED ON SIGN POSTS AS SHOWN. THE MAXIMUM SPACING BETWEEN SIGNS SHALL BE 50 FEET.

CONSERVATION OVERLAY DISTRICT SIGN

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

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FILE	18252-02	DR		FB	-	D-03
		CK		CADFILE	18252-02 COVER & DETAILS	

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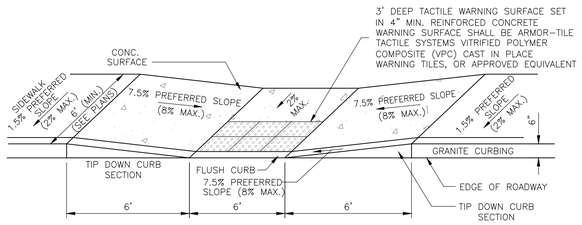
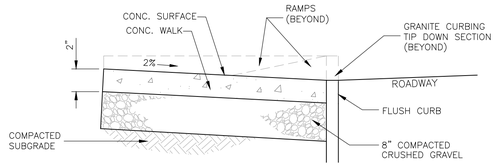
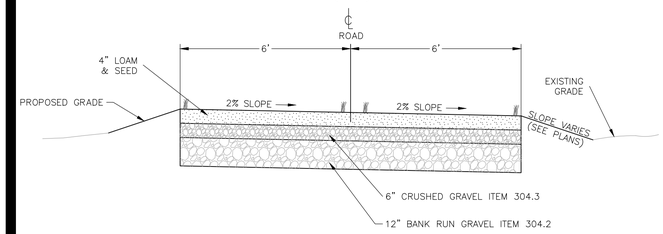




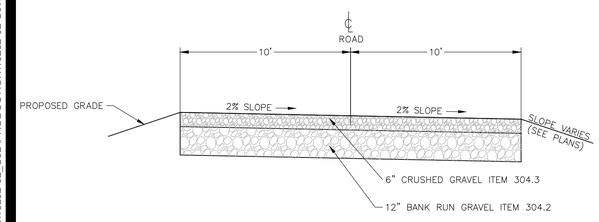
ACCESSIBLE RAMP RECESSED IN WALK

WITH DETECTABLE WARNING SURFACE (VPC) NOT TO SCALE



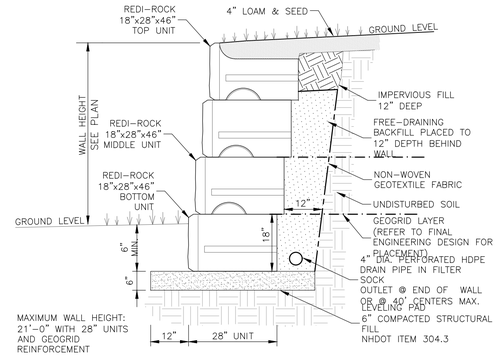
MAINTENANCE DRIVE

STORMWATER MANAGEMENT AREAS NOT TO SCALE



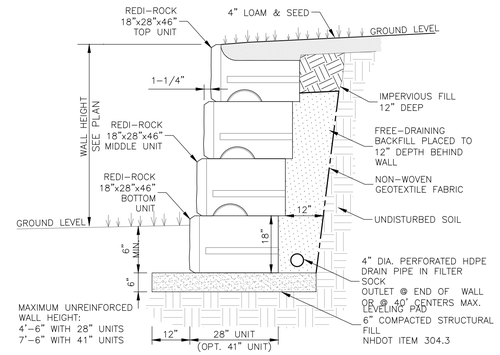
GRAVEL MAINTENANCE DRIVE

PROCESS BUILDING NOT TO SCALE



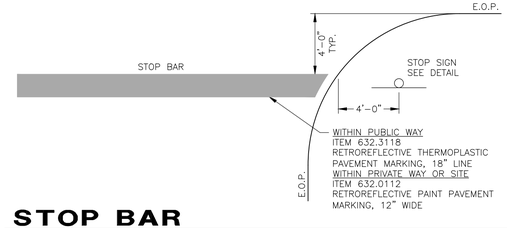
REDI-ROCK RETAINING WALL

REINFORCED WITH GEOGRID SCALE: 1/2"=1'-0"



REDI-ROCK RETAINING WALL

UNREINFORCED SCALE: 1/2"=1'-0"



STOP BAR

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 9/22/25

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		CK		CADFILE	18252-02 COVER & DETAILS	

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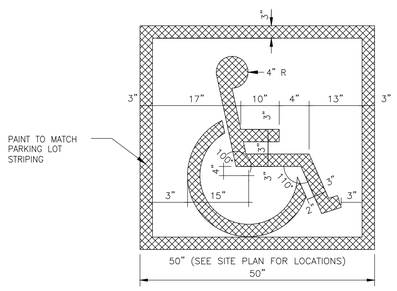

PAINTED ACCESSIBLE SYMBOL

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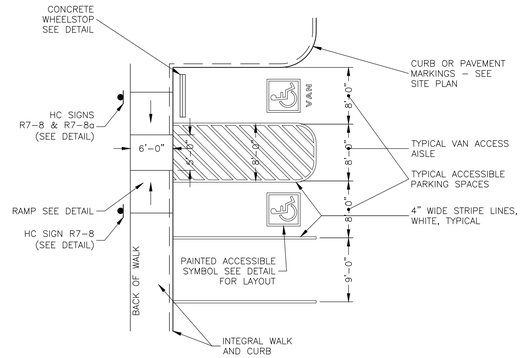


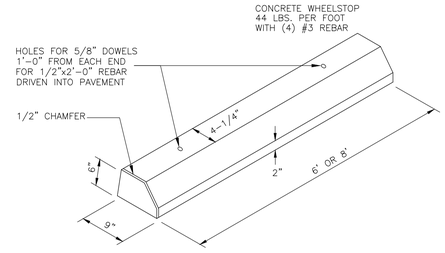
VAN ACCESSIBLE STRIPING LAYOUT

NOT TO SCALE



LADDER CROSSWALK

NOT TO SCALE

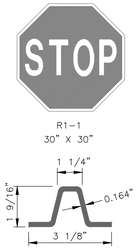


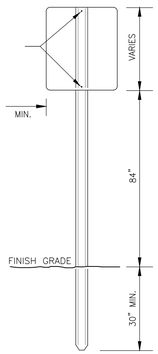
CONCRETE WHEELSTOP

NOT TO SCALE









LENGTH: P–12, 12'–0"; P–14, 14'–0"; P–16, 16'–0".

WEIGHT PER LINEAR FOOT: 2.50 LBS. (MIN.)

HOLES: 3/8" DIA. 1' C–C FULL LENGTH

STEEL: SHALL CONFORM TO ASTM A–499 (GRADE 60) OR ASTM A–576 (GRADE 1070–1080).

FINISH: SHALL BE PAINTED WITH TWO COATS OF AN APPROVED MEDIUM GREEN, BAKED ON OR AIR DRIED, PAINT OF WEATHER RESISTANT QUALITY. ALL FABRICATION SHALL BE COMPLETE BEFORE PAINTING.

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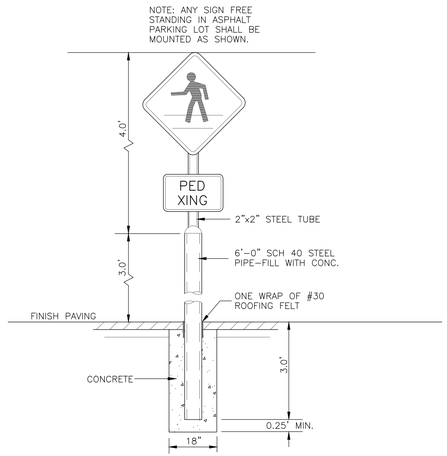
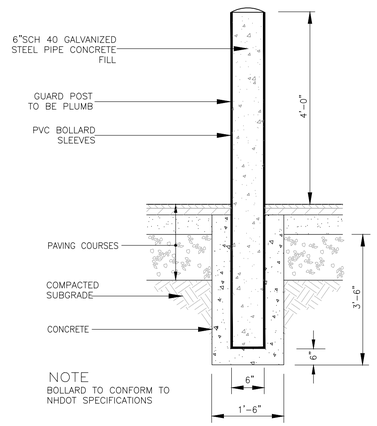
SIGN POST IN GRADE

NOT TO SCALE



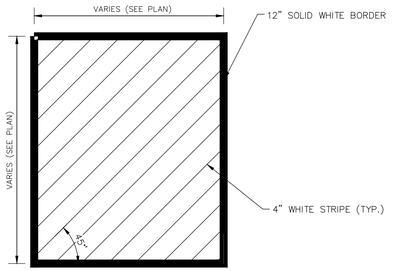
SIGN POLE IN PAVEMENT

NOT TO SCALE



GUARD POST (BOLLARD)

NOT TO SCALE



LOADING ZONE PAINT

NOT TO SCALE

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
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Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
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		CK		CADFILE	18252-02 COVER & DETAILS	

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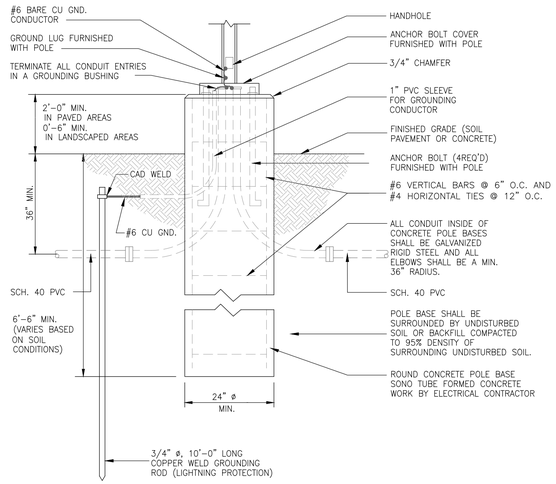

LIGHT POLE BASE

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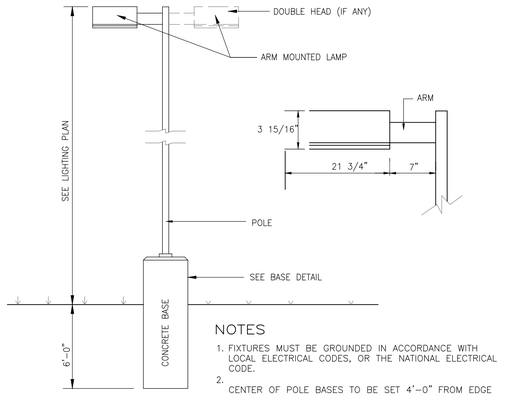

LIGHT POLE

NOTES

1. FIXTURES MUST BE GROUNDED IN ACCORDANCE WITH LOCAL ELECTRICAL CODES, OR THE NATIONAL ELECTRICAL CODE.
2. CENTER OF POLE BASES TO BE SET 4'-0" FROM EDGE OF PAVEMENT, EXCEPT WHERE OTHERWISE INDICATED ON
3. DRAWING.
   LIGHTING SHOWN HERE IS AREA LIGHTING, SUPPLEMENTAL BUILDING-MOUNTED FIXTURES AT DOORWAYS, ETC. MAY
4. BE REQUIRED.
   SEE LIGHTING PLAN FOR FIXTURE SCHEDULE.

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SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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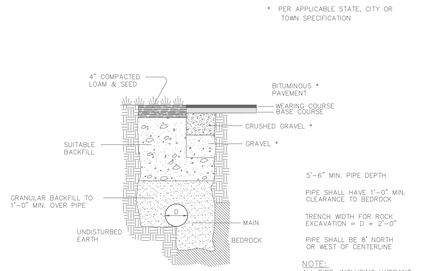


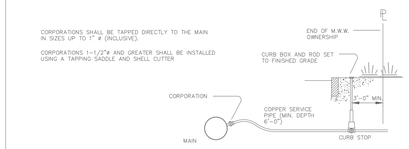
TYPICAL TRENCH DETAIL

NOT TO SCALE

6-22-95

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD1A
	STANDARD DETAIL	

95SD1



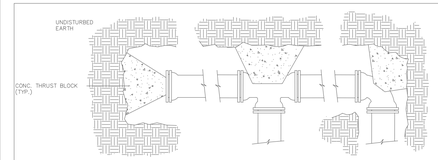
TYPICAL SERVICE CONNECTION

NOT TO SCALE

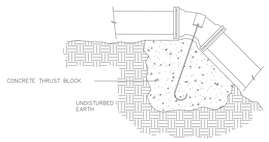
6-22-95

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD2
	STANDARD DETAIL	

95SD2



PLAN – HORIZONTAL BENDS, TEES AND PLUGS



ELEVATION – VERTICAL BENDS

THRUST BLOCK DIMENSIONS TO BE DETERMINED IN FIELD BY ENGINEER BASED ON PIPE SIZE, WATER PRESSURE AND SOIL TYPE.

STONE BACKING MAY BE SUBSTITUTED FOR CONCRETE THRUST BLOCKS PROVIDED THE STONE(S) ARE OF EQUAL SIZE AND BEAR ON UNDISTURBED EARTH.

USE OF JOINT RESTRAINT SYSTEMS SHALL NOT ELIMINATE THRUST BLOCK REQUIREMENTS (WHERE POSSIBLE).

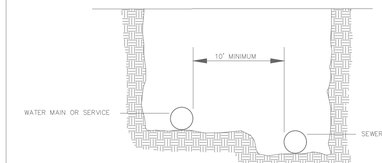
TYPICAL THRUST BLOCKS

NOT TO SCALE

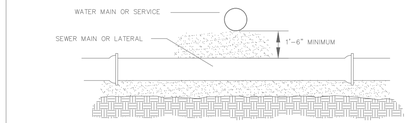
6-22-95

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD4
	STANDARD DETAIL	

95SD4



PARALLEL INSTALLATION



MAIN CROSSINGS

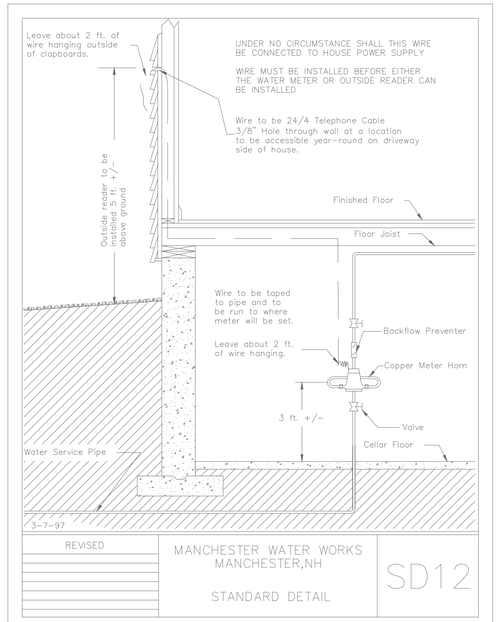
WATER MAIN/SEWER MAIN SEPARATION

NOT TO SCALE

6-22-95

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD6
	STANDARD DETAIL	

95SD6



3-7-97

REVISED	MANCHESTER WATER WORKS MANCHESTER,NH	SD12
	STANDARD DETAIL	

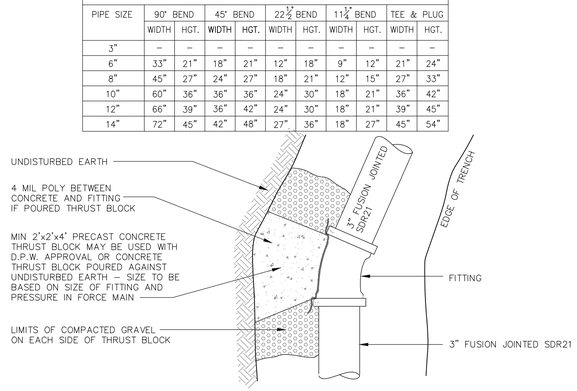


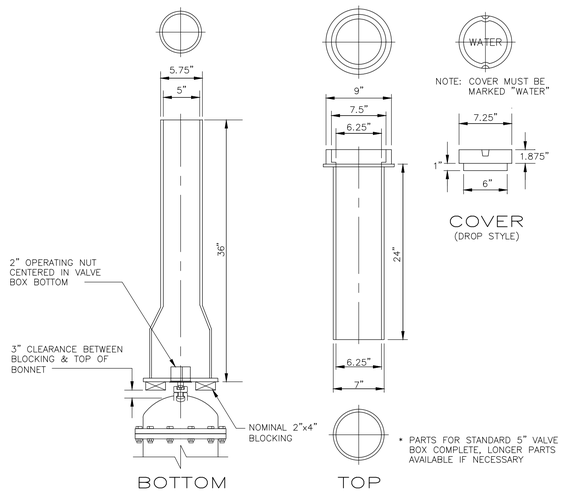
TABLE OF DIMENSIONS										
PIPE SIZE	90° BEND		45° BEND		22½° BEND		11¼° BEND		TEE & PLUG	
	WIDTH	HGT.	WIDTH	HGT.	WIDTH	HGT.	WIDTH	HGT.	WIDTH	HGT.
3"	–	–	–	–	–	–	–	–	–	–
6"	33"	21"	18"	21"	12"	18"	9"	12"	21"	24"
8"	45"	27"	24"	27"	18"	21"	12"	15"	27"	33"
10"	60"	36"	36"	36"	24"	30"	18"	21"	36"	42"
12"	66"	39"	36"	42"	24"	30"	18"	21"	39"	45"
14"	72"	45"	42"	48"	27"	36"	18"	27"	45"	54"

NOTE

1. ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO D.P.W. TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 6' FROM TOP OF PIPE TO FINISH GRADE, UNLESS NOTED OTHERWISE. REFER TO SEWER EXTENSION PROFILE.

THRUST BLOCKING BEHIND FITTINGS INSTALLATION

NOT TO SCALE



VALVE BOX

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE – NICHOLAS C. GOLON No. 14086 – LICENSED PROFESSIONAL ENGINEER – 9/30/25

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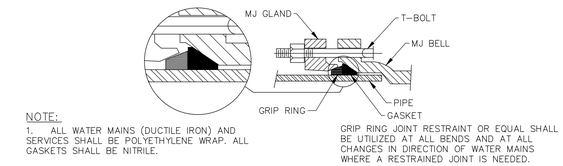


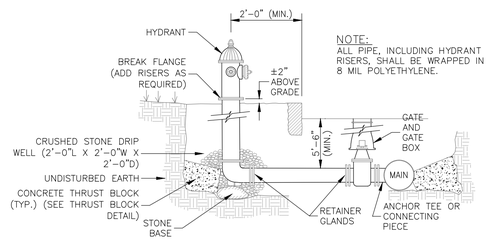
NOTE:

1. ALL WATER MAINS (DUCTILE IRON) AND SERVICES SHALL BE POLYETHYLENE WRAP. ALL GASKETS SHALL BE NITRILE.

GRIP RING JOINT RESTRAINT OR EQUAL SHALL BE UTILIZED AT ALL BENDS AND AT ALL CHANGES IN DIRECTION OF WATER MAINS WHERE A RESTRAINED JOINT IS NEEDED.

GRIP RING JOINT RESTRAINT

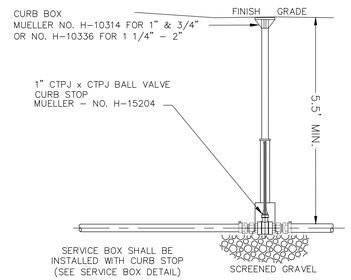
NOT TO SCALE



NOTE:
ALL PIPE, INCLUDING HYDRANT RISERS, SHALL BE WRAPPED IN 8 MIL POLYETHYLENE.

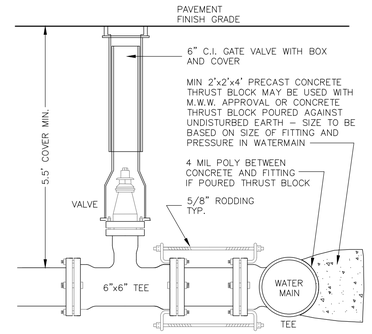
TYPICAL HYDRANT INSTALLATION

MANCHESTER WATER WORKS NOT TO SCALE



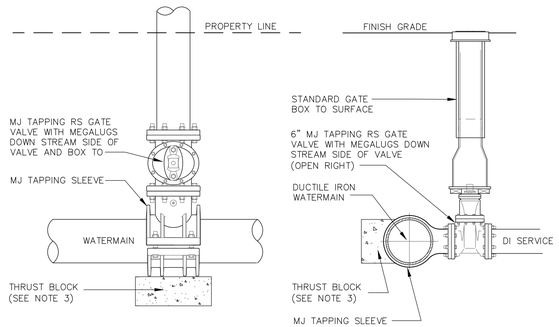
CURB STOP

NOT TO SCALE



BURIED GATE VALVE

NOT TO SCALE



NOTE

1. ALL MATERIAL AND INSTALLATION PROCEDURES WILL CONFORM TO M.W.W. TECHNICAL SPECIFICATIONS.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTHS OF 5'-6" FROM TOP OF PIPE TO FINISH GRADE.
3. MIN 2'x2'x4' PRECAST CONCRETE THRUST BLOCK MAY BE USED WITH M.W.W. APPROVAL OR CONCRETE THRUST BLOCK POURED AGAINST UNDISTURBED EARTH - SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATERMAIN.

WET TAP TEE INSTALLATION

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SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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SEWER SERVICE NOTES

1) MINIMUM SIZE PIPE FOR SEWER SERVICE SHALL BE FOUR INCHES.

2) PIPE AND JOINT MATERIALS:
   A. PLASTIC SEWER PIPE
      1. PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034	*PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F789	PVC (SOLID WALL)	4" THROUGH 18" (T-1 TO T-3)
F794	PVC (RIBBED WALL)	8" THROUGH 36"
D2680	*ABS (COMPOSITES WALL)	8" THROUGH 15"

*PVC: POLY VINYL CHLORIDE
*ABS: ACRYLONITRILE-BUTADIENE-STYRENE

      2. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.

      ABS TRUSS PIPE AND FITTINGS SHALL CONFORM TO ASTM D-2680, POLYMER COMPOUNDING SHALL BE TO ASTM D-1788 (CLASS 322).

      JOINTS FOR ABS TRUSS PIPE SHALL BE CHEMICAL WELDED COUPLINGS TYPE SC IN ACCORDANCE WITH ASTM D-2680, FORMING A CHEMICAL WELDED JOINT.

   B. DUCTILE-IRON PIPE, FITTINGS AND JOINTS.

      1. DUCTILE IRON PIPE AND FITTINGS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE UNITED STATES OF AMERICA STANDARDS INSTITUTE:
         A21.50 THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A-536 DUCTILE IRON CASTINGS.
         A21.51 DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL MOLDS OR SAND-LINED MOLDS FOR WATER OR OTHER LIQUIDS.
      2. JOINTS SHALL BE OF THE MECHANICAL OR PUSH-ON TYPE. JOINTS AND GASKETS SHALL CONFORM TO:
         A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS

3) DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.

4) JOINTS SHALL BE DEPENDENT UPON A NEOPRENE OR ELASTOMERIC GASKET FOR WATER-TIGHTNESS. ALL JOINTS SHALL BE PROPERLY MATCHED WITH THE PIPE MATERIALS USED. WHERE DIFFERING MATERIALS ARE TO BE CONNECTED, AS AT THE STREET SEWER WYE OR AT THE FOUNDATIOI WALL, APPROPRIATE MANUFACTURED ADAPTERS SHALL BE USED.

5) TEES AND WYES: WHERE A TEE OR WYE IS NOT AVAILABLE IN THE EXISTING STREET SEWER, AN APPROPRIATE CONNECTION SHALL BE MADE, FOLLOWING MANUFACTURERS' INSTRUCTIONS USING A BOLTED, CLAMPED OR EPOXY-CEMENTED SADDLE TAPPED INTO A SMOOTHLY DRILLED OR SAWN OPENING IN THE SEWER. THE PRACTICE OF BREAKING AN OPENING WITH A SLEDGE HAMMER, STUFFING CLOTH OR OTHER SUCH MATERIAL AROUND THE JOINT, OR APPLYING MORTAR TO HOLD THE CONNECTION, AND ANY OTHER SIMILAR CRUDE PRACTICES OR INEPT OR HASTY IMPROVISATIONS WILL NOT BE PERMITTED. THE CONNECTION SHALL BE CONCRETE ENCASED AS SHOWN IN THE DETAIL UP TO AND INCLUDING 15" DIAMETER.

6) SEWER SERVICE INSTALLATION: THE PIPE SHALL BE HANDLED, PLACED AND JOINTED IN ACCORDANCE WITH INSTALLATION GUIDES OF THE APPROPRIATE MANUFACTURER. IT SHALL BE CAREFULLY BEDDED ON A 6 INCH LAYER OF CRUSHED STONE AND/OR GRAVEL AS SPECIFIED IN NOTE 10. BEDDING AND RE-FILL FOR DEPTH OF 12 INCHES ABOVE THE TOP OF THE PIPE SHALL BE CAREFULLY AND THOROUGHLY TAMPED BY HAND OR WITH APPROPRIATE MECHANICAL DEVICES.

   THE PIPE SHALL BE LAID AT A CONTINUOUS AND CONSTANT GRADE FROM THE STREET SEWER CONNECTION TO THE FOUNDATION AT A GRADE OF NOT LESS THAN 1/4" INCH PER FOOT. PIPE JOINTS MUST BE MADE UNDER DRY CONDITIONS. IF WATER IS PRESENT, ALL NECESSARY STEPS SHALL BE TAKEN TO DEWATER THE TRENCH.

7) TESTING: THE COMPLETED SEWER SERVICE SHALL BE SUBJECTED TO A THIRD PARTY LEAKAGE TEST IN ANY OF THE FOLLOWING MANNERS: (PRIOR TO BACKFILLING)

   A. ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.

      LOW PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:

         ASTM F1417-92(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR".

         UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW PRESSURE AIR TESTING OF INSTALLED SEWER PIPE".

   LEAKAGE OBSERVED IN ANY ONE OF THE ABOVE ALTERNATE TESTS SHALL BE CAUSE FOR NON-ACCEPTANCE AND THE PIPE SHALL BE DUG-UP IF NECESSARY AND RE-LAID SO AS TO ASSURE WATER TIGHTNESS.

8) ILLEGAL CONNECTIONS: NOTHING BUT SANITARY WASTE FLOW FROM TOILETS, SINKS, LAUNDRY ETC. SHALL BE PERMITTED. ROOF LEADERS, FOOTING DRAINS, SUMP PUMPS OR OTHER SIMILAR CONNECTIONS CARRYING RAIN WATER, DRAINAGE OR GROUND WATER SHALL NOT BE PERMITTED.

9) WATER SERVICE SHALL NOT BE LAID IN SAME TRENCH AS SEWER SERVICE.

10) BEDDING: CRUSHED STONE FREE FROM CLAY, LOAM, ORGANIC MATERIAL AND MEETING ASTM C33-67.

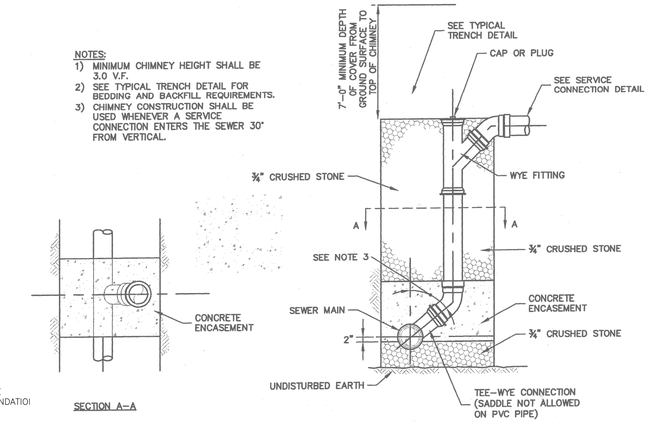
100% PASSING	1 INCH SCREEN
90%-100% PASSING	3/4 INCH SCREEN
20%-55% PASSING	3/8 INCH SCREEN
0%-10% PASSING	#4 SIEVE
0%-5% PASSING	#8 SIEVE

   WHERE ORDERED BY THE ENGINEER TO STABILIZE THE TRENCH BASE, CRUSHED STONE 1/2 INCH TO 1 1/ INCH SHALL BE USED.

11) LOCATION: THE LOCATION OF THE TEE OR WYE SHALL BE RECORDED AND FILED IN THE MUNICIPAL RECORDS. IN ADDITION, A FERROUS METAL ROD OR PIPE SHALL BE PLACED OVER THE TEE OR WYE AS DESCRIBED IN THE TYPICAL "CHIMNEY" DETAIL, TO AID IN LOCATING THE BURIED PIPE WITH A DIP NEEDLE OR PIPEFINDER.

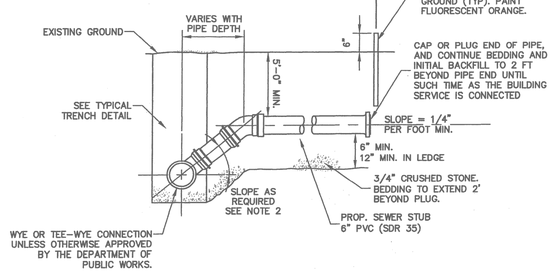
12) CHIMNEYS: IF VERTICAL DROP INTO SEWER IS GREATER THAN 4 FEET, A CHIMNEY SHALL BE CONSTRUCTED FOR THE SEWER CONNECTION. CHIMNEY INSTALLATION AS RECOMMENDED BY THE PIPE MANUFACTURER MAY BE USED IF APPROVED BY THE ENGINEER.

SEWER SERVICE DETAILS



CHIMNEY (SEE NOTE 12)

NOT TO SCALE



NOTES:
1. ALL SERVICE CONNECTIONS TO BE 6" MINIMUM UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. USE CHIMNEY DETAIL WHERE SERVICE CONNECTION ENTERS SEWER AT GREATER THAN 60° TO THE HORIZONTAL.

SEWER SERVICE

NOT TO SCALE

GRAVITY SEWER NOTES

1. MINIMUM SIZE PIPE FOR GRAVITY SEWER SHALL BE 8-INCHES.
2. PIPE AND JOINT MATERIALS FOR PLASTIC SEWER PIPE SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

ASTM STANDARDS	GENERIC PIPE MATERIAL	SIZES APPROVED
D3034-04a	* PVC (SOLID WALL)	8" THROUGH 15" (SDR 35)
F679-03	PVC (SOLID WALL)	18" THROUGH 27" (T-1 & T-2)
F794-03	PVC (RIBBED WALL)	8" THROUGH 36"
F1760-01(2005)e1	PVC, RECYCLED	ALL DIAMETERS

*PVC: POLY VINYL CHLORIDE

3. PLASTIC SEWER PIPE SHALL HAVE A PIPE STIFFNESS RATING OF AT LEAST 46 POUNDS PER SQUARE INCH AT 5 PERCENT PIPE DIAMETER DEFLECTION, AS MEASURED IN ACCORDANCE WITH ASTM D2412-02 DURING MANUFACTURE.
4. JOINTS SEALS FOR PVC PIPE SHALL BE OIL RESISTANT COMPRESSION RINGS OF ELASTOMERIC MATERIAL CONFORMING TO ASTM D-3212-96(a)(2003)e1 AND SHALL BE PUSH-ON, BELL AND SPIGOT TYPE.
5. DUCTILE-IRON PIPE, FITTINGS AND JOINTS SHALL CONFORM TO THE FOLLOWING STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION (AWWA).

   AWWA C150/A21.50 FOR THICKNESS DESIGN OF DUCTILE IRON PIPE AND WITH ASTM A536 FOR DUCTILE IRON CASTINGS.

   AWWA C151/A21.51 FOR DUCTILE IRON PIPE, CENTRIFUGALLY CAST IN METAL- OR SAND-LINED MOLDS FOR WATER, WASTEWATER, AND RECLAIMED WATER SYSTEMS.

   JOINTS SHALL BE OF THE MECHANICAL TYPE, PUSH-ON TYPE, OR BALL- AND SOCKET TYPE AS APPROPRIATE FOR THE SPECIFIC APPLICATION. JOINTS AND GASKETS SHALL CONFORM TO AWWA C151/A21.11 RUBBER GASKETS JOINTS FOR CAST IRON PRESSURE PIPE & FITTINGS.
6. CONCRETE PIPE SHALL CONFORM TO AWWA C302-04.
7. PRESTRESSED CONCRETE CYLINDER PIPE AND FITTINGS SHALL CONFORM TO AWWA C301-99.
8. JOINTS SEALS FOR CONCRETE CYLINDER PIPE SHALL BE OIL RESISTANT ELASTOMERIC MATERIAL CONFORMING TO ASWWA C301-99 SPECIFICATIONS.
9. DAMAGED PIPE SHALL BE REJECTED AND REMOVED FROM THE JOB SITE.
10. GRAVITY SEWER PIPE TESTING SHALL BE AS FOLLOWS:

    ALL NEW GRAVITY SEWERS SHALL BE TESTED FOR WATER TIGHTNESS BY THE USE OF LOW-PRESSURE AIR TESTS.

    LOW PRESSURE AIR TESTING SHALL BE IN CONFORMANCE WITH:

       ASTM F1417-92(2005) "STANDARD TEST METHOD FOR INSTALLATION ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR".

       UNI-BELL PVC PIPE ASSOCIATION UNI-B-6, "LOW PRESSURE AIR TESTING OF INSTALLED SEWER PIPE".
11. ALL NEW GRAVITY SEWERS SHALL BE CLEANED AND VISUALLY INSPECTED AND SHALL BE TRUE TO LINE AND GRADE FOLLOWING INSTALLATION AND PRIOR TO USE.
12. ALL PLASTIC SEWER PIPE SHALL BE DEFLECTION TESTED NOT LESS THAN 30 DAYS FOLLOWING INSTALLATION.
13. THE MAXIMUM ALLOWABLE DEFLECTION OF FLEXIBLE SEWER PIPE SHALL BE 5 PERCENT OF THE AVERAGE INSIDE DIAMETER.
14. TRENCH CONSTRUCTION SHALL CONFORM TO THE FOLLOWING:

    SEWERS SHALL BE BURIED TO A MINIMUM DEPTH OF 6' BELOW GRADE IN ALL ROADWAY LOCATIONS AND TO A MINIMUM DEPTH OF 4 FEET BELOW GRADE IN ALL CROSS COUNTRY LOCATIONS.

    WHERE SEWER LINES CROSS WATER PIPES, A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE OBSERVED. AT SEWER/WATER INTERSECTIONS, A MINIMUM OF 6 FEET SHALL BE PROVIDED FROM THE WATER LINE TO THE SEWER PIPE JOINT. 12" SEPARATION BETWEEN THE TWO OUTSIDE PIPE WALLS SHALL BE REQUIRED BETWEEN SEWER LINES AND ALL OTHER PIPES.

    TRENCH DIMENSIONS FOR SEWER PIPE LESS THAN 15 INCHES IN DIAMETER, THE ALLOWABLE TRENCH WIDTH AT A PLANE 12 INCHES ABOVE THE PIPE SHALL BE NO MORE THAN 36 INCHES AND FOR PIPE 15 INCHES AND LARGER, THE ALLOWABLE WIDTH SHALL BE EQUAL TO THE PIPES OUTSIDE DIAMETER PLUS 24 INCHES.

    PIPE TRENCH BEDDING MATERIAL AND FILL MATERIAL FOR EXCAVATION BELOW GRADE SHALL BE CRUSHED STONE TO ASTM C33-03 STONE SIZE NO. 67. THE PIPE SAND BLANKET MATERIAL SHALL BE GRADED SAND FREE FROM ANY ORGANIC MATERIALS, GRADED SUCH THAT 100 PERCENT PASSED THE 1/2-INCH SIEVE AND A MAXIMUM OF 15 PERCENT PASSES A #200 SIEVE. IN LIEU OF A SAND BLANKET, A STONE ENVELOPE 6 INCHES THICK COMPLETELY AROUND THE PIPE USING 3/4-INCH STONE MAY BE USED.

    PIPE BEDDING MATERIAL SHALL EXTEND FROM A HORIZONTAL PLANE THROUGH THE PIPE AXIS TO 6-INCHES BELOW THE BOTTOM OF THE OUTSIDE SURFACE OF THE PIPE.

    PIPE SAND BLANKET MATERIAL SHALL COVER THE PIPE A MINIMUM OF 12 INCHES ABOVE THE CROWN OF THE OUTSIDE SURFACE.

    COMPACTION SHALL BE IN 12-INCH LAYERS FOR BEDDING AND BLANKET MATERIALS.

    BACKFILL MATERIAL SHALL BE IN 3-FOOT LAYERS TO THE GROUND SURFACE EXCEPT FOR ROAD CONSTRUCTION WHERE THE FINAL 3-FEET SHALL BE COMPACTED IN 12-INCH LAYERS TO THE ROAD BASE SURFACE.

    TRENCH BACKFILL MATERIAL IN ROADWAY LOCATIONS SHALL BE NATURAL MATERIALS EXCAVATED FROM THE TRENCH DURING CONSTRUCTION, EXCLUDING DEBRIS, PAVEMENT PIECES, ORGANIC MATTER, TOP SOIL, WET OR SOFT MUCK, PEAT, CLAY, EXCAVATED LEDGE, ROCKS OVER 6 INCHES IN THE LARGEST DIMENSION, OR ANY OTHER UNSUITABLE MATERIAL NOT APPROVED BY THE ENGINEER.

    TRENCH BACKFILL AT CROSS-COUNTRY LOCATIONS SHALL BE AS DESCRIBED ABOVE EXCEPT THAT THE ENGINEER MAY PERMIT THE USE OF TOP SOIL, LOAM, MUCK OR PEAT, IF HE IS SATISFIED THAT THE COMPLETED CONSTRUCTION WILL BE ENTIRELY STABLE AND PROVIDED THAT EASY ACCESS TO THE SEWER FOR MAINTENANCE AND POSSIBLE RECONSTRUCTION, WHEN NECESSARY WILL BE PRESERVED. BACKFILL SHALL BE MOUNDED 6-INCHES ABOVE ORIGINAL GROUND.

    BASE COURSE MATERIALS FOR TRENCH REPAIRS SHALL MEET THE REQUIREMENTS OF DIVISION 300 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION.

    WHERE SHEETING IS PLACED ALONG SIDE OF THE PIPE AND EXTENDS BELOW MID-DIAMETER, THE SHEETING SHALL BE CUT OFF AND LEFT IN PLACE TO AN ELEVATION NOT LESS THAN ONE FOOT ABOVE THE TOP OF THE PIPE AND AT LEAST 3 FEET BELOW FINISH GRADE.

    TRENCHES FOR SEWER PIPES WITH SLOPES OVER 0.08 FEET PER FOOT AND TRENCHES FOR SEWER PIPES BELOW THE SEASONAL HIGH GROUND WATER LEVEL SHALL HAVE IMPERVIOUS TRENCH DAMS CONSTRUCTED EVERY 300 FEET TO PREVENT POTENTIAL DISTURBANCE TO PIPE BEDDING AND BLANKET MATERIALS.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-09

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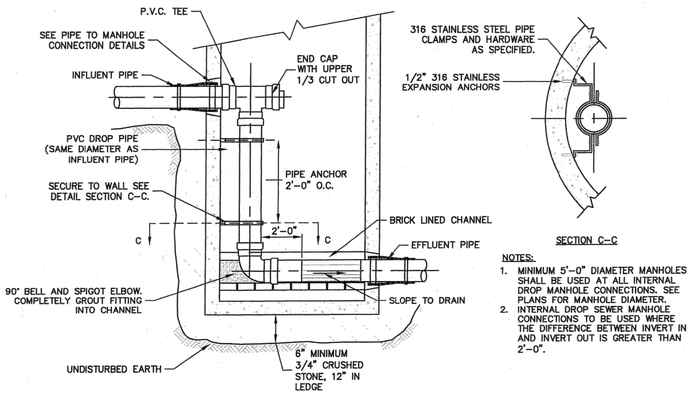
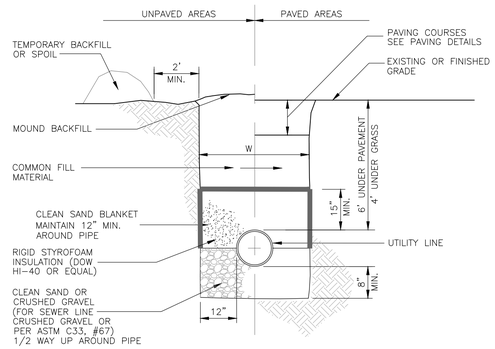


NOTES:
1. MINIMUM 5'-0" DIAMETER MANHOLES SHALL BE USED AT ALL INTERNAL DROP MANHOLE CONNECTIONS. SEE PLANS FOR MANHOLE DIAMETER.
2. INTERNAL DROP SEWER MANHOLE CONNECTIONS TO BE USED WHERE THE DIFFERENCE BETWEEN INVERT IN AND INVERT OUT IS GREATER THAN 2'-0".

TYPICAL SEWER MANHOLE
WITH INTERNAL DROP CONNECTION

NOT TO SCALE

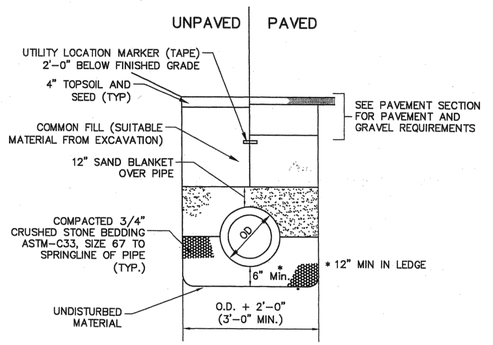


NOTE

W=MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.

PIPE INSULATION

NOT TO SCALE



TYPICAL SEWER PIPE TRENCH

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

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1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
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	18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-10

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GENERAL NOTES

1. ALL SEWER CONSTRUCTION STANDARDS AND DETAILS SHALL ADHERE TO ENV-WQ 700, EFFECTIVE DATE JULY 1, 2025.
2. IT IS THE INTENTION THAT THE MANHOLE, INCLUDING ALL COMPONENT PARTS, HAVE ADEQUATE SPACE, STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENTS AND CONFIGURATIONS, SHALL BE AS SHOWN ON THE DRAWING. MANHOLES SHALL BE AN ASSEMBLY OF PRECAST SECTIONS, WITH STEEL REINFORCEMENT AND ADEQUATE JOINTING. THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND HS-20-44 LOADING INCLUDING THE FRAME AND COVER.
3. SEWER MANHOLE DIAMETER SHALL BE AS INDICATED ON THE PLANS.
4. LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN OF LONDONDERRY AND NHDES REQUIREMENTS. INVERT AND SHELF TO BE PLACED AFTER PASSING THE LEAKAGE TEST.
   (a) ALL MANHOLES SHALL BE TESTED FOR LEAKAGE USING A VACUUM TEST IN ACCORDANCE WITH THE ASTM C1244 STANDARD IN EFFECT WHEN THE TESTING IS PERFORMED.
   (b) THE MANHOLE VACUUM TEST SHALL CONFORM TO THE FOLLOWING:
      1. THE INITIAL VACUUM GAUGE TEST PRESSURE SHALL BE 10 INCHES Hg.
      2. THE MINIMUM ACCEPTABLE TEST HOLD TIME FOR 1-INCH Hg PRESSURE DROP TO 9 INCHES SHALL BE:
         A. NOT LESS THAN 2 MINUTES FOR MANHOLES LESS THAN 10 FEET DEEP.
         B. NOT LESS THAN 2.5 MINUTES FOR MANHOLES 10 TO 15 FEET DEEP.
         C. NOT LESS THAN 3 MINUTES FOR MANHOLES MORE THAN 15 FEET DEEP.
   (c) THE MANHOLE SHALL BE REPAIRED AND RETESTED IF THE TEST HOLD TIMES FAIL TO ACHIEVE THE ACCEPTANCE LIMITS SPECIFIED IN (b) ABOVE.
   (d) INVERTS AND SHELVES SHALL NOT BE INSTALLED UNTIL AFTER SUCCESSFUL TESTING IS COMPLETE.
   (e) FOLLOWING COMPLETION OF THE LEAKAGE TEST, THE FRAME AND COVER SHALL BE PLACED ON TOP OF THE MANHOLE OR SOME OTHER MEANS USED TO PREVENT ACCIDENTAL ENTRY BY UNAUTHORIZED PERSONS, CHILDREN OR ANIMALS, UNTIL THE CONTRACTOR IS READY TO MAKE FINAL ADJUSTMENT TO GRADE.
5. CARE SHALL BE TAKEN TO ENSURE THAT THE BRICK INVERT IS A SMOOTH CONTINUATION OF THE SEWER INVERT. INVERT BRICKS SHALL BE LAID ON EDGE. BASE SECTION TO BE FULL.
6. MANHOLE CHANNELS REQUIRING CHANGE IN ALIGNMENT ARE TO BE BUILD ON A SMOOTH RADIUS.
7. IN CROSS COUNTRY AREAS BEYOND ROADWAY RIGHT-OF-WAYS, THE MANHOLE FRAME ELEVATION SHALL BE A MINIMUM OF 6" ABOVE FINISHED GRADE. GRADE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE MANHOLE.
8. FRAMES AND COVERS: MANHOLES FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN AND PROVIDE A 30-INCH CLEAR OPENING. 3-INCH (MINIMUM HEIGHT) LETTERS WITH THE WORD "SEWER" SHALL BE PLAINLY CAST INTO THE CENTER OF EACH MANHOLE COVER.
9. BARRELS, CONE SECTIONS AND CONCRETE GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE AND SHALL CONFORM ENV-WQ 704.12 & 704.13.
10. PRECAST CONCRETE BARREL SECTIONS, CONES AND BASES SHALL CONFORM TO ASTM C478-06.
11. BASE SECTIONS SHALL BE OF MONOLITHIC CONSTRUCTION TO A POINT AT LEAST 6 INCHES ABOVE THE CROWN OF THE INCOMING PIPE.
12. MANHOLE CONE SECTIONS SHALL BE ECCENTRIC IN SHAPE.
13. ALL PRECAST SECTIONS AND BASES SHALL HAVE THE DATE OF MANUFACTURE AND THE NAME OR TRADEMARK OF THE MANUFACTURER IMPRESSED OR INDELIBLY MARKED ON THE INSIDE WALL.
14. ALL PRECAST SECTIONS AND BASES SHALL BE COATED ON THE EXTERIOR WITH A BITUMINOUS DAMP-PROOFING COATING.
15. SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE DEPTH IS LESS THAN 6 FEET, A REINFORCED CONCRETE SLAB COVER MAY BE USED HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H-20 LOADS.
16. HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF AN OVERLAPPING TYPE, SEALED FOR WATERTIGHTNESS USING A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT. APPROVED ELASTOMERIC SEALANTS ARE:
   (a) SIKAFLEX-12-SL; OR
   (b) SONNEBORN BUILDING PRODUCTS-SONOLASTIC SL-1
17. THE MINIMUM INTERNAL DIAMETER OF MANHOLES SHALL BE 48 INCHES. FOR SEWERS LARGER THAN 24-INCH DIAMETER. MANHOLE DIAMETERS SHALL BE INCREASED SO AS TO PROVIDE AT LEAST 12-INCHES OF SHELF ON EACH SIDE OF THE SEWER.
18. LEAKAGE TEST SHALL BE PERFORMED IN ACCORDANCE TO ENV-WQ 704.17.
19. BRICK MASONRY FOR SHELF, INVERT AND GRADE ADJUSTMENT SHALL COMPLY WITH ASTM C32-05, CLAY OR SHALE, FOR GRADE SS HARD BRICK.
20. MORTAR SHALL BE COMPOSED OF PORTLAND CEMENT AND SAND WITH OR WITHOUT HYDRATED LIME ADDITION. PROPORTIONS IN MORTAR OF PARTS BY VOLUMES SHALL BE:
   (a) 4.5 PARTS SAND AND 1.5 PARTS CEMENT; OR
   (b) 4.5 PARTS SAND, 1 PART CEMENT AND 0.5 PART HYDRATED LIME
21. CEMENT SHALL BE TYPE II PORTLAND CEMENT CONFORMING TO ASTM C150-05. HYDRATED LIME SHALL BE TYPE S CONFORMING TO ASTM C207-06 "STANDARD SPECIFICATIONS FOR HYDRATED LIME FOR MASONRY PURPOSES". SAND SHALL CONSIST OF INERT NATURAL SAND CONFORMING TO ASTM C33-03 "STANDARD SPECIFICATIONS FOR CONCRETE, FINE AGGREGATES".
22. INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED OR PRECAST CONCRETE SHELF AND INVERT, CONSTRUCTED TO CONFORM TO THE SIZE OF THE PIPE AND FLOW. AT CHANGES IN DIRECTIONS, THE INVERTS SHALL BE LAID OUT IN CURVES OF THE LONGEST RADIUS POSSIBLE TANGENT TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY.
23. FRAMES AND COVERS: MANHOLES FRAMES AND COVERS SHALL BE OF HEAVY DUTY DESIGN, CLASS 30, CONFORMING TO ASTM A48/48M AND PROVIDE A 30-INCH CLEAR OPENING. 3-INCH WORD (MINIMUM HEIGHT) LETTERS "SEWER" SHALL BE PLAINLY CAST INTO THE TOP SURFACE. THE CASTING SHALL BE OF EVEN GRAINED CAST IRON, SMOOTH, AND FREE FROM SCALE, LUMPS, BLISTERS, SAND HOLES AND DEFECTS. CONTACT SURFACES OF COVERS AND FRAMES SHALL BE MACHINED AT THE FOUNDRY TO PREVENT ROCKING OF COVERS IN ANY ORIENTATION.
24. BEDDING: PRECAST BASES SHALL BE PLACED ON A 6-INCH (12-INCH IN LEDGE) LAYER OF COMPACTED BEDDING MATERIAL THAT CONFORMS TO ASTM C33-03 NO. 67 STONE AND FREE FROM CLAY, LOAM AND ORGANIC MATTER. THE EXCAVATION SHALL BE PROPERLY DEWATERED WHILE PLACING BEDDING MATERIAL AND SETTING OF THE BASE OR POURING CONCRETE. WATER-STOPS SHALL BE USED AT THE HORIZONTAL JOINT OF THE CAST-IN-PLACE MANHOLES.

100% PASSING	1" SCREEN
90-100% PASSING	3/4" SCREEN
20-55% PASSING	3/8" SCREEN
0-10% PASSING	#4 SIEVE
0-5% PASSING	#8 SIEVE

25. FLEXIBLE JOINT: A FLEXIBLE JOINT SHALL BE PROVIDED WITHIN THE FOLLOWING DISTANCES FROM ANY MANHOLE CONNECTION: (a) WITHIN 48 INCHES FOR REINFORCED CONCRETE PIPE (RCP). (b) WITHIN 60 INCHES FOR PVC PIPE LARGER THAN 15" DIAMETER.
26. NO FLEXIBLE JOINT SHALL BE REQUIRED FOR DUCTILE IRON PIPE OR PVC PIPE UP THROUGH 15-INCH DIAMETER.
27. PIPE TO MANHOLE JOINTS SHALL BE ONLY AS FOLLOWS:
   A. ELASTOMERIC, RUBBER SLEEVE WITH WATERTIGHT JOINTS AT THE MANHOLE OPENING AND PIPE SURFACES.
   B. CAST INTO WALL OR SECURED WITH STAINLESS STEEL CLAMPS.
   C. ELASTOMERIC SEALING RING CAST IN THE MANHOLE OPENING WITH THE SEAL FORMED ON THE SURFACE OF THE PIPE BY COMPRESSION OF THE RING.

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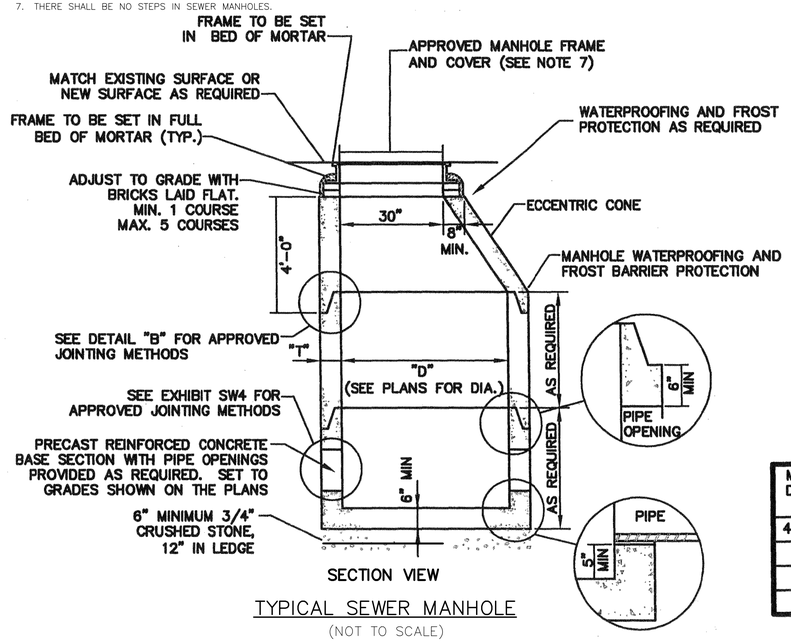
1. IN CROSS COUNTRY AREAS BEYOND ROADWAY RIGHT-OF-WAYS, THE MANHOLE FRAME ELEVATION SHALL BE A MINIMUM OF 6" ABOVE FINISHED GRADE. GRADE TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE MANHOLE
2. THE INVERT OF THE INCOMING PIPE SHALL BE NO MORE THAN 6 INCHES ABOVE THE OUTGOING PIPE UNLESS A DROP ENTRY IS USED.
3. THE SEWER CONNECTIONS SHALL BE INSPECTED BY AUTHORIZED TOWN OF LONDONDERRY PUBLIC WORKS AND ENGINEERING DEPARTMENT PERSONNEL BEFORE ANY BACKFILLING. INSPECTION HOURS ARE BETWEEN 9:00AM AND 4:30PM, MONDAY-FRIDAY, WITH AT LEAST 2 DAYS OF ADVANCE NOTICE.
4. THE SEWER SERVICE MANHOLE SHALL BE VACUUM TESTED AND THE PVC PIPING PRESSURE TESTED WITH AUTHORIZED TOWN OF LONDONDERRY PUBLIC WORKS AND ENGINEERING DEPARTMENT PERSONNEL PRESENT ON SITE WITH A WITNESS.
5. ALL SEWER CONSTRUCTION AND USE SHALL CONFORM TO THE STATE OF NEW HAMPSHIRE STANDARD SEWER CONSTRUCTION SPECIFICATION AND THE TOWN OF LONDONDERRY SEWER USE ORDINANCE.
6. A MANDATORY PRECONSTRUCTION MEETING SHALL BE HELD WITH THE TOWN, CONTRACTOR, OWNER AND ALL UTILITY REPRESENTATIVES PRIOR TO ANY CONSTRUCTION. NO WORK SHALL BEGIN UNTIL APPROVAL BY THE DEPARTMENT OF PUBLIC WORKS HAS BEEN OBTAINED.
7. THERE SHALL BE NO STEPS IN SEWER MANHOLES.

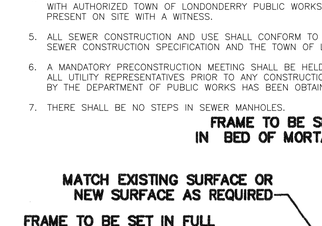


SECTION VIEW

TYPICAL SEWER MANHOLE

(NOT TO SCALE)

MANHOLE DIAMETER "D"	MAX. PIPE DIAMETER STRAIGHT THROUGH TO 45° DEFLECTION	"T" (WALL THICKNESS)
48" (MIN.)	30" OD MAX.	5" (MIN.)
60"	44" OD MAX.	6"
72"	51" OD MAX.	7"
96"	72" OD MAX.	9"



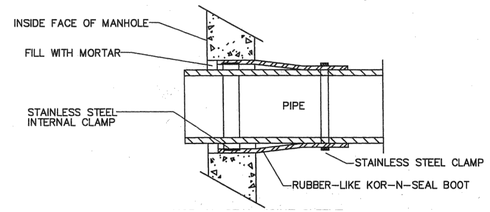
ELASTOMERIC SEALANT

NOTE:
ALL GASKETS AND SEALANTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS

DETAIL "B" HORIZONTAL JOINTS

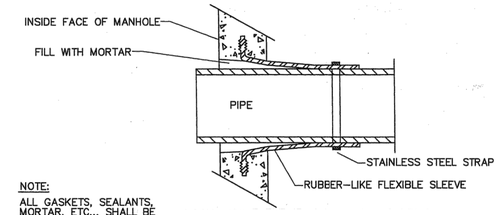
SECTION "A-A"

SECTION "B-B"



KOR-N-SEAL JOINT SLEEVE

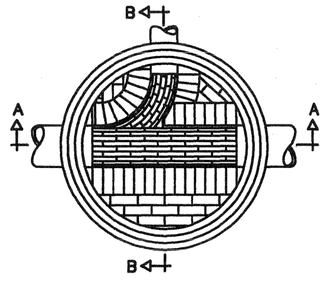
(OR ACCEPTABLE SUBSTITUTE)



NOTE:
ALL GASKETS, SEALANTS, MORTAR, ETC... SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' WRITTEN INSTRUCTIONS

LOCK-JOINT FLEXIBLE MANHOLE SLEEVE

(OR ACCEPTABLE SUBSTITUTE)



PLAN VIEW

TYPICAL MANHOLE - PLAN VIEW

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
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18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-11

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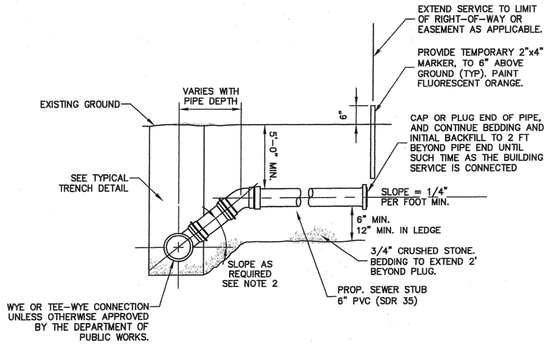
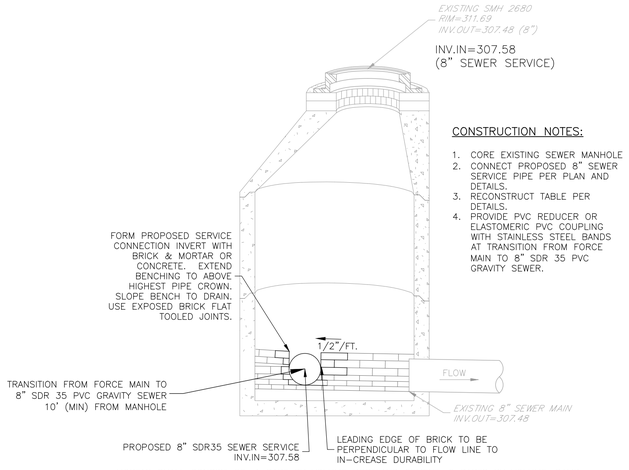


NOTES:
1. ALL SERVICE CONNECTIONS TO BE 6" MINIMUM UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. USE CHIMNEY DETAIL WHERE SERVICE CONNECTION ENTERS SEWER AT GREATER THAN 60° TO THE HORIZONTAL.

SEWER SERVICE CONNECTION

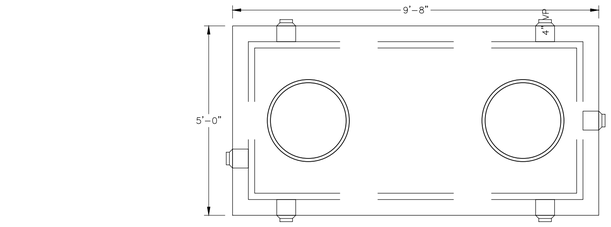


CONSTRUCTION NOTES:
1. CORE EXISTING SEWER MANHOLE
2. CONNECT PROPOSED 8" SEWER SERVICE PIPE PER PLAN AND DETAILS.
3. RECONSTRUCT TABLE PER DETAILS.
4. PROVIDE PVC REDUCER OR ELASTOMERIC PVC COUPLING WITH STAINLESS STEEL BANDS AT TRANSITION FROM FORCE MAIN TO 8" SDR 35 PVC GRAVITY SEWER.

MORTAR SHALL CONSIST OF: 1 PART BY VOLUME PORTLAND CEMENT, 2 PARTS BY VOLUME, DAMP WASHED COARSE SAND AND POTABLE WATER TO PRODUCE A CONSISTENCY OF STIFF PASTE. SEAL ALL PRECAST JOINTS WITH MORTAR.

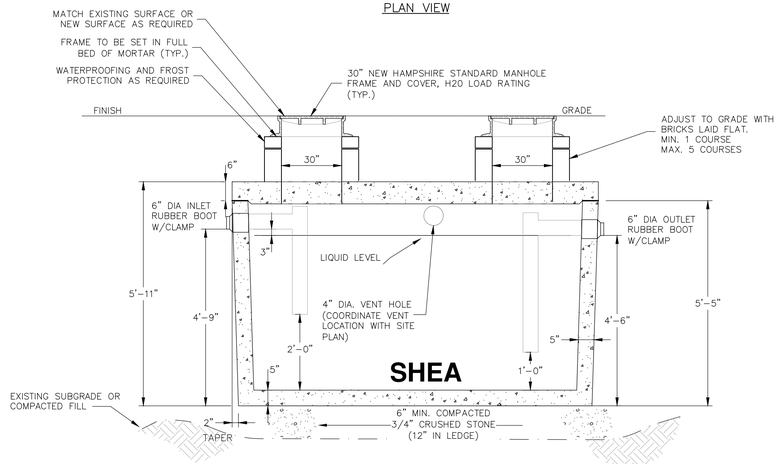
SEWER SERVICE CONNECTION

EX. SMH2680 NOT TO SCALE



PLAN VIEW

NOTES
1. TANK, WHETHER A SINGLE UNIT OR MULTIPLE SECTIONS, SHALL BE SEALED SO AS TO MEET N.H.D.E.S. WATERTIGHT SPECIFICATIONS.
2. SEE TYPICAL SEWER MANHOLE DETAIL AND AND JOINT DETAILS FOR ADDITIONAL DETAILS.



SECTION VIEW

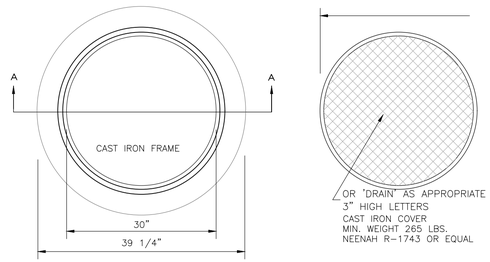
ITEM NO.	M1000H	H-20 (6" TOP)
	M1000HT10	H-20 (10" TOP)

WEIGHT:
BOTTOM = 11,250#
10" TOP = 5,960#
6" TOP = 3,575#

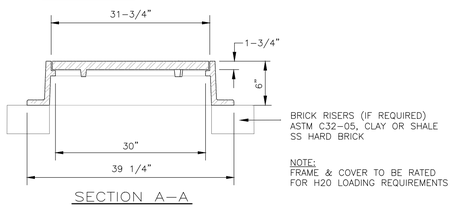
NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. ALL REINFORCEMENT PER ASTM C1227.
3. TEES AND BAFFLES SOLD SEPARATELY.
4. TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN.
5. DESIGNED FOR AASHTO HS-20 LOADING, 1 TO 5 FT COVER.

INDUSTRIAL TANK DETAIL

SHEA CONCRETE 1,000 GALLON SEPTIC TANK (OR APPROVED EQUAL) NOT TO SCALE



PLAN VIEW

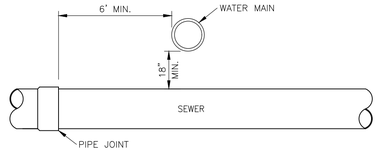


SECTION A-A

NOTE:
FRAME & COVER TO BE RATED FOR H20 LOADING REQUIREMENTS

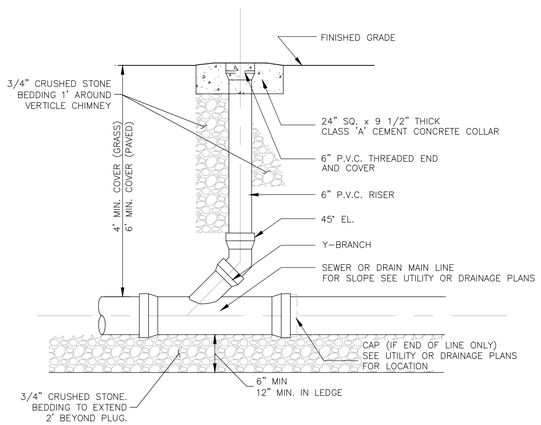
MANHOLE FRAME & COVER

HEAVY DUTY



SEWER / WATER INTERSECTIONS

ELEVATION VIEW NOT TO SCALE



SEWER CLEAN OUT

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

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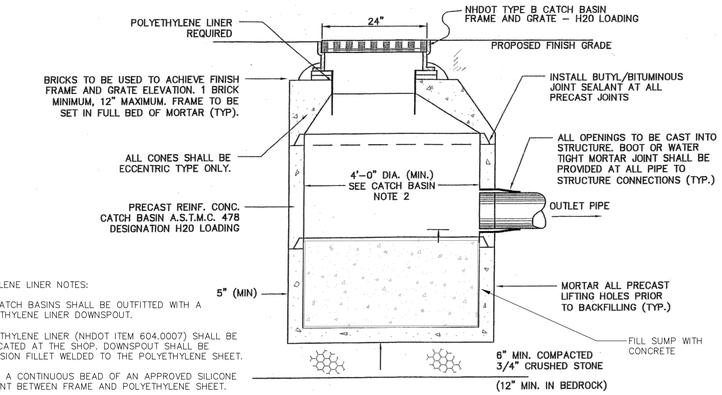


POLYETHYLENE LINER NOTES:

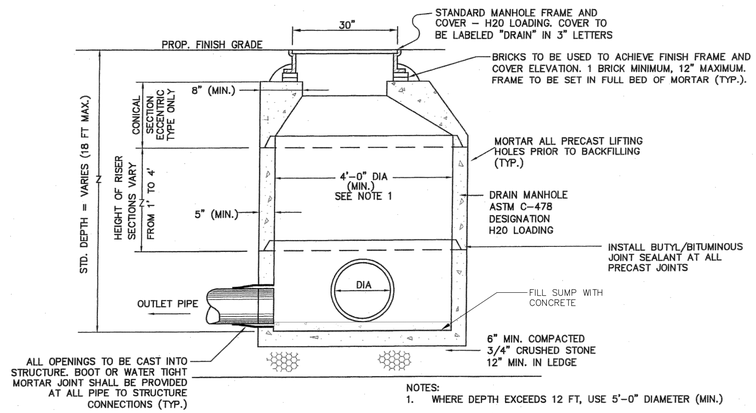
1. ALL CATCH BASINS SHALL BE OUTFITTED WITH A POLYETHYLENE LINER DOWNSPOUT.
2. POLYETHYLENE LINER (NHDOT ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
3. PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT BETWEEN FRAME AND POLYETHYLENE SHEET.
4. PLACE A CLASS AA CONCRETE TO 2" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE).
5. TRIM POLYETHYLENE SHEET A MAXIMUM OF 4" OUTSIDE THE FLANGE ON THE FRAME FOR THE CATCH BASIN BEFORE PLACING CONCRETE (EXCEPT AS SHOWN WHEN USED WITH CURB).
6. THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 3" FROM THE CENTER OF THE DOWNSPOUT IN ANY DIRECTION.

CATCH BASIN NOTES:

1. WHERE DEPTH EXCEEDS 12 FT, USE 5'–0" DIAMETER (MIN.)
2. MINIMUM PIPE DROP (INLET TO OUTLET) SHALL BE 3" UNLESS OTHERWISE APPROVED BY THE TOWN OF LONDONDERRY DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.
3. ALL BOOTS, GASKETS, AND SEALANTS, SHALL BE IN ACCORDANCE WITH MANUFACTURES WRITTEN INSTRUCTIONS.
4. ALL PRECAST SECTIONS SHALL CONFORM TO ASTM C–478 DESIGNAT ION H20 LOADING.

CATCH BASIN

NOT TO SCALE



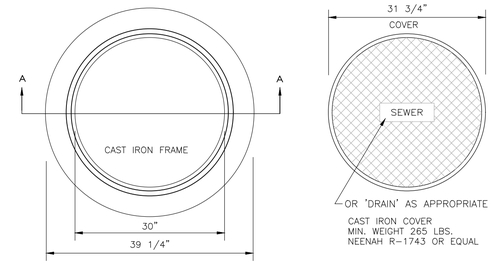
NOTES:

1. WHERE DEPTH EXCEEDS 12 FT, USE 5'–0" DIAMETER (MIN.)
2. MINIMUM PIPE DROP (INLET TO OUTLET) SHALL BE 3" UNLESS OTHERWISE APPROVED BY THE DEPARTMENT OF PUBLIC WORKS AND ENGINEERING.
3. ALL BOOTS, GASKETS AND SEALANTS SHALL BE IN ACCORDANCE WITH MANUFACTURES WRITTEN INSTRUCTIONS

DRAIN MANHOLE

ECCENTRIC CONE

NOT TO SCALE

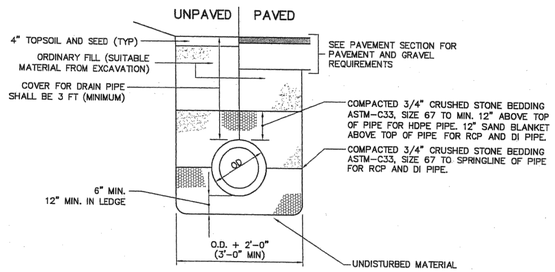


NOTE:
FRAME & COVER TO BE RATED FOR H20 LOADING REQUIREMENTS

MANHOLE FRAME & COVER

HEAVY DUTY

NOT TO SCALE



NOTE:

DRAIN PIPE SHALL BE 15" DIAMETER MIN.

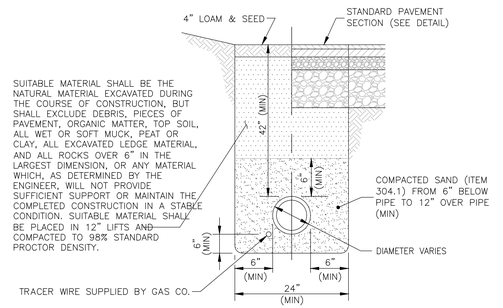
PLASTIC DRAIN PIPE (HDPE) SHALL BE ADS N–12 (CORRUGATED EXTERIOR/SMOOTH INTERIOR) OR EQUAL MEETING AASHTO M–252 AND H–20 LOADING.

DI DRAIN PIPE SHALL BE CL. 50.

RC DRAIN PIPE SHALL BE CLASS III UNLESS OTHERWISE NOTED.

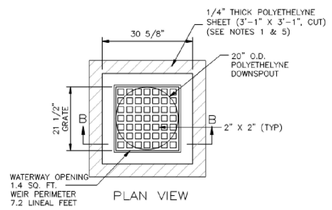
STORM DRAIN TRENCH

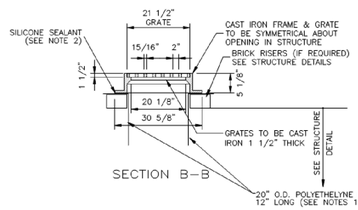
NOT TO SCALE



GAS MAIN TRENCH

NOT TO SCALE





1. POLYETHYLENE LINER (ITEM 604.0007) SHALL BE FABRICATED AT THE SHOP. DOWNSPOUT SHALL BE EXTRUSION FILLET WELDED TO THE POLYETHYLENE SHEET.
2. PLACE A CONTINUOUS BEAD OF AN APPROVED SILICONE SEALANT (SUBSIDIARY TO ITEM 604.0007) BETWEEN FRAME AND POLYETHYLENE SHEET (SEE SECTION A–A, PLATE 4).
3. PLACE CLASS AA CONCRETE TO 2" BELOW THE TOP OF GRATE ELEVATION (SUBSIDIARY TO DRAINAGE STRUCTURE). USE ON DRAINAGE STRUCTURES 4' MIN. DIAMETER ONLY.
4. TRIM POLYETHYLENE SHEET A MAXIMUM OF 4" OUTSIDE THE FLANGE ON THE FRAME FOR THE CATCH BASIN BEFORE PLACING CONCRETE (EXCEPT AS SHOWN WHEN USED WITH 3–FLANGE FRAME AND CURB)
5. THE CENTER OF THE GRATE & FRAME MAY BE SHIFTED A MAXIMUM OF 6" FROM THE CENTER OF THE DOWNSPOUT IN AS SHOWN WHEN USED WITH 3–FLANGE FRAME AND CURB).
6. PLACED ONLY IN DRAINAGE STRUCTURES IN PAVEMENT. ANY DIRECTION.

CATCH BASIN FRAME AND GRATE

NEENAH R–3404 OR EQUIVALENT

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

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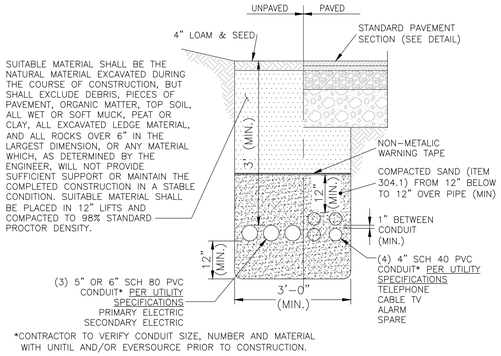
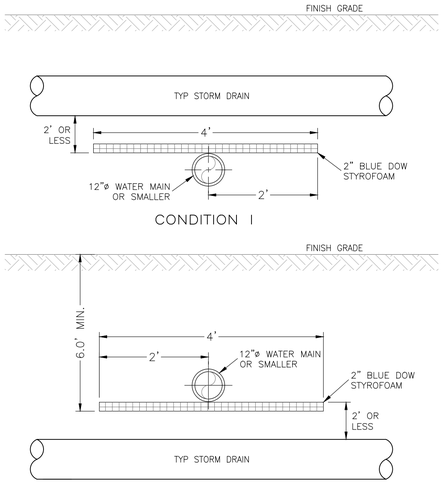


UTILITY TRENCH

NOT TO SCALE

NOTES

1. ALL CONDUITS SHALL BE 6" GRAY, ELECTRICAL GRADE, SCHEDULE 80 PVC CONDUIT WITH THE EXCEPTION OF THE SWEEPS AT RISER POLE AND THE FIRST HORIZONTAL AND VERTICAL CONDUIT SECTIONS AT EACH RISER POLE WHICH SHALL BE 6" HOT-DIPPED, GALVANIZED RIGID STEEL.
   a. THE STEEL TO PVC CONDUIT TRANSITIONS SHALL BE MADE WITH PVC THREADED ADAPTORS.
2. CONDUITS SHALL BE INSTALLED IN STRAIGHT LINES.
   a. NO SWEEPS SHALL BE USED IN THE CONDUIT SYSTEM EXCEPT AT RISER POLES AND EQUIPMENT PADS.
   b. THE MAXIMUM CHANGE IN CONDUIT DIRECTION BETWEEN TO CONTIGUOUS LENGTH OF CONDUIT SHALL BE LIMITED TO 2.5 DEGREES.
   c. ALL HORIZONTAL AND/OR VERTICAL CONDUIT BEND/CHANGES IN DIRECTION, NO MATTER HOW SMALL, SHALL BE REVIEWED AND APPROVED BY UNITIL.
3. ALL CONDUIT RUNS SHALL BE CLEANED BY PULLING A PLUG OR MANDREL (NO SMALLER THAN ¼" LESS THAN THE CONDUIT) THROUGH EACH CONDUIT.
4. ALL CONDUITS SHALL HAVE A 2,500# FLAT, WOVEN, POLYESTER PULLING LINE INSTALLED.
5. TEMPORARY CAPS SHALL BE INSTALLED ON THE END OF CONDUITS UNTIL CABLES ARE INSTALLED.
6. THE CONDUIT DUCT BANK INSTALLATION SHALL BE INSPECTED AND ACCEPTED BY UNITIL PRIOR TO BACKFILL.

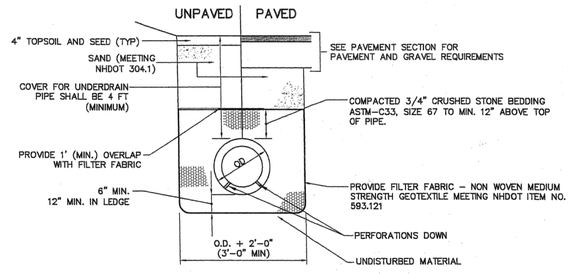


NOTES

1. INSULATION REQUIREMENTS MAY BE MODIFIED BY WATER DEPT. BASED ON FIELD CONDITIONS, ETC.
2. THE LENGTH OR WIDTH OF INSULATION SHALL EXTEND 1 STORM DRAIN PIPE DIAMETER BEYOND THE EDGE OF STORM DRAIN PIPE IN EACH DIRECTION OR A MINIMUM OF 2' BEYOND THE CENTERLINE OF THE STORM DRAIN PIPE, WHICHEVER IS GREATER.
3. ALL BUTT JOINT SEAMS TO BE OVERLAPPED WITH A 1' PIECE OF INSULATION CENTERED OVER SEAM.

STORM DRAIN / WATER MAIN INTERSECTING RUNS

ELEVATION VIEW NOT TO SCALE



NOTE:

PLASTIC UNDERDRAIN PIPE (HDPE) SHALL BE 6" DIAMETER (MIN.) ADS N-12 (CORRUGATED EXTERIOR/SMOOTH INTERIOR) OR EQUAL MEETING AASHTO M-252 AND H-20 LOADING.

UNDERDRAIN TRENCH

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SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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PUMP STATION DESIGN NOTES

Env–Wq 704.07 FORCE MAINS:

1. FORCE MAINS FOR CONSTANT SPEED PUMPS SHALL BE SIZED TO YIELD A CLEANSING VELOCITY OF 3 FEET PER SECOND OR GREATER AT DESIGN PUMP CAPACITY.
2. FORCE MAINS FOR VARIABLE SPEED PUMPS SHALL BE SIZED TO YIELD A VELOCITY OF 2 FEET PER SECOND OR GREATER AT AVERAGE DAILY DESIGN FLOW.
3. SEWER FORCE MAIN SHALL BE 6" INCHES IN NOMINAL DIAMETER FOR THE SEWER FROM THE SITE.
4. FORCE MAINS SHALL BE PROVIDED WITH AUTOMATIC AIR RELIEF VALVE(S) AT HIGH POINTS TO PREVENT AIR LOCKING.
5. FORCE MAINS SHALL ENTER THE GRAVITY SEWER SYSTEM AT THE FLOW LINE OF THE RECEIVING MANHOLE.
6. FORCE MAINS SHALL BE PROVIDED WITH DRAINAGE BLOW–OFFS, PROPERLY VALVED, AT LOW POINTS. SPACE SHALL BE AVAILABLE AT SUCH LOCATIONS FOR HANDLING THE DISPLACED WASTE WITHOUT DANGER OF POLLUTION OR HEALTH HAZARD.
7. FORCE MAINS SHALL BE DESIGNED IN ACCORDANCE WITH Env–Wq 704.07, CONSTRUCTED WITH MATERIALS AS SPECIFIED IN Env–Wq 704.08, AND TESTED AS SPECIFIED IN Env–Wq 704.09.
8. THRUST BLOCKS MADE FROM INORGANIC, CORROSION–RESISTANT MATERIAL SHALL BE PLACED AT ALL BENDS, ELBOWS, TEES AND JUNCTIONS.
9. FORCE MAINS SHALL BE DESIGNED TO WITHSTAND HYDROSTATIC PRESSURES OF AT LEAST 2.5 TIMES THE DESIGN TOTAL DYNAMIC HEAD.

Env–Wq 704.09 FORCE MAIN AND PRESSURE SEWER TESTING:

1. FORCE MAINS AND PRESSURE SEWERS AND FORCE MAINS AND PRESSURE SEWERS SHALL BE TESTED IN ACCORDANCE WITH SECTION 5 OF THE AWWA C600, "INSTALLATION OF CAST IRON WATER MAINS AND THEIR APPURTENANCES" STANDARD IN EFFECT WHEN THE TEST IS CONDUCTED, AVAILABLE AS NOTED IN APPENDIX D, AT A PRESSURE EQUAL TO THE GREATER OF 150 PERCENT OF THE DESIGN OPERATING TOTAL DYNAMIC HEAD OR AT LEAST 100 PSI.

Env–Wq 705.04 PUMP STATION ACCESS:

1. DRY WELL SHALL PROVIDE ACCESSIBILITY FOR THE REPAIR AND REMOVAL OF PUMPS, MOTORS, AND OTHER ITEMS OF EQUIPMENT THAT ARE ESSENTIAL TO THE SEWAGE PUMPING PROCESS.
2. SEPARATE EXTERIOR ENTRANCES SHALL BE PROVIDED TO BOTH WET WELLS AND DRY WELLS OF SEWAGE PUMPING STATIONS.
3. FOR BUILT–IN–PLACE SEWAGE PUMPING STATIONS, ACCESS TO LOWER LEVELS SHALL BE BY STAIRWAYS WITH HANDRAILS.
4. PREFABRICATED STATIONS MAY HAVE LADDERS WITH LESS THAN OR EQUAL TO A 75° SLOPE OR SPIRAL STAIRS.
5. VERTICAL DISTANCES BETWEEN FLOORS OR REST LANDINGS SHALL NOT EXCEED 12 FEET.
6. SAFETY BARRIERS TO PREVENT FALLING SHALL BE PROVIDED AT LANDINGS.
7. POWER ELEVATORS PROPOSED FOR ALL DEEP STATIONS SHALL HAVE A CAPACITY LIMIT OF NOT LESS THAN 600 POUNDS.
8. LIFTING EQUIPMENT SHALL BE PROVIDED FOR SUBMERSIBLE PUMP REMOVAL.
9. LIFTING CHAINS SHALL BE STAINLESS STEEL OR OTHER CORROSION RESISTANT MATERIAL.

Env–Wq 705.07 ELECTRICAL REQUIREMENTS:

1. SUBMERSIBLE PUMPS FOR SEWAGE PUMPING STATIONS SHALL CONFORM TO THE NEC REQUIREMENTS ADOPTED BY REFERENCE IN THE STATE BUILDING CODE PURSUANT TO RSA 155–A:1, IV, FOR INSTALLATION IN AREAS CLASSIFIED BY THE NEC AS CLASS I, DIVISION I.
2. ELECTRICAL SYSTEMS AND COMPONENTS INCLUDING MOTORS, LIGHTS, CABLE, CONDUITS, SWITCH BOXES AND CONTROL CIRCUITS SHALL BE PROTECTED FROM FLOODING IN ACCORDANCE WITH Env–Wq 705.01.
3. ELECTRICAL SYSTEMS AND COMPONENTS INCLUDING MOTORS, LIGHTS, CABLES, CONDUITS, SWITCH BOES AND CONTROL CIRCUITS IN ENCLOSED OR PARTIALLY ENCLOSED SPACES WHERE FLAMMABLE MIXTURES OCCASIONALLY MAY BE PRESENT, INCLUDING RAW SEWAGE WET WELLS, SHALL BE CERTIFIED BY THE MANUFACTURER AS:
   A. COMPLYING WITH THE NEC REQUIREMENTS ADOPTED BY REFERENCE IN THE STATE BUILDING CODE PURSUANT TO RSA 155–A:1, IV, FOR CLASS 1, DIVISION 1 LOCATIONS; OR
   B. BEING RATED FOR CLASS I DIVISION 2 REQUIREMENTS WHERE MECHANICAL VENTILATION IS PROVIDED IN ACCORDANCE WITH THE NFPA AS ADOPTED BY REFERENCE IN THE STATE FIRE CODE IN SAF–C 6000.
4. ALL ELECTRICAL EQUIPMENT AND WORK SHALL COMPLY WITH THE REQUIREMENTS OF NEC AS ADOPTED BY REFERENCE IN THE STATE BUILDING CODE PURSUANT TO RSA 155–A:1, IV, AND NFPA AS ADOPTED BY REFERENCE IN THE STATE FIRE CODE IN SAF–C 6000 IN EFFECT AT THE TIME OF INSTALLATION.

Env–Wq 705.08 VENTILATION REQUIREMENTS:

1. MECHANICAL VENTILATION FOR PERSONNEL AND EQUIPMENT SHALL BE PROVIDED FOR ALL OCCUPIED SPACES WITHIN SEWAGE PUMPING STATION IN ACCORDANCE WITH THE NFPA AS INCORPORATED BY REFERENCE IN THE STATE FIRE CODE IN SAF–C 6000.
2. MECHANICAL VENTILATION FOR BELOW–GRADE DRY WELLS SHALL BE PROVIDED, SO ARRANGED AS TO INDEPENDENTLY VENTILATE THE DRY WELL AND THE WET WELL.
3. THERE SHALL BE NO INTERCONNECTION BETWEEN THE WET WELL AND DRY WELL VENTILATION SYSTEMS.
4. SWITCHES FOR OPERATION OF VENTILATION EQUIPMENT SHALL BE MARKED AND LOCATED CONVENIENTLY.
5. DEHUMIDIFICATION SHALL BE PROVIDED IN BELOW–GROUND DRY WELLS.
6. VENTILATION OF WET WELLS SHALL PROVIDE AT LEAST 30 AIR CHANGES PER HOUR IF THE VENTILATION SYSTEM IS OPERATED INTERMITTENTLY, OR AT LEAST 12 AIR CHANGES PER HOUR IF THE VENTILATION SYSTEM IS OPERATED CONTINUOUSLY.
7. FANS INSTALLED WITHIN THE WET WELL STRUCTURE SHALL BE SUITABLE FOR A CLASS I, DIVISION I, GROUP C OR D ENVIRONMENT.
8. VENTILATION OF SUBMERSIBLE PUMP CHAMBERS OR SUCTION LIFE WET WELLS WHERE THERE IS NO OCCUPANCY FOR REGULAR MAINTENANCE PURPOSES MAY BE BY GRAVITY VENTILATION.
9. VENTILATION EXHAUST FROM WET WELLS SHALL NOT CAUSE AN ODOR NUISANCE TO THE PUBLIC OR SURROUNDING OCCUPIED BUILDINGS.
10. ACCESS DOORS TO WET WELLS SHALL HAVE WARNING SIGNS ON THE UNDERSIDE WHICH READ, "WARNING – HAZARDOUS AREA, ENTER ONLY WITH PROPER EQUIPMENT" OR "CONFINED SPACE, ENTRY BY PERMIT ONLY", AS APPROPRIATE.
11. THE ALARM SHALL INCLUDE A LOCAL AUDIBLE ENUNCIATOR AND LIGHT.

PUMP STATION OPERATIONAL INSTRUCTIONS

1. THE FOLLOWING MAINTENANCE SHALL BE DONE ON A MONTHLY BASIS (AT A MINIMUM):
2. PUMP STATION SHALL BE VISUALLY INSPECTED TO ENSURE THAT PUMPS AND APPURTENANCES ARE FUNCTIONING, PIPE SUPPORTS ARE SECURELY FIXED TO THE MANHOLE, STAINLESS STEEL LIFTING CHAINS ARE SAFELY STORED WITHIN THE PUMP STATION. IF ANY OF THE ABOVE PARTS ARE NOT FUNCTIONING AS DESIGNED THEY SHALL BE REPAIRED IMMEDIATELY.
3. PUMP STATION AND VALVE MANHOLE ACCESS HATCHES ARE WORKING PROPERLY. IF THE ACCESS HATCHES ARE NOT FUNCTIONING PER THE MANUFACTURER'S RECOMMENDATIONS, THEY SHALL BE REPAIRED IMMEDIATELY.
4. ELECTRIC CONTROL PANEL SHALL BE INSPECTED TO CONFIRM ELAPSED TIME METER, HIGH WATER ALARM, LOW LEVEL ALARM, LOSS OF ONE OR MORE PHASES OF POWER SUPPLY OR VOLTAGE DROP ALARM, LOSS OF ALARM TRANSMISSION LINE, AND STANDBY GENERATOR APPLICATION ALARM. IF ANY OF THE ALARMS ARE NOT FUNCTIONING AS DESIGNED, THEY SHALL BE REPAIRED IMMEDIATELY.
5. THE BACK–UP GENERATOR SHALL BE INSPECTED ON A MONTHLY BASIS (AT A MINIMUM, UNLESS OTHERWISE NOTED):
6. ALL RECOMMENDATIONS FROM THE MANUFACTURER AND OPERATOR'S MANUAL SHALL BE STRICTLY FOLLOWED.
7. THE GENERATOR SHALL BE PRIMED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
8. ALL FLUIDS SHALL BE CHECKED ON A DAILY BASIS AND ADDED ON AN AS NEEDED BASIS AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
9. ALL PARTS SHALL BE CHECKED ON A DAILY BASIS AND SHALL BE FIXED IMMEDIATELY WHEN NOT FUNCTIONING PROPERLY.
10. PUMP STATION OPERATION & MAINTENANCE (O&M) MANUAL SHALL BE SUBMITTED TO NHDES WASTEWATER BUREAU WITHIN 60 DAYS FOLLOWING COMPLETION OF PUMP STATION CONSTRUCTION.

Env–Wq 705.09 ALARM SYSTEMS:

1. ALARM SYSTEMS SHALL BE PROVIDED FOR ALL SEWAGE PUMPING STATIONS.
2. THE ALARM SIGNAL SHALL BE ACTIVATED IN ONE OF THE FOLLOWING CASES:
   A. HIGH WATER IN THE WET WELL.
   B. LOW WATER IN THE WET WELL.
   C. LOSS OF ONE OR MORE PHASES OF POWER SUPPLY OR SEVERE VOLTAGE DROP.
   D. HIGH WATER LEVEL IN THE PUMP ROOM SUMP.
   E. LOSS OF ALARM TRANSMISSION CAPABILITY.
   F. STANDBY GENERATOR APPLICATION.
   G. PUMP MALFUNCTION, INCLUDING SHAFT SEAL FAILURE.
   H. LOSS OF AIR PRESSURE IN A BUBBLER TUBE SYSTEM.
   I. LEVEL SENSING MALFUNCTION OR FAILURE.
   J. LOSS OF VENTILATION IN AREAS CLASSIFIED AS CLASS 1 DIVISION 2 AND USING MECHANICAL VENTILATION PER THE NFPA AS INCORPORATED BY REFERENCE IN THE STATE FIRE CODE IN SAF–C 6000.
   K. INTRUSION.
   L. TEMPERATURE OUTSIDE NORMAL OPERATING RANGES.
3. THE HIGH WATER ALARM AND LOW WATER ALARM TRIGGERS SHALL BE SEPARATE DEVICES, INDEPENDENT OF THE PUMP WET WELL LEVEL CONTROL SYSTEM AND SET AT ELEVATIONS ABOVE AND BELOW THE LAG PUMP ON AND OFF ELEVATIONS.
4. SATISFACTORY OPERATION OF THE ALARM SYSTEM SHALL BE INDICATED ON A PANEL WITH A LIGHT WHICH LIGHTS UP UPON FAILURE OF THE ALARM SYSTEM.
5. THE POWER SOURCE FOR THE ALARM SYSTEM SHALL BE:
   A. AN INDEPENDENT BATTERY WITH A CONTINUOUS CHARGE OR;
   B. MAIN LINE POWER WITH A BACK–UP BATTERY SYSTEM, WHICH SHALL BE CONNECTED AUTOMATICALLY SHOULD MAIN POWER FAIL.
6. THE ALARM SIGNAL SHALL BE TRANSMITTED THROUGH A 24 HOUR PER DAY, 7 DAY PER WEEK NOTIFICATION SYSTEM TO THE APPROPRIATE UTILITY OPERATOR.
7. THE ALARM SHALL INCLUDE A LOCAL AUDIBLE ENUNCIATOR AND LIGHT.
8. PROVISION SHALL BE MADE TO PERMIT SILENCING OF THE AUDIBLE ENUNCIATOR MANUALLY, AFTER THE ALARM HAS BEEN SOUNDED, BUT THE LIGHT SHALL CONTINUE UNTIL THE ALARM CONDITION HAS BEEN RECTIFIED.
9. ALARM SIGNALS FOR PRIVATELY–OPERATED SEWER PUMPING STATIONS SHALL BE TRANSMITTED TO THE RESPONSIBLE MAINTENANCE PERSON DIRECTLY OR VIA AN ANSWERING SERVICE.
10. IF A CENTRAL SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SYSTEM EXISTS AT THE WWTP, THE PUMPING STATION ALARMS SHALL BE CONNECTED TO THE SCADA SYSTEM USING PROGRAMMABLE LOGIC CONTROLLER (PLC) TECHNOLOGY.

Env–Wq 705.10 INSTRUCTION AND EQUIPMENT:

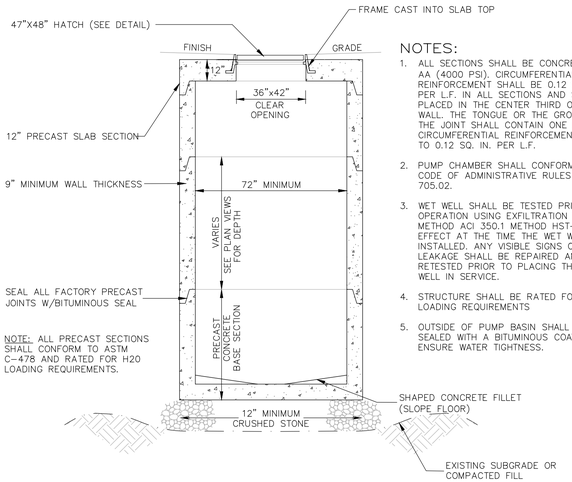
1. THE OWNER SHALL OBTAIN AN OPERATION AND MAINTENANCE MANUAL THAT PROVIDES INFORMATION AND GUIDANCE FOR DAY–TO–DAY OPERATION OF THE SEWAGE PUMPING STATION AND PROVIDE A COPY TO NHDES.

Env–Wq 705.11 EMERGENCY OPERATION:

1. THE ENGINEER SHALL RECOMMEND EMERGENCY OPERATION PROCEDURES TO PREVENT THE BACK–UP, OVERFLOW, OR OTHER UNPERMITTED DISCHARGE OF WASTEWATER FROM THE SEWAGE PUMPING STATION.
2. AN INDEPENDENT ENGINE–GENERATOR TYPE SOURCE OF ELECTRIC POWER SHALL BE PROVIDED FOR ELECTRICALLY–DRIVEN PUMPS. THIS SOURCE SHALL BE AUTOMATICALLY ACTIVATED BY FAILURE OF ANY PHASE OF POWER SUPPLY OR UPON ANY FLUCTUATION IN VOLTAGE, THE AMOUNT OR DURATION OF WHICH WOULD CAUSE DAMAGE TO THE MOTORS. INSTALLATIONS SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE AND THE STATE FIRE CODE IN SAF–C 6000.
3. THE EMERGENCY POWER GENERATOR SHALL BE PERMANENTLY SECURED IN PLACE, WITH PROVISIONS FOR REMOVAL TO FACILITATE GENERATOR REPAIR OR REPLACEMENT.
4. PROVISIONS SHALL BE MADE FOR AUTOMATIC AND MANUAL START–UP AND CUT–IN. THE CONTROLS SHALL BE SUCH THAT UPON AUTOMATIC START–UP UNDER EMERGENCY CONDITIONS, SHUT–DOWN SHALL BE ACCOMPLISHED AUTOMATICALLY ON RESTORATION OF UTILITY POWER WITH CONTROLLED SHUT–DOWN OF THE UNIT. MANUAL SHUT–DOWN SHALL ALSO BE PROVIDED. PROVISION SHALL BE MADE TO ALLOW PUMPS TO RUN DOWN BEFORE RE–ENERGIZING ON TRANSFER OF POWER.
5. THE EMERGENCY POWER GENERATOR SHALL BE SIZED TO SEQUENTIALLY START AND OPERATE ALL PUMPS NEEDED TO HANDLE DESIGN MAXIMUM WASTE FLOWS, PLUS LIGHTING, VENTILATION, CONTROLS, AND GRINDING OR SCREENING.
6. THE EMERGENCY POWER GENERATOR SHALL BE LOCATED ABOVE GRADE WITH VENTILATION OF EXHAUST GASES.
7. ALL EMERGENCY POWER GENERATION EQUIPMENT SHALL BE PROVIDED WITH INSTRUCTIONS FOR ROUTINE EXERCISING, LOAD TESTING AND MAINTENANCE.
8. THE GENERATOR ENGINE CONTROLS SHALL BE EQUIPPED WITH AN AUTOMATIC EXERCISER WHICH CAN BE SET ON ANY SELECTED SCHEDULE TO START THE GENERATOR, RUN THE GENERATOR UNDER NO LOAD OR LOAD CONDITIONS BY SELECTION AND SHUT THE GENERATOR OFF WITHOUT ACTUATING THE ALARM SYSTEM.
9. THE OWNER SHALL PROVIDE EACH EMERGENCY GENERATOR WITH ENOUGH FUEL FOR THE GENERATOR TO RUN UNDER FULL LOAD OR PEAK STATION FLOW FOR AT LEAST 46 HOURS OR UNDER NORMAL OPERATING CONDITIONS FOR AT LEAST 96 HOURS, WHICHEVER REQUIRES THE GREATER AMOUNT OF FUEL.
10. NO SEWAGE PUMPING STATION BY–PASSES ALLOWING THE DISCHARGE OF RAW SEWAGE EITHER OVERLAND OR TO ANY WATER COURSE SHALL BE PERMITTED.

GENERATOR STANDARD SPECIFICATIONS

1. GENERAC STANDBY GENERATOR, MODEL SD015T
   - 1.1. RATED MAXIMUM POWER CAPACITY: 15,000 WATTS
   - 1.2. RATED VOLTAGE: 240
   - 1.3. PHASE: 3
   - 1.4. TYPE OF ENGINE: PERKINS 2.2L
   - 1.5. OPERATING RPM: 1,800
   - 1.6. FUEL CONSUMPTION: HALF LOAD: 1.0 GAL/HR; FULL LOAD: 1.3 GAL/HR
2. INSTALLATIONS SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE NEC AND THE STATE FIRE CODE IN SAF–C 6000.
3. EMERGENCY GENERATOR SHALL HAVE ENOUGH FUEL TO OPERATE FOR EITHER 48–HRS UNDER FULL LOAD OR 96–HRS UNDER NORMAL OPERATING CONDITIONS, WHICHEVER REQUIRES MORE FUEL.
   - 3.1. HALF LOAD: 1.0 GAL/HR X 96–HRS = 96.0 GALLONS
   - 3.2. FULL LOAD: 1.3 GAL/HR X 48–HRS = 62.4 GALLONS
4. A 130–GALLON DIESEL FUEL TANK IS INCORPORATED INTO THE GENERATOR ASSEMBLY.
5. SEE PLANS FOR GENERATOR, VENT PIPE, AND ENCLOSURE LOCATIONS.
6. FINAL GENERATOR SELECTION SHALL CONFORM TO THESE MINIMUM STANDARDS. COORDINATE WITH OWNER, CONTRACTOR AND ELECTRICAL CONSULTANT.

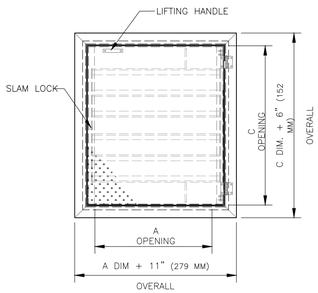


NOTES:

1. ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 PSI). CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER L.F. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.
2. PUMP CHAMBER SHALL CONFORM TO NH CODE OF ADMINISTRATIVE RULES Env–Wq 705.02.
3. WET WELL SHALL BE TESTED PRIOR TO OPERATION USING EXFILTRATION TESTING METHOD ACI 350.1 METHOD HST–NML IN EFFECT AT THE TIME THE WET WELL IS INSTALLED. ANY VISIBLE SIGNS OF LEAKAGE SHALL BE REPAIRED AND RETESTED PRIOR TO PLACING THE WET WELL IN SERVICE.
4. STRUCTURE SHALL BE RATED FOR H20 LOADING REQUIREMENTS
5. OUTSIDE OF PUMP BASIN SHALL BE SEALED WITH A BITUMINOUS COATING TO ENSURE WATER TIGHTNESS.

PUMP CHAMBER MANHOLE

SLAB TOP — NOT TO SCALE



SERIES H1R ACCESS DOOR

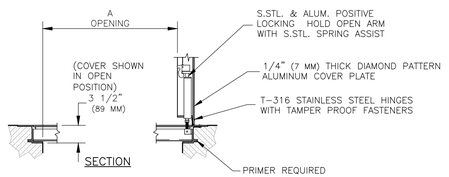
STANDARD FEATURES:

- AUTO–LOCK T–316 STAINLESS STEEL HOLD OPEN ARM WITH RELEASE HANDLE
- T–316 STAINLESS STEEL HINGES AND ATTACHING HARDWARE
- T–316 STAINLESS STEEL SLAM LOCK WITH REMOVABLE KEY
- STAINLESS STEEL COMPRESSION SPRING ASSIST
- SINGLE LEAF CONSTRUCTION
- H20 LOAD RATING (SEE NOTES)
- EXTRUDED ALUMINUM FRAME
- RECESSED LIFTING HANDLE
- LIFETIME GUARANTEE

NOTES:

1) SUITABLE FOR USE IN OFF STREET LOCATION WHERE NOT SUBJECTED TO HIGH DENSITY TRAFFIC.

2) PROVIDE A FULL BED OF CLASS "A" CONCRETE UNDER FRAME AND SUPPORT ANGLES.



PUMP CHAMBER HATCH

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Civil Engineers
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Landscape Architects
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FILE	DR		FB	–	
18252–02	CK		CADFILE	18252–02 COVER & DETAILS	D–15

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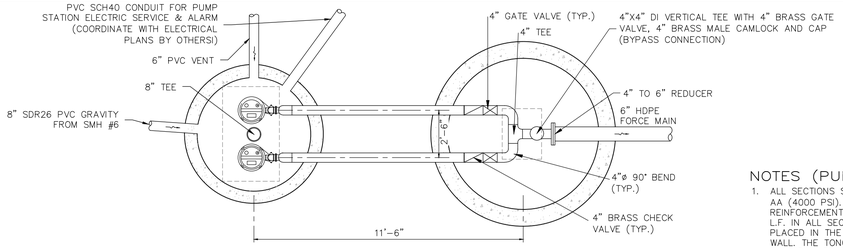
This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

Dec 23, 2025 - 2:24pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\18252-02 Cover & Details.dwg



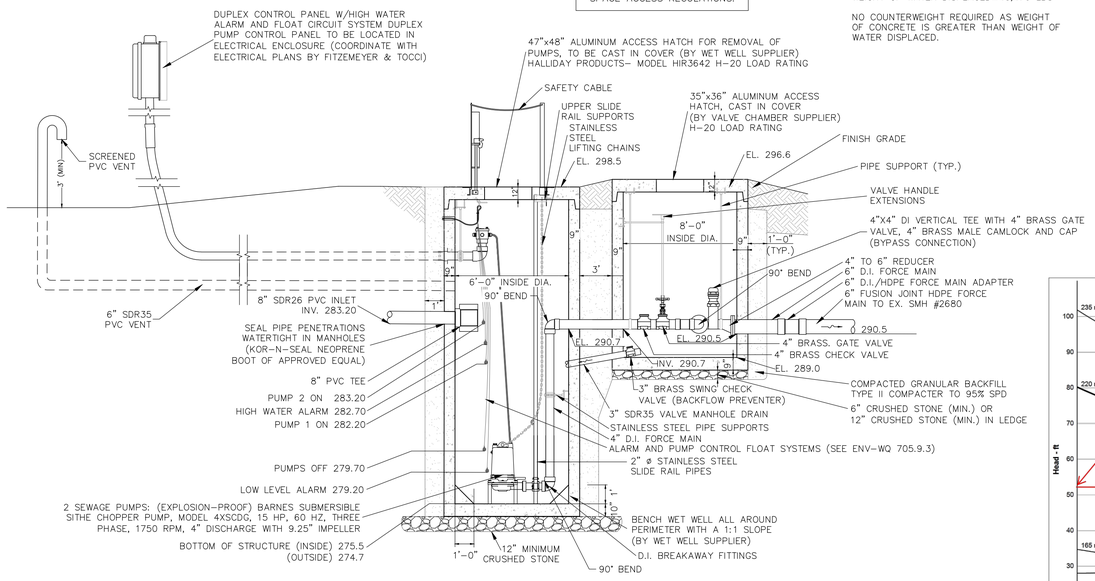
NOTES (PUMP STATION MANHOLE):

1. ALL SECTIONS SHALL BE CONCRETE CLASS AA (4000 PSI). CIRCUMFERENTIAL REINFORCEMENT SHALL BE 0.12 SQ. IN. PER L.F. IN ALL SECTIONS AND SHALL BE PLACED IN THE CENTER THIRD OF THE WALL. THE TONGUE OR THE GROOVE OF THE JOINT SHALL CONTAIN ONE LINE OF CIRCUMFERENTIAL REINFORCEMENT EQUAL TO 0.12 SQ. IN. PER L.F.
2. PUMP CHAMBER SHALL CONFORM TO NH CODE OF ADMINISTRATIVE RULES Env-Wq 705.02.
3. BUOYANCY CALCULATIONS:
   WEIGHT OF CONCRETE=56,019 LBS
   WEIGHT OF WATER DISPLACED=40,476 LBS

   NO COUNTERWEIGHT REQUIRED AS WEIGHT OF CONCRETE IS GREATER THAN WEIGHT OF WATER DISPLACED.

CAUTION

THIS IS A CONFINED SPACE. DO NOT ENTER WITHOUT FOLLOWING OSHA CONFINED SPACE ACCESS REGULATIONS.



WASTEWATER FLOW INFORMATION

AVERAGE DAILY FLOW:	120,440 GPD (84 GPM)
PEAK DAILY FLOW:	650,376 GPD (452 GPM)

PUMP INFORMATION (AT PEAK DAILY FLOW RATE)

STATIC HEAD:	28'
FRICTION HEAD:	24'
TOTAL DYNAMIC HEAD:	52'

WET WELL STORAGE

VOLUME OF WET WELL:	211 GAL/VERTICAL FT
AVAIL. VERT STORAGE: (INV. TO PUMP OFF)	3.5 FT
VOLUME AVAILABLE:	740 GALLONS

PUMP STATION NOTES:

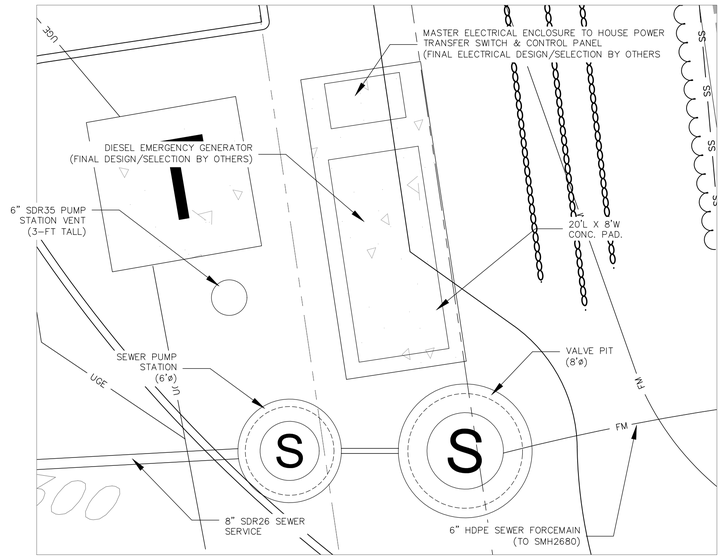
ALL PIPE AND FITTINGS TO BE PRODUCED BY A SINGLE MANUFACTURER AND TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS. BURIED PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM F 1668. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564. PRIMER SHALL CONFORM TO ASTM F 656.

NOTES:

1. STRUCTURES AND HATCHES TO BE H-20 LOADING. SUBMERSIBLE PUMPS AND ALL ELECTRICAL COMPONENTS SHALL BE SUITABLE FOR USE IN CLASS 1 DIVISION 1 HAZARDOUS LOCATIONS.
2. DUPLEX AUTOMATIC CONTROL PANEL AND ALARM PANEL TO BE PLACED IN ENCLOSURE. SYSTEM SHALL INCLUDE BOTH AUDIBLE AND VISUAL ALARMS. COORDINATE LOCATION WITH ARCHITECT.
3. USE 2 DUPLEX (EXPLOSION-PROOF) BARNES SUBMERSIBLE SITHE CHOPPER PUMP, MODEL 4XSCDG, 15 HP, 60 HZ, THREE PHASE, 1750 RPM, 4" DISCHARGE WITH 9.25" IMPELLER, OR APPROVED EQUAL.
4. OUTSIDE OF PUMP BASIN SHALL BE SEALED WITH A BITUMINOUS COATING TO ENSURE WATER TIGHTNESS.
5. ALL JOINTS SHALL BE SEALED WITH A DOUBLE ROW OF AN ELASTOMERIC OR MASTIC-LIKE SEALANT.
6. CONTROL PANEL TO BE WIRED TO ALTERNATE OPERATION OF PUMPS. PUMP CONTROLS SHALL PROVIDE AUTOSTART OF LAG PUMP SHOULD LEAD PUMP FAIL TO START.
7. SEPARATE ELECTRICAL CIRCUITS SHALL BE PROVIDED FOR THE PUMPS AND ALARM SYSTEMS.
8. AN ADDITIONAL RECEPTACLE SHALL BE PROVIDED FOR CONNECTION OF GENERATOR IN THE EVENT OF POWER OUTAGE.
9. ALL PIPE AND FITTINGS TO BE PRODUCED BY A SINGLE MANUFACTURER AND TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS. BURIED PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM F 1668. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564. PRIMER SHALL CONFORM TO ASTM F 656.
10. PUMP STATIONS SHALL BE OUTFITTED WITH AUDIBLE ALARM, FLASHING WARNING LIGHT AND DISCONNECT TO BE MOUNTED ADJACENT TO EACH PUMP STATION.
11. PUMP STATION SHALL RECORD PUMP RUN TIMES AND HAVE CONTINUOUS FLOW RECORDING.
12. AN OPERATION AND MAINTENANCE MANUAL IS REQUIRED AND SHALL BE PROVIDED TO THE OWNER/OPERATOR PURSUANT TO ENV-WQ 705.10(a).
13. VALVE PIT SHALL BE EQUIPPED WITH A BYPASS CONNECTION TO ALLOW FOR CONNECTION OF A PUMP AROUND WET WELL FOR MAINTENANCE, REPAIRS AND CONSTRUCTION PURSUANT TO ENV-WQ 705.02(e)(2).

PUMP STATION / VALVE MANHOLE DETAIL

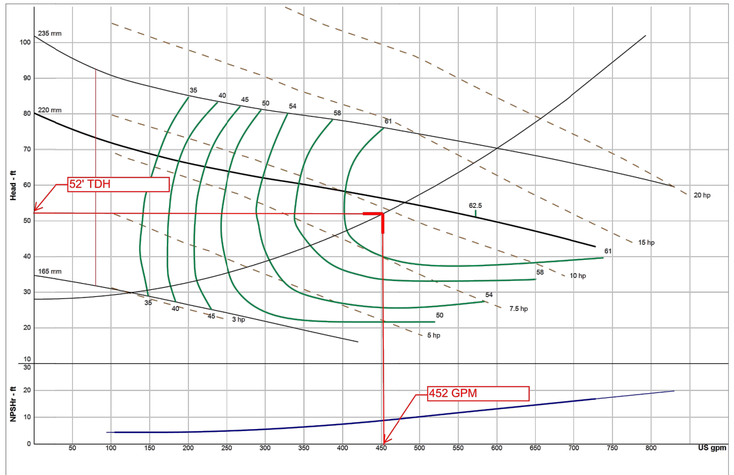
NOT TO SCALE



SEWER PUMP STATION PLAN VIEW

SCALE: 1"=5'

NOTES:
1. SYSTEM COMPONENTS (ELECTRICAL, CONTROLS, EMERGENCY GENERATOR, ETC.) SHOWN FOR COORDINATION PURPOSES ONLY.
2. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL PLANS (BY OTHERS) FOR CONSTRUCTION DETAILS.



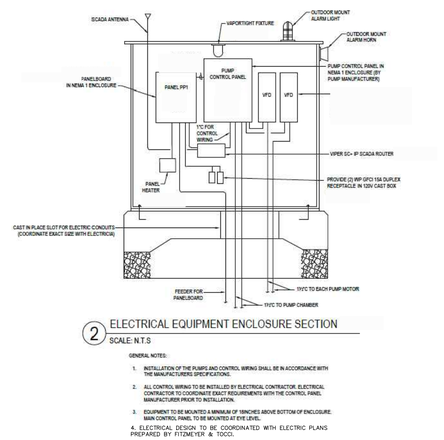
Company:	Crane Barnes.60	Size:	4ESCDG / 4XESCDG
Name:	Catalog: Barnes.60, Vers 4/23/20	Speed:	1750 rpm
Date: 06/05/2025	envie ESC 4" Chopper - 1800 rpm	Dia:	220 mm
	Design Point: 452 US gpm, 52 ft	Curve:	---
	Static Head: 28.05 ft		

BARNES

PUMP CURVE DATA

BARNES SUBMERSIBLE CHOPPER PUMP

NOT TO SCALE



2 ELECTRICAL EQUIPMENT ENCLOSURE SECTION

SCALE: N.T.S

GENERAL NOTES:
1. INSTALLATION OF THE PUMPS AND CONTROL WIRING SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
2. ALL CONTROL WIRING TO BE INSTALLED BY ELECTRICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO COORDINATE EXACT REQUIREMENTS WITH THE CONTROL PANEL MANUFACTURER PRIOR TO INSTALLATION.
3. EQUIPMENT TO BE MOUNTED A MINIMUM OF 18INCHES ABOVE BOTTOM OF ENCLOSURE. MAIN CONTROL PANEL TO BE MOUNTED AT EYE LEVEL.
4. ELECTRICAL DESIGN TO BE COORDINATED WITH ELECTRIC PLANS PREPARED BY FITZMEYER & TOCCI.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

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3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 10/22/25

TFM — Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists
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Dec 23, 2025 - 2:25pm
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NEW HAMPSHIRE
STATE ENDANGERED

BLANDING'S TURTLE

Report Sightings: Contact Wildlife Biologist Josh Megyesy at (603) 271 – 1125 or the Wildlife Division at (603) 271 – 2461. Observation reports can be sent to RAARP@wildlife.nh.gov. Photographs and exact locations are strongly encouraged.



Specific Information:

- Adults are 7 – 9 inches long.
- Shell is highly domed with light speckles.
- Distinct yellow throat and chin.
- Uses variety of wetlands and moves extensively over land.
- Turtles are frequently concealed by leaves and undergrowth and may not be easily visible.
- Turtles are most active from April 15 – October 15.
- During nesting season (May 15 – July 15) turtles are attracted to disturbed ground.





This species is protected under RSA 212-A and Fis 1000. Thank you for reporting any observations.

PLEASE DO NOT DISTURB OR HANDLE WILDLIFE

New England Cottontail *(Sylvilagus transitionalis)*

(New Hampshire State-Endangered)



- Adults are 15-17" in length
- Brown and gray coat that does NOT change color with the seasons.
- Black spot between the years is sometimes visible but not always present.
- Can be mistaken for non-native Eastern cottontails.

Please report sightings to NH Fish and Game at RAARP@wildlife.nh.gov or at 603-271-2461. Photo documentation, location, and date/time of observation is helpful.

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REPORT OBSERVATIONS
Smooth Green Snake
(Species of Special Concern)

Report sightings to NHFG Wildlife Division at NHFGReview@wildlife.nh.gov

Reference NHB# and project name if applicable.
Please report promptly, noting specific location and date.
Photographs strongly encouraged.



- Thin, bright green snake
- 10-20 inches long
- White or pale yellow underside
- Found in open or lightly forested habitats such as grassy fields, meadows, blueberry barrens, and forest openings
- Dead individuals turn blue





Northern Black Racer

(New Hampshire state threatened species)



- Solid black with a white throat and chin
- Slender with glossy scales, 3-6 ft. long
- Hatchlings are very small and patterned



Immediately report sightings to NH Fish and Game
Melissa Winters (603-479-1129) or
Brendan Clifford (603-944-0885)
Please report promptly, noting specific location and date
Photographs strongly encouraged

EASTERN HOGNOSE SNAKE

(New Hampshire state endangered species)

*Egg laying occurs **June 1 - July 15th**,*
*Young emerge in **August - September**.*



Identifying traits

- Black, gray or patterned appearance
- Upturned snout
- Adults are 2-3 ft. long
- May spread neck out or hiss
- May play dead if they feel threatened.
- Rarely bite – display is a defense strategy



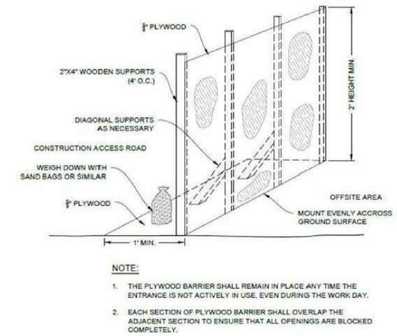
Habitat Use

- Can be found in a variety of habitats throughout the season



Immediately report sightings to NH Fish & Game
Melissa Winters (603-479-1129) or
Brendan Clifford (603-944-0885)
Please report promptly, noting specific location and date.
Photographs strongly encouraged.

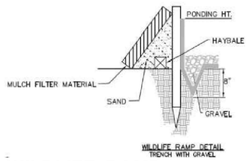
State Laws Pertaining to this Species
RSA 212-A:7, FIS 804.05, Fis 1401.03 (a)



NOTE:
1. THE PLYWOOD BARRIER SHALL REMAIN IN PLACE ANY TIME THE ENTRANCE IS NOT ACTIVELY IN USE, EVEN DURING THE WORK DAY.
2. EACH SECTION OF PLYWOOD BARRIER SHALL OVERLAP THE ADJACENT SECTION TO ENSURE THAT ALL OPENINGS ARE BLOCKED COMPLETELY.

WILDLIFE EXCLUSIONARY BARRIER GATE

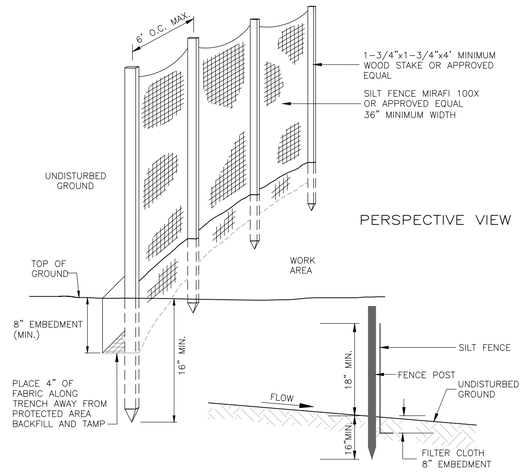
NOT TO SCALE



WILDLIFE RAMP DETAIL
TRENCH WITH GRAVEL

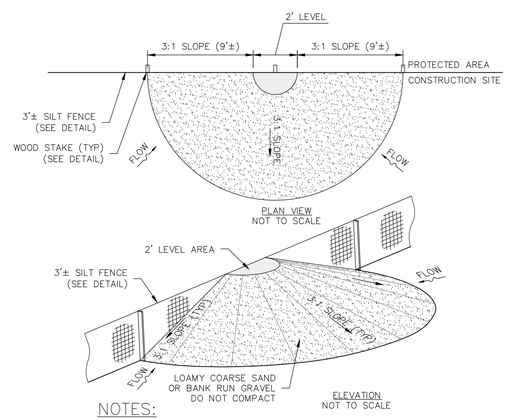
WILDLIFE RAMP

NOT TO SCALE



SILT FENCE

NOT TO SCALE



NOTES:

1. RAMP TO BE ON SIDE OF FENCE WHERE CONSTRUCTION ACTIVITIES OCCUR.
2. REFER TO SILT FENCE DETAIL FOR FENCE INSTALLATION.
3. SPACE AT 75'.

SILTATION FENCE WILDLIFE RAMP

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
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Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

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		CK		CADFILE	18252-02 COVER & DETAILS	

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LANDSCAPE NOTES

SITE AND SOIL PREPARATION

1. WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, ADVERSE DRAINAGE CONDITIONS, OR LEDGE, NOTIFY LANDSCAPE ARCHITECT/ENGINEER BEFORE PLANTING.

2. ALL DISTURBED AREAS & PLANTING AREAS, INCLUDING AREAS TO BE SODDED, SHALL RECEIVE THE FOLLOWING SOIL PREPARATION PRIOR TO PLANTING: A MINIMUM OF 6 INCHES OF LIGHTLY COMPACTED TOPSOIL SHALL BE INSTALLED OVER THE SUBSOIL IF TOPSOIL HAS BEEN REMOVED OR IS NOT PRESENT.

3. LOAM SHALL CONSIST OF LOOSE FRIABLE TOPSOIL WITH NO ADMIXTURE OF REFUSE OR MATERIAL TOXIC TO PLANT GROWTH. LOAM SHALL BE FREE FROM STONES, LUMPS, STUMPS, OR SIMILAR OBJECTS LARGER THAN TWO INCHES (2") IN GREATEST DIAMETER, SUBSOIL, ROOTS, AND WEEDS. THE MINIMUM AND MAXIMUM PH VALUE SHALL BE FROM 5.5 TO 7.0. LOAM SHALL CONTAIN A MINIMUM OF TWO PERCENT (2%) AND A MAXIMUM OF FIVE PERCENT (5%) ORGANIC MATTER AS DETERMINED BY LOSS BY IGNITION. SOIL TEXTURE SHALL BE SANDY CLAY LOAM OR SANDY LOAM WITH CLAY CONTENT BETWEEN 15 AND 25%, AND A COMBINED CLAY/SILT CONTENT OF NO MORE THAN 55%. NOT MORE THAN SIXTY-FIVE PERCENT (65%) SHALL PASS A NO. 200 SIEVE AS DETERMINED BY THE WASH TEST IN ACCORDANCE WITH ASTM D1140. IN NO INSTANCE SHALL MORE THAN 20% OF THAT MATERIAL PASSING THE #4 SIEVE CONSIST OF CLAY SIZE PARTICLES.

4. NATURAL TOPSOIL NOT CONFORMING TO THE PARAGRAPH ABOVE OR CONTAINING EXCESSIVE AMOUNTS OF CLAY OR SAND SHALL BE TREATED BY THE CONTRACTOR TO MEET THOSE REQUIREMENTS.

5. SUBMIT TEST RESULTS OBTAINED FROM SOURCE TO ENGINEER/LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL, PRIOR TO SPREADING OPERATIONS.

6. APPROVAL BY THE ENGINEER/LANDSCAPE ARCHITECT TO USE THE TOPSOIL WILL DEPEND UPON THE RESULTS OF THE SOIL TESTS.

7. THE BURDEN OF PROOF OF SOIL AMENDMENT INSTALLATION RESTS WITH THE CONTRACTOR. SOIL TESTS MAY BE REQUIRED AT THE CONTRACTOR'S EXPENSE IN ORDER TO CONFIRM AMENDMENT INSTALLATION.

SEEDING

1. ROUGH GRADING SHALL BE COMPLETED PRIOR TO THE START OF PLANTING IN ANY GIVEN AREA OF THE PROJECT SITE.

2. SEEDING SHALL BE DONE BETWEEN APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 15, EXCEPT FOR RESEEDING OF BARE SPOTS AND MAINTENANCE. ALL DISTURBED AREAS NOT COVERED BY BUILDINGS, PAVING OR AREAS THAT HAVE NOT BEEN OTHERWISE DEVELOPED SHALL BE SEEDED OR SODDED. SLOPES GREATER THAN 3:1 SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET. AFTER OCTOBER 15 DISTURBED SOILS SHALL BE PROTECTED IN ACCORDANCE WITH THE WINTER CONSTRUCTION NOTES.

ACCEPTABLE SEED MIXES ARE AS FOLLOWS:

PARK SEED MIX (NHDOT TYPE 44) MIN. 135 LBS/ACRE:
- 33% CREEPING RED FESCUE (MIN. 45 LBS/ACRE)
- 42% PERENNIAL RYEGRASS (MIN. 55 LBS/ACRE)
- 21% KENTUCKY BLUEGRASS (MIN. 30 LBS/ACRE)
- 4% REDTOP (MIN. 5 LBS/ACRE)

MODIFIED NEW ENGLAND CONSERVATION WILDLIFE MIX (MIN. 25 LBS/ACRE)*
CONTAINS: VIRGINIA WILD RYE (ELYMUS VIRGINICUS), LITTLE BLUESTEM (SCHIZACHYRIUM SCOPARIUM), BIG BLUESTEM (ANDROPOGON GERARDII), PANICLEDLEAF TICK TREFOIL (DESMODIUM PANICULATUM), BLUE VERVAIN (VERBENA HASTATA), BLACK EYED SUSAN (RUDBECKIA HIRTA), HEATH ASTER (ASTERPILOSUS/SYMPHYOTRICHUM PILOSUM), EARLY GOLDENROD (SOLIDAGO JUNCEA), UPLAND BENTGRASS (AGROSTIS PERENNANS).
*SEED MIX SHALL NOT CONTAIN INDIAN GRASS (SORGHASTRUM NUTANS), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), OR COMMON SNEEZEWEED (HELENIUM AUTUNALE).

TEMPORARY LAWN MIX: (MIN. 47 LBS/ACRE)
100% ANNUAL RYE

*SEED MIX SHALL NOT CONTAIN INDIAN GRASS (SORGHASTRUM NUTANS), RED FESCUE (FESTUCA RUBRA), SWITCH GRASS (PANICUM VIRGATUM), PARTRIDGE PEA (CHAMAECRISTA FASCICULATA), OR COMMON SNEEZEWEED (HELENIUM AUTUNALE).

PLANTING

1. EXCAVATE PITS, PLANTERS, BEDS AND TRENCHES WITH VERTICAL SIDES AND WITH BOTTOM OF EXCAVATION SLIGHTLY RAISED AT CENTER TO PROVIDE PROPER DRAINAGE. LOOSEN HARD SUBSOIL IN BOTTOM OF EXCAVATION.

2. ANY LEDGE OR RUBBLE MATERIAL SHALL BE FRACTURED TO A DEPTH OF 3 FEET AND EXCAVATED TO A DEPTH OF 30 INCHES FOR TREE POCKETS AND 18 INCHES FOR SHRUB BEDS. THIS PROCEDURE SHALL BE HANDLED BY THE SITE CONTRACTOR. SITE TOPSOIL SHALL BE DEPOSITED IN ALL EXCAVATED POCKETS.

3. DISPOSE OF SUBSOIL REMOVED FROM PLANTING EXCAVATIONS. DO NOT MIX WITH PLANTING SOIL OR USE AS BACKFILL.

4. FILL EXCAVATIONS FOR TREES AND SHRUBS WITH WATER AND ALLOW TO PERCOLATE OUT BEFORE PLANTING.

5. DISH TOP OF BACKFILL TO ALLOW FOR MULCH – PLANT SAUCERS SHALL BE AS SHOWN ON DETAIL SHEETS; 6' DIAMETER FOR ALL DECIDUOUS TREES, AND FOR EVERGREEN TREES A RADIUS 2' BEYOND THE OUTER MOST BRANCHES.

6. MULCH TREES, SHRUBS, PLANTERS AND BEDS. PROVIDE NOT LESS THAN 3" THICKNESS OF BARK MULCH, 3/8"–2" OF WIDTH, AND WORK INTO TOP OF BACKFILL. FINISH LEVEL WITH ADJACENT FINISH GRADES AS DIRECTED IN THE FIELD.

7. TREEGATOR WATERING SYSTEM OR APPROVED EQUAL SHALL BE INSTALLED FOR ALL DECIDUOUS TREES AT TIME OF PLANTING AND REMOVED BEFORE FROST. WATERING RATE TO BE APPLIED PER MANUFACTURER'S SPECIFICATIONS.

8. ALL PLANT MATERIALS SHALL HAVE DEAD OR DAMAGED BRANCHES REMOVED AT TIME OF PLANTING. ALL TAGS AND RIBBONS SHALL BE REMOVED AT THIS TIME.

9. THE CONTRACTOR SHALL REQUEST A FINAL OBSERVATION BY THE OWNER'S REPRESENTATIVE UPON COMPLETION OF INSTALLATION.

10. AVOID OR MINIMIZE THE USE OF FERTILIZERS IN UPLAND AREAS OR TRANSITION ZONES. IF FERTILIZERS ARE NECESSARY, USE ORGANIC VERSUS SYNTHETIC FERTILIZERS OPTIONS. SYNTHETIC OPTIONS SHOULD BE AVOIDED; HOWEVER, IF CHOSEN, THEY SHOULD BE CONTROLLED-RELEASE/SLOW-RELEASE AND AT LOW STRENGTHS.

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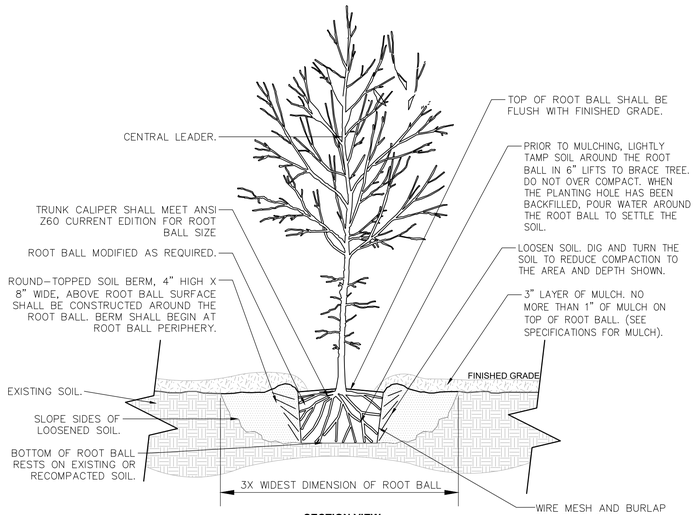
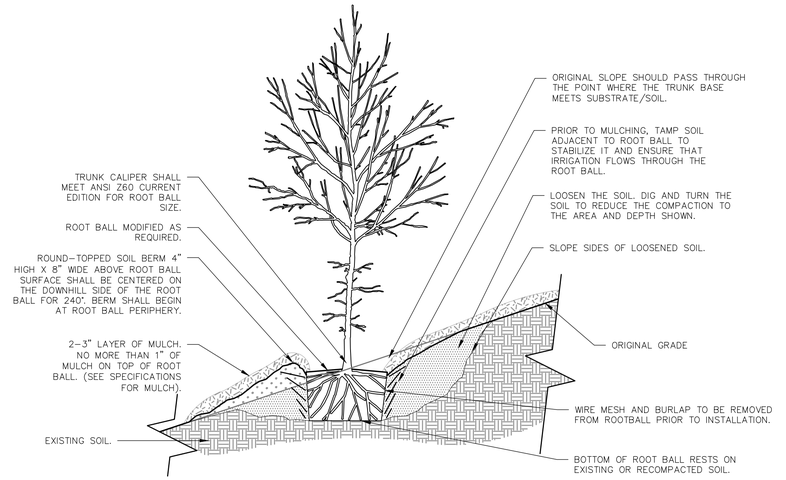


SECTION VIEW

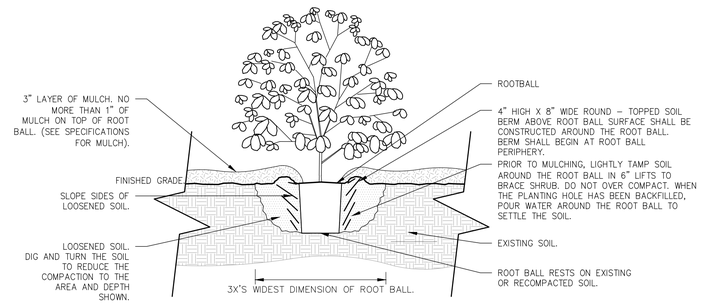
TREE WITH MULCH BERM

NOT TO SCALE



TREE ON SLOPE 5% (20:1) TO 50% (2:1)

NOT TO SCALE



SECTION VIEW

SHRUB PLANTING

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

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1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Land Surveyors
Landscape Architects
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STORMWATER MANAGEMENT INSPECTION & MAINTENANCE MANUAL

COPIES OF THE I&M REPORTS SHALL BE FILED WITH THE TOWN ON AN ANNUAL BASIS.

Inspection & Maintenance Manual

PurposeEnergy-Londonderry, LLC
Southern New Hampshire Green Energy Campus
North Wentworth Avenue, Londonderry, NH
September 12, 2025
Revised December 18, 2025

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- Pretreatment Practices
  - Sediment Forebays
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  - Culvert
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Inspection & Maintenance Log

Deicing Data Form

Inspection Checklist and Inspection & Maintenance Plan

Description of Project

The Southern New Hampshire Green Energy Campus will reduce the waste management burden on New Hampshire by tackling the food waste problem. It will feature two connected resource recovery facilities.

- The first, RecycleWorks, will receive food waste that normally goes to landfill, including food that has passed its sell by date or is out of specification but is wrapped in glass, plastic, or metal packaging. RecycleWorks will remove the organic waste from that packaging and send it to the second facility on the campus,
- PurposeEnergy – Londonderry. PurposeEnergy will pump the food waste into tanks that digest it in a process similar to a human stomach. The tanks will also receive dairy waste directly by pipe from a local business, Stonyfield Yogurt. The digester tanks will produce renewable biogas that will be cleaned to pipeline quality and injected into the local natural gas network.

The Green Energy Campus is not a landfill; all of the material that comes to the campus will leave it either as recyclable material, renewable biogas, clean water, or biosolids (the residuals from digestion which will be sent to a compost facility for use as fertilizer). The net impact of the Southern New Hampshire Green Energy Campus is to

- divert 90% of solid waste away from New Hampshire landfills;
- reduce the escape of environmentally damaging methane gas resulting from decomposition of organic matter;
- support local business in the cost-effective and environmentally beneficial management of food manufacturing waste.

The site consists of the following major elements:

- 36,600 sf Depackaging Facility (RecycleWorks)
- A 14,100 sf Process Building, with future expansion of 9,800 sf (PurposeEnergy)
- tribrid bio-reactors
- 3 flow equalization tanks
- 26' x 32' screening room building
- A biogas upgrading yard
- An interconnection facility yard
- Truck scales
- Parking and trucking interconnection

An open and closed drainage system is proposed to attenuate, convey, and treat runoff from the proposed development. A series of catchbasins, sediment forebays, two (2) filtration basins and one (1) detention basin, strategically located though the site will provide pretreatment/treatment and manage runoff.

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
North Wentworth Ave.
Londonderry, NH 03053

Responsible Party

Operator: PurposeEnergy-Londonderry, LLC

Address: PurposeEnergy-Londonderry, LLC

Contact: Sean O'Neill, oneail@purposeenergy.com, (917).776.6155

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
North Wentworth Ave.
Londonderry, NH 03053

Stormwater Practices – Schedule of Maintenance

The following practices shall be inspected twice annually, once following snowmelt (spring) and once following leaf-drop (fall):

- Sediment Forebays
- Filtration/Detention Basins
- Catch Basin

The following practices shall be inspected annually following snowmelt (spring):

- Culvert
- Catch Basin
- Headwalls
- Riprap Aprons
- Swales

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
North Wentworth Ave.
Londonderry, NH 03053

Stormwater Practices – Maintenance Guidelines

Treatment Practices
(Inspected twice a year)

Filtration/Detention Basin
Maintenance Requirements:
- To be inspected twice annually, once following snowmelt (spring) and once following leaf-drop (fall);
- Removal of debris from inlet and outlet structures;
- Removal of accumulated sediment;
- Periodic mowing of embankments;
- Removal of woody vegetation from embankments;
- Inspection and repair of embankments; and
- If an infiltration system does not drain within 72-hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore infiltration function, including but not limiting to removal of accumulated sediments or reconstruction of the infiltration trench.

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
North Wentworth Ave.
Londonderry, NH 03053

Pretreatment Practices
(Inspected twice a year)

Sediment Forebay
Maintenance Requirements:
- To be inspected at least twice annually, once following snowmelt and once following leaf-drop and cleaned as indicated by inspection;
- Conduct periodic mowing of embankments (two times per year) to control growth of woody vegetation on embankments;
- Remove debris from outlet structure;
- Remove and dispose of accumulated sediment; and
- Install and maintain a staff gage or other measuring device to indicate depth of sediment accumulation and level at which clean-out is required. It shall be cleaned out when sediment fills half the sump depth (minimum sump depth is 2 feet when clear).

Conveyance Practices
(Inspections As Noted)

Culvert
Maintenance Requirements:
- To be inspected at least twice annually, once following snow-melt (spring) and once following leaf drop (fall), and cleaned as indicated by inspection.
- Inspect culvert inlet, outlet, and structure.
- Remove accumulated sediments greater than 2 inches in depth and debris at the inlet, at the outlet, and within the conduit.
- Repair any erosion damage at the culvert's inlet and outlet.

Catch Basin
Maintenance Requirements:
- To be inspection a least twice annually, once following snow-melt and once following leaf-drop and cleaned as indicated by inspection;
- Sediment should be removed annually and when it approaches half the sump depth; and
- If floating hydrocarbons are observed during an inspection, the material should be removed immediately by skimming, absorbent materials, or other method and disposed of in conformance with applicable state and federal regulations.

Headwalls
Maintenance Requirements:
- Inspect at least once annually for accumulation of sediment and debris and for signs of erosion along embankments;
- Remove debris whenever observed during inspection; and
- Remove sediment when accumulation exceeds 25% of channel depth.

Riprap Apron/Plunge Pool
Maintenance Requirements:
- Inspect at least once annually for damage and deterioration; and
- Repair damages immediately.

Riprap Swales
Maintenance Requirements:
- Inspect at least once annually for damage and deterioration
- Remove lodged debris

Southern New Hampshire Green Energy Campus
Stormwater Management Report
Tax Map 14 Lot 39
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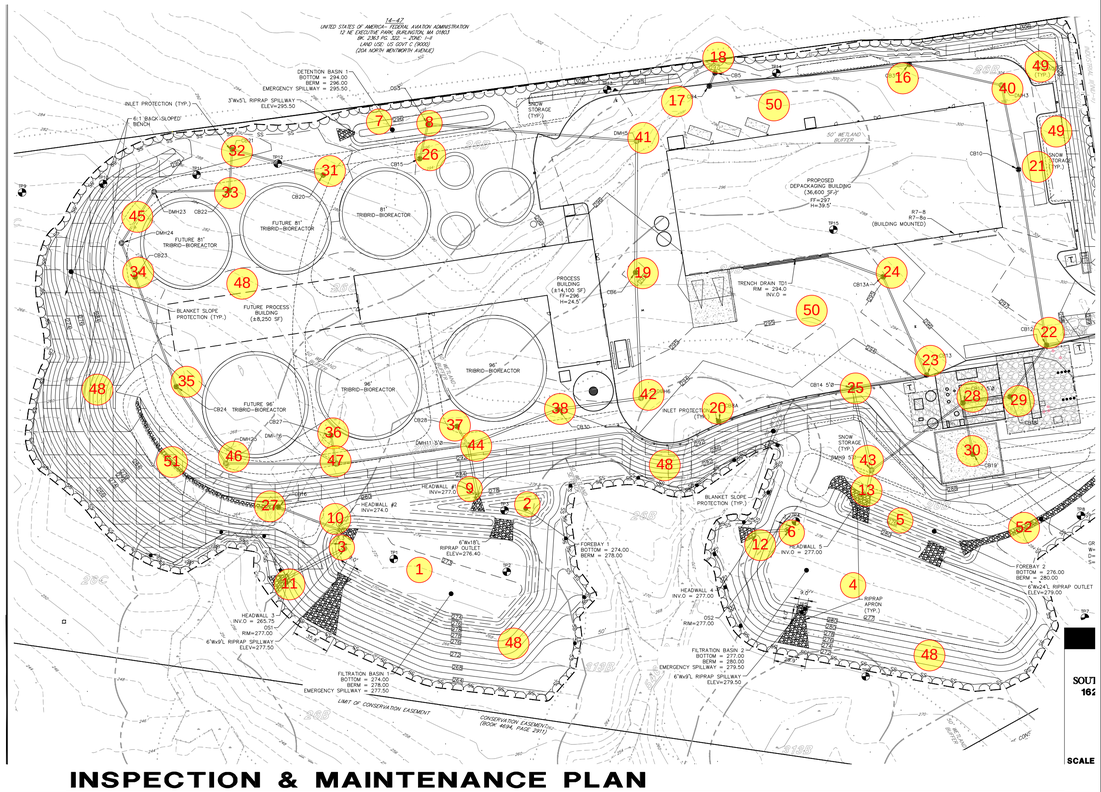
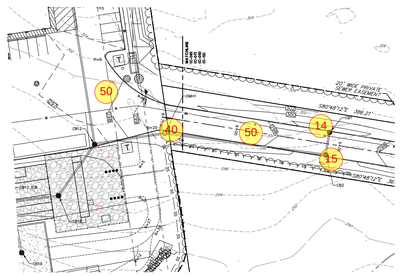


INSPECTION & MAINTENANCE PLAN

NOT TO SCALE



STORMWATER MANAGEMENT INSPECTION & MAINTENANCE MANUAL

COPIES OF THE I&M REPORTS SHALL BE FILED WITH THE TOWN ON AN ANNUAL BASIS.

- Repair damages immediately.

System Components

Access Driveway (North Wentworth Ave ROW):
Maintenance Requirements (only for section constructed by this site plan):

- Sediments and debris should be removed and disposed of from impervious areas by power-broom sweeping.
- Sweep at least two (2) times per year and on a more frequent basis depending on sanding operations.
- All resulting sweepings shall be collected and properly disposed of off-site in accordance with NHDES and other applicable requirements.

Driveway, Sidewalk, and Parking Areas:
Maintenance Requirements:

- Sediments and debris should be removed and disposed of from impervious areas by power-broom sweeping.
- Sweep at least two (2) times per year and on a more frequent basis depending on sanding operations.
- All resulting sweepings shall be collected and properly disposed of off-site in accordance with NHDES and other applicable requirements.

Lawns and Landscaping Areas:
Maintenance Requirements:

- Inspect, maintain, and repair as necessary development area lawns and landscaped areas to ensure a stabilized surface.
- Maintain lawn areas with healthy turf. Take steps to necessary to restore distressed turf to good health.
- Ensure that landscape mulch materials are refreshed as necessary and does not wash onto sidewalks or other adjacent surfaces.

Control of Invasive Plans

During maintenance activities, check for the presence of invasive plants. If invasive plants are found, they shall be controlled and removed in a safe manner as described on the following pages.

Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as "hitchhikers" among shipments of other plants, seeds, packing materials or fresh produce. Invasive plants can cause harm by:

- Becoming weedy and overgrown;
- Killing established shade trees;
- Obstructing pipes and drainage systems
- Forming dense beds in water
- Lowering water levels in lakes, streams, and wetlands
- Destroying natural communities
- Promoting erosion on stream banks and hillsides
- Resisting control except by hazardous chemicals.

Inspection & Maintenance Log

Date	Inspector	BMPs checked	Maintenance Required

Deicing Plan

The project Chloride Management Plan is described in the following pages. Also attached is a Deicing log to be used to document maintenance procedures, and the current NHDES Fact Sheet.

Beaver Brook has been declared an impacted watershed in need of corrective action due to Chloride loading, most notably resulting from winter maintenance activities. Londonderry has a Salt Reduction Plan (SRP) that provides a procedural framework for the Town of Londonderry to continuously strive to improve winter maintenance operations while effectively and efficiently using road salt during the snow and ice removal operations. Londonderry will provide winter maintenance to town roadways, parking lots, and sidewalks in accordance with Londonderry's Winter Maintenance Snow and Ice Control Policy while striving to minimize adverse impacts to the environment by:

- Adhering to the procedures contained within the SRP;
- Committing to ongoing winter maintenance staff training and education;
- Reporting fiscal year salt usage to New Hampshire Department of Environmental Services (NHDES);
- Re-evaluating the effectiveness of the SRP as needed to incorporate new technologies or changes in procedures.

Under the existing SRP, the Town has identified four strategies to help meet the Total Maximum Demand Load allocation within the Little Cohas Brook / Cohas Brook Watershed. The current load is estimated at 854.47 tons/year imported to the watershed. The town's reduction goals are 6% for year one, 12% for year two, and 18% for year three to be achieved from the following strategies:

- Equipment upgrade pilot project;
- Improved calibration;
- Private sector outreach;
- Improved weather system monitoring.

NHDES will monitor the progress made by each community impacting the Little Cohas Brook / Cohas Brook watershed and may require modifications to each plan. In recognition of the Little Cohas Brook / Cohas Brook Watershed chloride reduction plan for Londonderry, and that approximately 40% of the chloride impact is a result of winter operations on private roadways and parking lots, the PurposeEnergy-Londonderry, LLC will be guided by the following actions:

- Private Maintenance Contracting Equipment Upgrades and Training
  All snow removal contactors shall be NH Certified Green SnowPro contractors who have been trained and are knowledgeable of Best Management Practices (BMP) for snow removal with reduced salt application. These practices are published and are updated though the UNH – Technology Transfer (T2) program. All private contractors employed by PurposeEnergy-Londonderry, LLC roadway maintenance will use only pre-approved methods for spreading abrasives on private roadways and parking lots. When salt is applied, it will be applied only in accordance with best management practices and will include pre-treatment and ground speed-controlled spreaders.
- Improved Weather System Monitoring
  PurposeEnergy-Londonderry, LLC will coordinate weather information gathered by both the town and NHDOT for use by maintenance contractors. In doing so, contractors will be able to make more informed decisions as to when and to what extent chloride is applied to roadways, sidewalks, and parking lots;
- Increased Mechanical/Removal Capabilities
  PurposeEnergy-Londonderry, LLC will endeavor to use mechanical removal means on a more frequent basis using more manpower and equipment than traditionally used to shorten plowing intervals and reduce the need for salting to break up hard packed snow. Shortened maintenance routes with shorter service intervals will be used to stay ahead of snowfall, thus reducing the need to sand and salt after snow and ice packing has already occurred.
- Public Awareness Campaign
  PurposeEnergy-Londonderry, LLC will inform all future developers, grantees, and tenants of the need to reduce salt application on roadways, parking lots, and sidewalks.

The manual, as with the Town's Salt Reduction Plan, is intended to be a dynamic document, modified as required based on knowledge gained from past practices and technological advancement to reflect chloride best management practices.

Deicing Data Form

Note: The operator shall report annual salt usage within the municipal boundaries to NHDES's New Hampshire Salt Management System Database at: https://www.nhmed.des.nh.gov/salt-resources/winter-maintenance/

Location: Southern New Hampshire Green Energy Campus North Wentworth Ave. Londonderry, NH 03053				
Date:				
Air Temperature	**Pavement Temperature**	**Relative Humidity**	**Dew Point**	**Sky**
Reason for applying:				
Area of Application:				
Chemical:				
Application Time:				
Application Amount:				
Observation (first day):				
Observation (after event):				
Observation (before next application):				

Name:

*__New Hampshire Certified Green SnowPro__ Applicator shall be employed for winter snow and ice management activities

Inspection Checklist

Date:	**Project Name: Southern New Hampshire Green Energy Campus**
Inspector's Name/Title:	
Inspector's Contact Information:	
☐ 1st Yearly Inspection	BMP's to be inspected: All
☐ 2nd Yearly Inspection	BMP's to be inspected: Treatment and Pretreatment Practices

BMP* **Refer to following Inspection & Maintenance Plan for BMP location**		Maintenance Required	Corrective Action Needed and Notes
1	Filtration Basin 1	☐ Yes ☐ No	
2	Forebay 1	☐ Yes ☐ No	
3	Outlet Structure 1	☐ Yes ☐ No	
4	Filtration Basin 2	☐ Yes ☐ No	
5	Forebay 2	☐ Yes ☐ No	
6	Outlet Structure 2	☐ Yes ☐ No	
7	Detention Basin 1	☐ Yes ☐ No	
8	Outlet Structure 3	☐ Yes ☐ No	
9	Headwall 1	☐ Yes ☐ No	
10	Headwall 2	☐ Yes ☐ No	
11	Headwall 3	☐ Yes ☐ No	
12	Headwall 4	☐ Yes ☐ No	

13	Headwall 5	☐ Yes ☐ No	
14	CB1	☐ Yes ☐ No	
15	CB2	☐ Yes ☐ No	
16	CB3	☐ Yes ☐ No	
17	CB4	☐ Yes ☐ No	
18	CB5	☐ Yes ☐ No	
19	CB6	☐ Yes ☐ No	
20	CB8A	☐ Yes ☐ No	
21	CB10	☐ Yes ☐ No	
22	CB12	☐ Yes ☐ No	
23	CB13	☐ Yes ☐ No	
24	CB13A	☐ Yes ☐ No	
25	CB14	☐ Yes ☐ No	
26	CB15	☐ Yes ☐ No	
27	CB16	☐ Yes ☐ No	
28	CB17	☐ Yes ☐ No	
29	CB18	☐ Yes ☐ No	
30	CB19	☐ Yes ☐ No	
31	CB20	☐ Yes ☐ No	
32	CB21	☐ Yes ☐ No	
33	CB22	☐ Yes ☐ No	
34	CB23	☐ Yes ☐ No	
35	CB24	☐ Yes ☐ No	

36	CB27	☐ Yes ☐ No	
37	CB28	☐ Yes ☐ No	
38	CB30	☐ Yes ☐ No	
39	DMH1	☐ Yes ☐ No	
40	DMH3A	☐ Yes ☐ No	
41	DMH5	☐ Yes ☐ No	
42	DMH6	☐ Yes ☐ No	
43	DMH9	☐ Yes ☐ No	
44	DMH11	☐ Yes ☐ No	
45	DMH24	☐ Yes ☐ No	
46	DMH25	☐ Yes ☐ No	
47	DMH26	☐ Yes ☐ No	
48	Development Area Lawns (Typ.)	☐ Yes ☐ No	
49	Development Area Landscaping (Typ.)	☐ Yes ☐ No	
50	Parking Lot & Driveway Sweeping (Typ.)	☐ Yes ☐ No	
51	Swale R1		
52	Swale R2		
	Other	☐ Yes ☐ No	
52			

*Best Management Practices
**Photographs of BMPs shall be included as part of the required Inspections
***Copies of Inspection & Maintenance Records shall be provided to the Town of Londonderry on an annual basis and the NHDES AoT Bureau upon request
**** SWPPP reports shall be provided via e-mail to the Town of Londonderry at the same time they are provide to the Contractor and Owner

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
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Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	18252-02	DR		FB	–	D-20
		CK		CADFILE	18252-02 COVER & DETAILS	

Dec 23, 2025 - 2:25pm
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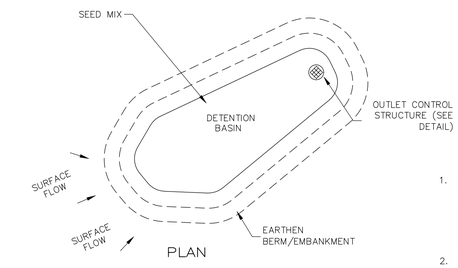

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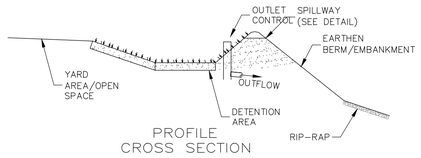
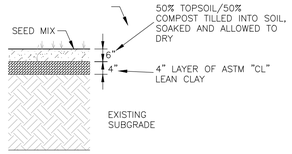


PROFILE
CROSS SECTION

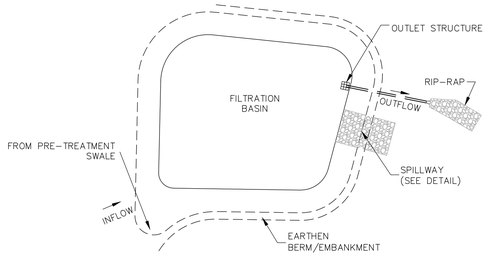


BASIN BOTTOM

1. THE INSTALLER SHALL NOT ALLOW ANY VEHICULAR OR CONSTRUCTION EQUIPMENT TRAVEL TO OCCUR ACROSS THE PROPOSED BASIN AREA AT ANY TIME EXCEPT DURING EXCAVATION OF TOPSOIL, SUBSOIL AND OTHER MATERIALS NOT SUITABLE FOR BED BOTTOM CONDITIONS.
2. CAUTION SHOULD BE EXERCISED DURING SITE PREPARATION TO AVOID COMPACTION OF THE INFILTRATIVE SURFACE.
3. SEED MIX
   NEW ENGLAND ROADSIDE MATRIX WET MEADOW SEED MIX (MIN. 35 LBS/ACRE)
4. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE BASIN.
5. VEGETATION SHOULD BE ESTABLISHED IMMEDIATELY.
6. DO NOT PLACE SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.

DETENTION BASIN

NOT TO SCALE



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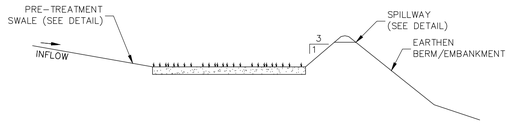
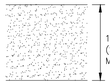


PROFILE



BASIN BOTTOM

FILTER MEDIA NOTES

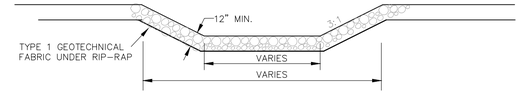
1. ASTM C-33 CONCRETE SAND (50%-55% BY VOLUME)
2. LOAMY SAND TOPSOIL WITH 15%-25% FINES PASSING THE NO. 200 SIEVE (20%-30% BY VOLUME)
3. MODERATELY FINE SHREDDED BARK OR WOOD FIBER MULCH WITH LESS THAN 5% PASSING THE NO. 200 SIEVE (20%-30% BY VOLUME)

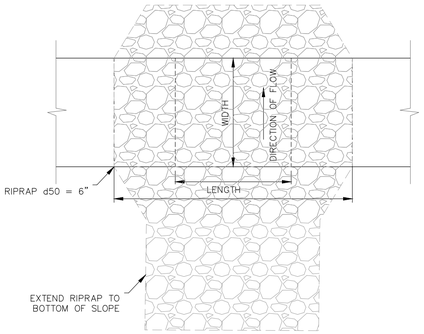
FILTRATION BASIN NOTES

1. THE INSTALLER SHALL NOT ALLOW ANY VEHICULAR OR CONSTRUCTION EQUIPMENT TRAVEL TO OCCUR ACROSS THE PROPOSED BASIN AREA AT ANY TIME EXCEPT DURING EXCAVATION OF TOPSOIL, SUBSOIL AND OTHER MATERIALS NOT SUITABLE FOR BED BOTTOM CONDITIONS.
2. CAUTION SHOULD BE EXERCISED DURING SITE PREPARATION TO AVOID COMPACTION OF THE INFILTRATIVE SURFACE.
3. SEED MIX
   NEW ENGLAND ROADSIDE MATRIX WET MEADOW SEED MIX (MIN. 35 LBS/ACRE)
4. FILTER MEDIA SOIL SAMPLE TO BE PROVIDED TO THE ENGINEER PRIOR TO PLACEMENT. ON SITE MIXING OF MANUFACTURED SOIL MAY BE ACCEPTABLE PENDING ENGINEER APPROVAL.
5. DO NOT DISCHARGE SEDIMENT-LADEN WATERS FROM CONSTRUCTION ACTIVITIES (RUNOFF, WATER FROM EXCAVATIONS) TO THE BASIN.
6. AFTER THE BASIN IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
7. VEGETATION SHOULD BE ESTABLISHED IMMEDIATELY.
8. DO NOT PLACE FILTRATION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.
9. FILTRATION MEDIA SHALL BE INSTALLED ALONG INTERIOR SIDE SLOPES TO ELEVATION EQUAL TO OUTLET STRUCTURE RIM OR WEIR ELEVATION, WHICHEVER IS LOWER.
10. FILL TO BRING EMBANKMENT AREAS TO GRADE SHALL BE EXISTING SIDE MATERIALS OR IMPORTED MATERIAL CONSISTENT WITH THE GEOTECHNICAL REPORT RECOMMENDATIONS FOR COMMON FILL (SEE NOTE 21 AND 22 ON SHEET C-02).

FILTRATION BASIN

NOT TO SCALE





WEIR	TOP OF BASIN BERM EL.	WEIR INV.	LENGTH	WIDTH
SEDIMENT FOREBAY #1	278.0	276.40	10.4'	15.6'
SEDIMENT FOREBAY #2	280.0	278.90	21.0'	9.0'

BROAD CRESTED WEIR

FROM FOREBAYS

NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

PREPARE BEDDING:

BACKFILL MATERIAL AROUND THE END SECTION MAY BE THE SAME AS THE MATERIAL AROUND THE PIPE, PLACE A FEW INCHES OF BACKFILL MATERIAL IN THE TRENCH OR DITCH WHERE THE END SECTION WILL BE PLACED. COMPACT AND CONTOUR THIS BEDDING MATERIAL TO GENERALLY MATCH THE END SECTION, EXCAVATE AN AREA IN THE BEDDING WHERE TOE TROUGH WILL SEAT SO THAT THE END SECTION WILL BE LEVEL WITH THE BOTTOM OF THE TRENCH OR DITCH IN THE FINISHED INSTALLATION.

PLACE END SECTION OF PIPE:

OPEN THE END SECTION COLLAR AND SEAT IT OVER THE TWO PIPE CONNECTIONS. ONCE THE END SECTION IS POSITIONED, CHECK TO MAKE SURE THAT THE INVERT OF THE END SECTION MATCHES THE INVERT OF THE PIPE AND THAT THE END SECTION IS LEVEL WITH THE TRENCH OR DITCH BOTTOM.

SECURE THE END SECTION:

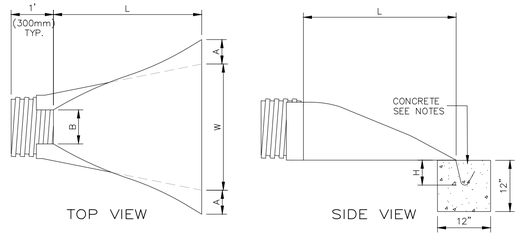
SLIP THE STAINLESS STEEL ROD THROUGH THE PRE-DRILLED HOLES AT THE TOP OF THE COLLAR. THE ROD SHOULD BE BETWEEN THE CROWNS OF THE TWO PIPE CONNECTIONS. PLACE A WASHER ON EITHER END OF THE ROD. PLACE A NUT ON EITHER END OF THE ROD AND TIGHTEN WITH A WRENCH.

SECURE THE TOE TROUGH:

TO PREVENT WASHOUTS FROM HIGH VELOCITY FLOW, IT IS RECOMMENDED THAT THE TROUGH BE SECURED WITH CONCRETE. POUR CONCRETE IN THE TROUGH UP TO THE LEVEL OF THE TRENCH OR DITCH BOTTOM AND ALONG THE ENTIRE LENGTH OF THE TROUGH.

FINISH BACKFILL:

SHOVEL BACKFILL AROUND THE END SECTION IN 6 TO 9 INCH LAYERS EQUALLY ON BOTH SIDES, KNIFING IT TO ELIMINATE VOIDS. TAMP WITH A SMALL-FACED COMPACTOR OR OTHER EQUIPMENT SUITABLE FOR SMALL AREAS. CONTINUE PLACING, KNIFING, AND COMPACTING BACKFILL LAYERS TO THE TOP OF THE END SECTION TO SEAT IT WELL INTO THE BACKFILL.



	DIMENSIONS, INCHES (mm)					
PIPE DIAMETER	PART NO.	A, ±1 (25)	B MAX	H, ±1 (25)	L, ±1/2 (13)	W, ±2 (50)
12", 15" (300,375)	1210 NP	6.5 (165)	10 (254)	6.5 (165)	25 (635)	29 (736)
18" (450)	1810 NP	7.5 (190)	15 (380)	6.5 (168)	32 (812)	35 (890)
24" (600)	2410 NP	7.5 (190)	18 (450)	6.5 (165)	36 (900)	45 (1140)
30" (750)	3010 NP	10.5 (266)	NA	7.0 (178)	53 (1346)	68 (1725)
36" (900)	3610 NP	10.5 (266)	NA	7.0 (178)	53 (1346)	68 (1725)

FLARED END SECTION

HIGH DENSITY POLYETHYLENE (HDPE)

NOT TO SCALE

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
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Fax (603) 472-9747
www.tfmoran.com

FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-21

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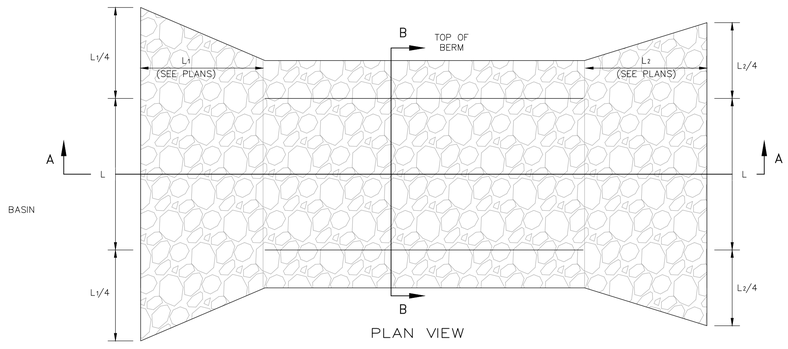
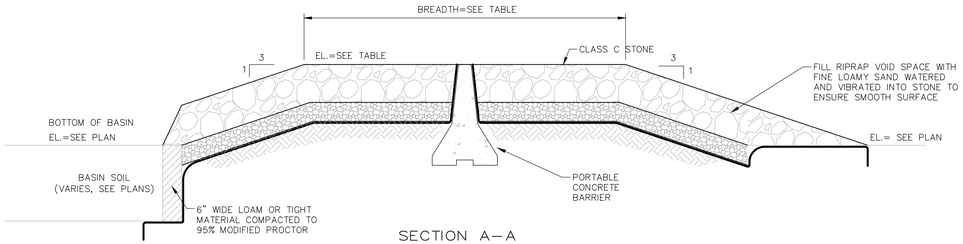
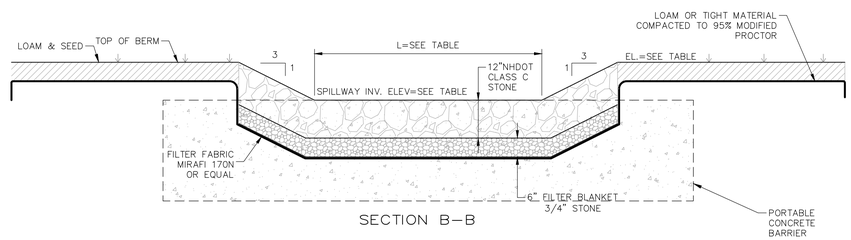
RIP-RAP GRADATION

	% FINER BY WEIGHT				
STONE SIZE	D 50 = 6"	D50 = 9"	D 50 = 12"	D50 = 18"	D50 = 24"
2"	0-15%	0%	–	–	–
4"	20-35%	10-20%	0-10%	–	–
6"	35-50%	25-35%	10-25%	0-10%	–
8"	50-65%	30-50%	20-30%	10-20%	0-10%
10"	60-80%	40-60%	30-40%	15-30%	5-15%
12"	75-100%	–	–	–	–
15"	–	70-100%	45-60%	25-40%	20-30%
20"	–	–	70-100%	40-60%	30-45%
30"	–	–	–	70-100%	50-70%
40	–	–	–	–	70-100%





SECTION A-A

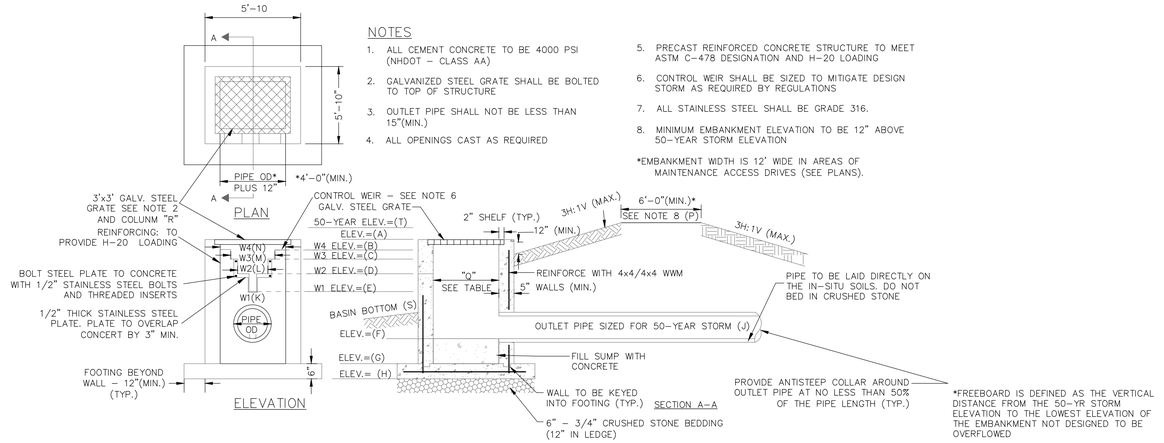


SECTION B-B

SYSTEM	TOP OF BASIN BERM EL.	SPILLWAY INV.	LENGTH (L)	BREADTH
FILTRATION BASIN #1	278.0	277.5	6'	9'
FILTRATION BASIN #2	280.0	279.5	6'	9'
DETENTION BASIN #1	296.0	295.5	3'	5'

SPILLWAY

FROM BASINS NOT TO SCALE



NOTES

1. ALL CEMENT CONCRETE TO BE 4000 PSI (NHDOT - CLASS AA)
2. GALVANIZED STEEL GRATE SHALL BE BOLTED TO TOP OF STRUCTURE
3. OUTLET PIPE SHALL NOT BE LESS THAN 15"(MIN.)
4. ALL OPENINGS CAST AS REQUIRED
5. PRECAST REINFORCED CONCRETE STRUCTURE TO MEET ASTM C-478 DESIGNATION AND H-20 LOADING
6. CONTROL WEIR SHALL BE SIZED TO MITIGATE DESIGN STORM AS REQUIRED BY REGULATIONS
7. ALL STAINLESS STEEL SHALL BE GRADE 316.
8. MINIMUM EMBANKMENT ELEVATION TO BE 12" ABOVE 50-YEAR STORM ELEVATION

*EMBANKMENT WIDTH IS 12' WIDE IN AREAS OF MAINTENANCE ACCESS DRIVES (SEE PLANS).

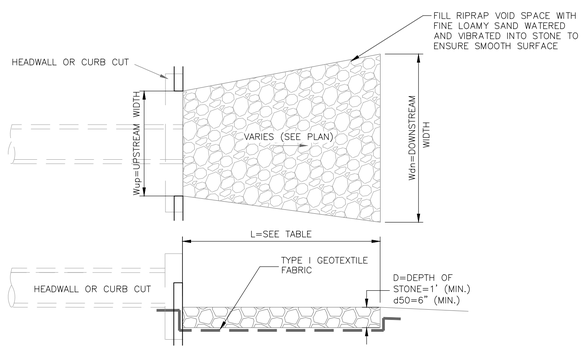
*FREEBOARD IS DEFINED AS THE VERTICAL DISTANCE FROM THE 50-YR STORM ELEVATION TO THE LOWEST ELEVATION OF THE EMBANKMENT NOT DESIGNED TO BE OVERFLOWED

	ELEVATIONS/DIMENSIONS																	
OUTLET STRUCTURE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	FREEBOARD (A-T)
FILTRATION BASIN #1	277.30	296.65	295.95	274.55	273.95	266.00	265.50	265.00	15"	1.2"	2.4"	6.0"	14.4"	278.00	4.00'x4.00'	4.50'x4.50'	273.00	277.00	1.00'
FILTRATION BASIN #2	279.00	–	278.65	278.35	277.75	272.00	271.50	271.00	15"	1.2"	6.0"	30.0"	–	280.00	4.00'x4.00'	4.50'x4.50'	277.00	278.97	1.03'
RETENTION BASIN #1	294.50	–	–	–	294.00	290.00	289.50	289.00	18"	9.0"	–	–	–	296.00	5.00'x5.00'	5.50'x5.50'	294.00	294.50	1.50'

OUTLET STRUCTURE AT STORMWATER BASINS

NOT TO SCALE

OUTLET	Do (ft.)	Q25 (cfs)	Tw (ft.)	La (ft.)	Wup (ft.)	Wdn (ft.)	d50 (in.)*
Headwall1(DMH11)	2.00	10.3	1.8	24.9	6.0	16.0	6.0
Headwall2 (CB16)	1.25	0.1	0.1	8.9	3.8	12.6	6.0
Headwall3 (OS1)	1.25	2.3	0.1	11.7	3.8	15.5	6.0
Headwall4 (OS2)	1.25	0.3	0.1	9.1	3.8	12.9	6.0
Headwall5 (DMH9)	2.50	16.9	2.0	30.3	7.5	19.6	6.0

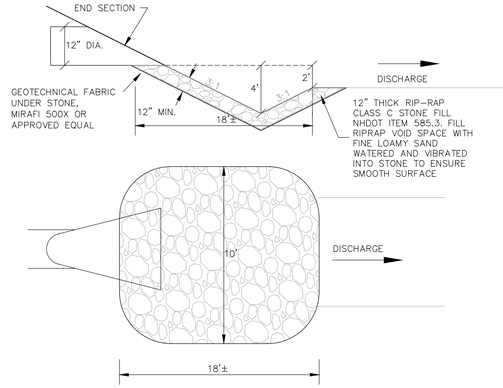


CONSTRUCTION SPECIFICATIONS:

1. THE SUBGRADE FOR THE GEOTEXTILE FABRIC AND RIP-RAP SHALL BE PREPARED TO THE LINES AND GRADES SHOWN ON THE PLANS.
2. THE ROCK USED FOR RIP-RAP SHALL CONFORM TO THE SPECIFIED GRADATION (D50=6" (MIN)).
3. GEOTEXTILE FABRICS SHALL BE PROTECTED FROM PUNCTURE OR TEARING DURING THE PLACEMENT OF THE ROCK RIP-RAP. DAMAGED AREAS IN THE FABRIC SHALL BE REPAIRED BY PLACING A PIECE OF FABRIC OVER THE DAMAGED AREA OR BY COMPLETE REPLACEMENT OF THE FABRIC. ALL OVERLAPS REQUIRED FOR REPAIRS OR JOINING TWO PIECES OF FABRIC SHALL BE A MINIMUM OF 12 INCHES.
4. STONE FOR THE RIP-RAP MAY BE PLACED BY EQUIPMENT AND SHALL BE CONSTRUCTED TO THE FULL LAYER THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO PREVENT SEGREGATION OF THE STONE SIZES.

OUTLET APRON

NOT TO SCALE



RIP RAP PLUNGE POOL

NOT TO SCALE

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/22/25

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
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FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-22

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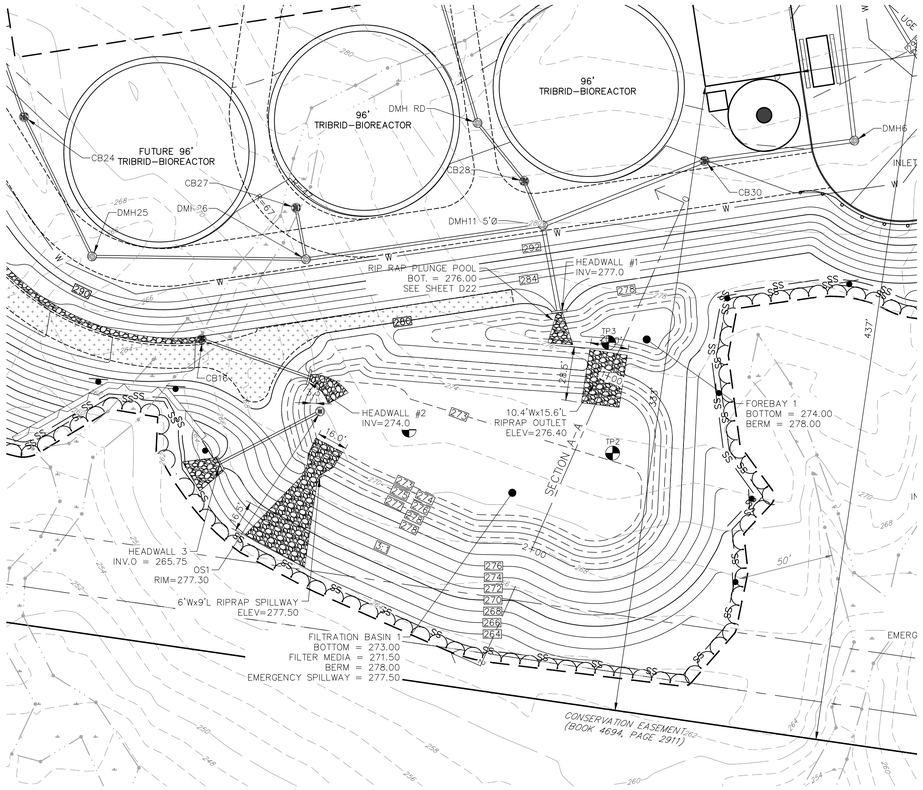
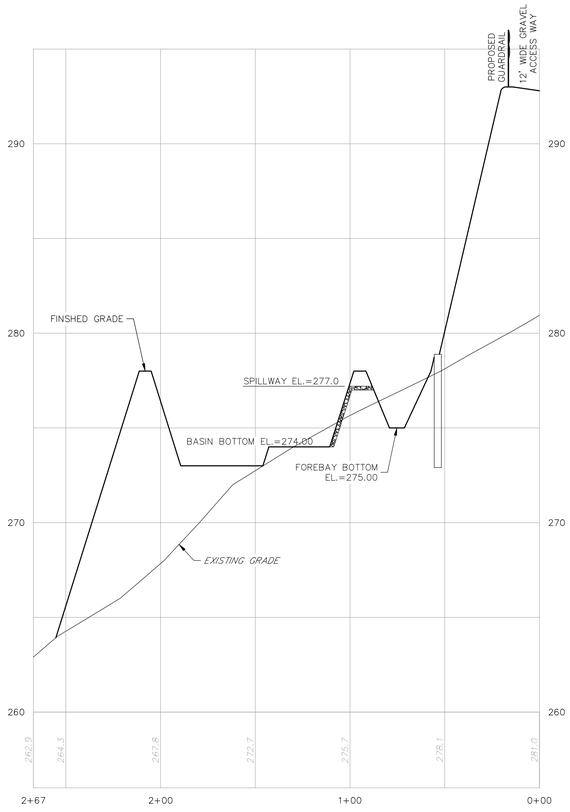


FILTRATION BASIN #1 PLAN VIEW

SCALE: 1"=40'



FILTRATION BASIN #1 SECTION A-A

SCALE: 1"=40' H/1"=4' V

GRADING & DRAINAGE NOTES

1. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF NHDES ENV–WQ 1500 AS APPLICABLE.
2. THE CONTRACTOR SHALL PREPARE, MAINTAIN, AND EXECUTE A S.W.P.P.P. IN ACCORDANCE WITH EPA REGULATIONS AND THE CONSTRUCTION GENERAL PERMIT.
3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO SUBMIT AN eNOI AT LEAST 14 DAYS IN ADVANCE OF ANY EARTHWORK ACTIVITIES AT THE SITE.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK THE ACCURACY OF THE TOPOGRAPHY AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO ANY EARTHWORK BEING PERFORMED ON THE SITE. NO CLAIM FOR EXTRA WORK WILL BE CONSIDERED FOR PAYMENT AFTER EARTHWORK HAS COMMENCED.
5. THE CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ABOUT SOIL AND GROUNDWATER CONDITIONS. THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL ENGINEER'S RECOMMENDED METHODS TO ADDRESS ANY SOIL AND GROUNDWATER ISSUES THAT ARE FOUND ON SITE, INCLUDING AND NOT LIMITED TO DEWATERING METHODS, PERIMETER DRAINS AND TIE INTO STORMWATER MANAGEMENT SYSTEM, ETC.
6. COORDINATE WITH GEOTECHNICAL REPORT FOR SITE PREPARATION AND OTHER PERTINENT INFORMATION.
7. COORDINATE WITH ELECTRICAL DESIGN PLANS FOR DETAILED GRADING AT ELECTRICAL STRUCTURES, AND SIZE AND LOCATION OF ALL ELECTRICAL SERVICES.
8. LIMITS OF WORK ARE SHOWN AS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE ALL WORK TO PROVIDE SMOOTH TRANSITIONS. THIS INCLUDES GRADING, DRIVES, ROADS, AND ALIGNMENTS.
10. THE CONTRACTOR SHALL PROVIDE A FINISH PAVEMENT SURFACE FREE OF LOW SPOTS AND PONDING AREAS. CRITICAL AREAS INCLUDE BUILDING ENTRANCE, RAMPS, AND LOADING AREAS.
11. THE SITE SHALL BE GRADED SO ALL FINISHED PAVEMENT HAS POSITIVE DRAINAGE AND SHALL NOT POND WATER DEEPER THAN 1/4" FOR A PERIOD OF MORE THAN 15 MINUTES AFTER FLOODING.
12. ALL ELEVATIONS SHOWN AT CURB ARE TO THE BOTTOM OF CURB UNLESS OTHERWISE NOTED. CURBS HAVE A 6" REVEAL UNLESS OTHERWISE NOTED.
13. ALL SIDEWALK AND OTHER CURB REVEALS SHALL BE 6" WITH A TOLERANCE OF PLUS OR MINUS 3/8". WHERE SIDEWALK IS TO BE FLUSH, THE PAVEMENT REVEAL SHALL BE 1/4" WITH A TOLERANCE OF 1/8".
14. THE FINISHED GRADE AT BOTTOM OF ALL ACCESSIBLE RAMPS SHALL BE FLUSH WITH PAVEMENT WITH A TOLERANCE OF PLUS OR MINUS 1/4".
15. ADJUST ALL MANHOLES, CATCH BASINS, CURB BOXES, ETC. WITHIN LIMITS OF WORK TO FINISH GRADE PRIOR TO INSTALLATION OF FINISHED PAVEMENT.
16. ROAD AND DRAINAGE CONSTRUCTION SHALL CONFORM TO THE TYPICAL SECTIONS AND DETAILS SHOWN ON THE PLANS AND SHALL MEET LOCAL STANDARDS AND THE REQUIREMENTS OF THE LATEST NHDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGE CONSTRUCTION AND THE NHDOT STANDARD STRUCTURE DRAWINGS UNLESS OTHERWISE NOTED.
17. STORMWATER DRAINAGE SYSTEM SHALL BE CONSTRUCTED TO LINE AND GRADE AS SHOWN ON THE PLANS. CONSTRUCTION METHODS SHALL CONFORM TO NHDOT STANDARD SPECIFICATIONS, SECTION 603. CATCH BASINS AND DRAIN MANHOLES SHALL CONFORM TO SECTION 604. ALL CATCH BASIN GRATES SHALL BE TYPE B AND CONFORM TO NHDOT STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED.
18. NO FILL SHALL BE PLACED IN ANY WETLAND AREA.
19. ALL EXCAVATIONS SHALL BE THOROUGHLY SECURED ON A DAILY BASIS BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION OPERATIONS IN THE IMMEDIATE AREA.
20. ALL DISTURBED AREAS NOT TO BE PAVED OR OTHERWISE TREATED SHALL RECEIVE 6" LOAM, SEED, FERTILIZER, AND MULCH.
21. DENSITY REQUIREMENTS:

MINIMUM DENSITY*	LOCATION
95%	BELOW PAVED OR CONCRETE AREAS
95%	TRENCH BEDDING MATERIAL AND SAND BLANKET BACKFILL
90%	BELOW LOAM AND SEED AREA
90%	EMBANKMENTS/PERIMETER SLOPES ASSOCIATED WITH STORMWATER MANAGEMENT AREAS
70%	STORMWATER MANAGEMENT AREAS BASIN BOTTOMS, INCLUDING SUBGRADE

*ALL PERCENTAGES OF COMPACTION SHALL BE OF THE MAXIMUM DRY DENSITY AT THE OPTIMUM MOISTURE CONTENT AS DETERMINED AND CONTROLLED IN ACCORDANCE WITH ASTM D–1557, METHOD C. FIELD DENSITY TESTS SHALL BE MADE IN ACCORDANCE WITH ASTM D–1556 OR ASTM D–6938.

22. COMMON FILL GRADATION REQUIREMENTS *PER GEOTECHNICAL REPORT SPECIFICATIONS

SIEVE SIZE	PERCENT FINER BY WEIGHT
8 INCH	100
NO. 4	25 – 70
NO.200	0 – 12 (TOTAL)

23. SWALES ARE TO BE VEGETATED OR STONE LINED PRIOR TO DIRECTING RUNOFF TO THEM.

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DETAILS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: NOT TO SCALE **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

REV	DATE	DESCRIPTION	DR	CK
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4	10/24/2025	NHF&G APPROVAL	JD	NG
3	11/3/2025	TOWN SEWER COMMENTS	JD	NG
2	9/30/2025	REVISED FOR NHF&G & NHDES COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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		CK		CADFILE	18252-02 COVER & DETAILS	

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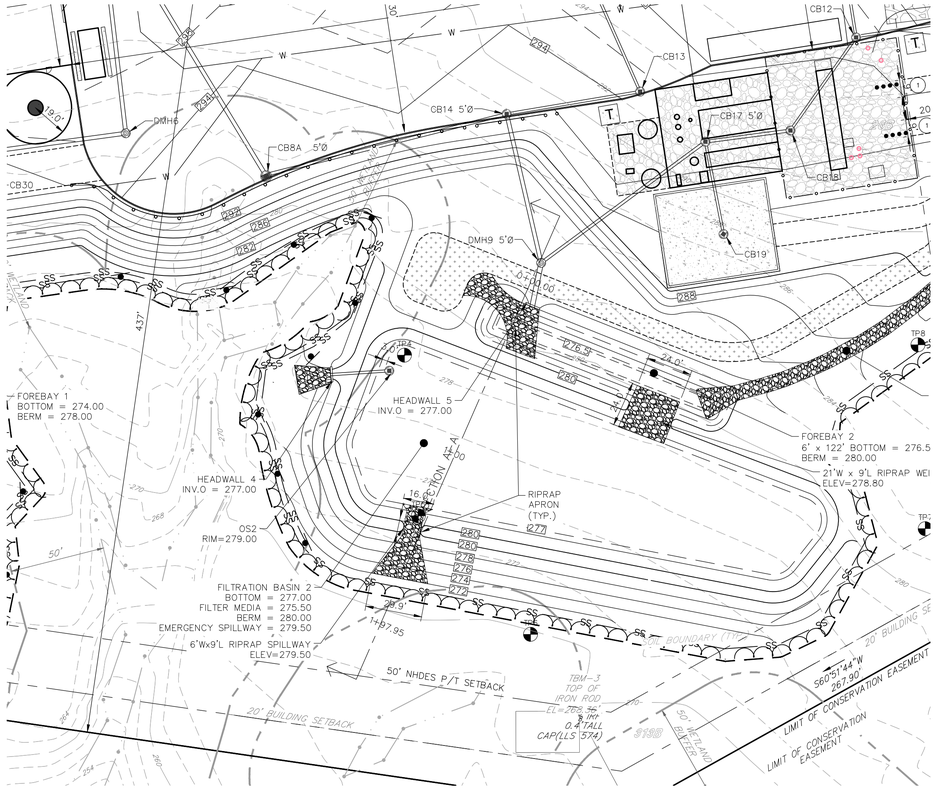
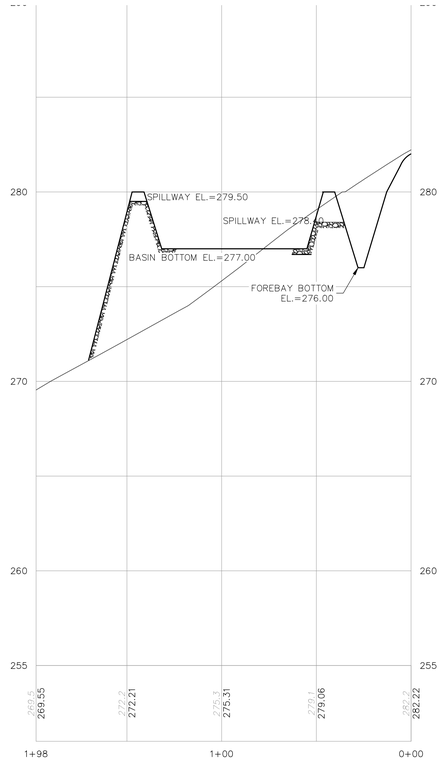
GRADING & DRAINAGE NOTES

1. SEE NOTES ON SHEET D-23.





FILTRATION BASIN #2

FILTRATION BASIN #2 PLAN VIEW

SCALE: 1"=40'

FILTRATION BASIN #2 SECTION A-A

SCALE: 1"=40' H/1"=4' V

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12/22/25

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SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

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Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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Bedford, NH 03110
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Fax (603) 472-9747
www.tfmoran.com

FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 COVER & DETAILS	D-24

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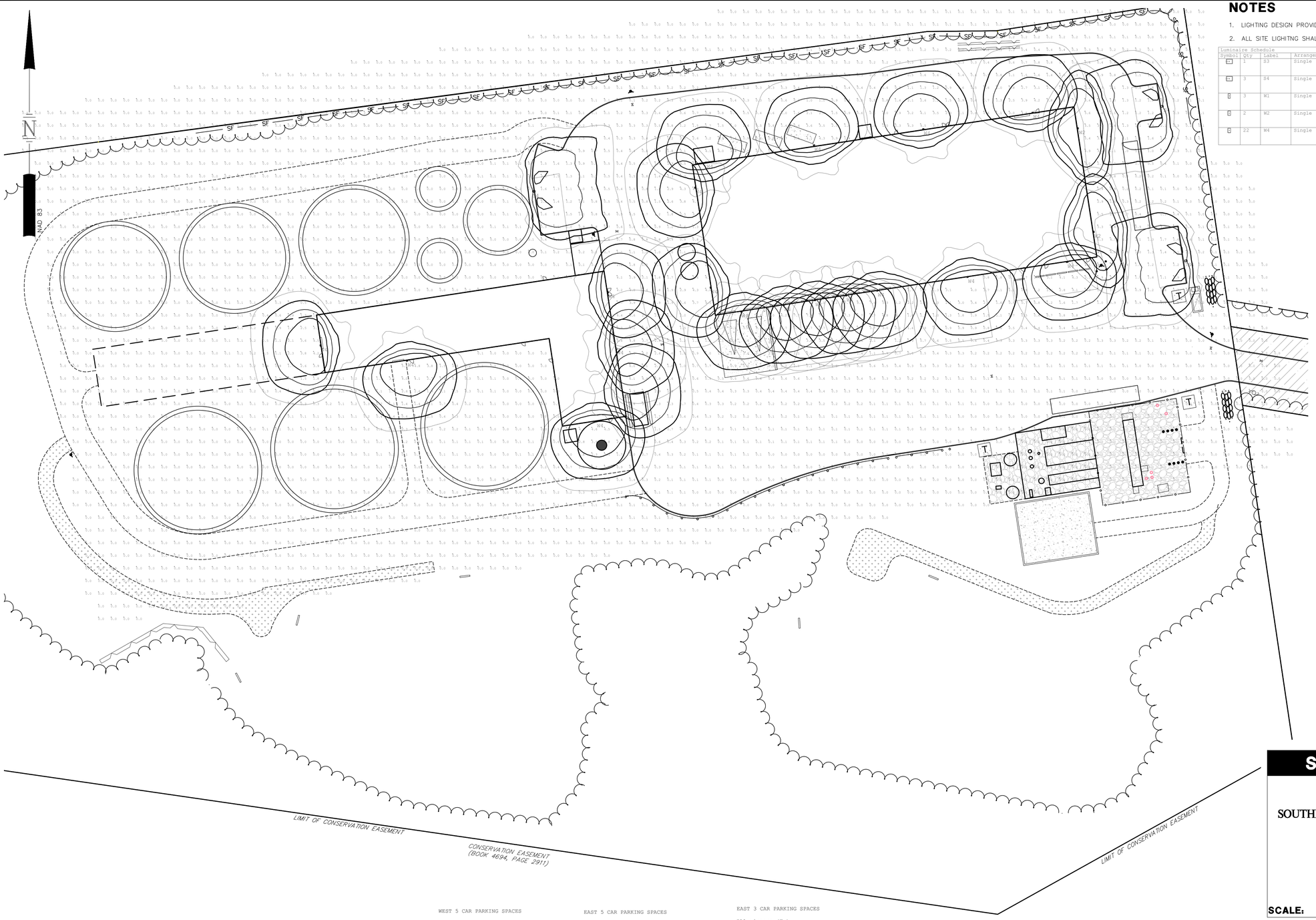

NOTES

1. LIGHTING DESIGN PROVIDED BY EXPOSURE INCORPORATED.
2. ALL SITE LIGHITNG SHALL BE FULL CUTOFF, DOWNCAST FIXTURE TYPES.

Luminaire Schedule

Symbol	Qty	Label	Arrangement	Description	[MANUFAC]	Tag
	1	S3	Single	VALS-09L-5W-UNV-30K8-CXX-SA-IMSBTL1 / 4SQ B3 S1LG16 S CXX AB 48C	LSI INDUSTRIES, INC.	16' POLE ON 2' BASE
	3	S4	Single	VALS-09L-4P-30K8-CXX-SA-IMSBTL1 / 4SQ B3 S1LG16 S CXX AB 48C	LSI INDUSTRIES, INC.	16' POLE ON 2' BASE
	3	W1	Single	XWS-LED-3L-FTW-UNV-DIM-30-80CRI-IMSBTIL-CXX	LSI INDUSTRIES, INC.	WALL MOUNTED 8' AFG
	2	W2	Single	XWM-2-LED-8L-30K8-UE-CXX-IMSBTIL	LSI INDUSTRIES, INC.	WALL MOUNTED 16' AFG
	22	W4	Single	XWM-4-LED-8L-30K8-UE-CXX-IMSBTIL	LSI INDUSTRIES, INC.	WALL MOUNTED 16' AFG

DOCK AREAS
Illuminance (Fc)
Average = 4.62
Maximum = 9.3
Minimum = 0.9
Avg/Min Ratio = 5.13
Max/Min Ratio = 10.33

PARKING AT BACK OF BLDG
Illuminance (Fc)
Average = 3.76
Maximum = 6.4
Minimum = 2.2
Avg/Min Ratio = 1.71
Max/Min Ratio = 2.91

TRUCK PKG AT BACK OF BLDG
Illuminance (Fc)
Average = 1.92
Maximum = 5.1
Minimum = 0.4
Avg/Min Ratio = 4.80
Max/Min Ratio = 12.75

PARKING IN FRONT OF BLDG
Illuminance (Fc)
Average = 2.51
Maximum = 4.1
Minimum = 1.1
Avg/Min Ratio = 2.28
Max/Min Ratio = 3.73



POLE MOUNTED FIXTURE
V-LOCITY SMALL VALS (S3 & S4)



WALL MOUNTED FIXTURE
MIRADA MEDIUM WALL SCONCE XWM (W2 & W4)



WALL MOUNTED FIXTURE
MIRADA SMALL WALL SCONCE XWS VC (W1)

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

LIGHTING PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
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STATE OF NEW HAMPSHIRE — NICHOLAS C. GOLON No. 14086 — LICENSED PROFESSIONAL ENGINEER — 12/22/25

HORIZONTAL SCALE 1"=20'
20 10 0 20

REV	DATE	DESCRIPTION	DR	CK
5	12/18/2025	AOT & STAFF COMMENTS	JD	NG
4	10/24/2025	NHF&G APPROVAL	JD	NG
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	18252-02	CK		CADFILE	18252-02 SITE PLAN	L-01

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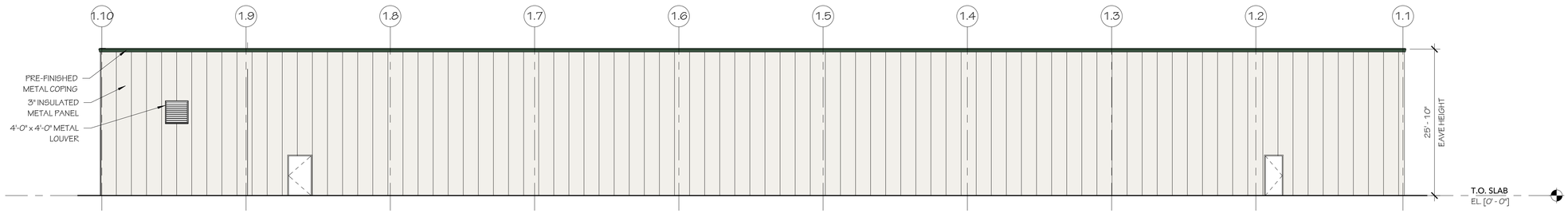
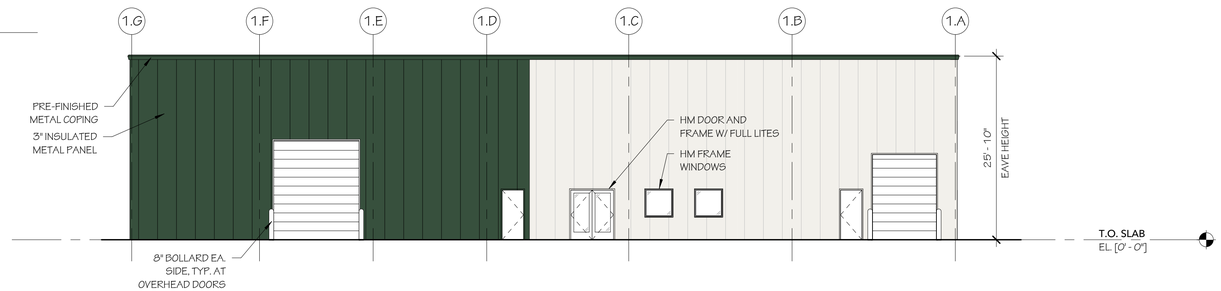


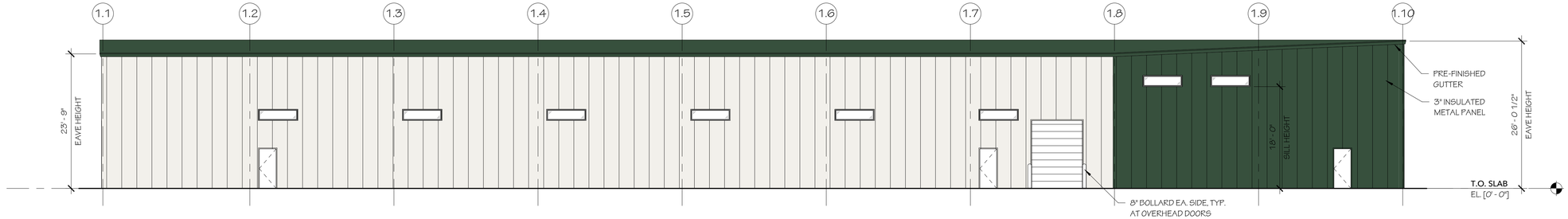
4 NORTH ELEVATION

3/32" = 1'-0" PROCESS BUILDING



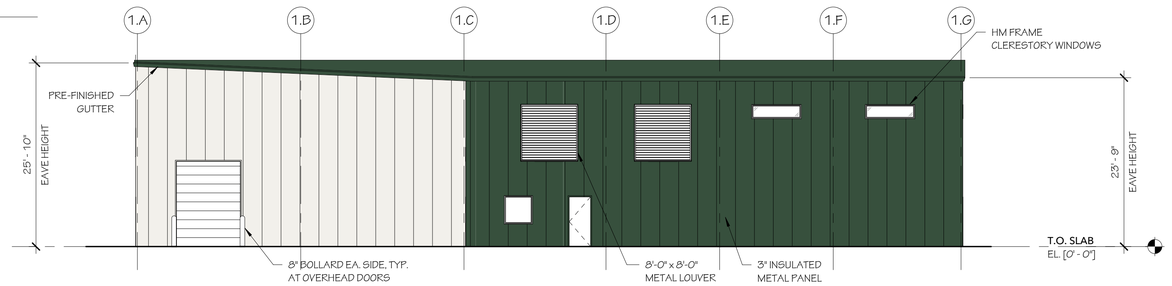
3 EAST ELEVATION

3/32" = 1'-0" PROCESS BUILDING



2 SOUTH ELEVATION

3/32" = 1'-0" DEPACK BUILDING



1 WEST ELEVATION

3/32" = 1'-0" PROCESS BUILDING

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-1

BUILDING ELEVATIONS

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25 NORTH WENTWORTH AVE.
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3/32" = 1'-0" SEPTEMBER 8, 2025

REV	DATE	DESCRIPTION	DR	CK
1	12/08/25	REVISION #1	JQ	MQ

285 SOUTH OHIO STREET
P.O. BOX 3
MINSTER, OHIO 45865
(419) 628-3364
www.baumerconstruction.com

JOB #	DR	JQ	SCALE	3/32" = 1'-0"	A-1
25.02	CK	MQ	DATE	12/08/2025	

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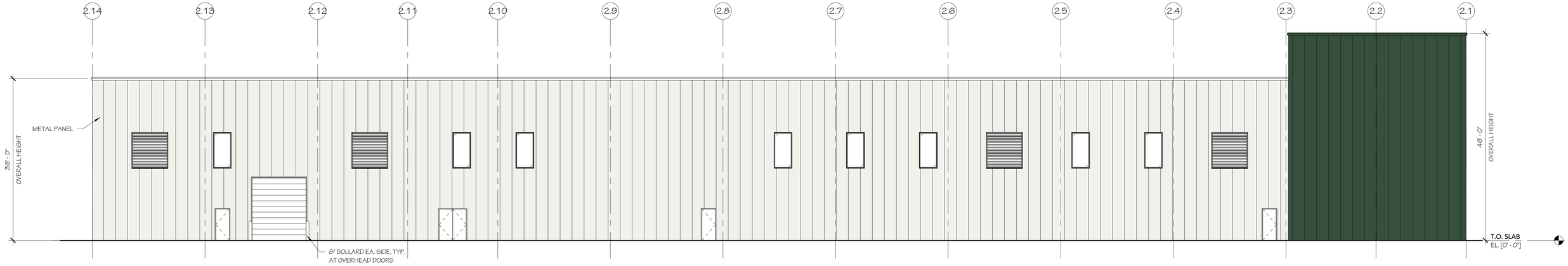
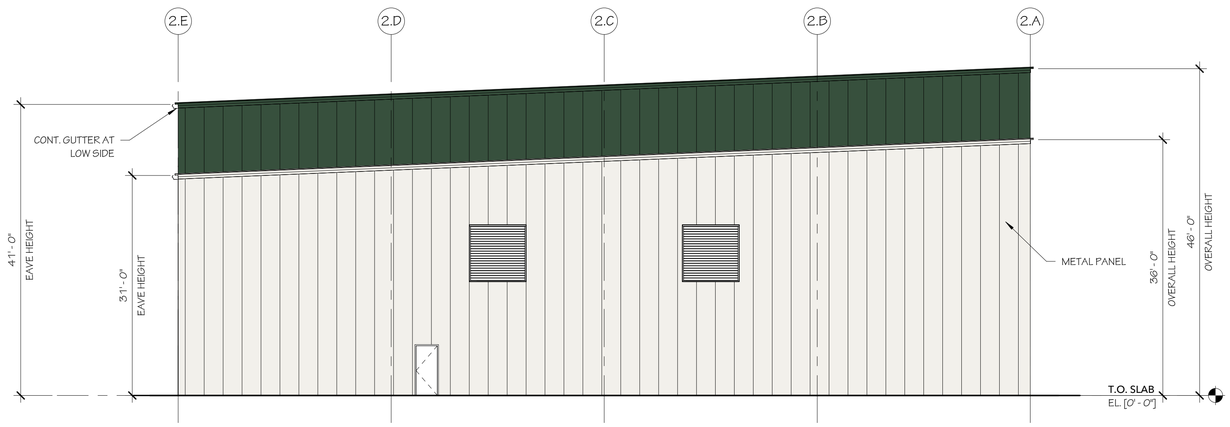


2 NORTH ELEVATION

3/32" = 1'-0" DEPACK BUILDING



1 EAST ELEVATION

3/32" = 1'-0" DEPACK BUILDING

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-1

BUILDING ELEVATIONS

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3/32" = 1'-0" SEPTEMBER 8, 2025

REV	DATE	DESCRIPTION	DR	CK
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JOB #		DR	JQ	SCALE	3/32" = 1'-0"	A-2
	25.02	CK	MQ	DATE	12/08/2025	

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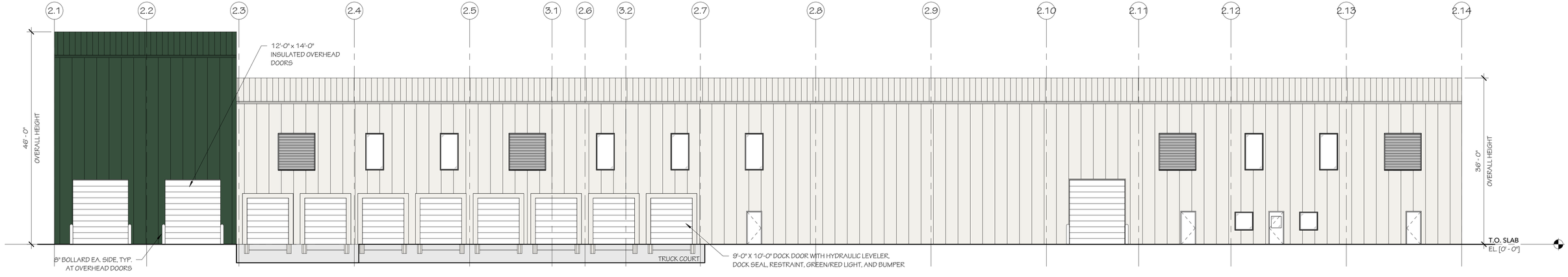
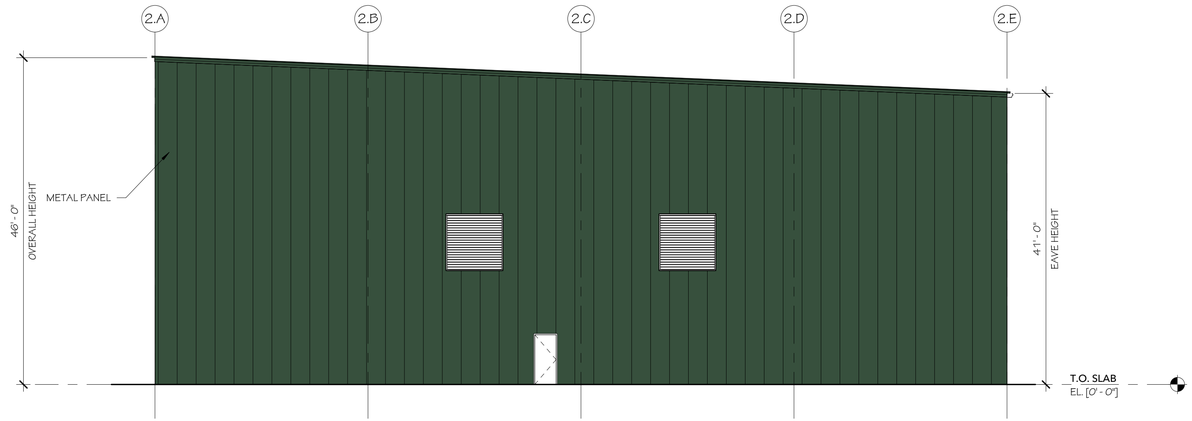


4 SOUTH ELEVATION

3/32" = 1'-0" | DEPACK BUILDING



3 WEST ELEVATION

3/32" = 1'-0" | DEPACK BUILDING

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-1

BUILDING ELEVATIONS

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY
PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

3/32" = 1'-0" SEPTEMBER 8, 2025

REV	DATE	DESCRIPTION	DR	CK
1	12/08/25	REVISION #1	JQ	MQ

BAUMER CONSTRUCTION INC.
285 SOUTH OHIO STREET
P.O. BOX 3
MINSTER, OHIO 45865
(419) 628-3364
www.baumerconstruction.com

JOB #					
25.02	DR	JQ	SCALE	3/32" = 1'-0"	A-3
	CK	MQ	DATE	12/08/2025	

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SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

SUBDIVISION PLANS

162 LITCHFIELD ROAD, LONDONDERRY, NEW HAMPSHIRE

GENERAL INFORMATION

OWNER
MAP 14 LOT 39
CODNER NICHOLAS F TRUST 2012
162 LITCHFIELD ROAD
LONDONDERRY, NH 03053
603-432-1100

APPLICANT
PUPROSEENERGY-LONDONDERRY, LLC
C/O SEAN O'NEIL
25 PELHAM ROAD, SUITE 102
SALEM, NH 03079
6172029156

PREPARED FOR
PUPROSEENERGY-LONDONDERRY, LLC
C/O SEAN O'NEIL
25 PELHAM ROAD, SUITE 102
SALEM, NH 03079
6172029156

RESOURCE LIST

TOWN MANAGER
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 151
SHAUN MULHOLLANDI, TOWN MANAGER

PLANNING & ECONOMIC DEVELOPMENT
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 149
KELLIE CARON, ASST. TOWN MANAGER,
DIRECTOR OF ECONOMIC DEVELOPMENT

BUILDING, HEALTH, ZONING AND CODE ENFORCEMENT
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 161
NICK CODNER, CHIEF BUILDING INSPECTOR
& CODE ENFORCEMENT OFFICER

HEALTH DIVISION
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 151

PUBLIC WORKS & ENGINEERING
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 139
DAVE WHOLLEY, DIRECTOR PUBLIC WORKS &
MUNICIPAL FACILITIES
JOHN TROTTIER, DIRECTOR OF ENGINEERING &
ENVIRONMENTAL SERVICES

HIGHWAY DIVISION
268B MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1100 EXT. 152
DAVE WHOLLEY, DIRECTOR PUBLIC WORKS &
MUNICIPAL FACILITIES

POLICE DEPARTMENT
28A MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1118
KIM ALAN BERNARD, CHIEF OF POLICE

FIRE DEPARTMENT
28O MAMMOTH ROAD
LONDONDERRY, NH 03053
(603) 432-1124
PHIL LEBLANC, ACTING FIRE CHIEF

NHDES AOT
29 HAZEN DRIVE
CONCORD, NH 03302-0095
(603) 271-2303
AMY CLARK, PE, AOT SUPERVISOR

ASSOCIATED PROFESSIONALS

ARCHITECT
RANDALL-PAULSON ARCHITECTS
MILLYARD ECHNOLOGY PARK, 82 TECHNOLOGY
WAY SUITE 3W2A NASHUA, NH 03060
603-617-3706
TIMOTHY ENGELBERT AICP

GEOTECHNICAL SERVICES
ARIES ENGINEERING
104 PLEASANT STREET
CONCORD, NH 03301
(603) 226-0374
GEORGE C. HOLT, P.G.

TRAFFIC ENGINEER
TFMORAN, INC.
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
ROBERT DUVAL, PE, PRINCIPAL

WETLAND SCIENTIST
TFMORAN, INC.
48 CONSTITUTION DRIVE
BEDFORD, NH 03110
CHRISTOPHER K. DANFORTH, CWS

SOIL SCIENTIST
BAG LAND CONSULTANTS
43 ROCKINGHAM STREET
CONCORD, NH 03301
BRUCE A. GILDAY, CSS

ABUTTERS

R014-039-0
NICHOLAS F CODNER TRUST 2012
162 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-047-0
US OF AMERICA FED AVIATION ADMIN
12 NE EXECUTIVE PARK
BURLINGTON, MA 01803

R01-044-38
STATE OF NEW HAMPSHIRE
PO BOX 483, 1 HAZEN DRIVE
CONCORD, NH 03302-0483

R014-44-0
GRANITE RIDGE ENERGY, LLC
21 NORTH WENTWORTH AVE
LONDONDERRY, NH 03053

R014 LOTS 044-3 & 040-0
TRACIE L & BRUCE A LEMIEUX
154 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-039-1
VICTOR D & CECILIA C REIS
158 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-13
RICHARD A BELANGER
149 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-12
NICOLE M THOMAS
151 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-11JUSTIN M QUISH
153 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-10
SHARON B BARTHOLOMEW
155 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-9
SAHIN B DAYIOGLU
157 LITCHFIELD ROAD
LONDONDERRY, NH 03053

ABUTTERS (CONT)

R011-020-8
ERIC J AND AMBER E POMER
159 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-020-7
JOHN ALBERT & LISA MARIE KIRCALDIE
51 YELLOWSTONE ROAD
LONDONDERRY, NH 03053-2502

R011-020-6
MICHAEL A ST. PIERRE
163 LITCHFIELD ROAD
LONDONDERRY, NH 03053-7408

R011-020-5
CLARK FAMILY TRUST OF 2011
165 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R011-015-0
ERICK MENDONSA
167 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-051-0
CLAIRE M KELLY
164 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-050-0
BRUCE ALLAN & CINDY LOUISE GOODWIN
168 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-007-0
MICHAEL W SIRACUSE III
170 LITCHFIELD ROAD
LONDONDERRY, NH 03053

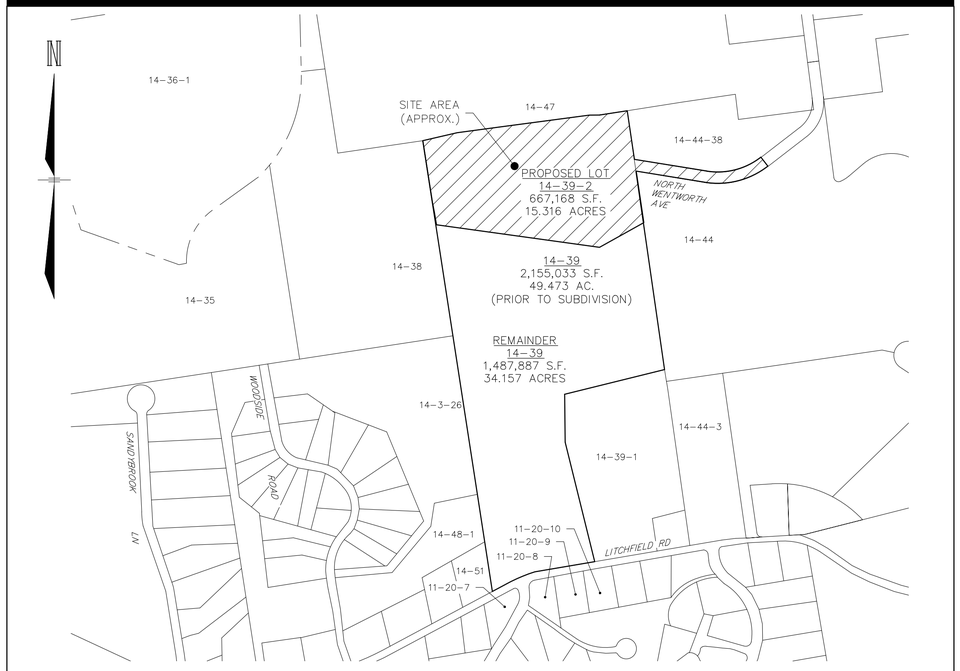
R014-005-0
ARIANNA O'NEIL
172 LITCHFIELD ROAD
LONDONDERRY, NH 03053

R014-048-1
STATE OF NEW HAMPSHIRE
PO BOX 483
CONCORD, NH 03302-0483

R-014-003-26
GYPSUM CONSTRUCTION CORP.
184 ROCKINGHAM ROAD
LONDONDERRY, NH 03053

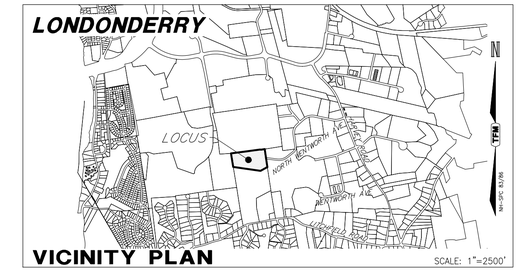
R014-038-0
TANA PROPERTIES LTD. PARTNERSHIP
40 TEMPLE STREET
NASHUA, NH 03060

TAX MAP SKETCH



LOT AREAS TABLE

LOT	AREA (SF)	AREA (ACRES)
14-39 (EXIST)	2,155,133 SF	49.473 AC
14-39 (REMAINDER)	1,487,887 SF	34.157 AC
14-39-2 (PROPOSED)	667,168 SF	15.316 AC



VICINITY PLAN — SCALE: 1"=2500'

NOTES

1. OWNER OF RECORD: NICHOLAS F. CODNER TRUST OF 2012
   162 LITCHFIELD ROAD
   LONDONDERRY, NEW HAMPSHIRE
   DEED REFERENCE: BOOK 5336, PAGE 1874
   PROPOSED LOT AREA: 667,167.7 S.F. OR 15.3161 ACRES
   EXISTING LOT AREA: 2,155,033 S.F. OR 49.473 ACRES
2. 14-39-0 INDICATES TAX MAP AND LOT NUMBER.
3. THE PURPOSE OF THIS SUBDIVISION PLAN IS TO SHOW THE EXISTING CONDITIONS PRESENT AT THE TIME OF THE FIELD SURVEY FOR ASSESSORS MAP 14 LOT 39, SITUATED ON THE WESTERLY TERMINUS OF NORTH WENTWORTH AVENUE IN THE TOWN OF LONDONDERRY, NEW HAMPSHIRE AS SHOWN HEREON AND TO SUBDIVIDE MAP 14 LOT 39 INTO ONE NEW LOT AND ONE REMAINDER LOT AS SHOWN:

LOT	AREA (SF)	AREA (AC)
14-39 (EXIST)	2,155,133 SF	49.473 AC
14-39 (REMAINDER)	1,487,887 SF	34.157 AC
14-39-1 (PROPOSED)	667,168 SF	15.316 AC

4. CURRENT ZONING IS: GATEWAY BUSINESS (GB) AND AGRICULTURAL RESIDENTIAL (AR-1)
   EXISTING USE: RESIDENTIAL
   PROPOSED USE 14-39: RESIDENTIAL (AR-1)
   PROPOSED USE 14-39-2: ORGANIC WASTE PROCESSING FACILITY (GB)

ZONE:	(GB)	(AR-1, SINGLE FAMILY, SEPTIC & WELL)
MINIMUM LOT SIZE:	1 ACRE	1 ACRE
MINIMUM LOT FRONTAGE:	150 FEET (CLASS V OR BETTER ROAD)	150 FEET (CLASS V OR BETTER ROAD)
MINIMUM FRONT BUILDING SETBACKS:	30 FEET	40 FEET
MINIMUM SIDE BUILDING SETBACKS:	20 FEET	15 FEET
MINIMUM REAR BUILDING SETBACKS:	20 FEET	15 FEET
MAXIMUM BUILDING HEIGHT:	50 FEET	35 FEET
MINIMUM OPEN SPACE:	25%	40%

5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0318E, EFFECTIVE DATE OF MAY 17, 2005, INDICATES THAT THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FLOOD HAZARD AREA.
6. CONTOURS DEPICTED ON THIS PLAN ARE AT 2 FOOT INTERVALS.
7. HORIZONTAL DATUM: NH-SPC NAD83/2011
   VERTICAL DATUM: NGVD29
   BENCHMARKS SET: TBM-1: TOP OF DRILL HOLE FOUND AT THE CORNER OF A STONE WALL LOCATED AT THE NORTHWESTERLY CORNER OF PROPOSED LOT 14-39-0, AS SHOWN HEREON. EL= 273.57'
   TBM-2: TOP OF DRILL HOLE FOUND IN STONE WALL LOCATED AT THE SOUTHWESTERLY CORNER OF PROPOSED LOT 14-39-0, AS SHOWN HEREON. EL= 242.21'
   TBM-3: TOP OF IRON ROD LOCATED AT THE SOUTHERLY CORNER OF PROPOSED LOT 14-39-0, AS SHOWN HEREON. EL= 268.36'
   TBM-4: TOP OF DRILL HOLE FOUND IN STONE WALL LOCATED ON THE NORTHERLY PROPERTY LINE, APPROXIMATELY 230 FEET FROM THE NORTHEASTERLY CORNER OF PROPOSED LOT 14-39-0, AS SHOWN HEREON. EL= 303.29'
   DATUM WAS OBTAINED BY SURVEY GRADE GPS UNIT ON MAY 21, 2024.
8. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL MAY DETERMINE.
9. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. T.F.MORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 811.
10. THE INFORMATION SHOW HEREON IS FROM AN ACTUAL SURVEY PREFORMED BY THIS OFFICE FROM MAY THROUGH JUNE 2024.
11. SHEETS SUB-1 & SUB-2 SHALL BE RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. A FULL SET OF PLANS (C-1, S-1 SUB-1 THROUGH SUB-9) SHALL BE ON FILE WITH THE TOWN OF LONDONDERRY PLANNING DEPARTMENT.
13. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT DEFICIENCIES EXIST IN THE APPROVED DESIGN DRAWINGS, THE OWNER SHALL BE REQUIRED TO CORRECT THE DEFICIENCIES TO MEET THE REQUIREMENTS OF THE REGULATIONS AT NO EXPENSE TO THE TOWN.
14. IF, DURING CONSTRUCTION, IT BECOMES APPARENT THAT ADDITIONAL EROSION CONTROL MEASURES ARE REQUIRED TO STOP ANY EROSION ON THE CONSTRUCTION SITE DUE TO ACTUAL SITE CONDITIONS, THE OWNER SHALL BE REQUIRED TO INSTALL THE NECESSARY EROSION PROTECTION AT NO EXPENSE TO THE TOWN.
15. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO TOWN OF LONDONDERRY SUBDIVISION REGULATIONS AND THE LATEST EDITION OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION.

INDEX OF SHEETS

SHEET	SHEET TITLE
COVER	COVER SHEET
S-01 TO S-08	SUBSIVISION PLANS
C-13	DRIVEWAY PLAN AND PROFILE
SD-1	SIGHT DISTANCE PLAN

PERMITS/APPROVALS

	NUMBER	APPROVED	EXPIRES
TOWN PLANNING BOARD SUBDIVISION APPROVAL			
TOWN PLANNING BOARD CUP (FRONTAGE)			
NHDES WETLAND DREDGE AND FILL PERMIT			

WAIVERS

THE FOLLOWING WAIVERS FROM THE TOWN OF LONDONDERRY SITE REVIEW REGULATIONS IS REQUESTED FROM THE PLANNING BOARD:

1. TOWN OF LONDONDERRY SUBDIVISION REVIEW REGULATIONS SECTION 3.10, 4.17 & CHECKLIST ITEM X1 –
   TO PROVIDE SITE SPECIFIC SOIL MAPPING IN LIEU OF HISS MAPPING REQUIREMENTS.
2. TOWN OF LONDONDERRY SUBDIVISION REVIEW REGULATIONS SECTION 3.02.C, 4.12.C.14 & CHECKLIST ITEM V.14 –
   TO LIMIT CO SIGNAGE TO LOT 14-39-02 (DEVELOPMENT LOT).
4. TOWN OF LONDONDERRY SUBDIVISION REVIEW REGULATIONS SECTION 3.05, 3.06, 3.07, 3.08, 4.16, & CHECKLIST ITEMS X.3, VIII.13-18 & EXHIBIT D2 –
   TO PROVIDE ALL TECHNICAL UTILITY DESIGN ELEMENTS AND IMPROVMENT PLANS WITHIN THE CORRESPONDING SITE PLAN APPLICATION

OWNER'S SIGNATURE

OWNER OR REPRESENTATIVE — DATE 12/22/2025

Approved by the Londonderry, NH Planning Board for Phase _____
on Date: _____
Certified by:
_____
_____

REV	DATE	DESCRIPTION	DR	CK
2	12/18/2025	REVISED PER TOWN REVIEW COMMENTS	JD	MRD
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

SUBDIVISION PLANS

TAX MAP 14 LOT 39-2 AND 39

SUBDIVISION COVER

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

NOT TO SCALE **SEPTEMBER 8, 2025**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE	DR		FB	–	
18252-02	CK		CADFILE	18252-02 SUBDIVISION PLAN	COVER

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48 Constitution Drive, Bedford, N.H. 03110

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This plan is not effective unless signed by a duly authorized officer of TFMoran, Inc.

DIG SAFE — CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION

Dec 23, 2025 - 2:01pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\Carlson Survey\Dwgs\18252-02 SUBDIVISION PLAN.dwg

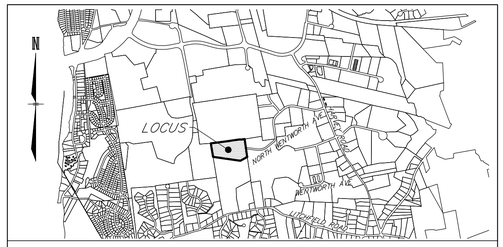
LEGEND

- STONE BOUND (FOUND)
- IRON PIN (FOUND)
- DRILL HOLE (FOUND)
- UTILITY POLE
- GUY WIRE
- BENCHMARK
- WATER VALVE
- HYDRANT
- CATCH BASIN
- DIRECTION OF DRAINAGE FLOW
- G.BND T.B.S. GRANITE BOUND TO BE SET
- SAC SLOPED ASPHALT CURB
- OHW OVERHEAD WIRES
- STONEWALL
- 302 2' CONTOUR
- 10' CONTOUR
- 280 SOILS BOUNDARY
- SOILS MAP UNIT SYMBOL
- WETLAND DELINEATION
- 5-12 WETLAND FLAG LOCATION
- WETLAND SETBACK
- ABUTTING PROPERTY LINE
- BUILDING SETBACK
- EP EDGE OF PAVEMENT
- ZONING DISTRICT BOUNDARY
- PROPERTY BOUNDARY
- EASEMENT LINE
- W WATER LINE
- G GAS LINE
- D DRAIN LINE
- S SEWER LINE

N

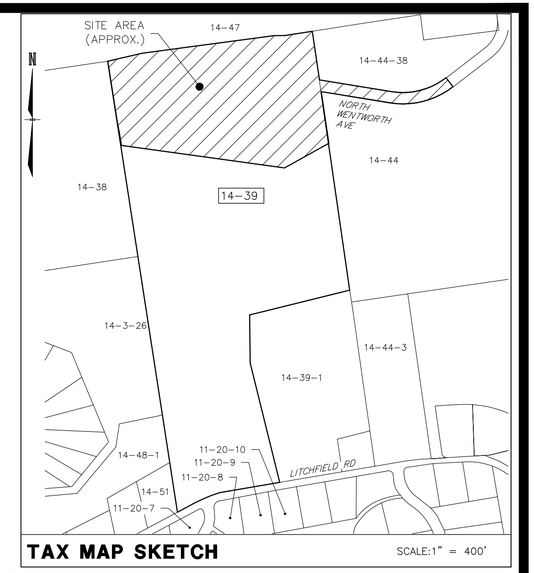
TFM

NH-SPC 83/86



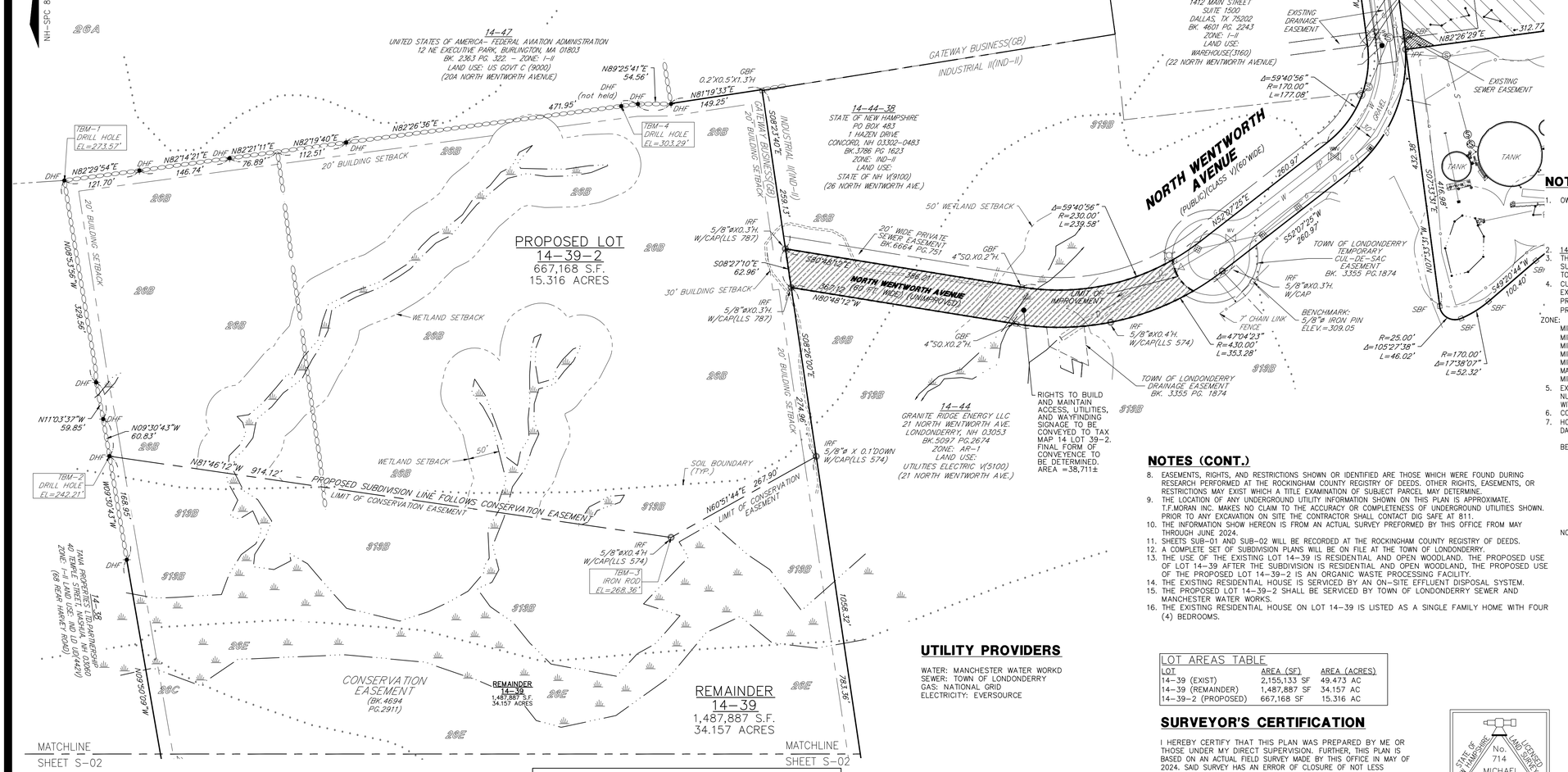
VICINITY PLAN

SCALE: 1"=2,500'±



TAX MAP SKETCH

SCALE:1" = 400'



NOTES

1. OWNER OF RECORD: NICHOLAS F. CODNER TRUST OF 2012
   162 LITCHFIELD ROAD
   LONDONDERRY, NEW HAMPSHIRE
   DEED REFERENCE: BOOK 5336, PAGE 1874
   PROPOSED LOT AREA: 667,167.7 S.F. OR 15.3161 ACRES
   EXISTING LOT AREA: 2,155,033 S.F. OR 49.473 ACRES
2. 14-39-2 INDICATES TAX MAP AND LOT NUMBER.
3. THE PURPOSE OF THIS SUBDIVISION PLAN IS TO SHOW THE EXISTING CONDITIONS PRESENT AT THE TIME OF THE FIELD SURVEY FOR ASSESSORS MAP 14 LOT 39, SITUATED ON THE WESTERLY TERMINUS OF NORTH WENTWORTH AVENUE IN THE TOWN OF LONDONDERRY, NEW HAMPSHIRE AS SHOWN HEREON AND NO OTHER PURPOSE.
4. CURRENT ZONING IS: GATEWAY BUSINESS (GB) AND AGRICULTURAL RESIDENTIAL (AR-1)
   EXISTING USE: RESIDENTIAL
   PROPOSED USE 14-39: RESIDENTIAL (AR-1)
   PROPOSED USE 14-39-2: ORGANIC WASTE PROCESSING FACILITY (GB)

ZONE:	(GB)	(AR-1, SINGLE FAMILY, SEPTIC & WELL)
MINIMUM LOT SIZE:	1 ACRE	1 ACRE
MINIMUM LOT FRONTAGE:	150 FEET (CLASS V OR BETTER ROAD)	150 FEET (CLASS V OR BETTER ROAD)
MINIMUM FRONT BUILDING SETBACKS:	30 FEET	40 FEET
MINIMUM SIDE BUILDING SETBACKS:	20 FEET	15 FEET
MINIMUM REAR BUILDING SETBACKS:	20 FEET	15 FEET
MAXIMUM BUILDING HEIGHT:	50 FEET	35 FEET
MINIMUM OPEN SPACE:	25%	40%

5. EXAMINATION OF THE FLOOD INSURANCE RATE MAP FOR ROCKINGHAM COUNTY, NEW HAMPSHIRE (ALL JURISDICTIONS), MAP NUMBER 33015C0318E, EFFECTIVE DATE OF MAY 17, 2005, INDICATES THAT THE SUBJECT PARCELS ARE NOT LOCATED WITHIN A FLOOD HAZARD AREA.
6. CONTOURS DEPICTED ON THIS PLAN ARE AT 2 FOOT INTERVALS.
7. HORIZONTAL DATUM: NH-SPC NAD83/2011. VERTICAL DATUM: NGVD29
   DATUMS WERE OBTAINED BY SURVEY GRADE GPS UNIT ON MAY 21, 2024

BENCHMARKS SET:
- TBM-1: TOP OF DRILL HOLE FOUND AT THE CORNER OF A STONE WALL LOCATED AT THE NORTHWESTERLY CORNER OF PROPOSED LOT 14-39-0, AS SHOWN HEREON. EL= 273.57'
- TBM-2: TOP OF DRILL HOLE FOUND IN STONE WALL LOCATED AT THE SOUTHWESTERLY CORNER OF PROPOSED LOT 14-39-0, AS SHOWN HEREON. EL= 242.21'
- TBM-3: TOP OF IRON ROD LOCATED AT THE SOUTHERLY CORNER OF PROPOSED LOT 14-39-0, AS SHOWN HEREON. EL= 268.36'
- TBM-4: TOP OF DRILL HOLE FOUND IN STONE WALL LOCATED ON THE NORTHERLY PROPERTY LINE, APPROXIMATELY 230 FEET FROM THE NORTHEASTERLY CORNER OF PROPOSED LOT 14-39-0, AS SHOWN HEREON. EL= 303.29'

NOTES (CONT.)

8. EASEMENTS, RIGHTS, AND RESTRICTIONS SHOWN OR IDENTIFIED ARE THOSE WHICH WERE FOUND DURING RESEARCH PERFORMED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS. OTHER RIGHTS, EASEMENTS, OR RESTRICTIONS MAY EXIST WHICH A TITLE EXAMINATION OF SUBJECT PARCEL MAY DETERMINE.
9. THE LOCATION OF ANY UNDERGROUND UTILITY INFORMATION SHOWN ON THIS PLAN IS APPROXIMATE. T.F.MORAN INC. MAKES NO CLAIM TO THE ACCURACY OR COMPLETENESS OF UNDERGROUND UTILITIES SHOWN. PRIOR TO ANY EXCAVATION ON SITE THE CONTRACTOR SHALL CONTACT DIG SAFE AT 811.
10. THE INFORMATION SHOW HEREON IS FROM AN ACTUAL SURVEY PREFORMED BY THIS OFFICE FROM MAY THROUGH JUNE 2024.
11. SHEETS SUB-01 AND SUB-02 WILL BE RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS.
12. A COMPLETE SET OF SUBDIVISION PLANS WILL BE ON FILE AT THE TOWN OF LONDONDERRY.
13. THE USE OF THE EXISTING LOT 14-39 IS RESIDENTIAL AND OPEN WOODLAND. THE PROPOSED USE OF LOT 14-39 AFTER THE SUBDIVISION IS RESIDENTIAL AND OPEN WOODLAND, THE PROPOSED USE OF THE PROPOSED LOT 14-39-2 IS AN ORGANIC WASTE PROCESSING FACILITY.
14. THE EXISTING RESIDENTIAL HOUSE IS SERVICED BY AN ON-SITE EFFLUENT DISPOSAL SYSTEM.
15. THE PROPOSED LOT 14-39-2 SHALL BE SERVICED BY TOWN OF LONDONDERRY SEWER AND MANCHESTER WATER WORKS.
16. THE EXISTING RESIDENTIAL HOUSE ON LOT 14-39 IS LISTED AS A SINGLE FAMILY HOME WITH FOUR (4) BEDROOMS.

Graphic Scale

100' 50' 0' 100' 200' 300' 400'

1" = 100'

UTILITY PROVIDERS

WATER: MANCHESTER WATER WORKD
SEWER: TOWN OF LONDONDERRY
GAS: NATIONAL GRID
ELECTRICITY: EVERSOURCE

LOT AREAS TABLE		
LOT	AREA (SF)	AREA (ACRES)
14-39 (EXIST)	2,155,133 SF	49.473 AC
14-39 (REMAINDER)	1,487,887 SF	34.157 AC
14-39-2 (PROPOSED)	667,168 SF	15.316 AC

SURVEYOR'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR THOSE UNDER MY DIRECT SUPERVISION. FURTHER, THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY MADE BY THIS OFFICE IN MAY OF 2024. SAID SURVEY HAS AN ERROR OF CLOSURE OF NOT LESS ACCURACY THAN ONE PART IN TEN THOUSAND (1:10,000).

STATE OF NEW HAMPSHIRE — No. 714 MICHAEL R. DAHLBERG — LICENSED LAND SURVEYOR

Michael R Dahlberg 12/22/2025
LICENSED LAND SURVEYOR DATE

Michael R Dahlberg
SIGNATURE

OWNER'S SIGNATURE

OWNER OR REPRESENTATIVE 12/22/2025 DATE

Approved by the Londonderry, NH Planning Board for Phase _____
on Date: _____
Certified by: _____

TAX MAP 14 LOT 39-2 AND 39

SUBDIVISION PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
PURPOPURPOSEENERGY-LONDONDERRY, LLC
PO BOX 4345, WINDHAM, NH 03087

SCALE: 1" = 100' **SEPTEMBER 8, 2025**

TFM Civil Engineers, Structural Engineers, Traffic Engineers, Land Surveyors, Landscape Architects, Scientists
48 Constitution Drive, Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE		DR	TNB	FB	2229/2230	
	18252.01	CK	MRD	CADFILE	18252-01 Survey	SUB-1 OF 8

SEE SHEETS SUB-3 OF 8 THROUGH SUB-8 OF 8 FOR 40 SCALE DETAIL OF ENTIRE SITE.
SHEETS SUB-1 OF 8 THROUGH SUB-8 OF 8 WILL BE ON FILE AT THE PLANNING & ECONOMIC DEVELOPMENT DEPARTMENT OF THE TOWN OF LONDONDERRY

WETLAND SCIENTIST CERTIFICATION

JURISDICTIONAL WETLANDS SHOWN ON THIS PLAN WERE DELINEATED ON AUGUST 16, 2024 BY CHRISTOPHER K. DANFORTH CWS #077. THE WETLANDS WERE DELINEATED ACCORDING TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (1987) AND THE REGIONAL SUPPLEMENT TO THE CORPS OF ENGINEERS WETLAND DELINEATION MANUAL: NORTHCENTRAL AND NORTHEAST REGION, VERSION 2, JANUARY 2012. DOMINANT HYDRIC SOILS WITHIN THE WETLAND(S) WERE IDENTIFIED USING "FIELD INDICATORS OF HYDRIC SOILS OF THE UNITED STATES" A GUIDE FOR IDENTIFYING AND DELINEATING HYDRIC SOILS, NRCS, VERSION 8.1, 2017. DOMINANCE OF HYDROPHYTIC VEGETATION WAS DETERMINED USING THE USACE NATIONAL WETLAND PLANT LIST, NWPL 2016 VERSION 3.3 HTTP://WETLAND_PLANTS.USACE.ARMY.MIL.

STATE OF NEW HAMPSHIRE — CHRISTOPHER K. DANFORTH — No. 077 — CERTIFIED WETLAND SCIENTIST — 8/28/2024

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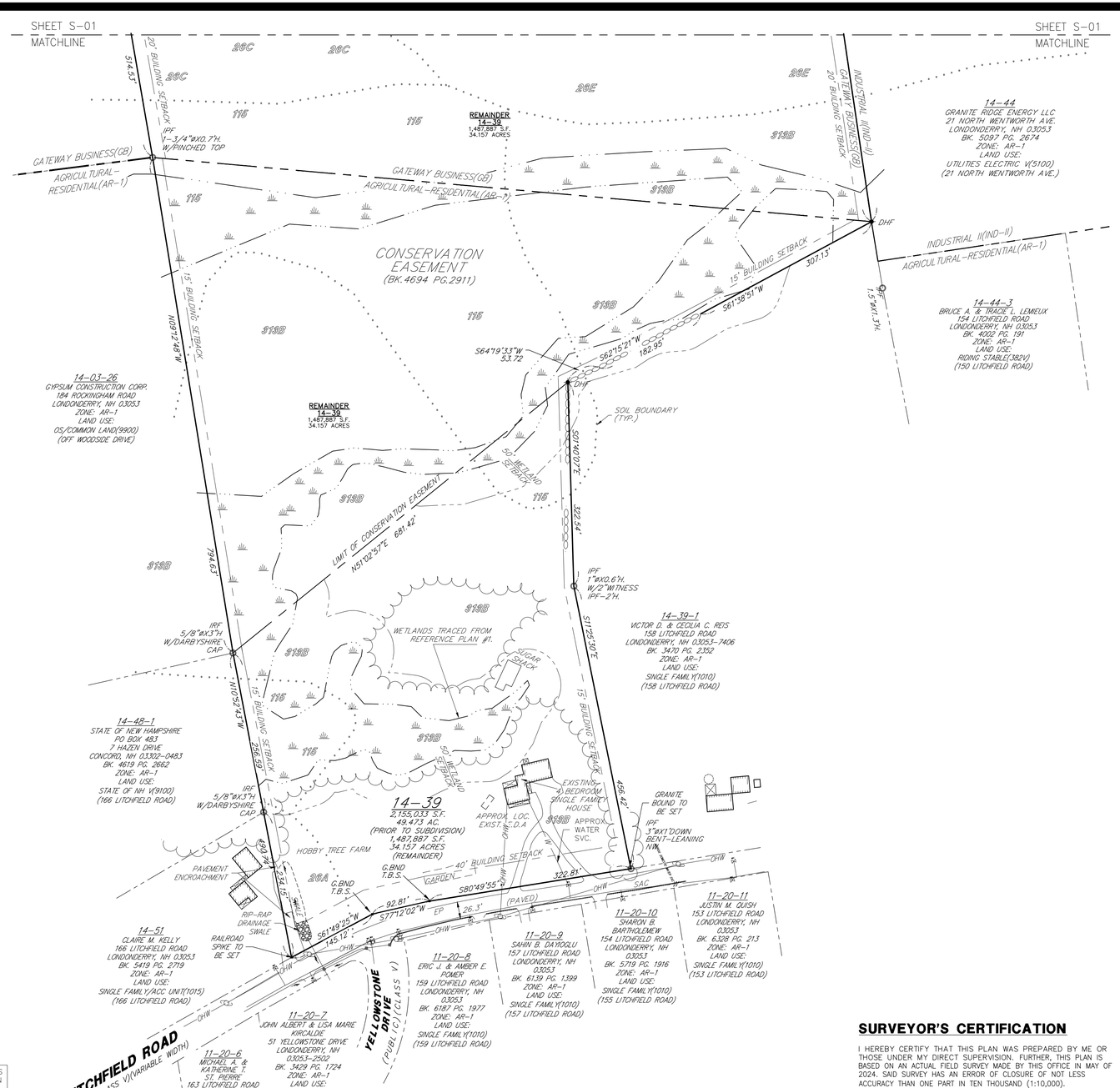
CONTACT DIG SAFE 72 BUSINESS HOURS PRIOR TO CONSTRUCTION "IT'S THE LAW"
811 Dig Safe MA-ME-NH-RI-VT

REV.	DATE	DESCRIPTION	DR	CK
2	12-18-25	REVISED PER TOWN REVIEW COMMENTS	JD	MRD
1	11-24-25	ADDITIONS PER REVIEW COMMENTS	MRD	MRD

Dec 23, 2025 - 2:34pm
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\Carlson Survey\Dwgs\18252-02 SUBDIVISION PLAN.dwg

LEGEND

- G.BND / T.B.S. — GRANITE BOUND TO BE SET
- GRANITE BOUND (FOUND)
- IRON PIN (FOUND)
- DRILL HOLE (FOUND)
- UTILITY POLE
- GUY WIRE
- BENCHMARK
- WV — WATER VALVE
- HYDRANT
- CATCH BASIN
- DIRECTION OF DRAINAGE FLOW
- EP — EDGE OF PAVEMENT
- SAC — SLOPED ASPHALT CURB
- OHW — OVERHEAD WIRES
- STONEWALL
- 302 — 2' CONTOUR
- 280 — 10' CONTOUR
- SOILS BOUNDARY
- 26A — SOILS MAP UNIT SYMBOL
- WETLAND DELINEATION
- 5-12 — WETLAND FLAG LOCATION
- WETLAND SETBACK
- BUILDING SETBACK
- ZONING DISTRICT BOUNDARY
- PROPERTY BOUNDARY
- EASEMENT LINE
- W — WATER LINE
- G — GAS LINE
- D — DRAIN LINE
- S — SEWER LINE
- ABUTTING PROPERTY LINE



REFERENCE PLANS

1. STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION, BEDFORD-MANCHESTER-LONDONDERRY-LITCHFIELD-MERRIMACK 11512, NHDOT PARCEL 1051, TAX MAP 14, LOT 39, PLAN OF WETLAND IMPACT MITIGATION SITES FOR STATE OF NEW HAMPSHIRE, LITCHFIELD ROAD, LONDONDERRY, N.H. SCALE: 1"=100', DATED: OCTOBER 25, 2007, PREPARED BY PAUL M. DARBYSHIRE ASSOCIATES. R.C.R.D. PLAN NO. 35156, PAGE 26.
2. SUBDIVISION PLAN OF LAND, WEBCO DEVELOPMENT CORP., LONDONDERRY, N.H., SCALE: 1"=200', DATED: MARCH 4, 1975, PREPARED BY THOMAS F. MORAN, INC. R.C.R.D. PLAN NO. D-5114.
3. FEDERAL AVIATION ADMINISTRATION, LONDONDERRY, N.H., MANCHESTER MUNICIPAL AIRPORT, ASR, PROPERTY PLAN RECORD, SCALE: 1"=100', DATED: MARCH 11, 1980, PREPARED BY DAVIS, BENOIT & TESSIER, INC. R.C.R.D. PLAN NO. D-9464.
4. FINAL SUBDIVISION PLAN, TAX MAP 11, LOT 12, COURTLAND ESTATES, SCALE: 1"=50', DATED: MARCH 27, 1985, PREPARED BY RONALD R. BURD, INC. R.C.R.D. PLAN NO. D-13547.
5. ECOLOGICAL INDUSTRIAL PARK, WENTWORTH AVENUE, LONDONDERRY, NEW HAMPSHIRE, SCALE: AS SHOWN, DATED: OCTOBER 20, 1999, PREPARED BY TF MORAN, INC. R.C.R.D. PLAN NO. D-27991.

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Graphic Scale

100' 50' 0' 100' 200' 300' 400'

1" = 100'

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STATE OF NEW HAMPSHIRE — CHRISTOPHER K. DANFORTH — 8/28/2024 — No. 077 — CERTIFIED WETLAND SCIENTIST

SURVEYOR'S CERTIFICATION

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Michael R Dahlberg — 12-22-2025
LICENSED LAND SURVEYOR — DATE

STATE OF NEW HAMPSHIRE — No. 714 — MICHAEL R. DAHLBERG — LICENSED LAND SURVEYOR — SIGNATURE

OWNER'S SIGNATURE

12/22/2025
OWNER OR REPRESENTATIVE — DATE

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_____
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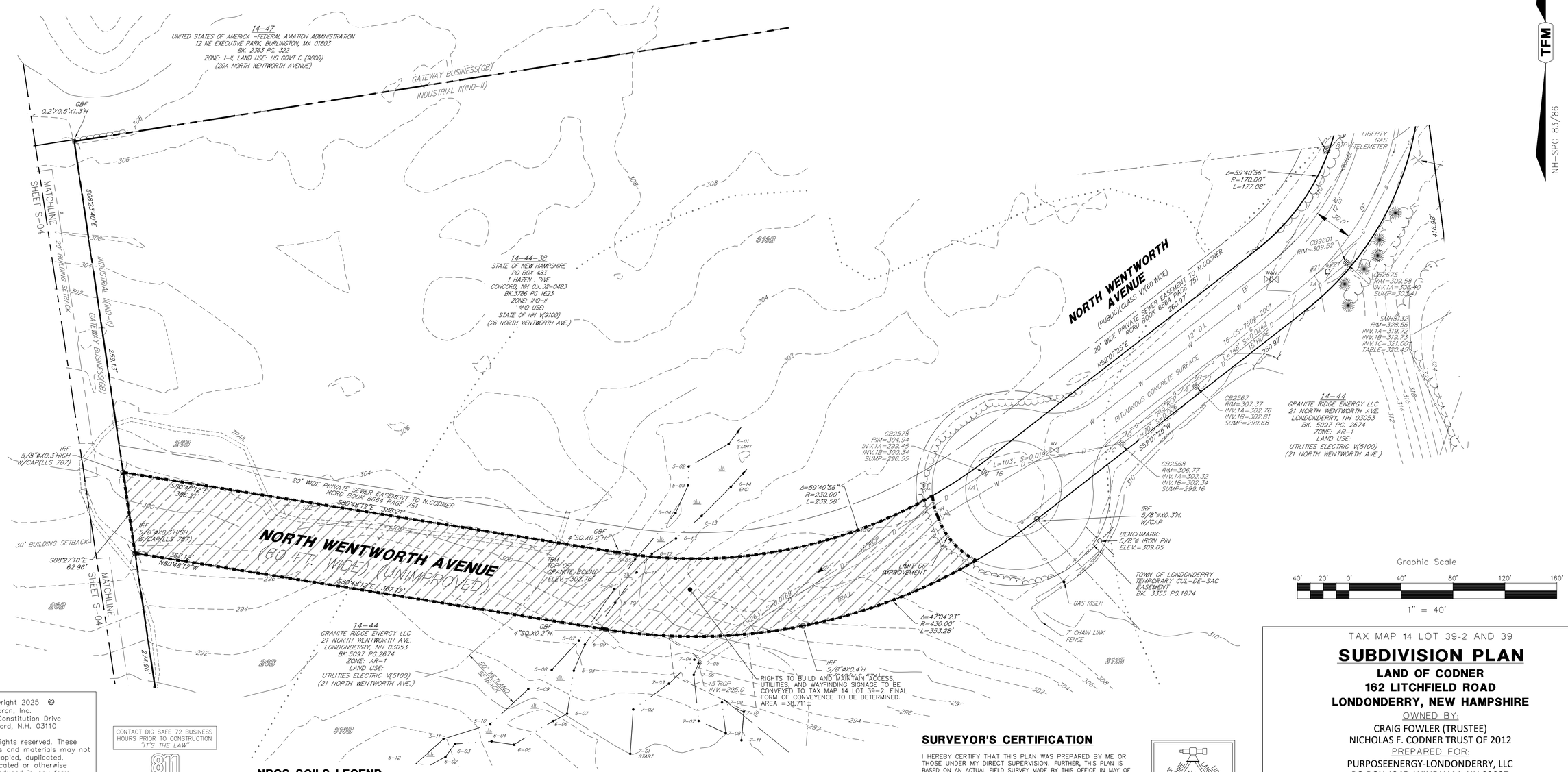
LEGEND

STONE BOUND (FOUND)	SLOPED ASPHALT CURB SAC	BUILDING SETBACK		WETLAND SETBACK	
IRON PIN (FOUND)	OVERHEAD WIRES OHW	ZONING DISTRICT BOUNDARY		EDGE OF PAVEMENT EP	
DRILL HOLE (FOUND)	STONEWALL	PROPERTY BOUNDARY		DRAIN LINE D	
UTILITY POLE	2' CONTOUR 302	EASEMENT LINE		SEWER LINE S	
GUY WIRE	10' CONTOUR 250	WATER LINE W		ABUTTING PROPERTY LINE	
BENCHMARK	CATCH BASIN	GAS LINE G		WETLAND DELINEATION	
WATER VALVE WV	SOILS MAP UNIT SYMBOL 26A	SOILS BOUNDARY		WETLAND FLAG LOCATION 5-12	
HYDRANT					



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1	12-22-25	REVISED PER TOWN REVIEW COMMENTS	JD	MRD

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26B	WINDSOR LOAMY SAND, 3 TO 8 PERCENT SLOPES
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26E	WINDSOR LOAMY SAND, 15 TO 60 PERCENT SLOPES
45B	MONTAUK FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES, VERY STONY
115	SCARBORO MUCK, COASTAL LOWLAND, 0 TO 3 PERCENT SLOPES
313B	DEERFIELD LOAMY FINE SAND, 3 TO 8 PERCENT SLOPES

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Michael R Dahlberg 12-22-2025
LICENSED LAND SURVEYOR DATE

STATE OF NEW HAMPSHIRE No. 714 MICHAEL R. DAHLBERG LICENSED LAND SURVEYOR Michael R Dahlberg SIGNATURE

OWNER'S SIGNATURE

OWNER OR REPRESENTATIVE DATE 12/22/2025

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	CK MRD	CADFILE 18252-01 Survey		

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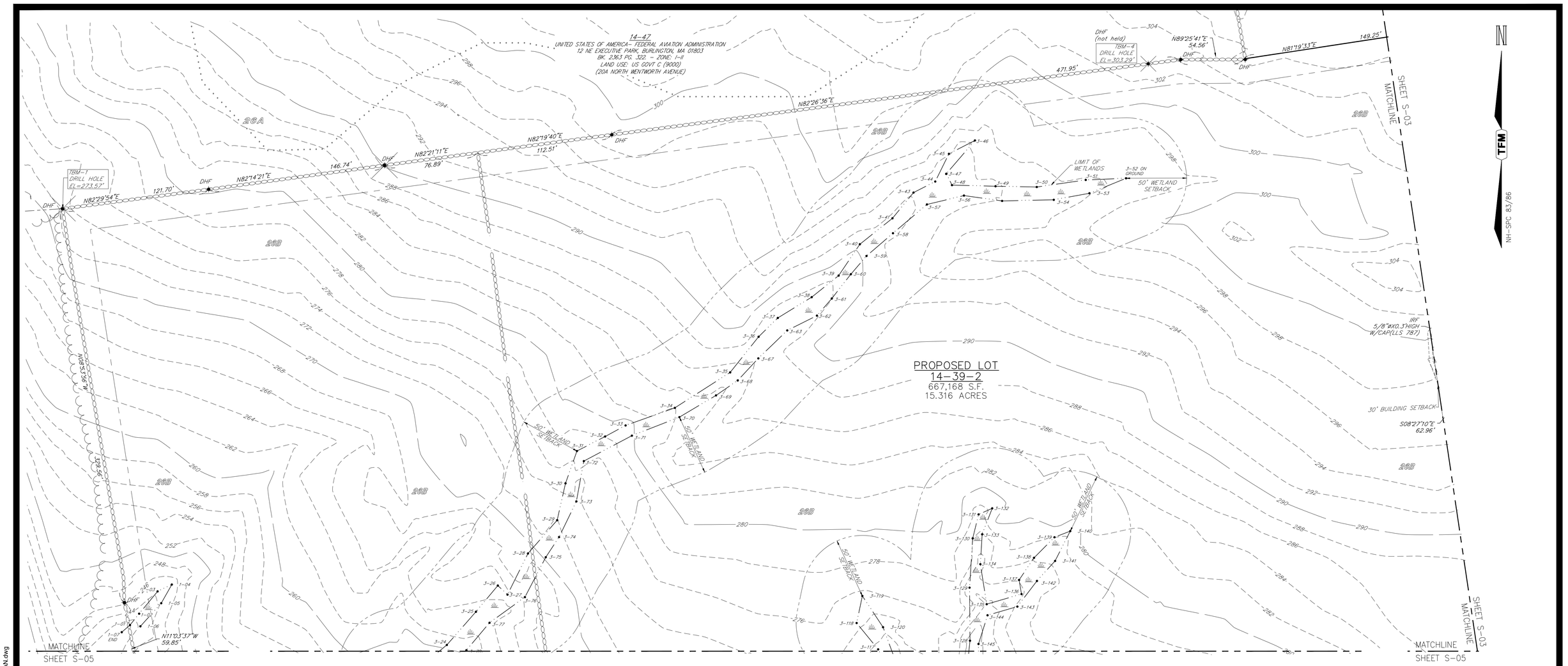

LEGEND

STONE BOUND (FOUND)	SLOPED ASPHALT CURB	SAC	BUILDING SETBACK
IRON PIN (FOUND)	OVERHEAD WIRES	OHW	ZONING DISTRICT BOUNDARY
DRILL HOLE (FOUND)	STONEWALL		PROPERTY BOUNDARY
UTILITY POLE	2' CONTOUR	302	EASEMENT LINE
GUY WIRE	10' CONTOUR	280	WATER LINE W
BENCHMARK	SOILS BOUNDARY		GAS LINE G
WATER VALVE	SOILS MAP UNIT SYMBOL		DRAIN LINE D
HYDRANT	WETLAND DELINEATION		SEWER LINE S
CATCH BASIN	WETLAND FLAG LOCATION	5-12	ABUTTING PROPERTY LINE
MAILBOX	WETLAND SETBACK		
EDGE OF PAVEMENT	DIRECTION OF DRAINAGE FLOW		

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Michael R Dahlberg — 12-22-2025
LICENSED LAND SURVEYOR — DATE

STATE OF NEW HAMPSHIRE LICENSED LAND SURVEYOR No. 714 MICHAEL R. DAHLBERG SIGNATURE

OWNER'S SIGNATURE — 12/22/2025
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TAX MAP 14 LOT 39-2 AND 39

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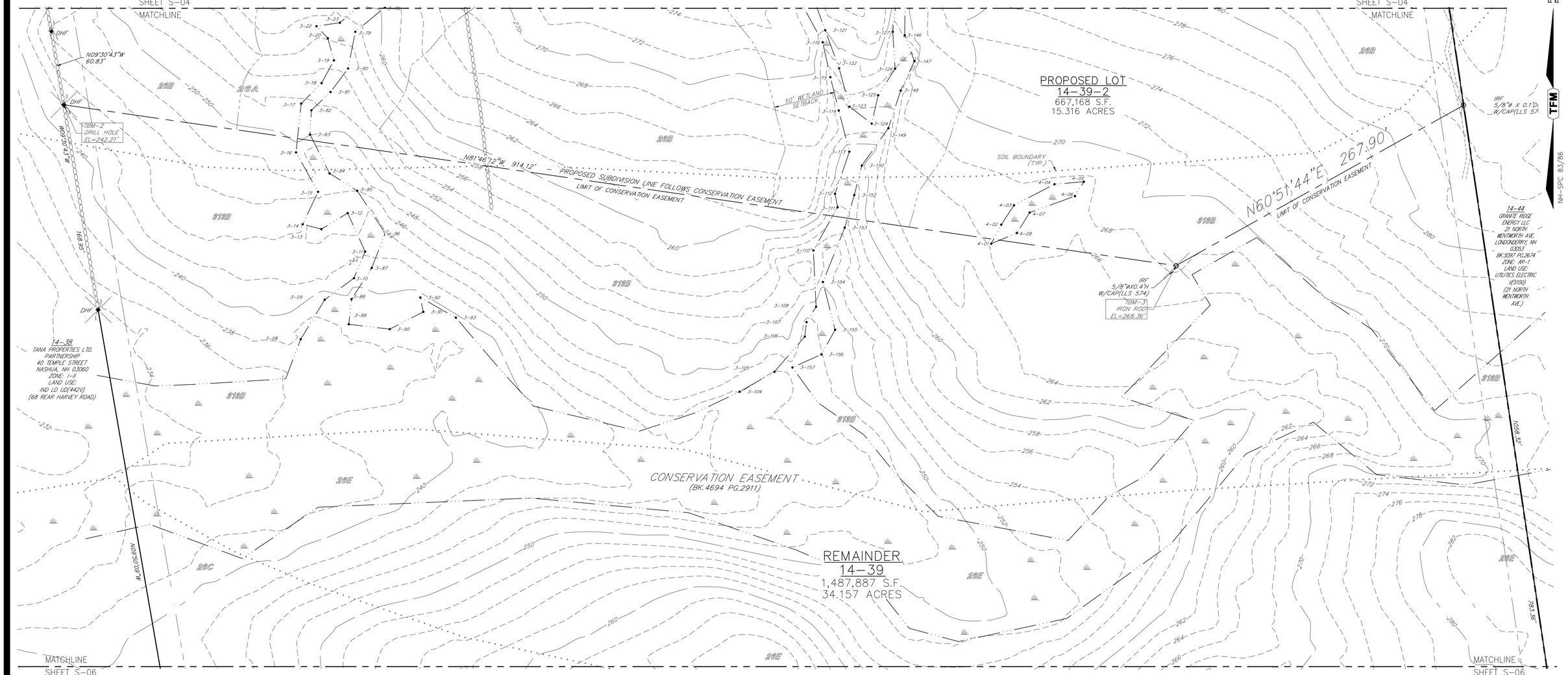

LEGEND

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Graphic Scale

40' 20' 0' 40' 80' 120' 160'

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WETLAND NOTE

THE WETLANDS DEPICTED SOUTH OF THE PROPOSED LOT LINE WITHIN THE EXISTING CONSERVATION EASEMENT WERE DIGITIZED FROM PLANS OF RECORD PREPARED FOR THE STATE OF NEW HAMPSHIRE AND RECORDED AT THE ROCKINGHAM COUNTY REGISTRY OF DEEDS AS PLAN #35156 SHEET 26.

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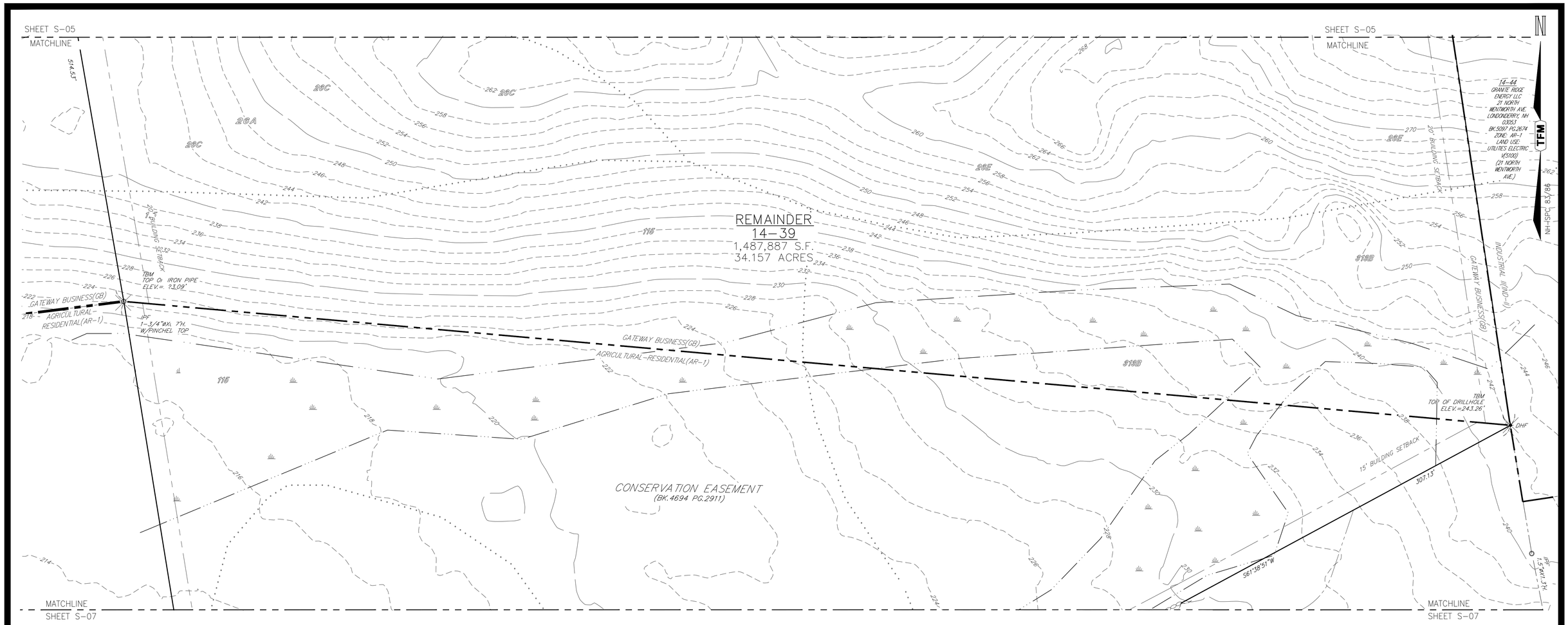

LEGEND

STONE BOUND (FOUND)	SLOPED ASPHALT CURB	SAC	BUILDING SETBACK
IRON PIN (FOUND)	OVERHEAD WIRES	OHW	ZONING DISTRICT BOUNDARY
DRILL HOLE (FOUND)	STONEWALL		PROPERTY BOUNDARY
UTILITY POLE	2' CONTOUR	302	EASEMENT LINE
GUY WIRE	10' CONTOUR	280	WATER LINE W
BENCHMARK	SOILS BOUNDARY		GAS LINE G
WATER VALVE	SOILS MAP UNIT SYMBOL		DRAIN LINE D
HYDRANT	WETLAND DELINEATION		SEWER LINE S
CATCH BASIN	WETLAND FLAG LOCATION	5-12	ABUTTING PROPERTY LINE
MAILBOX	WETLAND SETBACK		
EDGE OF PAVEMENT	DIRECTION OF DRAINAGE FLOW		

NRCS SOILS LEGEND

SOILS INFORMATION SHOWN HEREON IS GRAPHICALLY REPRODUCED FROM THE USDA NATURAL RESOURCES CONSERVATION SERVICE, NATIONAL COOPERATIVE SOIL SURVEY OF ROCKINGHAM COUNTY, NEW HAMPSHIRE.

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26B	WINDSOR LOAMY SAND, 3 TO 8 PERCENT SLOPES
26C	WINDSOR LOAMY SAND, 8 TO 15 PERCENT SLOPES
26E	WINDSOR LOAMY SAND, 15 TO 60 PERCENT SLOPES
45B	MONTAUK FINE SANDY LOAM, 0 TO 8 PERCENT SLOPES, VERY STONY
115	SCARBORO MUCK, COASTAL LOWLAND, 0 TO 3 PERCENT SLOPES
313B	DEERFIELD LOAMY FINE SAND, 3 TO 8 PERCENT SLOPES

Graphic Scale

40' 20' 0' 40' 80' 120' 160'

1" = 40'

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"IT'S THE LAW"
811 Dig Safe
MA-ME-NH-RI-VT

REV.	DATE	DESCRIPTION	DR	CK
1	12-22-25	REVISED PER TOWN REVIEW COMMENTS	JD	MRD

WETLAND NOTE

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Michael R Dahlberg 12-22-2025
LICENSED LAND SURVEYOR DATE

STATE OF NEW HAMPSHIRE — No. 714 — MICHAEL R. DAHLBERG — LICENSED LAND SURVEYOR
Michael R Dahlberg
SIGNATURE

OWNER'S SIGNATURE

OWNER OR REPRESENTATIVE 12-22-2025 DATE

TAX MAP 14 LOT 39-2 AND 39

SUBDIVISION PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
PURPOSEENERGY-LONDONDERRY, LLC
PO BOX 4345, WINDHAM, NH 03087

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
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FILE		DR	TNB	FB	2229/2230	
	18252.01	CK	MRD	CADFILE	18252-01 Survey	SUB-6 OF 8

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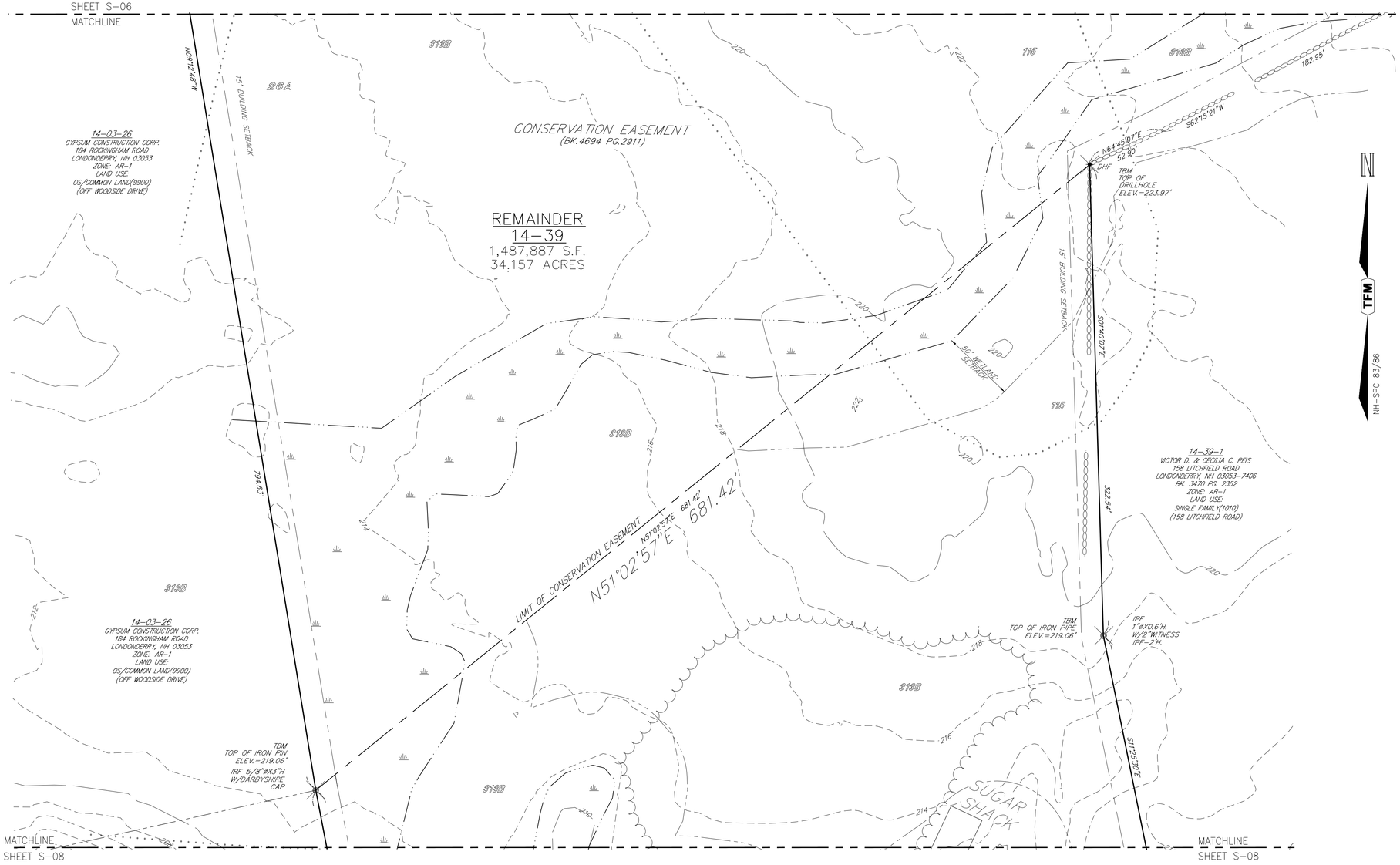

LEGEND

- STONE BOUND (FOUND)
- IRON PIN (FOUND)
- DRILL HOLE (FOUND)
- UTILITY POLE
- GUY WIRE
- BENCHMARK
- WATER VALVE
- HYDRANT
- CATCH BASIN
- MAIL BOX
- DIRECTION OF DRAINAGE FLOW
- EP — EDGE OF PAVEMENT
- SAC — SLOPED ASPHALT CURB
- OHW — OVERHEAD WIRES
- STONEWALL
- 302 — 2' CONTOUR
- 280 — 10' CONTOUR
- SOILS BOUNDARY
- SOILS MAP UNIT SYMBOL
- WETLAND DELINEATION
- 5-12 — WETLAND FLAG LOCATION
- WETLAND SETBACK
- BUILDING SETBACK
- ZONING DISTRICT BOUNDARY
- PROPERTY BOUNDARY
- EASEMENT LINE
- W — WATER LINE
- G — GAS LINE
- D — DRAIN LINE
- S — SEWER LINE
- ABUTTING PROPERTY LINE

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115	SCARBORO MUCK, COASTAL LOWLAND, 0 TO 3 PERCENT SLOPES
319B	DEERFIELD LOAMY FINE SAND, 3 TO 8 PERCENT SLOPES

Graphic Scale

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1" = 40'

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REV.	DATE	DESCRIPTION	DR	CK
1	12-22-25	REVISED PER TOWN REVIEW COMMENTS	JD	MRD

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LICENSED LAND SURVEYOR DATE

STATE OF NEW HAMPSHIRE — No. 714 — MICHAEL R DAHLBERG — LICENSED LAND SURVEYOR
Michael R Dahlberg
SIGNATURE

OWNER'S SIGNATURE

OWNER OR REPRESENTATIVE 12-22-2025
DATE

TAX MAP 14 LOT 39-2 AND 39

SUBDIVISION PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
PURPOSEENERGY-LONDONDERRY, LLC
PO BOX 4345, WINDHAM, NH 03087

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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FILE		DR	TNB	FB	2229/2230	
	18252.01	CK	MRD	CADFILE	18252-01 Survey	SUB-7 OF 8

Dec 23, 2025 - 2:02pm
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LEGEND

G.BND — GRANITE BOUND TO BE SET
T.B.S. — GRANITE BOUND (FOUND)
IRON PIN (FOUND)
DRILL HOLE (FOUND)
UTILITY POLE
GUY WIRE
BENCHMARK
WATER VALVE
HYDRANT
CATCH BASIN
MAIL BOX
DIRECTION OF DRAINAGE FLOW
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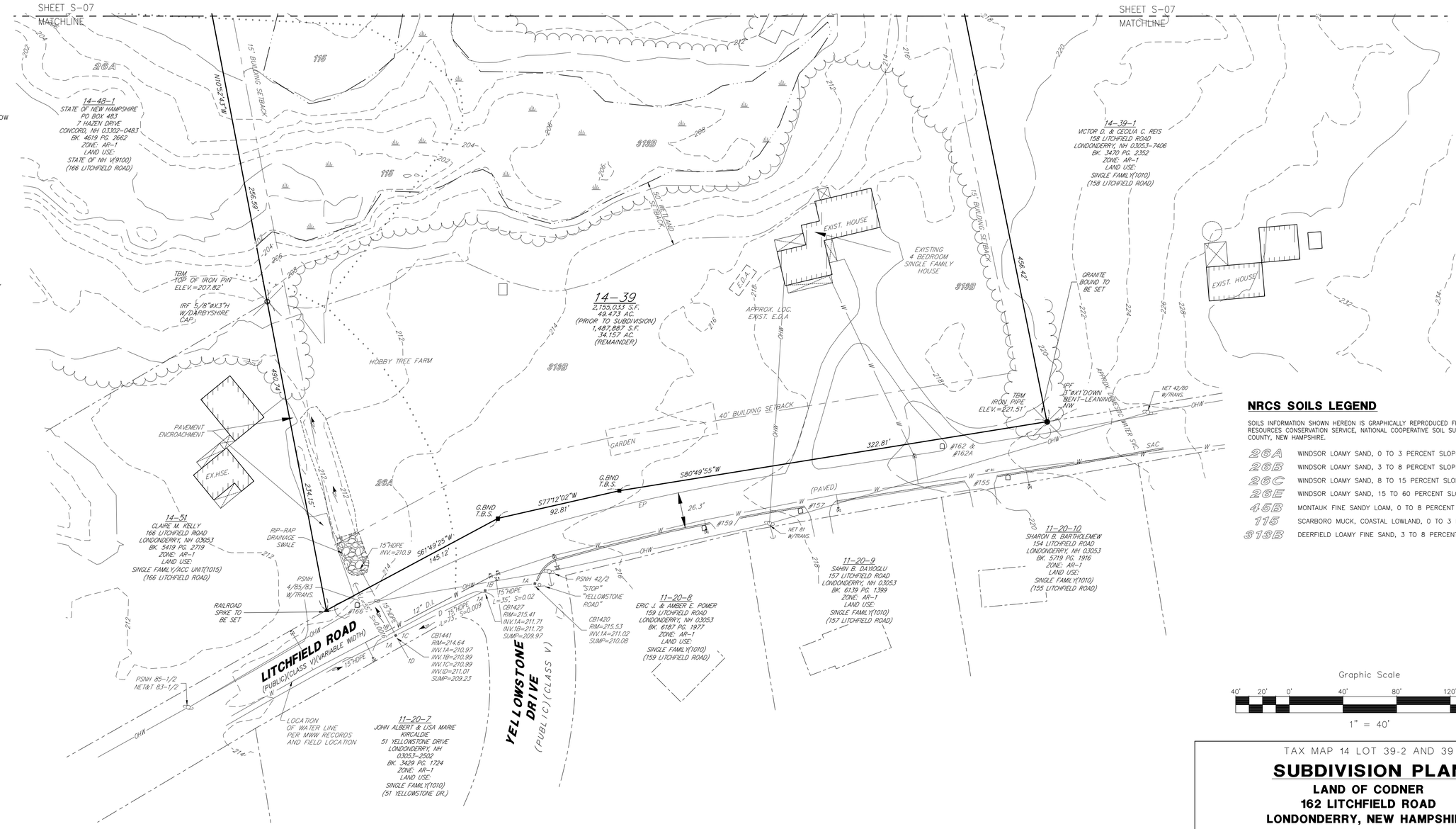

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Graphic Scale
40' 20' 0' 40' 80' 120' 160'
1" = 40'

N
TFM
NH-SPC 83/86

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REV.	DATE	DESCRIPTION	DR	CK
1	12-22-25	REVISED PER TOWN REVIEW COMMENTS	JD	MRD

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LICENSED LAND SURVEYOR — DATE

STATE OF NEW HAMPSHIRE — No. 714 — MICHAEL R DAHLBERG — LICENSED LAND SURVEYOR
Michael R Dahlberg
SIGNATURE

OWNER'S SIGNATURE — 12/22/2025
OWNER OR REPRESENTATIVE — DATE

TAX MAP 14 LOT 39-2 AND 39

SUBDIVISION PLAN

LAND OF CODNER
162 LITCHFIELD ROAD
LONDONDERRY, NEW HAMPSHIRE

OWNED BY:
CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
PREPARED FOR:
PURPOSEENERGY-LONDONDERRY, LLC
PO BOX 4345, WINDHAM, NH 03087

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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Structural Engineers
Traffic Engineers
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FILE					
18252.01	DR	TNB	FB	2229/2230	SUB-8 OF 8
	CK	MRD	CADFILE	18252-01 Survey	

Dec 23, 2025 - 2:02pm
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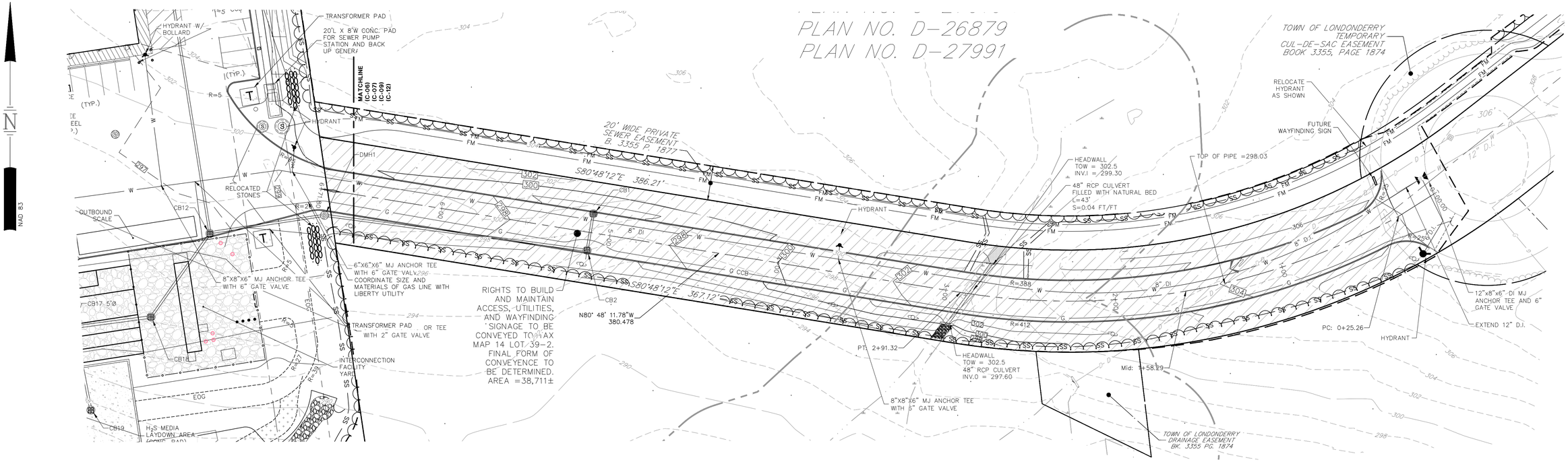

PROPOSED DRIVEWAY

HORIZONTAL SCALE 1"=30'
30 15 0 30
VERTICAL SCALE 1"=3'
3 0 3

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

DRIVEWAY PLAN & PROFILE

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON No. 14086
LICENSED PROFESSIONAL ENGINEER
12/18/25

REV	DATE	DESCRIPTION	DR	CK
2	11/3/2025	TOWN SEWER COMMENTS	JD	NG
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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Civil Engineers
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Traffic Engineers
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Bedford, NH 03110
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Fax (603) 472-9747
www.tfmoran.com

FILE 18252-02 | DR | FB | CADFILE: 18252-02 SITE PLAN | CK | C-13

Dec 23, 2025 - 2:19pm
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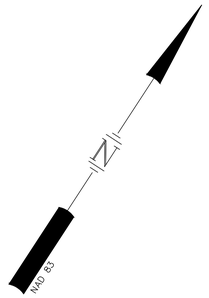
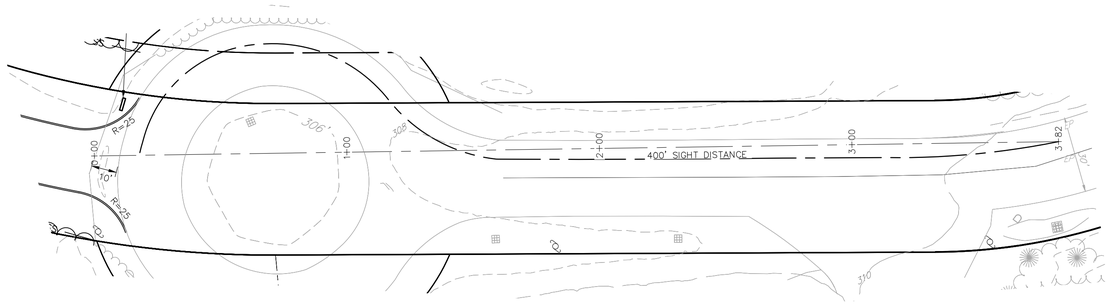
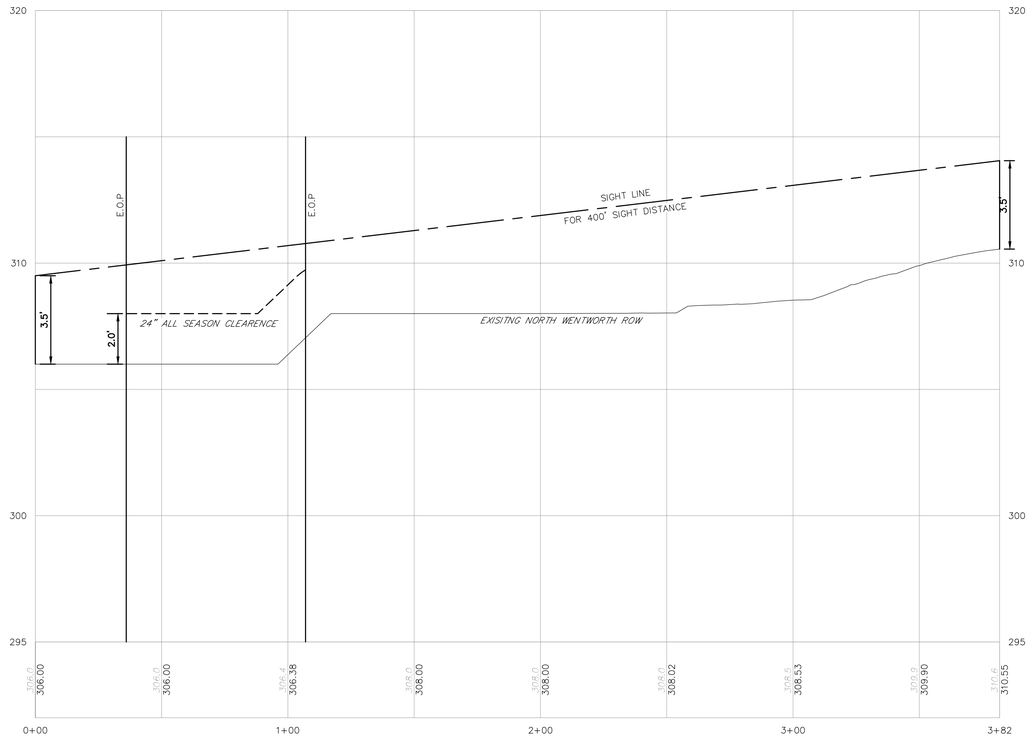
NOTES

1. POSTED SPEED LIMIT ON NORTH WENTWORTH AVE. IS 30 MPH.
2. TOWN OF LONDONDERRY SIGHT DISTANCE CALCULATIONS:

   SUBDIVISION REGULATIONS SECTION 3.09.F.2 & EHXIBIT D3
   MINIMUM ALL SEASON SIGHT DISTANCE = 365–FEET (NON–RESIDNETIAL) WHICH IS EXCEEDED.







SITE DISTANCE

HORIZONTAL SCALE 1"=30'
30 15 0 30
VERTICAL SCALE 1"=3'
3 0 3

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

SIGHT DISTANCE

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS
25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
OWNED BY
PREPARED FOR
PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/18/25

REV	DATE	DESCRIPTION	DR	CK
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FILE	DR		FB		
18252–02	CK		CADFILE	18252–02 SITE PLAN	SD–1

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STORMWATER MANAGEMENT REPORT

Southern New Hampshire Green Energy Campus

Tax Map 14, Lot 39
North Wentworth Avenue
Londonderry, NH

Prepared On:

September 12th, 2025

Revised September 16th, 2025

Revised December 18, 2025

Prepared for:

PurposeEnergy-Londonderry, LLC
25 Pelham Road, Suite 102
Salem, NH 03053

TFM Job Number:
18252-02

Prepared by:

TFM®
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

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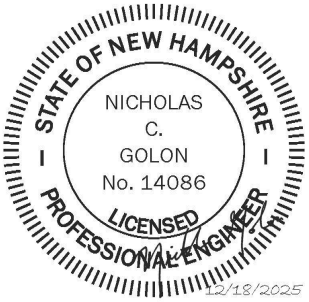

ALTERATION OF TERRAIN PERMIT APPLICATION

Water Division / Land Resources Management

Check the status of your application

RSA / Rule: RSA 485-A:17, Env-Wq 1500

Administrative Use Only	Administrative Use Only	Administrative Use Only	File Number:
			Check No.
			Amount:
			Initials:

1. APPLICANT INFORMATION (INTENDED PERMIT HOLDER)			
Applicant Name: PurposeEnergy-Londonderry, LLC	Contact Name: Sean O'Neill		
Email: oneill@purposeenergy.com	Daytime Telephone: 617.202.9156		
Mailing Address: P.O. Box 4345			
Town/City: Windham	State: NH	ZIP Code: 03087	
2. APPLICANT'S AGENT INFORMATION If none, check here: ☐			
Agent's Name: TFMoran, Inc.	Contact Name: Nicholas Golon		
Email: ngolon@tfmoran.com	Daytime Telephone: 603.472.4488		
Address: 48 Constitution Dr			
Town/City: Bedford	State: NH	ZIP Code: 03110	
3. PROPERTY OWNER INFORMATION (IF DIFFERENT FROM APPLICANT) Check here if more than one property owner, and attach additional sheets as necessary: ☐			
Owner's Name: Codner Nicholas F Trust 2012	Contact Name: Nicholas F. Codner		
Email: ncodner@londonderrynh.org	Daytime Telephone: (603) 432-1100 ext.161		
Mailing Address: 162 Litchfield Road			
Town/City: Londonderry	State: NH	ZIP Code: 03079	
4. PROPERTY OWNER'S AGENT INFORMATION If none, check here: ☐			
Business Name: PurposeEnergy-Londonderry, LLC	Contact Name: Sean O'Neill		
Email: oneill@purposeenergy.com	Daytime Telephone: 617.202.9156		
Address: P.O. Box 4345			
Town/City: Windham	State: NH	ZIP Code: 03087	
5. CONSULTANT INFORMATION If none, check here: ☐			
Engineering Firm: TFMoran, Inc	Contact Name: Nicholas Golon		
Email: ngolon@tfmoran.com	Daytime Telephone: 603.472.4488		
Address: 48 Constitution Dr			
Town/City: Bedford	State: NH	ZIP Code: 03110	

6. PROJECT TYPE

☐ Excavation Only ☐ Residential ■ Commercial ☐ Golf Course ☐ School ☐ Municipal
☐ Agricultural ☐ Land Conversion ☐ Other:

7. PROJECT LOCATION INFORMATION

Project Name: Southern New Hampshire Green Energy Campus

Street/Road Address: 162 Litchfield Road

Town/City: Londonderry	County: Rockingham

Tax Map: 14	Block:	Lot Number: 39	Unit:

Post-development, will the proposed project withdraw from or directly discharge to any of the following? If yes, identify the purpose.

1. Stream or Wetland Purpose:	■ Yes ☐ No	☐ Withdrawal	■ Discharge
2. Artificial pond created by impounding a stream or wetland Purpose:	☐ Yes ■ No	☐ Withdrawal	☐ Discharge
3. Unlined pond dug into the water table Purpose:	☐ Yes ■ No	☐ Withdrawal	☐ Discharge

Post-development, will the proposed project discharge to:

- Within one-quarter mile of a surface water impaired for phosphorus and/or nitrogen? ■ No ☐ **Yes**
- Within one-quarter mile of a Class A surface water or within the watershed area of an Outstanding Resource Water?
  ■ No ☐ **Yes**
- Within one-quarter mile of a lake or pond not covered previously? ■ No ☐ **Yes**

Is the project a High Load area? ☐ Yes ■ No
If yes, specify the type of high load land use or activity:

Is the project within a Water Supply Intake Protection Area (WSIPA)? ☐ Yes ☐ No
Is the project within a Groundwater Protection Area (GPA)? ☐ Yes ☐ No
Will the well setbacks identified in Env-Wq 1508.02 be met? ■ Yes ☐ No
For more details on the restrictions in these areas, read Chapter 3.1 in Volume 2 of the NH Stormwater Manual.

Is any part of the property within the 100-year floodplain? ☐ Yes ☐ No
If yes: Cut volume: cubic feet within the 100-year floodplain.
Fill volume: cubic feet within the 100-year floodplain.

☐ Project *is* within **¼ mile of a designated river** Name of River:
■ Project *is not* within ¼ mile of a designated river.

☐ Project *is* within a Coastal/Great Bay Region community.
■ Project *is not* within a Coastal/Great Bay Region community.

8. BRIEF PROJECT DESCRIPTION (PLEASE DO NOT REPLY "SEE ATTACHED")

The construction of a organic waste processing facility on a wooded lot with access from North Wentworth Avenue in Londonderry, NH.

lrm@des.nh.gov or (603) 271-2147
PO Box 95, Concord, NH 03303-0095
des.nh.gov

9. IF APPLICABLE, DESCRIBE ANY WORK STARTED PRIOR TO RECEIVING PERMIT.

N/A

10. ADDITIONAL REQUIRED INFORMATION

A. Date a copy of the application was sent to the municipality, as required by Env-Wq 1503.05(e) (Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the governing body of each municipality in which the project is proposed): 09/12/2025

(Attach proof of delivery)

B. Date a copy of the application was sent to the local river advisory committee, if required by Env-Wq 1503.05(e) (Env-Wq 1503.05(c)(6), requires proof that a completed application form, checklist, plans and specifications, and all other supporting materials have been sent or delivered to the Local River Advisory Committee, if the project is within ¼ mile of a designated river):

(Attach proof of delivery)

C. Type of plan required: ☐ Land Conversion ■ Detailed Development ☐ Excavation, Grading and Reclamation ☐ Steep Slope

D. Additional plans required: ■ Stormwater Drainage and Hydrologic Soil Groups ☐ Source Control ■ Chloride Management

E. Total area of disturbance, in square feet 568,650sf

F. Additional impervious cover as a result of the project, in square feet (use "-"to indicate a net reduction in impervious coverage).

Total final impervious cover, in square feet 256,118

G. Total undisturbed cover, in square feet 156,816

H. Number of lots proposed: 2

I. Total length of roadway, in linear feet: 600

J. Name(s) of receiving water(s): Merrimack River via unnamed wetland

K. Identify all other NHDES permits required for the project. For each, indicate whether an application has been filed and is pending. If the required approval has been issued, provide the permit number, registration date, or approval letter number, as applicable.

Type of Approval	Application Filed?	Pending?	If Issued
1. Water Supply Approval	☐ Yes ☐ No ☐ N/A	☐	Permit number:
2. Wetlands Permit	■ Yes ☐ No ☐ N/A	☑	Permit number:
3. Shoreland Permit	☐ Yes ☐ No ☐ N/A	☐	Registration date:
4. UIC Registration	☐ Yes ☐ No ☐ N/A	☐	Approval letter date:
5. Large/Small Community Well Approval	☐ Yes ☐ No ☐ N/A	☐	Permit number:
6. Large Groundwater Withdrawal Permit	☐ Yes ☐ No ☐ N/A	☐	Permit number:
7. Other:	☐ Yes ☐ No	Solid Waste	

L. List all species identified by the Natural Heritage Bureau as threatened or endangered or of concern:

Eastern Hognose Snake, Blanding's Turtle, New England Cottontail, Northern Black Racer, Smooth Green Snake, Spotted Turtle, Long Leaved Bluet

M. Using the NHDES OneStop Data Mapper with the Surface Water Impairment layer turned on, list the impairments identified for each receiving water. If no pollutants are listed, enter "N/A."

NA

N. Did the applicant or applicant's agent have a pre-application meeting with Alteration of Terrain Bureau staff?

☒ Yes ☐ No If yes, name of staff member: Kevin Thatcher

O. Will blasting of bedrock be required? ☐ Yes ☒ No If yes, estimated quantity of blast rock in cubic yards:
If yes, standard blasting Best Management Practices notes must be placed on the plans.

NOTE: If greater than 5,000 cubic yards of blast rock will be generated, a groundwater monitoring program must be developed and submitted to NHDES. Contact Alteration of Terrain Bureau staff for additional detail.

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11. CHECK ALL APPLICATION ATTACHMENTS THAT APPLY (SUBMIT WITH APPLICATION IN THE ORDER LISTED BELOW)

LOOSE:

- ■ Signed application form, with attached proof(s) of delivery.
- ■ Check for the application fee, calculated using the fee schedule available on the NHDES Land Development page.
- ■ Color copy of a USGS map with the property boundaries outlined (1" = 2,000' scale).
- ■ If the applicant is not the property owner, proof that the applicant will have a legal right to undertake the project on the property if a permit is issued to the applicant.

BOUND, IN A REPORT, IN THE FOLLOWING ORDER:

- ■ Copy of the signed application form and application checklist.
- ■ Copy of the check.
- ■ Copy of the USGS map with the property boundaries outlined (1" = 2,000' scale).
- ■ Narrative of the project with a summary table of the peak discharge rate for the off-site discharge points.
- ■ Printout of NHDES OneStop Mapper with "Surface Water Impairments" layer turned on.
- ■ Printout of NHDES OneStop Mapper with Alteration of Terrain screening layers turned on.
- ■ Printout of Natural Heritage Bureau DataCheck Tool letter and any relevant correspondence with New Hampshire Fish and Game.
- ■ USDA Web Soil Survey Map with project's watershed outlined.
- ■ Aerial photograph (1" = 2,000' scale with the site boundaries outlined).
- ■ Photographs representative of the site.
- ■ Groundwater recharge volume calculations (include one Best Management Practices worksheet per permit application).
- ■ Drainage analysis, stamped by a professional engineer (see "Application Checklist" at the end of this document).
- ■ Riprap apron or other energy dissipation or stability calculations.
- ■ Site Specific Soil Survey report, stamped and with a certification note prepared by the soil scientist that the survey was done in accordance with the Site Specific Soil Mapping standards of the Society of Soil Scientists of Northern New England.
- ■ Infiltration Feasibility Report (example online) [Env-Wq 1503.08(f)(3)].
- ☐ Registration and Notification Form for Stormwater Infiltration to Groundwater (UIC Registration-for underground systems only, including drywells and trenches).
- ■ Inspection and maintenance manual with, if applicable, long term maintenance agreements [Env-Wq 1503.08(g)].
- ☐ Source control plan.

PLANS:

- ■ One set of design plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details).
- ■ Pre- and post-development color-coded soil plans on 11" x 17" (see Application Checklist for details).
- ■ Pre- and post-construction drainage area plans on 34 - 36" by 22 - 24" white paper (see Application Checklist for details).

100-YEAR FLOODPLAIN REPORT:

- ☐ All information required in Env-Wq 1503.09, submitted as a separate report.

ADDITIONAL INFORMATION RE: NUTRIENTS, CLIMATE

- ☐ See Application Checklist (Attachment A) for details.

- ■ **REVIEW APPLICATION FOR COMPLETENESS. CONFIRM INFORMATION LISTED ON THE APPLICATION IS INCLUDED WITH SUBMITTAL.**

12. REQUIRED SIGNATURES

By signing below, I certify that:

- The information contained in or otherwise submitted with this application is true, complete, and not misleading to the best of my knowledge and belief;
- I understand that the submission of false, incomplete, or misleading information constitutes grounds for the department to deny the application, revoke any permit that is granted based on the information, and/or refer the matter to the board of professional engineers established by RSA 310-A:3 if I am a professional engineer; and
- I understand that I am subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641:3.

☒ **APPLICANT** ☐ **APPLICANT'S AGENT**:

Signature: S O'Neill Date: 6/11/2025

Name (print or type): Sean O'Neill Title:

☐ PROPERTY OWNER ☒ PROPERTY OWNER'S AGENT:

Signature: S O'Neill Date: Sean O'Neill

Name (print or type): Sean O'Neill Title: Agent

ALTERATION OF TERRAIN PERMIT ATTACHMENT A: APPLICATION CHECKLIST

Check each box to indicate the item has been provided, or indicate why it does not apply.

DESIGN PLANS

- ☒ Plans printed on 34 - 36" by 22 - 24" white paper.
- ☒ Professional Engineer stamp.
- ☒ Wetland delineation.
- ☒ Temporary erosion control measures.
- ☒ Treatment for all stormwater runoff from impervious surfaces such as roadways (including gravel roadways), parking areas, and nonresidential roof runoff. Guidance on treatment BMPs can be found in Volume 2, Chapter 4 of the New Hampshire Stormwater Management Manual.
- ☒ Pre-existing 2-foot contours.
- ☒ Proposed 2-foot contours.
- ☒ Drainage easements protecting the drainage/treatment structures.
- ☒ Compliance with state statute governing fill and dredge in wetlands, RSA 482- A. Note that artificial detention in wetlands is prohibited.
- ☐ Compliance with the New Hampshire Shoreland Protection Act, RSA 483-B.
- ☒ Benching – needed if you have more than 20 feet change in elevation on a 2:1 slope, 30 feet change in elevation on a 3:1 slope, 40 feet change in elevation on a 4:1 slope.
- ☒ Check to see if any proposed ponds require state dam permits.

DETAILS

- ☒ Typical roadway cross-section.
- ☒ Detention basin with inverts noted on the outlet structure.
- ☒ Stone berm level spreader.
- ☒ Outlet protection – riprap aprons.
- ☒ A general installation detail for an erosion control blanket.
- ☒ Silt fences or mulch berm.
- ☒ Storm drain inlet protection. Note that since hay bales must be embedded 4 inches into the ground, they are not to be used on hard surfaces such as pavement.
- ☐ Hay bale barriers.
- ☒ Stone check dams.
- ☒ Gravel construction exit.
- ☒ Temporary sediment trap.
- ☒ The treatment BMPs proposed.
- ☐ Any innovative BMPs proposed.

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CONSTRUCTION SEQUENCE / EROSION CONTROL

■ Note that the project must be managed to meet the requirements and intent of RSA 430:53 and Agr 3800 relative to invasive species.

■ Note that perimeter controls shall be installed prior to earth moving operations.

■ Note that temporary water diversion (swales, basins, etc.) must be used as necessary until areas are stabilized.

■ Note that ponds and swales shall be installed early on in the construction sequence (before rough grading the site).

■ Note that all ditches and swales shall be stabilized prior to directing runoff to them.

■ Note that all roadways and parking lots shall be stabilized within 72 hours of achieving finished grade.

■ Note that all cut and fill slopes shall be seeded or loamed within 72 hours of achieving finished grade

■ Note that all erosion controls shall be inspected weekly AND after every half-inch of rainfall.

■ Note the limits on the open area allowed, see Env-Wq 1505.02 for detailed information.

Example note: The smallest practical area shall be disturbed during construction, but in no case shall exceed 5 acres at any one time before disturbed areas are stabilized.

■ Note the definition of the word “stable.”

Example note: An area shall be considered stable if one of the following has occurred:

- Base course gravels have been installed in areas to be paved.
- A minimum of 85 percent vegetated growth has been established.
- A minimum of 3 inches of non-erosive material such stone or riprap has been installed.
- Or, erosion control blankets have been properly installed.

■ Note the limit of time an area may be exposed.

Example note: All areas shall be stabilized within 45 days of initial disturbance.

■ Provide temporary and permanent seeding specifications. Note that although reed canary grass is listed in the Green Book; it is a problematic species according to the Wetlands Bureau and therefore should not be specified.

■ Provide winter construction notes that meet or exceed our standards.

Standard Winter Notes:

- All proposed vegetated areas that do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized by seeding and installing erosion control blankets on slopes greater than 3:1, and seeding and placing 3 to 4 tons of mulch per acre, secured with anchored netting, elsewhere. The installation of erosion control blankets or mulch and netting shall not occur over accumulated snow or on frozen ground and shall be completed in advance of thaw or spring melt events.
- All ditches or swales which do not exhibit a minimum of 85 percent vegetative growth by October 15, or which are disturbed after October 15, shall be stabilized temporarily with stone or erosion control blankets appropriate for the design flow conditions.
- After October 15, incomplete road or parking surfaces where work has stopped for the winter season shall be protected with a minimum of 3 inches of crushed gravel per NHDOT item 304.3.

☐ Note at the end of the construction sequence that “Lot disturbance, other than that shown on the approved plans, shall not commence until after the roadway has the base course to design elevation and the associated drainage is complete and stable.” – This note is applicable to single/duplex family subdivisions, when lot development is not part of the permit.

DRAINAGE ANALYSES

Please provide double-side 8 ½" × 11" sheets where possible but, **do not** reduce the text such that more than one page fits on one side.

☐ Professional Engineer stamp.

☐ Rainfall amount obtained from the Northeast Regional Climate Center. Include extreme precipitation table as obtained from this source.

☐ Drainage analyses, in the following order:

- Pre-development analysis: Drainage diagram.
- Pre-development analysis: Area Listing and Soil Listing.
- Pre-development analysis: Node listing 1-year (if applicable), 2-year, 10-year and 50-year.
- Pre-development analysis: Full summary of the 10-year storm.
- Post-development analysis: Drainage diagram.
- Post-development analysis: Area Listing and Soil Listing.
- Post-development analysis: Node listing for the 2-year, 10-year and 50-year.
- Post-development analysis: Full summary of the 10-year storm.

☐ Review the Area Listing and Soil Listing reports

- Hydrologic Soil Groups (HSG) match the HSGs on the soil maps provided.
- There is the same or less HSG A soil area after development (check for each HSG).
- There is the same or less "woods" cover in the post-development.
- Undeveloped land was assumed to be in "good" condition.
- The amount of impervious cover in the analyses is correct.

Note: A good check is to subtract the total impervious area used in the pre-analysis from the total impervious area used in the post-analysis. For residential projects without demolition occurring, a good check is to take this change in impervious area, subtract out the roadway and divide the remaining by the number of houses or units proposed. Do these numbers make sense?

☐ Check the storage input used to model the ponds.

☐ Check to see if the artificial berms pass the 50-year storm, i.e., make sure the constructed berms on ponds are not overtopped.

☐ Check the outlet structure proposed and make sure it matches that modeled.

☐ Check to see if the total areas in the pre and post analyses are same.

☐ Confirm the correct NRCS storm type was modeled (Coos, Carroll and Grafton counties are Type II, all others Type III).

PRE- AND POST-CONSTRUCTION DRAINAGE AREA PLANS

☐ Plans printed on 34 - 36" by 22 - 24" on white paper.

☐ Submit these plans separate from the soil plans.

☐ A north arrow.

☐ A scale.

☐ Labeled subcatchments, reaches and ponds.

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- ■ Tc lines.
- ■ A clear delineation of the subcatchment boundaries.
- ■ Roadway station numbers.
- ■ Culverts and other conveyance structures.

PRE- AND POST-CONSTRUCTION COLOR-CODED SOIL PLANS

- ■ 11” × 17” sheets suitable, as long as it is readable.
- ■ Submit these plans separate from the drainage area plans.
- ■ A north arrow.
- ■ A scale.
- ■ Name of the soil scientist who performed the survey and date the soil survey took place.
- ■ 2-foot contours (5-foot contours if application is for a gravel pit) as well as other surveyed features.
- ■ Delineation of the soil boundaries and wetland boundaries.
- ■ Delineation of the subcatchment boundaries.
- ■ Soil series symbols (e.g., 26).
- ■ A key or legend identifying each soil series symbol and its associated soil series name (for example: 26 = Windsor).
- ■ The hydrologic soil group color coding (A = Green, B = yellow, C= orange, D=red, Water=blue, and Impervious = gray).

Please note that excavation projects (including gravel pits) have similar requirements to those above, with the following common exceptions or additions:

- ☐ Drainage report is not needed if site does not have off-site flow.
- ☐ 5-foot contours are allowed rather than 2-foot.
- ☐ No Professional Engineer stamp is needed on the plans.
- ☐ Add a note to the plans that the applicant must provide NHDES a written update of the project and revised plans documenting the project status every five years from the date of the Alteration of Terrain permit.
- ☐ Add reclamation notes.
- ☐ A description of the subsurface conditions to the planned depth of excavation, including the elevation of the location of the Seasonal High Water Table (SHWT), as observed and described by a certified soil scientist, or an individual holding a valid permit as a permitted designer as issued by the department’s Subsurface Systems Bureau.

For more resources, refer to the Natural Resources Conservation Service’s Vegetating New Hampshire Sand and Gravel Pits publication.

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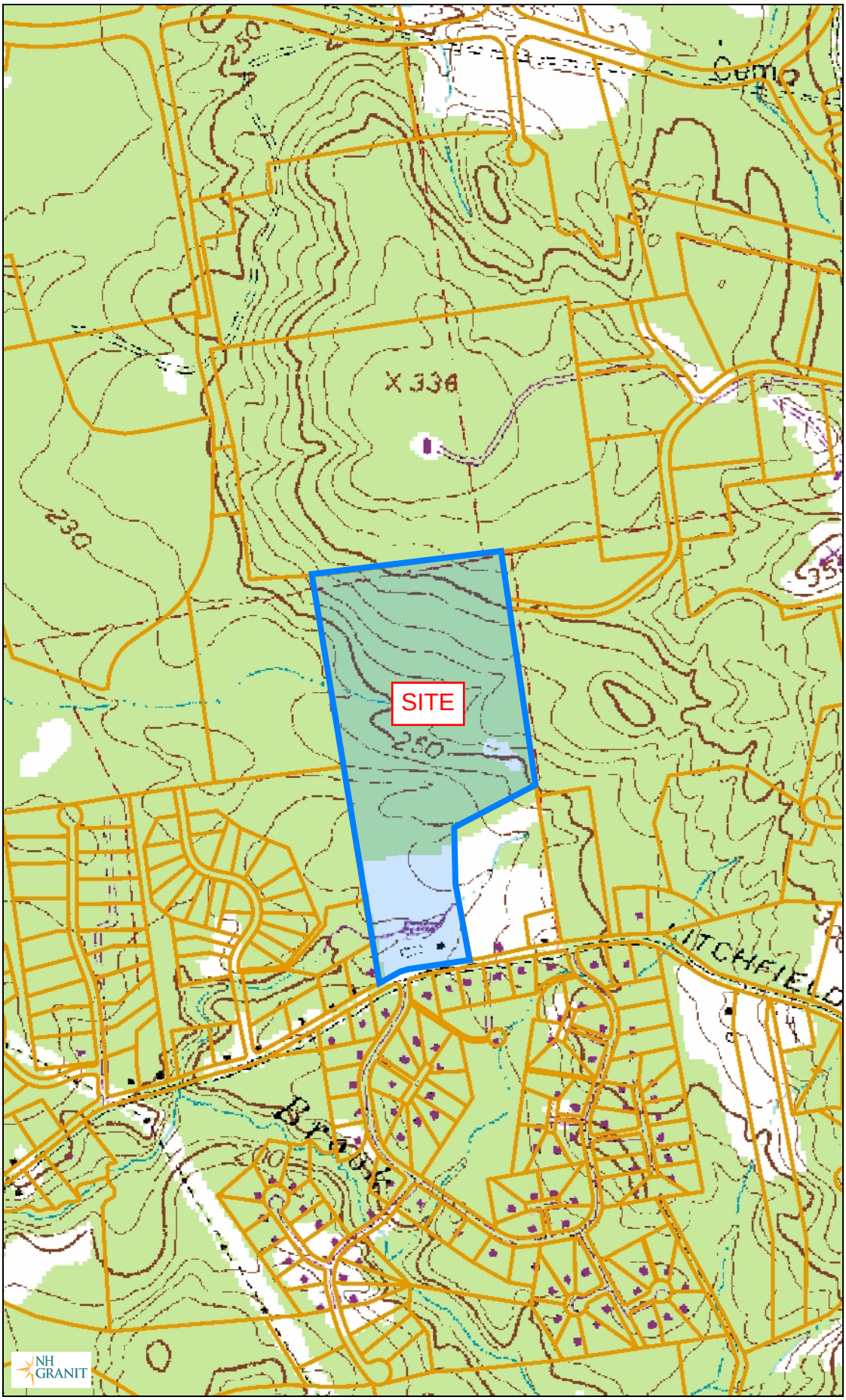
Map by NH GRANIT



Legend

- Parcels
- State
- County
- City/Town

Map Scale

1: 10,000

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Map Generated: 4/2/2025

Notes

7.5 min USGS Topo



Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

September 12, 2025

Town of Londonderry
Planning Office
268B Mammoth Road
Londonderry, NH 033053

New Hampshire Department of Environmental Services
29 Hazen Drive
PO Box 95
Concord, New Hampshire 03301-0095

RE: Certification Statement
Southern NH Green Energy Campus
North Wentworth Ave, Londonderry, NH 03053
Tax Map 14, Lot 39

To whom it may concern;

I hereby certify that the attached transmittal was delivered by hand and electronic format to the Town of Londonderry on September 12, 2025.

Sincerely,

Nick Golon, PE
TFMoran, Inc.

48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

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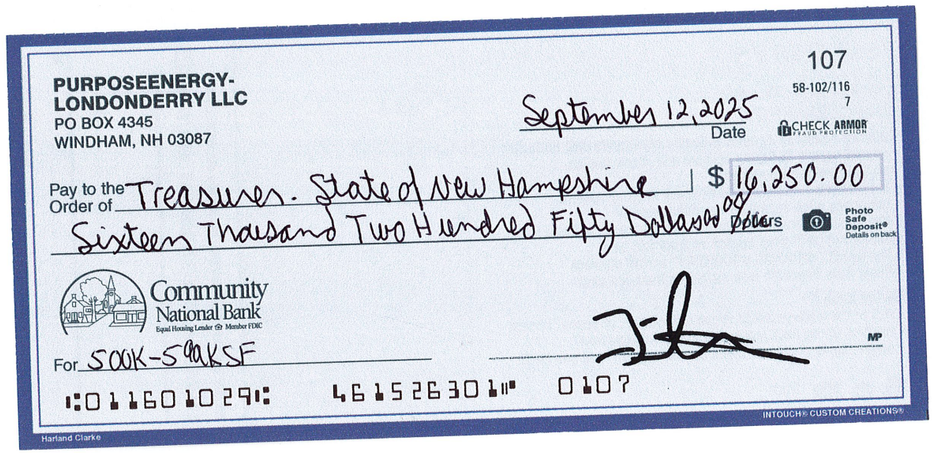

PURPOSEENERGY-
LONDONDERRY LLC
PO BOX 4345
WINDHAM, NH 03087

September 12, 2025
Date

CHECK ARMOR FRAUD PROTECTION

Pay to the Order of Treasurer. State of New Hampshire $ 16,250.00

Sixteen Thousand Two Hundred Fifty Dollars and 00/100 Dollars

Photo Safe Deposit® Details on back

Community National Bank
Equal Housing Lender Member FDIC

For 500K-599KSF

MP

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Harland Clarke

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Southern New Hampshire Green Energy Campus

North Wentworth Ave, Londonderry, NH
Tax Map 14 Lot 39
September 12, 2025
Revised September 16, 2025
Revised December 18, 2025

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PART 1

Executive Summary

Southern New Hampshire Green Energy Capus will be the new home of an organic waste processing facility in the Town of Londonderry, NH. It will feature two connected resource recovery facilities. The first, RecycleWorks, will receive food waste that normally goes to landfill, including food that has passed its sell by date or is out of specification but is wrapped in glass, plastic, or metal packaging. RecycleWorks will remove the organic waste from that packaging and send it to the second facility on the campus, PurposeEnergy-Londonderry. PurposeEnergy will pump the food waste into tanks that digest it in a process similar to a human stomach. The tanks will also receive dairy waste directly by pipe from a local business, Stonyfield Yogurt. The digester tanks will produce renewable biogas that will be cleaned to pipeline quality and injected into the local natural gas network.

- The subject parcel is located at 162 Litchfield Road, Tax Map 14, Lot 39 in the Town of Londonderry, NH. This existing parcel is 47.3 acres. a 15.3-acre portion of the parcel will be subdivided off, “the site,” for the purpose of this campus and will be accessed via North Wentworth Avenue. The area of site disturbance will be approximately 12.8 acres.
- The site is currently vacant and wooded. The site is in the Gateway Business Zone (GB) and within the Londonderry Eco-Industrial Zone and has been planned for development.
- There are wetlands on site and wetland impacts proposed by this project.
- An open and closed drainage system is proposed to attenuate, convey, and treat runoff from the proposed development. A series of catchbasins, sediment forebays, two filtration basin, one detention basin will provide pretreatment/treatment and manage runoff for this phase of the project.
- The systems have been designed to maintain peak flows and volumes during all storm conditions up to and including the 50-year storm event.
- Best Management Practices are proposed to manage stormwater from the development and provide treatment, groundwater recharge and maintain existing flow rates leaving the site.
    - Two (2) surface filtration basin system will collect and recharge stormwater from proposed impervious surfaces on the site. These basins are required to have pre-treatment prior to stormwater entering the main cell of the basin. The forebay allows sediment to settle out of the stormwater. Filtration basins remove pollutants, reduce the peak rates of flow, and flow volume by allowing evaporation and infiltration of the stormwater. The stormwater receives treatment as it percolates through the 18 inches of filter media as specified by Env-Wq 1508.08(k)(4). Infiltration below the filter media also provides groundwater recharge.

    - One surface retention basin will be used to attenuate flow entering the site from the North. The basin will have a standard outlet control structure that is linked to downstream stormwater treatment practices.

- The Water Quality Volume (WQV) has been met by providing the required storage below the lowest outlet orifice of the stormwater management areas.

Description of Project

Londonderry's new Southern New Hampshire Green Energy Campus will keep waste out of New Hampshire's landfills by turning it into renewable energy. About 30% of the U.S. food supply, over 30 million tons, goes to landfills every year. It is the single largest contributor to landfill waste. Meanwhile, New Hampshire's landfills are projected to exhaust their capacity in the next decade. As capacity declines, local communities could be forced to pay more for waste management, and state taxpayers could incur the high cost of landfill closure and new landfill development. New landfills are likely to be built in rural areas where they may have significant environmental impacts.

The Southern New Hampshire Green Energy Campus will reduce the waste management burden on New Hampshire by tackling the food waste problem. It will feature two connected resource recovery facilities.

- The first, RecycleWorks, will receive food waste that normally goes to landfill, including food that has passed its sell by date or is out of specification but is wrapped in glass, plastic, or metal packaging. RecycleWorks will remove the organic waste from that packaging and send it to the second facility on the campus,
- PurposeEnergy – Londonderry. PurposeEnergy will pump the food waste into tanks that digest it in a process similar to a human stomach. The tanks will also receive dairy waste directly by pipe from a local business, Stonyfield Yogurt. The digester tanks will produce renewable biogas that will be cleaned to pipeline quality and injected into the local natural gas network.

Left in its packaging, this waste would not only add dramatically to the tonnage of waste reaching New Hampshire landfills, but the decomposition of the organic material in a landfill would release methane, one of the most harmful greenhouse gases, into the atmosphere.

The Green Energy Campus is not a landfill; all of the material that comes to the campus will leave it either as recyclable material, renewable biogas, clean water, or biosolids (the residuals from digestion which will be sent to a compost facility for use as fertilizer). The net impact of the Southern New Hampshire Green Energy Campus is to

- divert 90% of solid waste away from New Hampshire landfills;
- reduce the escape of environmentally damaging methane gas resulting from decomposition of organic matter;
- support local business in the cost-effective and environmentally beneficial management of food manufacturing waste.

<u>The Londonderry Site</u>

PurposeEnergy took care to select a site already designated for industrial development, but where protections for the local environment were also in place. The site at the end of N Wentworth Avenue in Londonderry is zoned as part of the Greater Business

District. In the south, a permanent easement establishes a Wildlife Corridor protecting local species and ensuring their ability to traverse east and west. The corridor also contains the bulk of the wetlands. In the north, federal ownership ensures additional protection. PurposeEnergy's project is consistent with other area business and industrial land uses east (Granite Ridge Power Plant) and west (FW Webb).

The subject site is located at 162 Litchfield Road, and Tax Map 14, 39, in the Town of Londonderry, NH. Underlying zoning designation is the Gateway-Business Zone, where the use is permitted. The site is regulated by the Town of Londonderry Zoning, Subdivision, and Site Plan Regulations and applicable State and Federal regulations.

The site consists of the following major elements:

- 36,600 sf Depackaging Facility (RecycleWorks)
- A 14,100 sf Process Building, with future expansion of 9,800 sf (PurposeEnergy)
- Tribrid bio-reactors
- 3 flow equalization tanks
- 26' x 32' screening room building
- A biogas upgrading yard
- An interconnection facility yard
- Truck scales
- Parking and trucking interconnection

Provided for this infrastructure, an open and closed drainage systems will convey, attenuate, and provide treatment/groundwater recharge of stormwater associated with the development. Stormwater management areas are dispersed throughout the site, but the primary management feature will be located along the southern (down slope) portion of the property, mimicking the existing drainage flow paths associated with the project site.

For this phase of the project, stormwater management systems have been located adjacent to the proposed uses and will function both independently and in series.

Existing drainage discharge points will be maintained throughout the site. The proposed filtration basins with sediment forebays and surface detention basin will be utilized to maintain peak runoff flows and volume in post-development conditions.

The existing lot is a total of 47.3± acres of which approximately 12.8± acres will be disturbed as part of the proposed Southern New Hampshire Green Energy Campus.

A NHDES Alteration of Terrain (AoT) Permit, NHDES Standard Dredge and Fill Permit, 2 (two) NHDES Solids Waste permits, NHDES Sewer Connection Permit, NHB Data-Check, and local approval will be required for the site development project.

The objectives for the post-development drainage design are to use best management practices to attenuate flows, provide pretreatment and treatment to collected stormwater runoff and maintain groundwater recharge.

The intent of this report is: 1) to analyze the rate of runoff from the site for the pre- and post-development conditions. The drainage system will be designed to maintain the current peak rate of runoff from the site, and 2) to provide stormwater treatment and recharge for the runoff from the development prior to discharging runoff from the site in accordance with the requirements of NHDES Alteration of Terrain and The Town Of Londonderry.

Storm Water Methodology

Pre-Development Conditions

The existing lot is a total of 47.3± acres of which, approximately 15.2 acres will be subdivided for this site, of which 11.1± acres will be disturbed.

The site is abutted by undeveloped industrial uses to the north (GB), developed Industrial uses (IND-1) and developed and undeveloped residential uses to the south and west(GB & AR-1). A large conservation easement is located on site; however, it will not be on the subdivided parcel for this project. The site can be accessed by an existing Town of Londonderry unimproved ROW off the cul-da-sac at North Wentworth Avenue.

Existing topography on the site increases from southwest to northeast beginning at approximate elevation 254 along the southern property line and reaching a maximum elevation of approximately 306 along the northeastern property line. From the high point in the northeast, existing topography contains a series of forested channels and knolls where water has drained to form wetlands.

There is climbing topography offsite to the north which flows onto the project parcel along the northern property line.

Several wetland complexes exist onsite with the largest bisecting the central portion of the parcel east to west. On the northern portion of the site the topography forms two main wetlands, see sheet S-04 of the existing conditions plan. These complexes will be impacted as part of the project

Evaluation points (Point-of-Interest, POI) have been defined by abutting parcels and Right-of-Ways (ROW), and future property lines with HydroCAD Links as follows:

- POI-D: Future Abutting Parcel Lot 14-39-0;
- POI-F: Abutting Parcel Lot 14-38-0;
- POI-E: Abutting Parcel Lot 14-44-0;

Due to the existing topography and the proposed subdivision of the subject parcel, stormwater runoff from the property does not discharge to Lots 47, 44-38, or 44-13. As such, there is no change to existing runoff at these parcels, and they have been excluded from the drainage analysis.

A Site-Specific Soil (SSS) Survey was conducted by a Certified Soil Scientist to determine on-site soil types in accordance with the New Hampshire Supplement of the Site-Specific Soil Mapping Standards for New Hampshire and Vermont, Version 7.0, dated July 2021, Special Publication #3 of the Society of Soil Scientist of Northern New England. This mapping resulted in hydrologic soils group (HSG) type A, B, C, and D soils. The SSS survey has been supplemented with NRCS soils for areas on the subject parcel but outside the area of development.

To model the site drainage, the HydroCAD Version 10.20-5c program has been used. The software is based on the SCS TR-20 technique used for modeling the hydrology and hydraulics of storm water runoff. The 2-year, 10-year, 25-year, and 50-year storm-events are included per the requirements of the NHDES AoT and Town Of Londonderry.

Rainfall amounts were obtained from the Northeast Regional Climate Center and NRCS Storm Type-III was utilized for the HydroCAD Analysis. An Extreme Precipitation Table has been provided in Section 2 of this Report.

Post-Development Conditions

Southern New Hampshire Green Energy Campus will be the new home of an organic waste processing facility in the Town of Londonderry, NH. It will feature two connected resource recovery facilities. The first, RecycleWorks, will receive food waste that normally goes to landfill, including food that has passed its sell by date or is out of specification but is wrapped in glass, plastic, or metal packaging. RecycleWorks will remove the organic waste from that packaging and send it to the second facility on the campus, PurposeEnergy-Londonderry. PurposeEnergy will pump the food waste into tanks that digest it in a process similar to a human stomach. The tanks will also receive dairy waste directly by pipe from a local business, Stonyfield Yogurt. The digester tanks will produce renewable biogas that will be cleaned to pipeline quality and injected into the local natural gas network.

An open and closed drainage system is proposed to attenuate, convey, and treat runoff from the proposed development. A series of catchbasins, sediment forebays, two (2) filtration basins and one (1) surface detention basin will provide pretreatment/treatment and manage runoff for this phase of the project.

As shown in the volume output of the forebay nodes, the available storage is 0 cf. This is further confirmed by the 0.0% voids identified for the storage area. No storage is accounted for within the forebays.

All pre-development evaluation points have been analyzed in the post-development conditions. The post-development drainage model represents the site divided into multiple subcatchments based on the layout of the proposed stormwater collection systems. There is no proposed increase in discharge from the site up to and including the 50-year storm event.

Groundwater Recharge

The required GRV for the HSG A, B, and C soils, which have been replaced by impervious cover per AoT regulations has been provided within the proposed filtration systems. Supporting calculations have been provided on the GRV and Best Management Practices (BMP) Worksheet, Section 3 of this Report.

Stormwater Treatment

Best Management Practices are proposed to manage the stormwater from the development and provide treatment, groundwater recharge and maintain existing flow rates leaving the site.

The proposed filtration systems are designed to maintain existing recharge rates and to preserve groundwater levels. Pollutant removal is achieved as stormwater percolates through the existing subsurface material of the filtration basins. Pretreatment will be

provided prior to stormwater entering the main cell of the basin by sediment forebays, which allow sediment to settle out of the stormwater.

The Water Quality Volume (WQV) is fully detained within the proposed filtration basins/subsurface system providing the storm water treatment.

Test pits and infiltration testing were performed as part of the project design to identify Estimated Seasonal High-Water Table (ESHWT) and subgrade Infiltration Rates. The infiltration rates used in these calculations are based on those values obtained, with a factor of safety.

A Site-Specific Soil Survey (SSS) was conducted by a Certified Soil Scientist at BAG Land Consultants to determine on-site soil types within proposed development areas in accordance with the Site-Specific Soil Mapping Standards for New Hampshire and Vermont, Version 7.0, dated July 2021 of the Society of Soil Scientist of Northern New England. SSS Mapping was utilized to determine the on-site soil characteristics, which in turn, were used to specify CN and Tc values in both the Pre- and Post- development subcatchment analysis.

Erosion Control Measures

Erosion Control Measures are found on the Site Preparation and Demolition Plan within the plan set. The erosion control and construction sequence notes on the Notes Sheets contain specifications for stabilizing disturbed areas and limiting the length of time these areas are exposed.

Temporary Erosion Control Measures

Silt sock and/or mulch berms are proposed along the edges and downslope of site work to prevent sediment from discharging from the project area. A stabilized construction entrance is proposed to prevent sediment from being tracked onto the streets during construction.

Permanent Erosion Control Measures

A combination of open and closed drainage systems is proposed on the site to capture stormwater runoff from the project. Areas of concentrated flow will be stabilized with riprap and discharged to centralized stable discharge points. Areas disturbed during construction which will not be impervious or stabilized with riprap in post-development conditions will be loamed and seeded to restore the areas upon completion of construction.

Flood Protection

Examination of the Flood Insurance Rate Map for Rockingham County New Hampshire (All Jurisdictions), Map Numbered 33015C0316E, Effective Date: May 17, 2005, indicates that the proposed work is not located within the floodplain.

Conclusion

Peak Rate Flows

There is no increase in the peak rate of runoff at the discharge points from this project site.

FLOW (CFS)									
POI	DESCRIPTOR	2-YR		10-YR		25-YR		50-YR	
		PRE	POST	PRE	POST	PRE	POST	PRE	POST
A	14-44-38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B	14-47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	Future abutting lot 14-39-0	0.0	0.0	1.0	0.9	3.5	3.4	7.1	7.5
E	14-44-0	5.7	5.7	8.2	8.2	12.1	12.1	15.5	15.5
F	14-38-0	0.4	0.4	2.1	1.9	4.0	3.5	6.2	5.2

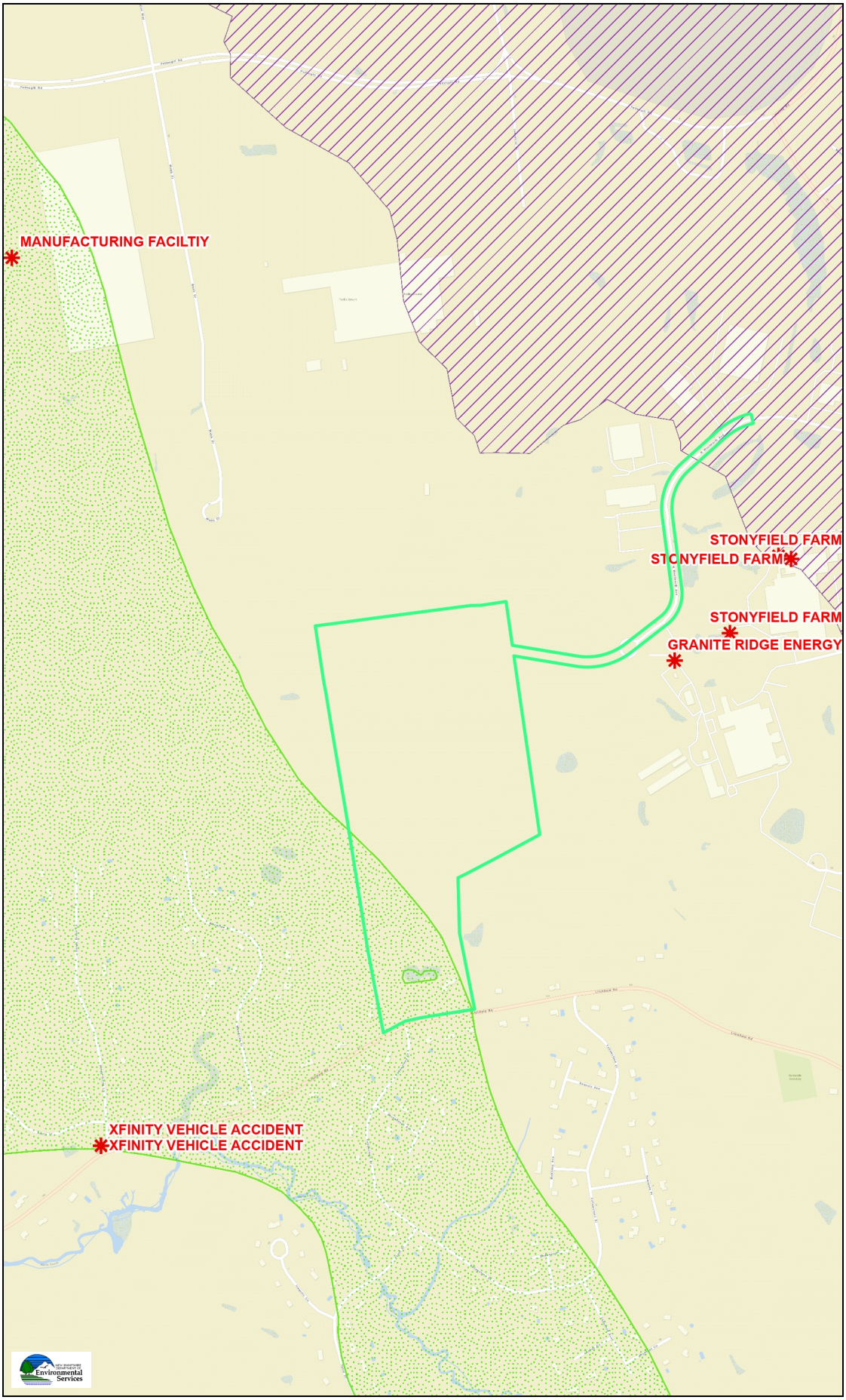
VOLUME (CF)									
POI	DESCRIPTOR	2-YR		10-YR		25-YR		50-YR	
		PRE	POST	PRE	POST	PRE	POST	PRE	POST
A	14-44-38	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
B	14-47	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
D	Future abutting lot 14-39-0	1,201	494	21,092	24,058	50,611	56,833	86,224	104,477
E	14-44-0	20,738	20,736	29,702	29,965	43,694	44,490	56,433	57,636
F	14-38-0	7,690	7,242	27,066	23,391	47,643	40,076	69,532	57,599

Treatment

The proposed filtration systems have been designed to provide adequate treatment for stormwater runoff.

PART 2

AoT Screening Layers



Legend

- Remediation Sites
- Coastal and Great Bay Regi Communities
- Designated Rivers Quarterm Buffer
- Public Water Supply Wells
- Groundwater Classification / GA1
- Groundwater Classification / GA2
- Water Supply Intake Protect Areas
- Wellhead Protection Areas
- Class A Lakes with a Quarte Buffer
- Class A - All Features
- All Lakes, with a Quarter Mil Buffer
- Outstanding Resource Wate Watersheds
- Surface Waters with Impairm with Quarter Mile Buffer
- Watersheds with Chloride Impairments

Map Scale

1: 10,000

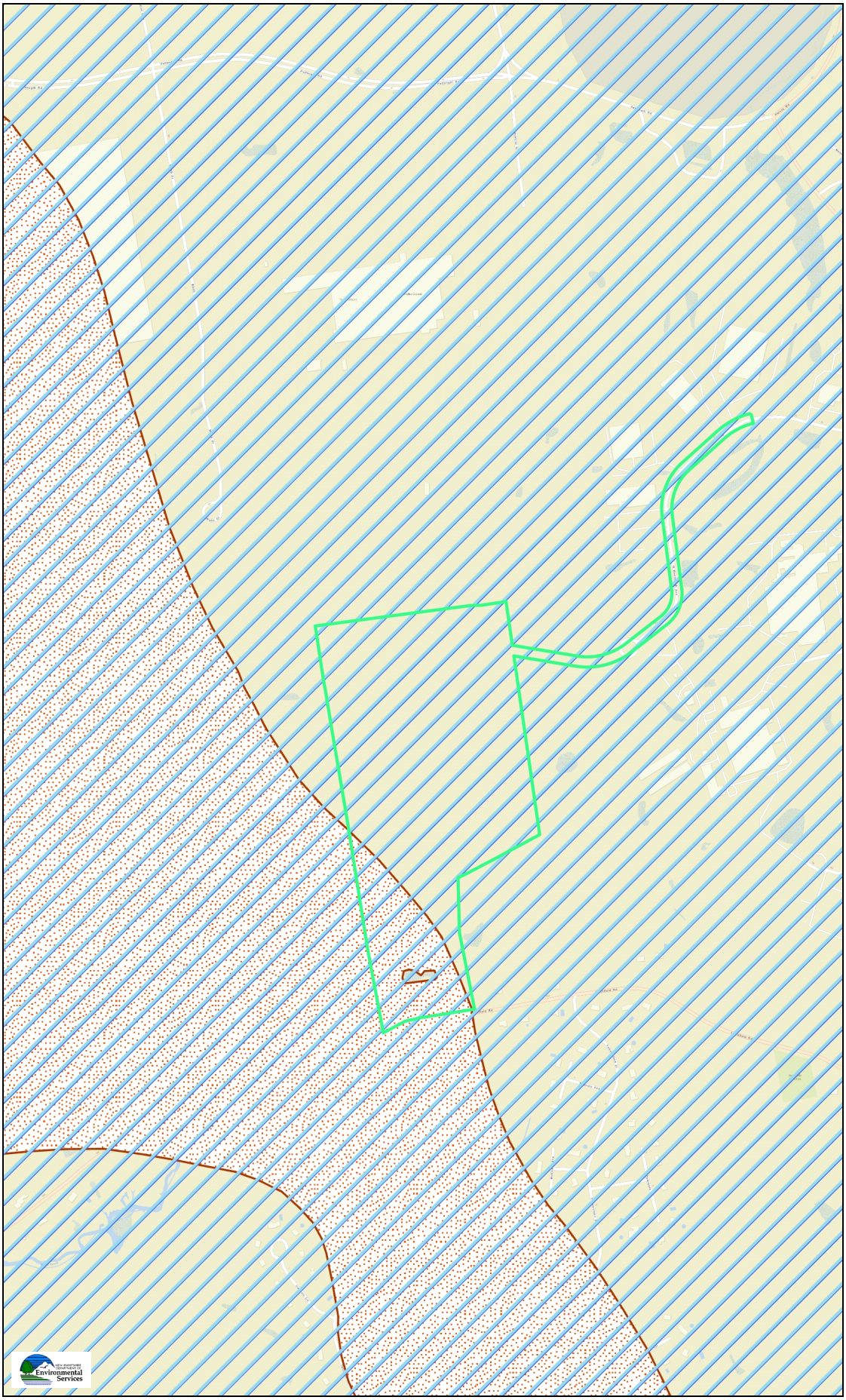
© NH DES, http://des.nh.gov

Map Generated: 5/21/2025

Notes

Prepared by: TFMoran, Inc.

Drinking & Groundwater Screening Layers



Legend

- Wellhead Protection Areas
- Hydrologic Areas of Concern
- GA2 High-Yield Stratified-Dr Aquifer

Map Scale

1: 10,000

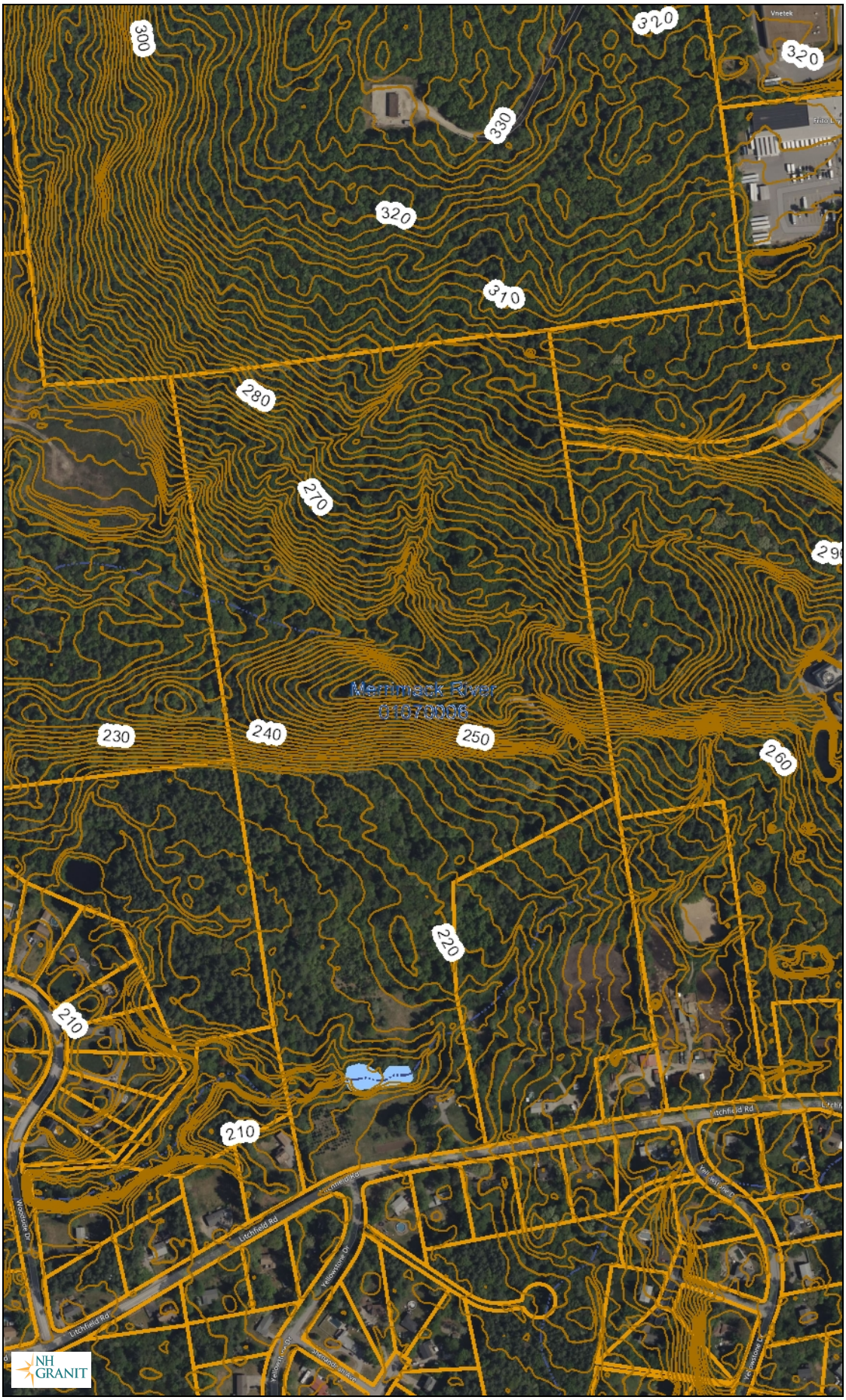
© NH DES, http://des.nh.gov

Map Generated: 5/21/2025

Notes

Prepared by: TFMoran, Inc.

Map by NH GRANIT



Legend

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- Contour_2ft_0108020101_s
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- Contour_2ft_0108010307_s
- Contour_2ft_0108010301_s

Map Scale

1: 5,000

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Map Generated: 4/2/2025

Notes

Aerial Overview Map
Map 14/Lot 39
Londonderry, NH



B A G
LAND CONSULTANTS

January 3, 2025

Nicholas Golan, P.E.
TF Moran Inc.
48 Constitution Drive
Bedford, NH 03110

RE: Purpose Energy Project [Map 14; Lot 39]
162 Litchfield Road, Londonderry, NH (17.0 Ac +/-)

Dear Nick:

Site Specific Soil Survey Technical Letter Report

At your request, we visited the above-referenced property to perform Site-Specific Soil Map (SSSM) services that will assist in the planning / design of a proposed land development project. Below is a summary report that details the standards utilized, mapped soil descriptions, and any limiting soil features encountered on the property.

Standards

The criteria under which the soil map was prepared is the *Site-specific Soil Mapping Standards for New Hampshire and Vermont*, Version 4.0, February 2011. The standards are based on a universally recognized taxonomic system of soil classification and are supported by national soil mapping standards established by the USDA National Cooperative Soil Survey. They allow for the development of multi-purpose soil map products that are carefully controlled and monitored through a state, regional and national quality assessment program. The SSSM's have been developed by the Society of Soil Scientists of Northern New England (SSSNNE) in cooperation with the USDA Natural Resources Conservation Service (NRCS). This map is a special product, intended for submission to NH DES Alteration of Terrain. This map is not a product of the USDA Natural Resource Conservation Service.

The Site-specific Soil Map Units identified on this property come from the *New Hampshire State-wide Numerical Soils Legend*, Issue 10, January 2011. This document represents the latest release of the permanent New Hampshire State-Wide Numerical Soils Legend since originally developed and adopted by the NRCS of NH in 1985.

Base Map

The soil map was developed on a base map of 1"= 100', with contour intervals of two (2') feet, and ground control indicators provided with detail of existing wetland flag locations, existing stonewalls, and recently established survey traverse stations. The highest elevations are

positioned in the extremely northeast section of our study area. The lowest elevation, on the property, is located in the extreme southwest corner of the study area. Topographic & boundary survey information was compiled onto our base map by your office – TF Moran, Inc., Bedford, NH.

Location

The study site has no road frontage and is located north of Litchfield Road, west of Burton Drive and south of North Wentworth Avenue in the Town of Londonderry, NH. There are no abandoned concrete slabs or any evidence of any building structures on the subject parcel. The entire project study area is approximately 17.0 Ac.+/-. All proposed land improvements will be outside of any shoreland protection zone.

Geomorphology

The site is situated in an area of predominant upland glacial outwash parent materials. There is an intermittent stream flowing from east to west and entering our property along the eastern property line. The observed soil had very good deep depth to ledge. This glaciofluvial parent material onsite was deposited when the last glacial ice started receding / melting over 10,000 years ago.

Legend

The following is the soil identification legend for the site-specific soil map units used in the preparation of the map.

SITE SPECIFIC SOIL MAP UNIT KEY

SYMBOL	SOIL TAXONOMIC NAME	HSG CLASS	DRAINAGE CLASS
26	Windsor	A	Well Drained
313	Deerfield	B	Moderately-well Drained
546 /P	Walpole	C	Poorly Drained

Slope

Slope Designation	Percent Slope
B	0 to 8%
C	8 to 15%
D	15 to 25%
E	> 25%

Limiting Soil Features

Most of the upland areas on this property are in natural undisturbed condition. Very little evidence of any prior earth moving excavations or timber clear cutting activities observed. The soils are capable of providing for excellent Gateway Business zone developmental improvements. The majority of soils mapped are **26** – Windsor a well-drained to excessively

well drained glacial outwash with no restrictive layers in the subsoil or substratum horizons below the soil surface. These soils are very deep to ledge and have a high infiltration rate due to their fine to coarse sandy texture, with a single grain structure and loose consistence. The soils would fall into a hydrologic soil group 'A'.

In the slightly lower dry land elevations we mapped moderately-well drained **313** - Deerfield soils. These soil also have no restrictive features in subsoils or substratum horizons. These soils would fall under a hydrologic soil grouping 'B' category. Some of the lowest elevation soil areas are mapped as **546B**/P – Walpole soil series. These poorly drained soils have no restrictive features and still drain. They would have a slow infiltration rate when thoroughly wetted and fall into a HSG "C" category.

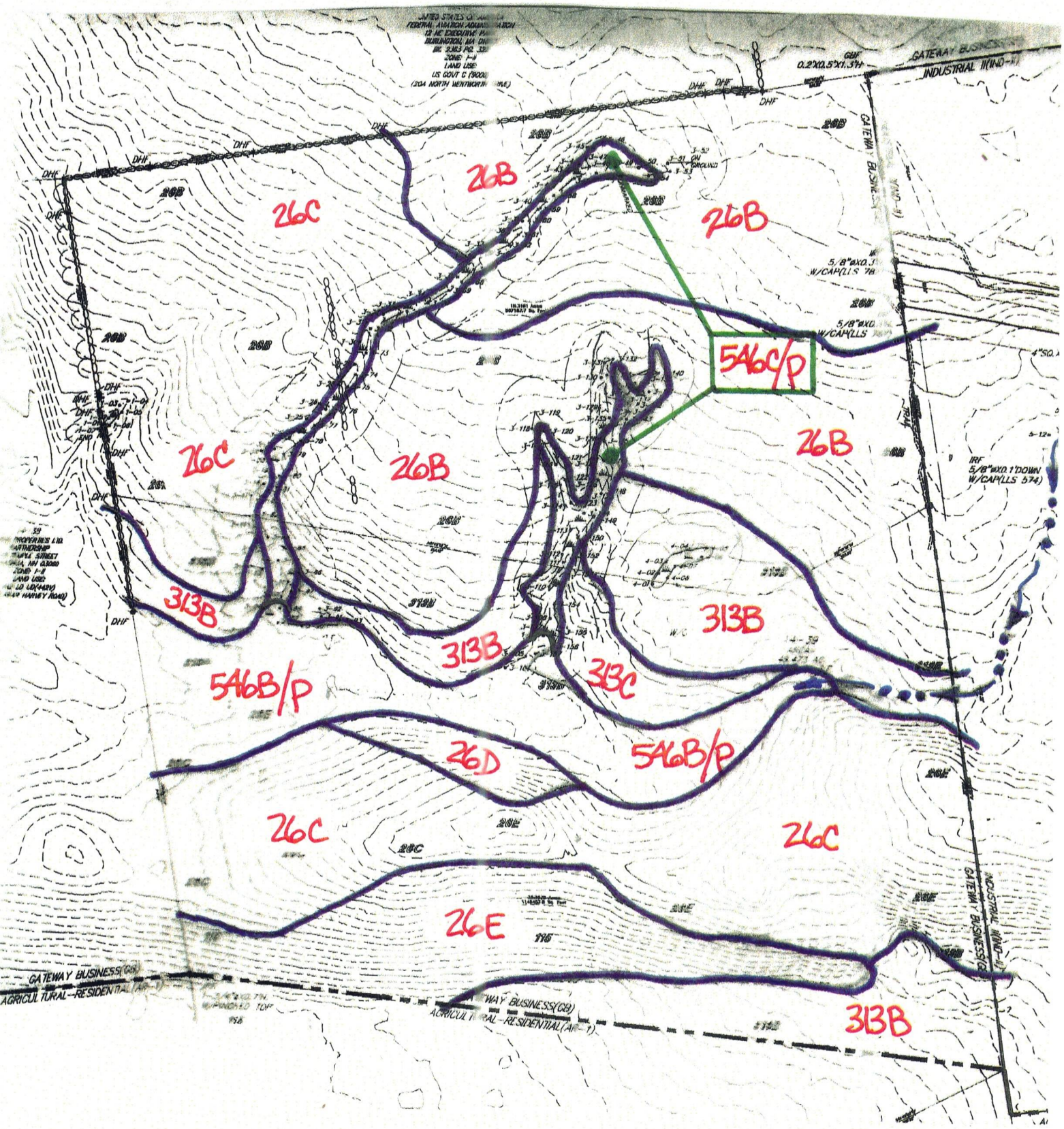
Sincerely,

Bruce A. Gilday

Bruce A. Gilday
Certified Soil Scientist



BAG:35104
Attachment



N.t.s.

BAS # 35104

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Rockingham County, New Hampshire



March 24, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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26C—Windsor loamy sand, 8 to 15 percent slopes..... 11
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45B—Montauk fine sandy loam, 0 to 8 percent slopes, very stony.....14
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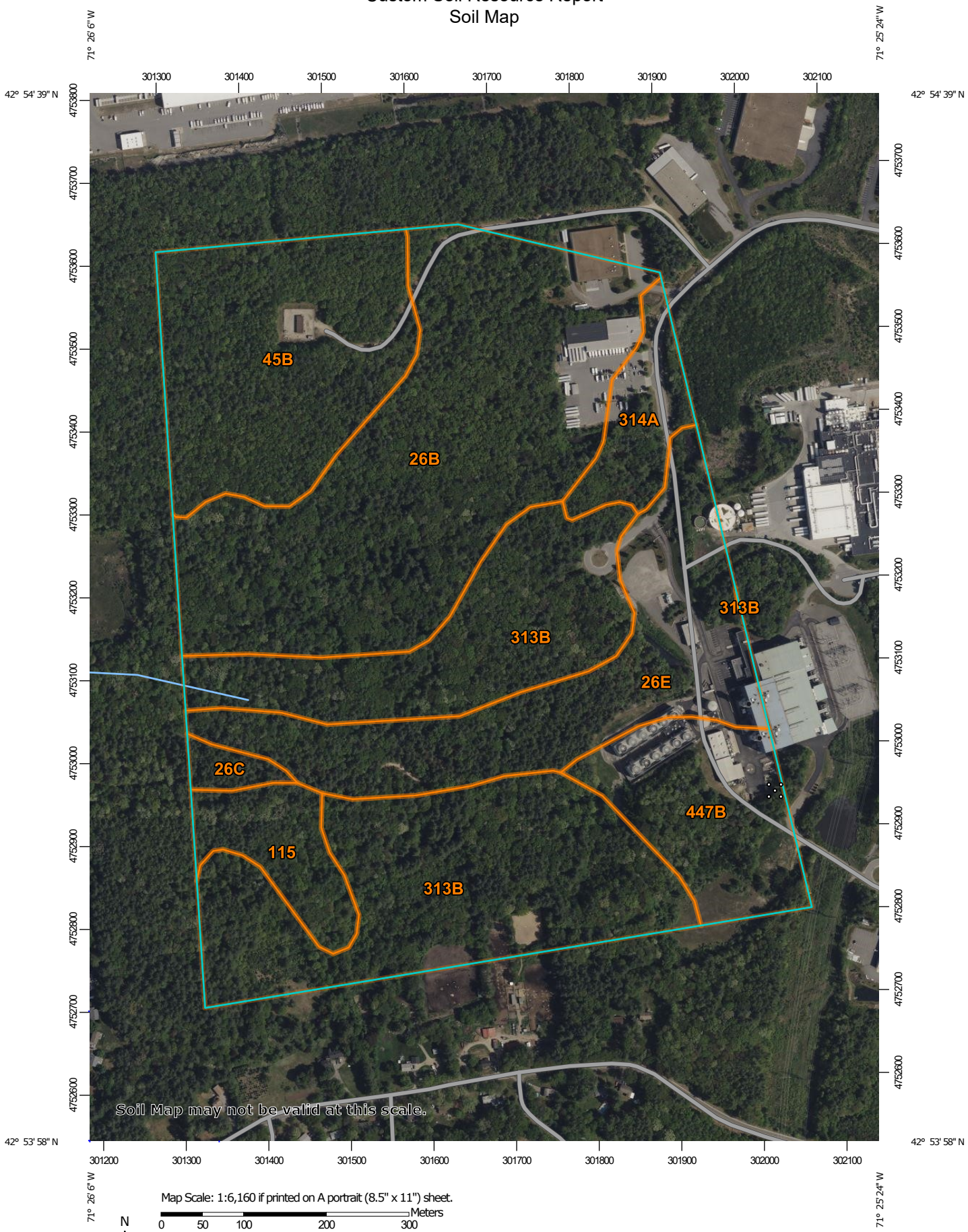
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:6,160 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 27, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2022—Jun 5, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
26B	Windsor loamy sand, 3 to 8 percent slopes	38.6	26.6%
26C	Windsor loamy sand, 8 to 15 percent slopes	1.3	0.9%
26E	Windsor loamy sand, 15 to 60 percent slopes	21.2	14.6%
45B	Montauk fine sandy loam, 0 to 8 percent slopes, very stony	20.9	14.4%
115	Scarboro muck, coastal lowland, 0 to 3 percent slopes	5.4	3.7%
313B	Deerfield loamy fine sand, 3 to 8 percent slopes	41.5	28.6%
314A	Pipestone sand, 0 to 5 percent slopes	5.1	3.5%
447B	Scituate-Newfields complex, 3 to 8 percent slopes, very stony	11.1	7.6%
Totals for Area of Interest		**145.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas

are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Rockingham County, New Hampshire

26B—Windsor loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svkf
Elevation: 0 to 1,210 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Farmland of local importance

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: Outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or schist and/or gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Eskers
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F145XY008MA - Dry Outwash
Hydric soil rating: No

Deerfield, loamy sand

Percent of map unit: 5 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

26C—Windsor loamy sand, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2svkq
Elevation: 0 to 1,260 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: — error in exists on —
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, riser
Down-slope shape: Convex
Across-slope shape: Convex, linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
Ap - 1 to 11 inches: loamy sand

Bw - 11 to 31 inches: loamy sand
C - 31 to 65 inches: sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Deerfield

Percent of map unit: 5 percent
Landform: Deltas, terraces, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

26E—Windsor loamy sand, 15 to 60 percent slopes

Map Unit Setting

National map unit symbol: 2w2ws
Elevation: 0 to 760 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: Dunes, deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 15 to 60 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, nose slope, side slope, crest, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Deerfield

Percent of map unit: 5 percent
Landform: Deltas, terraces, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

45B—Montauk fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2w80v
Elevation: 0 to 1,070 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of local importance

Map Unit Composition

Montauk, very stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montauk, Very Stony

Setting

Landform: Recessionial moraines, ground moraines, hills, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)

Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Scituate, very stony

Percent of map unit: 6 percent
Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Summit, backslope, footslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Canton, very stony

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, very stony

Percent of map unit: 4 percent
Landform: Depressions, ground moraines, hills, drainageways
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

115—Scarboro muck, coastal lowland, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svkw
Elevation: 0 to 650 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Scarboro, coastal lowland, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scarboro, Coastal Lowland

Setting

Landform: Depressions, outwash deltas, outwash terraces, drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave, linear
Parent material: Sandy glaciofluvial deposits derived from schist and/or gneiss and/or granite

Typical profile

Oa - 0 to 8 inches: muck
A - 8 to 14 inches: mucky fine sandy loam
Cg1 - 14 to 22 inches: sand
Cg2 - 22 to 65 inches: gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: About 0 to 2 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F144AY031MA - Very Wet Outwash
Hydric soil rating: Yes

Minor Components

Swansea

Percent of map unit: 10 percent
Landform: Bogs, swamps
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Mashpee

Percent of map unit: 5 percent
Landform: Depressions, terraces, drainageways
Landform position (two-dimensional): Footslope, toeslope

Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

313B—Deerfield loamy fine sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2xfg9
Elevation: 0 to 1,190 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Deerfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deerfield

Setting

Landform: Outwash deltas, outwash terraces, outwash plains, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand
Bw - 9 to 25 inches: loamy fine sand
BC - 25 to 33 inches: fine sand
Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: About 15 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum: 11.0
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: No

Minor Components

Windsor
Percent of map unit: 7 percent
Landform: Outwash terraces, outwash plains, kame terraces, outwash deltas
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Wareham
Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sudbury
Percent of map unit: 2 percent
Landform: Kame terraces, outwash deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Ninigret
Percent of map unit: 1 percent
Landform: Outwash plains, outwash terraces, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Convex, concave
Hydric soil rating: No

314A—Pipestone sand, 0 to 5 percent slopes

Map Unit Setting
National map unit symbol: 9cn2
Elevation: 0 to 2,100 feet
Mean annual precipitation: 28 to 55 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 100 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition
Pipestone and similar soils: 75 percent
Minor components: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pipestone

Setting

Landform: Outwash terraces

Typical profile

H1 - 0 to 6 inches: sand
H2 - 6 to 33 inches: sand
H3 - 33 to 60 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F144AY027MA - Moist Sandy Outwash
Hydric soil rating: Yes

Minor Components

Chocorua

Percent of map unit: 5 percent
Landform: Bogs
Hydric soil rating: Yes

Not named wet

Percent of map unit: 5 percent
Landform: Outwash terraces
Hydric soil rating: Yes

Squamscott

Percent of map unit: 5 percent
Landform: Marine terraces
Hydric soil rating: Yes

Scarboro

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Deerfield

Percent of map unit: 5 percent
Hydric soil rating: No

447B—Scituate-Newfields complex, 3 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 9cnr
Elevation: 0 to 1,000 feet
Mean annual precipitation: 35 to 56 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 120 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Scituate and similar soils: 50 percent
Newfields and similar soils: 25 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scituate

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 32 inches: cobbly fine sandy loam
H3 - 32 to 60 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Description of Newfields

Setting

Parent material: Till

Typical profile

H1 - 0 to 9 inches: fine sandy loam

H2 - 9 to 35 inches: fine sandy loam
H3 - 35 to 64 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: F144AY008CT - Moist Till Uplands
Hydric soil rating: No

Minor Components

Walpole

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Canton

Percent of map unit: 5 percent
Hydric soil rating: No

Not named

Percent of map unit: 5 percent
Hydric soil rating: No

Ridgebury

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Montauk

Percent of map unit: 5 percent
Hydric soil rating: No

State of New Hampshire
DEPARTMENT OF NATURAL & CULTURAL RESOURCES
DIVISION OF HISTORICAL RESOURCES

172 Pembroke Road Concord, New Hampshire 03301
Phone: 603-271-3483 Fax: 603-271-3433
TDD Access: Relay NH 1-800-735-2964
nhdhr.dncr.nh.gov

March 27, 2025

TFMoran Bedford

Re: 2025PR00341 - Resource Recovery Center

Dear TFMoran Bedford,

In accordance with state and federal statutes [New Hampshire RSA 227C:9 and Section 106 of the National Historic Preservation Act (16 U.S.C. 470)] and with federal Advisory Council on Historic Preservation regulations, Protection of Historic Properties (36 CFR Part 800), the New Hampshire Division of Historical Resources/State Historic Preservation Office (NHSHPO) has reviewed information regarding the above-referenced project.

Based upon this review, no known historic resources appear to be affected by the project. Therefore, it is the opinion of the NHSHPO that the project will result in ***No Historic Properties Affected*** under 36 CFR Part 800.4(d)(1).

No further consultation is required unless there are any changes in approved plans, the need for additional work is identified, or an unanticipated discovery occurs. If further correspondence is required, please refer to the project review number noted above.

If you have any questions, please email Elizabeth Schneible at: elizabeth.a.schneible@dncr.nh.gov

Thank you for the opportunity to comment.

Sincerely,

Nadine Miller

Nadine Miller
Deputy State Historic Preservation Officer
NH Division of Historical Resources

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Metadata for Point

Smoothing	Yes
State	New Hampshire
Location	New Hampshire, United States
Latitude	42.905 degrees North
Longitude	71.43 degrees West
Elevation	80 feet
Date/Time	Fri Jun 06 2025 13:10:42 GMT-0400 (Eastern Daylight Time)

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day
1yr	0.27	0.41	0.51	0.67	0.84	1.05	**1yr**	0.72	1.00	1.22	1.53	1.93	2.44	2.67	**1yr**	2.16	2.57
2yr	0.33	0.50	0.62	0.82	1.03	1.30	**2yr**	0.89	1.19	1.50	1.87	2.33	2.90	3.22	**2yr**	2.57	3.10
5yr	0.39	0.60	0.75	1.01	1.29	1.63	**5yr**	1.11	1.49	1.89	2.37	2.95	3.66	4.11	**5yr**	3.24	3.95
10yr	0.43	0.68	0.86	1.17	1.52	1.95	**10yr**	1.31	1.76	2.27	2.84	3.53	4.37	4.93	**10yr**	3.87	4.75
25yr	0.51	0.82	1.04	1.43	1.90	2.45	**25yr**	1.64	2.20	2.87	3.60	4.48	5.53	6.30	**25yr**	4.89	6.06
50yr	0.58	0.93	1.19	1.67	2.25	2.94	**50yr**	1.94	2.60	3.44	4.33	5.38	6.60	7.58	**50yr**	5.84	7.29
100yr	0.66	1.07	1.38	1.96	2.67	3.51	**100yr**	2.30	3.09	4.11	5.18	6.43	7.89	9.13	**100yr**	6.98	8.78
200yr	0.75	1.23	1.60	2.29	3.17	4.19	**200yr**	2.73	3.66	4.93	6.21	7.70	9.43	11.00	**200yr**	8.35	10.5
500yr	0.91	1.50	1.96	2.84	3.97	5.28	**500yr**	3.43	4.59	6.23	7.87	9.76	11.96	14.09	**500yr**	10.58	13.5

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day
1yr	0.22	0.34	0.42	0.56	0.69	0.83	**1yr**	0.60	0.81	1.06	1.32	1.64	2.30	2.54	**1yr**	2.03	2.44
2	0.31	0.48	0.59	0.80	0.98	1.18	**2**	0.85	1.15	1.34	1.76	2.26	2.82	3.14	**2**	2.50	3.02

National Flood Hazard Layer FIRMette

FEMA

71°26'12"W 42°54'31"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

71°25'34"W 42°54'5"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/6/2025 at 5:16 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

To: Jeremy Belanger
48 Consitution Dr
Bedford, NH 03110
jbelanger@tfmoran.com

From: NHB Review
NH Natural Heritage Bureau
Main Contact: Ashley Litwinenko - nhbreview@dncr.nh.gov

cc: NHFG Review

Date: 06/11/2024 (valid until 06/11/2025)
Re: DataCheck Review by NH Natural Heritage Bureau and NH Fish & Game
Permits: MUNICIPAL POR - Londonderry, NHDES - Alteration of Terrain Permit, NHDES - Standard Dredge & Fill - Major, USACE - General Permit, USEPA - Stormwater Pollution Prevention

NHB ID: NHB24-1680

Town: Londonderry
Location: 162 Litchfield Road & North Wentworth Ave

Project Description: The project proposes to construct a receiving station for trucked organic waste that would otherwise be directed to NH landfills. The facility will consist of equipment for de-packaging off-spec organic products that did not meet commercial standards for sale or otherwise have passed sell by dates. This equipment will be fully enclosed, and the structure designed with charcoal filtering for odor control. The facility is best defined as a food processing use. The project will also include accommodations for access, parking, and stormwater management.

Next Steps for Applicant:

NHB's database has been searched for records of rare species and exemplary natural communities. Please carefully read the comments and consultation requirements below.

NHB Comments: Please send NHB proposed plans and representative photos during the growing season of the proposed impact areas.

NHFG Comments: Please refer to NHFG consultation requirements below.

NHB Consultation

If this NHB DataCheck letter includes records of rare plants and/or natural communities/systems, please contact NHB and provide any requested supplementary materials by emailing nhbreview@dncr.nh.gov.

If this NHB DataCheck letter DOES NOT include any records of rare plants and/or natural communities/systems, no further consultation with NHB is required.

NH Fish and Game Department Consultation

If this NHB DataCheck letter DOES NOT include ANY wildlife species records, then, based on the information submitted, no further consultation with the NH Fish and Game Department pursuant to Fis 1004 is required.

If this NHB DataCheck letter includes a record for a threatened (T) or endangered (E) wildlife species, consultation with the New Hampshire Fish and Game Department under Fis 1004 may be required. To review the Fis 1000 rules (effective February 3, 2022), please go to https://www.wildlife.nh.gov/wildlife-and-habitat/nongame-and-endangered-species/environmental-review. All requests for consultation and submittals should be sent via email to NHFGreview@wildlife.nh.gov or can be sent by mail, and **must include the NHB DataCheck results letter number and "Fis 1004 consultation request" in the subject line**.

If the NHB DataCheck response letter does not include a threatened or endangered wildlife species but includes other wildlife species (e.g., Species of Special Concern), consultation under Fis 1004 is not required; however, some species are protected under other state laws or rules, so coordination with NH Fish & Game is highly recommended or may be required for certain permits. While some permitting processes are exempt from required consultation under Fis 1004 (e.g., *statutory permit by notification, permit by rule, permit by notification, routine roadway registration, docking structure registration, or conditional authorization by rule*), coordination with NH Fish & Game may still be required under the rules governing those specific permitting processes, and it is recommended you contact the applicable permitting agency. For projects not requiring consultation under Fis 1004, but where additional coordination with NH Fish and Game is requested, please email NHFGreview@wildlife.nh.gov, and include the NHB DataCheck results letter number and "review request" in the email subject line.
Contact NH Fish & Game at (603) 271-0467 with questions.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB Database Records:
The following record(s) have been documented in the vicinity of the proposed project.
Please see the map and detailed information about the record(s) on the following pages.

Plant species	State[1]	Federal	Notes
long-leaved bluet (*Houstonia longifolia*)	E	--	Occurs on talus slopes, sandplains/disturbed openings, and dry forests/thin woods. Threats would include recreational or development activities that would trample the plants or disturb their habitat.

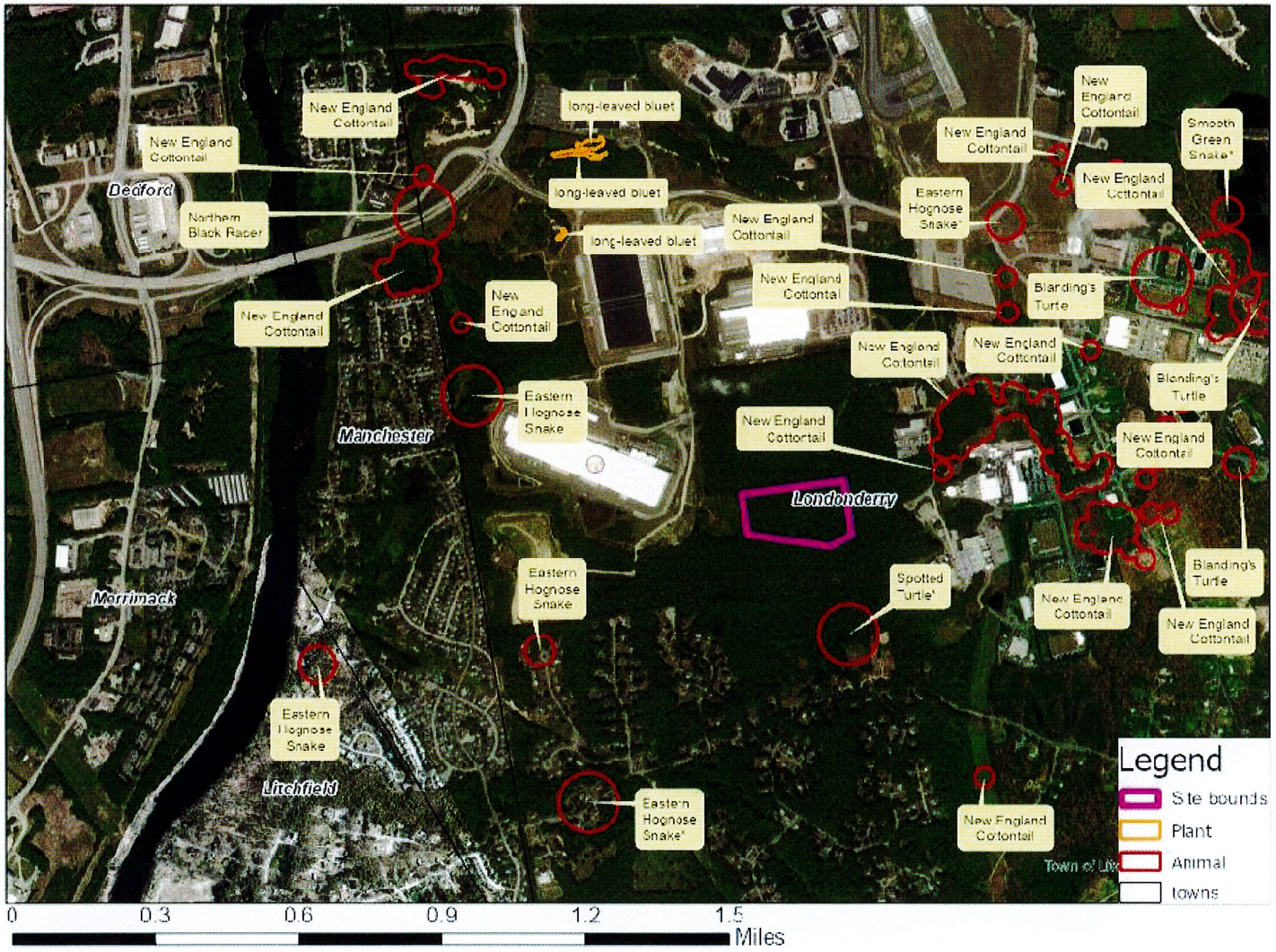
Vertebrate species	State[1]	Federal	Notes
Blanding's Turtle (*Emydoidea blandingii*)	E	--	Contact the NH Fish & Game Dept (see below).
Eastern Hognose Snake (*Heterodon platirhinos*)	E	--	Contact the NH Fish & Game Dept (see above).
New England Cottontail (*Sylvilagus transitionalis*)	E	--	Contact the NH Fish & Game Dept (see above).
Northern Black Racer (*Coluber constrictor constrictor*)	T	--	Contact the NH Fish & Game Dept (see above).
Smooth Green Snake (*Opheodrys vernalis*)*	SC	--	Contact the NH Fish & Game Dept (see above).
Spotted Turtle (*Clemmys guttata*)*	T	--	Contact the NH Fish & Game Dept (see below).

[1]Codes: "E" = Endangered, "T" = Threatened, "SC" = Special Concern, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list.
An asterisk (*) indicates that the most recent report for that occurrence was 20 or more years ago.

For all animal reviews, refer to 'IMPORTANT: NHFG Consultation' section above.

Disclaimer: NHB's database can only tell you of known occurrences that have been reported to NHFG/NHB. Known occurrences are based on information gathered by qualified biologists or members of the public, reported to our offices, and verified by NHB/NHFG.
However, many areas have never been surveyed, or have only been surveyed for certain species.
NHB recommends surveys to determine what species/natural communities are present onsite.

NHB24-1680


New England Cottontail
long-leaved bluet
Smooth Green Snake*
Eastern Hognose Snake*
Northern Black Racer
Blanding's Turtle
Spotted Turtle*
Bedford
Manchester
Londonderry
Merrimack
Litchfield
Legend
Site bounds
Plant
Animal
towns
0
0.3
0.6
0.9
1.2
1.5
Miles

NHB24-1680 EOCODE: PDRUB1T0E0*001*NH

New Hampshire Natural Heritage Bureau - Plant Record

long-leaved bluet (*Houstonia longifolia*)

Legal Status	Conservation Status
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2023: Area 1, northern polygon: over 300 plants in clumps within an area measuring approximately 1,555 m. Some large clumps with 70+ stems; majority of plants with 2-5 stems. 2014: Area 2: Approximately 10-12 plants at three locations. Plants growing in tight clumps. 1999: Several hundred plants in flower, in small patches over ca. one-half acre. No date: Specimen collected. 1902: Specimen 45353 at NHA.

General Area: 2023: Area 1, northern polygon: Plants were located along the sandy drive in mostly open areas and in partial sun. No plants located within forest edge, only up to it. Habitat west of the population very dense with understory vegetation and grass. Associated species include sweet-fern, yarrow (*Achillea millefolium*), oak (*Quercus* sp.), and haircap moss (*Polytrichum commune*). 2014: Area 2: Plants are located at the edge of an old sand pit with a sapling layer of gray birch (*Betula populifolia*) and quaking aspen (*Populus tremuloides*), and a shrub layer of sweet-fern (*Comptonia peregrina*). 1999: Edge habitat between grassy field and encroaching second-growth hardwoods.

General Comments: Original 1902 specimen placed in Manchester. Site discovered in 1999 is in Londonderry, 1.75 km south and 0.5 km east of the Manchester town line.

Management Comments: 2023: Excavator observed parked on plant. Sandy road cutting through area. Site visited for environmental review. 2014: Protection measures were put into place for cutting of the adjacent lot. 1999: Area may have burned not long ago (cinders present), helping to create open to lightly-shaded setting.

Location

Survey Site Name: Manchester Airport, south of
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 1.2 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2023: Area 1: Site is north of Pettengill Road and west of Innovation Way (42.916857, -71.440852). 2014: Area 2: Site is immediately adjacent to recently constructed Pettengill Road.

NHB24-1680 EOCODE: PDRUB1T0E0*001*NH

1999: Travel south on Brown Avenue past its point of divergence with Rte 3A. Stay left and park just before Brown Avenue rejoins 3A in an empty lot at a gate to the entrance of a sandpit. Walk due east to the eastern edge of the sandpit, near the tip of an elongated extension of grassland into the woods.

Dates documented

First reported: 1902-06-30 Last reported: 2023-06-20

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARAAD04010*387*NH

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2009: Area 12308: 1 observed.
General Area: 2009: Area 12308: In residential building.
General Comments: --
Management Comments: --

Location

Survey Site Name: Nesenkeag Brook
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2009: Area 12308: 13 Delta Drive, Suite 7, Londonderry.

Dates documented

First reported: 2009-09-23 Last reported: 2009-09-23

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARAAD04010*724*NH

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status	Conservation Status
Federal: Not listed	Global: Apparently secure but with cause for concern
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2012: Area 13045: 1 adult observed.
General Area: 2012: Area 13045: Gravel road shoulder near wetland forest.
General Comments: --
Management Comments: --

Location

Survey Site Name: Nesenkeag Brook
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2012: Area 13045: Aviation Park Drive, Londonderry, just before cul-de-sac at end of road.

Dates documented

First reported: 2012-06-07 Last reported: 2012-06-07

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARAAD04010*949*NH

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Apparently secure but with cause for concern
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2014: Area 13919: 1 adult observed, sex unknown.
General Area: 2014: Area 13919: Office park just west of Little Cohas Brook
General Comments: --
Management Comments: --

Location

Survey Site Name: Nesenkeag Brook
Managed By:

County: Rockingham
Town(s): Londonderry
Size: .4 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2014: Area 13919: Outside of office building on Delta Drive, Londonderry (42.91197, -71.41648).

Dates documented

First reported: 2014-06-12 Last reported: 2014-06-12

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARAAD04010*139*NH

New Hampshire Natural Heritage Bureau - Animal Record

Blanding's Turtle (*Emydoidea blandingii*)

Legal Status	Conservation Status
Federal: Not listed	Global: Apparently secure but with cause for concern
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: --

Detailed Description: 2004: Area 9278: 1 turtle.
General Area: --
General Comments: --
Management Comments: --

Location

Survey Site Name: Nesenkeag Brook
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2004: Area 9278: End of Delta Road off of Harvey Road behind the Londonderry Armed Forces Reserve Center.

Dates documented

First reported: 2004-05-15 Last reported: 2004-05-15

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARADB17020*008*NH

New Hampshire Natural Heritage Bureau - Animal Record

Eastern Hognose Snake (*Heterodon platirhinos*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2012: Area 13089: 1 adult observed, 18-20" in length. 2008: Area 11548: 1 adult seen. 1984: Area 12169M: 1 observed. 1979: Area 11548a: 1 snake found in garden and killed. 1972: Area 6596: 1 seen. Adult. Area 12169M: 1 individual observed, 16-18 inches long.

General Area: 2012: Area 13089: Residential yard in wooded area. 2008: Area 11548: It was located just to the north and east of the bigger pond on the north end of the parcel. 1979: Area 11548a: Snake found in garden. 1972: Area 12169M: In a small cemetary. Area shaded and grassy.

General Comments: 2003: Area 12169M: Formerly Pettengill Cemetery. Now busy road. NHNHB was contacted on 29 June 1984 by a neighbor of individual who killed the snake.

Management Comments: --

Location

Survey Site Name: Litchfield
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 12.5 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2012: Area 13089: End of Sunflower Lane in Londonderry. The woods in the back border the Manchester town line. 1979: Litchfield. About 4 houses over town line from Manchester on Rte. 3. 1972: Area 6596: Bill Boucher residence, 272 Litchfield Road, 1/2 mile east of Route 3A at the junction of Watts Brook. Area 12169M: Londonderry. Found in a small old cemetary on north side of Pettingill Road which runs west off of Harvey Road. Near Little Cohas Marsh.

Dates documented

First reported: 1972-07-01 Last reported: 2012-09-02

NHB24-1680 EOCODE: ARADB17020*008*NH

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARADB17020*012*NH

New Hampshire Natural Heritage Bureau - Animal Record

Eastern Hognose Snake (*Heterodon platirhinos*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 1984: Area 12169M: 1 observed. 1972: Area 12169M: 1 individual observed, 16-18 inches long.
General Area: 1971: Area 12169M: In a small cemetary. Area shaded and grassy.
General Comments: 2003: Area 12169M: Formerly Pettengill Cemetery. Now busy road. More field work needed.
Management Comments: --

Location

Survey Site Name: Londonderry Cemetary
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 2.8 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 1972: Area 12169M: Londonderry. Found in a small old cemetary on north side of Pettingill Road which runs west off of Harvey Road. Near Little Cohas Marsh.

Dates documented

First reported: 1971 Last reported: 1984-07-01

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARADB17020*022*NH

New Hampshire Natural Heritage Bureau - Animal Record

Eastern Hognose Snake (*Heterodon platirhinos*)

Legal Status	Conservation Status
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Endangered	State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 1972: Area 6596: 1 seen. Adult.
General Area: --
General Comments: --
Management Comments: --

Location

Survey Site Name: Watts Brook
Managed By: The Pathway Common Land

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 1972: Area 6596: Bill Boucher residence, 272 Litchfield Road, 1/2 mile east of Route 3A at the junction of Watts Brook.

Dates documented

First reported: 1972-07-01 Last reported: 1972-07-01

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: AMAEB01110*020*NH

New Hampshire Natural Heritage Bureau - Animal Record

New England Cottontail (*Sylvilagus transitionalis*)

Legal Status		Conservation Status	
Federal:	Not listed	Global:	Rare or uncommon
State:	Listed Endangered	State:	Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2020: Buckthorn: Winter observations at 8 points. Charlotte: Winter observations at 4 points. Pettengill: Winter observations at 5 points. Stonyfield: Winter observations at 9 points. 2019: Buckthorn: Winter observations at 38 points. Charlotte: Winter observations at 2 points. Pettengill: Winter observations at 4 points. Stonyfield: Winter observations at 39 points. 2018: Buckthorn: Winter observations at 32 points. Charlotte: Winter observations at 2 points. Stonyfield: Winter observations at 21 points. 2017: Buckthorn: Winter observations at 5 points. Charlotte: Winter observations at 33 points. Pettengill: Winter observations at 2 points. Stonyfield: Winter observations at 55 points. 2016: Buckthorn: Winter observations at 42 points. Pettengill: Winter observation at 1 point. Stonyfield: Winter observations at 38 points. 2015: Winter observations at 5 points. 2014: Winter observations at 3 points. 2013: Winter observations at 13 points. 2011: Winter observations at 32 points. 2002: 1+ age and sex unknowns (Obs_id 744).
General Area: 2002: Terrestrial: grassland / field (Obs_id 744).
General Comments: 2002: Results of J. Litvaitis Regional NEC Survey - 2003 (Obs_id 744).
Management Comments: --

Location

Survey Site Name: Little Cohas Brook, south of
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 88.6 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2017: Charlotte: [Points on NH DOT property at north end of Charlotte Street, Manchester, south of Raymond Wieczorek Drive.] 2016: Pettengill: [6 Pettengill Road, Manchester]. Buckthorn: [Points east of Manchester Airport and west of Mammoth Road]. Stonyfield:

NHB24-1680 EOCODE: AMAEB01110*020*NH

[Points in the vicinity of the Stonyfield yogurt facility off Burton Drive, Londonderry]. 2002: Stonyfield Farm (Obs_id 744).

Dates documented

First reported: 2002-02-02 Last reported: 2020-02-28

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB24-1680 EOCODE: ARADB0701D*019*NH

New Hampshire Natural Heritage Bureau - Animal Record

Northern Black Racer (*Coluber constrictor constrictor*)

Legal Status		**Conservation Status**	
Federal:	Not listed	Global:	Demonstrably widespread, abundant, and secure
State:	Listed Threatened	State:	Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2004: 1 seen. Adult. (Obs_id 2004.0054).
General Area: 2004: Dirt road next to field with old grass, near beaver pond. Restored gravel pit. Lots of dirt bike/ATV trails. Big housing development nearby. (Obs_id 2004.0054).
General Comments: --
Management Comments: --

Location

Survey Site Name: Manchester Industrial Park, south of
Managed By:

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2004: Rehabilitated gravel pit on west end of Pettingil Road (Obs_id 2004.0054).

Dates documented

First reported: 2004-04-27 Last reported: 2004-04-27

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
Please note: maps and NHB record pages are **confidential** and shall be redacted from public documents.

NHB24-1680 EOCODE: ARADB47010*030*NH

New Hampshire Natural Heritage Bureau - Animal Record

Smooth Green Snake (*Opheodrys vernalis*)

Legal Status	Conservation Status
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Special Concern	State: Rare or uncommon

Description at this Location

Conservation Rank: Not ranked
Comments on Rank: --

Detailed Description: 2003: Area 1044: 1 observed.
General Area: 2003: Area 1044: Marsh.
General Comments: --
Management Comments: --

Location

Survey Site Name: Little Cohas Marsh
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 1.9 acres
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 2003: Area 1044: West shore of marsh, 1/4 mile south of the dam, on the perimeter of the Army National Guard detention pond

Dates documented

First reported: 2003-09-17 Last reported: 2003-09-17

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

NHB DataCheck Results Letter
NH Natural Heritage Bureau
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NHB24-1680 EOCODE: ARAAD02010*079*NH

New Hampshire Natural Heritage Bureau - Animal Record

Spotted Turtle (*Clemmys guttata*)

Legal Status	Conservation Status
Federal: Not listed	Global: Demonstrably widespread, abundant, and secure
State: Listed Threatened	State: Imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Fair quality, condition and/or landscape context ('C' on a scale of A-D).
Comments on Rank: --

Detailed Description: 1997: Area 9260: 1 adult (8-9 years old) turtle observed, 7-8 inches long.
General Area: --
General Comments: 1997: Area 9620: Airport mitigation site review. Land to be an industrial development.
Management Comments: --

Location

Survey Site Name: Watts Brook
Managed By: NHDOT Mitigation

County: Rockingham
Town(s): Londonderry
Size: 7.7 acres Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: 1997: Area 9260: Small stream running west from Stonyfield Farm Yogurt.

Dates documented

First reported: 1997-05-01 Last reported: 1997-05-01

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists



Photo #1: North Wentworth Ave. right of way crossing of Tier 1 intermittent stream looking southeast



Photo #2: North Wentworth Ave. stream crossing looking upstream to the northeast

TFMoran, Inc.

48 Constitution Drive, Bedford, NH 03110

T(603) 472-4488 | www.tfmoran.com

TFMoran, Inc. Seacoast Division

170 Commerce Way–Suite 102 Portsmouth,NH 03801

T(603) 431-2222 | www.tfmoran.com

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists



Photo #3: Wetland 4 is a small, isolated depression located in the center of the site, looking northeast



Photo#4 Uplands adjacent to Wetland 3 and Wetland 4 looking north from WF3-148

TFMoran, Inc.

48 Constitution Drive, Bedford, NH 03110

T(603) 472-4488 | www.tfmoran.com

TFMoran, Inc. Seacoast Division

170 Commerce Way–Suite 102 Portsmouth,NH 03801

T(603) 431-2222 | www.tfmoran.com

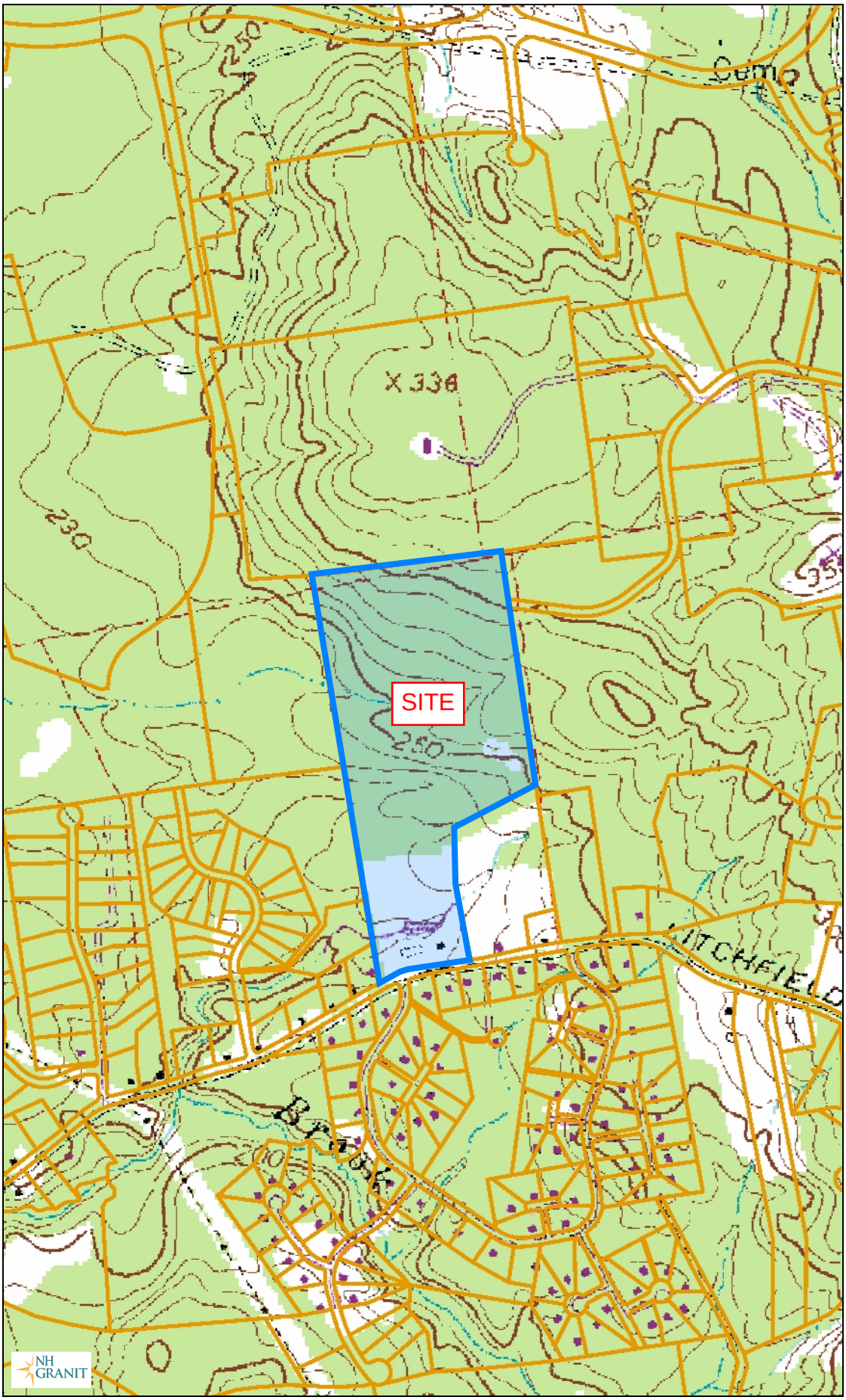


Photo#5: Junction of two gullies within proposed construction area looking north from WF3-112



Photo#6: Narrow wetland gully at WF3-150 looking south

Map by NH GRANIT



Legend

- Parcels
- State
- County
- City/Town

Map Scale

1: 10,000

© NH GRANIT, www.granit.unh.edu

Map Generated: 4/2/2025

Notes

7.5 min USGS Topo



PART 3

GROUNDWATER RECHARGE VOLULME (GRV) CALCULATION (Env-Wq 1507.04)

5.81	ac	Area of HSG A soil that was replaced by impervious cover	0.40"
-	ac	Area of HSG B soil that was replaced by impervious cover	0.25"
0.18	ac	Area of HSG C soil that was replaced by impervious cover	0.10"
-	ac	Area of HSG D soil or impervious cover that was replaced by impervious cover	0.0"
0.39	inches	Rd = Weighted groundwater recharge depth	
2.3438	ac-in	GRV = AI * Rd	
8,508	cf	GRV conversion (ac-in x 43,560 sf/ac x 1ft/12”)	

Provide calculations below showing that the project meets the groundwater recharge requirements (Env-Wq 1507.04):

Filtration Basin #1 = 13,348 cf

Filtration Basin #2 = 21,187 cf

Total = 34535 cf

Calculated by J. Devine, EIT 12/18/2025

FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.07)

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

Type/Node Name: **Filtration Basin 1**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

YES		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
10.52	ac	A = Area draining to the practice	
3.02	ac	A_I = Impervious area draining to the practice	
0.29	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.31	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
3.24	ac-in	WQV= 1" x Rv x A	
11,779	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
2,945	cf	25% x WQV (check calc for sediment forebay volume)	
8,834	cf	75% x WQV (check calc for surface sand filter volume)	
Sediment forebay		Method of Pretreatment? (not required for clean or roof runoff)	
3,260	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
7,027	sf	A_{SA} = Surface area of the practice	
1.25	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]	
		If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
	Yes/No	(Use the calculations below)	
16.1	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
-	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
271.50	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
-	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
269.83	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
266.50	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
271.50	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
5.00	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
1.67	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
277.00	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
278.00	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	**← yes**
If a surface sand filter or underground sand filter is proposed:			
NO	ac	Drainage Area check.	**< 10 ac**
-	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 75%WQV**
	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification.	
	Yes/No	Access grate provided?	**← yes**

If a bioretention area is proposed:			
NO	ac	Drainage Area no larger than 5 ac?	**← yes**
13,348	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ WQV**
18.0	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet	D-21	Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	**≥ 3:1**
Sheet	D-21	Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A_{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet		Note what sheet in the plan set contains the filter course spec.	

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

ESHWT = TP #1 = 272.5 - 32" = 269.83

Infiltration Rate = Average IT #1 & IT #2 = (0.33 + 4.68)/2 x FS = 1.3 in/hr

Impervious area calc includes gravel surfaces

forebay volume based on below lowest outlet to FB1

Calculated by J. Devine EIT 12/18/25

FILTRATION PRACTICE DESIGN CRITERIA
(Env-Wq 1508.07)

Type/Node Name: **Filtration Basin 2**

Enter the type of filtration practice (e.g., bioretention system) and the node name in the drainage analysis, if applicable.

YES		Check if you reviewed the restrictions on unlined systems outlined in Env-Wq 1508.07(a).	
11.79	ac	A = Area draining to the practice	
4.00	ac	A_I = Impervious area draining to the practice	
0.34	decimal	I = Percent impervious area draining to the practice, in decimal form	
0.36	unitless	Rv = Runoff coefficient = 0.05 + (0.9 x I)	
4.19	ac-in	WQV= 1" x Rv x A	
15,215	cf	WQV conversion (ac-in x 43,560 sf/ac x 1ft/12")	
3,804	cf	25% x WQV (check calc for sediment forebay volume)	
11,412	cf	75% x WQV (check calc for surface sand filter volume)	
Sediment forebay		Method of Pretreatment? (not required for clean or roof runoff)	
3,861	cf	V_{SED} = Sediment forebay volume, if used for pretreatment	**≥ 25%WQV**
Calculate time to drain if system IS NOT underdrained:			
15,250	sf	A_{SA} = Surface area of the practice	
3.82	iph	$Ksat_{DESIGN}$ = Design infiltration rate[1]	
		If Ksat (prior to factor of safety) is < 0.50 iph, has an underdrain been provided?	
	Yes/No	(Use the calculations below)	
3.1	hours	T_{DRAIN} = Drain time = V / (A_{SA} * I_{DESIGN})	**≤ 72-hrs**
Calculate time to drain if system IS underdrained:			
	ft	E_{WQV} = Elevation of WQV (attach stage-storage table)	
	cfs	Q_{WQV} = Discharge at the E_{WQV} (attach stage-discharge table)	
-	hours	T_{DRAIN} = Drain time = 2WQV/Q_{WQV}	**≤ 72-hrs**
275.50	feet	E_{FC} = Elevation of the bottom of the filter course material[2]	
-	feet	E_{UD} = Invert elevation of the underdrain (UD), if applicable	
274.23	feet	E_{SHWT} = Elevation of SHWT (if none found, enter the lowest elevation of the test pit)	
271.90	feet	E_{ROCK} = Elevation of bedrock (if none found, enter the lowest elevation of the test pit)	
275.50	feet	$D_{FC\ to\ UD}$ = Depth to UD from the bottom of the filter course	**≥ 1'**
3.60	feet	$D_{FC\ to\ ROCK}$ = Depth to bedrock from the bottom of the filter course	**≥ 1'**
1.27	feet	$D_{FC\ to\ SHWT}$ = Depth to SHWT from the bottom of the filter course	**≥ 1'**
278.97	ft	Peak elevation of the 50-year storm event (infiltration can be used in analysis)	
280.00	ft	Elevation of the top of the practice	
YES		50 peak elevation ≤ Elevation of the top of the practice	**← yes**
If a surface sand filter or underground sand filter is proposed:			
NO	ac	Drainage Area check.	**< 10 ac**
	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ 75%WQV**
	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet		Note what sheet in the plan set contains the filter course specification.	
Yes	Yes/No	Access grate provided?	**← yes**

If a bioretention area is proposed:			
NO	ac	Drainage Area no larger than 5 ac?	**← yes**
21,187	cf	V = Volume of storage[3] (attach a stage-storage table)	**≥ WQV**
18.0	inches	D_{FC} = Filter course thickness	**18", or 24" if within GPA**
Sheet	D-21	Note what sheet in the plan set contains the filter course specification	
3.0	:1	Pond side slopes	**≥ 3:1**
Sheet	D-21	Note what sheet in the plan set contains the planting plans and surface cover	
If porous pavement is proposed:			
		Type of pavement proposed (Concrete? Asphalt? Pavers? Etc.)	
	acres	A_{SA} = Surface area of the pervious pavement	
	:1	Ratio of the contributing area to the pervious surface area	**≤ 5:1**
	inches	D_{FC} = Filter course thickness	**12", or 18" if within GPA mod. 304.1 (see spec)**
Sheet		Note what sheet in the plan set contains the filter course spec.	

1. Rate of the limiting layer (either the filter course or the underlying soil). $Ksat_{design}$ includes factor of safey. See Env-Wq 1504.14 for guidance on determining the infiltration rate.

2. See lines 34, 40 and 48 for required depths of filter media.

3. Volume without depending on infiltration. The volume includes the storage above the filter (but below the invert of the outlet stucture, if any), the filter media voids, and the pretreatment area. The storage above the filter media shall not include the volume above the outlet structure, if any.

Designer's Notes:

ESHWT = TP #4 = 276.9 - 32" = 274.23

Infiltration Rate = IT #4, IT #5 = (6.73 + 8.45)/2 x FS = 3.818 in/hr

Calculated by J. Devine EIT 12/18/2025

Stage-Area-Storage for Pond FB1: FILT. BASIN #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
271.50	7,427	0
271.60	7,427	297
271.70	7,427	594
271.80	7,427	891
271.90	7,427	1,188
272.00	7,427	1,485
272.10	7,427	1,782
272.20	7,427	2,080
272.30	7,427	2,377
272.40	7,427	2,674
272.50	7,427	2,971
272.60	7,427	3,268
272.70	7,427	3,565
272.80	7,427	3,862
272.90	7,427	4,159
273.00	7,427	4,501
273.10	7,822	5,263
273.20	8,216	6,065
273.30	8,611	6,906
273.40	9,005	7,787
273.50	9,400	8,707
273.60	9,794	9,667
273.70	10,188	10,666
273.80	10,583	11,705
273.90	10,977	12,783
274.00	11,372	13,900
274.10	11,513	15,045
274.20	11,654	16,203
274.30	11,795	17,375
274.40	11,936	18,562
274.50	12,078	19,763
274.60	12,219	20,977
274.70	12,360	22,206
274.80	12,501	23,449
274.90	12,642	24,707
275.00	12,783	25,978
275.10	12,930	27,263
275.20	13,076	28,564
275.30	13,223	29,879
275.40	13,370	31,208
275.50	13,517	32,553
275.60	13,663	33,912
275.70	13,810	35,285
275.80	13,957	36,674
275.90	14,103	38,077
276.00	14,250	39,494
276.10	14,402	40,927
276.20	14,555	42,375
276.30	14,707	43,838
276.40	14,860	45,316
276.50	15,012	46,810
276.60	15,164	48,319
276.70	15,317	49,843
276.80	15,469	51,382
276.90	15,622	52,936
277.00	15,774	54,506
277.10	15,932	56,092
277.20	16,090	57,693
277.30	16,248	59,310
277.40	16,406	60,942
277.50	16,564	62,591
277.60	16,722	64,255
277.70	16,880	65,935
277.80	17,038	67,631
277.90	17,196	69,343
278.00	17,354	71,070
278.10	17,900	72,833
278.20	18,445	74,650
278.30	**18,991**	**76,522**

Stage-Area-Storage for Pond FB2: FILT. BASIN #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
275.50	15,250	0
275.55	15,250	305
275.60	15,250	610
275.65	15,250	915
275.70	15,250	1,220
275.75	15,250	1,525
275.80	15,250	1,830
275.85	15,250	2,135
275.90	15,250	2,440
275.95	15,250	2,745
276.00	15,250	3,050
276.05	15,250	3,355
276.10	15,250	3,660
276.15	15,250	3,965
276.20	15,250	4,270
276.25	15,250	4,575
276.30	15,250	4,880
276.35	15,250	5,185
276.40	15,250	5,490
276.45	15,250	5,795
276.50	15,250	6,100
276.55	15,250	6,405
276.60	15,250	6,710
276.65	15,250	7,015
276.70	15,250	7,320
276.75	15,250	7,625
276.80	15,250	7,930
276.85	15,250	8,235
276.90	15,250	8,540
276.95	15,250	8,845
277.00	15,250	9,241
277.05	15,340	10,006
277.10	15,430	10,776
277.15	15,520	11,549
277.20	15,610	12,327
277.25	15,700	13,110
277.30	15,790	13,898
277.35	15,880	14,689
277.40	15,970	15,485
277.45	16,060	16,286
277.50	16,150	17,091
277.55	16,240	17,901
277.60	16,330	18,716
277.65	16,420	19,534
277.70	16,510	20,357
277.75	16,600	21,185
277.80	16,690	22,018
277.85	16,780	22,854
277.90	16,870	23,695
277.95	16,960	24,541
278.00	17,050	25,391
278.05	17,143	26,246
278.10	17,236	27,106
278.15	17,329	27,970
278.20	17,421	28,839
278.25	17,514	29,712
278.30	17,607	30,590
278.35	17,700	31,473
278.40	17,793	32,360
278.45	17,886	33,252
278.50	17,979	34,149
278.55	18,071	35,050
278.60	18,164	35,956
278.65	18,257	36,866
278.70	18,350	37,781
278.75	18,443	38,701
278.80	18,536	39,626
278.85	18,628	40,555
278.90	18,721	41,489
278.95	18,814	42,427
279.00	18,907	43,370
279.05	19,003	44,318
279.10	19,098	45,270
279.15	19,194	46,228
279.20	19,290	47,190
279.25	19,385	48,157
279.30	19,481	49,128
279.35	19,577	50,105
279.40	19,672	51,086
279.45	19,768	52,072
279.50	19,864	53,063
279.55	19,959	54,058
279.60	20,055	55,059
279.65	20,150	56,064
279.70	20,246	57,074
279.75	20,342	58,088
279.80	20,437	59,108
279.85	20,533	60,132
279.90	20,629	61,161
279.95	20,724	62,195
280.00	**20,820**	**63,233**

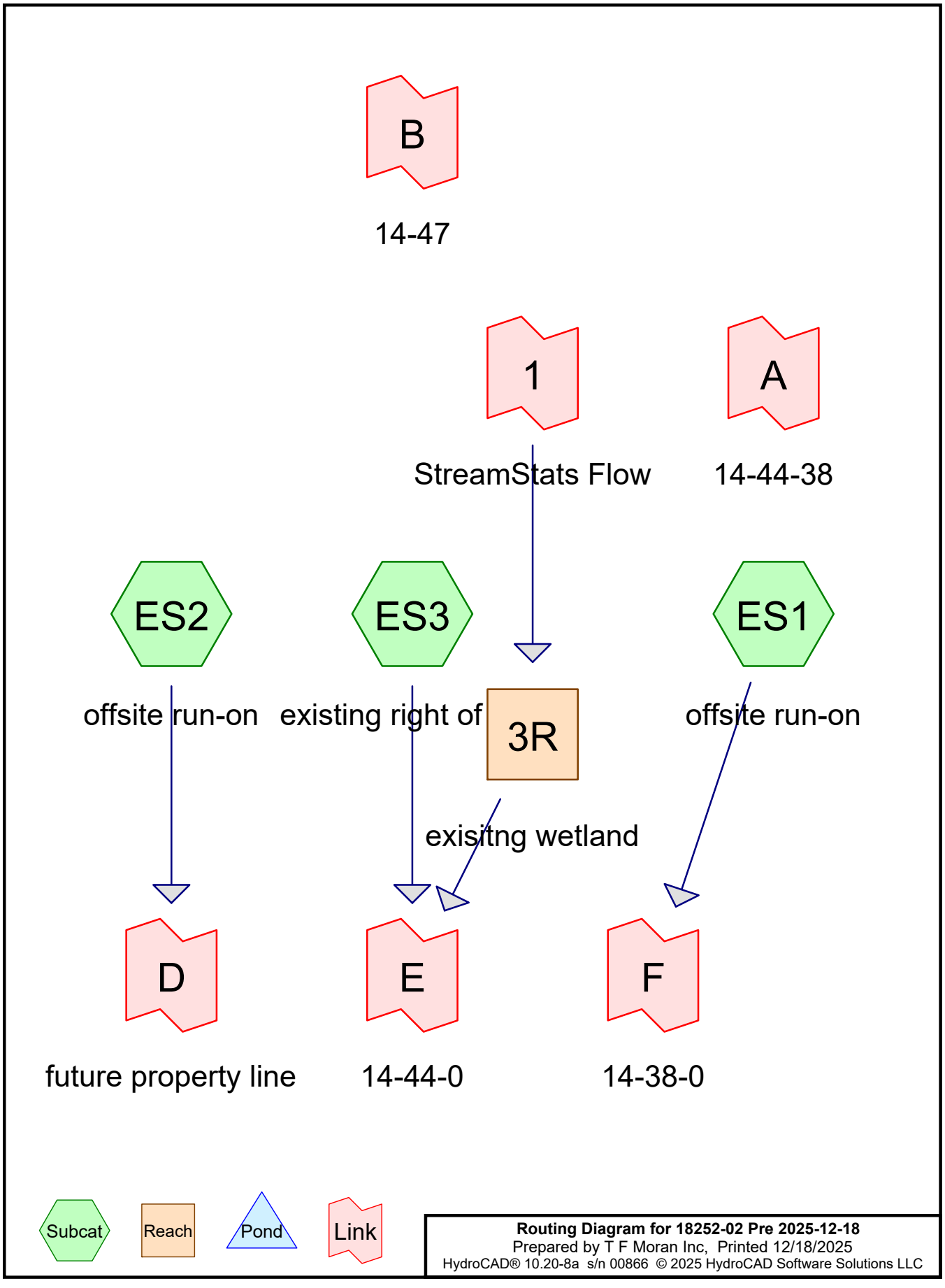
Stage-Area-Storage for Pond SFB1: FOREBAY #1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
274.00	628	0
274.05	654	32
274.10	680	65
274.15	705	100
274.20	731	136
274.25	757	173
274.30	783	212
274.35	809	251
274.40	834	292
274.45	860	335
274.50	886	379
274.55	912	423
274.60	938	470
274.65	963	517
274.70	989	566
274.75	1,015	616
274.80	1,041	668
274.85	1,067	720
274.90	1,092	774
274.95	1,118	829
275.00	1,144	886
275.05	1,183	944
275.10	1,221	1,004
275.15	1,260	1,066
275.20	1,298	1,130
275.25	1,337	1,196
275.30	1,375	1,264
275.35	1,414	1,334
275.40	1,452	1,405
275.45	1,491	1,479
275.50	1,530	1,554
275.55	1,568	1,632
275.60	1,607	1,711
275.65	1,645	1,792
275.70	1,684	1,876
275.75	1,722	1,961
275.80	1,761	2,048
275.85	1,799	2,137
275.90	1,838	2,228
275.95	1,876	2,321
276.00	1,915	2,416
276.05	1,964	2,512
276.10	2,014	2,612
276.15	2,063	2,714
276.20	2,112	2,818
276.25	2,161	2,925
276.30	2,211	3,034
276.35	2,260	3,146
276.40	2,309	3,260
276.45	2,358	3,377
276.50	2,408	3,496
276.55	2,457	3,618
276.60	2,506	3,742
276.65	2,555	3,868
276.70	2,604	3,997
276.75	2,654	4,129
276.80	2,703	4,263
276.85	2,752	4,399
276.90	2,801	4,538
276.95	2,851	4,679
277.00	2,900	4,823
277.05	2,956	4,969
277.10	3,011	5,119
277.15	3,067	5,271
277.20	3,123	5,425
277.25	3,179	5,583
277.30	3,234	5,743
277.35	3,290	5,906
277.40	3,346	6,072
277.45	3,401	6,241
277.50	3,457	6,412
277.55	3,513	6,586
277.60	3,568	6,764
277.65	3,624	6,943
277.70	3,680	7,126
277.75	3,736	7,311
277.80	3,791	7,499
277.85	3,847	7,690
277.90	3,903	7,884
277.95	3,958	8,081
278.00	**4,014**	**8,280**

Stage-Area-Storage for Pond SFB2: FOREBAY #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
276.50	741	0
276.55	780	38
276.60	819	78
276.65	858	120
276.70	897	164
276.75	937	210
276.80	976	257
276.85	1,015	307
276.90	1,054	359
276.95	1,093	413
277.00	1,132	468
277.05	1,173	526
277.10	1,215	586
277.15	1,256	647
277.20	1,297	711
277.25	1,339	777
277.30	1,380	845
277.35	1,421	915
277.40	1,462	987
277.45	1,504	1,061
277.50	1,545	1,138
277.55	1,586	1,216
277.60	1,628	1,296
277.65	1,669	1,379
277.70	1,710	1,463
277.75	1,752	1,550
277.80	1,793	1,638
277.85	1,834	1,729
277.90	1,875	1,822
277.95	1,917	1,916
278.00	1,958	2,013
278.05	2,002	2,112
278.10	2,046	2,213
278.15	2,090	2,317
278.20	2,134	2,422
278.25	2,178	2,530
278.30	2,222	2,640
278.35	2,266	2,752
278.40	2,310	2,867
278.45	2,354	2,983
278.50	2,398	3,102
278.55	2,441	3,223
278.60	2,485	3,346
278.65	2,529	3,472
278.70	2,573	3,599
278.75	2,617	3,729
278.80	2,661	3,861
278.85	2,705	3,995
278.90	2,749	4,131
278.95	2,793	4,270
279.00	2,837	4,411
279.05	2,884	4,554
279.10	2,931	4,699
279.15	2,978	4,847
279.20	3,024	4,997
279.25	3,071	5,149
279.30	3,118	5,304
279.35	3,165	5,461
279.40	3,212	5,621
279.45	3,259	5,782
279.50	3,306	5,946
279.55	3,352	6,113
279.60	3,399	6,282
279.65	3,446	6,453
279.70	3,493	6,626
279.75	3,540	6,802
279.80	3,587	6,980
279.85	3,633	7,161
279.90	3,680	7,344
279.95	3,727	7,529
280.00	**3,774**	**7,716**

PART 4



Routing Diagram for 18252-02 Pre 2025-12-18
Prepared by T F Moran Inc, Printed 12/18/2025
HydroCAD® 10.20-8a s/n 00866 © 2025 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-YR	Type III 24-hr		Default	24.00	1	2.90	2
2	10-YR	Type III 24-hr		Default	24.00	1	4.37	2
3	25-YR	Type III 24-hr		Default	24.00	1	5.53	2
4	50-YR	Type III 24-hr		Default	24.00	1	6.60	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
26,715	96	Gravel surface, HSG C (ES2)
2,123	98	Roofs, HSG C (ES2)
820,890	30	Woods, Good, HSG A (ES1, ES2, ES3)
38,440	55	Woods, Good, HSG B (ES2)
575,414	70	Woods, Good, HSG C (ES1, ES2)
1,463,582	**48**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
820,890	HSG A	ES1, ES2, ES3
38,440	HSG B	ES2
604,252	HSG C	ES1, ES2
0	HSG D	
0	Other	
1,463,582		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Subcatchment Numbers
0	0	26,715	0	0	26,715	Gravel surface	ES2
0	0	2,123	0	0	2,123	Roofs	ES2
820,890	38,440	575,414	0	0	1,434,744	Woods, Good	ES1, ES2, ES3
820,890	**38,440**	**604,252**	**0**	**0**	**1,463,582**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES1: offsite run-on Runoff Area=401,005 sf 0.00% Impervious Runoff Depth>0.23"
Flow Length=1,975' Tc=97.1 min CN=58 Runoff=0.4 cfs 7,690 cf

Subcatchment ES2: offsite run-on Runoff Area=1,011,351 sf 0.21% Impervious Runoff Depth>0.01"
Flow Length=1,293' Tc=76.6 min CN=45 Runoff=0.0 cfs 1,201 cf

Subcatchment ES3: existing right of way Runoff Area=51,226 sf 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=30 Runoff=0.0 cfs 0 cf

Reach 3R: exisitng wetland Avg. Flow Depth=0.27' Max Vel=4.98 fps Inflow=5.8 cfs 20,736 cf
n=0.030 L=60.0' S=0.0667 '/' Capacity=268.4 cfs Outflow=5.7 cfs 20,738 cf

Link 1: StreamStats Flow Manual Hydrograph Inflow=5.8 cfs 20,736 cf
Area= 1,951,488 sf Primary=5.8 cfs 20,736 cf

Link A: 14-44-38
Primary=0.0 cfs 0 cf

Link B: 14-47
Primary=0.0 cfs 0 cf

Link D: future property line Inflow=0.0 cfs 1,201 cf
Primary=0.0 cfs 1,201 cf

Link E: 14-44-0 Inflow=5.7 cfs 20,738 cf
Primary=5.7 cfs 20,738 cf

Link F: 14-38-0 Inflow=0.4 cfs 7,690 cf
Primary=0.4 cfs 7,690 cf

Total Runoff Area = 1,463,582 sf Runoff Volume = 8,892 cf Average Runoff Depth = 0.07"
99.85% Pervious = 1,461,459 sf 0.15% Impervious = 2,123 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES1: offsite run-on Runoff Area=401,005 sf 0.00% Impervious Runoff Depth>0.81"
Flow Length=1,975' Tc=97.1 min CN=58 Runoff=2.1 cfs 27,066 cf

Subcatchment ES2: offsite run-on Runoff Area=1,011,351 sf 0.21% Impervious Runoff Depth>0.25"
Flow Length=1,293' Tc=76.6 min CN=45 Runoff=1.0 cfs 21,092 cf

Subcatchment ES3: existing right of way Runoff Area=51,226 sf 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=30 Runoff=0.0 cfs 0 cf

Reach 3R: exisitng wetland Avg. Flow Depth=0.34' Max Vel=5.66 fps Inflow=8.3 cfs 29,700 cf
n=0.030 L=60.0' S=0.0667 '/' Capacity=268.4 cfs Outflow=8.2 cfs 29,702 cf

Link 1: StreamStats Flow Manual Hydrograph Inflow=8.3 cfs 29,700 cf
Area= 1,951,488 sf Primary=8.3 cfs 29,700 cf

Link A: 14-44-38
Primary=0.0 cfs 0 cf

Link B: 14-47
Primary=0.0 cfs 0 cf

Link D: future property line Inflow=1.0 cfs 21,092 cf
Primary=1.0 cfs 21,092 cf

Link E: 14-44-0 Inflow=8.2 cfs 29,702 cf
Primary=8.2 cfs 29,702 cf

Link F: 14-38-0 Inflow=2.1 cfs 27,066 cf
Primary=2.1 cfs 27,066 cf

Total Runoff Area = 1,463,582 sf Runoff Volume = 48,158 cf Average Runoff Depth = 0.39"
99.85% Pervious = 1,461,459 sf 0.15% Impervious = 2,123 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES1: offsite run-on Runoff Area=401,005 sf 0.00% Impervious Runoff Depth>1.43"
Flow Length=1,975' Tc=97.1 min CN=58 Runoff=4.0 cfs 47,643 cf

Subcatchment ES2: offsite run-on Runoff Area=1,011,351 sf 0.21% Impervious Runoff Depth>0.60"
Flow Length=1,293' Tc=76.6 min CN=45 Runoff=3.5 cfs 50,611 cf

Subcatchment ES3: existing right of way Runoff Area=51,226 sf 0.00% Impervious Runoff Depth>0.03"
Tc=6.0 min CN=30 Runoff=0.0 cfs 131 cf

Reach 3R: exisitng wetland Avg. Flow Depth=0.42' Max Vel=6.47 fps Inflow=12.1 cfs 43,560 cf
n=0.030 L=60.0' S=0.0667 '/' Capacity=268.4 cfs Outflow=12.1 cfs 43,563 cf

Link 1: StreamStats Flow Manual Hydrograph Inflow=12.1 cfs 43,560 cf
Area= 1,951,488 sf Primary=12.1 cfs 43,560 cf

Link A: 14-44-38
Primary=0.0 cfs 0 cf

Link B: 14-47
Primary=0.0 cfs 0 cf

Link D: future property line Inflow=3.5 cfs 50,611 cf
Primary=3.5 cfs 50,611 cf

Link E: 14-44-0 Inflow=12.1 cfs 43,694 cf
Primary=12.1 cfs 43,694 cf

Link F: 14-38-0 Inflow=4.0 cfs 47,643 cf
Primary=4.0 cfs 47,643 cf

Total Runoff Area = 1,463,582 sf Runoff Volume = 98,384 cf Average Runoff Depth = 0.81"
99.85% Pervious = 1,461,459 sf 0.15% Impervious = 2,123 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment ES1: offsite run-on Runoff Area=401,005 sf 0.00% Impervious Runoff Depth>2.08"
Flow Length=1,975' Tc=97.1 min CN=58 Runoff=6.2 cfs 69,532 cf

Subcatchment ES2: offsite run-on Runoff Area=1,011,351 sf 0.21% Impervious Runoff Depth>1.02"
Flow Length=1,293' Tc=76.6 min CN=45 Runoff=7.1 cfs 86,224 cf

Subcatchment ES3: existing right of way Runoff Area=51,226 sf 0.00% Impervious Runoff Depth>0.15"
Tc=6.0 min CN=30 Runoff=0.0 cfs 629 cf

Reach 3R: exisitng wetland Avg. Flow Depth=0.49' Max Vel=7.04 fps Inflow=15.5 cfs 55,800 cf
n=0.030 L=60.0' S=0.0667 '/' Capacity=268.4 cfs Outflow=15.5 cfs 55,804 cf

Link 1: StreamStats Flow Manual Hydrograph Inflow=15.5 cfs 55,800 cf
Area= 1,951,488 sf Primary=15.5 cfs 55,800 cf

Link A: 14-44-38
Primary=0.0 cfs 0 cf

Link B: 14-47
Primary=0.0 cfs 0 cf

Link D: future property line Inflow=7.1 cfs 86,224 cf
Primary=7.1 cfs 86,224 cf

Link E: 14-44-0 Inflow=15.5 cfs 56,433 cf
Primary=15.5 cfs 56,433 cf

Link F: 14-38-0 Inflow=6.2 cfs 69,532 cf
Primary=6.2 cfs 69,532 cf

Total Runoff Area = 1,463,582 sf Runoff Volume = 156,385 cf Average Runoff Depth = 1.28"
99.85% Pervious = 1,461,459 sf 0.15% Impervious = 2,123 sf

Summary for Subcatchment ES1: offsite run-on

Runoff = 2.1 cfs @ 13.50 hrs, Volume= 27,066 cf, Depth> 0.81"
Routed to Link F : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
277,626	70	Woods, Good, HSG C
0	98	Roofs, HSG C
0	96	Gravel surface, HSG C
123,379	30	Woods, Good, HSG A
0	30	Woods, Good, HSG A
401,005	58	Weighted Average
401,005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.3	100	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
23.9	508	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.2	706	0.0600	0.61		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	661	0.0900	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
97.1	1,975	Total			

Summary for Subcatchment ES2: offsite run-on

Runoff = 1.0 cfs @ 13.68 hrs, Volume= 21,092 cf, Depth> 0.25"
Routed to Link D : future property line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
297,788	70	Woods, Good, HSG C
646,285	30	Woods, Good, HSG A
26,715	96	Gravel surface, HSG C
38,440	55	Woods, Good, HSG B
2,123	98	Roofs, HSG C
1,011,351	45	Weighted Average
1,009,228		99.79% Pervious Area
2,123		0.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.5	100	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
24.4	517	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.2	444	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.5	232	0.0800	0.71		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
76.6	1,293	Total			

Summary for Subcatchment ES3: existing right of way

[45] Hint: Runoff=Zero

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Link E : 14-44-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
38,710	30	Woods, Good, HSG A
12,516	30	Woods, Good, HSG A
51,226	30	Weighted Average
51,226		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Reach 3R: exisitng wetland

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.18" for 10-YR event
Inflow = 8.3 cfs @ 12.00 hrs, Volume= 29,700 cf
Outflow = 8.2 cfs @ 12.00 hrs, Volume= 29,702 cf, Atten= 0%, Lag= 0.1 min
Routed to Link E : 14-44-0

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.66 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 4.15 fps, Avg. Travel Time= 0.2 min

Peak Storage= 87 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.34' , Surface Width= 4.67'
Bank-Full Depth= 2.50' Flow Area= 16.3 sf, Capacity= 268.4 cfs

4.00' x 2.50' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 1.0 '/' Top Width= 9.00'
Length= 60.0' Slope= 0.0667 '/'
Inlet Invert= 300.00', Outlet Invert= 296.00'



Summary for Link 1: StreamStats Flow

Peak flow rates from Pea-Plow Statistics Floew Report [Peak Flow Statewide SIR2008 5206]

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.18" for 10-YR event
Inflow = 8.3 cfs @ 12.00 hrs, Volume= 29,700 cf
Primary = 8.3 cfs @ 12.00 hrs, Volume= 29,700 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 3R : exisitng wetland

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

10-YR 25 Point manual hydrograph, To= 0.00 hrs, dt= 1.00 hrs, Area= 1,951,488 sf, cfs =

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	8.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00					

Summary for Link A: 14-44-38

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: 14-47

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: future property line

Inflow Area = 1,011,351 sf, 0.21% Impervious, Inflow Depth > 0.25" for 10-YR event
Inflow = 1.0 cfs @ 13.68 hrs, Volume= 21,092 cf
Primary = 1.0 cfs @ 13.68 hrs, Volume= 21,092 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: 14-44-0

Inflow Area = 2,002,714 sf, 0.00% Impervious, Inflow Depth = 0.18" for 10-YR event
Inflow = 8.2 cfs @ 12.00 hrs, Volume= 29,702 cf
Primary = 8.2 cfs @ 12.00 hrs, Volume= 29,702 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link F: 14-38-0

Inflow Area = 401,005 sf, 0.00% Impervious, Inflow Depth > 0.81" for 10-YR event
Inflow = 2.1 cfs @ 13.50 hrs, Volume= 27,066 cf
Primary = 2.1 cfs @ 13.50 hrs, Volume= 27,066 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Subcatchment ES1: offsite run-on

Runoff = 4.0 cfs @ 13.43 hrs, Volume= 47,643 cf, Depth> 1.43"
Routed to Link F : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
277,626	70	Woods, Good, HSG C
0	98	Roofs, HSG C
0	96	Gravel surface, HSG C
123,379	30	Woods, Good, HSG A
0	30	Woods, Good, HSG A
401,005	58	Weighted Average
401,005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.3	100	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
23.9	508	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.2	706	0.0600	0.61		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	661	0.0900	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
97.1	1,975	Total			

Summary for Subcatchment ES2: offsite run-on

Runoff = 3.5 cfs @ 13.34 hrs, Volume= 50,611 cf, Depth> 0.60"
Routed to Link D : future property line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
297,788	70	Woods, Good, HSG C
646,285	30	Woods, Good, HSG A
26,715	96	Gravel surface, HSG C
38,440	55	Woods, Good, HSG B
2,123	98	Roofs, HSG C
1,011,351	45	Weighted Average
1,009,228		99.79% Pervious Area
2,123		0.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.5	100	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
24.4	517	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.2	444	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.5	232	0.0800	0.71		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
76.6	1,293	Total			

Summary for Subcatchment ES3: existing right of way

Runoff = 0.0 cfs @ 20.96 hrs, Volume= 131 cf, Depth> 0.03"
Routed to Link E : 14-44-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
38,710	30	Woods, Good, HSG A
12,516	30	Woods, Good, HSG A
51,226	30	Weighted Average
51,226		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Reach 3R: exisitng wetland

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.27" for 25-YR event
Inflow = 12.1 cfs @ 12.00 hrs, Volume= 43,560 cf
Outflow = 12.1 cfs @ 12.00 hrs, Volume= 43,563 cf, Atten= 0%, Lag= 0.1 min
Routed to Link E : 14-44-0

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.47 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 4.76 fps, Avg. Travel Time= 0.2 min

Peak Storage= 112 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.42' , Surface Width= 4.84'
Bank-Full Depth= 2.50' Flow Area= 16.3 sf, Capacity= 268.4 cfs

4.00' x 2.50' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 1.0 '/' Top Width= 9.00'
Length= 60.0' Slope= 0.0667 '/'
Inlet Invert= 300.00', Outlet Invert= 296.00'



Summary for Link 1: StreamStats Flow

Peak flow rates from Pea-Plow Statistics Floew Report [Peak Flow Statewide SIR2008 5206]

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.27" for 25-YR event
Inflow = 12.1 cfs @ 12.00 hrs, Volume= 43,560 cf
Primary = 12.1 cfs @ 12.00 hrs, Volume= 43,560 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 3R : exisitng wetland

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

25-YR 25 Point manual hydrograph, To= 0.00 hrs, dt= 1.00 hrs, Area= 1,951,488 sf, cfs =

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	12.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00					

Summary for Link A: 14-44-38

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: 14-47

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: future property line

Inflow Area = 1,011,351 sf, 0.21% Impervious, Inflow Depth > 0.60" for 25-YR event
Inflow = 3.5 cfs @ 13.34 hrs, Volume= 50,611 cf
Primary = 3.5 cfs @ 13.34 hrs, Volume= 50,611 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: 14-44-0

Inflow Area = 2,002,714 sf, 0.00% Impervious, Inflow Depth > 0.26" for 25-YR event
Inflow = 12.1 cfs @ 12.00 hrs, Volume= 43,694 cf
Primary = 12.1 cfs @ 12.00 hrs, Volume= 43,694 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link F: 14-38-0

Inflow Area = 401,005 sf, 0.00% Impervious, Inflow Depth > 1.43" for 25-YR event
Inflow = 4.0 cfs @ 13.43 hrs, Volume= 47,643 cf
Primary = 4.0 cfs @ 13.43 hrs, Volume= 47,643 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Subcatchment ES1: offsite run-on

Runoff = 6.2 cfs @ 13.38 hrs, Volume= 69,532 cf, Depth> 2.08"
Routed to Link F : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
277,626	70	Woods, Good, HSG C
0	98	Roofs, HSG C
0	96	Gravel surface, HSG C
123,379	30	Woods, Good, HSG A
0	30	Woods, Good, HSG A
401,005	58	Weighted Average
401,005		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.3	100	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
23.9	508	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.2	706	0.0600	0.61		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	661	0.0900	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
97.1	1,975	Total			

Summary for Subcatchment ES2: offsite run-on

Runoff = 7.1 cfs @ 13.23 hrs, Volume= 86,224 cf, Depth> 1.02"
Routed to Link D : future property line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
297,788	70	Woods, Good, HSG C
646,285	30	Woods, Good, HSG A
26,715	96	Gravel surface, HSG C
38,440	55	Woods, Good, HSG B
2,123	98	Roofs, HSG C
1,011,351	45	Weighted Average
1,009,228		99.79% Pervious Area
2,123		0.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.5	100	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
24.4	517	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.2	444	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.5	232	0.0800	0.71		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
76.6	1,293	Total			

Summary for Subcatchment ES3: existing right of way

Runoff = 0.0 cfs @ 14.81 hrs, Volume= 629 cf, Depth> 0.15"
Routed to Link E : 14-44-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
38,710	30	Woods, Good, HSG A
12,516	30	Woods, Good, HSG A
51,226	30	Weighted Average
51,226		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Reach 3R: exisitng wetland

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.34" for 50-YR event
Inflow = 15.5 cfs @ 12.00 hrs, Volume= 55,800 cf
Outflow = 15.5 cfs @ 12.00 hrs, Volume= 55,804 cf, Atten= 0%, Lag= 0.1 min
Routed to Link E : 14-44-0

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.04 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 5.20 fps, Avg. Travel Time= 0.2 min

Peak Storage= 132 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.49' , Surface Width= 4.98'
Bank-Full Depth= 2.50' Flow Area= 16.3 sf, Capacity= 268.4 cfs

4.00' x 2.50' deep channel, n= 0.030 Stream, clean & straight
Side Slope Z-value= 1.0 '/' Top Width= 9.00'
Length= 60.0' Slope= 0.0667 '/'
Inlet Invert= 300.00', Outlet Invert= 296.00'



Summary for Link 1: StreamStats Flow

Peak flow rates from Pea-Plow Statistics Floew Report [Peak Flow Statewide SIR2008 5206]

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.34" for 50-YR event
Inflow = 15.5 cfs @ 12.00 hrs, Volume= 55,800 cf
Primary = 15.5 cfs @ 12.00 hrs, Volume= 55,800 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 3R : exisitng wetland

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

50-YR 25 Point manual hydrograph, To= 0.00 hrs, dt= 1.00 hrs, Area= 1,951,488 sf, cfs =

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00					

Summary for Link A: 14-44-38

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: 14-47

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: future property line

Inflow Area = 1,011,351 sf, 0.21% Impervious, Inflow Depth > 1.02" for 50-YR event
Inflow = 7.1 cfs @ 13.23 hrs, Volume= 86,224 cf
Primary = 7.1 cfs @ 13.23 hrs, Volume= 86,224 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: 14-44-0

Inflow Area = 2,002,714 sf, 0.00% Impervious, Inflow Depth > 0.34" for 50-YR event
Inflow = 15.5 cfs @ 12.00 hrs, Volume= 56,433 cf
Primary = 15.5 cfs @ 12.00 hrs, Volume= 56,433 cf, Atten= 0%, Lag= 0.0 min

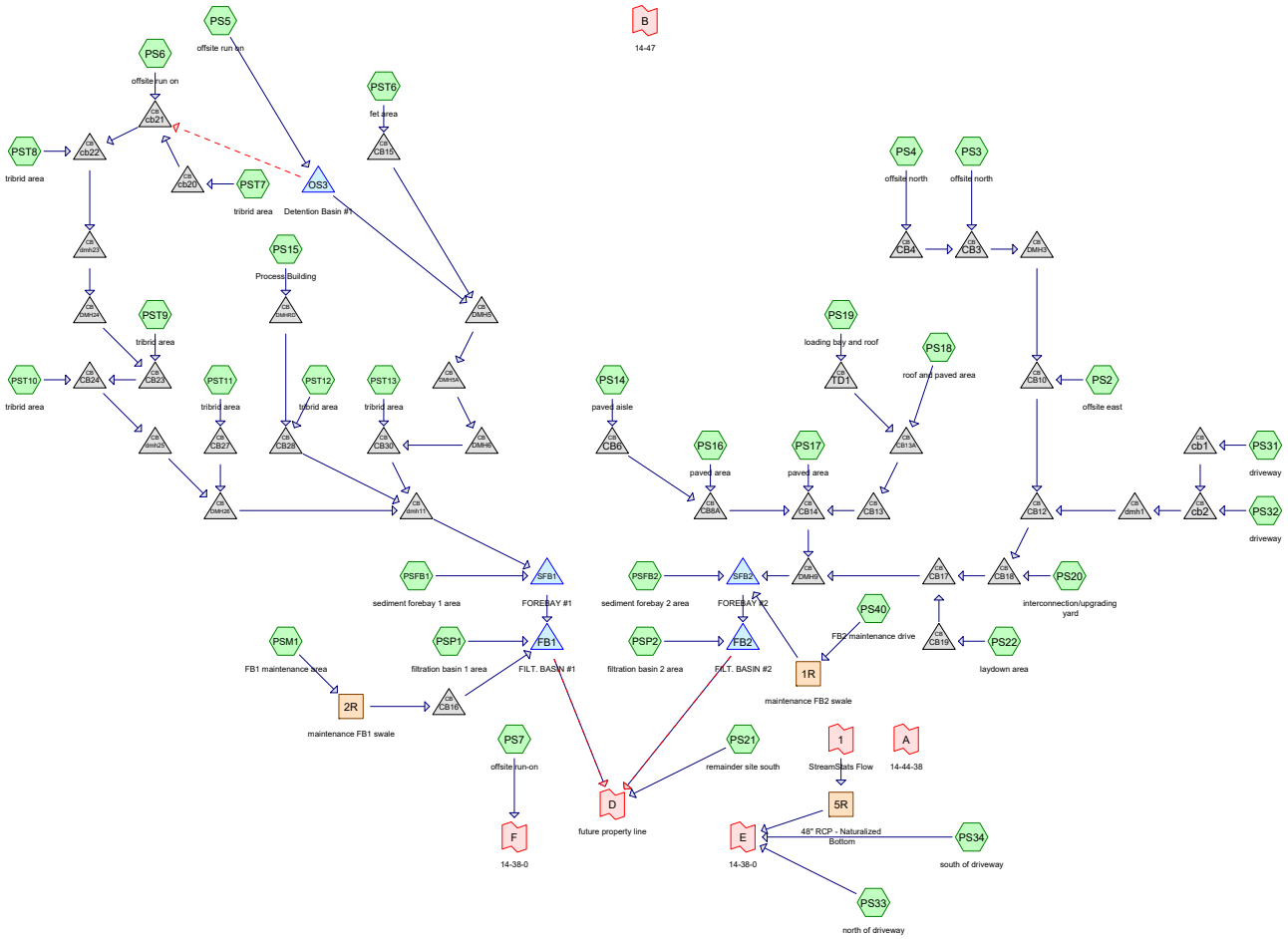
Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link F: 14-38-0

Inflow Area = 401,005 sf, 0.00% Impervious, Inflow Depth > 2.08" for 50-YR event
Inflow = 6.2 cfs @ 13.38 hrs, Volume= 69,532 cf
Primary = 6.2 cfs @ 13.38 hrs, Volume= 69,532 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

PART 5



Subcat Reach Pond Link

Routing Diagram for 18252-02 Post 2025-12-18
Prepared by T F Moran Inc, Printed 12/19/2025
HydroCAD® 10.20-8a s/n 00866 © 2025 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-YR	Type III 24-hr		Default	24.00	1	2.90	2
2	10-YR	Type III 24-hr		Default	24.00	1	4.37	2
3	25-YR	Type III 24-hr		Default	24.00	1	5.53	2
4	50-YR	Type III 24-hr		Default	24.00	1	6.60	2

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
294,439	39	>75% Grass cover, Good, HSG A (PS14, PS2, PS20, PS21, PS3, PS33, PS34, PS4, PS40, PS5, PS6, PS7, PSFB1, PSFB2, PSM1, PSP1, PSP2, PST10, PST11, PST12, PST13, PST6, PST7, PST8, PST9)
2,587	61	>75% Grass cover, Good, HSG B (PS21)
3,965	74	>75% Grass cover, Good, HSG C (PS14, PS21, PSM1, PSP1, PST11, PST12, PST13)
32,741	96	Gravel surface, HSG A (PS20, PS40, PST10, PST11, PST12, PST13, PST6, PST7, PST8, PST9)
27,033	96	Gravel surface, HSG C (PS4, PS5, PST11, PST12)
101,422	98	Paved parking, HSG A (PS14, PS16, PS17, PS18, PS19, PS2, PS21, PS22, PS3, PS4)
1,508	98	Paved parking, HSG C (PS14, PS4)
16,279	98	Paved roads w/curbs & sewers, HSG A (PS31, PS32)
102,915	98	Roofs, HSG A (PS14, PS15, PS16, PS18, PS19, PST10, PST11, PST12, PST13, PST6, PST7, PST8, PST9)
5,981	98	Roofs, HSG C (PS14, PS15, PS19, PS5, PST11, PST12)
273,094	30	Woods, Good, HSG A (PS2, PS21, PS3, PS4, PS7)
35,853	55	Woods, Good, HSG B (PS21)
565,765	70	Woods, Good, HSG C (PS21, PS3, PS4, PS5, PS6, PS7)
1,463,582	**61**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
820,890	HSG A	PS14, PS15, PS16, PS17, PS18, PS19, PS2, PS20, PS21, PS22, PS3, PS31, PS32, PS33, PS34, PS4, PS40, PS5, PS6, PS7, PSFB1, PSFB2, PSM1, PSP1, PSP2, PST10, PST11, PST12, PST13, PST6, PST7, PST8, PST9
38,440	HSG B	PS21
604,252	HSG C	PS14, PS15, PS19, PS21, PS3, PS4, PS5, PS6, PS7, PSM1, PSP1, PST11, PST12, PST13
0	HSG D	
0	Other	
1,463,582		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
294,439	2,587	3,965	0	0	300,991	>75% Grass cover, Good
32,741	0	27,033	0	0	59,774	Gravel surface
101,422	0	1,508	0	0	102,930	Paved parking
16,279	0	0	0	0	16,279	Paved roads w/curbs & sewers
102,915	0	5,981	0	0	108,896	Roofs
273,094	35,853	565,765	0	0	874,712	Woods, Good
820,890	**38,440**	**604,252**	**0**	**0**	**1,463,582**	**TOTAL AREA**

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	5R	298.60	297.80	48.0	0.0167	0.040	48.0	24.0	0.0	
2	cb1	293.18	292.96	21.8	0.0101	0.013	0.0	15.0	0.0	
3	CB10	285.94	284.25	169.0	0.0100	0.013	0.0	15.0	0.0	
4	CB12	284.15	283.55	60.0	0.0100	0.013	0.0	15.0	0.0	
5	CB13	288.00	287.13	71.4	0.0122	0.013	0.0	18.0	0.0	
6	CB13A	290.70	289.66	102.3	0.0102	0.013	0.0	18.0	0.0	
7	CB14	280.06	279.25	80.7	0.0100	0.013	0.0	30.0	0.0	
8	CB15	291.94	291.60	34.0	0.0100	0.013	0.0	15.0	0.0	
9	CB16	277.55	275.75	62.0	0.0290	0.013	0.0	15.0	0.0	
10	CB17	279.72	278.10	108.0	0.0150	0.013	0.0	18.0	0.0	
11	CB18	282.45	282.00	45.2	0.0100	0.013	0.0	18.0	0.0	
12	CB19	285.00	284.50	50.0	0.0100	0.013	0.0	15.0	0.0	
13	cb2	292.64	291.33	155.0	0.0085	0.013	0.0	15.0	0.0	
14	cb20	289.20	286.90	94.0	0.0245	0.013	0.0	15.0	0.0	
15	cb21	286.80	286.41	44.0	0.0089	0.013	0.0	15.0	0.0	
16	cb22	286.31	285.59	73.0	0.0099	0.013	0.0	15.0	0.0	
17	CB23	284.31	283.20	110.0	0.0101	0.013	0.0	15.0	0.0	
18	CB24	283.10	282.23	82.0	0.0106	0.013	0.0	15.0	0.0	
19	CB27	288.15	287.87	27.7	0.0101	0.013	0.0	15.0	0.0	
20	CB28	288.75	288.54	20.7	0.0101	0.013	0.0	18.0	0.0	
21	CB3	289.05	288.15	90.0	0.0100	0.013	0.0	15.0	0.0	
22	CB30	285.80	284.88	92.0	0.0100	0.013	0.0	24.0	0.0	
23	CB4	291.06	289.15	191.0	0.0100	0.013	0.0	15.0	0.0	
24	CB6	288.00	286.82	118.0	0.0100	0.013	0.0	24.0	0.0	
25	CB8A	286.00	284.69	131.3	0.0100	0.013	0.0	15.0	0.0	
26	dmh1	289.95	289.30	65.3	0.0100	0.013	0.0	15.0	0.0	
27	dmh11	277.23	277.00	41.0	0.0056	0.013	0.0	24.0	0.0	
28	dmh23	285.49	284.91	57.8	0.0100	0.013	0.0	15.0	0.0	
29	DMH24	284.81	284.46	37.0	0.0095	0.013	0.0	15.0	0.0	
30	dmh25	282.10	281.05	113.0	0.0093	0.013	0.0	15.0	0.0	
31	DMH26	280.80	279.54	126.4	0.0100	0.013	0.0	18.0	0.0	
32	DMH3	286.97	286.15	82.0	0.0100	0.013	0.0	15.0	0.0	
33	DMH5	289.40	288.13	126.7	0.0100	0.013	0.0	24.0	0.0	
34	DMH5A	288.00	286.82	118.0	0.0100	0.013	0.0	24.0	0.0	
35	DMH6	286.72	285.92	79.0	0.0101	0.013	0.0	24.0	0.0	
36	DMH9	278.12	278.00	24.0	0.0050	0.013	0.0	30.0	0.0	
37	DMHRD	289.10	288.85	28.0	0.0089	0.013	0.0	18.0	0.0	
38	FB1	266.00	265.75	40.0	0.0063	0.013	0.0	15.0	0.0	
39	FB2	272.00	271.50	51.0	0.0098	0.013	0.0	15.0	0.0	
40	OS3	290.00	289.00	100.0	0.0100	0.013	0.0	18.0	0.0	
41	TD1	290.70	289.66	102.3	0.0102	0.013	0.0	24.0	0.0	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS14: paved aisle Runoff Area=19,691 sf 94.87% Impervious Runoff Depth>2.35"
Flow Length=229' Tc=16.3 min CN=95 Runoff=0.9 cfs 3,850 cf

Subcatchment PS15: Process Building Runoff Area=22,384 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=1.4 cfs 4,975 cf

Subcatchment PS16: paved area Runoff Area=17,826 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=1.1 cfs 3,962 cf

Subcatchment PS17: paved area Runoff Area=16,650 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=1.0 cfs 3,700 cf

Subcatchment PS18: roof and paved area Runoff Area=21,424 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=1.3 cfs 4,762 cf

Subcatchment PS19: loading bay and roof Runoff Area=36,281 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=2.3 cfs 8,064 cf

Subcatchment PS2: offsite east Runoff Area=54,682 sf 17.50% Impervious Runoff Depth>0.01"
Flow Length=267' Tc=22.9 min CN=44 Runoff=0.0 cfs 42 cf

Subcatchment PS20: Runoff Area=11,390 sf 0.00% Impervious Runoff Depth>2.07"
Tc=6.0 min CN=92 Runoff=0.6 cfs 1,960 cf

Subcatchment PS21: remainder site south Runoff Area=167,886 sf 0.00% Impervious Runoff Depth>0.00"
Flow Length=332' Tc=28.4 min CN=41 Runoff=0.0 cfs 0 cf

Subcatchment PS22: laydown area Runoff Area=2,752 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=0.2 cfs 612 cf

Subcatchment PS3: offsite north Runoff Area=92,068 sf 7.96% Impervious Runoff Depth>0.00"
Flow Length=716' Tc=23.7 min CN=41 Runoff=0.0 cfs 0 cf

Subcatchment PS31: driveway Runoff Area=8,080 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=0.5 cfs 1,796 cf

Subcatchment PS32: driveway Runoff Area=8,199 sf 100.00% Impervious Runoff Depth>2.67"
Tc=6.0 min CN=98 Runoff=0.5 cfs 1,822 cf

Subcatchment PS33: north of driveway Runoff Area=23,596 sf 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=39 Runoff=0.0 cfs 0 cf

Subcatchment PS34: south of driveway Runoff Area=11,351 sf 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=39 Runoff=0.0 cfs 0 cf

Subcatchment PS4: offsite north Runoff Area=161,914 sf 6.35% Impervious Runoff Depth>0.24"
Flow Length=778' Tc=28.6 min CN=58 Runoff=0.3 cfs 3,227 cf

Subcatchment PS40: FB2 maintenance drive Runoff Area=14,933 sf 0.00% Impervious Runoff Depth>0.06"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=49 Runoff=0.0 cfs 73 cf

Subcatchment PS5: offsite run on Runoff Area=217,984 sf 0.97% Impervious Runoff Depth>0.73"
Flow Length=1,113' Tc=74.8 min CN=72 Runoff=1.3 cfs 13,290 cf

Subcatchment PS6: offsite run on Runoff Area=51,321 sf 0.00% Impervious Runoff Depth>0.53"
Flow Length=482' Tc=20.7 min CN=67 Runoff=0.4 cfs 2,277 cf

Subcatchment PS7: offsite run-on Runoff Area=305,720 sf 0.00% Impervious Runoff Depth>0.28"
Flow Length=1,975' Tc=97.1 min CN=60 Runoff=0.4 cfs 7,242 cf

Subcatchment PSFB1: sediment forebay 1 Runoff Area=12,045 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=39 Runoff=0.0 cfs 0 cf

Subcatchment PSFB2: sediment forebay 2 Runoff Area=17,093 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=39 Runoff=0.0 cfs 0 cf

Subcatchment PSM1: FB1 maintenance area Runoff Area=7,267 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=40 Runoff=0.0 cfs 0 cf

Subcatchment PSP1: filtration basin 1 area Runoff Area=23,524 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=40 Runoff=0.0 cfs 0 cf

Subcatchment PSP2: filtration basin 2 area Runoff Area=30,454 sf 0.00% Impervious Runoff Depth=0.00"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=39 Runoff=0.0 cfs 0 cf

Subcatchment PST10: tribrid area Runoff Area=11,547 sf 34.69% Impervious Runoff Depth>1.11"
Flow Length=124' Slope=0.0100 '/' Tc=20.4 min CN=79 Runoff=0.2 cfs 1,069 cf

Subcatchment PST11: tribrid area Runoff Area=14,447 sf 55.46% Impervious Runoff Depth>1.11"
Flow Length=135' Tc=14.7 min CN=79 Runoff=0.3 cfs 1,339 cf

Subcatchment PST12: tribrid area Runoff Area=15,957 sf 50.21% Impervious Runoff Depth>1.23"
Flow Length=140' Slope=0.0180 '/' Tc=16.4 min CN=81 Runoff=0.4 cfs 1,639 cf

Subcatchment PST13: tribrid area Runoff Area=11,389 sf 36.49% Impervious Runoff Depth>0.61"
Flow Length=142' Slope=0.0230 '/' Tc=14.9 min CN=69 Runoff=0.1 cfs 583 cf

Subcatchment PST6: fet area Runoff Area=20,776 sf 35.46% Impervious Runoff Depth>0.66"
Flow Length=226' Slope=0.0100 '/' Tc=16.6 min CN=70 Runoff=0.2 cfs 1,136 cf

Subcatchment PST7: tribrid area Runoff Area=11,860 sf 50.51% Impervious Runoff Depth>0.79"
Flow Length=120' Tc=17.2 min CN=73 Runoff=0.2 cfs 784 cf

Subcatchment PST8: tribrid area Runoff Area=11,680 sf 51.21% Impervious Runoff Depth>0.94"
Flow Length=128' Tc=20.3 min CN=76 Runoff=0.2 cfs 918 cf

Subcatchment PST9: tribrid area Runoff Area=9,411 sf 31.82% Impervious Runoff Depth>1.00"
Flow Length=116' Slope=0.0100 '/' Tc=20.2 min CN=77 Runoff=0.2 cfs 782 cf

Reach 1R: maintenance FB2 swale Avg. Flow Depth=0.00' Max Vel=0.15 fps Inflow=0.0 cfs 73 cf
n=0.069 L=165.0' S=0.0606 '/' Capacity=14.2 cfs Outflow=0.0 cfs 71 cf

Reach 2R: maintenance FB1 swale Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.0 cfs 0 cf
n=0.041 L=178.0' S=0.0573 '/' Capacity=2.8 cfs Outflow=0.0 cfs 0 cf

Reach 5R: 48" RCP - Naturalized Bottom Avg. Flow Depth=0.54' Max Vel=2.69 fps Inflow=5.8 cfs 20,736 cf
48.0" x 24.0", R=24.0" Arch Pipe n=0.040 L=48.0' S=0.0167 '/' Capacity=21.7 cfs Outflow=5.7 cfs 20,736 cf

Pond cb1: Peak Elev=293.53' Inflow=0.5 cfs 1,796 cf
15.0" Round Culvert n=0.013 L=21.8' S=0.0101 '/' Outflow=0.5 cfs 1,796 cf

Pond CB10: Peak Elev=286.19' Inflow=0.3 cfs 3,269 cf
15.0" Round Culvert n=0.013 L=169.0' S=0.0100 '/' Outflow=0.3 cfs 3,269 cf

Pond CB12: Peak Elev=284.64' Inflow=1.0 cfs 6,887 cf
15.0" Round Culvert n=0.013 L=60.0' S=0.0100 '/' Outflow=1.0 cfs 6,887 cf

Pond CB13: Peak Elev=288.91' Inflow=3.6 cfs 12,825 cf
18.0" Round Culvert n=0.013 L=71.4' S=0.0122 '/' Outflow=3.6 cfs 12,825 cf

Pond CB13A: Peak Elev=291.61' Inflow=3.6 cfs 12,825 cf
18.0" Round Culvert n=0.013 L=102.3' S=0.0102 '/' Outflow=3.6 cfs 12,825 cf

Pond CB14: Peak Elev=281.08' Inflow=6.4 cfs 24,337 cf
30.0" Round Culvert n=0.013 L=80.7' S=0.0100 '/' Outflow=6.4 cfs 24,337 cf

Pond CB15: Peak Elev=292.16' Inflow=0.2 cfs 1,136 cf
15.0" Round Culvert n=0.013 L=34.0' S=0.0100 '/' Outflow=0.2 cfs 1,136 cf

Pond CB16: Peak Elev=277.55' Inflow=0.0 cfs 0 cf
15.0" Round Culvert n=0.013 L=62.0' S=0.0290 '/' Outflow=0.0 cfs 0 cf

Pond CB17: Peak Elev=280.39' Inflow=1.8 cfs 9,459 cf
18.0" Round Culvert n=0.013 L=108.0' S=0.0150 '/' Outflow=1.8 cfs 9,459 cf

Pond CB18: Peak Elev=283.05' Inflow=1.6 cfs 8,848 cf
18.0" Round Culvert n=0.013 L=45.2' S=0.0100 '/' Outflow=1.6 cfs 8,848 cf

Pond CB19: Peak Elev=285.19' Inflow=0.2 cfs 612 cf
15.0" Round Culvert n=0.013 L=50.0' S=0.0100 '/' Outflow=0.2 cfs 612 cf

Pond cb2: Peak Elev=293.12' Inflow=1.0 cfs 3,618 cf
15.0" Round Culvert n=0.013 L=155.0' S=0.0085 '/' Outflow=1.0 cfs 3,618 cf

Pond cb20: Peak Elev=289.38' Inflow=0.2 cfs 784 cf
15.0" Round Culvert n=0.013 L=94.0' S=0.0245 '/' Outflow=0.2 cfs 784 cf

Pond cb21: Peak Elev=287.16' Inflow=0.5 cfs 3,061 cf
15.0" Round Culvert n=0.013 L=44.0' S=0.0089 '/' Outflow=0.5 cfs 3,061 cf

Pond cb22: Peak Elev=286.71' Inflow=0.7 cfs 3,979 cf
15.0" Round Culvert n=0.013 L=73.0' S=0.0099 '/' Outflow=0.7 cfs 3,979 cf

Pond CB23: Peak Elev=284.75' Inflow=0.9 cfs 4,762 cf
15.0" Round Culvert n=0.013 L=110.0' S=0.0101 '/' Outflow=0.9 cfs 4,762 cf

Pond CB24: Peak Elev=283.60' Inflow=1.1 cfs 5,830 cf
15.0" Round Culvert n=0.013 L=82.0' S=0.0106 '/' Outflow=1.1 cfs 5,830 cf

Pond CB27: Peak Elev=288.42' Inflow=0.3 cfs 1,339 cf
15.0" Round Culvert n=0.013 L=27.7' S=0.0101 '/' Outflow=0.3 cfs 1,339 cf

Pond CB28: Peak Elev=289.39' Inflow=1.6 cfs 6,614 cf
18.0" Round Culvert n=0.013 L=20.7' S=0.0101 '/' Outflow=1.6 cfs 6,614 cf

Pond CB3: Peak Elev=289.30' Inflow=0.3 cfs 3,227 cf
15.0" Round Culvert n=0.013 L=90.0' S=0.0100 '/' Outflow=0.3 cfs 3,227 cf

Pond CB30: Peak Elev=286.31' Inflow=1.6 cfs 14,923 cf
24.0" Round Culvert n=0.013 L=92.0' S=0.0100 '/' Outflow=1.6 cfs 14,923 cf

Pond CB4: Peak Elev=291.31' Inflow=0.3 cfs 3,227 cf
15.0" Round Culvert n=0.013 L=191.0' S=0.0100 '/' Outflow=0.3 cfs 3,227 cf

Pond CB6: Peak Elev=288.38' Inflow=0.9 cfs 3,850 cf
24.0" Round Culvert n=0.013 L=118.0' S=0.0100 '/' Outflow=0.9 cfs 3,850 cf

Pond CB8A: Peak Elev=286.65' Inflow=1.8 cfs 7,812 cf
15.0" Round Culvert n=0.013 L=131.3' S=0.0100 '/' Outflow=1.8 cfs 7,812 cf

Pond dmh1: Peak Elev=290.43' Inflow=1.0 cfs 3,618 cf
15.0" Round Culvert n=0.013 L=65.3' S=0.0100 '/' Outflow=1.0 cfs 3,618 cf

Pond dmh11: Peak Elev=278.04' Inflow=2.8 cfs 28,706 cf
24.0" Round Culvert n=0.013 L=41.0' S=0.0056 '/' Outflow=2.8 cfs 28,706 cf

Pond dmh23: Peak Elev=285.89' Inflow=0.7 cfs 3,979 cf
15.0" Round Culvert n=0.013 L=57.8' S=0.0100 '/' Outflow=0.7 cfs 3,979 cf

Pond DMH24: Peak Elev=285.23' Inflow=0.7 cfs 3,979 cf
15.0" Round Culvert n=0.013 L=37.0' S=0.0095 '/' Outflow=0.7 cfs 3,979 cf

Pond dmh25: Peak Elev=282.60' Inflow=1.1 cfs 5,830 cf
15.0" Round Culvert n=0.013 L=113.0' S=0.0093 '/' Outflow=1.1 cfs 5,830 cf

Pond DMH26: Peak Elev=281.33' Inflow=1.4 cfs 7,169 cf
18.0" Round Culvert n=0.013 L=126.4' S=0.0100 '/' Outflow=1.4 cfs 7,169 cf

Pond DMH3: Peak Elev=287.22' Inflow=0.3 cfs 3,227 cf
15.0" Round Culvert n=0.013 L=82.0' S=0.0100 '/' Outflow=0.3 cfs 3,227 cf

Pond DMH5: Peak Elev=289.91' Inflow=1.5 cfs 14,340 cf
24.0" Round Culvert n=0.013 L=126.7' S=0.0100 '/' Outflow=1.5 cfs 14,340 cf

Pond DMH5A: Peak Elev=288.51' Inflow=1.5 cfs 14,340 cf
24.0" Round Culvert n=0.013 L=118.0' S=0.0100 '/' Outflow=1.5 cfs 14,340 cf

Pond DMH6: Peak Elev=287.23' Inflow=1.5 cfs 14,340 cf
24.0" Round Culvert n=0.013 L=79.0' S=0.0101 '/' Outflow=1.5 cfs 14,340 cf

Pond DMH9: Peak Elev=279.55' Inflow=8.2 cfs 33,797 cf
30.0" Round Culvert n=0.013 L=24.0' S=0.0050 '/' Outflow=8.2 cfs 33,797 cf

Pond DMHRD: Peak Elev=289.72' Inflow=1.4 cfs 4,975 cf
18.0" Round Culvert n=0.013 L=28.0' S=0.0089 '/' Outflow=1.4 cfs 4,975 cf

Pond FB1: FILT. BASIN #1 Peak Elev=274.15' Storage=15,610 cf Inflow=2.8 cfs 28,706 cf
Discarded=0.3 cfs 15,481 cf Primary=0.0 cfs 494 cf Secondary=0.0 cfs 0 cf Outflow=0.4 cfs 15,975 cf

Pond FB2: FILT. BASIN #2 Peak Elev=276.92' Storage=8,663 cf Inflow=8.2 cfs 33,868 cf
Discarded=1.3 cfs 33,905 cf Primary=0.0 cfs 0 cf Secondary=0.0 cfs 0 cf Outflow=1.3 cfs 33,905 cf

Pond OS3: Detention Basin #1 Peak Elev=294.50' Storage=480 cf Inflow=1.3 cfs 13,290 cf
Primary=1.5 cfs 13,204 cf Secondary=0.0 cfs 0 cf Outflow=1.5 cfs 13,204 cf

Pond SFB1: FOREBAY #1 Peak Elev=277.32' Storage=0 cf Inflow=2.8 cfs 28,706 cf
Outflow=2.8 cfs 28,706 cf

Pond SFB2: FOREBAY #2 Peak Elev=279.09' Storage=0 cf Inflow=8.2 cfs 33,868 cf
Outflow=8.2 cfs 33,868 cf

Pond TD1: Peak Elev=291.78' Inflow=2.3 cfs 8,064 cf
24.0" Round Culvert n=0.013 L=102.3' S=0.0102 '/' Outflow=2.3 cfs 8,064 cf

Link 1: StreamStats Flow Manual Hydrograph Inflow=5.8 cfs 20,736 cf
Area= 1,951,488 sf Primary=5.8 cfs 20,736 cf

Link A: 14-44-38
Primary=0.0 cfs 0 cf

Link B: 14-47
Primary=0.0 cfs 0 cf

Link D: future property line Inflow=0.0 cfs 494 cf
Primary=0.0 cfs 494 cf

Link E: 14-38-0 Inflow=5.7 cfs 20,736 cf
Primary=5.7 cfs 20,736 cf

Link F: 14-38-0 Inflow=0.4 cfs 7,242 cf
Primary=0.4 cfs 7,242 cf

Total Runoff Area = 1,463,582 sf Runoff Volume = 69,904 cf Average Runoff Depth = 0.57"
84.41% Pervious = 1,235,477 sf 15.59% Impervious = 228,105 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS14: paved aisle Runoff Area=19,691 sf 94.87% Impervious Runoff Depth>3.79"
Flow Length=229' Tc=16.3 min CN=95 Runoff=1.4 cfs 6,215 cf

Subcatchment PS15: Process Building Runoff Area=22,384 sf 100.00% Impervious Runoff Depth>4.13"
Tc=6.0 min CN=98 Runoff=2.1 cfs 7,707 cf

Subcatchment PS16: paved area Runoff Area=17,826 sf 100.00% Impervious Runoff Depth>4.13"
Tc=6.0 min CN=98 Runoff=1.7 cfs 6,138 cf

Subcatchment PS17: paved area Runoff Area=16,650 sf 100.00% Impervious Runoff Depth>4.13"
Tc=6.0 min CN=98 Runoff=1.6 cfs 5,733 cf

Subcatchment PS18: roof and paved area Runoff Area=21,424 sf 100.00% Impervious Runoff Depth>4.13"
Tc=6.0 min CN=98 Runoff=2.0 cfs 7,377 cf

Subcatchment PS19: loading bay and roof Runoff Area=36,281 sf 100.00% Impervious Runoff Depth>4.13"
Tc=6.0 min CN=98 Runoff=3.5 cfs 12,492 cf

Subcatchment PS2: offsite east Runoff Area=54,682 sf 17.50% Impervious Runoff Depth>0.23"
Flow Length=267' Tc=22.9 min CN=44 Runoff=0.1 cfs 1,029 cf

Subcatchment PS20: Runoff Area=11,390 sf 0.00% Impervious Runoff Depth>3.47"
Tc=6.0 min CN=92 Runoff=1.0 cfs 3,297 cf

Subcatchment PS21: remainder site south Runoff Area=167,886 sf 0.00% Impervious Runoff Depth>0.14"
Flow Length=332' Tc=28.4 min CN=41 Runoff=0.1 cfs 1,921 cf

Subcatchment PS22: laydown area Runoff Area=2,752 sf 100.00% Impervious Runoff Depth>4.13"
Tc=6.0 min CN=98 Runoff=0.3 cfs 948 cf

Subcatchment PS3: offsite north Runoff Area=92,068 sf 7.96% Impervious Runoff Depth>0.14"
Flow Length=716' Tc=23.7 min CN=41 Runoff=0.0 cfs 1,057 cf

Subcatchment PS31: driveway Runoff Area=8,080 sf 100.00% Impervious Runoff Depth>4.13"
Tc=6.0 min CN=98 Runoff=0.8 cfs 2,782 cf

Subcatchment PS32: driveway Runoff Area=8,199 sf 100.00% Impervious Runoff Depth>4.13"
Tc=6.0 min CN=98 Runoff=0.8 cfs 2,823 cf

Subcatchment PS33: north of driveway Runoff Area=23,596 sf 0.00% Impervious Runoff Depth>0.09"
Tc=6.0 min CN=39 Runoff=0.0 cfs 179 cf

Subcatchment PS34: south of driveway Runoff Area=11,351 sf 0.00% Impervious Runoff Depth>0.09"
Tc=6.0 min CN=39 Runoff=0.0 cfs 86 cf

Subcatchment PS4: offsite north Runoff Area=161,914 sf 6.35% Impervious Runoff Depth>0.83"
Flow Length=778' Tc=28.6 min CN=58 Runoff=1.7 cfs 11,227 cf

Subcatchment PS40: FB2 maintenance drive Runoff Area=14,933 sf 0.00% Impervious Runoff Depth>0.41"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=49 Runoff=0.1 cfs 508 cf

Subcatchment PS5: offsite run on Runoff Area=217,984 sf 0.97% Impervious Runoff Depth>1.69"
Flow Length=1,113' Tc=74.8 min CN=72 Runoff=3.4 cfs 30,726 cf

Subcatchment PS6: offsite run on Runoff Area=51,321 sf 0.00% Impervious Runoff Depth>1.37"
Flow Length=482' Tc=20.7 min CN=67 Runoff=1.2 cfs 5,865 cf

Subcatchment PS7: offsite run-on Runoff Area=305,720 sf 0.00% Impervious Runoff Depth>0.92"
Flow Length=1,975' Tc=97.1 min CN=60 Runoff=1.9 cfs 23,391 cf

Subcatchment PSFB1: sediment forebay 1 Runoff Area=12,045 sf 0.00% Impervious Runoff Depth>0.09"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=39 Runoff=0.0 cfs 91 cf

Subcatchment PSFB2: sediment forebay 2 Runoff Area=17,093 sf 0.00% Impervious Runoff Depth>0.09"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=39 Runoff=0.0 cfs 127 cf

Subcatchment PSM1: FB1 maintenance area Runoff Area=7,267 sf 0.00% Impervious Runoff Depth>0.11"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=40 Runoff=0.0 cfs 69 cf

Subcatchment PSP1: filtration basin 1 area Runoff Area=23,524 sf 0.00% Impervious Runoff Depth>0.11"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=40 Runoff=0.0 cfs 224 cf

Subcatchment PSP2: filtration basin 2 area Runoff Area=30,454 sf 0.00% Impervious Runoff Depth>0.09"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=39 Runoff=0.0 cfs 227 cf

Subcatchment PST10: tribrid area Runoff Area=11,547 sf 34.69% Impervious Runoff Depth>2.26"
Flow Length=124' Slope=0.0100 '/' Tc=20.4 min CN=79 Runoff=0.5 cfs 2,173 cf

Subcatchment PST11: tribrid area Runoff Area=14,447 sf 55.46% Impervious Runoff Depth>2.26"
Flow Length=135' Tc=14.7 min CN=79 Runoff=0.7 cfs 2,723 cf

Subcatchment PST12: tribrid area Runoff Area=15,957 sf 50.21% Impervious Runoff Depth>2.43"
Flow Length=140' Slope=0.0180 '/' Tc=16.4 min CN=81 Runoff=0.8 cfs 3,229 cf

Subcatchment PST13: tribrid area Runoff Area=11,389 sf 36.49% Impervious Runoff Depth>1.51"
Flow Length=142' Slope=0.0230 '/' Tc=14.9 min CN=69 Runoff=0.3 cfs 1,431 cf

Subcatchment PST6: fet area Runoff Area=20,776 sf 35.46% Impervious Runoff Depth>1.58"
Flow Length=226' Slope=0.0100 '/' Tc=16.6 min CN=70 Runoff=0.6 cfs 2,729 cf

Subcatchment PST7: tribrid area Runoff Area=11,860 sf 50.51% Impervious Runoff Depth>1.79"
Flow Length=120' Tc=17.2 min CN=73 Runoff=0.4 cfs 1,771 cf

Subcatchment PST8: tribrid area Runoff Area=11,680 sf 51.21% Impervious Runoff Depth>2.02"
Flow Length=128' Tc=20.3 min CN=76 Runoff=0.4 cfs 1,964 cf

Subcatchment PST9: tribrid area Runoff Area=9,411 sf 31.82% Impervious Runoff Depth>2.10"
Flow Length=116' Slope=0.0100 '/' Tc=20.2 min CN=77 Runoff=0.4 cfs 1,644 cf

Reach 1R: maintenance FB2 swale Avg. Flow Depth=0.02' Max Vel=0.36 fps Inflow=0.1 cfs 508 cf
n=0.069 L=165.0' S=0.0606 '/' Capacity=14.2 cfs Outflow=0.1 cfs 503 cf

Reach 2R: maintenance FB1 swale Avg. Flow Depth=0.00' Max Vel=0.22 fps Inflow=0.0 cfs 69 cf
n=0.041 L=178.0' S=0.0573 '/' Capacity=2.8 cfs Outflow=0.0 cfs 68 cf

Reach 5R: 48" RCP - Naturalized Bottom Avg. Flow Depth=0.69' Max Vel=3.03 fps Inflow=8.3 cfs 29,700 cf
48.0" x 24.0", R=24.0" Arch Pipe n=0.040 L=48.0' S=0.0167 '/' Capacity=21.7 cfs Outflow=8.2 cfs 29,700 cf

Pond cb1: Peak Elev=293.62' Inflow=0.8 cfs 2,782 cf
15.0" Round Culvert n=0.013 L=21.8' S=0.0101 '/' Outflow=0.8 cfs 2,782 cf

Pond CB10: Peak Elev=286.58' Inflow=1.7 cfs 13,314 cf
15.0" Round Culvert n=0.013 L=169.0' S=0.0100 '/' Outflow=1.7 cfs 13,314 cf

Pond CB12: Peak Elev=284.88' Inflow=2.1 cfs 18,919 cf
15.0" Round Culvert n=0.013 L=60.0' S=0.0100 '/' Outflow=2.1 cfs 18,919 cf

Pond CB13: Peak Elev=289.18' Inflow=5.5 cfs 19,869 cf
18.0" Round Culvert n=0.013 L=71.4' S=0.0122 '/' Outflow=5.5 cfs 19,869 cf

Pond CB13A: Peak Elev=291.88' Inflow=5.5 cfs 19,869 cf
18.0" Round Culvert n=0.013 L=102.3' S=0.0102 '/' Outflow=5.5 cfs 19,869 cf

Pond CB14: Peak Elev=281.37' Inflow=9.8 cfs 37,955 cf
30.0" Round Culvert n=0.013 L=80.7' S=0.0100 '/' Outflow=9.8 cfs 37,955 cf

Pond CB15: Peak Elev=292.32' Inflow=0.6 cfs 2,729 cf
15.0" Round Culvert n=0.013 L=34.0' S=0.0100 '/' Outflow=0.6 cfs 2,729 cf

Pond CB16: Peak Elev=277.57' Inflow=0.0 cfs 68 cf
15.0" Round Culvert n=0.013 L=62.0' S=0.0290 '/' Outflow=0.0 cfs 68 cf

Pond CB17: Peak Elev=280.68' Inflow=3.1 cfs 23,163 cf
18.0" Round Culvert n=0.013 L=108.0' S=0.0150 '/' Outflow=3.1 cfs 23,163 cf

Pond CB18: Peak Elev=283.27' Inflow=2.8 cfs 22,215 cf
18.0" Round Culvert n=0.013 L=45.2' S=0.0100 '/' Outflow=2.8 cfs 22,215 cf

Pond CB19: Peak Elev=285.24' Inflow=0.3 cfs 948 cf
15.0" Round Culvert n=0.013 L=50.0' S=0.0100 '/' Outflow=0.3 cfs 948 cf

Pond cb2: Peak Elev=293.25' Inflow=1.6 cfs 5,605 cf
15.0" Round Culvert n=0.013 L=155.0' S=0.0085 '/' Outflow=1.6 cfs 5,605 cf

Pond cb20: Peak Elev=289.49' Inflow=0.4 cfs 1,771 cf
15.0" Round Culvert n=0.013 L=94.0' S=0.0245 '/' Outflow=0.4 cfs 1,771 cf

Pond cb21: Peak Elev=287.49' Inflow=1.6 cfs 7,636 cf
15.0" Round Culvert n=0.013 L=44.0' S=0.0089 '/' Outflow=1.6 cfs 7,636 cf

Pond cb22: Peak Elev=287.03' Inflow=2.0 cfs 9,600 cf
15.0" Round Culvert n=0.013 L=73.0' S=0.0099 '/' Outflow=2.0 cfs 9,600 cf

Pond CB23: Peak Elev=285.09' Inflow=2.3 cfs 11,244 cf
15.0" Round Culvert n=0.013 L=110.0' S=0.0101 '/' Outflow=2.3 cfs 11,244 cf

Pond CB24: Peak Elev=283.96' Inflow=2.8 cfs 13,418 cf
15.0" Round Culvert n=0.013 L=82.0' S=0.0106 '/' Outflow=2.8 cfs 13,418 cf

Pond CB27: Peak Elev=288.55' Inflow=0.7 cfs 2,723 cf
15.0" Round Culvert n=0.013 L=27.7' S=0.0101 '/' Outflow=0.7 cfs 2,723 cf

Pond CB28: Peak Elev=289.59' Inflow=2.6 cfs 10,937 cf
18.0" Round Culvert n=0.013 L=20.7' S=0.0101 '/' Outflow=2.6 cfs 10,937 cf

Pond CB3: Peak Elev=289.68' Inflow=1.7 cfs 12,284 cf
15.0" Round Culvert n=0.013 L=90.0' S=0.0100 '/' Outflow=1.7 cfs 12,284 cf

Pond CB30: Peak Elev=286.62' Inflow=3.7 cfs 34,753 cf
24.0" Round Culvert n=0.013 L=92.0' S=0.0100 '/' Outflow=3.7 cfs 34,753 cf

Pond CB4: Peak Elev=291.69' Inflow=1.7 cfs 11,227 cf
15.0" Round Culvert n=0.013 L=191.0' S=0.0100 '/' Outflow=1.7 cfs 11,227 cf

Pond CB6: Peak Elev=288.48' Inflow=1.4 cfs 6,215 cf
24.0" Round Culvert n=0.013 L=118.0' S=0.0100 '/' Outflow=1.4 cfs 6,215 cf

Pond CB8A: Peak Elev=286.84' Inflow=2.7 cfs 12,353 cf
15.0" Round Culvert n=0.013 L=131.3' S=0.0100 '/' Outflow=2.7 cfs 12,353 cf

Pond dmh1: Peak Elev=290.56' Inflow=1.6 cfs 5,605 cf
15.0" Round Culvert n=0.013 L=65.3' S=0.0100 '/' Outflow=1.6 cfs 5,605 cf

Pond dmh11: Peak Elev=278.55' Inflow=6.6 cfs 61,830 cf
24.0" Round Culvert n=0.013 L=41.0' S=0.0056 '/' Outflow=6.6 cfs 61,830 cf

Pond dmh23: Peak Elev=286.23' Inflow=2.0 cfs 9,600 cf
15.0" Round Culvert n=0.013 L=57.8' S=0.0100 '/' Outflow=2.0 cfs 9,600 cf

Pond DMH24: Peak Elev=285.58' Inflow=2.0 cfs 9,600 cf
15.0" Round Culvert n=0.013 L=37.0' S=0.0095 '/' Outflow=2.0 cfs 9,600 cf

Pond dmh25: Peak Elev=282.95' Inflow=2.8 cfs 13,418 cf
15.0" Round Culvert n=0.013 L=113.0' S=0.0093 '/' Outflow=2.8 cfs 13,418 cf

Pond DMH26: Peak Elev=281.68' Inflow=3.4 cfs 16,140 cf
18.0" Round Culvert n=0.013 L=126.4' S=0.0100 '/' Outflow=3.4 cfs 16,140 cf

Pond DMH3: Peak Elev=287.60' Inflow=1.7 cfs 12,284 cf
15.0" Round Culvert n=0.013 L=82.0' S=0.0100 '/' Outflow=1.7 cfs 12,284 cf

Pond DMH5: Peak Elev=290.21' Inflow=3.7 cfs 33,322 cf
24.0" Round Culvert n=0.013 L=126.7' S=0.0100 '/' Outflow=3.7 cfs 33,322 cf

Pond DMH5A: Peak Elev=288.81' Inflow=3.7 cfs 33,322 cf
24.0" Round Culvert n=0.013 L=118.0' S=0.0100 '/' Outflow=3.7 cfs 33,322 cf

Pond DMH6: Peak Elev=287.55' Inflow=3.7 cfs 33,322 cf
24.0" Round Culvert n=0.013 L=79.0' S=0.0101 '/' Outflow=3.7 cfs 33,322 cf

Pond DMH9: Peak Elev=279.95' Inflow=12.8 cfs 61,117 cf
30.0" Round Culvert n=0.013 L=24.0' S=0.0050 '/' Outflow=12.8 cfs 61,117 cf

Pond DMHRD: Peak Elev=289.92' Inflow=2.1 cfs 7,707 cf
18.0" Round Culvert n=0.013 L=28.0' S=0.0089 '/' Outflow=2.1 cfs 7,707 cf

Pond FB1: FILT. BASIN #1 Peak Elev=275.47' Storage=32,147 cf Inflow=6.6 cfs 62,213 cf
Discarded=0.4 cfs 18,665 cf Primary=0.9 cfs 22,137 cf Secondary=0.0 cfs 0 cf Outflow=1.3 cfs 40,802 cf

Pond FB2: FILT. BASIN #2 Peak Elev=277.70' Storage=20,330 cf Inflow=12.8 cfs 61,975 cf
Discarded=1.5 cfs 61,958 cf Primary=0.0 cfs 0 cf Secondary=0.0 cfs 0 cf Outflow=1.5 cfs 61,958 cf

Pond OS3: Detention Basin #1 Peak Elev=294.50' Storage=480 cf Inflow=3.4 cfs 30,726 cf
Primary=3.6 cfs 30,593 cf Secondary=0.0 cfs 0 cf Outflow=3.6 cfs 30,593 cf

Pond SFB1: FOREBAY #1 Peak Elev=277.48' Storage=0 cf Inflow=6.6 cfs 61,921 cf
Outflow=6.6 cfs 61,921 cf

Pond SFB2: FOREBAY #2 Peak Elev=279.19' Storage=0 cf Inflow=12.8 cfs 61,748 cf
Outflow=12.8 cfs 61,748 cf

Pond TD1: Peak Elev=292.07' Inflow=3.5 cfs 12,492 cf
24.0" Round Culvert n=0.013 L=102.3' S=0.0102 '/' Outflow=3.5 cfs 12,492 cf

Link 1: StreamStats Flow Manual Hydrograph Inflow=8.3 cfs 29,700 cf
Area= 1,951,488 sf Primary=8.3 cfs 29,700 cf

Link A: 14-44-38
Primary=0.0 cfs 0 cf

Link B: 14-47
Primary=0.0 cfs 0 cf

Link D: future property line Inflow=1.0 cfs 24,058 cf
Primary=1.0 cfs 24,058 cf

Link E: 14-38-0 Inflow=8.2 cfs 29,965 cf
Primary=8.2 cfs 29,965 cf

Link F: 14-38-0 Inflow=1.9 cfs 23,391 cf
Primary=1.9 cfs 23,391 cf

Total Runoff Area = 1,463,582 sf Runoff Volume = 149,904 cf Average Runoff Depth = 1.23"
84.41% Pervious = 1,235,477 sf 15.59% Impervious = 228,105 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS14: paved aisle Runoff Area=19,691 sf 94.87% Impervious Runoff Depth>4.93"
Flow Length=229' Tc=16.3 min CN=95 Runoff=1.8 cfs 8,097 cf

Subcatchment PS15: Process Building Runoff Area=22,384 sf 100.00% Impervious Runoff Depth>5.29"
Tc=6.0 min CN=98 Runoff=2.7 cfs 9,866 cf

Subcatchment PS16: paved area Runoff Area=17,826 sf 100.00% Impervious Runoff Depth>5.29"
Tc=6.0 min CN=98 Runoff=2.2 cfs 7,857 cf

Subcatchment PS17: paved area Runoff Area=16,650 sf 100.00% Impervious Runoff Depth>5.29"
Tc=6.0 min CN=98 Runoff=2.0 cfs 7,339 cf

Subcatchment PS18: roof and paved area Runoff Area=21,424 sf 100.00% Impervious Runoff Depth>5.29"
Tc=6.0 min CN=98 Runoff=2.6 cfs 9,443 cf

Subcatchment PS19: loading bay and roof Runoff Area=36,281 sf 100.00% Impervious Runoff Depth>5.29"
Tc=6.0 min CN=98 Runoff=4.4 cfs 15,992 cf

Subcatchment PS2: offsite east Runoff Area=54,682 sf 17.50% Impervious Runoff Depth>0.56"
Flow Length=267' Tc=22.9 min CN=44 Runoff=0.3 cfs 2,559 cf

Subcatchment PS20: Runoff Area=11,390 sf 0.00% Impervious Runoff Depth>4.60"
Tc=6.0 min CN=92 Runoff=1.3 cfs 4,371 cf

Subcatchment PS21: remainder site south Runoff Area=167,886 sf 0.00% Impervious Runoff Depth>0.41"
Flow Length=332' Tc=28.4 min CN=41 Runoff=0.5 cfs 5,693 cf

Subcatchment PS22: laydown area Runoff Area=2,752 sf 100.00% Impervious Runoff Depth>5.29"
Tc=6.0 min CN=98 Runoff=0.3 cfs 1,213 cf

Subcatchment PS3: offsite north Runoff Area=92,068 sf 7.96% Impervious Runoff Depth>0.41"
Flow Length=716' Tc=23.7 min CN=41 Runoff=0.3 cfs 3,130 cf

Subcatchment PS31: driveway Runoff Area=8,080 sf 100.00% Impervious Runoff Depth>5.29"
Tc=6.0 min CN=98 Runoff=1.0 cfs 3,561 cf

Subcatchment PS32: driveway Runoff Area=8,199 sf 100.00% Impervious Runoff Depth>5.29"
Tc=6.0 min CN=98 Runoff=1.0 cfs 3,614 cf

Subcatchment PS33: north of driveway Runoff Area=23,596 sf 0.00% Impervious Runoff Depth>0.32"
Tc=6.0 min CN=39 Runoff=0.1 cfs 627 cf

Subcatchment PS34: south of driveway Runoff Area=11,351 sf 0.00% Impervious Runoff Depth>0.32"
Tc=6.0 min CN=39 Runoff=0.0 cfs 302 cf

Subcatchment PS4: offsite north Runoff Area=161,914 sf 6.35% Impervious Runoff Depth>1.46"
Flow Length=778' Tc=28.6 min CN=58 Runoff=3.3 cfs 19,691 cf

Subcatchment PS40: FB2 maintenance drive Runoff Area=14,933 sf 0.00% Impervious Runoff Depth>0.85"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=49 Runoff=0.2 cfs 1,059 cf

Subcatchment PS5: offsite run on Runoff Area=217,984 sf 0.97% Impervious Runoff Depth>2.57"
Flow Length=1,113' Tc=74.8 min CN=72 Runoff=5.2 cfs 46,635 cf

Subcatchment PS6: offsite run on Runoff Area=51,321 sf 0.00% Impervious Runoff Depth>2.17"
Flow Length=482' Tc=20.7 min CN=67 Runoff=1.9 cfs 9,284 cf

Subcatchment PS7: offsite run-on Runoff Area=305,720 sf 0.00% Impervious Runoff Depth>1.57"
Flow Length=1,975' Tc=97.1 min CN=60 Runoff=3.5 cfs 40,076 cf

Subcatchment PSFB1: sediment forebay 1 Runoff Area=12,045 sf 0.00% Impervious Runoff Depth>0.32"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=39 Runoff=0.0 cfs 320 cf

Subcatchment PSFB2: sediment forebay 2 Runoff Area=17,093 sf 0.00% Impervious Runoff Depth>0.32"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=39 Runoff=0.0 cfs 449 cf

Subcatchment PSM1: FB1 maintenance area Runoff Area=7,267 sf 0.00% Impervious Runoff Depth>0.36"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=40 Runoff=0.0 cfs 221 cf

Subcatchment PSP1: filtration basin 1 area Runoff Area=23,524 sf 0.00% Impervious Runoff Depth>0.36"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=40 Runoff=0.1 cfs 714 cf

Subcatchment PSP2: filtration basin 2 area Runoff Area=30,454 sf 0.00% Impervious Runoff Depth>0.32"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=39 Runoff=0.1 cfs 800 cf

Subcatchment PST10: tribrid area Runoff Area=11,547 sf 34.69% Impervious Runoff Depth>3.25"
Flow Length=124' Slope=0.0100 '/' Tc=20.4 min CN=79 Runoff=0.7 cfs 3,128 cf

Subcatchment PST11: tribrid area Runoff Area=14,447 sf 55.46% Impervious Runoff Depth>3.25"
Flow Length=135' Tc=14.7 min CN=79 Runoff=1.0 cfs 3,918 cf

Subcatchment PST12: tribrid area Runoff Area=15,957 sf 50.21% Impervious Runoff Depth>3.45"
Flow Length=140' Slope=0.0180 '/' Tc=16.4 min CN=81 Runoff=1.1 cfs 4,585 cf

Subcatchment PST13: tribrid area Runoff Area=11,389 sf 36.49% Impervious Runoff Depth>2.34"
Flow Length=142' Slope=0.0230 '/' Tc=14.9 min CN=69 Runoff=0.5 cfs 2,224 cf

Subcatchment PST6: fet area Runoff Area=20,776 sf 35.46% Impervious Runoff Depth>2.43"
Flow Length=226' Slope=0.0100 '/' Tc=16.6 min CN=70 Runoff=1.0 cfs 4,205 cf

Subcatchment PST7: tribrid area Runoff Area=11,860 sf 50.51% Impervious Runoff Depth>2.69"
Flow Length=120' Tc=17.2 min CN=73 Runoff=0.6 cfs 2,662 cf

Subcatchment PST8: tribrid area Runoff Area=11,680 sf 51.21% Impervious Runoff Depth>2.97"
Flow Length=128' Tc=20.3 min CN=76 Runoff=0.6 cfs 2,887 cf

Subcatchment PST9: tribrid area Runoff Area=9,411 sf 31.82% Impervious Runoff Depth>3.06"
Flow Length=116' Slope=0.0100 '/' Tc=20.2 min CN=77 Runoff=0.5 cfs 2,400 cf

Reach 1R: maintenance FB2 swale Avg. Flow Depth=0.03' Max Vel=0.55 fps Inflow=0.2 cfs 1,059 cf
n=0.069 L=165.0' S=0.0606 '/' Capacity=14.2 cfs Outflow=0.1 cfs 1,051 cf

Reach 2R: maintenance FB1 swale Avg. Flow Depth=0.01' Max Vel=0.49 fps Inflow=0.0 cfs 221 cf
n=0.041 L=178.0' S=0.0573 '/' Capacity=2.8 cfs Outflow=0.0 cfs 219 cf

Reach 5R: 48" RCP - Naturalized Avg. Flow Depth=0.92' Max Vel=3.41 fps Inflow=12.1 cfs 43,560 cf
48.0" x 24.0", R=24.0" Arch Pipe n=0.040 L=48.0' S=0.0167 '/' Capacity=21.7 cfs Outflow=12.1 cfs 43,562 cf

Pond cb1: Peak Elev=293.69' Inflow=1.0 cfs 3,561 cf
15.0" Round Culvert n=0.013 L=21.8' S=0.0101 '/' Outflow=1.0 cfs 3,561 cf

Pond CB10: Peak Elev=286.99' Inflow=3.8 cfs 25,380 cf
15.0" Round Culvert n=0.013 L=169.0' S=0.0100 '/' Outflow=3.8 cfs 25,380 cf

Pond CB12: Peak Elev=285.33' Inflow=4.3 cfs 32,555 cf
15.0" Round Culvert n=0.013 L=60.0' S=0.0100 '/' Outflow=4.3 cfs 32,555 cf

Pond CB13: Peak Elev=289.41' Inflow=7.0 cfs 25,435 cf
18.0" Round Culvert n=0.013 L=71.4' S=0.0122 '/' Outflow=7.0 cfs 25,435 cf

Pond CB13A: Peak Elev=292.11' Inflow=7.0 cfs 25,435 cf
18.0" Round Culvert n=0.013 L=102.3' S=0.0102 '/' Outflow=7.0 cfs 25,435 cf

Pond CB14: Peak Elev=281.57' Inflow=12.4 cfs 48,727 cf
30.0" Round Culvert n=0.013 L=80.7' S=0.0100 '/' Outflow=12.4 cfs 48,727 cf

Pond CB15: Peak Elev=292.43' Inflow=1.0 cfs 4,205 cf
15.0" Round Culvert n=0.013 L=34.0' S=0.0100 '/' Outflow=1.0 cfs 4,205 cf

Pond CB16: Peak Elev=277.61' Inflow=0.0 cfs 219 cf
15.0" Round Culvert n=0.013 L=62.0' S=0.0290 '/' Outflow=0.0 cfs 219 cf

Pond CB17: Peak Elev=280.99' Inflow=4.8 cfs 38,139 cf
18.0" Round Culvert n=0.013 L=108.0' S=0.0150 '/' Outflow=4.8 cfs 38,139 cf

Pond CB18: Peak Elev=283.58' Inflow=4.7 cfs 36,926 cf
18.0" Round Culvert n=0.013 L=45.2' S=0.0100 '/' Outflow=4.7 cfs 36,926 cf

Pond CB19: Peak Elev=285.27' Inflow=0.3 cfs 1,213 cf
15.0" Round Culvert n=0.013 L=50.0' S=0.0100 '/' Outflow=0.3 cfs 1,213 cf

Pond cb2: Peak Elev=293.34' Inflow=2.0 cfs 7,175 cf
15.0" Round Culvert n=0.013 L=155.0' S=0.0085 '/' Outflow=2.0 cfs 7,175 cf

Pond cb20: Peak Elev=289.56' Inflow=0.6 cfs 2,662 cf
15.0" Round Culvert n=0.013 L=94.0' S=0.0245 '/' Outflow=0.6 cfs 2,662 cf

Pond cb21: Peak Elev=287.76' Inflow=2.5 cfs 11,946 cf
15.0" Round Culvert n=0.013 L=44.0' S=0.0089 '/' Outflow=2.5 cfs 11,946 cf

Pond cb22: Peak Elev=287.31' Inflow=3.2 cfs 14,834 cf
15.0" Round Culvert n=0.013 L=73.0' S=0.0099 '/' Outflow=3.2 cfs 14,834 cf

Pond CB23: Peak Elev=285.38' Inflow=3.7 cfs 17,234 cf
15.0" Round Culvert n=0.013 L=110.0' S=0.0101 '/' Outflow=3.7 cfs 17,234 cf

Pond CB24: Peak Elev=284.28' Inflow=4.3 cfs 20,362 cf
15.0" Round Culvert n=0.013 L=82.0' S=0.0106 '/' Outflow=4.3 cfs 20,362 cf

Pond CB27: Peak Elev=288.64' Inflow=1.0 cfs 3,918 cf
15.0" Round Culvert n=0.013 L=27.7' S=0.0101 '/' Outflow=1.0 cfs 3,918 cf

Pond CB28: Peak Elev=289.74' Inflow=3.4 cfs 14,451 cf
18.0" Round Culvert n=0.013 L=20.7' S=0.0101 '/' Outflow=3.4 cfs 14,451 cf

Pond CB3: Peak Elev=290.04' Inflow=3.6 cfs 22,821 cf
15.0" Round Culvert n=0.013 L=90.0' S=0.0100 '/' Outflow=3.6 cfs 22,821 cf

Pond CB30: Peak Elev=286.81' Inflow=5.5 cfs 52,898 cf
24.0" Round Culvert n=0.013 L=92.0' S=0.0100 '/' Outflow=5.5 cfs 52,898 cf

Pond CB4: Peak Elev=292.01' Inflow=3.3 cfs 19,691 cf
15.0" Round Culvert n=0.013 L=191.0' S=0.0100 '/' Outflow=3.3 cfs 19,691 cf

Pond CB6: Peak Elev=288.55' Inflow=1.8 cfs 8,097 cf
24.0" Round Culvert n=0.013 L=118.0' S=0.0100 '/' Outflow=1.8 cfs 8,097 cf

Pond CB8A: Peak Elev=286.98' Inflow=3.5 cfs 15,954 cf
15.0" Round Culvert n=0.013 L=131.3' S=0.0100 '/' Outflow=3.5 cfs 15,954 cf

Pond dmh1: Peak Elev=290.65' Inflow=2.0 cfs 7,175 cf
15.0" Round Culvert n=0.013 L=65.3' S=0.0100 '/' Outflow=2.0 cfs 7,175 cf

Pond dmh11: Peak Elev=278.98' Inflow=10.3 cfs 91,629 cf
24.0" Round Culvert n=0.013 L=41.0' S=0.0056 '/' Outflow=10.3 cfs 91,629 cf

Pond dmh23: Peak Elev=286.52' Inflow=3.2 cfs 14,834 cf
15.0" Round Culvert n=0.013 L=57.8' S=0.0100 '/' Outflow=3.2 cfs 14,834 cf

Pond DMH24: Peak Elev=285.88' Inflow=3.2 cfs 14,834 cf
15.0" Round Culvert n=0.013 L=37.0' S=0.0095 '/' Outflow=3.2 cfs 14,834 cf

Pond dmh25: Peak Elev=283.26' Inflow=4.3 cfs 20,362 cf
15.0" Round Culvert n=0.013 L=113.0' S=0.0093 '/' Outflow=4.3 cfs 20,362 cf

Pond DMH26: Peak Elev=281.94' Inflow=5.2 cfs 24,280 cf
18.0" Round Culvert n=0.013 L=126.4' S=0.0100 '/' Outflow=5.2 cfs 24,280 cf

Pond DMH3: Peak Elev=287.99' Inflow=3.6 cfs 22,821 cf
15.0" Round Culvert n=0.013 L=82.0' S=0.0100 '/' Outflow=3.6 cfs 22,821 cf

Pond DMH5: Peak Elev=290.40' Inflow=5.4 cfs 50,673 cf
24.0" Round Culvert n=0.013 L=126.7' S=0.0100 '/' Outflow=5.4 cfs 50,673 cf

Pond DMH5A: Peak Elev=289.02' Inflow=5.4 cfs 50,673 cf
24.0" Round Culvert n=0.013 L=118.0' S=0.0100 '/' Outflow=5.4 cfs 50,673 cf

Pond DMH6: Peak Elev=287.76' Inflow=5.4 cfs 50,673 cf
24.0" Round Culvert n=0.013 L=79.0' S=0.0101 '/' Outflow=5.4 cfs 50,673 cf

Pond DMH9: Peak Elev=280.28' Inflow=16.9 cfs 86,866 cf
30.0" Round Culvert n=0.013 L=24.0' S=0.0050 '/' Outflow=16.9 cfs 86,866 cf

Pond DMHRD: Peak Elev=290.06' Inflow=2.7 cfs 9,866 cf
18.0" Round Culvert n=0.013 L=28.0' S=0.0089 '/' Outflow=2.7 cfs 9,866 cf

Pond FB1: FILT. BASIN #1 Peak Elev=276.36' Storage=44,651 cf Inflow=10.4 cfs 92,882 cf
Discarded=0.4 cfs 20,423 cf Primary=2.3 cfs 47,896 cf Secondary=0.0 cfs 0 cf Outflow=2.7 cfs 68,319 cf

Pond FB2: FILT. BASIN #2 Peak Elev=278.47' Storage=33,697 cf Inflow=16.9 cfs 89,167 cf
Discarded=1.6 cfs 81,281 cf Primary=0.3 cfs 3,244 cf Secondary=0.0 cfs 0 cf Outflow=1.8 cfs 84,524 cf

Pond OS3: Detention Basin #1 Peak Elev=294.50' Storage=481 cf Inflow=5.2 cfs 46,635 cf
Primary=5.2 cfs 46,468 cf Secondary=0.0 cfs 0 cf Outflow=5.2 cfs 46,468 cf

Pond SFB1: FOREBAY #1 Peak Elev=277.61' Storage=0 cf Inflow=10.4 cfs 91,949 cf
Outflow=10.4 cfs 91,949 cf

Pond SFB2: FOREBAY #2 Peak Elev=279.26' Storage=0 cf Inflow=16.9 cfs 88,367 cf
Outflow=16.9 cfs 88,367 cf

Pond TD1: Peak Elev=292.31' Inflow=4.4 cfs 15,992 cf
24.0" Round Culvert n=0.013 L=102.3' S=0.0102 '/' Outflow=4.4 cfs 15,992 cf

Link 1: StreamStats Flow Manual Hydrograph Inflow=12.1 cfs 43,560 cf
Area= 1,951,488 sf Primary=12.1 cfs 43,560 cf

Link A: 14-44-38
Primary=0.0 cfs 0 cf

Link B: 14-47
Primary=0.0 cfs 0 cf

Link D: future property line Inflow=2.7 cfs 56,832 cf
Primary=2.7 cfs 56,832 cf

Link E: 14-38-0 Inflow=12.1 cfs 44,490 cf
Primary=12.1 cfs 44,490 cf

Link F: 14-38-0 Inflow=3.5 cfs 40,076 cf
Primary=3.5 cfs 40,076 cf

Total Runoff Area = 1,463,582 sf Runoff Volume = 228,923 cf Average Runoff Depth = 1.88"
84.41% Pervious = 1,235,477 sf 15.59% Impervious = 228,105 sf

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points x 3
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment PS14: paved aisle Runoff Area=19,691 sf 94.87% Impervious Runoff Depth>5.99"
Flow Length=229' Tc=16.3 min CN=95 Runoff=2.1 cfs 9,837 cf

Subcatchment PS15: Process Building Runoff Area=22,384 sf 100.00% Impervious Runoff Depth>6.36"
Tc=6.0 min CN=98 Runoff=3.2 cfs 11,859 cf

Subcatchment PS16: paved area Runoff Area=17,826 sf 100.00% Impervious Runoff Depth>6.36"
Tc=6.0 min CN=98 Runoff=2.6 cfs 9,444 cf

Subcatchment PS17: paved area Runoff Area=16,650 sf 100.00% Impervious Runoff Depth>6.36"
Tc=6.0 min CN=98 Runoff=2.4 cfs 8,821 cf

Subcatchment PS18: roof and paved area Runoff Area=21,424 sf 100.00% Impervious Runoff Depth>6.36"
Tc=6.0 min CN=98 Runoff=3.1 cfs 11,350 cf

Subcatchment PS19: loading bay and roof Runoff Area=36,281 sf 100.00% Impervious Runoff Depth>6.36"
Tc=6.0 min CN=98 Runoff=5.3 cfs 19,221 cf

Subcatchment PS2: offsite east Runoff Area=54,682 sf 17.50% Impervious Runoff Depth>0.97"
Flow Length=267' Tc=22.9 min CN=44 Runoff=0.6 cfs 4,427 cf

Subcatchment PS20: Runoff Area=11,390 sf 0.00% Impervious Runoff Depth>5.66"
Tc=6.0 min CN=92 Runoff=1.6 cfs 5,369 cf

Subcatchment PS21: remainder site south Runoff Area=167,886 sf 0.00% Impervious Runoff Depth>0.76"
Flow Length=332' Tc=28.4 min CN=41 Runoff=1.2 cfs 10,577 cf

Subcatchment PS22: laydown area Runoff Area=2,752 sf 100.00% Impervious Runoff Depth>6.36"
Tc=6.0 min CN=98 Runoff=0.4 cfs 1,458 cf

Subcatchment PS3: offsite north Runoff Area=92,068 sf 7.96% Impervious Runoff Depth>0.76"
Flow Length=716' Tc=23.7 min CN=41 Runoff=0.7 cfs 5,813 cf

Subcatchment PS31: driveway Runoff Area=8,080 sf 100.00% Impervious Runoff Depth>6.36"
Tc=6.0 min CN=98 Runoff=1.2 cfs 4,281 cf

Subcatchment PS32: driveway Runoff Area=8,199 sf 100.00% Impervious Runoff Depth>6.36"
Tc=6.0 min CN=98 Runoff=1.2 cfs 4,344 cf

Subcatchment PS33: north of driveway Runoff Area=23,596 sf 0.00% Impervious Runoff Depth>0.63"
Tc=6.0 min CN=39 Runoff=0.2 cfs 1,238 cf

Subcatchment PS34: south of driveway Runoff Area=11,351 sf 0.00% Impervious Runoff Depth>0.63"
Tc=6.0 min CN=39 Runoff=0.1 cfs 595 cf

Subcatchment PS4: offsite north Runoff Area=161,914 sf 6.35% Impervious Runoff Depth>2.13"
Flow Length=778' Tc=28.6 min CN=58 Runoff=5.1 cfs 28,681 cf

Subcatchment PS40: FB2 maintenance drive Runoff Area=14,933 sf 0.00% Impervious Runoff Depth>1.36"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=49 Runoff=0.3 cfs 1,689 cf

Subcatchment PS5: offsite run on Runoff Area=217,984 sf 0.97% Impervious Runoff Depth>3.43"
Flow Length=1,113' Tc=74.8 min CN=72 Runoff=7.0 cfs 62,353 cf

Subcatchment PS6: offsite run on Runoff Area=51,321 sf 0.00% Impervious Runoff Depth>2.98"
Flow Length=482' Tc=20.7 min CN=67 Runoff=2.7 cfs 12,736 cf

Subcatchment PS7: offsite run-on Runoff Area=305,720 sf 0.00% Impervious Runoff Depth>2.26"
Flow Length=1,975' Tc=97.1 min CN=60 Runoff=5.2 cfs 57,599 cf

Subcatchment PSFB1: sediment forebay 1 Runoff Area=12,045 sf 0.00% Impervious Runoff Depth>0.63"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=39 Runoff=0.1 cfs 632 cf

Subcatchment PSFB2: sediment forebay 2 Runoff Area=17,093 sf 0.00% Impervious Runoff Depth>0.62"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=39 Runoff=0.1 cfs 889 cf

Subcatchment PSM1: FB1 maintenance area Runoff Area=7,267 sf 0.00% Impervious Runoff Depth>0.70"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=40 Runoff=0.1 cfs 421 cf

Subcatchment PSP1: filtration basin 1 area Runoff Area=23,524 sf 0.00% Impervious Runoff Depth>0.70"
Flow Length=100' Slope=0.0600 '/' Tc=6.6 min CN=40 Runoff=0.2 cfs 1,363 cf

Subcatchment PSP2: filtration basin 2 area Runoff Area=30,454 sf 0.00% Impervious Runoff Depth>0.62"
Flow Length=95' Slope=0.0150 '/' Tc=24.8 min CN=39 Runoff=0.2 cfs 1,583 cf

Subcatchment PST10: tribrid area Runoff Area=11,547 sf 34.69% Impervious Runoff Depth>4.20"
Flow Length=124' Slope=0.0100 '/' Tc=20.4 min CN=79 Runoff=0.9 cfs 4,046 cf

Subcatchment PST11: tribrid area Runoff Area=14,447 sf 55.46% Impervious Runoff Depth>4.21"
Flow Length=135' Tc=14.7 min CN=79 Runoff=1.2 cfs 5,068 cf

Subcatchment PST12: tribrid area Runoff Area=15,957 sf 50.21% Impervious Runoff Depth>4.42"
Flow Length=140' Slope=0.0180 '/' Tc=16.4 min CN=81 Runoff=1.4 cfs 5,880 cf

Subcatchment PST13: tribrid area Runoff Area=11,389 sf 36.49% Impervious Runoff Depth>3.18"
Flow Length=142' Slope=0.0230 '/' Tc=14.9 min CN=69 Runoff=0.7 cfs 3,017 cf

Subcatchment PST6: fet area Runoff Area=20,776 sf 35.46% Impervious Runoff Depth>3.28"
Flow Length=226' Slope=0.0100 '/' Tc=16.6 min CN=70 Runoff=1.3 cfs 5,675 cf

Subcatchment PST7: tribrid area Runoff Area=11,860 sf 50.51% Impervious Runoff Depth>3.58"
Flow Length=120' Tc=17.2 min CN=73 Runoff=0.8 cfs 3,539 cf

Subcatchment PST8: tribrid area Runoff Area=11,680 sf 51.21% Impervious Runoff Depth>3.89"
Flow Length=128' Tc=20.3 min CN=76 Runoff=0.8 cfs 3,785 cf

Subcatchment PST9: tribrid area Runoff Area=9,411 sf 31.82% Impervious Runoff Depth>3.99"
Flow Length=116' Slope=0.0100 '/' Tc=20.2 min CN=77 Runoff=0.7 cfs 3,132 cf

Reach 1R: maintenance FB2 swale Avg. Flow Depth=0.05' Max Vel=0.70 fps Inflow=0.3 cfs 1,689 cf
n=0.069 L=165.0' S=0.0606 '/' Capacity=14.2 cfs Outflow=0.3 cfs 1,680 cf

Reach 2R: maintenance FB1 swale Avg. Flow Depth=0.03' Max Vel=0.74 fps Inflow=0.1 cfs 421 cf
n=0.041 L=178.0' S=0.0573 '/' Capacity=2.8 cfs Outflow=0.1 cfs 419 cf

Reach 5R: 48" RCP - Naturalized Avg. Flow Depth=1.12' Max Vel=3.65 fps Inflow=15.5 cfs 55,800 cf
48.0" x 24.0", R=24.0" Arch Pipe n=0.040 L=48.0' S=0.0167 '/' Capacity=21.7 cfs Outflow=15.5 cfs 55,803 cf

Pond cb1: Peak Elev=293.75' Inflow=1.2 cfs 4,281 cf
15.0" Round Culvert n=0.013 L=21.8' S=0.0101 '/' Outflow=1.2 cfs 4,281 cf

Pond CB10: Peak Elev=288.58' Inflow=6.4 cfs 38,920 cf
15.0" Round Culvert n=0.013 L=169.0' S=0.0100 '/' Outflow=6.4 cfs 38,920 cf

Pond CB12: Peak Elev=286.29' Inflow=7.1 cfs 47,545 cf
15.0" Round Culvert n=0.013 L=60.0' S=0.0100 '/' Outflow=7.1 cfs 47,545 cf

Pond CB13: Peak Elev=289.72' Inflow=8.4 cfs 30,571 cf
18.0" Round Culvert n=0.013 L=71.4' S=0.0122 '/' Outflow=8.4 cfs 30,571 cf

Pond CB13A: Peak Elev=292.42' Inflow=8.4 cfs 30,571 cf
18.0" Round Culvert n=0.013 L=102.3' S=0.0102 '/' Outflow=8.4 cfs 30,571 cf

Pond CB14: Peak Elev=281.78' Inflow=14.9 cfs 58,673 cf
30.0" Round Culvert n=0.013 L=80.7' S=0.0100 '/' Outflow=14.9 cfs 58,673 cf

Pond CB15: Peak Elev=292.52' Inflow=1.3 cfs 5,675 cf
15.0" Round Culvert n=0.013 L=34.0' S=0.0100 '/' Outflow=1.3 cfs 5,675 cf

Pond CB16: Peak Elev=277.66' Inflow=0.1 cfs 419 cf
15.0" Round Culvert n=0.013 L=62.0' S=0.0290 '/' Outflow=0.1 cfs 419 cf

Pond CB17: Peak Elev=281.35' Inflow=7.6 cfs 54,371 cf
18.0" Round Culvert n=0.013 L=108.0' S=0.0150 '/' Outflow=7.6 cfs 54,371 cf

Pond CB18: Peak Elev=284.02' Inflow=7.5 cfs 52,914 cf
18.0" Round Culvert n=0.013 L=45.2' S=0.0100 '/' Outflow=7.5 cfs 52,914 cf

Pond CB19: Peak Elev=285.30' Inflow=0.4 cfs 1,458 cf
15.0" Round Culvert n=0.013 L=50.0' S=0.0100 '/' Outflow=0.4 cfs 1,458 cf

Pond cb2: Peak Elev=293.41' Inflow=2.4 cfs 8,624 cf
15.0" Round Culvert n=0.013 L=155.0' S=0.0085 '/' Outflow=2.4 cfs 8,624 cf

Pond cb20: Peak Elev=289.63' Inflow=0.8 cfs 3,539 cf
15.0" Round Culvert n=0.013 L=94.0' S=0.0245 '/' Outflow=0.8 cfs 3,539 cf

Pond cb21: Peak Elev=288.06' Inflow=3.5 cfs 16,275 cf
15.0" Round Culvert n=0.013 L=44.0' S=0.0089 '/' Outflow=3.5 cfs 16,275 cf

Pond cb22: Peak Elev=287.65' Inflow=4.3 cfs 20,060 cf
15.0" Round Culvert n=0.013 L=73.0' S=0.0099 '/' Outflow=4.3 cfs 20,060 cf

Pond CB23: Peak Elev=285.88' Inflow=5.0 cfs 23,192 cf
15.0" Round Culvert n=0.013 L=110.0' S=0.0101 '/' Outflow=5.0 cfs 23,192 cf

Pond CB24: Peak Elev=284.92' Inflow=5.9 cfs 27,238 cf
15.0" Round Culvert n=0.013 L=82.0' S=0.0106 '/' Outflow=5.9 cfs 27,238 cf

Pond CB27: Peak Elev=288.72' Inflow=1.2 cfs 5,068 cf
15.0" Round Culvert n=0.013 L=27.7' S=0.0101 '/' Outflow=1.2 cfs 5,068 cf

Pond CB28: Peak Elev=289.87' Inflow=4.2 cfs 17,739 cf
18.0" Round Culvert n=0.013 L=20.7' S=0.0101 '/' Outflow=4.2 cfs 17,739 cf

Pond CB3: Peak Elev=290.98' Inflow=5.8 cfs 34,493 cf
15.0" Round Culvert n=0.013 L=90.0' S=0.0100 '/' Outflow=5.8 cfs 34,493 cf

Pond CB30: Peak Elev=287.01' Inflow=7.4 cfs 70,848 cf
24.0" Round Culvert n=0.013 L=92.0' S=0.0100 '/' Outflow=7.4 cfs 70,848 cf

Pond CB4: Peak Elev=292.50' Inflow=5.1 cfs 28,681 cf
15.0" Round Culvert n=0.013 L=191.0' S=0.0100 '/' Outflow=5.1 cfs 28,681 cf

Pond CB6: Peak Elev=288.60' Inflow=2.1 cfs 9,837 cf
24.0" Round Culvert n=0.013 L=118.0' S=0.0100 '/' Outflow=2.1 cfs 9,837 cf

Pond CB8A: Peak Elev=287.12' Inflow=4.2 cfs 19,281 cf
15.0" Round Culvert n=0.013 L=131.3' S=0.0100 '/' Outflow=4.2 cfs 19,281 cf

Pond dmh1: Peak Elev=290.73' Inflow=2.4 cfs 8,624 cf
15.0" Round Culvert n=0.013 L=65.3' S=0.0100 '/' Outflow=2.4 cfs 8,624 cf

Pond dmh11: Peak Elev=279.36' Inflow=13.7 cfs 120,893 cf
24.0" Round Culvert n=0.013 L=41.0' S=0.0056 '/' Outflow=13.7 cfs 120,893 cf

Pond dmh23: Peak Elev=286.94' Inflow=4.3 cfs 20,060 cf
15.0" Round Culvert n=0.013 L=57.8' S=0.0100 '/' Outflow=4.3 cfs 20,060 cf

Pond DMH24: Peak Elev=286.39' Inflow=4.3 cfs 20,060 cf
15.0" Round Culvert n=0.013 L=37.0' S=0.0095 '/' Outflow=4.3 cfs 20,060 cf

Pond dmh25: Peak Elev=283.71' Inflow=5.9 cfs 27,238 cf
15.0" Round Culvert n=0.013 L=113.0' S=0.0093 '/' Outflow=5.9 cfs 27,238 cf

Pond DMH26: Peak Elev=282.21' Inflow=7.0 cfs 32,305 cf
18.0" Round Culvert n=0.013 L=126.4' S=0.0100 '/' Outflow=7.0 cfs 32,305 cf

Pond DMH3: Peak Elev=289.75' Inflow=5.8 cfs 34,493 cf
15.0" Round Culvert n=0.013 L=82.0' S=0.0100 '/' Outflow=5.8 cfs 34,493 cf

Pond DMH5: Peak Elev=290.61' Inflow=7.3 cfs 67,831 cf
24.0" Round Culvert n=0.013 L=126.7' S=0.0100 '/' Outflow=7.3 cfs 67,831 cf

Pond DMH5A: Peak Elev=289.24' Inflow=7.3 cfs 67,831 cf
24.0" Round Culvert n=0.013 L=118.0' S=0.0100 '/' Outflow=7.3 cfs 67,831 cf

Pond DMH6: Peak Elev=287.99' Inflow=7.3 cfs 67,831 cf
24.0" Round Culvert n=0.013 L=79.0' S=0.0101 '/' Outflow=7.3 cfs 67,831 cf

Pond DMH9: Peak Elev=280.61' Inflow=21.0 cfs 113,045 cf
30.0" Round Culvert n=0.013 L=24.0' S=0.0050 '/' Outflow=21.0 cfs 113,045 cf

Pond DMHRD: Peak Elev=290.20' Inflow=3.2 cfs 11,859 cf
18.0" Round Culvert n=0.013 L=28.0' S=0.0089 '/' Outflow=3.2 cfs 11,859 cf

Pond FB1: FILT. BASIN #1 Peak Elev=277.00' Storage=54,459 cf Inflow=14.0 cfs 123,306 cf
Discarded=0.5 cfs 21,655 cf Primary=4.5 cfs 75,029 cf Secondary=0.0 cfs 0 cf Outflow=5.0 cfs 96,684 cf

Pond FB2: FILT. BASIN #2 Peak Elev=278.97' Storage=42,889 cf Inflow=21.0 cfs 117,197 cf
Discarded=1.7 cfs 86,750 cf Primary=2.3 cfs 18,869 cf Secondary=0.0 cfs 0 cf Outflow=4.0 cfs 105,619 cf

Pond OS3: Detention Basin #1 Peak Elev=294.50' Storage=483 cf Inflow=7.0 cfs 62,353 cf
Primary=7.1 cfs 62,156 cf Secondary=0.0 cfs 0 cf Outflow=7.1 cfs 62,156 cf

Pond SFB1: FOREBAY #1 Peak Elev=277.72' Storage=0 cf Inflow=13.8 cfs 121,525 cf
Outflow=13.8 cfs 121,525 cf

Pond SFB2: FOREBAY #2 Peak Elev=279.32' Storage=0 cf Inflow=21.0 cfs 115,614 cf
Outflow=21.0 cfs 115,614 cf

Pond TD1: Peak Elev=292.60' Inflow=5.3 cfs 19,221 cf
24.0" Round Culvert n=0.013 L=102.3' S=0.0102 '/' Outflow=5.3 cfs 19,221 cf

Link 1: StreamStats Flow Manual Hydrograph Inflow=15.5 cfs 55,800 cf
Area= 1,951,488 sf Primary=15.5 cfs 55,800 cf

Link A: 14-44-38
Primary=0.0 cfs 0 cf

Link B: 14-47
Primary=0.0 cfs 0 cf

Link D: future property line Inflow=6.8 cfs 104,474 cf
Primary=6.8 cfs 104,474 cf

Link E: 14-38-0 Inflow=15.5 cfs 57,636 cf
Primary=15.5 cfs 57,636 cf

Link F: 14-38-0 Inflow=5.2 cfs 57,599 cf
Primary=5.2 cfs 57,599 cf

Total Runoff Area = 1,463,582 sf Runoff Volume = 310,720 cf Average Runoff Depth = 2.55"
84.41% Pervious = 1,235,477 sf 15.59% Impervious = 228,105 sf

Summary for Subcatchment PS14: paved aisle

Runoff = 1.4 cfs @ 12.22 hrs, Volume= 6,215 cf, Depth> 3.79"
Routed to Pond CB6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
799	98	Roofs, HSG A
176	98	Roofs, HSG C
1,186	98	Paved parking, HSG C
16,520	98	Paved parking, HSG A
751	39	>75% Grass cover, Good, HSG A
259	74	>75% Grass cover, Good, HSG C
19,691	95	Weighted Average
1,010		5.13% Pervious Area
18,681		94.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	36	0.0280	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
0.1	23	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	170	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.3	229	Total			

Summary for Subcatchment PS15: Process Building

Runoff = 2.1 cfs @ 12.09 hrs, Volume= 7,707 cf, Depth> 4.13"
Routed to Pond DMHRD :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
21,262	98	Roofs, HSG A
1,122	98	Roofs, HSG C
22,384	98	Weighted Average
22,384		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS16: paved area

Runoff = 1.7 cfs @ 12.09 hrs, Volume= 6,138 cf, Depth> 4.13"
Routed to Pond CB8A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
286	98	Roofs, HSG A
17,540	98	Paved parking, HSG A
17,826	98	Weighted Average
17,826		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS17: paved area

Runoff = 1.6 cfs @ 12.09 hrs, Volume= 5,733 cf, Depth> 4.13"
Routed to Pond CB14 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
16,650	98	Paved parking, HSG A
16,650		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS18: roof and paved area

Runoff = 2.0 cfs @ 12.09 hrs, Volume= 7,377 cf, Depth> 4.13"
Routed to Pond CB13A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
10,840	98	Paved parking, HSG A
10,584	98	Roofs, HSG A
21,424	98	Weighted Average
21,424		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS19: loading bay and roof

Runoff = 3.5 cfs @ 12.09 hrs, Volume= 12,492 cf, Depth> 4.13"
Routed to Pond TD1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
10,257	98	Paved parking, HSG A
24,660	98	Roofs, HSG A
1,364	98	Roofs, HSG C
36,281	98	Weighted Average
36,281		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS2: offsite east

Runoff = 0.1 cfs @ 12.68 hrs, Volume= 1,029 cf, Depth> 0.23"
Routed to Pond CB10 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
9,567	98	Paved parking, HSG A
33,691	30	Woods, Good, HSG A
11,424	39	>75% Grass cover, Good, HSG A
54,682	44	Weighted Average
45,115		82.50% Pervious Area
9,567		17.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.1	92	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	49	0.1100	2.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	26	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
22.9	267	Total			

Summary for Subcatchment PS20: interconnection/upgrading yard

Runoff = 1.0 cfs @ 12.09 hrs, Volume= 3,297 cf, Depth> 3.47"
Routed to Pond CB18 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
820	39	>75% Grass cover, Good, HSG A
10,570	96	Gravel surface, HSG A
11,390	92	Weighted Average
11,390		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS21: remainder site south

area 7 is a head wall

Runoff = 0.1 cfs @ 14.06 hrs, Volume= 1,921 cf, Depth> 0.14"
Routed to Link D : future property line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
58,550	30	Woods, Good, HSG A
35,853	55	Woods, Good, HSG B
7,591	70	Woods, Good, HSG C
61,491	39	>75% Grass cover, Good, HSG A
1,806	74	>75% Grass cover, Good, HSG C
2,587	61	>75% Grass cover, Good, HSG B
8	98	Paved parking, HSG A
167,886	41	Weighted Average
167,878		100.00% Pervious Area
8		0.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	100	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
5.8	232	0.0700	0.66		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
28.4	332	Total			

Summary for Subcatchment PS22: laydown area

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 948 cf, Depth> 4.13"
Routed to Pond CB19 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
2,752	98	Paved parking, HSG A
2,752		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS3: offsite north

Runoff = 0.0 cfs @ 13.99 hrs, Volume= 1,057 cf, Depth> 0.14"
Routed to Pond CB3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
7,328	98	Paved parking, HSG A
11,458	70	Woods, Good, HSG C
69,043	30	Woods, Good, HSG A
4,239	39	>75% Grass cover, Good, HSG A
92,068	41	Weighted Average
84,740		92.04% Pervious Area
7,328		7.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
4.7	245	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
4.7	283	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	26	0.3500	4.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	62	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
23.7	716	Total			

Summary for Subcatchment PS31: driveway

Runoff = 0.8 cfs @ 12.09 hrs, Volume= 2,782 cf, Depth> 4.13"
Routed to Pond cb1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
8,080	98	Paved roads w/curbs & sewers, HSG A
8,080		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS32: driveway

Runoff = 0.8 cfs @ 12.09 hrs, Volume= 2,823 cf, Depth> 4.13"
Routed to Pond cb2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
8,199	98	Paved roads w/curbs & sewers, HSG A
8,199		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS33: north of driveway

Runoff = 0.0 cfs @ 14.89 hrs, Volume= 179 cf, Depth> 0.09"
Routed to Link E : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
11,080	39	>75% Grass cover, Good, HSG A
12,516	39	>75% Grass cover, Good, HSG A
23,596	39	Weighted Average
23,596		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS34: south of driveway

Runoff = 0.0 cfs @ 14.89 hrs, Volume= 86 cf, Depth> 0.09"
Routed to Link E : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
11,351	39	>75% Grass cover, Good, HSG A
11,351		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS4: offsite north

Runoff = 1.7 cfs @ 12.49 hrs, Volume= 11,227 cf, Depth> 0.83"
Routed to Pond CB4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
9,960	98	Paved parking, HSG A
83,865	70	Woods, Good, HSG C
56,653	30	Woods, Good, HSG A
4,399	39	>75% Grass cover, Good, HSG A
322	98	Paved parking, HSG C
6,715	96	Gravel surface, HSG C
161,914	58	Weighted Average
151,632		93.65% Pervious Area
10,282		6.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
8.8	589	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	23	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	66	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
28.6	778	Total			

Summary for Subcatchment PS40: FB2 maintenance drive

Runoff = 0.1 cfs @ 12.57 hrs, Volume= 508 cf, Depth> 0.41"
Routed to Reach 1R : maintenance FB2 swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
12,263	39	>75% Grass cover, Good, HSG A
2,670	96	Gravel surface, HSG A
14,933	49	Weighted Average
14,933		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PS5: offsite run on

Runoff = 3.4 cfs @ 13.05 hrs, Volume= 30,726 cf, Depth> 1.69"
Routed to Pond OS3 : Detention Basin #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
188,914	70	Woods, Good, HSG C
6,947	39	>75% Grass cover, Good, HSG A
2,123	98	Roofs, HSG C
20,000	96	Gravel surface, HSG C
217,984	72	Weighted Average
215,861		99.03% Pervious Area
2,123		0.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.5	100	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
5.4	81	0.0100	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	201	0.0100	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
9.5	248	0.0300	0.43		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.1	405	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.9	78	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
74.8	1,113	Total			

Summary for Subcatchment PS6: offsite run on

Runoff = 1.2 cfs @ 12.31 hrs, Volume= 5,865 cf, Depth> 1.37"
Routed to Pond cb21 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
46,969	70	Woods, Good, HSG C
4,352	39	>75% Grass cover, Good, HSG A
51,321	67	Weighted Average
51,321		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	100	0.0500	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.9	289	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	93	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.7	482	Total			

Summary for Subcatchment PS7: offsite run-on

Runoff = 1.9 cfs @ 13.48 hrs, Volume= 23,391 cf, Depth> 0.92"
Routed to Link F : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
226,968	70	Woods, Good, HSG C
55,157	30	Woods, Good, HSG A
23,595	39	>75% Grass cover, Good, HSG A
305,720	60	Weighted Average
305,720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.3	100	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
23.9	508	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.2	706	0.0600	0.61		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	661	0.0900	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
97.1	1,975	Total			

Summary for Subcatchment PSFB1: sediment forebay 1 area

Runoff = 0.0 cfs @ 14.90 hrs, Volume= 91 cf, Depth> 0.09"
Routed to Pond SFB1 : FOREBAY #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
12,045	39	>75% Grass cover, Good, HSG A
12,045		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSFB2: sediment forebay 2 area

Runoff = 0.0 cfs @ 15.19 hrs, Volume= 127 cf, Depth> 0.09"
Routed to Pond SFB2 : FOREBAY #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
17,093	39	>75% Grass cover, Good, HSG A
17,093		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PSM1: FB1 maintenance area

Runoff = 0.0 cfs @ 14.65 hrs, Volume= 69 cf, Depth> 0.11"
Routed to Reach 2R : maintenance FB1 swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
7,015	39	>75% Grass cover, Good, HSG A
252	74	>75% Grass cover, Good, HSG C
7,267	40	Weighted Average
7,267		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSP1: filtration basin 1 area

Runoff = 0.0 cfs @ 14.65 hrs, Volume= 224 cf, Depth> 0.11"
Routed to Pond FB1 : FILT. BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
22,768	39	>75% Grass cover, Good, HSG A
756	74	>75% Grass cover, Good, HSG C
23,524	40	Weighted Average
23,524		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSP2: filtration basin 2 area

Runoff = 0.0 cfs @ 15.19 hrs, Volume= 227 cf, Depth> 0.09"
Routed to Pond FB2 : FILT. BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
30,454	39	>75% Grass cover, Good, HSG A
30,454		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PST10: tribrid area

Runoff = 0.5 cfs @ 12.29 hrs, Volume= 2,173 cf, Depth> 2.26"
Routed to Pond CB24 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
4,006	98	Roofs, HSG A
3,911	96	Gravel surface, HSG A
3,630	39	>75% Grass cover, Good, HSG A
11,547	79	Weighted Average
7,541		65.31% Pervious Area
4,006		34.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.6	24	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.4	124	Total			

Summary for Subcatchment PST11: tribrid area

Runoff = 0.7 cfs @ 12.21 hrs, Volume= 2,723 cf, Depth> 2.26"
Routed to Pond CB27 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
7,342	98	Roofs, HSG A
1,387	96	Gravel surface, HSG A
4,531	39	>75% Grass cover, Good, HSG A
670	98	Roofs, HSG C
209	96	Gravel surface, HSG C
308	74	>75% Grass cover, Good, HSG C
14,447	79	Weighted Average
6,435		44.54% Pervious Area
8,012		55.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0230	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.5	35	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.7	135	Total			

Summary for Subcatchment PST12: tribrid area

Runoff = 0.8 cfs @ 12.23 hrs, Volume= 3,229 cf, Depth> 2.43"
Routed to Pond CB28 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
7,486	98	Roofs, HSG A
3,088	96	Gravel surface, HSG A
4,198	39	>75% Grass cover, Good, HSG A
526	98	Roofs, HSG C
109	96	Gravel surface, HSG C
550	74	>75% Grass cover, Good, HSG C
15,957	81	Weighted Average
7,945		49.79% Pervious Area
8,012		50.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	100	0.0180	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.7	40	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.4	140	Total			

Summary for Subcatchment PST13: tribrid area

Runoff = 0.3 cfs @ 12.22 hrs, Volume= 1,431 cf, Depth> 1.51"
Routed to Pond CB30 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
4,156	98	Roofs, HSG A
1,698	96	Gravel surface, HSG A
5,501	39	>75% Grass cover, Good, HSG A
34	74	>75% Grass cover, Good, HSG C
11,389	69	Weighted Average
7,233		63.51% Pervious Area
4,156		36.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0230	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.7	42	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.9	142	Total			

Summary for Subcatchment PST6: fet area

Runoff = 0.6 cfs @ 12.25 hrs, Volume= 2,729 cf, Depth> 1.58"
Routed to Pond CB15 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
7,368	98	Roofs, HSG A
3,784	96	Gravel surface, HSG A
9,624	39	>75% Grass cover, Good, HSG A
20,776	70	Weighted Average
13,408		64.54% Pervious Area
7,368		35.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
3.0	126	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.6	226	Total			

Summary for Subcatchment PST7: tribrid area

Runoff = 0.4 cfs @ 12.25 hrs, Volume= 1,771 cf, Depth> 1.79"
Routed to Pond cb20 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
5,990	98	Roofs, HSG A
974	96	Gravel surface, HSG A
4,896	39	>75% Grass cover, Good, HSG A
11,860	73	Weighted Average
5,870		49.49% Pervious Area
5,990		50.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0150	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.4	20	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.2	120	Total			

Summary for Subcatchment PST8: tribrid area

Runoff = 0.4 cfs @ 12.29 hrs, Volume= 1,964 cf, Depth> 2.02"
Routed to Pond cb22 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
5,981	98	Roofs, HSG A
1,487	96	Gravel surface, HSG A
4,212	39	>75% Grass cover, Good, HSG A
11,680	76	Weighted Average
5,699		48.79% Pervious Area
5,981		51.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.5	28	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.3	128	Total			

Summary for Subcatchment PST9: tribrid area

Runoff = 0.4 cfs @ 12.29 hrs, Volume= 1,644 cf, Depth> 2.10"
Routed to Pond CB23 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-YR Rainfall=4.37"

Area (sf)	CN	Description
2,995	98	Roofs, HSG A
3,172	96	Gravel surface, HSG A
3,244	39	>75% Grass cover, Good, HSG A
9,411	77	Weighted Average
6,416		68.18% Pervious Area
2,995		31.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.4	16	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.2	116	Total			

Summary for Reach 1R: maintenance FB2 swale

Inflow Area = 14,933 sf, 0.00% Impervious, Inflow Depth > 0.41" for 10-YR event
Inflow = 0.1 cfs @ 12.57 hrs, Volume= 508 cf
Outflow = 0.1 cfs @ 12.67 hrs, Volume= 503 cf, Atten= 5%, Lag= 5.8 min
Routed to Pond SFB2 : FOREBAY #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.36 fps, Min. Travel Time= 7.7 min
Avg. Velocity = 0.19 fps, Avg. Travel Time= 14.1 min

Peak Storage= 23 cf @ 12.67 hrs
Average Depth at Peak Storage= 0.02' , Surface Width= 8.10'
Bank-Full Depth= 0.50' Flow Area= 4.8 sf, Capacity= 14.2 cfs

8.00' x 0.50' deep channel, n= 0.069 Riprap, 6-inch
Side Slope Z-value= 3.0 '/' Top Width= 11.00'
Length= 165.0' Slope= 0.0606 '/'
Inlet Invert= 290.00', Outlet Invert= 280.00'



‡

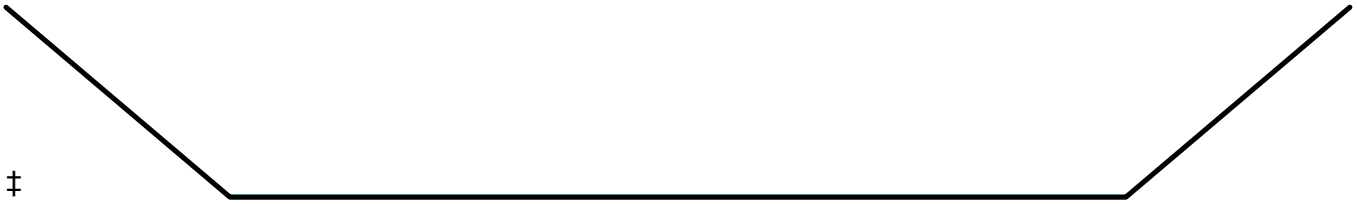
Summary for Reach 2R: maintenance FB1 swale

Inflow Area = 7,267 sf, 0.00% Impervious, Inflow Depth > 0.11" for 10-YR event
Inflow = 0.0 cfs @ 14.65 hrs, Volume= 69 cf
Outflow = 0.0 cfs @ 14.78 hrs, Volume= 68 cf, Atten= 0%, Lag= 8.1 min
Routed to Pond CB16 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.22 fps, Min. Travel Time= 13.3 min
Avg. Velocity = 0.18 fps, Avg. Travel Time= 16.1 min

Peak Storage= 2 cf @ 14.78 hrs
Average Depth at Peak Storage= 0.00' , Surface Width= 3.02'
Bank-Full Depth= 0.25' Flow Area= 0.9 sf, Capacity= 2.8 cfs

3.00' x 0.25' deep channel, n= 0.041 Riprap, 2-inch
Side Slope Z-value= 3.0 '/' Top Width= 4.50'
Length= 178.0' Slope= 0.0573 '/'
Inlet Invert= 292.00', Outlet Invert= 281.80'



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Summary for Reach 5R: 48" RCP - Naturalized Bottom

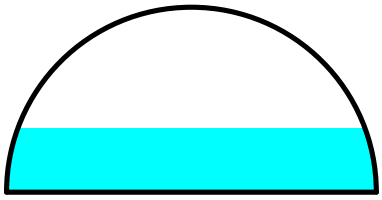
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.18" for 10-YR event
Inflow = 8.3 cfs @ 12.00 hrs, Volume= 29,700 cf
Outflow = 8.2 cfs @ 12.00 hrs, Volume= 29,700 cf, Atten= 0%, Lag= 0.2 min
Routed to Link E : 14-38-0

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 3.03 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.25 fps, Avg. Travel Time= 0.4 min

Peak Storage= 130 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.69' , Surface Width= 3.75'
Bank-Full Depth= 2.00' Flow Area= 6.3 sf, Capacity= 21.7 cfs

48.0" W x 24.0" H, R=24.0" Arch Pipe
n= 0.040 Earth, cobble bottom, clean sides
Length= 48.0' Slope= 0.0167 '/'
Inlet Invert= 298.60', Outlet Invert= 297.80'



Summary for Pond cb1:

Inflow Area = 8,080 sf,100.00% Impervious, Inflow Depth > 4.13" for 10-YR event
Inflow = 0.8 cfs @ 12.09 hrs, Volume= 2,782 cf
Outflow = 0.8 cfs @ 12.09 hrs, Volume= 2,782 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.8 cfs @ 12.09 hrs, Volume= 2,782 cf
Routed to Pond cb2 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 293.62' @ 12.09 hrs
Flood Elev= 297.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	293.18'	**15.0" Round Culvert** L= 21.8' Ke= 0.500 Inlet / Outlet Invert= 293.18' / 292.96' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.8 cfs @ 12.09 hrs HW=293.62' TW=293.24' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.8 cfs @ 2.93 fps)

Summary for Pond CB10:

Inflow Area = 308,664 sf, 8.80% Impervious, Inflow Depth > 0.52" for 10-YR event
Inflow = 1.7 cfs @ 12.50 hrs, Volume= 13,314 cf
Outflow = 1.7 cfs @ 12.50 hrs, Volume= 13,314 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.50 hrs, Volume= 13,314 cf
Routed to Pond CB12 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 286.58' @ 12.50 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.94'	**15.0" Round Culvert** L= 169.0' Ke= 0.500 Inlet / Outlet Invert= 285.94' / 284.25' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.7 cfs @ 12.50 hrs HW=286.58' TW=284.87' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.7 cfs @ 2.73 fps)

Summary for Pond CB12:

Inflow Area = 324,943 sf, 13.37% Impervious, Inflow Depth > 0.70" for 10-YR event
Inflow = 2.1 cfs @ 12.44 hrs, Volume= 18,919 cf
Outflow = 2.1 cfs @ 12.44 hrs, Volume= 18,919 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.44 hrs, Volume= 18,919 cf
Routed to Pond CB18 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 284.88' @ 12.44 hrs
Flood Elev= 296.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.15'	**15.0" Round Culvert** L= 60.0' Ke= 0.500 Inlet / Outlet Invert= 284.15' / 283.55' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.1 cfs @ 12.44 hrs HW=284.88' TW=283.19' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.1 cfs @ 4.05 fps)

Summary for Pond CB13:

Inflow Area = 57,705 sf,100.00% Impervious, Inflow Depth > 4.13" for 10-YR event
Inflow = 5.5 cfs @ 12.09 hrs, Volume= 19,869 cf
Outflow = 5.5 cfs @ 12.09 hrs, Volume= 19,869 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.5 cfs @ 12.09 hrs, Volume= 19,869 cf
Routed to Pond CB14 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.18' @ 12.09 hrs
Flood Elev= 294.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**18.0" Round Culvert** L= 71.4' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 287.13' S= 0.0122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.4 cfs @ 12.09 hrs HW=289.16' TW=281.35' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.4 cfs @ 3.67 fps)

Summary for Pond CB13A:

Inflow Area = 57,705 sf,100.00% Impervious, Inflow Depth > 4.13" for 10-YR event
Inflow = 5.5 cfs @ 12.09 hrs, Volume= 19,869 cf
Outflow = 5.5 cfs @ 12.09 hrs, Volume= 19,869 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.5 cfs @ 12.09 hrs, Volume= 19,869 cf
Routed to Pond CB13 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 291.88' @ 12.09 hrs
Flood Elev= 294.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	290.70'	**18.0" Round Culvert** L= 102.3' Ke= 0.500 Inlet / Outlet Invert= 290.70' / 289.66' S= 0.0102 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.4 cfs @ 12.09 hrs HW=291.86' TW=289.16' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.4 cfs @ 3.67 fps)

Summary for Pond CB14:

Inflow Area = 111,872 sf, 99.10% Impervious, Inflow Depth > 4.07" for 10-YR event
Inflow = 9.8 cfs @ 12.09 hrs, Volume= 37,955 cf
Outflow = 9.8 cfs @ 12.09 hrs, Volume= 37,955 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.8 cfs @ 12.09 hrs, Volume= 37,955 cf
Routed to Pond DMH9 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 281.37' @ 12.09 hrs
Flood Elev= 293.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	280.06'	**30.0" Round Culvert** L= 80.7' Ke= 0.500 Inlet / Outlet Invert= 280.06' / 279.25' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=9.6 cfs @ 12.09 hrs HW=281.35' TW=279.93' (Dynamic Tailwater)
1=Culvert (Barrel Controls 9.6 cfs @ 5.46 fps)

Summary for Pond CB15:

Inflow Area = 20,776 sf, 35.46% Impervious, Inflow Depth > 1.58" for 10-YR event
Inflow = 0.6 cfs @ 12.25 hrs, Volume= 2,729 cf
Outflow = 0.6 cfs @ 12.25 hrs, Volume= 2,729 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.6 cfs @ 12.25 hrs, Volume= 2,729 cf
Routed to Pond DMH5 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 292.32' @ 12.25 hrs
Flood Elev= 296.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.94'	**15.0" Round Culvert** L= 34.0' Ke= 0.500 Inlet / Outlet Invert= 291.94' / 291.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.6 cfs @ 12.25 hrs HW=292.32' TW=289.83' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.6 cfs @ 2.91 fps)

Summary for Pond CB16:

Inflow Area = 7,267 sf, 0.00% Impervious, Inflow Depth > 0.11" for 10-YR event
Inflow = 0.0 cfs @ 14.78 hrs, Volume= 68 cf
Outflow = 0.0 cfs @ 14.79 hrs, Volume= 68 cf, Atten= 0%, Lag= 0.4 min
Primary = 0.0 cfs @ 14.79 hrs, Volume= 68 cf
Routed to Pond FB1 : FILT. BASIN #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.57' @ 14.79 hrs
Flood Elev= 281.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.55'	**15.0" Round Culvert** L= 62.0' Ke= 0.500 Inlet / Outlet Invert= 277.55' / 275.75' S= 0.0290 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 14.79 hrs HW=277.57' TW=275.45' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.0 cfs @ 0.51 fps)

Summary for Pond CB17:

Inflow Area = 339,085 sf, 13.63% Impervious, Inflow Depth > 0.82" for 10-YR event
Inflow = 3.1 cfs @ 12.10 hrs, Volume= 23,163 cf
Outflow = 3.1 cfs @ 12.10 hrs, Volume= 23,163 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.1 cfs @ 12.10 hrs, Volume= 23,163 cf
Routed to Pond DMH9 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 280.68' @ 12.10 hrs
Flood Elev= 293.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	279.72'	**18.0" Round Culvert** L= 108.0' Ke= 0.500 Inlet / Outlet Invert= 279.72' / 278.10' S= 0.0150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.0 cfs @ 12.10 hrs HW=280.67' TW=279.94' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.0 cfs @ 3.65 fps)

Summary for Pond CB18:

Inflow Area = 336,333 sf, 12.92% Impervious, Inflow Depth > 0.79" for 10-YR event
Inflow = 2.8 cfs @ 12.10 hrs, Volume= 22,215 cf
Outflow = 2.8 cfs @ 12.10 hrs, Volume= 22,215 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.8 cfs @ 12.10 hrs, Volume= 22,215 cf
Routed to Pond CB17 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 283.27' @ 12.10 hrs
Flood Elev= 293.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	282.45'	**18.0" Round Culvert** L= 45.2' Ke= 0.500 Inlet / Outlet Invert= 282.45' / 282.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.8 cfs @ 12.10 hrs HW=283.27' TW=280.68' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.8 cfs @ 4.11 fps)

Summary for Pond CB19:

Inflow Area = 2,752 sf,100.00% Impervious, Inflow Depth > 4.13" for 10-YR event
Inflow = 0.3 cfs @ 12.09 hrs, Volume= 948 cf
Outflow = 0.3 cfs @ 12.09 hrs, Volume= 948 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.3 cfs @ 12.09 hrs, Volume= 948 cf
Routed to Pond CB17 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.24' @ 12.09 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**15.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 285.00' / 284.50' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.3 cfs @ 12.09 hrs HW=285.24' TW=280.66' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.3 cfs @ 2.41 fps)

Summary for Pond cb2:

Inflow Area = 16,279 sf,100.00% Impervious, Inflow Depth > 4.13" for 10-YR event
Inflow = 1.6 cfs @ 12.09 hrs, Volume= 5,605 cf
Outflow = 1.6 cfs @ 12.09 hrs, Volume= 5,605 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.6 cfs @ 12.09 hrs, Volume= 5,605 cf
Routed to Pond dmh1 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 293.25' @ 12.09 hrs
Flood Elev= 297.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.64'	**15.0" Round Culvert** L= 155.0' Ke= 0.500 Inlet / Outlet Invert= 292.64' / 291.33' S= 0.0085 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.5 cfs @ 12.09 hrs HW=293.24' TW=290.55' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 1.5 cfs @ 3.82 fps)

Summary for Pond cb20:

Inflow Area = 11,860 sf, 50.51% Impervious, Inflow Depth > 1.79" for 10-YR event
Inflow = 0.4 cfs @ 12.25 hrs, Volume= 1,771 cf
Outflow = 0.4 cfs @ 12.25 hrs, Volume= 1,771 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.25 hrs, Volume= 1,771 cf
Routed to Pond cb21 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.49' @ 12.25 hrs
Flood Elev= 292.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.20'	**15.0" Round Culvert** L= 94.0' Ke= 0.500 Inlet / Outlet Invert= 289.20' / 286.90' S= 0.0245 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.4 cfs @ 12.25 hrs HW=289.49' TW=287.48' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.4 cfs @ 1.84 fps)

Summary for Pond cb21:

Inflow Area = 63,181 sf, 9.48% Impervious, Inflow Depth > 1.45" for 10-YR event
Inflow = 1.6 cfs @ 12.30 hrs, Volume= 7,636 cf
Outflow = 1.6 cfs @ 12.30 hrs, Volume= 7,636 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.6 cfs @ 12.30 hrs, Volume= 7,636 cf
Routed to Pond cb22 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.49' @ 12.30 hrs
Flood Elev= 292.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.80'	**15.0" Round Culvert** L= 44.0' Ke= 0.500 Inlet / Outlet Invert= 286.80' / 286.41' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.6 cfs @ 12.30 hrs HW=287.49' TW=287.03' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 1.6 cfs @ 3.27 fps)

Summary for Pond cb22:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 1.54" for 10-YR event
Inflow = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf
Outflow = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf
Routed to Pond dmh23 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.03' @ 12.30 hrs
Flood Elev= 291.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.31'	**15.0" Round Culvert** L= 73.0' Ke= 0.500 Inlet / Outlet Invert= 286.31' / 285.59' S= 0.0099 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.0 cfs @ 12.30 hrs HW=287.03' TW=286.23' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.0 cfs @ 3.88 fps)

Summary for Pond CB23:

Inflow Area = 84,272 sf, 17.76% Impervious, Inflow Depth > 1.60" for 10-YR event
Inflow = 2.3 cfs @ 12.29 hrs, Volume= 11,244 cf
Outflow = 2.3 cfs @ 12.29 hrs, Volume= 11,244 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.3 cfs @ 12.29 hrs, Volume= 11,244 cf
Routed to Pond CB24 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.09' @ 12.29 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.31'	**15.0" Round Culvert** L= 110.0' Ke= 0.500 Inlet / Outlet Invert= 284.31' / 283.20' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.3 cfs @ 12.29 hrs HW=285.09' TW=283.96' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.3 cfs @ 4.15 fps)

Summary for Pond CB24:

Inflow Area = 95,819 sf, 19.80% Impervious, Inflow Depth > 1.68" for 10-YR event
Inflow = 2.8 cfs @ 12.29 hrs, Volume= 13,418 cf
Outflow = 2.8 cfs @ 12.29 hrs, Volume= 13,418 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.8 cfs @ 12.29 hrs, Volume= 13,418 cf
Routed to Pond dmh25 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 283.96' @ 12.29 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	283.10'	**15.0" Round Culvert** L= 82.0' Ke= 0.500 Inlet / Outlet Invert= 283.10' / 282.23' S= 0.0106 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.8 cfs @ 12.29 hrs HW=283.96' TW=282.95' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.8 cfs @ 4.39 fps)

Summary for Pond CB27:

Inflow Area = 14,447 sf, 55.46% Impervious, Inflow Depth > 2.26" for 10-YR event
Inflow = 0.7 cfs @ 12.21 hrs, Volume= 2,723 cf
Outflow = 0.7 cfs @ 12.21 hrs, Volume= 2,723 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.7 cfs @ 12.21 hrs, Volume= 2,723 cf
Routed to Pond DMH26 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.55' @ 12.21 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.15'	**15.0" Round Culvert** L= 27.7' Ke= 0.500 Inlet / Outlet Invert= 288.15' / 287.87' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.7 cfs @ 12.21 hrs HW=288.55' TW=281.64' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.7 cfs @ 2.92 fps)

Summary for Pond CB28:

Inflow Area = 38,341 sf, 79.28% Impervious, Inflow Depth > 3.42" for 10-YR event
Inflow = 2.6 cfs @ 12.10 hrs, Volume= 10,937 cf
Outflow = 2.6 cfs @ 12.10 hrs, Volume= 10,937 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.6 cfs @ 12.10 hrs, Volume= 10,937 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.59' @ 12.10 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.75'	**18.0" Round Culvert** L= 20.7' Ke= 0.500 Inlet / Outlet Invert= 288.75' / 288.54' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.6 cfs @ 12.10 hrs HW=289.59' TW=278.42' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.6 cfs @ 3.73 fps)

Summary for Pond CB3:

Inflow Area = 253,982 sf, 6.93% Impervious, Inflow Depth > 0.58" for 10-YR event
Inflow = 1.7 cfs @ 12.49 hrs, Volume= 12,284 cf
Outflow = 1.7 cfs @ 12.49 hrs, Volume= 12,284 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.49 hrs, Volume= 12,284 cf
Routed to Pond DMH3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.68' @ 12.49 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.05'	**15.0" Round Culvert** L= 90.0' Ke= 0.500 Inlet / Outlet Invert= 289.05' / 288.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.7 cfs @ 12.49 hrs HW=289.68' TW=287.60' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.7 cfs @ 2.71 fps)

Summary for Pond CB30:

Inflow Area = 250,149 sf, 5.46% Impervious, Inflow Depth > 1.67" for 10-YR event
Inflow = 3.7 cfs @ 13.05 hrs, Volume= 34,753 cf
Outflow = 3.7 cfs @ 13.05 hrs, Volume= 34,753 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.7 cfs @ 13.05 hrs, Volume= 34,753 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 286.62' @ 13.05 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.80'	**24.0" Round Culvert** L= 92.0' Ke= 0.500 Inlet / Outlet Invert= 285.80' / 284.88' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.7 cfs @ 13.05 hrs HW=286.62' TW=278.32' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.7 cfs @ 3.08 fps)

Summary for Pond CB4:

Inflow Area = 161,914 sf, 6.35% Impervious, Inflow Depth > 0.83" for 10-YR event
Inflow = 1.7 cfs @ 12.49 hrs, Volume= 11,227 cf
Outflow = 1.7 cfs @ 12.49 hrs, Volume= 11,227 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.49 hrs, Volume= 11,227 cf
Routed to Pond CB3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 291.69' @ 12.49 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.06'	**15.0" Round Culvert** L= 191.0' Ke= 0.500 Inlet / Outlet Invert= 291.06' / 289.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.7 cfs @ 12.49 hrs HW=291.69' TW=289.68' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.7 cfs @ 2.71 fps)

Summary for Pond CB6:

Inflow Area = 19,691 sf, 94.87% Impervious, Inflow Depth > 3.79" for 10-YR event
Inflow = 1.4 cfs @ 12.22 hrs, Volume= 6,215 cf
Outflow = 1.4 cfs @ 12.22 hrs, Volume= 6,215 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.4 cfs @ 12.22 hrs, Volume= 6,215 cf
Routed to Pond CB8A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.48' @ 12.22 hrs
Flood Elev= 294.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**24.0" Round Culvert** L= 118.0' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 286.82' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.4 cfs @ 12.22 hrs HW=288.48' TW=286.75' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.4 cfs @ 2.35 fps)

Summary for Pond CB8A:

Inflow Area = 37,517 sf, 97.31% Impervious, Inflow Depth > 3.95" for 10-YR event
Inflow = 2.7 cfs @ 12.11 hrs, Volume= 12,353 cf
Outflow = 2.7 cfs @ 12.11 hrs, Volume= 12,353 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.7 cfs @ 12.11 hrs, Volume= 12,353 cf
Routed to Pond CB14 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 286.84' @ 12.11 hrs
Flood Elev= 293.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.00'	**15.0" Round Culvert** L= 131.3' Ke= 0.500 Inlet / Outlet Invert= 286.00' / 284.69' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.7 cfs @ 12.11 hrs HW=286.83' TW=281.34' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.7 cfs @ 3.10 fps)

Summary for Pond dmh1:

Inflow Area = 16,279 sf,100.00% Impervious, Inflow Depth > 4.13" for 10-YR event
Inflow = 1.6 cfs @ 12.09 hrs, Volume= 5,605 cf
Outflow = 1.6 cfs @ 12.09 hrs, Volume= 5,605 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.6 cfs @ 12.09 hrs, Volume= 5,605 cf
Routed to Pond CB12 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 290.56' @ 12.09 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.95'	**15.0" Round Culvert** L= 65.3' Ke= 0.500 Inlet / Outlet Invert= 289.95' / 289.30' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.5 cfs @ 12.09 hrs HW=290.55' TW=284.81' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.5 cfs @ 3.80 fps)

Summary for Pond dmh11:

Inflow Area = 398,756 sf, 17.81% Impervious, Inflow Depth > 1.86" for 10-YR event
Inflow = 6.6 cfs @ 12.25 hrs, Volume= 61,830 cf
Outflow = 6.6 cfs @ 12.25 hrs, Volume= 61,830 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.6 cfs @ 12.25 hrs, Volume= 61,830 cf
Routed to Pond SFB1 : FOREBAY #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 278.55' @ 12.25 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.23'	**24.0" Round Culvert** L= 41.0' Ke= 0.500 Inlet / Outlet Invert= 277.23' / 277.00' S= 0.0056 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=6.6 cfs @ 12.25 hrs HW=278.55' TW=277.48' (Dynamic Tailwater)
1=Culvert (Barrel Controls 6.6 cfs @ 4.23 fps)

Summary for Pond dmh23:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 1.54" for 10-YR event
Inflow = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf
Outflow = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf
Routed to Pond DMH24 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 286.23' @ 12.30 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.49'	**15.0" Round Culvert** L= 57.8' Ke= 0.500 Inlet / Outlet Invert= 285.49' / 284.91' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.0 cfs @ 12.30 hrs HW=286.23' TW=285.58' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.0 cfs @ 3.75 fps)

Summary for Pond DMH24:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 1.54" for 10-YR event
Inflow = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf
Outflow = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 12.30 hrs, Volume= 9,600 cf
Routed to Pond CB23 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.58' @ 12.30 hrs
Flood Elev= 292.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.81'	**15.0" Round Culvert** L= 37.0' Ke= 0.500 Inlet / Outlet Invert= 284.81' / 284.46' S= 0.0095 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.0 cfs @ 12.30 hrs HW=285.58' TW=285.09' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.0 cfs @ 3.59 fps)

Summary for Pond dmh25:

Inflow Area = 95,819 sf, 19.80% Impervious, Inflow Depth > 1.68" for 10-YR event
Inflow = 2.8 cfs @ 12.29 hrs, Volume= 13,418 cf
Outflow = 2.8 cfs @ 12.29 hrs, Volume= 13,418 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.8 cfs @ 12.29 hrs, Volume= 13,418 cf
Routed to Pond DMH26 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 282.95' @ 12.29 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	282.10'	**15.0" Round Culvert** L= 113.0' Ke= 0.500 Inlet / Outlet Invert= 282.10' / 281.05' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.8 cfs @ 12.29 hrs HW=282.95' TW=281.67' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.8 cfs @ 3.14 fps)

Summary for Pond DMH26:

Inflow Area = 110,266 sf, 24.47% Impervious, Inflow Depth > 1.76" for 10-YR event
Inflow = 3.4 cfs @ 12.27 hrs, Volume= 16,140 cf
Outflow = 3.4 cfs @ 12.27 hrs, Volume= 16,140 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.4 cfs @ 12.27 hrs, Volume= 16,140 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 281.68' @ 12.27 hrs
Flood Elev= 292.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	280.80'	**18.0" Round Culvert** L= 126.4' Ke= 0.500 Inlet / Outlet Invert= 280.80' / 279.54' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.4 cfs @ 12.27 hrs HW=281.67' TW=278.54' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.4 cfs @ 3.18 fps)

Summary for Pond DMH3:

Inflow Area = 253,982 sf, 6.93% Impervious, Inflow Depth > 0.58" for 10-YR event
Inflow = 1.7 cfs @ 12.49 hrs, Volume= 12,284 cf
Outflow = 1.7 cfs @ 12.49 hrs, Volume= 12,284 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.7 cfs @ 12.49 hrs, Volume= 12,284 cf
Routed to Pond CB10 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.60' @ 12.49 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.97'	**15.0" Round Culvert** L= 82.0' Ke= 0.500 Inlet / Outlet Invert= 286.97' / 286.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.7 cfs @ 12.49 hrs HW=287.60' TW=286.58' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.7 cfs @ 2.71 fps)

Summary for Pond DMH5:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 1.67" for 10-YR event
Inflow = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf
Outflow = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf
Routed to Pond DMH5A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 290.21' @ 13.05 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.40'	**24.0" Round Culvert** L= 126.7' Ke= 0.500 Inlet / Outlet Invert= 289.40' / 288.13' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.7 cfs @ 13.05 hrs HW=290.21' TW=288.81' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.7 cfs @ 3.07 fps)

Summary for Pond DMH5A:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 1.67" for 10-YR event
Inflow = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf
Outflow = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf
Routed to Pond DMH6 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.81' @ 13.05 hrs
Flood Elev= 294.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**24.0" Round Culvert** L= 118.0' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 286.82' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.7 cfs @ 13.05 hrs HW=288.81' TW=287.55' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.7 cfs @ 3.07 fps)

Summary for Pond DMH6:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 1.67" for 10-YR event
Inflow = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf
Outflow = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.7 cfs @ 13.05 hrs, Volume= 33,322 cf
Routed to Pond CB30 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.55' @ 13.05 hrs
Flood Elev= 294.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.72'	**24.0" Round Culvert** L= 79.0' Ke= 0.500 Inlet / Outlet Invert= 286.72' / 285.92' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.7 cfs @ 13.05 hrs HW=287.55' TW=286.62' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.7 cfs @ 4.42 fps)

Summary for Pond DMH9:

Inflow Area = 450,957 sf, 34.83% Impervious, Inflow Depth > 1.63" for 10-YR event
Inflow = 12.8 cfs @ 12.09 hrs, Volume= 61,117 cf
Outflow = 12.8 cfs @ 12.09 hrs, Volume= 61,117 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.8 cfs @ 12.09 hrs, Volume= 61,117 cf
Routed to Pond SFB2 : FOREBAY #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 279.95' @ 12.09 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.12'	**30.0" Round Culvert** L= 24.0' Ke= 0.500 Inlet / Outlet Invert= 278.12' / 278.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=12.6 cfs @ 12.09 hrs HW=279.93' TW=279.18' (Dynamic Tailwater)
1=Culvert (Barrel Controls 12.6 cfs @ 4.65 fps)

Summary for Pond DMHRD:

Inflow Area = 22,384 sf,100.00% Impervious, Inflow Depth > 4.13" for 10-YR event
Inflow = 2.1 cfs @ 12.09 hrs, Volume= 7,707 cf
Outflow = 2.1 cfs @ 12.09 hrs, Volume= 7,707 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.09 hrs, Volume= 7,707 cf
Routed to Pond CB28 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.92' @ 12.09 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.10'	**18.0" Round Culvert** L= 28.0' Ke= 0.500 Inlet / Outlet Invert= 289.10' / 288.85' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.1 cfs @ 12.09 hrs HW=289.90' TW=289.58' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.1 cfs @ 3.14 fps)

Summary for Pond FB1: FILT. BASIN #1

Inflow Area = 441,592 sf, 16.08% Impervious, Inflow Depth > 1.69" for 10-YR event
Inflow = 6.6 cfs @ 12.25 hrs, Volume= 62,213 cf
Outflow = 1.3 cfs @ 15.31 hrs, Volume= 40,802 cf, Atten= 80%, Lag= 184.0 min
Discarded = 0.4 cfs @ 15.31 hrs, Volume= 18,665 cf
Primary = 0.9 cfs @ 15.31 hrs, Volume= 22,137 cf
Routed to Link D : future property line
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 275.47' @ 15.31 hrs Surf.Area= 13,472 sf Storage= 32,147 cf
Flood Elev= 278.00' Surf.Area= 17,354 sf Storage= 71,070 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 160.1 min (1,028.4 - 868.2)

Volume	Invert	Avail.Storage	Storage Description
#1	271.50'	76,522 cf	**FILT. BASIN #1 (18" FILTER MEDIA) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
271.50	7,427	0.0	0	0
271.51	7,427	40.0	30	30
272.99	7,427	40.0	4,397	4,426
273.00	7,427	100.0	74	4,501
274.00	11,372	100.0	9,400	13,900
275.00	12,783	100.0	12,078	25,978
276.00	14,250	100.0	13,517	39,494
277.00	15,774	100.0	15,012	54,506
278.00	17,354	100.0	16,564	71,070
278.30	18,991	100.0	5,452	76,522

Device	Routing	Invert	Outlet Devices
#1	Discarded	271.50'	**1.253 in/hr Exfiltration over Surface area**
#2	Secondary	277.50'	**6.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69
#3	Primary	266.00'	**15.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 266.00' / 265.75' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#4	Device 3	277.30'	**48.0" x 48.0" Horiz. OS1 Conc. Horz. Rim** C= 0.600
#5	Device 3	273.95'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.60 0.60 2.00 2.00 2.70 2.70 3.35 Width (feet) 0.10 0.10 0.20 0.20 0.50 0.50 1.20 1.20

Discarded OutFlow Max=0.4 cfs @ 15.31 hrs HW=275.47' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.4 cfs)

Primary OutFlow Max=0.9 cfs @ 15.31 hrs HW=275.47' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Passes 0.9 cfs of 17.6 cfs potential flow)
  ├**4=OS1 Conc. Horz. Rim** (Controls 0.0 cfs)
  └**5=Custom Weir/Orifice** (Weir Controls 0.9 cfs @ 3.70 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=271.50' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond FB2: FILT. BASIN #2

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=28)

Inflow Area = 513,437 sf, 30.59% Impervious, Inflow Depth > 1.45" for 10-YR event
Inflow = 12.8 cfs @ 12.09 hrs, Volume= 61,975 cf
Outflow = 1.5 cfs @ 13.54 hrs, Volume= 61,958 cf, Atten= 89%, Lag= 87.1 min
Discarded = 1.5 cfs @ 13.54 hrs, Volume= 61,958 cf
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.70' @ 13.54 hrs Surf.Area= 16,507 sf Storage= 20,330 cf
Flood Elev= 280.00' Surf.Area= 20,820 sf Storage= 63,233 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 112.6 min (909.1 - 796.5)

Volume	Invert	Avail.Storage	Storage Description
#1	275.50'	63,233 cf	**FILT. BASIN #2 (18" FILTER MEDIA) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
275.50	15,250	0.0	0	0
275.51	15,250	40.0	61	61
276.99	15,250	40.0	9,028	9,089
277.00	15,250	100.0	152	9,241
278.00	17,050	100.0	16,150	25,391
279.00	18,907	100.0	17,979	43,370
280.00	20,820	100.0	19,864	63,233

Device	Routing	Invert	Outlet Devices
#1	Secondary	279.50'	**6.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69
#2	Discarded	275.50'	**3.818 in/hr Exfiltration over Surface area**
#3	Device 5	277.75'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.60 0.60 0.90 0.90 1.25 Width (feet) 0.10 0.10 0.50 0.50 2.50 2.50
#4	Device 5	279.00'	**48.0" x 48.0" Horiz. OS2 Conc. Horz. Rim** C= 0.600 Limited to weir flow at low heads
#5	Primary	272.00'	**15.0" Round Culvert** L= 51.0' Ke= 0.500 Inlet / Outlet Invert= 272.00' / 271.50' S= 0.0098 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Discarded OutFlow Max=1.5 cfs @ 13.54 hrs HW=277.70' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 1.5 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=275.50' TW=0.00' (Dynamic Tailwater)
└**5=Culvert** (Passes 0.0 cfs of 10.0 cfs potential flow)
  └**3=Custom Weir/Orifice** (Controls 0.0 cfs)
  └**4=OS2 Conc. Horz. Rim** (Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=275.50' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond OS3: Detention Basin #1

[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=23)

Inflow Area = 217,984 sf, 0.97% Impervious, Inflow Depth > 1.69" for 10-YR event
Inflow = 3.4 cfs @ 13.05 hrs, Volume= 30,726 cf
Outflow = 3.6 cfs @ 13.05 hrs, Volume= 30,593 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.6 cfs @ 13.05 hrs, Volume= 30,593 cf
  Routed to Pond DMH5 :
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
  Routed to Pond cb21 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 294.50' @ 13.05 hrs Surf.Area= 1,188 sf Storage= 480 cf
Flood Elev= 296.00' Surf.Area= 2,642 sf Storage= 3,352 cf

Plug-Flow detention time= 6.7 min calculated for 30,530 cf (99% of inflow)
Center-of-Mass det. time= 4.5 min (906.8 - 902.3)

Volume	Invert	Avail.Storage	Storage Description
#1	293.99'	3,352 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
293.99	693	0	0
296.00	2,642	3,352	3,352

Device	Routing	Invert	Outlet Devices
#1	Primary	290.00'	**18.0" Round Culvert** L= 100.0' Ke= 0.500 Inlet / Outlet Invert= 290.00' / 289.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	294.50'	**60.0" x 60.0" Horiz. OS3 Conc. Horz. Rim** C= 0.600
#3	Device 1	294.00'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.50 Width (feet) 0.75 0.75
#4	Secondary	295.50'	**3.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65

2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=3.6 cfs @ 13.05 hrs HW=294.50' TW=290.21' (Dynamic Tailwater)
↑**1=Culvert** (Passes 3.6 cfs of 15.5 cfs potential flow)
↑**2=OS3 Conc. Horz. Rim** (Orifice Controls 2.7 cfs @ 0.11 fps)
3=Custom Weir/Orifice (Orifice Controls 0.9 cfs @ 2.32 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=293.99' TW=286.80' (Dynamic Tailwater)
↑**4=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond SFB1: FOREBAY #1

Inflow Area = 410,801 sf, 17.29% Impervious, Inflow Depth > 1.81" for 10-YR event
Inflow = 6.6 cfs @ 12.25 hrs, Volume= 61,921 cf
Outflow = 6.6 cfs @ 12.25 hrs, Volume= 61,921 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.6 cfs @ 12.25 hrs, Volume= 61,921 cf
Routed to Pond FB1 : FILT. BASIN #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.48' @ 12.25 hrs Surf.Area= 3,434 sf Storage= 0 cf
Flood Elev= 278.00' Surf.Area= 4,014 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	274.00'	0 cf	**FOREBAY #1 (0% Voids) (Prismatic)** Listed below (Recalc) 8,280 cf Overall x 0.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
274.00	628	0	0
275.00	1,144	886	886
276.00	1,915	1,530	2,416
277.00	2,900	2,408	4,823
278.00	4,014	3,457	8,280

Device	Routing	Invert	Outlet Devices
#1	Primary	277.10'	**10.4' long x 15.6' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=6.6 cfs @ 12.25 hrs HW=277.48' TW=273.36' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 6.6 cfs @ 1.66 fps)

Summary for Pond SFB2: FOREBAY #2

[80] Warning: Exceeded Pond DMH9 by 0.17' @ 0.85 hrs (0.1 cfs 654 cf)

Inflow Area = 482,983 sf, 32.52% Impervious, Inflow Depth > 1.53" for 10-YR event
Inflow = 12.8 cfs @ 12.09 hrs, Volume= 61,748 cf
Outflow = 12.8 cfs @ 12.09 hrs, Volume= 61,748 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.8 cfs @ 12.09 hrs, Volume= 61,748 cf
Routed to Pond FB2 : FILT. BASIN #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 279.19' @ 12.09 hrs Surf.Area= 3,012 sf Storage= 0 cf
Flood Elev= 280.00' Surf.Area= 3,774 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	276.50'	0 cf	**FOREBAY #2 (0% VOIDS) (Prismatic)** Listed below (Recalc) 7,716 cf Overall x 0.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
276.50	741	0	0
277.00	1,132	468	468
278.00	1,958	1,545	2,013
279.00	2,837	2,398	4,411
280.00	3,774	3,306	7,716

Device	Routing	Invert	Outlet Devices
#1	Primary	278.80'	**21.0' long + 0.1 '/' SideZ x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Primary OutFlow Max=12.6 cfs @ 12.09 hrs HW=279.18' TW=276.72' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 12.6 cfs @ 1.57 fps)

Summary for Pond TD1:

Inflow Area = 36,281 sf,100.00% Impervious, Inflow Depth > 4.13" for 10-YR event
Inflow = 3.5 cfs @ 12.09 hrs, Volume= 12,492 cf
Outflow = 3.5 cfs @ 12.09 hrs, Volume= 12,492 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.5 cfs @ 12.09 hrs, Volume= 12,492 cf
Routed to Pond CB13A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 292.07' @ 12.09 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	290.70'	**24.0" Round Culvert** L= 102.3' Ke= 0.500 Inlet / Outlet Invert= 290.70' / 289.66' S= 0.0102 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=3.4 cfs @ 12.09 hrs HW=292.05' TW=291.86' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 3.4 cfs @ 2.11 fps)

Summary for Link 1: StreamStats Flow

Peak flow rates from Pea-Plow Statistics Floew Report [Peak Flow Statewide SIR2008 5206]

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.18" for 10-YR event
Inflow = 8.3 cfs @ 12.00 hrs, Volume= 29,700 cf
Primary = 8.3 cfs @ 12.00 hrs, Volume= 29,700 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 5R : 48" RCP - Naturalized Bottom

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

10-YR 25 Point manual hydrograph, To= 0.00 hrs, dt= 1.00 hrs, Area= 1,951,488 sf, cfs =

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	8.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00					

Summary for Link A: 14-44-38

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: 14-47

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: future property line

Inflow Area = 1,122,915 sf, 20.31% Impervious, Inflow Depth > 0.26" for 10-YR event
Inflow = 1.0 cfs @ 15.26 hrs, Volume= 24,058 cf
Primary = 1.0 cfs @ 15.26 hrs, Volume= 24,058 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node R1

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: 14-38-0

Inflow Area = 1,986,435 sf, 0.00% Impervious, Inflow Depth > 0.18" for 10-YR event
Inflow = 8.2 cfs @ 12.00 hrs, Volume= 29,965 cf
Primary = 8.2 cfs @ 12.00 hrs, Volume= 29,965 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link F: 14-38-0

Inflow Area = 305,720 sf, 0.00% Impervious, Inflow Depth > 0.92" for 10-YR event
Inflow = 1.9 cfs @ 13.48 hrs, Volume= 23,391 cf
Primary = 1.9 cfs @ 13.48 hrs, Volume= 23,391 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Subcatchment PS14: paved aisle

Runoff = 1.8 cfs @ 12.21 hrs, Volume= 8,097 cf, Depth> 4.93"
Routed to Pond CB6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
799	98	Roofs, HSG A
176	98	Roofs, HSG C
1,186	98	Paved parking, HSG C
16,520	98	Paved parking, HSG A
751	39	>75% Grass cover, Good, HSG A
259	74	>75% Grass cover, Good, HSG C
19,691	95	Weighted Average
1,010		5.13% Pervious Area
18,681		94.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	36	0.0280	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
0.1	23	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	170	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.3	229	Total			

Summary for Subcatchment PS15: Process Building

Runoff = 2.7 cfs @ 12.09 hrs, Volume= 9,866 cf, Depth> 5.29"
Routed to Pond DMHRD :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
21,262	98	Roofs, HSG A
1,122	98	Roofs, HSG C
22,384	98	Weighted Average
22,384		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS16: paved area

Runoff = 2.2 cfs @ 12.09 hrs, Volume= 7,857 cf, Depth> 5.29"
Routed to Pond CB8A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
286	98	Roofs, HSG A
17,540	98	Paved parking, HSG A
17,826	98	Weighted Average
17,826		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS17: paved area

Runoff = 2.0 cfs @ 12.09 hrs, Volume= 7,339 cf, Depth> 5.29"
Routed to Pond CB14 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
16,650	98	Paved parking, HSG A
16,650		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS18: roof and paved area

Runoff = 2.6 cfs @ 12.09 hrs, Volume= 9,443 cf, Depth> 5.29"
Routed to Pond CB13A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
10,840	98	Paved parking, HSG A
10,584	98	Roofs, HSG A
21,424	98	Weighted Average
21,424		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS19: loading bay and roof

Runoff = 4.4 cfs @ 12.09 hrs, Volume= 15,992 cf, Depth> 5.29"
Routed to Pond TD1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
10,257	98	Paved parking, HSG A
24,660	98	Roofs, HSG A
1,364	98	Roofs, HSG C
36,281	98	Weighted Average
36,281		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS2: offsite east

Runoff = 0.3 cfs @ 12.53 hrs, Volume= 2,559 cf, Depth> 0.56"
Routed to Pond CB10 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
9,567	98	Paved parking, HSG A
33,691	30	Woods, Good, HSG A
11,424	39	>75% Grass cover, Good, HSG A
54,682	44	Weighted Average
45,115		82.50% Pervious Area
9,567		17.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.1	92	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	49	0.1100	2.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	26	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
22.9	267	Total			

Summary for Subcatchment PS20: interconnection/upgrading yard

Runoff = 1.3 cfs @ 12.09 hrs, Volume= 4,371 cf, Depth> 4.60"
Routed to Pond CB18 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
820	39	>75% Grass cover, Good, HSG A
10,570	96	Gravel surface, HSG A
11,390	92	Weighted Average
11,390		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS21: remainder site south

area 7 is a head wall

Runoff = 0.5 cfs @ 12.67 hrs, Volume= 5,693 cf, Depth> 0.41"
Routed to Link D : future property line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
58,550	30	Woods, Good, HSG A
35,853	55	Woods, Good, HSG B
7,591	70	Woods, Good, HSG C
61,491	39	>75% Grass cover, Good, HSG A
1,806	74	>75% Grass cover, Good, HSG C
2,587	61	>75% Grass cover, Good, HSG B
8	98	Paved parking, HSG A
167,886	41	Weighted Average
167,878		100.00% Pervious Area
8		0.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	100	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
5.8	232	0.0700	0.66		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
28.4	332	Total			

Summary for Subcatchment PS22: laydown area

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 1,213 cf, Depth> 5.29"
Routed to Pond CB19 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
2,752	98	Paved parking, HSG A
2,752		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS3: offsite north

Runoff = 0.3 cfs @ 12.61 hrs, Volume= 3,130 cf, Depth> 0.41"
Routed to Pond CB3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
7,328	98	Paved parking, HSG A
11,458	70	Woods, Good, HSG C
69,043	30	Woods, Good, HSG A
4,239	39	>75% Grass cover, Good, HSG A
92,068	41	Weighted Average
84,740		92.04% Pervious Area
7,328		7.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
4.7	245	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
4.7	283	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	26	0.3500	4.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	62	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
23.7	716	Total			

Summary for Subcatchment PS31: driveway

Runoff = 1.0 cfs @ 12.09 hrs, Volume= 3,561 cf, Depth> 5.29"
Routed to Pond cb1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
8,080	98	Paved roads w/curbs & sewers, HSG A
8,080		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS32: driveway

Runoff = 1.0 cfs @ 12.09 hrs, Volume= 3,614 cf, Depth> 5.29"
Routed to Pond cb2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
8,199	98	Paved roads w/curbs & sewers, HSG A
8,199		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS33: north of driveway

Runoff = 0.1 cfs @ 12.40 hrs, Volume= 627 cf, Depth> 0.32"
Routed to Link E : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
11,080	39	>75% Grass cover, Good, HSG A
12,516	39	>75% Grass cover, Good, HSG A
23,596	39	Weighted Average
23,596		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS34: south of driveway

Runoff = 0.0 cfs @ 12.40 hrs, Volume= 302 cf, Depth> 0.32"
Routed to Link E : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
11,351	39	>75% Grass cover, Good, HSG A
11,351		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS4: offsite north

Runoff = 3.3 cfs @ 12.45 hrs, Volume= 19,691 cf, Depth> 1.46"
Routed to Pond CB4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
9,960	98	Paved parking, HSG A
83,865	70	Woods, Good, HSG C
56,653	30	Woods, Good, HSG A
4,399	39	>75% Grass cover, Good, HSG A
322	98	Paved parking, HSG C
6,715	96	Gravel surface, HSG C
161,914	58	Weighted Average
151,632		93.65% Pervious Area
10,282		6.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
8.8	589	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	23	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	66	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
28.6	778	Total			

Summary for Subcatchment PS40: FB2 maintenance drive

Runoff = 0.2 cfs @ 12.46 hrs, Volume= 1,059 cf, Depth> 0.85"
Routed to Reach 1R : maintenance FB2 swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
12,263	39	>75% Grass cover, Good, HSG A
2,670	96	Gravel surface, HSG A
14,933	49	Weighted Average
14,933		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PS5: offsite run on

Runoff = 5.2 cfs @ 13.04 hrs, Volume= 46,635 cf, Depth> 2.57"
Routed to Pond OS3 : Detention Basin #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
188,914	70	Woods, Good, HSG C
6,947	39	>75% Grass cover, Good, HSG A
2,123	98	Roofs, HSG C
20,000	96	Gravel surface, HSG C
217,984	72	Weighted Average
215,861		99.03% Pervious Area
2,123		0.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.5	100	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
5.4	81	0.0100	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	201	0.0100	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
9.5	248	0.0300	0.43		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.1	405	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.9	78	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
74.8	1,113	Total			

Summary for Subcatchment PS6: offsite run on

Runoff = 1.9 cfs @ 12.30 hrs, Volume= 9,284 cf, Depth> 2.17"
Routed to Pond cb21 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
46,969	70	Woods, Good, HSG C
4,352	39	>75% Grass cover, Good, HSG A
51,321	67	Weighted Average
51,321		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	100	0.0500	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.9	289	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	93	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.7	482	Total			

Summary for Subcatchment PS7: offsite run-on

Runoff = 3.5 cfs @ 13.41 hrs, Volume= 40,076 cf, Depth> 1.57"
Routed to Link F : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
226,968	70	Woods, Good, HSG C
55,157	30	Woods, Good, HSG A
23,595	39	>75% Grass cover, Good, HSG A
305,720	60	Weighted Average
305,720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.3	100	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
23.9	508	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.2	706	0.0600	0.61		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	661	0.0900	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
97.1	1,975	Total			

Summary for Subcatchment PSFB1: sediment forebay 1 area

Runoff = 0.0 cfs @ 12.41 hrs, Volume= 320 cf, Depth> 0.32"
Routed to Pond SFB1 : FOREBAY #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
12,045	39	>75% Grass cover, Good, HSG A
12,045		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSFB2: sediment forebay 2 area

Runoff = 0.0 cfs @ 12.68 hrs, Volume= 449 cf, Depth> 0.32"
Routed to Pond SFB2 : FOREBAY #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
17,093	39	>75% Grass cover, Good, HSG A
17,093		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PSM1: FB1 maintenance area

Runoff = 0.0 cfs @ 12.38 hrs, Volume= 221 cf, Depth> 0.36"
Routed to Reach 2R : maintenance FB1 swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
7,015	39	>75% Grass cover, Good, HSG A
252	74	>75% Grass cover, Good, HSG C
7,267	40	Weighted Average
7,267		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSP1: filtration basin 1 area

Runoff = 0.1 cfs @ 12.38 hrs, Volume= 714 cf, Depth> 0.36"
Routed to Pond FB1 : FILT. BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
22,768	39	>75% Grass cover, Good, HSG A
756	74	>75% Grass cover, Good, HSG C
23,524	40	Weighted Average
23,524		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSP2: filtration basin 2 area

Runoff = 0.1 cfs @ 12.68 hrs, Volume= 800 cf, Depth> 0.32"
Routed to Pond FB2 : FILT. BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
30,454	39	>75% Grass cover, Good, HSG A
30,454		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PST10: tribrid area

Runoff = 0.7 cfs @ 12.28 hrs, Volume= 3,128 cf, Depth> 3.25"
Routed to Pond CB24 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
4,006	98	Roofs, HSG A
3,911	96	Gravel surface, HSG A
3,630	39	>75% Grass cover, Good, HSG A
11,547	79	Weighted Average
7,541		65.31% Pervious Area
4,006		34.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.6	24	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.4	124	Total			

Summary for Subcatchment PST11: tribrid area

Runoff = 1.0 cfs @ 12.20 hrs, Volume= 3,918 cf, Depth> 3.25"
Routed to Pond CB27 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
7,342	98	Roofs, HSG A
1,387	96	Gravel surface, HSG A
4,531	39	>75% Grass cover, Good, HSG A
670	98	Roofs, HSG C
209	96	Gravel surface, HSG C
308	74	>75% Grass cover, Good, HSG C
14,447	79	Weighted Average
6,435		44.54% Pervious Area
8,012		55.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0230	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.5	35	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.7	135	Total			

Summary for Subcatchment PST12: tribrid area

Runoff = 1.1 cfs @ 12.22 hrs, Volume= 4,585 cf, Depth> 3.45"
Routed to Pond CB28 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
7,486	98	Roofs, HSG A
3,088	96	Gravel surface, HSG A
4,198	39	>75% Grass cover, Good, HSG A
526	98	Roofs, HSG C
109	96	Gravel surface, HSG C
550	74	>75% Grass cover, Good, HSG C
15,957	81	Weighted Average
7,945		49.79% Pervious Area
8,012		50.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	100	0.0180	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.7	40	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.4	140	Total			

Summary for Subcatchment PST13: tribrid area

Runoff = 0.5 cfs @ 12.21 hrs, Volume= 2,224 cf, Depth> 2.34"
Routed to Pond CB30 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
4,156	98	Roofs, HSG A
1,698	96	Gravel surface, HSG A
5,501	39	>75% Grass cover, Good, HSG A
34	74	>75% Grass cover, Good, HSG C
11,389	69	Weighted Average
7,233		63.51% Pervious Area
4,156		36.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0230	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.7	42	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.9	142	Total			

Summary for Subcatchment PST6: fet area

Runoff = 1.0 cfs @ 12.24 hrs, Volume= 4,205 cf, Depth> 2.43"
Routed to Pond CB15 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
7,368	98	Roofs, HSG A
3,784	96	Gravel surface, HSG A
9,624	39	>75% Grass cover, Good, HSG A
20,776	70	Weighted Average
13,408		64.54% Pervious Area
7,368		35.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
3.0	126	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.6	226	Total			

Summary for Subcatchment PST7: tribrid area

Runoff = 0.6 cfs @ 12.24 hrs, Volume= 2,662 cf, Depth> 2.69"
Routed to Pond cb20 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
5,990	98	Roofs, HSG A
974	96	Gravel surface, HSG A
4,896	39	>75% Grass cover, Good, HSG A
11,860	73	Weighted Average
5,870		49.49% Pervious Area
5,990		50.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0150	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.4	20	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.2	120	Total			

Summary for Subcatchment PST8: tribrid area

Runoff = 0.6 cfs @ 12.28 hrs, Volume= 2,887 cf, Depth> 2.97"
Routed to Pond cb22 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
5,981	98	Roofs, HSG A
1,487	96	Gravel surface, HSG A
4,212	39	>75% Grass cover, Good, HSG A
11,680	76	Weighted Average
5,699		48.79% Pervious Area
5,981		51.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.5	28	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.3	128	Total			

Summary for Subcatchment PST9: tribrid area

Runoff = 0.5 cfs @ 12.28 hrs, Volume= 2,400 cf, Depth> 3.06"
Routed to Pond CB23 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YR Rainfall=5.53"

Area (sf)	CN	Description
2,995	98	Roofs, HSG A
3,172	96	Gravel surface, HSG A
3,244	39	>75% Grass cover, Good, HSG A
9,411	77	Weighted Average
6,416		68.18% Pervious Area
2,995		31.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.4	16	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.2	116	Total			

Summary for Reach 1R: maintenance FB2 swale

Inflow Area = 14,933 sf, 0.00% Impervious, Inflow Depth > 0.85" for 25-YR event
Inflow = 0.2 cfs @ 12.46 hrs, Volume= 1,059 cf
Outflow = 0.1 cfs @ 12.52 hrs, Volume= 1,051 cf, Atten= 2%, Lag= 3.7 min
Routed to Pond SFB2 : FOREBAY #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.55 fps, Min. Travel Time= 5.0 min
Avg. Velocity = 0.25 fps, Avg. Travel Time= 11.1 min

Peak Storage= 45 cf @ 12.52 hrs
Average Depth at Peak Storage= 0.03' , Surface Width= 8.20'
Bank-Full Depth= 0.50' Flow Area= 4.8 sf, Capacity= 14.2 cfs

8.00' x 0.50' deep channel, n= 0.069 Riprap, 6-inch
Side Slope Z-value= 3.0 '/' Top Width= 11.00'
Length= 165.0' Slope= 0.0606 '/'
Inlet Invert= 290.00', Outlet Invert= 280.00'



‡

Summary for Reach 2R: maintenance FB1 swale

Inflow Area = 7,267 sf, 0.00% Impervious, Inflow Depth > 0.36" for 25-YR event
Inflow = 0.0 cfs @ 12.38 hrs, Volume= 221 cf
Outflow = 0.0 cfs @ 12.45 hrs, Volume= 219 cf, Atten= 6%, Lag= 4.6 min
Routed to Pond CB16 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.49 fps, Min. Travel Time= 6.0 min
Avg. Velocity = 0.28 fps, Avg. Travel Time= 10.7 min

Peak Storage= 7 cf @ 12.45 hrs
Average Depth at Peak Storage= 0.01' , Surface Width= 3.08'
Bank-Full Depth= 0.25' Flow Area= 0.9 sf, Capacity= 2.8 cfs

3.00' x 0.25' deep channel, n= 0.041 Riprap, 2-inch
Side Slope Z-value= 3.0 '/' Top Width= 4.50'
Length= 178.0' Slope= 0.0573 '/'
Inlet Invert= 292.00', Outlet Invert= 281.80'



‡

Summary for Reach 5R: 48" RCP - Naturalized Bottom

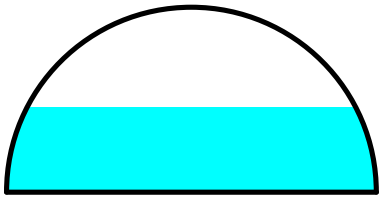
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.27" for 25-YR event
Inflow = 12.1 cfs @ 12.00 hrs, Volume= 43,560 cf
Outflow = 12.1 cfs @ 12.00 hrs, Volume= 43,562 cf, Atten= 0%, Lag= 0.2 min
Routed to Link E : 14-38-0

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 3.41 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.56 fps, Avg. Travel Time= 0.3 min

Peak Storage= 170 cf @ 12.00 hrs
Average Depth at Peak Storage= 0.92' , Surface Width= 3.55'
Bank-Full Depth= 2.00' Flow Area= 6.3 sf, Capacity= 21.7 cfs

48.0" W x 24.0" H, R=24.0" Arch Pipe
n= 0.040 Earth, cobble bottom, clean sides
Length= 48.0' Slope= 0.0167 '/'
Inlet Invert= 298.60', Outlet Invert= 297.80'



Summary for Pond cb1:

Inflow Area = 8,080 sf,100.00% Impervious, Inflow Depth > 5.29" for 25-YR event
Inflow = 1.0 cfs @ 12.09 hrs, Volume= 3,561 cf
Outflow = 1.0 cfs @ 12.09 hrs, Volume= 3,561 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.09 hrs, Volume= 3,561 cf
Routed to Pond cb2 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 293.69' @ 12.09 hrs
Flood Elev= 297.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	293.18'	**15.0" Round Culvert** L= 21.8' Ke= 0.500 Inlet / Outlet Invert= 293.18' / 292.96' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.0 cfs @ 12.09 hrs HW=293.68' TW=293.32' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.0 cfs @ 3.08 fps)

Summary for Pond CB10:

Inflow Area = 308,664 sf, 8.80% Impervious, Inflow Depth > 0.99" for 25-YR event
Inflow = 3.8 cfs @ 12.47 hrs, Volume= 25,380 cf
Outflow = 3.8 cfs @ 12.47 hrs, Volume= 25,380 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.8 cfs @ 12.47 hrs, Volume= 25,380 cf
Routed to Pond CB12 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 286.99' @ 12.47 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.94'	**15.0" Round Culvert** L= 169.0' Ke= 0.500 Inlet / Outlet Invert= 285.94' / 284.25' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.8 cfs @ 12.47 hrs HW=286.99' TW=285.32' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.8 cfs @ 3.48 fps)

Summary for Pond CB12:

Inflow Area = 324,943 sf, 13.37% Impervious, Inflow Depth > 1.20" for 25-YR event
Inflow = 4.3 cfs @ 12.44 hrs, Volume= 32,555 cf
Outflow = 4.3 cfs @ 12.44 hrs, Volume= 32,555 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.3 cfs @ 12.44 hrs, Volume= 32,555 cf
Routed to Pond CB18 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.33' @ 12.44 hrs
Flood Elev= 296.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.15'	**15.0" Round Culvert** L= 60.0' Ke= 0.500 Inlet / Outlet Invert= 284.15' / 283.55' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.3 cfs @ 12.44 hrs HW=285.32' TW=283.58' (Dynamic Tailwater)
1=Culvert (Barrel Controls 4.3 cfs @ 4.69 fps)

Summary for Pond CB13:

Inflow Area = 57,705 sf,100.00% Impervious, Inflow Depth > 5.29" for 25-YR event
Inflow = 7.0 cfs @ 12.09 hrs, Volume= 25,435 cf
Outflow = 7.0 cfs @ 12.09 hrs, Volume= 25,435 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.0 cfs @ 12.09 hrs, Volume= 25,435 cf
Routed to Pond CB14 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.41' @ 12.09 hrs
Flood Elev= 294.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**18.0" Round Culvert** L= 71.4' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 287.13' S= 0.0122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=6.8 cfs @ 12.09 hrs HW=289.38' TW=281.55' (Dynamic Tailwater)
1=Culvert (Inlet Controls 6.8 cfs @ 4.00 fps)

Summary for Pond CB13A:

Inflow Area = 57,705 sf,100.00% Impervious, Inflow Depth > 5.29" for 25-YR event
Inflow = 7.0 cfs @ 12.09 hrs, Volume= 25,435 cf
Outflow = 7.0 cfs @ 12.09 hrs, Volume= 25,435 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.0 cfs @ 12.09 hrs, Volume= 25,435 cf
Routed to Pond CB13 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 292.11' @ 12.09 hrs
Flood Elev= 294.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	290.70'	**18.0" Round Culvert** L= 102.3' Ke= 0.500 Inlet / Outlet Invert= 290.70' / 289.66' S= 0.0102 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=6.8 cfs @ 12.09 hrs HW=292.08' TW=289.38' (Dynamic Tailwater)
1=Culvert (Inlet Controls 6.8 cfs @ 4.00 fps)

Summary for Pond CB14:

Inflow Area = 111,872 sf, 99.10% Impervious, Inflow Depth > 5.23" for 25-YR event
Inflow = 12.4 cfs @ 12.09 hrs, Volume= 48,727 cf
Outflow = 12.4 cfs @ 12.09 hrs, Volume= 48,727 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.4 cfs @ 12.09 hrs, Volume= 48,727 cf
Routed to Pond DMH9 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 281.57' @ 12.09 hrs
Flood Elev= 293.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	280.06'	**30.0" Round Culvert** L= 80.7' Ke= 0.500 Inlet / Outlet Invert= 280.06' / 279.25' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=12.2 cfs @ 12.09 hrs HW=281.55' TW=280.26' (Dynamic Tailwater)
1=Culvert (Barrel Controls 12.2 cfs @ 5.73 fps)

Summary for Pond CB15:

Inflow Area = 20,776 sf, 35.46% Impervious, Inflow Depth > 2.43" for 25-YR event
Inflow = 1.0 cfs @ 12.24 hrs, Volume= 4,205 cf
Outflow = 1.0 cfs @ 12.24 hrs, Volume= 4,205 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.24 hrs, Volume= 4,205 cf
Routed to Pond DMH5 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 292.43' @ 12.24 hrs
Flood Elev= 296.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.94'	**15.0" Round Culvert** L= 34.0' Ke= 0.500 Inlet / Outlet Invert= 291.94' / 291.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.0 cfs @ 12.24 hrs HW=292.43' TW=290.01' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.0 cfs @ 3.23 fps)

Summary for Pond CB16:

Inflow Area = 7,267 sf, 0.00% Impervious, Inflow Depth > 0.36" for 25-YR event
Inflow = 0.0 cfs @ 12.45 hrs, Volume= 219 cf
Outflow = 0.0 cfs @ 12.45 hrs, Volume= 219 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 12.45 hrs, Volume= 219 cf
Routed to Pond FB1 : FILT. BASIN #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.61' @ 12.45 hrs
Flood Elev= 281.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.55'	**15.0" Round Culvert** L= 62.0' Ke= 0.500 Inlet / Outlet Invert= 277.55' / 275.75' S= 0.0290 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.0 cfs @ 12.45 hrs HW=277.61' TW=274.53' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.0 cfs @ 0.86 fps)

Summary for Pond CB17:

Inflow Area = 339,085 sf, 13.63% Impervious, Inflow Depth > 1.35" for 25-YR event
Inflow = 4.8 cfs @ 12.41 hrs, Volume= 38,139 cf
Outflow = 4.8 cfs @ 12.41 hrs, Volume= 38,139 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.8 cfs @ 12.41 hrs, Volume= 38,139 cf
Routed to Pond DMH9 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 280.99' @ 12.10 hrs
Flood Elev= 293.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	279.72'	**18.0" Round Culvert** L= 108.0' Ke= 0.500 Inlet / Outlet Invert= 279.72' / 278.10' S= 0.0150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.8 cfs @ 12.41 hrs HW=280.82' TW=279.63' (Dynamic Tailwater)
1=Culvert (Outlet Controls 4.8 cfs @ 4.81 fps)

Summary for Pond CB18:

Inflow Area = 336,333 sf, 12.92% Impervious, Inflow Depth > 1.32" for 25-YR event
Inflow = 4.7 cfs @ 12.41 hrs, Volume= 36,926 cf
Outflow = 4.7 cfs @ 12.41 hrs, Volume= 36,926 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.7 cfs @ 12.41 hrs, Volume= 36,926 cf
Routed to Pond CB17 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 283.58' @ 12.41 hrs
Flood Elev= 293.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	282.45'	**18.0" Round Culvert** L= 45.2' Ke= 0.500 Inlet / Outlet Invert= 282.45' / 282.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.7 cfs @ 12.41 hrs HW=283.58' TW=280.82' (Dynamic Tailwater)
1=Culvert (Barrel Controls 4.7 cfs @ 4.58 fps)

Summary for Pond CB19:

Inflow Area = 2,752 sf,100.00% Impervious, Inflow Depth > 5.29" for 25-YR event
Inflow = 0.3 cfs @ 12.09 hrs, Volume= 1,213 cf
Outflow = 0.3 cfs @ 12.09 hrs, Volume= 1,213 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.3 cfs @ 12.09 hrs, Volume= 1,213 cf
Routed to Pond CB17 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.27' @ 12.09 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**15.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 285.00' / 284.50' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.3 cfs @ 12.09 hrs HW=285.27' TW=280.96' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.3 cfs @ 2.57 fps)

Summary for Pond cb2:

Inflow Area = 16,279 sf,100.00% Impervious, Inflow Depth > 5.29" for 25-YR event
Inflow = 2.0 cfs @ 12.09 hrs, Volume= 7,175 cf
Outflow = 2.0 cfs @ 12.09 hrs, Volume= 7,175 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 12.09 hrs, Volume= 7,175 cf
Routed to Pond dmh1 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 293.34' @ 12.09 hrs
Flood Elev= 297.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.64'	**15.0" Round Culvert** L= 155.0' Ke= 0.500 Inlet / Outlet Invert= 292.64' / 291.33' S= 0.0085 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.9 cfs @ 12.09 hrs HW=293.32' TW=290.64' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.9 cfs @ 4.05 fps)

Summary for Pond cb20:

Inflow Area = 11,860 sf, 50.51% Impervious, Inflow Depth > 2.69" for 25-YR event
Inflow = 0.6 cfs @ 12.24 hrs, Volume= 2,662 cf
Outflow = 0.6 cfs @ 12.24 hrs, Volume= 2,662 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.6 cfs @ 12.24 hrs, Volume= 2,662 cf
Routed to Pond cb21 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.56' @ 12.24 hrs
Flood Elev= 292.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.20'	**15.0" Round Culvert** L= 94.0' Ke= 0.500 Inlet / Outlet Invert= 289.20' / 286.90' S= 0.0245 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.6 cfs @ 12.24 hrs HW=289.56' TW=287.74' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.6 cfs @ 2.05 fps)

Summary for Pond cb21:

Inflow Area = 63,181 sf, 9.48% Impervious, Inflow Depth > 2.27" for 25-YR event
Inflow = 2.5 cfs @ 12.29 hrs, Volume= 11,946 cf
Outflow = 2.5 cfs @ 12.29 hrs, Volume= 11,946 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.5 cfs @ 12.29 hrs, Volume= 11,946 cf
Routed to Pond cb22 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.76' @ 12.29 hrs
Flood Elev= 292.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.80'	**15.0" Round Culvert** L= 44.0' Ke= 0.500 Inlet / Outlet Invert= 286.80' / 286.41' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.5 cfs @ 12.29 hrs HW=287.75' TW=287.30' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.5 cfs @ 3.46 fps)

Summary for Pond cb22:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 2.38" for 25-YR event
Inflow = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf
Outflow = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf
Routed to Pond dmh23 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.31' @ 12.29 hrs
Flood Elev= 291.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.31'	**15.0" Round Culvert** L= 73.0' Ke= 0.500 Inlet / Outlet Invert= 286.31' / 285.59' S= 0.0099 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.1 cfs @ 12.29 hrs HW=287.30' TW=286.52' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.1 cfs @ 4.11 fps)

Summary for Pond CB23:

Inflow Area = 84,272 sf, 17.76% Impervious, Inflow Depth > 2.45" for 25-YR event
Inflow = 3.7 cfs @ 12.29 hrs, Volume= 17,234 cf
Outflow = 3.7 cfs @ 12.29 hrs, Volume= 17,234 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.7 cfs @ 12.29 hrs, Volume= 17,234 cf
Routed to Pond CB24 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.38' @ 12.29 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.31'	**15.0" Round Culvert** L= 110.0' Ke= 0.500 Inlet / Outlet Invert= 284.31' / 283.20' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.7 cfs @ 12.29 hrs HW=285.38' TW=284.28' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.7 cfs @ 4.41 fps)

Summary for Pond CB24:

Inflow Area = 95,819 sf, 19.80% Impervious, Inflow Depth > 2.55" for 25-YR event
Inflow = 4.3 cfs @ 12.29 hrs, Volume= 20,362 cf
Outflow = 4.3 cfs @ 12.29 hrs, Volume= 20,362 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.3 cfs @ 12.29 hrs, Volume= 20,362 cf
Routed to Pond dmh25 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 284.28' @ 12.29 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	283.10'	**15.0" Round Culvert** L= 82.0' Ke= 0.500 Inlet / Outlet Invert= 283.10' / 282.23' S= 0.0106 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.3 cfs @ 12.29 hrs HW=284.28' TW=283.25' (Dynamic Tailwater)
1=Culvert (Outlet Controls 4.3 cfs @ 4.67 fps)

Summary for Pond CB27:

Inflow Area = 14,447 sf, 55.46% Impervious, Inflow Depth > 3.25" for 25-YR event
Inflow = 1.0 cfs @ 12.20 hrs, Volume= 3,918 cf
Outflow = 1.0 cfs @ 12.20 hrs, Volume= 3,918 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.0 cfs @ 12.20 hrs, Volume= 3,918 cf
Routed to Pond DMH26 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.64' @ 12.20 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.15'	**15.0" Round Culvert** L= 27.7' Ke= 0.500 Inlet / Outlet Invert= 288.15' / 287.87' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.0 cfs @ 12.20 hrs HW=288.64' TW=281.89' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.0 cfs @ 3.16 fps)

Summary for Pond CB28:

Inflow Area = 38,341 sf, 79.28% Impervious, Inflow Depth > 4.52" for 25-YR event
Inflow = 3.4 cfs @ 12.10 hrs, Volume= 14,451 cf
Outflow = 3.4 cfs @ 12.10 hrs, Volume= 14,451 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.4 cfs @ 12.10 hrs, Volume= 14,451 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.74' @ 12.10 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.75'	**18.0" Round Culvert** L= 20.7' Ke= 0.500 Inlet / Outlet Invert= 288.75' / 288.54' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.4 cfs @ 12.10 hrs HW=289.74' TW=278.75' (Dynamic Tailwater)
1=Culvert (Barrel Controls 3.4 cfs @ 3.95 fps)

Summary for Pond CB3:

Inflow Area = 253,982 sf, 6.93% Impervious, Inflow Depth > 1.08" for 25-YR event
Inflow = 3.6 cfs @ 12.47 hrs, Volume= 22,821 cf
Outflow = 3.6 cfs @ 12.47 hrs, Volume= 22,821 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.6 cfs @ 12.47 hrs, Volume= 22,821 cf
Routed to Pond DMH3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 290.04' @ 12.47 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.05'	**15.0" Round Culvert** L= 90.0' Ke= 0.500 Inlet / Outlet Invert= 289.05' / 288.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.5 cfs @ 12.47 hrs HW=290.04' TW=287.99' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.5 cfs @ 3.39 fps)

Summary for Pond CB30:

Inflow Area = 250,149 sf, 5.46% Impervious, Inflow Depth > 2.54" for 25-YR event
Inflow = 5.5 cfs @ 13.03 hrs, Volume= 52,898 cf
Outflow = 5.5 cfs @ 13.03 hrs, Volume= 52,898 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.5 cfs @ 13.03 hrs, Volume= 52,898 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 286.81' @ 13.03 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.80'	**24.0" Round Culvert** L= 92.0' Ke= 0.500 Inlet / Outlet Invert= 285.80' / 284.88' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.5 cfs @ 13.03 hrs HW=286.81' TW=278.59' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.5 cfs @ 3.43 fps)

Summary for Pond CB4:

Inflow Area = 161,914 sf, 6.35% Impervious, Inflow Depth > 1.46" for 25-YR event
Inflow = 3.3 cfs @ 12.45 hrs, Volume= 19,691 cf
Outflow = 3.3 cfs @ 12.45 hrs, Volume= 19,691 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.3 cfs @ 12.45 hrs, Volume= 19,691 cf
Routed to Pond CB3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 292.01' @ 12.45 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.06'	**15.0" Round Culvert** L= 191.0' Ke= 0.500 Inlet / Outlet Invert= 291.06' / 289.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.3 cfs @ 12.45 hrs HW=292.01' TW=290.04' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.3 cfs @ 3.32 fps)

Summary for Pond CB6:

Inflow Area = 19,691 sf, 94.87% Impervious, Inflow Depth > 4.93" for 25-YR event
Inflow = 1.8 cfs @ 12.21 hrs, Volume= 8,097 cf
Outflow = 1.8 cfs @ 12.21 hrs, Volume= 8,097 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.8 cfs @ 12.21 hrs, Volume= 8,097 cf
Routed to Pond CB8A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.55' @ 12.21 hrs
Flood Elev= 294.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**24.0" Round Culvert** L= 118.0' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 286.82' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.7 cfs @ 12.21 hrs HW=288.55' TW=286.87' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.7 cfs @ 2.51 fps)

Summary for Pond CB8A:

Inflow Area = 37,517 sf, 97.31% Impervious, Inflow Depth > 5.10" for 25-YR event
Inflow = 3.5 cfs @ 12.11 hrs, Volume= 15,954 cf
Outflow = 3.5 cfs @ 12.11 hrs, Volume= 15,954 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.5 cfs @ 12.11 hrs, Volume= 15,954 cf
Routed to Pond CB14 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 286.98' @ 12.11 hrs
Flood Elev= 293.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.00'	**15.0" Round Culvert** L= 131.3' Ke= 0.500 Inlet / Outlet Invert= 286.00' / 284.69' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.4 cfs @ 12.11 hrs HW=286.97' TW=281.53' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.4 cfs @ 3.35 fps)

Summary for Pond dmh1:

Inflow Area = 16,279 sf,100.00% Impervious, Inflow Depth > 5.29" for 25-YR event
Inflow = 2.0 cfs @ 12.09 hrs, Volume= 7,175 cf
Outflow = 2.0 cfs @ 12.09 hrs, Volume= 7,175 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.0 cfs @ 12.09 hrs, Volume= 7,175 cf
Routed to Pond CB12 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 290.65' @ 12.09 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.95'	**15.0" Round Culvert** L= 65.3' Ke= 0.500 Inlet / Outlet Invert= 289.95' / 289.30' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.9 cfs @ 12.09 hrs HW=290.64' TW=285.02' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.9 cfs @ 4.00 fps)

Summary for Pond dmh11:

Inflow Area = 398,756 sf, 17.81% Impervious, Inflow Depth > 2.76" for 25-YR event
Inflow = 10.3 cfs @ 12.26 hrs, Volume= 91,629 cf
Outflow = 10.3 cfs @ 12.26 hrs, Volume= 91,629 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.3 cfs @ 12.26 hrs, Volume= 91,629 cf
Routed to Pond SFB1 : FOREBAY #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 278.98' @ 12.26 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.23'	**24.0" Round Culvert** L= 41.0' Ke= 0.500 Inlet / Outlet Invert= 277.23' / 277.00' S= 0.0056 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=10.3 cfs @ 12.26 hrs HW=278.97' TW=277.61' (Dynamic Tailwater)
1=Culvert (Barrel Controls 10.3 cfs @ 4.72 fps)

Summary for Pond dmh23:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 2.38" for 25-YR event
Inflow = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf
Outflow = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf
Routed to Pond DMH24 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 286.52' @ 12.29 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.49'	**15.0" Round Culvert** L= 57.8' Ke= 0.500 Inlet / Outlet Invert= 285.49' / 284.91' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.1 cfs @ 12.29 hrs HW=286.52' TW=285.87' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 3.1 cfs @ 3.95 fps)

Summary for Pond DMH24:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 2.38" for 25-YR event
Inflow = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf
Outflow = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.2 cfs @ 12.29 hrs, Volume= 14,834 cf
Routed to Pond CB23 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.88' @ 12.29 hrs
Flood Elev= 292.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.81'	**15.0" Round Culvert** L= 37.0' Ke= 0.500 Inlet / Outlet Invert= 284.81' / 284.46' S= 0.0095 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.1 cfs @ 12.29 hrs HW=285.87' TW=285.38' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 3.1 cfs @ 3.79 fps)

Summary for Pond dmh25:

Inflow Area = 95,819 sf, 19.80% Impervious, Inflow Depth > 2.55" for 25-YR event
Inflow = 4.3 cfs @ 12.29 hrs, Volume= 20,362 cf
Outflow = 4.3 cfs @ 12.29 hrs, Volume= 20,362 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.3 cfs @ 12.29 hrs, Volume= 20,362 cf
Routed to Pond DMH26 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 283.26' @ 12.29 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	282.10'	**15.0" Round Culvert** L= 113.0' Ke= 0.500 Inlet / Outlet Invert= 282.10' / 281.05' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.3 cfs @ 12.29 hrs HW=283.25' TW=281.93' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 4.3 cfs @ 3.66 fps)

Summary for Pond DMH26:

Inflow Area = 110,266 sf, 24.47% Impervious, Inflow Depth > 2.64" for 25-YR event
Inflow = 5.2 cfs @ 12.27 hrs, Volume= 24,280 cf
Outflow = 5.2 cfs @ 12.27 hrs, Volume= 24,280 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.2 cfs @ 12.27 hrs, Volume= 24,280 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 281.94' @ 12.27 hrs
Flood Elev= 292.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	280.80'	**18.0" Round Culvert** L= 126.4' Ke= 0.500 Inlet / Outlet Invert= 280.80' / 279.54' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.2 cfs @ 12.27 hrs HW=281.93' TW=278.97' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.2 cfs @ 3.62 fps)

Summary for Pond DMH3:

Inflow Area = 253,982 sf, 6.93% Impervious, Inflow Depth > 1.08" for 25-YR event
Inflow = 3.6 cfs @ 12.47 hrs, Volume= 22,821 cf
Outflow = 3.6 cfs @ 12.47 hrs, Volume= 22,821 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.6 cfs @ 12.47 hrs, Volume= 22,821 cf
Routed to Pond CB10 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.99' @ 12.47 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.97'	**15.0" Round Culvert** L= 82.0' Ke= 0.500 Inlet / Outlet Invert= 286.97' / 286.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.5 cfs @ 12.47 hrs HW=287.99' TW=286.99' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.5 cfs @ 4.52 fps)

Summary for Pond DMH5:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 2.55" for 25-YR event
Inflow = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf
Outflow = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf
Routed to Pond DMH5A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 290.40' @ 13.03 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.40'	**24.0" Round Culvert** L= 126.7' Ke= 0.500 Inlet / Outlet Invert= 289.40' / 288.13' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.4 cfs @ 13.03 hrs HW=290.40' TW=289.02' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.4 cfs @ 3.41 fps)

Summary for Pond DMH5A:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 2.55" for 25-YR event
Inflow = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf
Outflow = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf
Routed to Pond DMH6 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.02' @ 13.03 hrs
Flood Elev= 294.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**24.0" Round Culvert** L= 118.0' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 286.82' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.4 cfs @ 13.03 hrs HW=289.02' TW=287.76' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.4 cfs @ 4.88 fps)

Summary for Pond DMH6:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 2.55" for 25-YR event
Inflow = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf
Outflow = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.4 cfs @ 13.03 hrs, Volume= 50,673 cf
Routed to Pond CB30 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.76' @ 13.03 hrs
Flood Elev= 294.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.72'	**24.0" Round Culvert** L= 79.0' Ke= 0.500 Inlet / Outlet Invert= 286.72' / 285.92' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.4 cfs @ 13.03 hrs HW=287.76' TW=286.81' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.4 cfs @ 4.73 fps)

Summary for Pond DMH9:

Inflow Area = 450,957 sf, 34.83% Impervious, Inflow Depth > 2.31" for 25-YR event
Inflow = 16.9 cfs @ 12.09 hrs, Volume= 86,866 cf
Outflow = 16.9 cfs @ 12.09 hrs, Volume= 86,866 cf, Atten= 0%, Lag= 0.0 min
Primary = 16.9 cfs @ 12.09 hrs, Volume= 86,866 cf
Routed to Pond SFB2 : FOREBAY #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 280.28' @ 12.09 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.12'	**30.0" Round Culvert** L= 24.0' Ke= 0.500 Inlet / Outlet Invert= 278.12' / 278.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=16.7 cfs @ 12.09 hrs HW=280.27' TW=279.26' (Dynamic Tailwater)
1=Culvert (Barrel Controls 16.7 cfs @ 5.01 fps)

Summary for Pond DMHRD:

Inflow Area = 22,384 sf,100.00% Impervious, Inflow Depth > 5.29" for 25-YR event
Inflow = 2.7 cfs @ 12.09 hrs, Volume= 9,866 cf
Outflow = 2.7 cfs @ 12.09 hrs, Volume= 9,866 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.7 cfs @ 12.09 hrs, Volume= 9,866 cf
Routed to Pond CB28 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 290.06' @ 12.09 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.10'	**18.0" Round Culvert** L= 28.0' Ke= 0.500 Inlet / Outlet Invert= 289.10' / 288.85' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.6 cfs @ 12.09 hrs HW=290.05' TW=289.72' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.6 cfs @ 3.21 fps)

Summary for Pond FB1: FILT. BASIN #1

Inflow Area = 441,592 sf, 16.08% Impervious, Inflow Depth > 2.52" for 25-YR event
Inflow = 10.4 cfs @ 12.26 hrs, Volume= 92,882 cf
Outflow = 2.7 cfs @ 14.36 hrs, Volume= 68,319 cf, Atten= 74%, Lag= 125.7 min
Discarded = 0.4 cfs @ 14.36 hrs, Volume= 20,423 cf
Primary = 2.3 cfs @ 14.36 hrs, Volume= 47,896 cf
Routed to Link D : future property line
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 276.36' @ 14.36 hrs Surf.Area= 14,791 sf Storage= 44,651 cf
Flood Elev= 278.00' Surf.Area= 17,354 sf Storage= 71,070 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 145.7 min (1,005.6 - 860.0)

Volume	Invert	Avail.Storage	Storage Description
#1	271.50'	76,522 cf	**FILT. BASIN #1 (18" FILTER MEDIA) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
271.50	7,427	0.0	0	0
271.51	7,427	40.0	30	30
272.99	7,427	40.0	4,397	4,426
273.00	7,427	100.0	74	4,501
274.00	11,372	100.0	9,400	13,900
275.00	12,783	100.0	12,078	25,978
276.00	14,250	100.0	13,517	39,494
277.00	15,774	100.0	15,012	54,506
278.00	17,354	100.0	16,564	71,070
278.30	18,991	100.0	5,452	76,522

Device	Routing	Invert	Outlet Devices
#1	Discarded	271.50'	**1.253 in/hr Exfiltration over Surface area**
#2	Secondary	277.50'	**6.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69
#3	Primary	266.00'	**15.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 266.00' / 265.75' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#4	Device 3	277.30'	**48.0" x 48.0" Horiz. OS1 Conc. Horz. Rim** C= 0.600
#5	Device 3	273.95'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.60 0.60 2.00 2.00 2.70 2.70 3.35 Width (feet) 0.10 0.10 0.20 0.20 0.50 0.50 1.20 1.20

Discarded OutFlow Max=0.4 cfs @ 14.36 hrs HW=276.36' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.4 cfs)

Primary OutFlow Max=2.3 cfs @ 14.36 hrs HW=276.36' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Passes 2.3 cfs of 18.4 cfs potential flow)
  ├**4=OS1 Conc. Horz. Rim** (Controls 0.0 cfs)
  └**5=Custom Weir/Orifice** (Weir Controls 2.3 cfs @ 4.18 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=271.50' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond FB2: FILT. BASIN #2

Inflow Area = 513,437 sf, 30.59% Impervious, Inflow Depth > 2.08" for 25-YR event
Inflow = 16.9 cfs @ 12.09 hrs, Volume= 89,167 cf
Outflow = 1.8 cfs @ 14.01 hrs, Volume= 84,524 cf, Atten= 89%, Lag= 114.7 min
Discarded = 1.6 cfs @ 14.01 hrs, Volume= 81,281 cf
Primary = 0.3 cfs @ 14.01 hrs, Volume= 3,244 cf
Routed to Link D : future property line
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 278.47' @ 14.01 hrs Surf.Area= 17,932 sf Storage= 33,697 cf
Flood Elev= 280.00' Surf.Area= 20,820 sf Storage= 63,233 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 156.7 min (957.8 - 801.2)

Volume	Invert	Avail.Storage	Storage Description
#1	275.50'	63,233 cf	**FILT. BASIN #2 (18" FILTER MEDIA) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
275.50	15,250	0.0	0	0
275.51	15,250	40.0	61	61
276.99	15,250	40.0	9,028	9,089
277.00	15,250	100.0	152	9,241
278.00	17,050	100.0	16,150	25,391
279.00	18,907	100.0	17,979	43,370
280.00	20,820	100.0	19,864	63,233

Device	Routing	Invert	Outlet Devices
#1	Secondary	279.50'	**6.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69
#2	Discarded	275.50'	**3.818 in/hr Exfiltration over Surface area**
#3	Device 5	277.75'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.60 0.60 0.90 0.90 1.25 Width (feet) 0.10 0.10 0.50 0.50 2.50 2.50
#4	Device 5	279.00'	**48.0" x 48.0" Horiz. OS2 Conc. Horz. Rim** C= 0.600 Limited to weir flow at low heads
#5	Primary	272.00'	**15.0" Round Culvert** L= 51.0' Ke= 0.500 Inlet / Outlet Invert= 272.00' / 271.50' S= 0.0098 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Discarded OutFlow Max=1.6 cfs @ 14.01 hrs HW=278.47' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 1.6 cfs)

Primary OutFlow Max=0.3 cfs @ 14.01 hrs HW=278.47' TW=0.00' (Dynamic Tailwater)
└**5=Culvert** (Passes 0.3 cfs of 14.3 cfs potential flow)
  └**3=Custom Weir/Orifice** (Weir Controls 0.3 cfs @ 2.12 fps)
  └**4=OS2 Conc. Horz. Rim** (Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=275.50' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond OS3: Detention Basin #1

Inflow Area = 217,984 sf, 0.97% Impervious, Inflow Depth > 2.57" for 25-YR event
Inflow = 5.2 cfs @ 13.04 hrs, Volume= 46,635 cf
Outflow = 5.2 cfs @ 13.04 hrs, Volume= 46,468 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.2 cfs @ 13.04 hrs, Volume= 46,468 cf
Routed to Pond DMH5 :
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond cb21 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 294.50' @ 13.04 hrs Surf.Area= 1,189 sf Storage= 481 cf
Flood Elev= 296.00' Surf.Area= 2,642 sf Storage= 3,352 cf

Plug-Flow detention time= 5.4 min calculated for 46,372 cf (99% of inflow)
Center-of-Mass det. time= 3.5 min (894.3 - 890.9)

Volume	Invert	Avail.Storage	Storage Description
#1	293.99'	3,352 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
293.99	693	0	0
296.00	2,642	3,352	3,352

Device	Routing	Invert	Outlet Devices
#1	Primary	290.00'	**18.0" Round Culvert** L= 100.0' Ke= 0.500 Inlet / Outlet Invert= 290.00' / 289.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	294.50'	**60.0" x 60.0" Horiz. OS3 Conc. Horz. Rim** C= 0.600
#3	Device 1	294.00'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.50 Width (feet) 0.75 0.75
#4	Secondary	295.50'	**3.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=5.2 cfs @ 13.04 hrs HW=294.50' TW=290.40' (Dynamic Tailwater)
└**1=Culvert** (Passes 5.2 cfs of 15.5 cfs potential flow)
└**2=OS3 Conc. Horz. Rim** (Orifice Controls 4.3 cfs @ 0.17 fps)
└**3=Custom Weir/Orifice** (Orifice Controls 0.9 cfs @ 2.32 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=293.99' TW=286.80' (Dynamic Tailwater)
└**4=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond SFB1: FOREBAY #1

Inflow Area = 410,801 sf, 17.29% Impervious, Inflow Depth > 2.69" for 25-YR event
Inflow = 10.4 cfs @ 12.26 hrs, Volume= 91,949 cf
Outflow = 10.4 cfs @ 12.26 hrs, Volume= 91,949 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.4 cfs @ 12.26 hrs, Volume= 91,949 cf
Routed to Pond FB1 : FILT. BASIN #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.61' @ 12.26 hrs Surf.Area= 3,585 sf Storage= 0 cf
Flood Elev= 278.00' Surf.Area= 4,014 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	274.00'	0 cf	**FOREBAY #1 (0% Voids) (Prismatic)** Listed below (Recalc) 8,280 cf Overall x 0.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
274.00	628	0	0
275.00	1,144	886	886
276.00	1,915	1,530	2,416
277.00	2,900	2,408	4,823
278.00	4,014	3,457	8,280

Device	Routing	Invert	Outlet Devices
#1	Primary	277.10'	**10.4' long x 15.6' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=10.3 cfs @ 12.26 hrs HW=277.61' TW=273.98' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 10.3 cfs @ 1.93 fps)

Summary for Pond SFB2: FOREBAY #2

[80] Warning: Exceeded Pond DMH9 by 0.02' @ 0.75 hrs (0.6 cfs 455 cf)

Inflow Area = 482,983 sf, 32.52% Impervious, Inflow Depth > 2.20" for 25-YR event
Inflow = 16.9 cfs @ 12.09 hrs, Volume= 88,367 cf
Outflow = 16.9 cfs @ 12.09 hrs, Volume= 88,367 cf, Atten= 0%, Lag= 0.0 min
Primary = 16.9 cfs @ 12.09 hrs, Volume= 88,367 cf
Routed to Pond FB2 : FILT. BASIN #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 279.26' @ 12.09 hrs Surf.Area= 3,079 sf Storage= 0 cf
Flood Elev= 280.00' Surf.Area= 3,774 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	276.50'	0 cf	**FOREBAY #2 (0% VOIDS) (Prismatic)** Listed below (Recalc) 7,716 cf Overall x 0.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
276.50	741	0	0
277.00	1,132	468	468
278.00	1,958	1,545	2,013
279.00	2,837	2,398	4,411
280.00	3,774	3,306	7,716

Device	Routing	Invert	Outlet Devices
#1	Primary	278.80'	**21.0' long + 0.1 '/' SideZ x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Primary OutFlow Max=16.7 cfs @ 12.09 hrs HW=279.26' TW=277.11' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 16.7 cfs @ 1.75 fps)

Summary for Pond TD1:

Inflow Area = 36,281 sf,100.00% Impervious, Inflow Depth > 5.29" for 25-YR event
Inflow = 4.4 cfs @ 12.09 hrs, Volume= 15,992 cf
Outflow = 4.4 cfs @ 12.09 hrs, Volume= 15,992 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.4 cfs @ 12.09 hrs, Volume= 15,992 cf
Routed to Pond CB13A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 292.31' @ 12.09 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	290.70'	**24.0" Round Culvert** L= 102.3' Ke= 0.500 Inlet / Outlet Invert= 290.70' / 289.66' S= 0.0102 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=4.3 cfs @ 12.09 hrs HW=292.28' TW=292.08' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 4.3 cfs @ 2.21 fps)

Summary for Link 1: StreamStats Flow

Peak flow rates from Pea-Plow Statistics Floew Report [Peak Flow Statewide SIR2008 5206]

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.27" for 25-YR event
Inflow = 12.1 cfs @ 12.00 hrs, Volume= 43,560 cf
Primary = 12.1 cfs @ 12.00 hrs, Volume= 43,560 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 5R : 48" RCP - Naturalized Bottom

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

25-YR 25 Point manual hydrograph, To= 0.00 hrs, dt= 1.00 hrs, Area= 1,951,488 sf, cfs =

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	12.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00					

Summary for Link A: 14-44-38

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: 14-47

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: future property line

Inflow Area = 1,122,915 sf, 20.31% Impervious, Inflow Depth > 0.61" for 25-YR event
Inflow = 2.7 cfs @ 14.27 hrs, Volume= 56,832 cf
Primary = 2.7 cfs @ 14.27 hrs, Volume= 56,832 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node R1

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: 14-38-0

Inflow Area = 1,986,435 sf, 0.00% Impervious, Inflow Depth > 0.27" for 25-YR event
Inflow = 12.1 cfs @ 12.00 hrs, Volume= 44,490 cf
Primary = 12.1 cfs @ 12.00 hrs, Volume= 44,490 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link F: 14-38-0

Inflow Area = 305,720 sf, 0.00% Impervious, Inflow Depth > 1.57" for 25-YR event
Inflow = 3.5 cfs @ 13.41 hrs, Volume= 40,076 cf
Primary = 3.5 cfs @ 13.41 hrs, Volume= 40,076 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Subcatchment PS14: paved aisle

Runoff = 2.1 cfs @ 12.21 hrs, Volume= 9,837 cf, Depth> 5.99"
Routed to Pond CB6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
799	98	Roofs, HSG A
176	98	Roofs, HSG C
1,186	98	Paved parking, HSG C
16,520	98	Paved parking, HSG A
751	39	>75% Grass cover, Good, HSG A
259	74	>75% Grass cover, Good, HSG C
19,691	95	Weighted Average
1,010		5.13% Pervious Area
18,681		94.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.2	36	0.0280	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
0.1	23	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	170	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.3	229	Total			

Summary for Subcatchment PS15: Process Building

Runoff = 3.2 cfs @ 12.09 hrs, Volume= 11,859 cf, Depth> 6.36"
Routed to Pond DMHRD :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
21,262	98	Roofs, HSG A
1,122	98	Roofs, HSG C
22,384	98	Weighted Average
22,384		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS16: paved area

Runoff = 2.6 cfs @ 12.09 hrs, Volume= 9,444 cf, Depth> 6.36"
Routed to Pond CB8A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
286	98	Roofs, HSG A
17,540	98	Paved parking, HSG A
17,826	98	Weighted Average
17,826		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS17: paved area

Runoff = 2.4 cfs @ 12.09 hrs, Volume= 8,821 cf, Depth> 6.36"
Routed to Pond CB14 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
16,650	98	Paved parking, HSG A
16,650		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS18: roof and paved area

Runoff = 3.1 cfs @ 12.09 hrs, Volume= 11,350 cf, Depth> 6.36"
Routed to Pond CB13A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
10,840	98	Paved parking, HSG A
10,584	98	Roofs, HSG A
21,424	98	Weighted Average
21,424		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS19: loading bay and roof

Runoff = 5.3 cfs @ 12.09 hrs, Volume= 19,221 cf, Depth> 6.36"
Routed to Pond TD1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
10,257	98	Paved parking, HSG A
24,660	98	Roofs, HSG A
1,364	98	Roofs, HSG C
36,281	98	Weighted Average
36,281		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS2: offsite east

Runoff = 0.6 cfs @ 12.44 hrs, Volume= 4,427 cf, Depth> 0.97"
Routed to Pond CB10 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
9,567	98	Paved parking, HSG A
33,691	30	Woods, Good, HSG A
11,424	39	>75% Grass cover, Good, HSG A
54,682	44	Weighted Average
45,115		82.50% Pervious Area
9,567		17.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.1	92	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	49	0.1100	2.32		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	26	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
22.9	267	Total			

Summary for Subcatchment PS20: interconnection/upgrading yard

Runoff = 1.6 cfs @ 12.09 hrs, Volume= 5,369 cf, Depth> 5.66"
Routed to Pond CB18 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
820	39	>75% Grass cover, Good, HSG A
10,570	96	Gravel surface, HSG A
11,390	92	Weighted Average
11,390		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS21: remainder site south

area 7 is a head wall

Runoff = 1.2 cfs @ 12.58 hrs, Volume= 10,577 cf, Depth> 0.76"
Routed to Link D : future property line

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
58,550	30	Woods, Good, HSG A
35,853	55	Woods, Good, HSG B
7,591	70	Woods, Good, HSG C
61,491	39	>75% Grass cover, Good, HSG A
1,806	74	>75% Grass cover, Good, HSG C
2,587	61	>75% Grass cover, Good, HSG B
8	98	Paved parking, HSG A
167,886	41	Weighted Average
167,878		100.00% Pervious Area
8		0.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.6	100	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
5.8	232	0.0700	0.66		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
28.4	332	Total			

Summary for Subcatchment PS22: laydown area

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 1,458 cf, Depth> 6.36"
Routed to Pond CB19 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
2,752	98	Paved parking, HSG A
2,752		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS3: offsite north

Runoff = 0.7 cfs @ 12.51 hrs, Volume= 5,813 cf, Depth> 0.76"
Routed to Pond CB3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
7,328	98	Paved parking, HSG A
11,458	70	Woods, Good, HSG C
69,043	30	Woods, Good, HSG A
4,239	39	>75% Grass cover, Good, HSG A
92,068	41	Weighted Average
84,740		92.04% Pervious Area
7,328		7.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.7	100	0.0700	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
4.7	245	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
4.7	283	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	26	0.3500	4.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	62	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
23.7	716	Total			

Summary for Subcatchment PS31: driveway

Runoff = 1.2 cfs @ 12.09 hrs, Volume= 4,281 cf, Depth> 6.36"
Routed to Pond cb1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
8,080	98	Paved roads w/curbs & sewers, HSG A
8,080		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS32: driveway

Runoff = 1.2 cfs @ 12.09 hrs, Volume= 4,344 cf, Depth> 6.36"
Routed to Pond cb2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
8,199	98	Paved roads w/curbs & sewers, HSG A
8,199		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS33: north of driveway

Runoff = 0.2 cfs @ 12.28 hrs, Volume= 1,238 cf, Depth> 0.63"
Routed to Link E : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
11,080	39	>75% Grass cover, Good, HSG A
12,516	39	>75% Grass cover, Good, HSG A
23,596	39	Weighted Average
23,596		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS34: south of driveway

Runoff = 0.1 cfs @ 12.28 hrs, Volume= 595 cf, Depth> 0.63"
Routed to Link E : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
11,351	39	>75% Grass cover, Good, HSG A
11,351		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PS4: offsite north

Runoff = 5.1 cfs @ 12.43 hrs, Volume= 28,681 cf, Depth> 2.13"
Routed to Pond CB4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
9,960	98	Paved parking, HSG A
83,865	70	Woods, Good, HSG C
56,653	30	Woods, Good, HSG A
4,399	39	>75% Grass cover, Good, HSG A
322	98	Paved parking, HSG C
6,715	96	Gravel surface, HSG C
161,914	58	Weighted Average
151,632		93.65% Pervious Area
10,282		6.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	100	0.0300	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
8.8	589	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	23	0.2000	3.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	66	0.0100	2.03		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
28.6	778	Total			

Summary for Subcatchment PS40: FB2 maintenance drive

Runoff = 0.3 cfs @ 12.42 hrs, Volume= 1,689 cf, Depth> 1.36"
Routed to Reach 1R : maintenance FB2 swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
12,263	39	>75% Grass cover, Good, HSG A
2,670	96	Gravel surface, HSG A
14,933	49	Weighted Average
14,933		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PS5: offsite run on

Runoff = 7.0 cfs @ 13.03 hrs, Volume= 62,353 cf, Depth> 3.43"
Routed to Pond OS3 : Detention Basin #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
188,914	70	Woods, Good, HSG C
6,947	39	>75% Grass cover, Good, HSG A
2,123	98	Roofs, HSG C
20,000	96	Gravel surface, HSG C
217,984	72	Weighted Average
215,861		99.03% Pervious Area
2,123		0.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
33.5	100	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
5.4	81	0.0100	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	201	0.0100	0.25		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
9.5	248	0.0300	0.43		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.1	405	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.9	78	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
74.8	1,113	Total			

Summary for Subcatchment PS6: offsite run on

Runoff = 2.7 cfs @ 12.30 hrs, Volume= 12,736 cf, Depth> 2.98"
Routed to Pond cb21 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
46,969	70	Woods, Good, HSG C
4,352	39	>75% Grass cover, Good, HSG A
51,321	67	Weighted Average
51,321		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	100	0.0500	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.89"
3.9	289	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	93	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.7	482	Total			

Summary for Subcatchment PS7: offsite run-on

Runoff = 5.2 cfs @ 13.36 hrs, Volume= 57,599 cf, Depth> 2.26"
Routed to Link F : 14-38-0

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
226,968	70	Woods, Good, HSG C
55,157	30	Woods, Good, HSG A
23,595	39	>75% Grass cover, Good, HSG A
305,720	60	Weighted Average
305,720		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
39.3	100	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.89"
23.9	508	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.2	706	0.0600	0.61		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	661	0.0900	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
97.1	1,975	Total			

Summary for Subcatchment PSFB1: sediment forebay 1 area

Runoff = 0.1 cfs @ 12.29 hrs, Volume= 632 cf, Depth> 0.63"
Routed to Pond SFB1 : FOREBAY #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
12,045	39	>75% Grass cover, Good, HSG A
12,045		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSFB2: sediment forebay 2 area

Runoff = 0.1 cfs @ 12.57 hrs, Volume= 889 cf, Depth> 0.62"
Routed to Pond SFB2 : FOREBAY #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
17,093	39	>75% Grass cover, Good, HSG A
17,093		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PSM1: FB1 maintenance area

Runoff = 0.1 cfs @ 12.15 hrs, Volume= 421 cf, Depth> 0.70"
Routed to Reach 2R : maintenance FB1 swale

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
7,015	39	>75% Grass cover, Good, HSG A
252	74	>75% Grass cover, Good, HSG C
7,267	40	Weighted Average
7,267		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSP1: filtration basin 1 area

Runoff = 0.2 cfs @ 12.15 hrs, Volume= 1,363 cf, Depth> 0.70"
Routed to Pond FB1 : FILT. BASIN #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
22,768	39	>75% Grass cover, Good, HSG A
756	74	>75% Grass cover, Good, HSG C
23,524	40	Weighted Average
23,524		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	100	0.0600	0.25		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"

Summary for Subcatchment PSP2: filtration basin 2 area

Runoff = 0.2 cfs @ 12.57 hrs, Volume= 1,583 cf, Depth> 0.62"
Routed to Pond FB2 : FILT. BASIN #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
30,454	39	>75% Grass cover, Good, HSG A
30,454		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.8	95	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.89"

Summary for Subcatchment PST10: tribrid area

Runoff = 0.9 cfs @ 12.28 hrs, Volume= 4,046 cf, Depth> 4.20"
Routed to Pond CB24 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
4,006	98	Roofs, HSG A
3,911	96	Gravel surface, HSG A
3,630	39	>75% Grass cover, Good, HSG A
11,547	79	Weighted Average
7,541		65.31% Pervious Area
4,006		34.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.6	24	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.4	124	Total			

Summary for Subcatchment PST11: tribrid area

Runoff = 1.2 cfs @ 12.20 hrs, Volume= 5,068 cf, Depth> 4.21"
Routed to Pond CB27 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
7,342	98	Roofs, HSG A
1,387	96	Gravel surface, HSG A
4,531	39	>75% Grass cover, Good, HSG A
670	98	Roofs, HSG C
209	96	Gravel surface, HSG C
308	74	>75% Grass cover, Good, HSG C
14,447	79	Weighted Average
6,435		44.54% Pervious Area
8,012		55.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0230	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.5	35	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.7	135	Total			

Summary for Subcatchment PST12: tribrid area

Runoff = 1.4 cfs @ 12.22 hrs, Volume= 5,880 cf, Depth> 4.42"
Routed to Pond CB28 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
7,486	98	Roofs, HSG A
3,088	96	Gravel surface, HSG A
4,198	39	>75% Grass cover, Good, HSG A
526	98	Roofs, HSG C
109	96	Gravel surface, HSG C
550	74	>75% Grass cover, Good, HSG C
15,957	81	Weighted Average
7,945		49.79% Pervious Area
8,012		50.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	100	0.0180	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.7	40	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.4	140	Total			

Summary for Subcatchment PST13: tribrid area

Runoff = 0.7 cfs @ 12.21 hrs, Volume= 3,017 cf, Depth> 3.18"
Routed to Pond CB30 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
4,156	98	Roofs, HSG A
1,698	96	Gravel surface, HSG A
5,501	39	>75% Grass cover, Good, HSG A
34	74	>75% Grass cover, Good, HSG C
11,389	69	Weighted Average
7,233		63.51% Pervious Area
4,156		36.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	100	0.0230	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.7	42	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.9	142	Total			

Summary for Subcatchment PST6: fet area

Runoff = 1.3 cfs @ 12.23 hrs, Volume= 5,675 cf, Depth> 3.28"
Routed to Pond CB15 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
7,368	98	Roofs, HSG A
3,784	96	Gravel surface, HSG A
9,624	39	>75% Grass cover, Good, HSG A
20,776	70	Weighted Average
13,408		64.54% Pervious Area
7,368		35.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.89"
3.0	126	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
16.6	226	Total			

Summary for Subcatchment PST7: tribrid area

Runoff = 0.8 cfs @ 12.24 hrs, Volume= 3,539 cf, Depth> 3.58"
Routed to Pond cb20 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
5,990	98	Roofs, HSG A
974	96	Gravel surface, HSG A
4,896	39	>75% Grass cover, Good, HSG A
11,860	73	Weighted Average
5,870		49.49% Pervious Area
5,990		50.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0150	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.4	20	0.0180	0.94		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.2	120	Total			

Summary for Subcatchment PST8: tribrid area

Runoff = 0.8 cfs @ 12.28 hrs, Volume= 3,785 cf, Depth> 3.89"
Routed to Pond cb22 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
5,981	98	Roofs, HSG A
1,487	96	Gravel surface, HSG A
4,212	39	>75% Grass cover, Good, HSG A
11,680	76	Weighted Average
5,699		48.79% Pervious Area
5,981		51.21% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.5	28	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.3	128	Total			

Summary for Subcatchment PST9: tribrid area

Runoff = 0.7 cfs @ 12.28 hrs, Volume= 3,132 cf, Depth> 3.99"
Routed to Pond CB23 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YR Rainfall=6.60"

Area (sf)	CN	Description
2,995	98	Roofs, HSG A
3,172	96	Gravel surface, HSG A
3,244	39	>75% Grass cover, Good, HSG A
9,411	77	Weighted Average
6,416		68.18% Pervious Area
2,995		31.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.8	100	0.0100	0.08		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.89"
0.4	16	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.2	116	Total			

Summary for Reach 1R: maintenance FB2 swale

Inflow Area = 14,933 sf, 0.00% Impervious, Inflow Depth > 1.36" for 50-YR event
Inflow = 0.3 cfs @ 12.42 hrs, Volume= 1,689 cf
Outflow = 0.3 cfs @ 12.46 hrs, Volume= 1,680 cf, Atten= 1%, Lag= 2.8 min
Routed to Pond SFB2 : FOREBAY #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.70 fps, Min. Travel Time= 4.0 min
Avg. Velocity = 0.29 fps, Avg. Travel Time= 9.5 min

Peak Storage= 65 cf @ 12.46 hrs
Average Depth at Peak Storage= 0.05' , Surface Width= 8.29'
Bank-Full Depth= 0.50' Flow Area= 4.8 sf, Capacity= 14.2 cfs

8.00' x 0.50' deep channel, n= 0.069 Riprap, 6-inch
Side Slope Z-value= 3.0 '/' Top Width= 11.00'
Length= 165.0' Slope= 0.0606 '/'
Inlet Invert= 290.00', Outlet Invert= 280.00'



‡

Summary for Reach 2R: maintenance FB1 swale

Inflow Area = 7,267 sf, 0.00% Impervious, Inflow Depth > 0.70" for 50-YR event
Inflow = 0.1 cfs @ 12.15 hrs, Volume= 421 cf
Outflow = 0.1 cfs @ 12.29 hrs, Volume= 419 cf, Atten= 3%, Lag= 8.7 min
Routed to Pond CB16 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 0.74 fps, Min. Travel Time= 4.0 min
Avg. Velocity = 0.34 fps, Avg. Travel Time= 8.7 min

Peak Storage= 14 cf @ 12.29 hrs
Average Depth at Peak Storage= 0.03' , Surface Width= 3.15'
Bank-Full Depth= 0.25' Flow Area= 0.9 sf, Capacity= 2.8 cfs

3.00' x 0.25' deep channel, n= 0.041 Riprap, 2-inch
Side Slope Z-value= 3.0 '/' Top Width= 4.50'
Length= 178.0' Slope= 0.0573 '/'
Inlet Invert= 292.00', Outlet Invert= 281.80'



‡

Summary for Reach 5R: 48" RCP - Naturalized Bottom

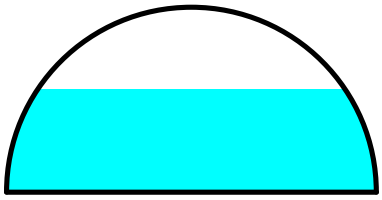
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.34" for 50-YR event
Inflow = 15.5 cfs @ 12.00 hrs, Volume= 55,800 cf
Outflow = 15.5 cfs @ 12.00 hrs, Volume= 55,803 cf, Atten= 0%, Lag= 0.2 min
Routed to Link E : 14-38-0

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Max. Velocity= 3.65 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.77 fps, Avg. Travel Time= 0.3 min

Peak Storage= 203 cf @ 12.00 hrs
Average Depth at Peak Storage= 1.12' , Surface Width= 3.31'
Bank-Full Depth= 2.00' Flow Area= 6.3 sf, Capacity= 21.7 cfs

48.0" W x 24.0" H, R=24.0" Arch Pipe
n= 0.040 Earth, cobble bottom, clean sides
Length= 48.0' Slope= 0.0167 '/'
Inlet Invert= 298.60', Outlet Invert= 297.80'



Summary for Pond cb1:

Inflow Area = 8,080 sf,100.00% Impervious, Inflow Depth > 6.36" for 50-YR event
Inflow = 1.2 cfs @ 12.09 hrs, Volume= 4,281 cf
Outflow = 1.2 cfs @ 12.09 hrs, Volume= 4,281 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.09 hrs, Volume= 4,281 cf
Routed to Pond cb2 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 293.75' @ 12.09 hrs
Flood Elev= 297.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	293.18'	**15.0" Round Culvert** L= 21.8' Ke= 0.500 Inlet / Outlet Invert= 293.18' / 292.96' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.1 cfs @ 12.09 hrs HW=293.74' TW=293.40' (Dynamic Tailwater)
1=Culvert (Outlet Controls 1.1 cfs @ 3.14 fps)

Summary for Pond CB10:

Inflow Area = 308,664 sf, 8.80% Impervious, Inflow Depth > 1.51" for 50-YR event
Inflow = 6.4 cfs @ 12.44 hrs, Volume= 38,920 cf
Outflow = 6.4 cfs @ 12.44 hrs, Volume= 38,920 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.4 cfs @ 12.44 hrs, Volume= 38,920 cf
Routed to Pond CB12 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.58' @ 12.43 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.94'	**15.0" Round Culvert** L= 169.0' Ke= 0.500 Inlet / Outlet Invert= 285.94' / 284.25' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=6.4 cfs @ 12.44 hrs HW=288.56' TW=286.27' (Dynamic Tailwater)
1=Culvert (Outlet Controls 6.4 cfs @ 5.21 fps)

Summary for Pond CB12:

Inflow Area = 324,943 sf, 13.37% Impervious, Inflow Depth > 1.76" for 50-YR event
Inflow = 7.1 cfs @ 12.42 hrs, Volume= 47,545 cf
Outflow = 7.1 cfs @ 12.42 hrs, Volume= 47,545 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.1 cfs @ 12.42 hrs, Volume= 47,545 cf
Routed to Pond CB18 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 286.29' @ 12.42 hrs
Flood Elev= 296.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.15'	**15.0" Round Culvert** L= 60.0' Ke= 0.500 Inlet / Outlet Invert= 284.15' / 283.55' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=7.0 cfs @ 12.42 hrs HW=286.28' TW=284.02' (Dynamic Tailwater)
1=Culvert (Barrel Controls 7.0 cfs @ 5.73 fps)

Summary for Pond CB13:

Inflow Area = 57,705 sf,100.00% Impervious, Inflow Depth > 6.36" for 50-YR event
Inflow = 8.4 cfs @ 12.09 hrs, Volume= 30,571 cf
Outflow = 8.4 cfs @ 12.09 hrs, Volume= 30,571 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.4 cfs @ 12.09 hrs, Volume= 30,571 cf
Routed to Pond CB14 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.72' @ 12.09 hrs
Flood Elev= 294.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**18.0" Round Culvert** L= 71.4' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 287.13' S= 0.0122 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=8.1 cfs @ 12.09 hrs HW=289.67' TW=281.75' (Dynamic Tailwater)
1=Culvert (Inlet Controls 8.1 cfs @ 4.61 fps)

Summary for Pond CB13A:

Inflow Area = 57,705 sf,100.00% Impervious, Inflow Depth > 6.36" for 50-YR event
Inflow = 8.4 cfs @ 12.09 hrs, Volume= 30,571 cf
Outflow = 8.4 cfs @ 12.09 hrs, Volume= 30,571 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.4 cfs @ 12.09 hrs, Volume= 30,571 cf
Routed to Pond CB13 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 292.42' @ 12.09 hrs
Flood Elev= 294.95'

Device	Routing	Invert	Outlet Devices
#1	Primary	290.70'	**18.0" Round Culvert** L= 102.3' Ke= 0.500 Inlet / Outlet Invert= 290.70' / 289.66' S= 0.0102 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=8.1 cfs @ 12.09 hrs HW=292.37' TW=289.67' (Dynamic Tailwater)
1=Culvert (Inlet Controls 8.1 cfs @ 4.61 fps)

Summary for Pond CB14:

Inflow Area = 111,872 sf, 99.10% Impervious, Inflow Depth > 6.29" for 50-YR event
Inflow = 14.9 cfs @ 12.09 hrs, Volume= 58,673 cf
Outflow = 14.9 cfs @ 12.09 hrs, Volume= 58,673 cf, Atten= 0%, Lag= 0.0 min
Primary = 14.9 cfs @ 12.09 hrs, Volume= 58,673 cf
Routed to Pond DMH9 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 281.78' @ 12.09 hrs
Flood Elev= 293.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	280.06'	**30.0" Round Culvert** L= 80.7' Ke= 0.500 Inlet / Outlet Invert= 280.06' / 279.25' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=14.6 cfs @ 12.09 hrs HW=281.76' TW=280.58' (Dynamic Tailwater)
1=Culvert (Outlet Controls 14.6 cfs @ 5.83 fps)

Summary for Pond CB15:

Inflow Area = 20,776 sf, 35.46% Impervious, Inflow Depth > 3.28" for 50-YR event
Inflow = 1.3 cfs @ 12.23 hrs, Volume= 5,675 cf
Outflow = 1.3 cfs @ 12.23 hrs, Volume= 5,675 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.3 cfs @ 12.23 hrs, Volume= 5,675 cf
Routed to Pond DMH5 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 292.52' @ 12.23 hrs
Flood Elev= 296.08'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.94'	**15.0" Round Culvert** L= 34.0' Ke= 0.500 Inlet / Outlet Invert= 291.94' / 291.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.3 cfs @ 12.23 hrs HW=292.52' TW=290.14' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.3 cfs @ 3.45 fps)

Summary for Pond CB16:

Inflow Area = 7,267 sf, 0.00% Impervious, Inflow Depth > 0.69" for 50-YR event
Inflow = 0.1 cfs @ 12.29 hrs, Volume= 419 cf
Outflow = 0.1 cfs @ 12.29 hrs, Volume= 419 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.1 cfs @ 12.29 hrs, Volume= 419 cf
Routed to Pond FB1 : FILT. BASIN #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.66' @ 12.29 hrs
Flood Elev= 281.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.55'	**15.0" Round Culvert** L= 62.0' Ke= 0.500 Inlet / Outlet Invert= 277.55' / 275.75' S= 0.0290 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.1 cfs @ 12.29 hrs HW=277.66' TW=274.69' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.1 cfs @ 1.12 fps)

Summary for Pond CB17:

Inflow Area = 339,085 sf, 13.63% Impervious, Inflow Depth > 1.92" for 50-YR event
Inflow = 7.6 cfs @ 12.40 hrs, Volume= 54,371 cf
Outflow = 7.6 cfs @ 12.40 hrs, Volume= 54,371 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.6 cfs @ 12.40 hrs, Volume= 54,371 cf
Routed to Pond DMH9 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 281.35' @ 12.10 hrs
Flood Elev= 293.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	279.72'	**18.0" Round Culvert** L= 108.0' Ke= 0.500 Inlet / Outlet Invert= 279.72' / 278.10' S= 0.0150 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=7.6 cfs @ 12.40 hrs HW=281.28' TW=279.97' (Dynamic Tailwater)
1=Culvert (Inlet Controls 7.6 cfs @ 4.33 fps)

Summary for Pond CB18:

Inflow Area = 336,333 sf, 12.92% Impervious, Inflow Depth > 1.89" for 50-YR event
Inflow = 7.5 cfs @ 12.40 hrs, Volume= 52,914 cf
Outflow = 7.5 cfs @ 12.40 hrs, Volume= 52,914 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.5 cfs @ 12.40 hrs, Volume= 52,914 cf
Routed to Pond CB17 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 284.02' @ 12.40 hrs
Flood Elev= 293.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	282.45'	**18.0" Round Culvert** L= 45.2' Ke= 0.500 Inlet / Outlet Invert= 282.45' / 282.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=7.5 cfs @ 12.40 hrs HW=284.02' TW=281.28' (Dynamic Tailwater)
1=Culvert (Barrel Controls 7.5 cfs @ 5.04 fps)

Summary for Pond CB19:

Inflow Area = 2,752 sf,100.00% Impervious, Inflow Depth > 6.36" for 50-YR event
Inflow = 0.4 cfs @ 12.09 hrs, Volume= 1,458 cf
Outflow = 0.4 cfs @ 12.09 hrs, Volume= 1,458 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.4 cfs @ 12.09 hrs, Volume= 1,458 cf
Routed to Pond CB17 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.30' @ 12.09 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.00'	**15.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 285.00' / 284.50' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.4 cfs @ 12.09 hrs HW=285.29' TW=281.30' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.4 cfs @ 2.69 fps)

Summary for Pond cb2:

Inflow Area = 16,279 sf,100.00% Impervious, Inflow Depth > 6.36" for 50-YR event
Inflow = 2.4 cfs @ 12.09 hrs, Volume= 8,624 cf
Outflow = 2.4 cfs @ 12.09 hrs, Volume= 8,624 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.4 cfs @ 12.09 hrs, Volume= 8,624 cf
Routed to Pond dmh1 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 293.41' @ 12.09 hrs
Flood Elev= 297.43'

Device	Routing	Invert	Outlet Devices
#1	Primary	292.64'	**15.0" Round Culvert** L= 155.0' Ke= 0.500 Inlet / Outlet Invert= 292.64' / 291.33' S= 0.0085 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.3 cfs @ 12.09 hrs HW=293.40' TW=290.72' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 2.3 cfs @ 4.22 fps)

Summary for Pond cb20:

Inflow Area = 11,860 sf, 50.51% Impervious, Inflow Depth > 3.58" for 50-YR event
Inflow = 0.8 cfs @ 12.24 hrs, Volume= 3,539 cf
Outflow = 0.8 cfs @ 12.24 hrs, Volume= 3,539 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.8 cfs @ 12.24 hrs, Volume= 3,539 cf
Routed to Pond cb21 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.63' @ 12.24 hrs
Flood Elev= 292.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.20'	**15.0" Round Culvert** L= 94.0' Ke= 0.500 Inlet / Outlet Invert= 289.20' / 286.90' S= 0.0245 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.8 cfs @ 12.24 hrs HW=289.62' TW=288.01' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.8 cfs @ 2.22 fps)

Summary for Pond cb21:

Inflow Area = 63,181 sf, 9.48% Impervious, Inflow Depth > 3.09" for 50-YR event
Inflow = 3.5 cfs @ 12.28 hrs, Volume= 16,275 cf
Outflow = 3.5 cfs @ 12.28 hrs, Volume= 16,275 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.5 cfs @ 12.28 hrs, Volume= 16,275 cf
Routed to Pond cb22 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.06' @ 12.30 hrs
Flood Elev= 292.30'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.80'	**15.0" Round Culvert** L= 44.0' Ke= 0.500 Inlet / Outlet Invert= 286.80' / 286.41' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.4 cfs @ 12.28 hrs HW=288.05' TW=287.63' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 3.4 cfs @ 3.42 fps)

Summary for Pond cb22:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 3.22" for 50-YR event
Inflow = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf
Outflow = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf
Routed to Pond dmh23 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.65' @ 12.30 hrs
Flood Elev= 291.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.31'	**15.0" Round Culvert** L= 73.0' Ke= 0.500 Inlet / Outlet Invert= 286.31' / 285.59' S= 0.0099 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.3 cfs @ 12.28 hrs HW=287.63' TW=286.90' (Dynamic Tailwater)
1=Culvert (Outlet Controls 4.3 cfs @ 4.08 fps)

Summary for Pond CB23:

Inflow Area = 84,272 sf, 17.76% Impervious, Inflow Depth > 3.30" for 50-YR event
Inflow = 5.0 cfs @ 12.28 hrs, Volume= 23,192 cf
Outflow = 5.0 cfs @ 12.28 hrs, Volume= 23,192 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.0 cfs @ 12.28 hrs, Volume= 23,192 cf
Routed to Pond CB24 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 285.88' @ 12.28 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.31'	**15.0" Round Culvert** L= 110.0' Ke= 0.500 Inlet / Outlet Invert= 284.31' / 283.20' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.0 cfs @ 12.28 hrs HW=285.86' TW=284.89' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.0 cfs @ 4.17 fps)

Summary for Pond CB24:

Inflow Area = 95,819 sf, 19.80% Impervious, Inflow Depth > 3.41" for 50-YR event
Inflow = 5.9 cfs @ 12.28 hrs, Volume= 27,238 cf
Outflow = 5.9 cfs @ 12.28 hrs, Volume= 27,238 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.9 cfs @ 12.28 hrs, Volume= 27,238 cf
Routed to Pond dmh25 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 284.92' @ 12.28 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	283.10'	**15.0" Round Culvert** L= 82.0' Ke= 0.500 Inlet / Outlet Invert= 283.10' / 282.23' S= 0.0106 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.8 cfs @ 12.28 hrs HW=284.89' TW=283.70' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 5.8 cfs @ 4.74 fps)

Summary for Pond CB27:

Inflow Area = 14,447 sf, 55.46% Impervious, Inflow Depth > 4.21" for 50-YR event
Inflow = 1.2 cfs @ 12.20 hrs, Volume= 5,068 cf
Outflow = 1.2 cfs @ 12.20 hrs, Volume= 5,068 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.2 cfs @ 12.20 hrs, Volume= 5,068 cf
Routed to Pond DMH26 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.72' @ 12.20 hrs
Flood Elev= 292.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.15'	**15.0" Round Culvert** L= 27.7' Ke= 0.500 Inlet / Outlet Invert= 288.15' / 287.87' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.2 cfs @ 12.20 hrs HW=288.72' TW=282.14' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 1.2 cfs @ 3.34 fps)

Summary for Pond CB28:

Inflow Area = 38,341 sf, 79.28% Impervious, Inflow Depth > 5.55" for 50-YR event
Inflow = 4.2 cfs @ 12.10 hrs, Volume= 17,739 cf
Outflow = 4.2 cfs @ 12.10 hrs, Volume= 17,739 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.2 cfs @ 12.10 hrs, Volume= 17,739 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.87' @ 12.10 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.75'	**18.0" Round Culvert** L= 20.7' Ke= 0.500 Inlet / Outlet Invert= 288.75' / 288.54' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.2 cfs @ 12.10 hrs HW=289.87' TW=279.09' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 4.2 cfs @ 4.13 fps)

Summary for Pond CB3:

Inflow Area = 253,982 sf, 6.93% Impervious, Inflow Depth > 1.63" for 50-YR event
Inflow = 5.8 cfs @ 12.44 hrs, Volume= 34,493 cf
Outflow = 5.8 cfs @ 12.44 hrs, Volume= 34,493 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.8 cfs @ 12.44 hrs, Volume= 34,493 cf
Routed to Pond DMH3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 290.98' @ 12.45 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.05'	**15.0" Round Culvert** L= 90.0' Ke= 0.500 Inlet / Outlet Invert= 289.05' / 288.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.8 cfs @ 12.44 hrs HW=290.96' TW=289.73' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.8 cfs @ 4.69 fps)

Summary for Pond CB30:

Inflow Area = 250,149 sf, 5.46% Impervious, Inflow Depth > 3.40" for 50-YR event
Inflow = 7.4 cfs @ 13.00 hrs, Volume= 70,848 cf
Outflow = 7.4 cfs @ 13.00 hrs, Volume= 70,848 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.4 cfs @ 13.00 hrs, Volume= 70,848 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.01' @ 13.00 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.80'	**24.0" Round Culvert** L= 92.0' Ke= 0.500 Inlet / Outlet Invert= 285.80' / 284.88' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.4 cfs @ 13.00 hrs HW=287.01' TW=278.87' (Dynamic Tailwater)
1=Culvert (Barrel Controls 7.4 cfs @ 5.35 fps)

Summary for Pond CB4:

Inflow Area = 161,914 sf, 6.35% Impervious, Inflow Depth > 2.13" for 50-YR event
Inflow = 5.1 cfs @ 12.43 hrs, Volume= 28,681 cf
Outflow = 5.1 cfs @ 12.43 hrs, Volume= 28,681 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.1 cfs @ 12.43 hrs, Volume= 28,681 cf
Routed to Pond CB3 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 292.50' @ 12.46 hrs
Flood Elev= 296.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	291.06'	**15.0" Round Culvert** L= 191.0' Ke= 0.500 Inlet / Outlet Invert= 291.06' / 289.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.0 cfs @ 12.43 hrs HW=292.47' TW=290.92' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.0 cfs @ 4.50 fps)

Summary for Pond CB6:

Inflow Area = 19,691 sf, 94.87% Impervious, Inflow Depth > 5.99" for 50-YR event
Inflow = 2.1 cfs @ 12.21 hrs, Volume= 9,837 cf
Outflow = 2.1 cfs @ 12.21 hrs, Volume= 9,837 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.1 cfs @ 12.21 hrs, Volume= 9,837 cf
Routed to Pond CB8A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 288.60' @ 12.21 hrs
Flood Elev= 294.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**24.0" Round Culvert** L= 118.0' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 286.82' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=2.1 cfs @ 12.21 hrs HW=288.60' TW=286.98' (Dynamic Tailwater)
1=Culvert (Inlet Controls 2.1 cfs @ 2.64 fps)

Summary for Pond CB8A:

Inflow Area = 37,517 sf, 97.31% Impervious, Inflow Depth > 6.17" for 50-YR event
Inflow = 4.2 cfs @ 12.11 hrs, Volume= 19,281 cf
Outflow = 4.2 cfs @ 12.11 hrs, Volume= 19,281 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.2 cfs @ 12.11 hrs, Volume= 19,281 cf
Routed to Pond CB14 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.12' @ 12.11 hrs
Flood Elev= 293.10'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.00'	**15.0" Round Culvert** L= 131.3' Ke= 0.500 Inlet / Outlet Invert= 286.00' / 284.69' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.1 cfs @ 12.11 hrs HW=287.10' TW=281.73' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.1 cfs @ 3.58 fps)

Summary for Pond dmh1:

Inflow Area = 16,279 sf,100.00% Impervious, Inflow Depth > 6.36" for 50-YR event
Inflow = 2.4 cfs @ 12.09 hrs, Volume= 8,624 cf
Outflow = 2.4 cfs @ 12.09 hrs, Volume= 8,624 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.4 cfs @ 12.09 hrs, Volume= 8,624 cf
Routed to Pond CB12 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 290.73' @ 12.09 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.95'	**15.0" Round Culvert** L= 65.3' Ke= 0.500 Inlet / Outlet Invert= 289.95' / 289.30' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=2.3 cfs @ 12.09 hrs HW=290.72' TW=285.26' (Dynamic Tailwater)
1=Culvert (Barrel Controls 2.3 cfs @ 4.16 fps)

Summary for Pond dmh11:

Inflow Area = 398,756 sf, 17.81% Impervious, Inflow Depth > 3.64" for 50-YR event
Inflow = 13.7 cfs @ 12.26 hrs, Volume= 120,893 cf
Outflow = 13.7 cfs @ 12.26 hrs, Volume= 120,893 cf, Atten= 0%, Lag= 0.0 min
Primary = 13.7 cfs @ 12.26 hrs, Volume= 120,893 cf
Routed to Pond SFB1 : FOREBAY #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 279.36' @ 12.26 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	277.23'	**24.0" Round Culvert** L= 41.0' Ke= 0.500 Inlet / Outlet Invert= 277.23' / 277.00' S= 0.0056 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=13.7 cfs @ 12.26 hrs HW=279.36' TW=277.72' (Dynamic Tailwater)
1=Culvert (Barrel Controls 13.7 cfs @ 5.09 fps)

Summary for Pond dmh23:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 3.22" for 50-YR event
Inflow = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf
Outflow = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf
Routed to Pond DMH24 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 286.94' @ 12.30 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	285.49'	**15.0" Round Culvert** L= 57.8' Ke= 0.500 Inlet / Outlet Invert= 285.49' / 284.91' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.2 cfs @ 12.28 hrs HW=286.90' TW=286.34' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 4.2 cfs @ 3.78 fps)

Summary for Pond DMH24:

Inflow Area = 74,861 sf, 15.99% Impervious, Inflow Depth > 3.22" for 50-YR event
Inflow = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf
Outflow = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.3 cfs @ 12.28 hrs, Volume= 20,060 cf
Routed to Pond CB23 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 286.39' @ 12.30 hrs
Flood Elev= 292.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	284.81'	**15.0" Round Culvert** L= 37.0' Ke= 0.500 Inlet / Outlet Invert= 284.81' / 284.46' S= 0.0095 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.1 cfs @ 12.28 hrs HW=286.34' TW=285.86' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 4.1 cfs @ 3.34 fps)

Summary for Pond dmh25:

Inflow Area = 95,819 sf, 19.80% Impervious, Inflow Depth > 3.41" for 50-YR event
Inflow = 5.9 cfs @ 12.28 hrs, Volume= 27,238 cf
Outflow = 5.9 cfs @ 12.28 hrs, Volume= 27,238 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.9 cfs @ 12.28 hrs, Volume= 27,238 cf
Routed to Pond DMH26 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 283.71' @ 12.28 hrs
Flood Elev= 293.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	282.10'	**15.0" Round Culvert** L= 113.0' Ke= 0.500 Inlet / Outlet Invert= 282.10' / 281.05' S= 0.0093 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.8 cfs @ 12.28 hrs HW=283.70' TW=282.20' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 5.8 cfs @ 4.74 fps)

Summary for Pond DMH26:

Inflow Area = 110,266 sf, 24.47% Impervious, Inflow Depth > 3.52" for 50-YR event
Inflow = 7.0 cfs @ 12.27 hrs, Volume= 32,305 cf
Outflow = 7.0 cfs @ 12.27 hrs, Volume= 32,305 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.0 cfs @ 12.27 hrs, Volume= 32,305 cf
Routed to Pond dmh11 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 282.21' @ 12.26 hrs
Flood Elev= 292.90'

Device	Routing	Invert	Outlet Devices
#1	Primary	280.80'	**18.0" Round Culvert** L= 126.4' Ke= 0.500 Inlet / Outlet Invert= 280.80' / 279.54' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=6.9 cfs @ 12.27 hrs HW=282.21' TW=279.35' (Dynamic Tailwater)
1=Culvert (Inlet Controls 6.9 cfs @ 4.04 fps)

Summary for Pond DMH3:

Inflow Area = 253,982 sf, 6.93% Impervious, Inflow Depth > 1.63" for 50-YR event
Inflow = 5.8 cfs @ 12.44 hrs, Volume= 34,493 cf
Outflow = 5.8 cfs @ 12.44 hrs, Volume= 34,493 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.8 cfs @ 12.44 hrs, Volume= 34,493 cf
Routed to Pond CB10 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.75' @ 12.44 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.97'	**15.0" Round Culvert** L= 82.0' Ke= 0.500 Inlet / Outlet Invert= 286.97' / 286.15' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=5.8 cfs @ 12.44 hrs HW=289.73' TW=288.56' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.8 cfs @ 4.69 fps)

Summary for Pond DMH5:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 3.41" for 50-YR event
Inflow = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf
Outflow = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf
Routed to Pond DMH5A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3

Peak Elev= 290.61' @ 13.00 hrs
Flood Elev= 297.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.40'	**24.0" Round Culvert** L= 126.7' Ke= 0.500 Inlet / Outlet Invert= 289.40' / 288.13' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.3 cfs @ 13.00 hrs HW=290.61' TW=289.24' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 7.3 cfs @ 5.25 fps)

Summary for Pond DMH5A:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 3.41" for 50-YR event
Inflow = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf
Outflow = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf
Routed to Pond DMH6 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 289.24' @ 13.00 hrs
Flood Elev= 294.80'

Device	Routing	Invert	Outlet Devices
#1	Primary	288.00'	**24.0" Round Culvert** L= 118.0' Ke= 0.500 Inlet / Outlet Invert= 288.00' / 286.82' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.3 cfs @ 13.00 hrs HW=289.24' TW=287.98' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 7.3 cfs @ 5.12 fps)

Summary for Pond DMH6:

Inflow Area = 238,760 sf, 3.98% Impervious, Inflow Depth > 3.41" for 50-YR event
Inflow = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf
Outflow = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.3 cfs @ 13.00 hrs, Volume= 67,831 cf
Routed to Pond CB30 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 287.99' @ 13.00 hrs
Flood Elev= 294.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	286.72'	**24.0" Round Culvert** L= 79.0' Ke= 0.500 Inlet / Outlet Invert= 286.72' / 285.92' S= 0.0101 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=7.3 cfs @ 13.00 hrs HW=287.98' TW=287.01' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 7.3 cfs @ 4.98 fps)

Summary for Pond DMH9:

Inflow Area = 450,957 sf, 34.83% Impervious, Inflow Depth > 3.01" for 50-YR event
Inflow = 21.0 cfs @ 12.10 hrs, Volume= 113,045 cf
Outflow = 21.0 cfs @ 12.10 hrs, Volume= 113,045 cf, Atten= 0%, Lag= 0.0 min
Primary = 21.0 cfs @ 12.10 hrs, Volume= 113,045 cf
Routed to Pond SFB2 : FOREBAY #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 280.61' @ 12.10 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	278.12'	**30.0" Round Culvert** L= 24.0' Ke= 0.500 Inlet / Outlet Invert= 278.12' / 278.00' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=20.8 cfs @ 12.10 hrs HW=280.59' TW=279.32' (Dynamic Tailwater)
1=Culvert (Barrel Controls 20.8 cfs @ 5.33 fps)

Summary for Pond DMHRD:

Inflow Area = 22,384 sf,100.00% Impervious, Inflow Depth > 6.36" for 50-YR event
Inflow = 3.2 cfs @ 12.09 hrs, Volume= 11,859 cf
Outflow = 3.2 cfs @ 12.09 hrs, Volume= 11,859 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.2 cfs @ 12.09 hrs, Volume= 11,859 cf
Routed to Pond CB28 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 290.20' @ 12.09 hrs
Flood Elev= 292.60'

Device	Routing	Invert	Outlet Devices
#1	Primary	289.10'	**18.0" Round Culvert** L= 28.0' Ke= 0.500 Inlet / Outlet Invert= 289.10' / 288.85' S= 0.0089 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=3.2 cfs @ 12.09 hrs HW=290.18' TW=289.85' (Dynamic Tailwater)
1=Culvert (Outlet Controls 3.2 cfs @ 3.26 fps)

Summary for Pond FB1: FILT. BASIN #1

Inflow Area = 441,592 sf, 16.08% Impervious, Inflow Depth > 3.35" for 50-YR event
Inflow = 14.0 cfs @ 12.26 hrs, Volume= 123,306 cf
Outflow = 5.0 cfs @ 13.85 hrs, Volume= 96,684 cf, Atten= 64%, Lag= 95.6 min
Discarded = 0.5 cfs @ 13.85 hrs, Volume= 21,655 cf
Primary = 4.5 cfs @ 13.85 hrs, Volume= 75,029 cf
Routed to Link D : future property line
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.00' @ 13.85 hrs Surf.Area= 15,769 sf Storage= 54,459 cf
Flood Elev= 278.00' Surf.Area= 17,354 sf Storage= 71,070 cf

Plug-Flow detention time= 205.4 min calculated for 96,483 cf (78% of inflow)
Center-of-Mass det. time= 126.6 min (980.3 - 853.7)

Volume	Invert	Avail.Storage	Storage Description
#1	271.50'	76,522 cf	**FILT. BASIN #1 (18" FILTER MEDIA) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
271.50	7,427	0.0	0	0
271.51	7,427	40.0	30	30
272.99	7,427	40.0	4,397	4,426
273.00	7,427	100.0	74	4,501
274.00	11,372	100.0	9,400	13,900
275.00	12,783	100.0	12,078	25,978
276.00	14,250	100.0	13,517	39,494
277.00	15,774	100.0	15,012	54,506
278.00	17,354	100.0	16,564	71,070
278.30	18,991	100.0	5,452	76,522

Device	Routing	Invert	Outlet Devices
#1	Discarded	271.50'	**1.253 in/hr Exfiltration over Surface area**
#2	Secondary	277.50'	**6.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69
#3	Primary	266.00'	**15.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 266.00' / 265.75' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#4	Device 3	277.30'	**48.0" x 48.0" Horiz. OS1 Conc. Horz. Rim** C= 0.600
#5	Device 3	273.95'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.60 0.60 2.00 2.00 2.70 2.70 3.35 Width (feet) 0.10 0.10 0.20 0.20 0.50 0.50 1.20 1.20

Discarded OutFlow Max=0.5 cfs @ 13.85 hrs HW=277.00' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.5 cfs)

Primary OutFlow Max=4.5 cfs @ 13.85 hrs HW=277.00' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Passes 4.5 cfs of 19.0 cfs potential flow)
  └**4=OS1 Conc. Horz. Rim** (Controls 0.0 cfs)
  └**5=Custom Weir/Orifice** (Weir Controls 4.5 cfs @ 4.08 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=271.50' TW=0.00' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond FB2: FILT. BASIN #2

Inflow Area = 513,437 sf, 30.59% Impervious, Inflow Depth > 2.74" for 50-YR event
Inflow = 21.0 cfs @ 12.10 hrs, Volume= 117,197 cf
Outflow = 4.0 cfs @ 13.13 hrs, Volume= 105,619 cf, Atten= 81%, Lag= 62.0 min
Discarded = 1.7 cfs @ 13.13 hrs, Volume= 86,750 cf
Primary = 2.3 cfs @ 13.13 hrs, Volume= 18,869 cf
Routed to Link D : future property line
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 278.97' @ 13.13 hrs Surf.Area= 18,860 sf Storage= 42,889 cf
Flood Elev= 280.00' Surf.Area= 20,820 sf Storage= 63,233 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 128.1 min (931.4 - 803.2)

Volume	Invert	Avail.Storage	Storage Description
#1	275.50'	63,233 cf	**FILT. BASIN #2 (18" FILTER MEDIA) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
275.50	15,250	0.0	0	0
275.51	15,250	40.0	61	61
276.99	15,250	40.0	9,028	9,089
277.00	15,250	100.0	152	9,241
278.00	17,050	100.0	16,150	25,391
279.00	18,907	100.0	17,979	43,370
280.00	20,820	100.0	19,864	63,233

Device	Routing	Invert	Outlet Devices
#1	Secondary	279.50'	**6.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69
#2	Discarded	275.50'	**3.818 in/hr Exfiltration over Surface area**
#3	Device 5	277.75'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.60 0.60 0.90 0.90 1.25 Width (feet) 0.10 0.10 0.50 0.50 2.50 2.50
#4	Device 5	279.00'	**48.0" x 48.0" Horiz. OS2 Conc. Horz. Rim** C= 0.600 Limited to weir flow at low heads
#5	Primary	272.00'	**15.0" Round Culvert** L= 51.0' Ke= 0.500 Inlet / Outlet Invert= 272.00' / 271.50' S= 0.0098 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Discarded OutFlow Max=1.7 cfs @ 13.13 hrs HW=278.97' (Free Discharge)
└**2=Exfiltration** (Exfiltration Controls 1.7 cfs)

Primary OutFlow Max=2.3 cfs @ 13.13 hrs HW=278.97' TW=0.00' (Dynamic Tailwater)
└**5=Culvert** (Passes 2.3 cfs of 14.9 cfs potential flow)
  └**3=Custom Weir/Orifice** (Weir Controls 2.3 cfs @ 2.25 fps)
  └**4=OS2 Conc. Horz. Rim** (Controls 0.0 cfs)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=275.50' TW=0.00' (Dynamic Tailwater)
└**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond OS3: Detention Basin #1

[90] Warning: Qout>Qin may require smaller dt or Finer Routing
[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=19)

Inflow Area = 217,984 sf, 0.97% Impervious, Inflow Depth > 3.43" for 50-YR event
Inflow = 7.0 cfs @ 13.03 hrs, Volume= 62,353 cf
Outflow = 7.1 cfs @ 13.00 hrs, Volume= 62,156 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.1 cfs @ 13.00 hrs, Volume= 62,156 cf
  Routed to Pond DMH5 :
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
  Routed to Pond cb21 :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 294.50' @ 13.00 hrs Surf.Area= 1,190 sf Storage= 483 cf
Flood Elev= 296.00' Surf.Area= 2,642 sf Storage= 3,352 cf

Plug-Flow detention time= 4.6 min calculated for 62,156 cf (100% of inflow)
Center-of-Mass det. time= 2.9 min (885.8 - 883.0)

Volume	Invert	Avail.Storage	Storage Description
#1	293.99'	3,352 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
293.99	693	0	0
296.00	2,642	3,352	3,352

Device	Routing	Invert	Outlet Devices
#1	Primary	290.00'	**18.0" Round Culvert** L= 100.0' Ke= 0.500 Inlet / Outlet Invert= 290.00' / 289.00' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#2	Device 1	294.50'	**60.0" x 60.0" Horiz. OS3 Conc. Horz. Rim** C= 0.600
#3	Device 1	294.00'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.50 Width (feet) 0.75 0.75
#4	Secondary	295.50'	**3.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65

2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=7.1 cfs @ 13.00 hrs HW=294.50' TW=290.61' (Dynamic Tailwater)
↑**1=Culvert** (Passes 7.1 cfs of 15.3 cfs potential flow)
↑**2=OS3 Conc. Horz. Rim** (Orifice Controls 6.2 cfs @ 0.25 fps)
3=Custom Weir/Orifice (Orifice Controls 0.9 cfs @ 2.33 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=293.99' TW=286.80' (Dynamic Tailwater)
↑**4=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond SFB1: FOREBAY #1

Inflow Area = 410,801 sf, 17.29% Impervious, Inflow Depth > 3.55" for 50-YR event
Inflow = 13.8 cfs @ 12.26 hrs, Volume= 121,525 cf
Outflow = 13.8 cfs @ 12.26 hrs, Volume= 121,525 cf, Atten= 0%, Lag= 0.0 min
Primary = 13.8 cfs @ 12.26 hrs, Volume= 121,525 cf
Routed to Pond FB1 : FILT. BASIN #1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.72' @ 12.26 hrs Surf.Area= 3,705 sf Storage= 0 cf
Flood Elev= 278.00' Surf.Area= 4,014 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	274.00'	0 cf	**FOREBAY #1 (0% Voids) (Prismatic)** Listed below (Recalc) 8,280 cf Overall x 0.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
274.00	628	0	0
275.00	1,144	886	886
276.00	1,915	1,530	2,416
277.00	2,900	2,408	4,823
278.00	4,014	3,457	8,280

Device	Routing	Invert	Outlet Devices
#1	Primary	277.10'	**10.4' long x 15.6' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=13.7 cfs @ 12.26 hrs HW=277.72' TW=274.54' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 13.7 cfs @ 2.12 fps)

Summary for Pond SFB2: FOREBAY #2

[80] Warning: Exceeded Pond DMH9 by 0.02' @ 0.65 hrs (0.6 cfs 392 cf)

Inflow Area = 482,983 sf, 32.52% Impervious, Inflow Depth > 2.87" for 50-YR event
Inflow = 21.0 cfs @ 12.10 hrs, Volume= 115,614 cf
Outflow = 21.0 cfs @ 12.10 hrs, Volume= 115,614 cf, Atten= 0%, Lag= 0.0 min
Primary = 21.0 cfs @ 12.10 hrs, Volume= 115,614 cf
Routed to Pond FB2 : FILT. BASIN #2

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 279.32' @ 12.10 hrs Surf.Area= 3,139 sf Storage= 0 cf
Flood Elev= 280.00' Surf.Area= 3,774 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	276.50'	0 cf	**FOREBAY #2 (0% VOIDS) (Prismatic)** Listed below (Recalc) 7,716 cf Overall x 0.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
276.50	741	0	0
277.00	1,132	468	468
278.00	1,958	1,545	2,013
279.00	2,837	2,398	4,411
280.00	3,774	3,306	7,716

Device	Routing	Invert	Outlet Devices
#1	Primary	278.80'	**21.0' long + 0.1 '/' SideZ x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69

Primary OutFlow Max=20.9 cfs @ 12.10 hrs HW=279.32' TW=277.38' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 20.9 cfs @ 1.90 fps)

Summary for Pond TD1:

Inflow Area = 36,281 sf,100.00% Impervious, Inflow Depth > 6.36" for 50-YR event
Inflow = 5.3 cfs @ 12.09 hrs, Volume= 19,221 cf
Outflow = 5.3 cfs @ 12.09 hrs, Volume= 19,221 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.3 cfs @ 12.09 hrs, Volume= 19,221 cf
Routed to Pond CB13A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 292.60' @ 12.09 hrs
Flood Elev= 300.00'

Device	Routing	Invert	Outlet Devices
#1	Primary	290.70'	**24.0" Round Culvert** L= 102.3' Ke= 0.500 Inlet / Outlet Invert= 290.70' / 289.66' S= 0.0102 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.1 cfs @ 12.09 hrs HW=292.56' TW=292.37' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 5.1 cfs @ 2.20 fps)

Summary for Link 1: StreamStats Flow

Peak flow rates from Pea-Plow Statistics Floew Report [Peak Flow Statewide SIR2008 5206]

Inflow Area = 1,951,488 sf, 0.00% Impervious, Inflow Depth = 0.34" for 50-YR event
Inflow = 15.5 cfs @ 12.00 hrs, Volume= 55,800 cf
Primary = 15.5 cfs @ 12.00 hrs, Volume= 55,800 cf, Atten= 0%, Lag= 0.0 min
Routed to Reach 5R : 48" RCP - Naturalized Bottom

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

50-YR 25 Point manual hydrograph, To= 0.00 hrs, dt= 1.00 hrs, Area= 1,951,488 sf, cfs =

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	15.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00					

Summary for Link A: 14-44-38

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link B: 14-47

[43] Hint: Has no inflow (Outflow=Zero)

Primary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link D: future property line

Inflow Area = 1,122,915 sf, 20.31% Impervious, Inflow Depth > 1.12" for 50-YR event
Inflow = 6.8 cfs @ 13.65 hrs, Volume= 104,474 cf
Primary = 6.8 cfs @ 13.65 hrs, Volume= 104,474 cf, Atten= 0%, Lag= 0.0 min
Routed to nonexistent node R1

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link E: 14-38-0

Inflow Area = 1,986,435 sf, 0.00% Impervious, Inflow Depth > 0.35" for 50-YR event
Inflow = 15.5 cfs @ 12.00 hrs, Volume= 57,636 cf
Primary = 15.5 cfs @ 12.00 hrs, Volume= 57,636 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link F: 14-38-0

Inflow Area = 305,720 sf, 0.00% Impervious, Inflow Depth > 2.26" for 50-YR event
Inflow = 5.2 cfs @ 13.36 hrs, Volume= 57,599 cf
Primary = 5.2 cfs @ 13.36 hrs, Volume= 57,599 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	50-YR	Type III 24-hr		Default	24.00	1	6.60	2

Summary for Pond FB1: FILT. BASIN #1

Inflow Area = 441,592 sf, 16.08% Impervious, Inflow Depth > 3.35" for 50-YR event
Inflow = 14.0 cfs @ 12.26 hrs, Volume= 123,306 cf
Outflow = 5.4 cfs @ 13.75 hrs, Volume= 92,252 cf, Atten= 61%, Lag= 89.7 min
Primary = 5.4 cfs @ 13.75 hrs, Volume= 92,252 cf
Routed to Link D : future property line
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 277.16' @ 13.75 hrs Surf.Area= 16,024 sf Storage= 57,019 cf
Flood Elev= 278.00' Surf.Area= 17,354 sf Storage= 71,070 cf

Plug-Flow detention time= 223.0 min calculated for 92,252 cf (75% of inflow)
Center-of-Mass det. time= 136.8 min (990.5 - 853.7)

Volume	Invert	Avail.Storage	Storage Description
#1	271.50'	76,522 cf	**FILT. BASIN #1 (18" FILTER MEDIA) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
271.50	7,427	0.0	0	0
271.51	7,427	40.0	30	30
272.99	7,427	40.0	4,397	4,426
273.00	7,427	100.0	74	4,501
274.00	11,372	100.0	9,400	13,900
275.00	12,783	100.0	12,078	25,978
276.00	14,250	100.0	13,517	39,494
277.00	15,774	100.0	15,012	54,506
278.00	17,354	100.0	16,564	71,070
278.30	18,991	100.0	5,452	76,522

Device	Routing	Invert	Outlet Devices
#1	Secondary	277.50'	**6.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69
#2	Primary	266.00'	**15.0" Round Culvert** L= 40.0' Ke= 0.500 Inlet / Outlet Invert= 266.00' / 265.75' S= 0.0063 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#3	Device 2	277.30'	**48.0" x 48.0" Horiz. OS1 Conc. Horz. Rim** C= 0.600
#4	Device 2	273.95'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.60 0.60 2.00 2.00 2.70 2.70 3.35 Width (feet) 0.10 0.10 0.20 0.20 0.50 0.50 1.20 1.20

Primary OutFlow Max=5.4 cfs @ 13.75 hrs HW=277.16' TW=0.00' (Dynamic Tailwater)
└─**2=Culvert** (Passes 5.4 cfs of 19.2 cfs potential flow)
  └─**3=OS1 Conc. Horz. Rim** (Controls 0.0 cfs)
  └─**4=Custom Weir/Orifice** (Weir Controls 5.4 cfs @ 4.15 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=271.50' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond FB2: FILT. BASIN #2

Inflow Area = 513,445 sf, 30.59% Impervious, Inflow Depth > 2.74" for 50-YR event
Inflow = 21.0 cfs @ 12.10 hrs, Volume= 117,201 cf
Outflow = 11.7 cfs @ 12.50 hrs, Volume= 80,093 cf, Atten= 44%, Lag= 24.3 min
Primary = 11.7 cfs @ 12.50 hrs, Volume= 80,093 cf
Routed to Link D : future property line
Secondary = 0.0 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link D : future property line

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 279.28' @ 12.50 hrs Surf.Area= 19,445 sf Storage= 48,768 cf
Flood Elev= 280.00' Surf.Area= 20,820 sf Storage= 63,233 cf

Plug-Flow detention time= 222.6 min calculated for 79,927 cf (68% of inflow)
Center-of-Mass det. time= 114.5 min (917.7 - 803.2)

Volume	Invert	Avail.Storage	Storage Description
#1	275.50'	63,233 cf	**FILT. BASIN #2 (18" FILTER MEDIA) (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
275.50	15,250	0.0	0	0
275.51	15,250	40.0	61	61
276.99	15,250	40.0	9,028	9,089
277.00	15,250	100.0	152	9,241
278.00	17,050	100.0	16,150	25,391
279.00	18,907	100.0	17,979	43,370
280.00	20,820	100.0	19,864	63,233

Device	Routing	Invert	Outlet Devices
#1	Secondary	279.50'	**6.0' long x 9.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.46 2.55 2.70 2.69 2.68 2.68 2.67 2.64 2.64 2.64 2.65 2.64 2.65 2.65 2.66 2.67 2.69
#2	Device 4	277.75'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.60 0.60 0.90 0.90 1.25 Width (feet) 0.10 0.10 0.50 0.50 2.50 2.50
#3	Device 4	279.00'	**48.0" x 48.0" Horiz. OS2 Conc. Horz. Rim** C= 0.600 Limited to weir flow at low heads
#4	Primary	272.00'	**15.0" Round Culvert** L= 51.0' Ke= 0.500 Inlet / Outlet Invert= 272.00' / 271.50' S= 0.0098 '/' Cc= 0.900

n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf

Primary OutFlow Max=11.7 cfs @ 12.50 hrs HW=279.28' TW=0.00' (Dynamic Tailwater)
└─**4=Culvert** (Passes 11.7 cfs of 15.2 cfs potential flow)
  ├─**2=Custom Weir/Orifice** (Orifice Controls 3.9 cfs @ 3.56 fps)
  └─**3=OS2 Conc. Horz. Rim** (Weir Controls 7.8 cfs @ 1.73 fps)

Secondary OutFlow Max=0.0 cfs @ 0.00 hrs HW=275.50' TW=0.00' (Dynamic Tailwater)
└─**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

PART 6

RIPRAP CALCULATIONS

SNHGEC
North Wentworth Ave.
Londonderry, NH 03053
Date: sept. 16, 2025
Revised: dec. 18 2025
Project No.: 18252.02

OUTLET	Do (ft.)	Q25 (cfs)	Tw (ft.)	La (ft.)	Wup (ft.)	Wdn (ft.)	d50 (in.)*
Headwall1(DMH11)	2.00	10.3	1.8	24.9	6.0	16.0	6.0
Headwall2 (CB16)	1.25	0.1	0.1	8.9	3.8	12.6	6.0
Headwall3 (OS1)	1.25	2.3	0.1	11.7	3.8	15.5	6.0
Headwall4 (OS2)	1.25	0.3	0.1	9.1	3.8	12.9	6.0
Headwall5 (DMH9)	2.50	16.9	2.0	30.3	7.5	19.6	6.0

*Note:6"min.

Notes:

1 Use NHDOT Class C Stone
2 Depth of Stone to be 12" min. or 1.5 times d50 - which ever is larger
3 Actual riprap dimensions may vary from calculations. See Plans.

Calculations

1. 'When Tw < 0.5Do at pipe outlet:
La = 1.8Q/Do^3/2 + 7Do
Wup = 3Do
Wdn = 3Do + La
d50 = (0.02Q^4/3)/(TwDo)

2. When Tw > or = 0.5Do at pipe outlet:
La = 3Q/Do^3/2 + 7Do
Wup = 3Do
Wdn = 3Do + 0.4La
d50 = (0.02Q^4/3)/(TwDo)

Where:
Tw is the tailwater depth at the outlet of the pipe or channel
Do is the diameter of the pipe or the width of channel
Q is the discharge from the pipe of channel
La is the length of apron
Wup is the upstream width of apron
Wdn is the downstream width of apron
d50 is the median stone diameter

Summary Tables

(25-Year Storm)

PRE-DEVELOPMENT SWALES TABLE

Node (#)	Location	Cross-Section	Slope (Ft/Ft)	Manning's (N)	Peak Discharge (CFS)	Flow Depth (Ft)	Peak Velocity (FPS)
3R	OFFSITE TO LINK E	4.0' by 2.5'	0.061	0.069	12.10	0.42	6.5

POST-DEVELOPMENT PIPES/SWALES

Node (#)	Location	Size (in)	Type	Length (Ft)	Slope (Ft/Ft)	Manning's (N)	Peak Discharge (CFS)	Flow Depth (Ft)	Peak Velocity (FPS)
CB10	CB10 TO CB12	15	HDPE	169	0.010	0.013	3.8	1.10	3.5
CB12	CB12 TO CB18	15	HDPE	60	0.010	0.013	4.3	0.20	4.7
CB13	CB13 TO CB14	18	HDPE	71	0.012	0.013	6.8	1.40	4.0
CB13A	CB13A TO CB13	18	HDPE	102	0.010	0.013	6.8	1.40	4.0
CB14	CB14 TO DMH9	30	HDPE	81	0.010	0.013	12.4	1.33	5.7
CB15	CB15 TO DMH5	15	HDPE	34	0.010	0.013	1.0	0.33	3.2
CB16	CB16 TO FB1	15	HDPE	62	0.029	0.013	0.0	0.10	0.9
CB17	CB17 TO DMH9	18	HDPE	108	0.015	0.013	4.8	1.00	4.7
CB18	CB18 TO CB17	18	HDPE	45	0.010	0.013	4.7	0.88	4.6
CB19	CB19 TO CB17	15	HDPE	50	0.010	0.013	0.3	0.12	2.6
CB23	CB23 TO CB24	15	HDPE	110	0.010	0.013	3.7	0.89	4.6
CB24	CB24 TO DMH25	15	HDPE	82	0.011	0.013	4.3	0.92	4.6
CB27	CB27 TO DMH26	15	HDPE	28	0.010	0.013	1.0	0.26	3.2
CB28	CB28 TO DMH11	18	HDPE	21	0.010	0.013	3.4	0.75	4.0
CB3	CB3 TO DMH3	15	HDPE	90	0.010	0.013	3.6	1.08	3.4

Summary Tables

(25-Year Storm)

CB30	CB30 TO DMH11	24	HDPE	92	0.010	0.013	5.5	1.02	3.4
CB4	CB4 TO CB3	15	HDPE	191	0.010	0.013	3.3	1.12	3.3
CB6	CB6 TO CB8A	24	HDPE	118	0.010	0.013	1.8	0.34	2.5
CB8A	CB8A TO CB14	15	HDPE	131	0.010	0.013	3.5	1.12	3.4
cb1	CB1 TO CB2	15	HDPE	22	0.010	0.013	1.0	1.03	3.1
cb2	CB2 TO DMH1	15	HDPE	155	0.009	0.013	2.0	0.33	4.1
cb20	CB20 TO CB21	15	HDPE	94	0.025	0.013	0.6	0.33	2.1
cb21	CB21 TO CB22	15	HDPE	44	0.009	0.013	2.5	0.76	3.6
cb22	CB22 TO DMH23	15	HDPE	73	0.010	0.013	3.2	0.77	4.6
dmh1	DMH1 TO CB12	15	HDPE	65	0.010	0.013	2.0	0.63	4.0
dmh11	DMH11 TO FB1	24	HDPE	41	0.006	0.013	10.3	1.67	4.7
dmh23	DMH23 TO DMH24	15	HDPE	58	0.010	0.013	3.2	1.13	4.0
dmh25	DMH25 TO DMH26	15	HDPE	113	0.009	0.013	4.3	1.23	3.7
DMH24	DMH24 TO CB23	15	HDPE	37	0.010	0.013	3.2	1.13	3.9
DMH26	DMH26 TO DMH11	18	HDPE	126	0.010	0.013	5.2	1.25	3.6
DMH3	DMH3 TO CB10	15	HDPE	82	0.010	0.013	3.6	1.09	4.5
DMH5	DMH5 TO DMH5A	24	HDPE	127	0.010	0.013	5.4	1.02	3.4
DMH5A	DMH5A TO DMH6	24	HDPE	118	0.010	0.013	5.4	0.94	4.9
DMH6	DMH6 TO CB30	24	HDPE	79	0.010	0.013	5.4	0.92	4.7
DMH9	DMH9 TO FB2	30	HDPE	24	0.005	0.013	16.9	2.06	5.0
DMHRD	DMHRD TO CB28	18	HDPE	28	0.009	0.013	2.7	0.76	3.2
TD1	TD1 TO CB13A	24	HDPE	102	0.010	0.013	4.4	1.24	2.2
OS1	OS1 TO HW3	15”	HDPE	40	0.006	0.013	2.1	0.17	4.0

Summary Tables

(25-Year Storm)

OS2	OS2 TO HW4	15”	HDPE	51	0.010	0.013	0.2	0.08	2.2
OS3	OS3 TO DMH5	18”	HDPE	100	0.010	0.013	4.2	1.21	3.5

POST-DEVELOPMENT SWALES TABLE

Node (#)	Location	Cross-Section	Slope (Ft/Ft)	Manning’s (N)	Peak Discharge (CFS)	Flow Depth (Ft)	Peak Velocity (FPS)
1R	PS40 TO SFB2	8’ by .5’	0.061	0.069	0.15	0.03	0.55
2R	PSM1 TO CB16	33 by .25’	0.057	0.041	0.02	0.01	0.47
5R	LINK 1 TO E	24” Dia. Arch	0.017	0.040	12.1	1.00	3.41

PART 7

Infiltration Feasibility Report

Southern New Hampshire Green Energy Campus
Tax Map 14 Lot 39
162 Litchfield Road
Londonderry, NH 03053
September 12, 2025
Revised December 18, 2025

Table of Contents

(a) Location of Practice

(b) Existing Topography at Location of Practice

(c) Test Pit Locations and Locations of Infiltration Tests

a. Plans of Proposed Practices

(d) Seasonal High-Water Table (SHWT) and Bedrock Elevations

(e) Profile Descriptions

a. Test Pit Logs

(f) Date Data Collected

(g) Summary of Design Infiltration Rate

a. Amoozemeter Field Data Sheets

(h) Attachments

a. USDA NRCS Soils Report (SEE PART2)
b. Site-Specific Soils Report (SEE PART2)

(a) Location of Practice

This project proposes construction of a 36,600± square foot Depackaging Building, 7,200 square foot Biogas Upgrading Yard, 5,250 square foot Interconnection Facility Yard, 14,100 square foot Process Building, and eight (8) Tribrid-Bioreactors with associated site improvements such as paved driveway, grading, utilities, and stormwater management areas. The subject parcel is identified as Tax Map 14 Lot 39 and is located at 162 Litchfield Road in Londonderry, NH.

An open and closed drainage system is proposed to attenuate, convey, and treat runoff from the proposed development. A series of catchbasins, sediment forebays, two (2) filtration basin, and one (1) detention basin will provide pretreatment/treatment and manage runoff for this phase of the project.

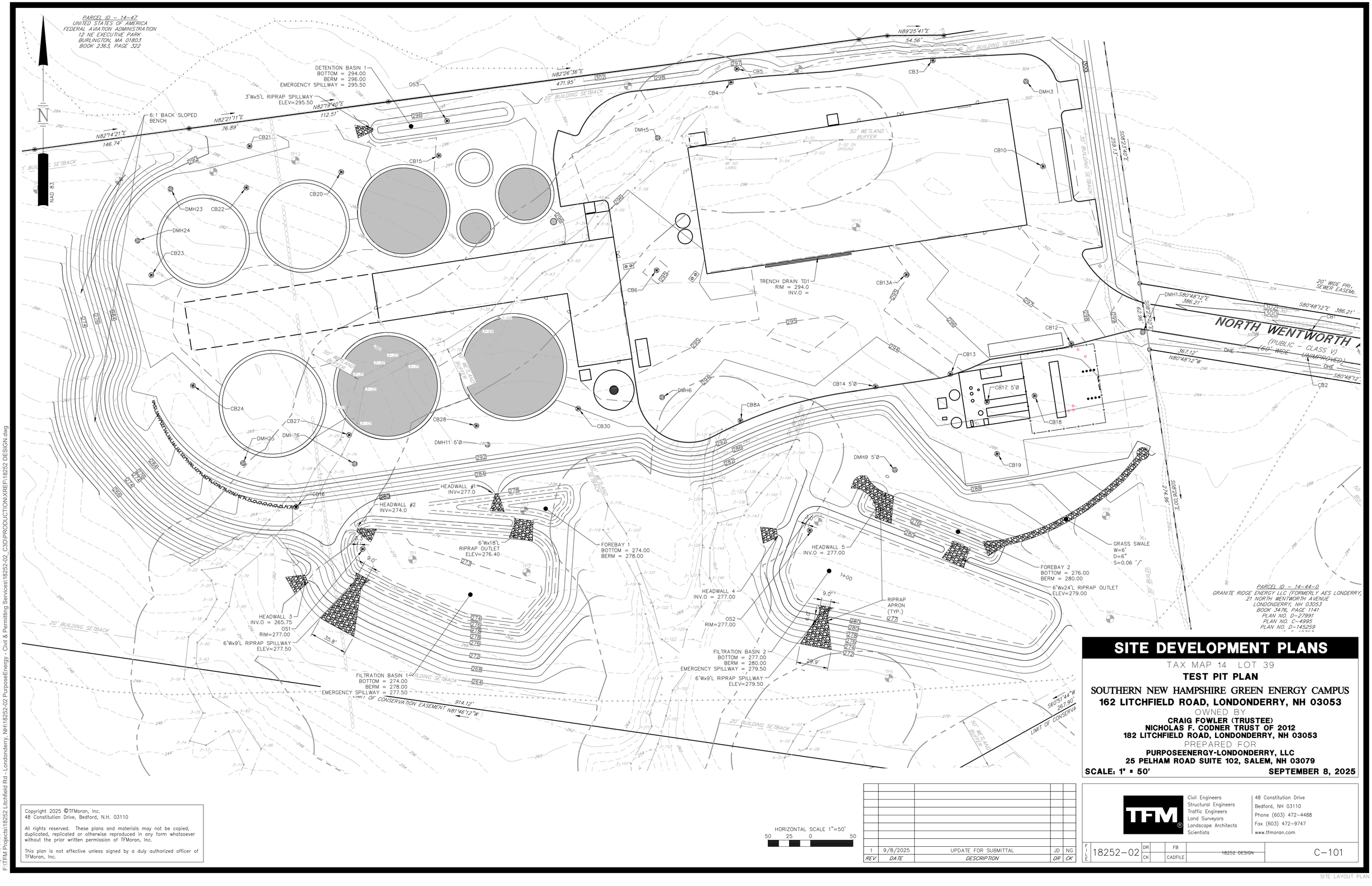
(b) Existing Topography at Location of Practice

The existing lot is a total of 47.3± which will undergo a subdivision. The proposed development will be located in the northern 15.3± acres of the existing parcel with the remainder of the parcel being donated for conservation purposes.

The proposed development is located within the Gateway Business (GB) zoning district. The site is abutted by a GB lots to the north and west, Industrial-II (IND-II) lots to the east, and Agricultural-Residential (AR-I) lots to the south.

Tax Map 14 Lot 39 is a vacant lot consisting of woods throughout the area of development with wetlands located in various areas throughout the site. Access to the proposed area of development will be from North Wentworth Avenue. Existing topography in the proposed area of work reflects a moderate elevational change from an approximate elevation of 306 in the northeastern portion of the property to an approximate elevation of 242 in the southwestern portion of the property.

(c) Test Pit Locations and Locations of Infiltration Tests



SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39

TEST PIT PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

162 LITCHFIELD ROAD, LONDONDERRY, NH 03053

OWNED BY

CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
182 LITCHFIELD ROAD, LONDONDERRY, NH 03053

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 50' **SEPTEMBER 8, 2025**

HORIZONTAL SCALE 1"=50'
50 25 0 50

REV	DATE	DESCRIPTION	DR	CK
1	9/8/2025	UPDATE FOR SUBMITTAL	JD	NG

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www.tfmoran.com

FILE 18252–02 | DR | CK | FB | CADFILE | 18252 DESIGN | C–101

Sep 12, 2025 - 7:16am
F:\TFM Projects\18252 Litchfield Rd - Londonderry, NH\18252-02 PurposeEnergy - Civil & Permitting Services\18252-02_C3D\PRODUCTION\XREF\18252 DESIGN.dwg

(d) Seasonal High-Water Table and Bedrock Elevations

Test Pit #1: **(Filtration Basin 1)**
Surface Elevation = 272.50
ESHWT= Observed @ 32” (Elev = 269.83)
Bedrock = None observed to 72” (Elev = 266.50)

Test Pit #2: **(Filtration Basin 1)**
Surface Elevation = 273.50
ESHWT= Observed @ 32” (Elev = 270.83)
Bedrock = None observed to 60” (Elev = 268.50)

Test Pit #3:
Surface Elevation = 276.60
ESHWT= Observed @ 34” (Elev = 273.77)
Bedrock = None observed to 60” (Elev = 271.60)

Test Pit #4: **(Filtration Basin 2)**
Surface Elevation = 276.90
ESHWT= Observed @ 32” (Elev = 274.23)
Bedrock = None observed to 60” (Elev = 271.90)

Test Pit #5: **(Filtration Basin 2)**
Surface Elevation = 272.80
ESHWT= Observed @ 32” (Elev = 270.13)
Bedrock = None observed to 60” (Elev = 267.80)

Test Pit #6:
Surface Elevation = 269.80
ESHWT= Observed @ 16” (Elev = 268.47)
Bedrock = None observed to 38” (Elev = 266.63)

Test Pit #7: **(Filtration Basin 2)**
Surface Elevation = 283.50
ESHWT= Observed @ 60” (Elev = 278.50)
Bedrock = None observed to 72” (Elev = 277.50)

Test Pit #8:
Surface Elevation = 286.80
ESHWT= Observed @ 40” (Elev = 283.47)
Bedrock = None observed to 72” (Elev = 280.80)

Test Pit #9:
Surface Elevation = 277.50
ESHWT= Observed @ 30” (Elev = 275.00)
Bedrock = None observed to 60” (Elev = 272.50)

Test Pit #10:
Surface Elevation = 279.00
ESHWT= Observed @ 34” (Elev = 276.17)
Bedrock = None observed to 60” (Elev = 274.00)

Test Pit #11:
Surface Elevation = 285.90

ESHWT= Observed @ 30” (Elev = 283.40)
Bedrock = None observed to 68” (Elev = 280.23)

Test Pit #12:
Surface Elevation = 290.10
ESHWT= Observed @ 30” (Elev = 287.60)
Bedrock = None observed to 72” (Elev = 284.10)

Test Pit #13:
Surface Elevation = 301.70
ESHWT= None observed to 80” (Elev = 295.03)
Bedrock = None observed to 80” (Elev = 295.03)

Test Pit #14:
Surface Elevation = 300.05
ESHWT= Observed @ 28” (Elev = 297.72)
Bedrock = None observed to 66” (Elev = 294.55)

Test Pit #15:
Surface Elevation = 296.15
ESHWT= None observed to 80” (Elev = 289.48)
Bedrock = None observed to 80” (Elev = 289.48)

(e) Profile Descriptions

TEST PIT REPORT

for

PurposeEnergy-Londonderry, LLC
North Wentworth Avenue
Londonderry, NH

PREPARED FOR

PurposeEnergy-Londonderry, LLC
25 Pelham Road, Suite 102
Salem, NH
18252.02

PREPARED BY

TFMoran, Inc.
48 Constitution Drive
Bedford, NH 03110

May 12, 2025

Test Pit #1 5/12/2025

0-12” 10YR 2/2 Very Dark Brown, Sandy Loam, Granular, Friable, Medium roots

12-24” 10YR 3/3 Dark Brown, Loamy Sand, Granular Friable

24-38” 2.5Y 5/6 Light Olive Brown, Loamy Sand, Granular Friable,
Redox Concentrations @ 32” 7.5YR 5/8 common distinct

38-72” 2.5Y 6/2 Light Brownish Gray, Loamy Sand, Massive, Friable Saturated.

ESHWT: Obs @ 32”
Seeps: low volume seeps at 30”
Roots: obs to 36”
No Refusal @ 72”

Test Pit #2 5/5/2025

0-8” 10YR 2/2 Very Dark Brown, Loamy Sand, Granular, Friable, fine-medium roots

8-20” 10YR 5/6 Yellowish Brown, Med. Sand, Granular, Friable, moist

20-32” 10YR 5/4 Yellowish Brown, Medium Sand, Granular Friable, Saturated

32-45” 2.5Y 6/4 Light Yellowish Brown, Medium Sand Granular, Friable

Redox Concentrations @32” 7.5YR 5/4 common, distinct

45-60” 2.5Y 6/2 Light Brownish Gray, Loamy Fine Sand, Sub angular, Blocky, Friable

ESHWT: Obs @ 32”
Seeps: low volume seeps at 32”
Roots: obs to 40”
No Refusal @ 60”

Test Pit #3 5/12/2025

0-10” 10YR 2/2 Very Dark Brown, Loamy Sand,
Granular, Friable, medium Roots

10-20” 10YR 3/3 Dark Brown, Med. Sand, Granular, Friable,
Med fine roots

20-32” 2.5Y 5/6 Light Olive Brown, Med. Sand, Granular
Friable, Saturated, Rapid Seeps
Redox Conc. @ 34” 7.5YR 5/4 Common Distinct

32-60” 10YR 4/6 Dark Yellowish Brown, Fine Sand
Massive Friable Saturated-Rapid Seeps

ESHWT: Observed at 34”
Roots to 30”
Seeps At 20” Rapid
No Refusal @ 60”

Test Pit #4 5/12/2025

0-7” 10YR 3/2 Very Dark Grayish Brown, Loamy Sand,
Granular, Friable, medium Roots

7-12” 7.5YR 3/3 Dark Brown, Med. Sand, Granular, Friable,
Med fine roots

12-32” 10YR 5/6 Yellowish Brown, Med. Sand, Granular
Friable, Saturated, Seeps
Redox Conc. @ 32” 7.5YR 5/4 & 2.5Y 6/6 Common Distinct

32-60” 2.5Y 5/2 Grayish Brown, Fine Sand
Massive, Friable Saturated- Seeps

ESHWT: Observed at 32”
Roots to 30”
Seeps At 30” Rapid
No Refusal @ 60”

Test Pit #5 5/12/2025

0-10” 10YR 3/2 Very Dark Grayish Brown, Loamy Sand, Granular, Friable, medium Roots

10-27” 10YR 5/6 Yellowish Brown, Med. Sand, Granular, Friable, Med roots

27-75” 2.5Y 5/4 Light Olive Brown, Med. Sand, Granular Friable, Saturated, Seeps
Redox Conc. @ 32” 7.5YR 5/4 Common Distinct

32-60” 2.5Y 5/4 Light Olive Brown, Medium Sand Massive, Friable Saturated- Seeps

ESHWT: Observed at 32”
Roots to 30”
Seeps At 321” Rapid
No Refusal @ 60”

Test Pit #6 5/12/2025

0-4” 10YR 2/2 Very Dark Brown, Loamy Sand, Granular, Friable, medium Roots

4-12” 2.5Y 3/2 Very Dark Grayish Brown, Med. Sand, Massive, Friable, Saturated, Fine Roots

12-20” 10YR 5/4 Light Olive Brown, Loamy Sand, Friable, Saturated, Seeps
Redox Conc. @ 16” 7.5YR 5/8 Common Distinct

20-38” 2.5Y 6/2 Light Brownish Gray, Medium Sand Granular-slightly cemented Firm, Saturated- Seeps

ESHWT: Observed at 16”
Roots to 20”
Seeps At 20” Rapid
No Refusal @ 38”

Test Pit #7 5/12/2025

0-3” 10YR 3/2 Very Dark Grayish Brown, Loamy Sand, Granular, Friable, medium Roots

3-12” 10YR 4/3 Brown, Loamy Sand, Granular, Friable, Med roots

12-30” 10YR 5/6 Yellowish Brown, Med. Sand, Granular Friable,

30-54” 2.5Y 5/4 Light Olive Brown, Medium Sand Granular, Friable Fine Roots, Saturated, Seeps @48

54-72” 2.5Y 6/4 Light Yellowish Brown, Loamy Fine Sand, Massive, Friable Fine Roots, Saturated

Redox Conc. @ 60” 7.5YR 5/4 Common Distinct

ESHWT: Observed at 60”
Roots to 48”
Seeps At 48” Rapid
No Refusal @ 72”

Test Pit #8 5/12/2025

0-3” 10YR 2/2 Very Dark Brown, Loamy Sand, Granular, Friable, Fine Roots

3-10” 10YR 3/3 Dark Brown, Loamy. Sand, Granular, Friable, Coarse Roots

10-36” 10YR 5/6 Yellowish Brown, Med. Sand, Granular, Friable, Saturated, Seeps Large Boulder encountered at 24”, Saturated, Seeps at 24”

36-72” 2.5Y 6/3 Light Yellowish Brown, Gray, Loamy Sand Granular, Friable, Saturated- Seeps

Redox Concentrations @40” 5Y 5/4 Reddish Brown Common Distinct

ESHWT: Observed at 40”
Roots to 28”
Seeps At 24” Rapid
No Refusal @ 72”

Test Pit #9 5/12/2025

0-5” 10YR 2/2 Very Dark Brown, Loamy Sand,
Granular, Friable, medium Roots

5-20” 10YR 3/6 Brown, Gravelly Loamy Sand, Granular,
Friable, Med roots

20-34” 10YR 6/6 Brownish Yellow, Loamy Sand, Granular
Friable, Seeps, Saturated

34-60” 2.5Y 5/4 Light Olive Brown, Gravelly Loamy Sand
Massive, Friable Seeps, Saturated

Redox Conc. @ 30” 7.5YR 5/6 Common Distinct

ESHWT: Observed at 30”
Roots to 36”
Seeps At 30” Rapid
No Refusal @ 60”

Test Pit #10 5/12/2025

0-5” 10YR 2/2 Very Dark Brown, Loamy Sand,
Granular, Friable, medium Roots

5-17” 10YR 4/3 Brown, Loamy Sand, Granular,
Friable, Med roots

17-32” 10YR 5/6 Yellowish Brown, Med. Sand, Granular
Friable, Saturated, Seeps at 26”

32-60” 2.5Y 5/3 Light Olive Brown, Loamy Sand
Granular, Friable Fine Roots, Saturated,
Seeps @48, Large angular boulder encountered

Redox Conc. @ 34” 2.5Y 5/6 Common Distinct

ESHWT: Observed at 34”
Roots to 36”
Seeps At 26” Rapid
No Refusal @ 60”

Test Pit #11 5/12/2025

0-5” 10YR 2/2 Very Dark Brown, Loamy Sand,
Granular, Friable, medium Roots

5-15” 10YR 3/3 Dark Brown, Loamy Sand, Granular,
Friable, Med roots

15-32” 10YR 5/4 Yellowish Brown, Loamy Sand,
Massive, Friable Saturated, Coarse Roots, seeps
Redox concentrations @30” 10YR 5/8-Common, faint

32-48” 2.5Y 6/4 Light Yellowish Brown, Loamy Fine Sand
Sub angular, Blocky, Friable, Saturated, Seeps

48-68” 2.5Y 6/2 Light Brownish Gray, Loamy Fine Sand,
Sub angular, Blocky Friable, seeps, Saturated

Redox Conc. @ 60” 7.5YR 5/4 Common Distinct

ESHWT: Observed at 30”
Roots to 36”
Seeps At 18”
No Refusal @ 68”

Test Pit #12 5/12/2025

0-5” 10YR 2/2 Very Dark Brown, Loamy Sand,
Granular, Friable, medium Roots

5-16” 10YR 4/6 Dark Yellowish Brown, Loamy Sand, Granular,
Friable, Med roots

16-32” 10YR 5/6 Yellowish Brown, Loamy Sand, Granular
Friable, Fine Roots, Saturated, rapid seeps @ 24”
Redox Conc. @30” 10YR 4/4

32-78” 2.5Y 5/4 Light Olive Brown, Loamy Sand
Massive, Friable, Fine Roots, Saturated,
Seeps

Redox Conc. @ 30” 10YR 4/4 Common Distinct

ESHWT: Observed at 30”
Roots to 40”
Seeps At 24” Rapid
No Refusal @ 72”

Test Pit #13 5/12/2025

0-10” 10YR 3/3 Dark Brown, Loamy Sand,
Granular, Friable, medium Roots

10-22” 10YR 5/4 Yellowish Brown, Med.Sand, Granular,
Friable, Med roots

22-47” 2.5Y 6/4 Light Yellowish Brown, Med. Sand, Granular
Friable, Fine Roots

47-80” 2.5Y 5/6 Light Olive Brown, Med. Sand
Massive, Friable, Fine Roots,

ESHWT: None Obs. @ 80””
Roots to 48”
Seeps None Obs. @80”
No refusal @ 80”

Test Pit #14 5/12/2025

0-9” 10YR 2/2 Very Dark Brown, Loamy Sand,
Granular, Friable, medium Roots

9-26” 2.5Y 4/4 Olive Brown, Loamy Sand, Granular,
Friable, Med roots

26-38” 2.5Y 6/4 Light Yellowish Brown, Loamy Sand, Granular
Friable, Fine Roots, Saturated, seeps @ 30”
Redox Conc. @28” 10YR 5/8

38-66” 2.5Y 5/3 Light Olive Brown, Loamy Sand
Massive, Friable, Fine Roots, Saturated,
Seeps

Redox Conc. @ 28” 10YR 5/84 Common Distinct

ESHWT: Observed at 28”
Roots to 44”
Seeps At 30” Rapid
No Refusal @ 66”

Test Pit #15 5/12/2025

0-8”	10YR 2/2 Very Dark Brown, Loamy Sand, Granular, Friable, medium Roots
8-19”	10YR 3/4 Dark Yellowish Brown, Loamy Sand, Granular, Friable, Med roots
19-33”	10YR 5/4 Yellowish Brown, Medium Sand, Granular Friable, Fine Roots,
33-80”	10YR 6/4 Light Yellowish Brown, Med. Sand Single grain, loose

ESHWT: None Observed at 80”
Roots to 40”
Seeps: None Obs @ 80”
No Refusal @ 80”

(f) Date Data was collected:

Test Pits #1 to #15
Date: May 12, 2025
Performed by: Christopher Danforth, CWS

Infiltration Tests #1 to #15
Date: May 12, 2025
Performed by: Guillermo M. Sepulveda

Town/State: Londonderry, NH
TFM Project Name: Londonderry Green Energy Campus

(g) Summary of Design Infiltration Rate

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

Test Pit #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)	SCM HydroCAD Node
1	0.33	0.165	Filtration Basin 1
2	4.68	2.340	Filtration Basin 1
3	0.07	-	-
4	6.73	3.365	Filtration Basin 2
5	8.54	4.470	Filtration Basin 2
6*	-	-	-
7	29.55	14.775	-
8	10.65	5.325	-
9	2.47	1.235	-
10	0.86	0.43	-
12	0.13	-	-
13	28.47	14.235	Detention Basin 1
14	0.26	0.130	-
15	35.55	17.775	-

** too fast for amoozemeter*

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-01.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #1 conducted 1.5' Below EG @ TP-01							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
						Average	**0.33506**	**0.13191**
						Stand Dev	0.57223017	0.22528747
Sample Set 2 Coefficient A =		**0.000745**						
0.00	0.5	0.008333	105		0		0.00000	0
0.00	0.5	0.008333	105		0		0.00000	0
0.25	0.5	0.008333	105		3150		2.34545	0.92340384
0.00	0.5	0.008333	105		0		0.00000	0
0.25	0.5	0.008333	105		3150		2.34545	0.92340384
0.00	0.5	0.008333	105		0		0.00000	0
0.50	0.5	0.008333	105		6300		4.69089	1.84680768
						Average	**1.34025**	**0.52766**
						Stand Dev	1.845386849	0.72653026
						Average Combined		0.32979

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
1	0.33	0.16

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-02.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #2 conducted 1.5' Below EG @ TP-02							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
2.50	1	0.016667	105		15750		11.72723	4.6170192
2.75	1	0.016667	105		17325		12.89995	5.07872112
2.75	1	0.016667	105		17325		12.89995	5.07872112
2.25	1	0.016667	105		14175		10.55451	4.15531728
2.25	1	0.016667	105		14175		10.55451	4.15531728
2.50	1	0.016667	105		15750		11.72723	4.6170192
2.50	1	0.016667	105		15750		11.72723	4.6170192
						Average	**11.72723**	**4.61702**
						Stand Dev	0.957524219	0.37697804
Sample Set 2 Coefficient A =		**0.000745**						
2.50	1	0.016667	105		15750		11.72723	4.6170192
2.75	1	0.016667	105		17325		12.89995	5.07872112
2.50	1	0.016667	105		15750		11.72723	4.6170192
2.50	1	0.016667	105		15750		11.72723	4.6170192
2.25	1	0.016667	105		14175		10.55451	4.15531728
3.00	1	0.016667	105		18900		14.07267	5.54042304
2.50	1	0.016667	105		15750		11.72723	4.6170192
						Average	**12.06229**	**4.74893**
						Stand Dev	1.115481957	0.43916612
						Average Combined		4.68298

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
2	4.68	2.34

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-03.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #3 conducted 1.5' Below EG @ TP-03							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
						Average	**0.16753**	**0.06596**
						Stand Dev	0.443247584	0.17450692
Sample Set 2 Coefficient A =		**0.000745**						
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
						Average	**0.16753**	**0.06596**
						Stand Dev	0.443247584	0.17450692
						Average Combined		0.06596

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
3	0.07	0.03

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025		Project: 18252-00 Londonderry Green Energy Campus	
LOCATION: 162 Litchfield Road, Londonderry, NH 03053		AIR TEMPERATURE:	73°F
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)		NOTES:	
HORIZON: A		Test conducted 1.5' below EG at TP-04.	
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #4 conducted 1.5' Below EG @ TP-04							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
5.00	1	0.016667	105		31500		23.45446	9.23403839
4.00	1	0.016667	105		25200		18.76357	7.38723071
3.50	1	0.016667	105		22050		16.41812	6.46382688
3.00	1	0.016667	105		18900		14.07267	5.54042304
4.00	1	0.016667	105		25200		18.76357	7.38723071
3.25	1	0.016667	105		20475		15.24540	6.00212496
3.75	1	0.016667	105		23625		17.59084	6.92552879
						Average	**17.75837**	**6.99149**
						Stand Dev	3.060227886	1.20481413
Sample Set 2 Coefficient A =		**0.000745**						
3.50	1	0.016667	105		22050		16.41812	6.46382688
3.75	1	0.016667	105		23625		17.59084	6.92552879
3.75	1	0.016667	105		23625		17.59084	6.92552879
3.50	1	0.016667	105		22050		16.41812	6.46382688
3.50	1	0.016667	105		22050		16.41812	6.46382688
3.00	1	0.016667	105		18900		14.07267	5.54042304
3.50	1	0.016667	105		22050		16.41812	6.46382688
						Average	**16.41812**	**6.46383**
						Stand Dev	1.172722876	0.46170192
						Average Combined		6.72766

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
4	6.73	3.36

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-05.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #5 conducted 1.5' Below EG @ TP-05							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
4.75	1	0.016667	105		29925		22.28173	8.77233647
4.75	1	0.016667	105		29925		22.28173	8.77233647
5.00	1	0.016667	105		31500		23.45446	9.23403839
4.50	1	0.016667	105		28350		21.10901	8.31063455
4.75	1	0.016667	105		29925		22.28173	8.77233647
4.75	1	0.016667	105		29925		22.28173	8.77233647
4.75	1	0.016667	105		29925		22.28173	8.77233647
						Average	**22.28173**	**8.77234**
						Stand Dev	0.677071868	0.26656373
Sample Set 2 Coefficient A =		**0.000745**						
4.50	1	0.016667	105		28350		21.10901	8.31063455
4.50	1	0.016667	105		28350		21.10901	8.31063455
4.50	1	0.016667	105		28350		21.10901	8.31063455
4.75	1	0.016667	105		29925		22.28173	8.77233647
4.50	1	0.016667	105		28350		21.10901	8.31063455
4.25	1	0.016667	105		26775		19.93629	7.84893263
4.50	1	0.016667	105		28350		21.10901	8.31063455
						Average	**21.10901**	**8.31063**
						Stand Dev	0.677071868	0.26656373
						Average Combined		8.54149

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
5	8.54	4.27

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 2.5' below EG at TP-07.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	2.5 ft	2.5 ft	

Amoozemeter Data Calculation Sheet				18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #7 conducted 2.5' Below EG @ TP-07								Ksat	Ksat
Drop in Water		Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =			**0.000745**						
16.00		1	0.016667	105		100800		75.05426	29.5489229
16.50		1	0.016667	105		103950		77.39971	30.4723267
							Average	**76.22699**	**30.01062**
							Stand Dev	1.658480596	0.65294512
Sample Set 2 Coefficient A =			**0.000745**						
15.50		1	0.016667	105		97650		72.70882	28.625519
15.75		1	0.016667	105		99225		73.88154	29.0872209
16.00		1	0.016667	105		100800		75.05426	29.5489229
							Average	**73.88154**	**29.08722**
							Stand Dev	1.172722876	0.46170192
							Average Combined		29.54892

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
7	29.55	14.77

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-08.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #8 conducted 1.5' Below EG @ TP-08							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
5.50	1	0.016667	105		34650		25.79990	10.1574422
5.50	1	0.016667	105		34650		25.79990	10.1574422
5.75	1	0.016667	105		36225		26.97263	10.6191442
5.50	1	0.016667	105		34650		25.79990	10.1574422
5.50	1	0.016667	105		34650		25.79990	10.1574422
5.50	1	0.016667	105		34650		25.79990	10.1574422
5.25	1	0.016667	105		33075		24.62718	9.69574031
						Average	**25.79990**	**10.15744**
						Stand Dev	0.677071868	0.26656373
Sample Set 2 Coefficient A =		**0.000745**						
6.00	1	0.016667	105		37800		28.14535	11.0808461
6.25	1	0.016667	105		39375		29.31807	11.542548
6.00	1	0.016667	105		37800		28.14535	11.0808461
6.00	1	0.016667	105		37800		28.14535	11.0808461
6.25	1	0.016667	105		39375		29.31807	11.542548
5.75	1	0.016667	105		36225		26.97263	10.6191442
6.00	1	0.016667	105		37800		28.14535	11.0808461
						Average	**28.31288**	**11.14680**
						Stand Dev	0.809255667	0.31860459
						Average Combined		10.65212

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
8	10.65	5.33

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-09.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #9 conducted 1.5' Below EG @ TP-09							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
1.50	1	0.016667	105		9450		7.03634	2.77021152
1.50	1	0.016667	105		9450		7.03634	2.77021152
1.50	1	0.016667	105		9450		7.03634	2.77021152
1.50	1	0.016667	105		9450		7.03634	2.77021152
2.00	1	0.016667	105		12600		9.38178	3.69361536
1.75	1	0.016667	105		11025		8.20906	3.23191344
2.00	1	0.016667	105		12600		9.38178	3.69361536
						Average	**7.87400**	**3.10000**
						Stand Dev	1.115481957	0.43916612
Sample Set 2 Coefficient A =		**0.000745**						
1.00	1	0.016667	105		6300		4.69089	1.84680768
0.75	1	0.016667	105		4725		3.51817	1.38510576
1.00	1	0.016667	105		6300		4.69089	1.84680768
1.00	1	0.016667	105		6300		4.69089	1.84680768
1.00	1	0.016667	105		6300		4.69089	1.84680768
1.25	1	0.016667	105		7875		5.86361	2.3085096
1.00	1	0.016667	105		6300		4.69089	1.84680768
						Average	**4.69089**	**1.84681**
						Stand Dev	0.677071868	0.26656373
						Average Combined		2.47340

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
9	2.47	1.24

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-10.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #10 conducted 1.5' Below EG @ TP-10							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.50	1	0.016667	105		3150		2.34545	0.92340384
						Average	**2.17791**	**0.85745**
						Stand Dev	0.443247584	0.17450692
Sample Set 2 Coefficient A =		**0.000745**						
0.75	1	0.016667	105		4725		3.51817	1.38510576
0.75	1	0.016667	105		4725		3.51817	1.38510576
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.50	1	0.016667	105		3150		2.34545	0.92340384
						Average	**2.17791**	**0.85745**
						Stand Dev	1.055140299	0.41540957
						Average Combined		0.85745

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
10	0.86	0.43

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-12.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #12 conducted 1.5' Below EG @ TP-12							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.00	1	0.016667	105		0		0.00000	0
						Average	**0.33506**	**0.13191**
						Stand Dev	0.57223017	0.22528747
Sample Set 2 Coefficient A =		**0.000745**						
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
						Average	**0.33506**	**0.13191**
						Stand Dev	0.57223017	0.22528747
						Average Combined		0.13191

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
12	0.13	0.07

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 3' below EG at TP-13.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	3 ft	3 ft	

Amoozemeter Data Calculation Sheet				18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #13 conducted 3' Below EG @ TP-13								Ksat	Ksat
Drop in Water		Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =			**0.000745**						
15.50		1	0.016667	105		97650		72.70882	28.625519
15.50		1	0.016667	105		97650		72.70882	28.625519
							Average	**72.70882**	**28.62552**
							Stand Dev	0	0
Sample Set 2 Coefficient A =			**0.000745**						
15.50		1	0.016667	105		97650		72.70882	28.625519
15.00		1	0.016667	105		94500		70.36337	27.7021152
15.50		1	0.016667	105		97650		72.70882	28.625519
							Average	**71.92700**	**28.31772**
							Stand Dev	1.354143736	0.53312746
							Average Combined		28.47162

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
13	28.47	14.24

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025	Project: 18252-00 Londonderry Green Energy Campus		
LOCATION: 162 Litchfield Road, Londonderry, NH 03053	AIR TEMPERATURE:	73°F	
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)	NOTES:		
HORIZON: A	Test conducted 1.5' below EG at TP-14.		
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	1.5 ft	1.5 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #14 conducted 1.5' Below EG @ TP-14							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.00	1	0.016667	105		0		0.00000	0
0.25	1	0.016667	105		1575		1.17272	0.46170192
0.00	1	0.016667	105		0		0.00000	0
						Average	**0.33506**	**0.13191**
						Stand Dev	0.57223017	0.22528747
Sample Set 2 Coefficient A =		**0.000745**						
0.00	1	0.016667	105		0		0.00000	0
0.00	1	0.016667	105		0		0.00000	0
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.00	1	0.016667	105		0		0.00000	0
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.50	1	0.016667	105		3150		2.34545	0.92340384
0.00	1	0.016667	105		0		0.00000	0
						Average	**1.00519**	**0.39574**
						Stand Dev	1.253693489	0.49358011
						Average Combined		0.26383

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
14	0.26	0.13

Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists

Amoozemeter Field Data Sheet

DATE: May 12th, 2025		Project: 18252-00 Londonderry Green Energy Campus	
LOCATION: 162 Litchfield Road, Londonderry, NH 03053		AIR TEMPERATURE:	73°F
TEST BY: Guillermo M. Sepulveda			
SOIL MAP Symbol: 26B (NRCS)		NOTES:	
HORIZON: A		Test conducted 3' below EG at TP-15.	
DISTURBED SITE: N/A			
SOIL LOG RECORDED: See Test Pit Report			

SETUP CALCULATIONS	Sample Round 1	Sample Round 2	
D- Bottom of Hole to Ref line	21.34 cm	21.34 cm	
H - DEPTH OF H20 IN HOLE	18.29 cm	18.29 cm	
Coefficient A	0.000745	0.000745	
Depth to Test (Measured From EG)	3 ft	3 ft	

Amoozemeter Data Calculation Sheet			18252-00 - Londonderry Green Energy Campus					5/12/2025
Inf Test #15 conducted 3' Below EG @ TP-15							Ksat	Ksat
Drop in Water	Time	Min./hr.	Outflow C.F.		Outflow Q		(cm/hr)	(in/hr)
Sample Set 1 Coefficient A =		**0.000745**						
19.00	1	0.016667	105		119700		89.12694	35.0893459
20.00	1	0.016667	105		126000		93.81783	36.9361536
						Average	**91.47238**	**36.01275**
						Stand Dev	3.316961192	1.30589023
Sample Set 2 Coefficient A =		**0.000745**						
19.00	1	0.016667	105		119700		89.12694	35.0893459
19.00	1	0.016667	105		119700		89.12694	35.0893459
						Average	**89.12694**	**35.08935**
						Stand Dev	0	0
						Average Combined		35.55105

IT #	Avg. Infiltration Rate (in/hr)	Infil. Rate with FS=2 (in/hr)
15	35.55	17.78

PART 8

Inspection & Maintenance Manual

PurposeEnergy-Londonderry, LLC
Southern New Hampshire Green Energy Campus
North Wentworth Avenue, Londonderry, NH
September 12, 2025
Revised December 18, 2025

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Inspection & Maintenance Log

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Inspection Checklist and Inspection & Maintenance Plan

Description of Project

The Southern New Hampshire Green Energy Campus will reduce the waste management burden on New Hampshire by tackling the food waste problem. It will feature two connected resource recovery facilities.

- The first, RecycleWorks, will receive food waste that normally goes to landfill, including food that has passed its sell by date or is out of specification but is wrapped in glass, plastic, or metal packaging. RecycleWorks will remove the organic waste from that packaging and send it to the second facility on the campus,
- PurposeEnergy – Londonderry. PurposeEnergy will pump the food waste into tanks that digest it in a process similar to a human stomach. The tanks will also receive dairy waste directly by pipe from a local business, Stonyfield Yogurt. The digester tanks will produce renewable biogas that will be cleaned to pipeline quality and injected into the local natural gas network.

The Green Energy Campus is not a landfill; all of the material that comes to the campus will leave it either as recyclable material, renewable biogas, clean water, or biosolids (the residuals from digestion which will be sent to a compost facility for use as fertilizer). The net impact of the Southern New Hampshire Green Energy Campus is to

- divert 90% of solid waste away from New Hampshire landfills;
- reduce the escape of environmentally damaging methane gas resulting from decomposition of organic matter;
- support local business in the cost-effective and environmentally beneficial management of food manufacturing waste.

The site consists of the following major elements:

- 36,600 sf Depackaging Facility (RecycleWorks)
- A 14,100 sf Process Building, with future expansion of 9,800 sf (PurposeEnergy)
- tribrid bio-reactors
- 3 flow equalization tanks
- 26’ x 32’ screening room building
- A biogas upgrading yard
- An interconnection facility yard
- Truck scales
- Parking and trucking interconnection

An open and closed drainage system is proposed to attenuate, convey, and treat runoff from the proposed development. A series of catchbasins, sediment forebays, two (2) filtration basins and one (1) detention basin, strategically located though the site will provide pretreatment/treatment and manage runoff.

Responsible Party

Operator: PurposeEnergy-Londonderry, LLC

Address: PurposeEnergy-Londonderry, LLC

Contact: Sean O'Neill, oneail@purposeenergy.com, (917).776.6155

Stormwater Practices – Schedule of Maintenance

The following practices shall be inspected twice annually, once following snowmelt (spring) and once following leaf-drop (fall):

- Sediment Forebays
- Filtration/Detention Basins
- Catch Basin

The following practices shall be inspected annually following snowmelt (spring):

- Culvert
- Catch Basin
- Headwalls
- Riprap Aprons
- Swales

Stormwater Practices – Maintenance Guidelines

Treatment Practices
(Inspected twice a year)

Filtration/Detention Basin
Maintenance Requirements:

- To be inspected twice annually, once following snowmelt (spring) and once following leaf-drop (fall);
- Removal of debris from inlet and outlet structures;
- Removal of accumulated sediment;
- Periodic mowing of embankments;
- Removal of woody vegetation from embankments;
- Inspection and repair of embankments; and
- If an infiltration system does not drain within 72-hours following a rainfall event, then a qualified professional should assess the condition of the facility to determine measures required to restore infiltration function, including but not limiting to removal of accumulated sediments or reconstruction of the infiltration trench.

Pretreatment Practices
(Inspected twice a year)

Sediment Forebay
Maintenance Requirements:

- To be inspected at least twice annually, once following snowmelt and once following leaf-drop and cleaned as indicated by inspection;
- Conduct periodic mowing of embankments (two times per year) to control growth of woody vegetation on embankments;
- Remove debris from outlet structure;
- Remove and dispose of accumulated sediment; and
- Install and maintain a staff gage or other measuring device to indicate depth of sediment accumulation and level at which clean-out is required. It shall be cleaned out when sediment fills half the sump depth (minimum sump depth is 2 feet when clear).

Conveyance Practices
(Inspections As Noted)

Culvert
Maintenance Requirements:

- To be inspected at least twice annually, once following snow-melt (spring) and once following leaf drop (fall), and cleaned as indicated by inspection.
- Inspect culvert inlet, outlet, and structure.
- Remove accumulated sediments greater than 2 inches in depth and debris at the inlet, at the outlet, and within the conduit.
- Repair any erosion damage at the culvert's inlet and outlet.

Catch Basin
Maintenance Requirements:

- To be inspection a least twice annually, once following snow-melt and once following leaf-drop and cleaned as indicated by inspection;
- Sediment should be removed annually and when it approaches half the sump depth; and
- If floating hydrocarbons are observed during an inspection, the material should be removed immediately by skimming, absorbent materials, or other method and disposed of in conformance with applicable state and federal regulations.

Headwalls
Maintenance Requirements:

- Inspect at least once annually for accumulation of sediment and debris and for signs of erosion along embankments;
- Remove debris whenever observed during inspection; and
- Remove sediment when accumulation exceeds 25% of channel depth.

Riprap Apron/Plunge Pool
Maintenance Requirements:

- Inspect at least once annually for damage and deterioration; and
- Repair damages immediately.

Riprap Swales
Maintenance Requirements:

- Inspect at least once annually for damage and deterioration
- Remove lodged debris

- Repair damages immediately.

System Components

Access Driveway (North Wentworth Ave ROW):
Maintenance Requirements (only for section constructed by this site plan):

- Sediments and debris should be removed and disposed of from impervious areas by power-broom sweeping.
- Sweep at least two (2) times per year and on a more frequent basis depending on sanding operations.
- All resulting sweepings shall be collected and properly disposed of off-site in accordance with NHDES and other applicable requirements.

Driveway, Sidewalk, and Parking Areas:
Maintenance Requirements:

- Sediments and debris should be removed and disposed of from impervious areas by power-broom sweeping.
- Sweep at least two (2) times per year and on a more frequent basis depending on sanding operations.
- All resulting sweepings shall be collected and properly disposed of off-site in accordance with NHDES and other applicable requirements.

Lawns and Landscaping Areas:
Maintenance Requirements:

- Inspect, maintain, and repair as necessary development area lawns and landscaped areas to ensure a stabilized surface.
- Maintain lawn areas with healthy turf. Take steps to necessary to restore distressed turf to good health.
- Ensure that landscape mulch materials are refreshed as necessary and does not wash onto sidewalks or other adjacent surfaces.

Control of Invasive Plans

During maintenance activities, check for the presence of invasive plants. If invasive plants are found, they shall be controlled and removed in a safe manner as described on the following pages.

Invasive plants are introduced, alien, or non-native plants, which have been moved by people from their native habitat to a new area. Some exotic plants are imported for human use such as landscaping, erosion control, or food crops. They also can arrive as “hitchhikers” among shipments of other plants, seeds, packing materials or fresh produce. Invasive plants can cause harm by:

- Becoming weedy and overgrown;
- Killing established shade trees;
- Obstructing pipes and drainage systems
- Forming dense beds in water
- Lowering water levels in lakes, streams, and wetlands
- Destroying natural communities
- Promoting erosion on stream banks and hillsides
- Resisting control except by hazardous chemicals.

Inspection & Maintenance Log

Date	Inspector	BMPs checked	Maintenance Required

Deicing Plan

The project Chloride Management Plan is described in the following pages. Also attached is a Deicing log to be used to document maintenance procedures, and the current NHDES Fact Sheet.

Beaver Brook has been declared an impacted watershed in need of corrective action due to Chloride loading, most notably resulting from winter maintenance activities. Londonderry has a Salt Reduction Plan (SRP) that provides a procedural framework for the Town of Londonderry to continuously strive to improve winter maintenance operations while effectively and efficiently using road salt during the snow and ice removal operations. Londonderry will provide winter maintenance to town roadways, parking lots, and sidewalks in accordance with Londonderry's Winter Maintenance Snow and Ice Control Policy while striving to minimize adverse impacts to the environment by:

- Adhering to the procedures contained within the SRP;
- Committing to ongoing winter maintenance staff training and education;
- Reporting fiscal year salt usage to New Hampshire Department of Environmental Services (NHDES);
- Re-evaluating the effectiveness of the SRP as needed to incorporate new technologies or changes in procedures.

Under the existing SRP, the Town has identified four strategies to help meet the Total Maximum Demand Load allocation within the Little Cohas Brook / Cohas Brook Watershed. The current load is estimated at 854.47 tons/year imported to the watershed. The town's reduction goals are 6% for year one, 12% for year two, and 18% for year three to be achieved from the following strategies.

- Equipment upgrade pilot project;
- Improved calibration;
- Private sector outreach;
- Improved weather system monitoring.

NHDES will monitor the progress made by each community impacting the Little Cohas Brook / Cohas Brook watershed and may require modifications to each plan. In recognition of the Little Cohas Brook / Cohas Brook Watershed chloride reduction plan for Londonderry, and that approximately 40% of the chloride impact is a result of winter operations on private roadways and parking lots, the PurposeEnergy-Londonderry, LLC will be guided by the following actions:

- Private Maintenance Contracting Equipment Upgrades and Training
  All snow removal contactors shall be **NH Certified Green SnowPro** contractors who have been trained and are knowledgeable of Best Management Practices (BMP) for snow removal with reduced salt application. These practices are published and are updated though the UNH – Technology Transfer (T2) program. All private contractors employed by PurposeEnergy-Londonderry, LLC roadway maintenance will use only pre-approved methods for spreading abrasives on private roadways and parking lots. When salt is applied, it will be applied only in accordance with best management practices and will include pre-treatment and ground speed-controlled spreaders.
- Improved Weather System Monitoring
  PurposeEnergy-Londonderry, LLC will coordinate weather information gathered by both the town and NHDOT for use by maintenance contractors. In doing so, contractors will

be able to make more informed decisions as to when and to what extent chloride is applied to roadways, sidewalks, and parking lots;

- Increased Mechanical Removal Capabilities
  PurposeEnergy-Londonderry, LLC will endeavor to use mechanical removal means on a more frequent basis using more manpower and equipment than traditionally used to shorten plowing intervals and reduce the need for salting to break up hard packed snow. Shortened maintenance routes with shorter service intervals will be used to stay ahead of snowfall, thus reducing the need to sand and salt after snow and ice packing has already occurred.
- Public Awareness Campaign
  PurposeEnergy-Londonderry, LLC will inform all future developers, grantees, and tenants of the need to reduce salt application on roadways, parking lots, and sidewalks.

The manual, as with the Town's Salt Reduction Plan, is intended to be a dynamic document, modified as required based on knowledge gained from past practices and technological advancement to reflect chloride best management practices.

Deicing Data Form

Note: The operator shall report annual salt usage within the municipal boundaries to NHDES's New Hampshire Salt Management System Database at: https://www.nhms4.des.nh.gov/nh-resources/winter-maintenance/

Location: Southern New Hampshire Green Energy Campus North Wentworth Ave. Londonderry, NH 03053				
Date:				
Air Temperature	**Pavement Temperature**	**Relative Humidity**	**Dew Point**	**Sky**
Reason for applying:				
Area of Application:				
Chemical:				
Application Time:				
Application Amount:				
Observation (first day):				
Observation (after event):				
Observation (before next application):				

Name:

*__New Hampshire Certified Green SnowPro__ Applicator shall be employed for winter snow and ice management activities

Inspection Checklist

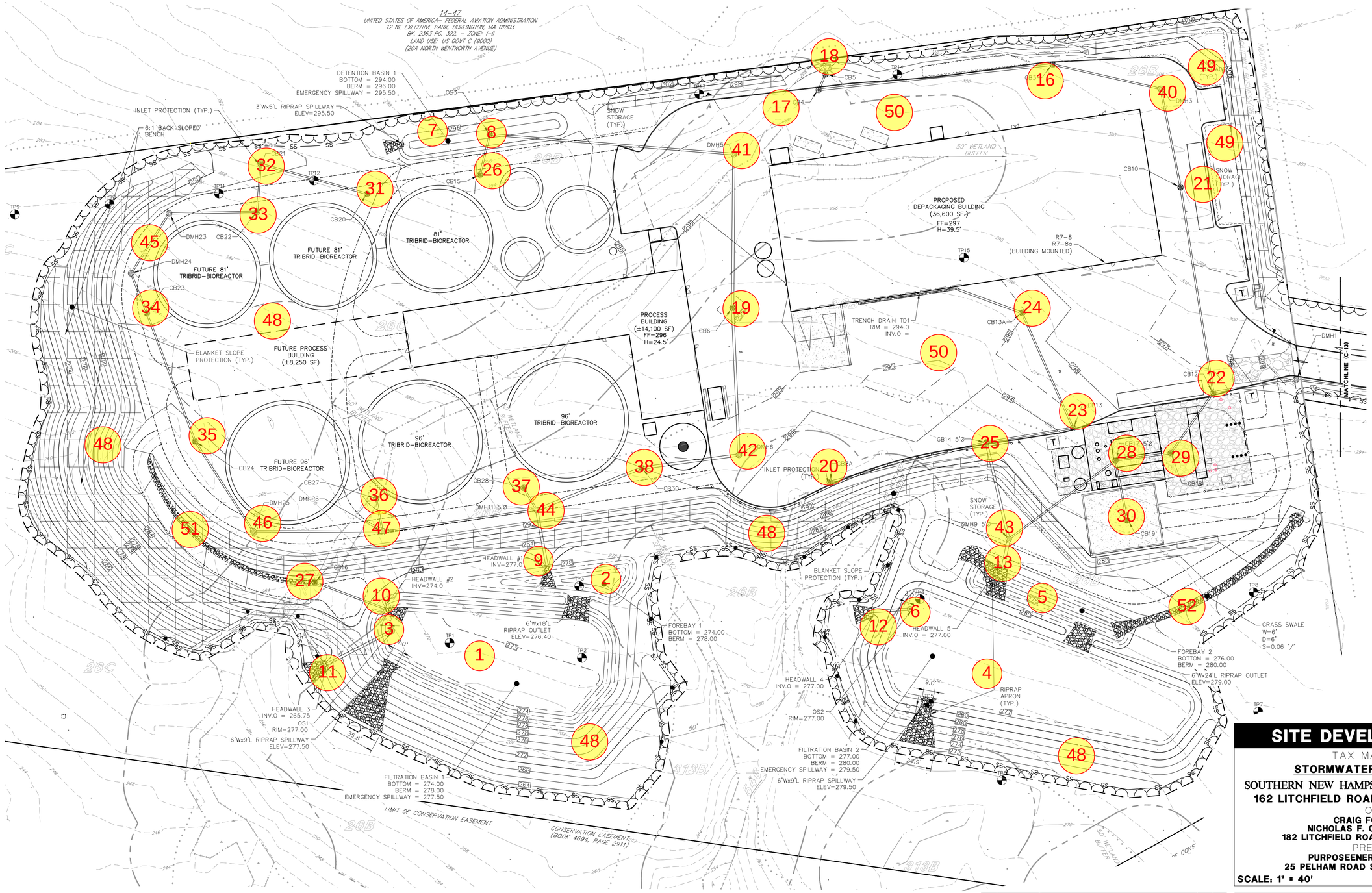
Date:	**Project Name: Southern New Hampshire Green Energy Campus**
Inspector's Name/Title:	
Inspector's Contact Information:	
☐ 1st Yearly Inspection ☐ 2nd Yearly Inspection	BMP's to be inspected: All BMP's to be inspected: Treatment and Pretreatment Practices

	BMP* **Refer to following Inspection & Maintenance Plan for BMP location**	Maintenance Required	Corrective Action Needed and Notes
1	Filtration Basin 1	☐ Yes ☐ No	
2	Forebay 1	☐ Yes ☐ No	
3	Outlet Structure 1	☐ Yes ☐ No	
4	Filtration Basin 2	☐ Yes ☐ No	
5	Forebay 2	☐ Yes ☐ No	
6	Outlet Structure 2	☐ Yes ☐ No	
7	Detention Basin 1	☐ Yes ☐ No	
8	Outlet Structure 3	☐ Yes ☐ No	
9	Headwall 1	☐ Yes ☐ No	
10	Headwall 2	☐ Yes ☐ No	
11	Headwall 3	☐ Yes ☐ No	
12	Headwall 4	☐ Yes ☐ No	

13	Headwall 5	☐ Yes ☐ No	
14	CB1	☐ Yes ☐ No	
15	CB2	☐ Yes ☐ No	
16	CB3	☐ Yes ☐ No	
17	CB4	☐ Yes ☐ No	
18	CB5	☐ Yes ☐ No	
19	CB6	☐ Yes ☐ No	
20	CB8A	☐ Yes ☐ No	
21	CB10	☐ Yes ☐ No	
22	CB12	☐ Yes ☐ No	
23	CB13	☐ Yes ☐ No	
24	CB13A	☐ Yes ☐ No	
25	CB14	☐ Yes ☐ No	
26	CB15	☐ Yes ☐ No	
27	CB16	☐ Yes ☐ No	
28	CB17	☐ Yes ☐ No	
29	CB18	☐ Yes ☐ No	
30	CB19	☐ Yes ☐ No	
31	CB20	☐ Yes ☐ No	
32	CB21	☐ Yes ☐ No	
33	CB22	☐ Yes ☐ No	
34	CB23	☐ Yes ☐ No	
35	CB24	☐ Yes ☐ No	

36	CB27	☐ Yes ☐ No	
37	CB28	☐ Yes ☐ No	
38	CB30	☐ Yes ☐ No	
39	DMH1	☐ Yes ☐ No	
40	DMH3A	☐ Yes ☐ No	
41	DMH5	☐ Yes ☐ No	
42	DMH6	☐ Yes ☐ No	
43	DMH9	☐ Yes ☐ No	
44	DMH11	☐ Yes ☐ No	
45	DMH24	☐ Yes ☐ No	
46	DMH25	☐ Yes ☐ No	
47	DMH26	☐ Yes ☐ No	
48	Development Area Lawns (Typ.)	☐ Yes ☐ No	
49	Development Area Landscaping (Typ.)	☐ Yes ☐ No	
50	Parking Lot & Driveway Sweeping (Typ.)	☐ Yes ☐ No	
51	Swale R1		
52	Swale R2		
	Other	☐ Yes ☐ No	
52			

*Best Management Practices
**Photographs of BMPs shall be included as part of the required Inspections
***Copies of Inspection & Maintenance Records shall be provided to the Town of Londonderry on an annual basis and the NHDES AoT Bureau upon request
**** SWPPP reports shall be provided via e-mail to the Town of Londonderry at the same time they are provide to the Contractor and Owner



SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39

STORMWATER MANAGEMENT PLAN

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

162 LITCHFIELD ROAD, LONDONDERRY, NH 03053

OWNED BY

CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
182 LITCHFIELD ROAD, LONDONDERRY, NH 03053

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 40' **SEPTEMBER 8, 2025**

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STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/2025

HORIZONTAL SCALE 1"=40'
40 20 0 40

REV	DATE	DESCRIPTION	DR	CK
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE 18252-02 | DR | FB | CADFILE 18252-02 SITE PLAN | C-12

Sep 12, 2025 - 10:58am
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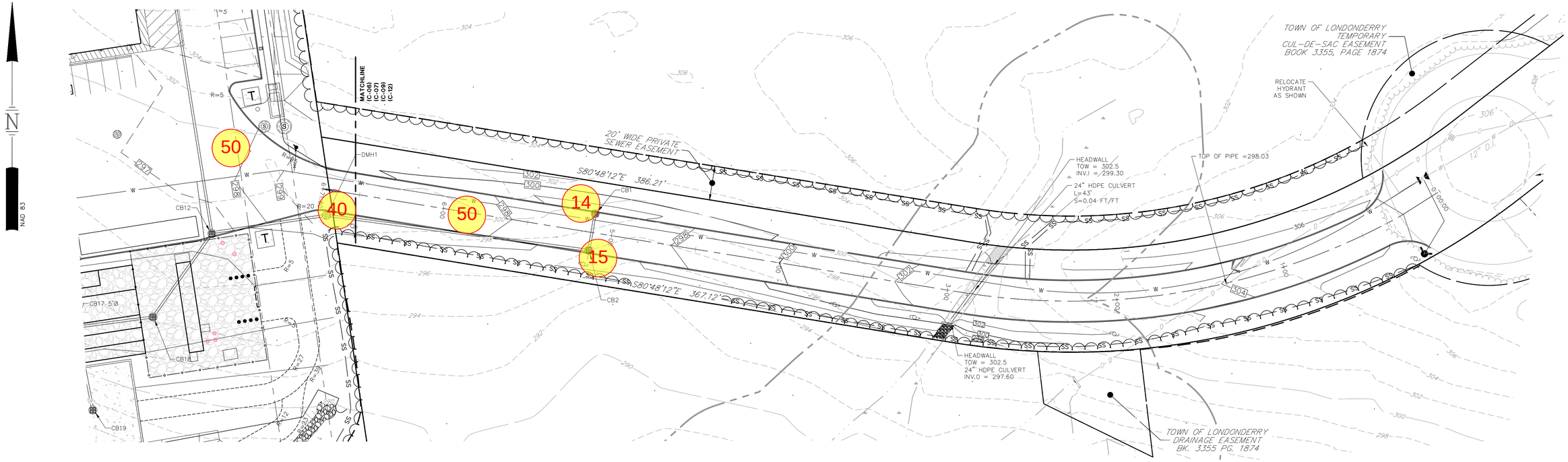

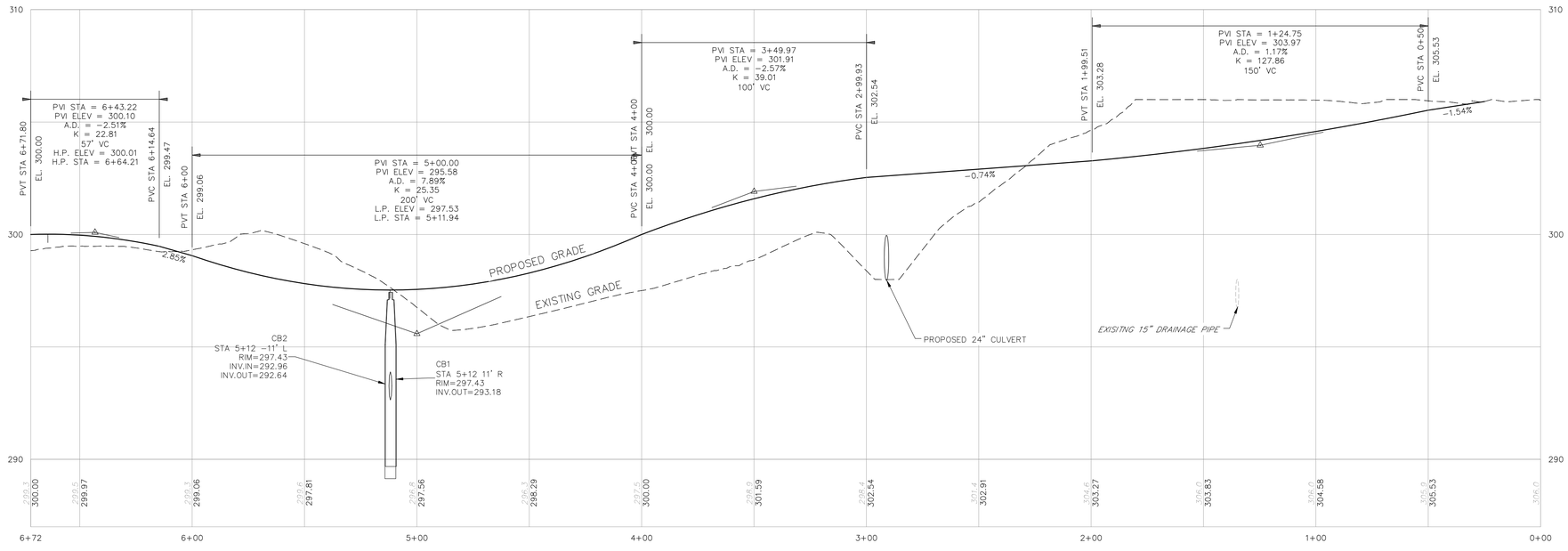

PROPOSED DRIVEWAY

HORIZONTAL SCALE 1"=30'
30 15 0 30
VERTICAL SCALE 1"=3'
3 0 3

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39

DRIVEWAY PLAN & PROFILE

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

162 LITCHFIELD ROAD, LONDONDERRY, NH 03053

OWNED BY

CRAIG FOWLER (TRUSTEE)
NICHOLAS F. CODNER TRUST OF 2012
182 LITCHFIELD ROAD, LONDONDERRY, NH 03053

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

SCALE: 1" = 30' H / 1" = 3' V **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
9/12/2025

REV	DATE	DESCRIPTION	DR	CK
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
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Bedford, NH 03110
Phone (603) 472-4488
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FILE	18252-02	DR		FB		C-13
		CK		CADFILE	18252-02 SITE PLAN	

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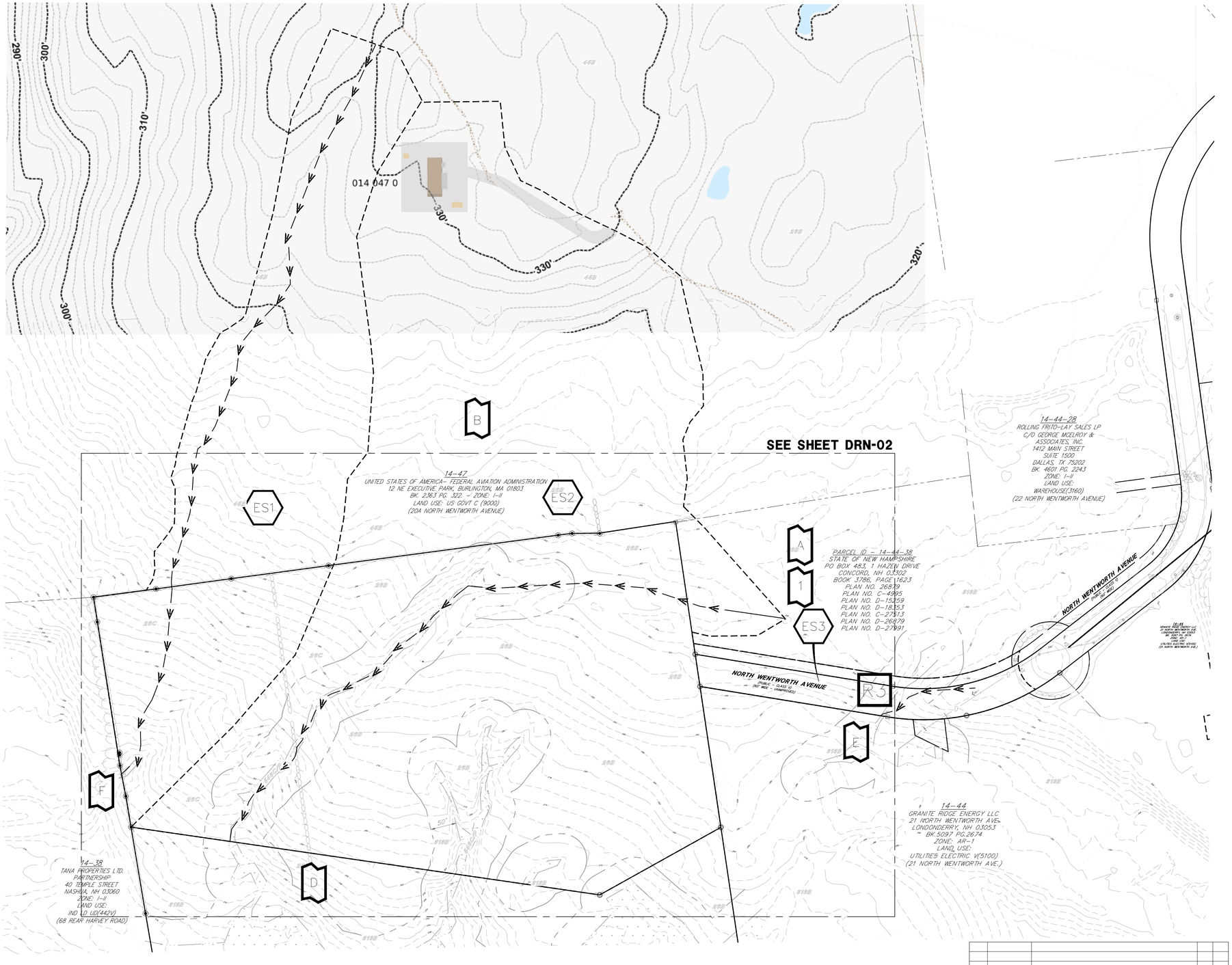
PART 9



LEGEND

- PROPERTY LINE
- LIMITS OF DRAINAGE SUBCATCHMENT
- SOIL GROUP BREAKLINE
- FLOW PATH (Tc LINE)
- REACH
- E — POINT OF INTEREST
- ES-1 — SUBCATCHMENT AREA
- EP-1 — POND, CULVERT, OR CATCH BASIN
- ER-1 — REACH

NOTES

1. THE SITE SPECIFIC SOIL MAP WAS PREPARED ON JANUARY 3, 2025 BY BRUCE A. GILDAY, CSS #012, OF BAG LAND CONSULTANTS.

NRCS SOILS LEGEND

SYMBOL	MAP UNIT	SLOPE	HSG
26B	WINDSOR LOAMY SAND	3-8%	A
26C	WINDSOR LOAMY SAND	8-15%	A
26E	WINDSOR LOAMY SAND	15-60%	A
45B	MONTAUK FINE SANDY LOAM	0-8%	C
313B	DEERFIELD LOMAY FINE SAND	3-8%	A

SITE SPECIFIC SOILS LEGEND

SYMBOL	MAP UNIT	DRAINAGE	HSG
26	WINDSOR	WELL	A
313	DEERFIELD	MODERATELY WELL	B
546AP	WALPOLE	VERY POORLY	C

SLOPE DESIGNATION	PERCENT SLOPE
B	0 TO 8%
C	8 TO 15%
D	15 TO 25%
E	>25%

Node Name	Area (sq. ft.)
ES1	401005
ES2	1011351
ES3	51226
Total	**1463582**

Bruce A. Gilday
Bruce A. Gilday
Certified Soil Scientist

STATE OF NEW HAMPSHIRE
BRUCE A. GILDAY
No. 012
CERTIFIED SOIL SCIENTIST

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
10/16/25

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

PRE DRAINAGE AREA MAP (OVERALL)

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

1" = 100' **SEPTEMBER 8, 2025**

REV	DATE	DESCRIPTION	DR	CK
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

TFM
Civil Engineers
Structural Engineers
Traffic Engineers
Land Surveyors
Landscape Architects
Scientists
48 Constitution Drive
Bedford, NH 03110
Phone (603) 472-4488
Fax (603) 472-9747
www.tfmoran.com

FILE 18252-02 | DR | FB | CADFILE: 18252_02 DRAINAGE | CK | DA-1

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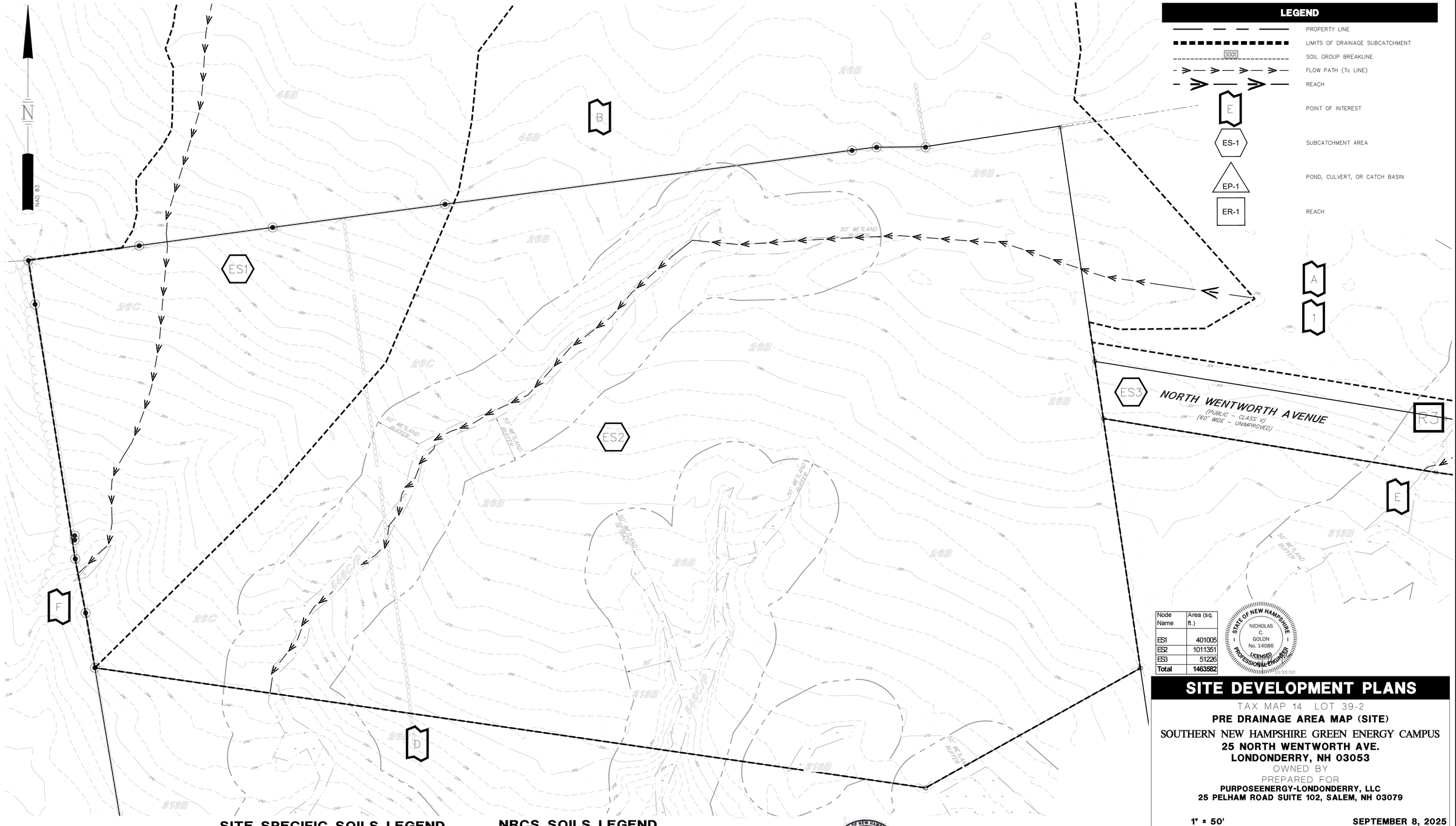

Node Name	Area (sq. ft.)
ES1	401005
ES2	1011351
ES3	51226
Total	1463582

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/18/25

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

PRE DRAINAGE AREA MAP (SITE)

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.

LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC

25 PELHAM ROAD SUITE 102, SALEM, NH 03079

1" = 50' **SEPTEMBER 8, 2025**

SITE SPECIFIC SOILS LEGEND

SYMBOL	MAP UNIT	DRAINAGE	HSG
26	WINDSOR	WELL	A
313	DEERFIELD	MODERATELY WELL	B
546/P	WALPOLE	VERY POORLY	C

SLOPE DESIGNATION	PERCENT SLOPE
B	0 TO 8%
C	8 TO 15%
D	15 TO 25%
E	>25%

NRCS SOILS LEGEND

SYMBOL	MAP UNIT	SLOPE	HSG
26B	WINDSOR LOAMY SAND	3-8%	A
26C	WINDSOR LOAMY SAND	8-15%	A
26E	WINDSOR LOAMY SAND	15-60%	A
45B	MONTAUK FINE SANDY LOAM	0-8%	C
313B	DEEREFIELD LOMAY FINE SAND	3-8%	A

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Certified Soil Scientist

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BRUCE A. GILDAY
No. 012
CERTIFIED SOIL SCIENTIST

HORIZONTAL SCALE 1"=50'
50 25 0 50

REV	DATE	DESCRIPTION	DR	CK
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290'
300'
310'
320'
330'
014 047 0
B
SEE SHEET DRN-04
1 STORY
PROCESS BUILDING (14,400 SF)
W/ FUTURE EXPANSION BUILDING
(8,250 SF.)
14-47
UNITED STATES OF AMERICA- FEDERAL AVIATION ADMINISTRATION
12 NE EXECUTIVE PARK, BURLINGTON, MA 01803
BK. 2363 PG. 222 - ZONE: I-II
LAND USE: US GOVT C (9000)
(20A NORTH WENTWORTH AVENUE)
14-44-28
ROLLING FRITO-LAY SALES LP
C/O GEORGE MCELROY &
ASSOCIATES, INC.
1412 MAIN STREET
SUITE 1500
DALLAS, TX 75202
BK. 4601 PG. 2243
ZONE: I-II
LAND USE:
WAREHOUSE(3160)
(22 NORTH WENTWORTH AVENUE)
A
1
PARCEL ID - 14-44-38
STATE OF NEW HAMPSHIRE
C/O BOX 483, 1 HAZEN DRIVE
CONCORD, NH 03302
BOOK 3786, PAGE 1623
PLAN NO. 26879
PLAN NO. C-4995
PLAN NO. D-15259
PLAN NO. D-18353
PLAN NO. C-27913
PLAN NO. D-26879
PLAN NO. D-27991
NORTH WENTWORTH AVENUE
E
F
D
14-38
TANA PROPERTIES LTD.
PARTNERSHIP
40 TEMPLE STREET
NASHUA, NH 03060
ZONE: I-II
LAND USE:
IND LD LIX(442V)
(68 REAR HARVEY ROAD)
14-44
GRANITE RIDGE ENERGY LLC
21 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053
BK. 5097 PG.2674
ZONE: AR-1
LAND USE:
UTILITIES ELECTRIC V(5100)
(21 NORTH WENTWORTH AVE.)
PS1
PS2
PS3
PS4
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PS7
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CB40



Node Name	Area (sq. ft.)	Node Name	Area (sq. ft.)
PS2	11,390	PS32	8,199
PS3	92,068	PS33	23,596
PS4	161,914	PS34	11,351
PS5	217,984	PS40	14,933
PS6	51,321	PSFB1	12,045
PS7	305,720	PSFB2	17,093
PS14	19,691	PSM1	7,267
PS15	22,384	PSP1	23,524
PS16	17,826	PSP2	30,454
PS17	16,650	PST6	20,776
PS18	21,424	PST7	11,860
PS19	36,281	PST8	11,680
PS20	54,682	PST9	9,411
PS21	167,886	PST10	11,547
PS22	2,752	PST11	14,447
PS31	8,080	PST12	15,957
		PST13	11,389
		total	1,463,582

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

POST DRAINAGE AREA MAP (SITE)

SOUTHERN NEW HAMPSHIRE GREEN ENERGY CAMPUS

25 NORTH WENTWORTH AVE.
LONDONDERRY, NH 03053

OWNED BY

PREPARED FOR

PURPOSEENERGY-LONDONDERRY, LLC
25 PELHAM ROAD SUITE 102, SALEM, NH 03079

1" = 50' **SEPTEMBER 8, 2025**

STATE OF NEW HAMPSHIRE
NICHOLAS C. GOLON
No. 14086
LICENSED PROFESSIONAL ENGINEER
12/18/25

SITE SPECIFIC SOILS LEGEND

SYMBOL	MAP UNIT	DRAINAGE	HSG
26	WINDSOR	WELL	A
313	DEERFIELD	MODERATELY WELL	B
546/P	WALPOLE	VERY POORLY	C

SLOPE DESIGNATION	PERCENT SLOPE
B	0 TO 8%
C	8 TO 15%
D	15 TO 25%
E	>25%

NRCS SOILS LEGEND

SYMBOL	MAP UNIT	SLOPE	HSG
26B	WINDSOR LOAMY SAND	3–8%	A
26C	WINDSOR LOAMY SAND	8–15%	A
26E	WINDSOR LOAMY SAND	15–60%	A
45B	MONTAUK FINE SANDY LOAM	0–8%	C
513B	DEEREFIELD LOMAY FINE SAND	3–8%	A

Bruce A. Gilday
Certified Soil Scientist

STATE OF NEW HAMPSHIRE
BRUCE A. GILDAY
No. 012
CERTIFIED SOIL SCIENTIST

HORIZONTAL SCALE 1"=50'
50 25 0 50

REV	DATE	DESCRIPTION	DR	CK
1	9/12/2025	UPDATE FOR SUBMITTAL	JD	NG

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FILE 18252-02 | DR | FB | CADFILE 18252_02 DRAINAGE | CK

DA-4

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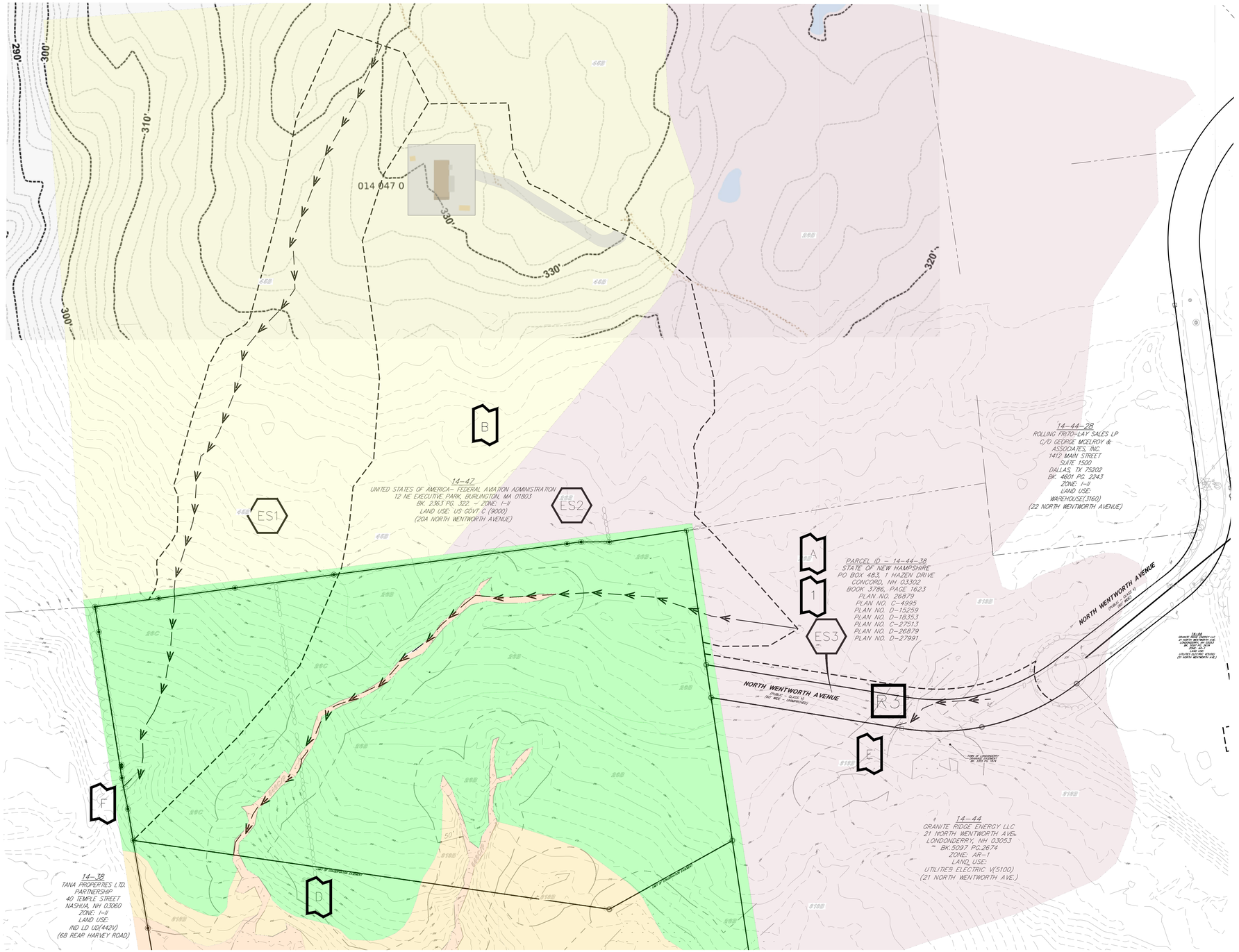

LEGEND

- PROPERTY LINE
- LIMITS OF DRAINAGE SUBCATCHMENT
- SOIL GROUP BREAKLINE
- FLOW PATH (Tc LINE)
- REACH
- E — POINT OF INTEREST
- ES-1 — SUBCATCHMENT AREA
- EP-1 — POND, CULVERT, OR CATCH BASIN
- ER-1 — REACH

NRCS SOILS LEGEND

SYMBOL	MAP UNIT	SLOPE	HSG	COLOR
26B	WINDSOR LOAMY SAND	3-8%	A	
26C	WINDSOR LOAMY SAND	8-15%	A	
26E	WINDSOR LOAMY SAND	15-60%	A	
45B	MONTAUK FINE SANDY LOAM	0-8%	C	
313B	DEERFIELD LOMAY FINE SAND	3-8%	A	
	IMPERVIOUS			

SITE SPECIFIC SOILS LEGEND

SYMBOL	MAP UNIT	DRAINAGE	HSG	COLOR
26	WINDSOR	WELL	A	
313	DEERFIELD	MODERATELY WELL	B	
546P	WALPOLE	VERY POORLY	C	

SLOPE DESIGNATION	PERCENT SLOPE
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Node Name	Area (sq. ft.)
ES1	401005
ES2	1011351
ES3	51226
Total	**1463582**

STATE OF NEW HAMPSHIRE
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LICENSED PROFESSIONAL ENGINEER
9/12/25

SITE DEVELOPMENT PLANS

TAX MAP 14 LOT 39-2

PRE DEVELOPMENT SOILS MAP

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25 NORTH WENTWORTH AVE.

LONDONDERRY, NH 03053

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1" = 100' **SEPTEMBER 8, 2025**

HORIZONTAL SCALE 1"=100'
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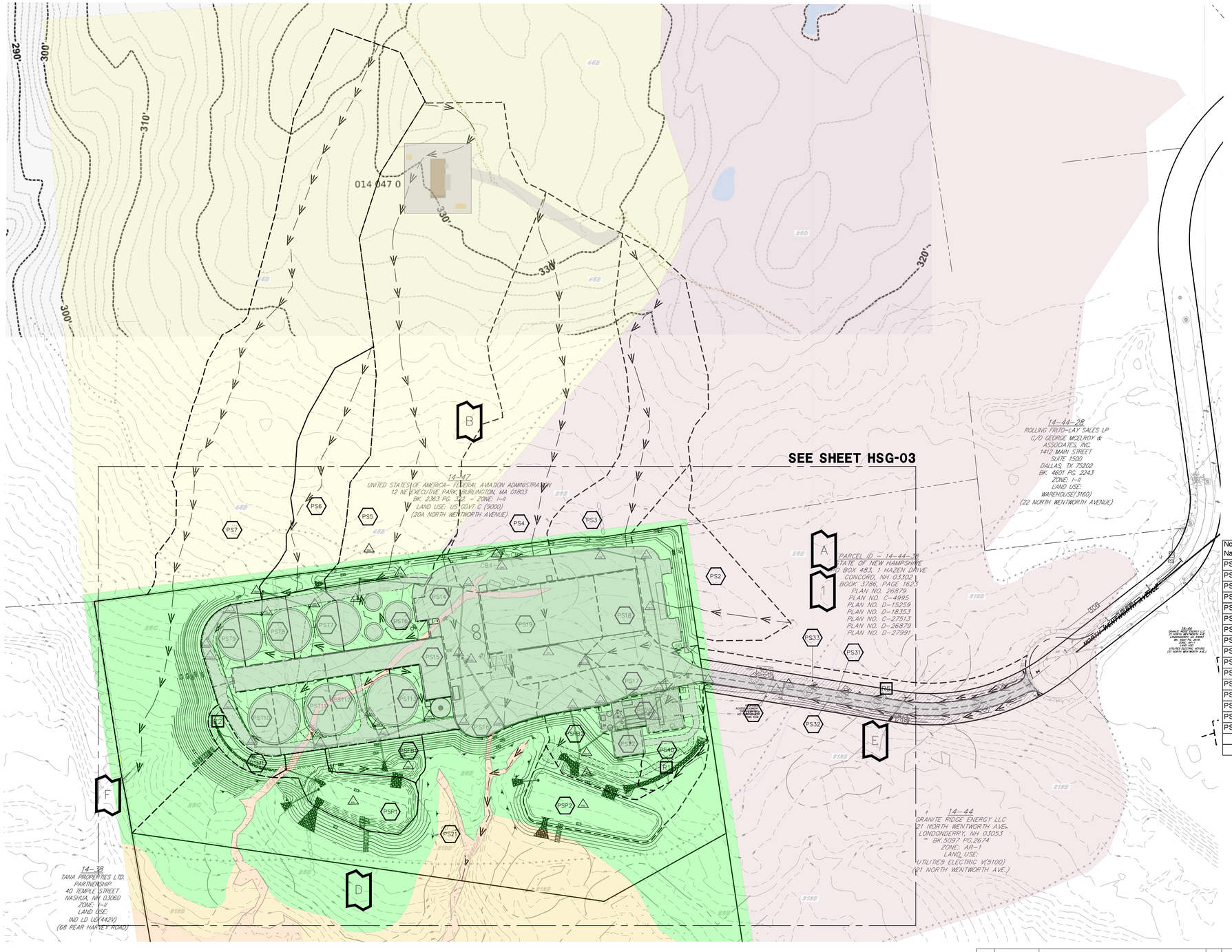

LEGEND

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NRCS SOILS LEGEND

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SITE SPECIFIC SOILS LEGEND

SYMBOL	MAP UNIT	DRAINAGE	HSG	COLOR
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SLOPE DESIGNATION	PERCENT SLOPE
B	0 TO 8%
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E	>25%

Node Name	Area (sq. ft.)	Node Name	Area (sq. ft.)
PS2	11,390	PS32	8,199
PS3	92,068	PS33	23,596
PS4	161,914	PS34	11,351
PS5	217,984	PS40	14,933
PS6	51,321	PSFB1	12,045
PS7	305,720	PSFB2	17,093
PS14	19,691	PSM1	7,267
PS15	22,384	PSP1	23,524
PS16	17,826	PSP2	30,454
PS17	16,650	PST6	20,776
PS18	21,424	PST7	11,860
PS19	36,281	PST8	11,680
PS20	54,682	PST9	9,411
PS21	167,886	PST10	11,547
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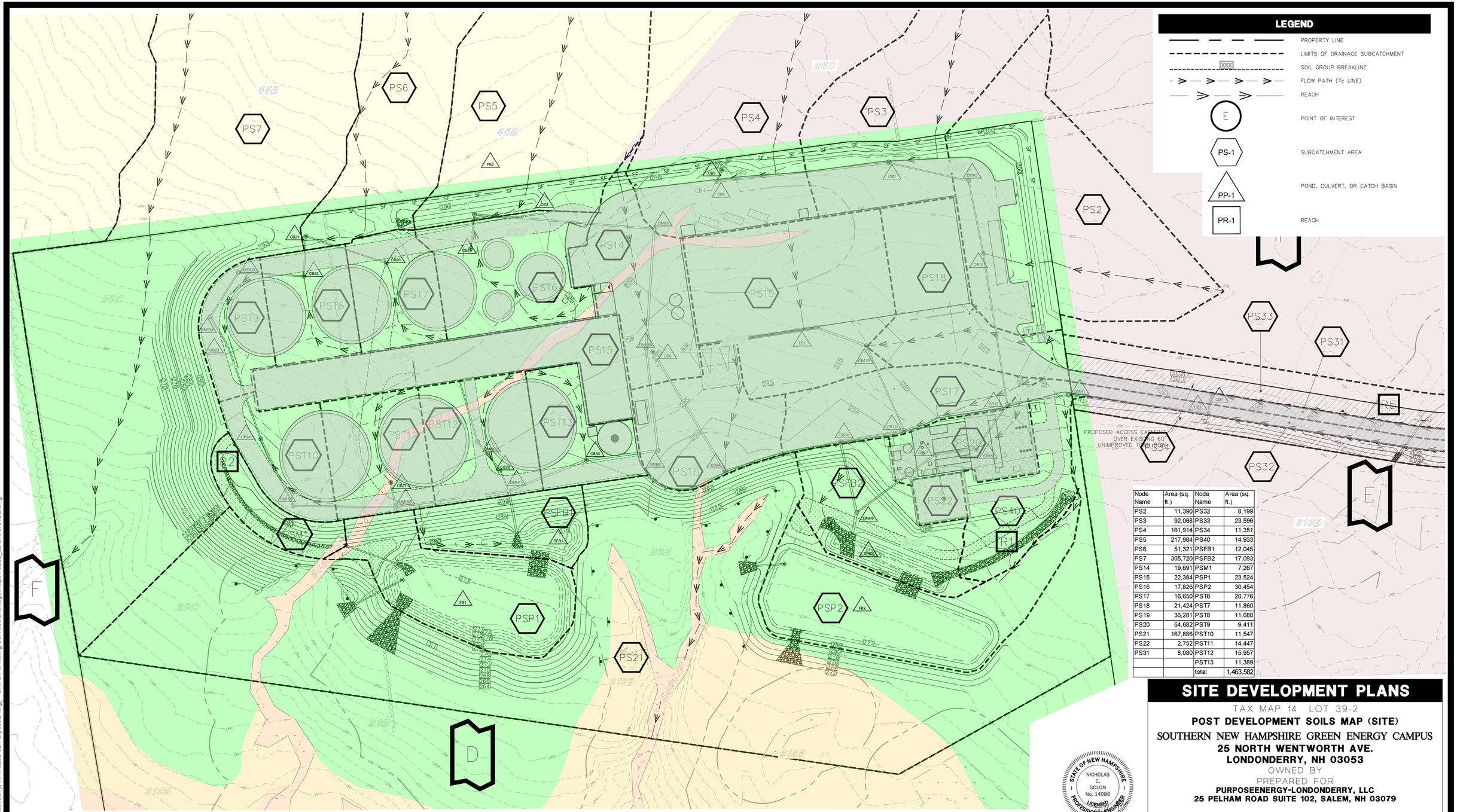

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