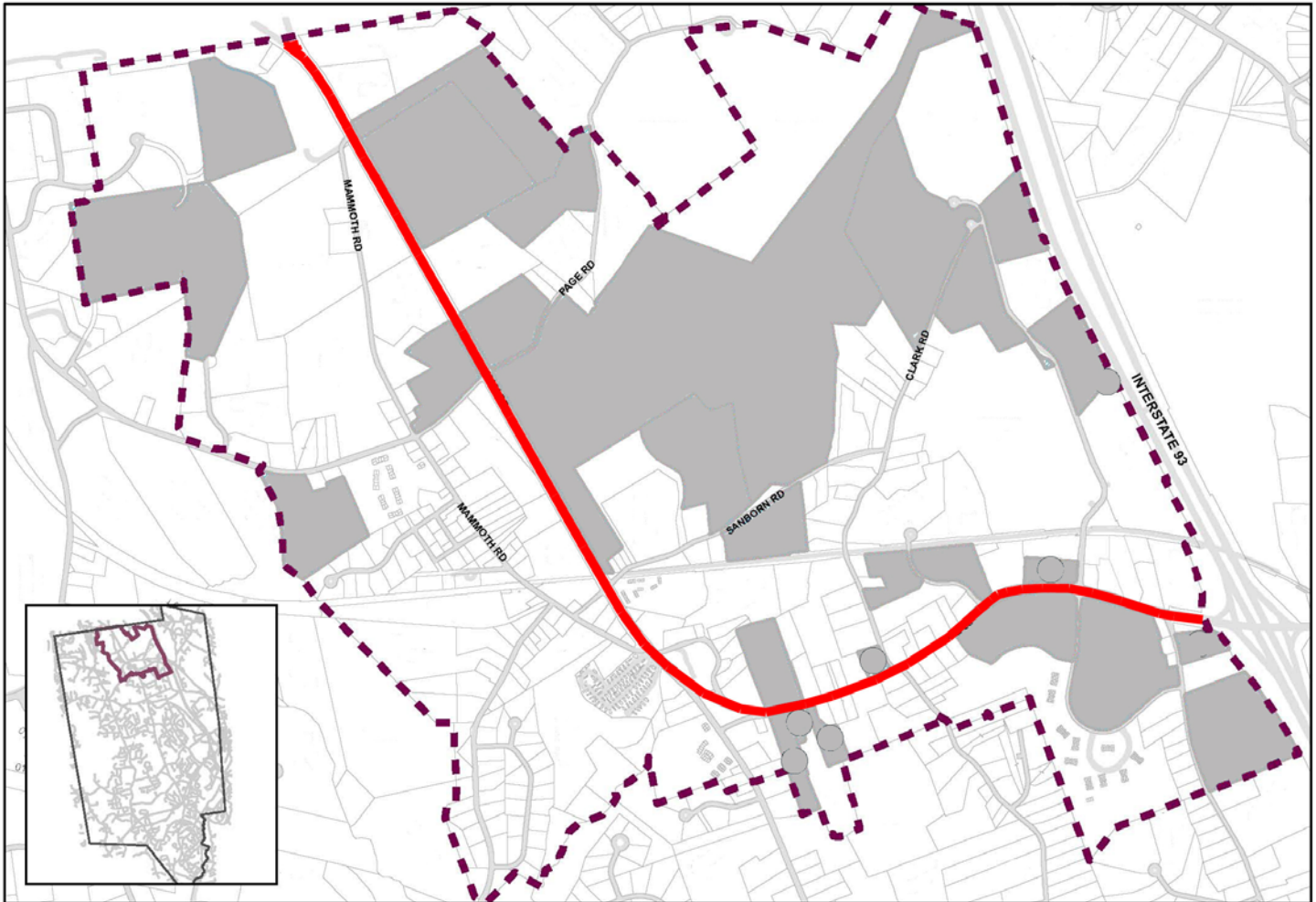


# ***Town of Londonderry, New Hampshire NH Route 28—Western Segment Traffic Impact Fee Methodology***



Londonderry  
Business is good. Life is better.

***Prepared by the Londonderry Community Development  
Department  
Planning & Economic Development Division***

Based on Impact Fee Methodology originally prepared by Southern NH Planning Commission



Supplemental Data and Information prepared by Stantec Consulting Services, Inc.



***Adopted by the Londonderry Planning Board - March 9, 2011  
Adopted by the Londonderry Town Council - April 4, 2011***

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## Introduction

The western segment of the New Hampshire Route 28 corridor in northern Londonderry experienced considerable development activity over the course of the past 30 years. Despite this development, there remains a considerable amount of vacant land and the potential for future development along this corridor. The proximity of this vacant land to Manchester-Boston Regional Airport and to Interstate 93 makes continued future development likely.

The Southern New Hampshire Planning Commission (SNHPC) completed a long range plan for NH Route 28 in Londonderry in 1990 to assist the Town in determining the long range transportation needs for that area. That study included the western segment of New Hampshire Route 28 from Interstate 93, westward through North Londonderry Village, and then north to the Manchester city line. The original study was last updated by SNHPC in 2001. Due to the changes in the land use since then, the Town of Londonderry obtained a new corridor study from Stantec Consulting Services Inc in 2008. This updated impact fee methodology was developed by the staff of the Londonderry Community Development Department, based on the basic methodology utilized by SNHPC, the 2008 Stantec study, and a 2010 Construction Cost Analysis of the corridor, also prepared by Stantec.

Details of the 2001 SNHPC Corridor Study and the 2008 Stantec corridor study are hereby incorporated by reference, and can be found in the *"Route 28 Corridor Study, Western Segment, Londonderry, NH, Updated February 2001"* and the *"Supplemental Traffic Study for Selected Rockingham Road (Route 28) Intersections as part of Reduced Development Scenarios for the Exit 5 TIF Area"* on file with the Londonderry Community Development Department.

Maintenance responsibility for NH Route 28 lies with the State of New Hampshire. Improvements are subject to funding and scheduling constraints imposed at the state and federal levels. Improvements to a state highway are not a local responsibility, but Town officials are faced with a growing number of site plan, subdivision and building permit applications for industrial and commercial development along the highway. With growing development pressures and the subsequent traffic impact, the Town must anticipate future needs and set forth a series of transportation plans for improvements in circulation, parcel access and for projects intended to increase the overall capacity and safety of the highway system. Maintenance responsibility for local roads adjacent to NH Route 28 lies with the Town. As the area develops, the Town will be responsible for upgrading and expanding these roadway systems to accommodate future traffic. Traffic projections for the year 2021 indicate that, even without any future development within this corridor, traffic volumes could increase by 16.4% from the current 2011 volume on all of these roads. If traffic from the parcels along the corridor is included, volume could increase by 38.5% along Route 28. Given these projections, the Town must ensure that future development decisions will facilitate smooth and safe traffic flows along Route 28 and adjacent roadways. It is also important that this future decision-making is compatible with the long range improvement plans for the area.

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## Study Area

The study area identified as the western segment of the New Hampshire Route 28 corridor is shown on the next page. The study area extends from the intersection of Route 28 and Interstate 93 northbound ramps at Exit 5, westward through the village of North Londonderry and then north to the Manchester city line. Also shown on page 3 are various parcels identified as potential development areas as of December 2010 (utilizing the same numbering system from the SNHPC 2001 Study). These areas comprise approximately 601 acres. An examination of the development potential of these parcels revealed that approximately 472 acres were developable. Table 1 summarizes the parcels included in this study and lists them according to Development Area, Tax Map, and Lot Number.

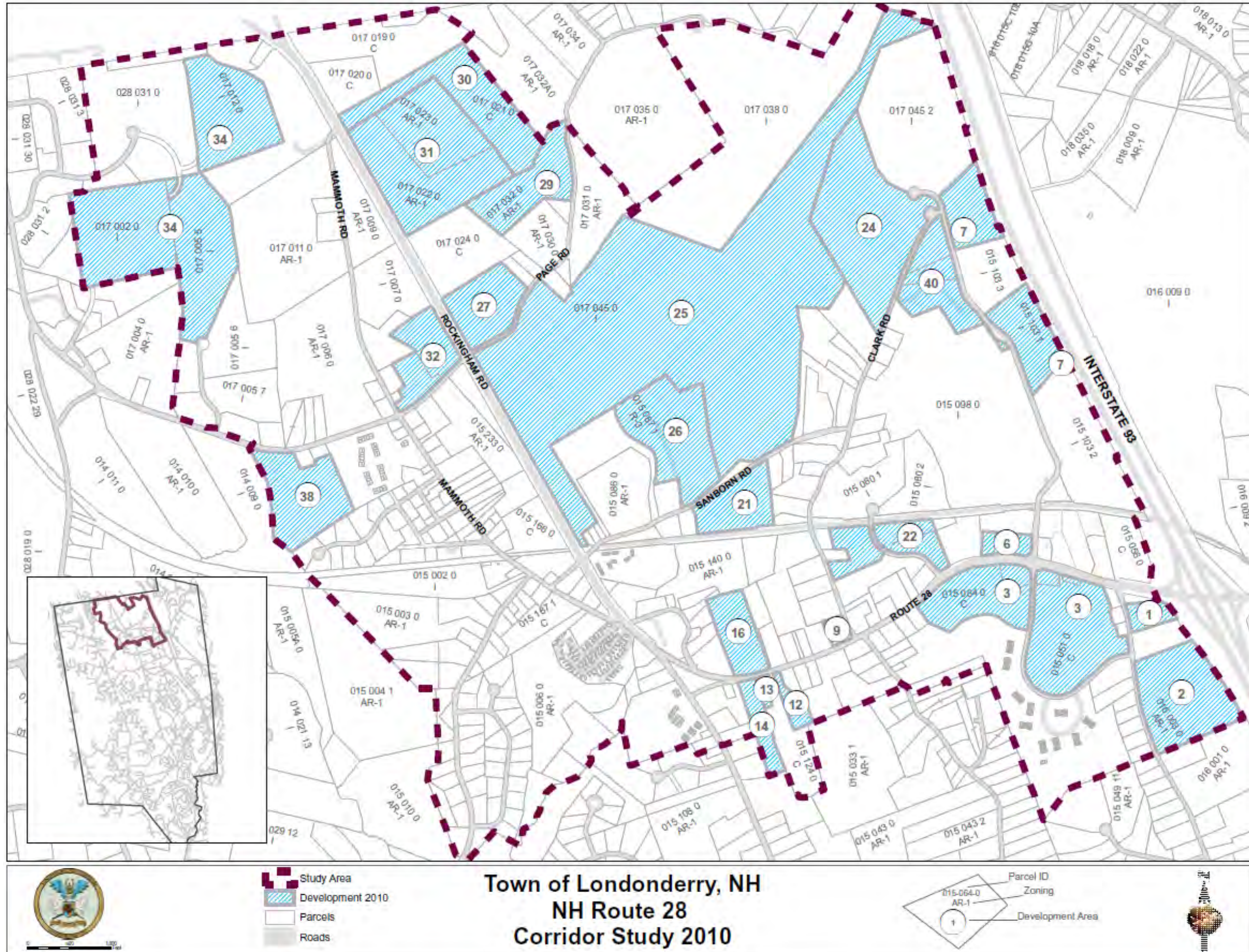
**Town Of Londonderry, NH  
Route 28 Corridor Study - 2010  
TABLE 1**

Development Area	Tax Map	Lot Number	Total Land (Acres)	Developable Land	Zoning
2	16	3	25	18.75	AR-I
3	15	51, 59, 60, 64	46.86	46.86	MUC
6	15	61, 61-7, 61-8	4.07	4.07	POD/C-II
7	15	103, 103-1	23.237	23.237	I-I
9	15	27	1.74	1.74	POD/C-II
12	15	22	3.2	3.2	POD/C-II
13	15	125	1	1	POD/C-II
14	15	126	6.1	3.05	POD/C-II
16	15	150	10	5	POD/C-I
21	15	83-2	13.67	9.08	R-III
22	15	62, 62-1	13.245	13.245	C-II, POD/C-II
24	17	44	12	10.2	I-I
25	17	45	212.495	124.5	I-I
26	15	87-1	25.4	21.59	R-III
27	17	27	13.87	11.1	C-II
29	17	32	13.25	11.26	AR-I
30	17	21	27	22.95	C-II
31	17	22, 23	23	19.55	AR-I
32	17, 15	235, 25	12.32	10.47	C-II
34	17	2, 5, 12	81.556	81.556	I-I, I-II
38	15	1	18.3	15.56	AR-I
40	15	96, 96-2, 97	14.3	14.3	AR-I
<b>TOTAL</b>			<b>601.613</b>	<b>472.268</b>	

Rt. 28  
Corridor

Western  
Segment

Development  
Areas Map



## Existing Trips

Base year 2011 evening peak hour volumes can be found in Figure 2 and Appendix C of the *"Supplemental Traffic Study for Selected Rockingham Road (Route 28) Intersections as part of Reduced Development Scenarios for the Exit 5 TIF Area"* on file with the Londonderry Community Development Department.

## Development Area Trips

The number of-site generated trips for each of the development areas were determined based on the assumptions below:

- Future land use will be consistent with existing zoning
- Floor area for commercial and industrial parcels is generally equal to 15 percent of the developable area.
- For residential parcels, the number of dwellings is equal to 1 per acre of the developable area, with a 25% bonus added to parcels suited for workforce housing development.
- Standardized trip generation rates and equations published by the Institute of Transportation Engineers (8<sup>th</sup> Edition) were applied to all future developments.

These development areas are projected to create approximately 3,962 new vehicle trips during the evening peak hour. These trips take into consideration the pass-by trip characteristics of some of the development areas in the study area. The trip generation and land use characteristics for the development areas are summarized in tabular form on the following page.

## Background Growth Rate

A background growth rate of one percent (1%) is utilized for this methodology, consistent with the Town of Londonderry and NHDOT requirements, and is indicated in section 4.1 of the *"Supplemental Traffic Study for Selected Rockingham Road (Route 28) Intersections as part of Reduced Development Scenarios for the Exit 5 TIF Area"* on file with the Londonderry Community Development Department.

## Trip Distribution

Trip distribution for the study area is summarized in section 2.6 of the *"Supplemental Traffic Study for Selected Rockingham Road (Route 28) Intersections as part of Reduced Development Scenarios for the Exit 5 TIF Area"* on file with the Londonderry Community Development Department.

Rt. 28  
Corridor

Western  
Segment

Development  
Areas Trip  
Generation

Dev Area #	Tax Map	Lot	Lot Size	Devl Acres	Current Use	Zoning	Future Land Use	Land Use Code	Poten Units	Poten Area (SF)	Rate or Equation	Daily Trip Rate	PM In Rate	PM Out Rate	Total PM Trips	PM In Trips	PM Out Trips	Total New PM Trips	PM New In Trips	PM New Out Trips	
2	16	3	25	18.75	Single Family	AR-I	Single Family	210	25		Equation				25	16	9	25	16	9	
3	15	51, 59, 60, 64	46.86	46.86	Vacant	MUC	Big Box Retail, Shopping Center, Restaurant	813, 820, 932		60,000 Shp Ctr; 6,000 Restmnt; 205,000 Big Box					1464	723	739	1102	543	557	
6	15	61, 61-7, 61-8	4.07	4.07	Vacant	POD/C-II	Specialty Retail	814		26593	Rate	44.32	1.19	1.52	72	32	40	54	24	30	
7	15	103	23.237	23.237	Vacant	I-I	Light Industrial, General Office	110, 710		196,500 Indus, 65,500 Office	Equation				343	49	294	343	49	294	
9	15	27	1.74	1.74	Single Family	POD/C-II	Specialty Retail	814		11369	Rate	44.32	1.19	1.52	31	14	17	23	10	13	
12	15	22	3.2	3.2	Single Family	POD/C-II	Specialty Retail	814		20909	Rate	44.32	1.19	1.52	57	25	32	42	19	24	
13	15	125	1	1	Single Family	POD/C-II	Specialty Retail	814		6534	Rate	44.32	1.19	1.52	18	8	10	13	6	7	
14	15	126	6.1	3.05	Single Family	POD/C-II	Specialty Retail	814		19929	Rate	44.32	1.19	1.52	54	24	30	41	18	23	
16	15	150	10	5	Single Family	POD/C-I	Shopping Center	820		32670	Equation				301	147	153	198	97	101	
21	15	83-2	13.67	9.08	Vacant	R-III	Elderly Housing	252	60		Equation				10	6	4	10	6	4	
22	15	62	13.245	13.245	Vacant	C-II, POD/C-II	Light Industrial	110		80000	Equation				78	9	68	78	9	68	
24	17	44	12	10.2	Vacant	I-I	Light Industrial	110		100000	Equation				97	12	85	97	12	85	
25	17	45	212.495	124.5	Vacant	I-I	Industrial Park	130		730000	Equation				628	132	496	628	132	496	
26	15	87-1	25.4	21.59	Vacant	R-III	Condominium	230	130		Equation				68	45	22	68	45	22	
27	17	27	13.87	11.1	Vacant	C-II	Office Park	750		72501	Equation				194	27	167	194	27	167	
29	17	32	13.25	11.26	Vacant	AR-I	Single Family	210	11		Equation				11	7	4	11	7	4	
30	17	21	27	22.95	Vacant	C-II	Light Industrial	110		149955	Equation				146	17	128	146	17	128	
31	17	22, 23	23	19.55	Vacant	AR-I	Single Family	210	20		Equation				20	13	7	20	13	7	
32	17, 15	235, 25	12.32	10.47	Vacant	C-II	Light Industrial	110		68424	Equation				66	8	58	66	8	58	
34	17	2, 5, 12	81.556	81.556	Vacant	I-I, I-II	Light Industrial	110		691238	Equation				671	80	590	671	80	590	
38	15	1	18.3	15.56	Vacant	AR-I	Single Family	210	16		Equation				16	10	6	16	10	6	
40	15	96, 96-2, 97	14.3	14.3	Single Family	AR-I	Light Industrial	110		120000	Equation				116	14	102	116	14	102	
								<b>Totals:</b>	<b>262</b>	<b>2,636,529</b>						<b>4485</b>	<b>1417</b>	<b>3062</b>	<b>3962</b>	<b>1161</b>	<b>2796</b>

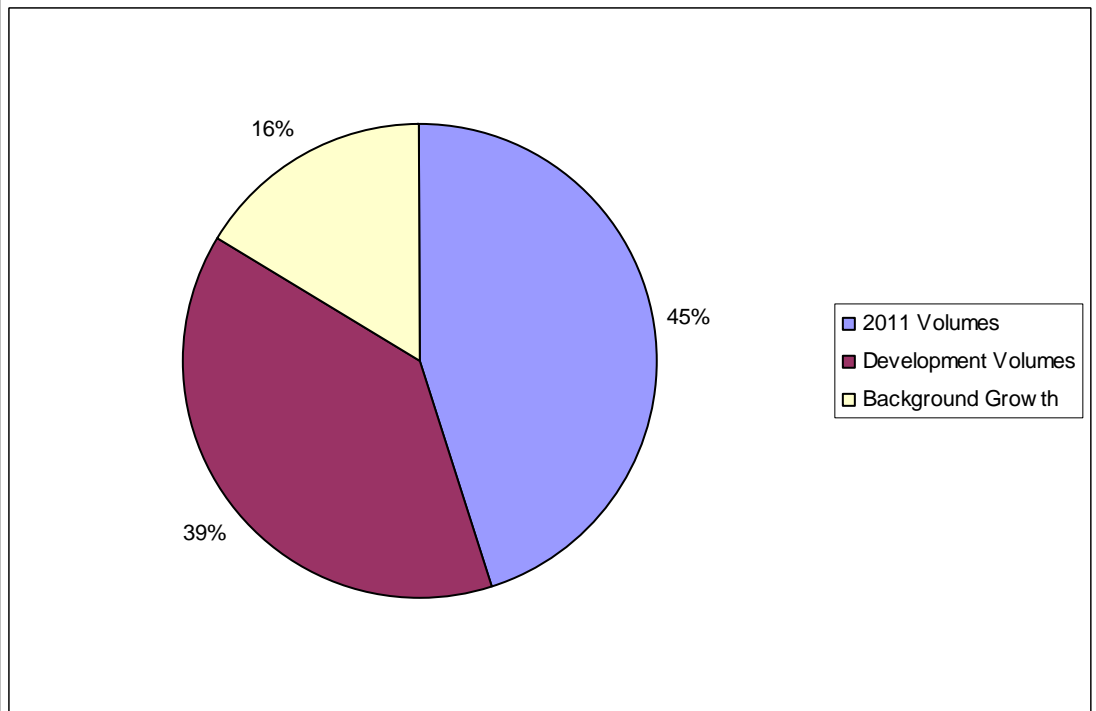
## Horizon Year Traffic

Based on analysis in the previous steps as previously prepared by SNHPC and updated by Town Staff, the background growth was added to the development area trips to determine the peak hour traffic projections for the New Hampshire Route 28 corridor for the design year 2021. These development area trips are summarized on page 5 and are based upon the following:

- Full build-out of the all the development areas by year 2021 under the existing zoning pattern; and
- A background or normal growth rate of 1% compounded annually

Figure 1 below illustrates the projected composition of the year 2021 traffic on NH Route 28 during the PM peak hour in terms of existing volume, background growth, and site specific growth. Clearly, the study area parcels account for a substantial portion of the traffic pressures that will impact the corridor.

**Figure 1—Composition of 2021 PM Peak Hour Traffic**



## Corridor Improvements Plans & Traffic Capacity Analysis

Based on the projected traffic volume and the roadway/intersection capacity analysis which was conducted for the New Hampshire Route 28 corridor, the current number of lanes on NH Route 28 and intersection configurations will not be adequate to meet the projected traffic demands for the year 2021. To accommodate all of the projected traffic, NH Route 28 will have to be improved as outlined in the Conclusions & Recommendations Section of this document.

## Cost Sharing Method

From a highway design standpoint, the primary function of NH Route 28 is to serve as an arterial highway. It should be designed to promote the movement of through traffic as efficiently as possible and still maintain safety. Providing access to abutting property should be perceived as a secondary function of this roadway. The ability to move traffic along NH Route 28 must be given the highest priority. Access points should be limited in number and located to facilitate efficient traffic flow.

Preliminary estimates indicate that the cost of recommended improvements to N.H. Route 28 between Interstate 93 and the Page Road, and of providing the necessary intersection improvements along NH Route 28, will be approximately \$19.9 million based on 2010 monetary values. This cost estimate is based upon future traffic projections and conceptual improvements as provided to the Town by Stantec with the *Traffic Study - Rockingham Road (Route 28)* dated January 8, 2007 (see table, next page).

This total improvement cost will be shared by the State of NH DOT (NHDOT), the Town of Londonderry and the developers of the areas identified earlier. The NHDOT and Town's share of the cost of improvements is based on existing volumes and background growth, as discussed previously, which makes up a cost share of 61%. The developers' share of the cost is therefore determined to be that which is made up of the development area volumes during the PM peak hour, or 39% of the costs of improvements to the corridor.

The impact fee is therefore calculated by dividing the total cost of Rt. 28 Improvements by the total number of development area generated PM peak hour trips. This number is then multiplied by 39% (and rounded to the nearest whole number), which represents the cost share of corridor improvements to be paid by development projects (the remaining 61% of the costs are to be paid by NHDOT and the Town of Londonderry). Additionally, there has been an average of 17 new PM peak hour trips per year generated from outside the studied corridor. In reviewing development potential of parcels outside the studied corridor, an additional 20 trips per year are accounted for in the impact fee calculation resulting from trips originating outside the corridor.

In order to keep this impact fee methodology relevant from now until the corridor study is re-examined in the future, the impact fee listed below shall escalate each year, based on a 3.5% anticipated increase to the costs of the improvements to the corridor. The impact fee shall be based on a fee per new PM peak hour trip impacting the Rt. 28 Western Segment, and shall be assessed on a project by project basis when development plans are approved by the Londonderry Planning Board. Traffic impact analyses are required for all site plans in Londonderry, and shall be used as the basis for calculating the impact fee due from each proposed development project in Londonderry that indicates an impact to the corridor.

See the Chart on page 9 for the per PM peak hour trip impact fee for the Rt. 28 Western Segment.

# Corridor Improvements Cost Estimate

	2010 Dollars	2011 Dollars*	2012 Dollars*	2013 Dollars*	2014 Dollars*	2015 Dollars*
<b>Major Intersections</b>						
Rockingham Road at Page Road	\$1,650,000	\$1,708,000	\$1,768,000	\$1,830,000	\$1,894,000	\$1,960,000
Rockingham Road at Sanborn Road	\$1,777,000	\$1,840,000	\$1,904,000	\$1,971,000	\$2,040,000	\$2,111,000
Rockingham Road at Old Mammoth Road	\$2,318,000	\$2,400,000	\$2,484,000	\$2,571,000	\$2,660,000	\$2,754,000
Rockingham Road at Mammoth Road (Route 128)	\$2,424,000	\$2,509,000	\$2,597,000	\$2,688,000	\$2,782,000	\$2,879,000
Rockingham Road at Clark Road and Noyes Road	\$1,373,000	\$1,422,000	\$1,471,000	\$1,523,000	\$1,576,000	\$1,631,000
Rockingham Road at Symmes Drive and Vista Ridge Road	\$1,979,000	\$2,049,000	\$2,120,000	\$2,195,000	\$2,271,000	\$2,351,000
Rockingham Road at Perkins Road	\$948,000	\$982,000	\$1,016,000	\$1,052,000	\$1,088,000	\$1,126,000
Rockingham Road at 1-93 Exit 5	\$1,226,000	\$1,269,000	\$1,314,000	\$1,360,000	\$1,407,000	\$1,457,000
<b>Roadway Segments</b>						
Road Segment Between Page Road and Sanborn Road	\$1,308,000	\$1,354,000	\$1,402,000	\$1,451,000	\$1,501,000	\$1,554,000
Road Segment Between Sanborn Road and Old Mammoth Road	\$600,000	\$632,000	\$654,000	\$677,000	\$700,000	\$725,000
Road Segment Between Old Mammoth Road and Mammoth Road (Rt. 128)	\$902,800	\$935,000	\$968,000	\$1,001,000	\$1,036,000	\$1,073,000
Road Segment Between Mammoth Road (Rt. 128) and Clark/Noyes Road	\$1,471,000	\$1,523,000	\$1,576,000	\$1,631,000	\$1,689,000	\$1,748,000
Road Segment Between Clark/Noyes and Symmes Drive/Vista Ridge Road	\$1,914,000	\$1,981,000	\$2,051,000	\$2,123,000	\$2,197,000	\$2,274,000
<b>Roadway Corridors</b>						
Rockingham Road from Page Road to Symmes Drive	\$15,747,800	\$16,299,000	\$16,870,000	\$17,460,000	\$18,071,000	\$18,704,000
Rockingham Road from Symmes Drive to 1-93 Exit 5	\$4,153,000	\$4,299,000	\$4,449,000	\$4,605,000	\$4,766,000	\$4,933,000
<b>TOTAL</b>	<b>\$19,900,800</b>	<b>\$20,598,000</b>	<b>\$21,319,000</b>	<b>\$22,065,000</b>	<b>\$22,837,000</b>	<b>\$23,636,000</b>

\* Escalation of construction estimate was calculated using a rate of 3.5% per year

Notes:

1. Costs presented herein do not include costs associated with Right of Way/easement acquisition.
2. Costs presented herein do not include upgrades to the existing water and sewer system.

**Rt. 28 Western Segment Traffic Impact Fee per new PM Peak Hour Trip**

2011 Impact Fee:	<b>\$ 1,998</b>
2012 Impact Fee:	<b>\$ 2,057</b>
2013 Impact Fee:	<b>\$ 2,118</b>
2014 Impact Fee:	<b>\$ 2,181</b>
2015 Impact Fee:	<b>\$ 2,202</b>
2016 Impact Fee:	<b>\$ 2,313</b>

The updated impact fee for the Western Segment of Rt. 28 has increased approximately 100% from when it was last calculated in 2001. The primary factor in the increase of the fee is the estimated costs of improvements within the corridor have increased from \$10.83 million in the 2001 Corridor Study to \$19.9 million in this updated analysis.

It should be noted, however, that the cost share for the improvements has also changed since 2001. In the 2001 study, development area trips were responsible for 50% of the total costs of improvements. In this updated analysis, development is responsible for 39% of the costs of improvements. The tables below illustrate the changes in the cost share between 2001 and this updated methodology.

**2001: SUMMARY OF TOTAL COST OF IMPROVEMENTS**

Item	Basis	Cost
Total Project Cost	Improvements Per 2001 Study	\$10.83 Million
NHDOT/Town's Share	Background Growth	\$5.37 Million
Developers' Share	Development Area Trips	\$5.46 Million

**2011: SUMMARY OF TOTAL COST OF IMPROVEMENTS**

Item	Basis	Cost
Total Project Cost	Improvements Per 2011 Study	\$19.9008 Million
NHDOT/Town's Share	Background Growth	\$12.139 Million
Developers' Share	Development Area Trips	\$7.761 Million

## Conclusions & Recommendations

In view of the traffic impacts projected for the year 2021 for the western segment of the New Hampshire Route 28 corridor, it is the recommendation of this study that Route 28 is widened and intersections be improved as outlined in the Corridor Improvement Plans on the following pages

The number of trips, and hence the dollar amounts presented in this document, are preliminary in that they represent a hypothetical development situation for each vacant/developable parcel in the study area. Nevertheless, this should provide the Town officials with a sense of what could occur in the future, given current trends in development of some parcels in this area of Town.

The actual number of trips generated for a particular development area may well vary from those projected here. Thus, the number of trips and hence the proportionate share of the cost of improvements should be refined on a site - by - site basis as more information becomes available (i.e, conceptual plans or site plans). The standard traffic impact studies that are normally required by the Town for a site plan or subdivision could provide the necessary detailed information to determine the proportionate share for a particular site.

This study should be updated on a regular basis as site plans, subdivisions, and conceptual plans become available. If zoning changes occur in the proposed development areas and they become developed as uses other than those that have been projected, or if new traffic circulation concepts emerge, this document should be revised accordingly. This would entail the reassessment of traffic impacts, transportation improvements, and cost allocations. In conclusion, this study is intended to be a working document. It should be viewed as a tool to guide the decision-making process.

In summary, the recommended improvements for NH Route 28 Corridor in the study area are as shown in the Recommended Corridor Improvements Plans on the following pages.

The following assumptions are related to the future improvements:

1. The improvements at Exit 5 of I-93 are based upon the eight-lane section for Route 28 as designed by the NHDOT, which is the future intersection configuration allowed for with NHDOT's I-93 widening project. Please refer to NHDOT's concept plan for this location.
  - A. The assumptions and description of work for the future improvements at the Intersection of I-93 and Rockingham Road is as follows:
    - i. Widening of the northbound off ramp from I-93 to Rockingham Road.
    - ii. Widening of the northbound on ramp to I-93.
    - iii. Modification of two (2) existing signalized inter sections.
    - iv. Add additional left turns lanes on to Route 28 to the northbound and southbound on ramps by removing concrete island.
    - v. Widening of southbound on ramp to I-93 from Rockingham Road.
    - vi. Widening of southbound off ramp from I-93 to Rockingham Road.
2. The bridge at Stokes Road is assumed to be removed and Stokes Road to be ended with a cul-de-sac as part of the future improvements. Reconstruction of Stokes Road is not included with the work.
3. The intersection of NH Routes 28 and 128 is assumed to be reconfigured and the section of Route 128 adjacent to the Mobil Gas Station is assumed to end in a cul-de-sac.
4. The work along the corridor is assumed to be divided into roadway segments with assumptions relative to drainage system components based upon the available information at this time. The Town may need to combine or reorganize segments based upon the scale of future development projects and the extent of their impacts and required off-site improvements.
5. Future utility improvements, including water and sewer infrastructure, are not included in the estimate of construction costs.

## Alternative Fee Implementation Scenarios

In light of the significant cost increases to the construction of improvements within the corridor, and the corresponding increase to the impact fees, staff understands that there is concern about adopting such a dramatic increase in the traffic impact fees for this corridor all at once and its impact on the Town's ability to attract potential economic development.

Because of that concern, staff offers the following alternative implementation scenarios for the new impact fees, in order to make the fees correspond to the construction costs, while gradually implementing the increases to minimize the impact to development efforts. Following the recommendation of the Planning Board at the March 9, 2011 Public Hearing, the Planning the Town Council has adopted Alternative 2 for the implementation of the impact fee increases.

### ***Alternative 1: Implementation of new Impact Fees per the Construction Cost Estimates (no gradual implementation)***

2011 Impact Fee:	\$ 1,998
2012 Impact Fee:	\$ 2,057
2013 Impact Fee:	\$ 2,118
2014 Impact Fee:	\$ 2,181
2015 Impact Fee:	\$ 2,202
2016 Impact Fee:	\$ 2,313

### ***Alternative 2: Graduated Increase 1 (50% of Construction related increase in year 2011, 75% Construction related increase in year 2012, 100% each subsequent year) Adopted by the Town Council on 4/4/11***

2011 Impact Fee:	\$ 1,189
2012 Impact Fee:	\$ 1,836
2013 Impact Fee:	\$ 2,118
2014 Impact Fee:	\$ 2,181
2015 Impact Fee:	\$ 2,202
2016 Impact Fee:	\$ 2,313

### ***Alternative 3: Graduated Increase 2 (50% of Construction related increase in year 2011, 60% of Construction related increase in year 2012, 75% of Construction related increase in year 2013, 100% each subsequent year)***

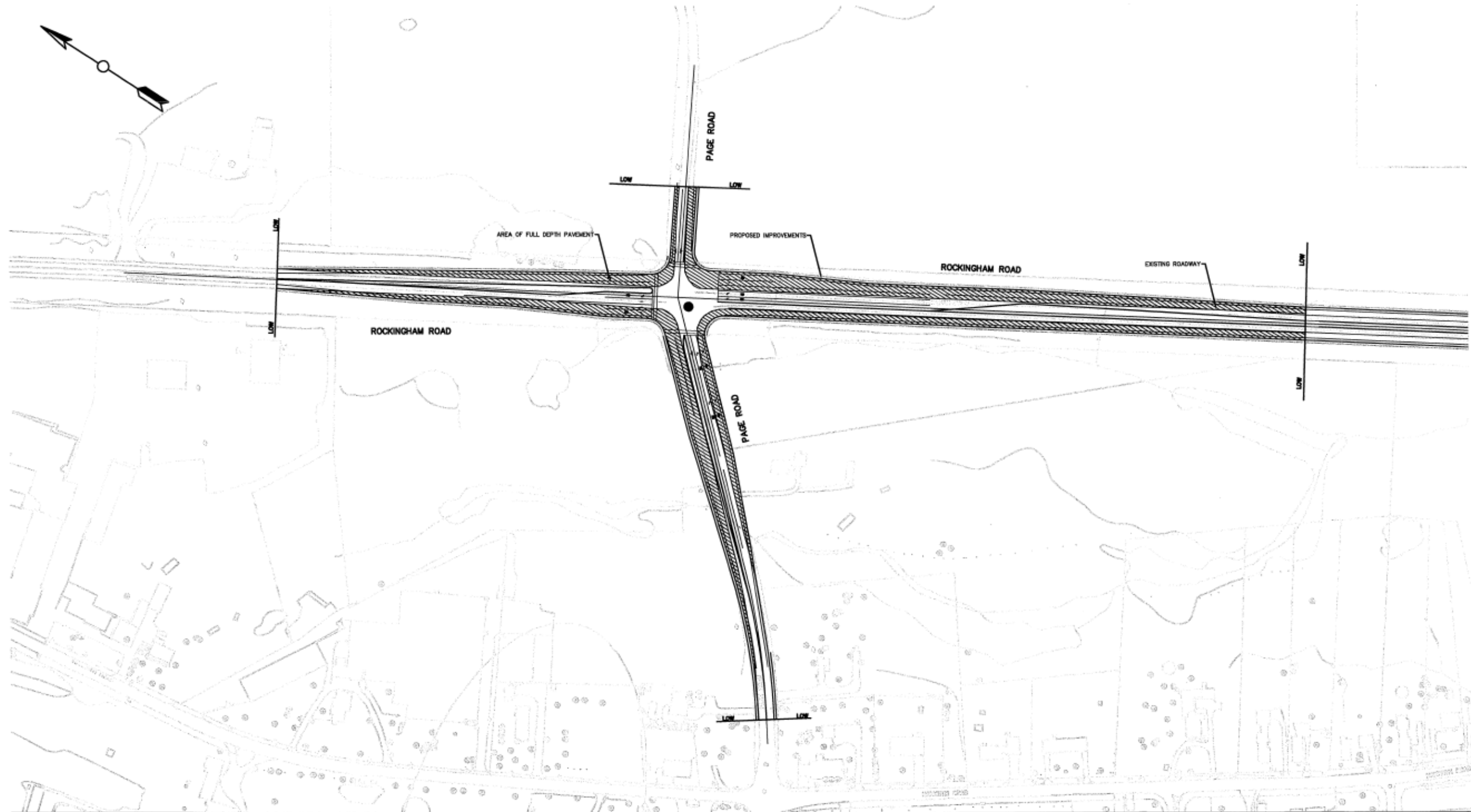
2011 Impact Fee:	\$ 1,189
2012 Impact Fee:	\$ 1,469
2013 Impact Fee:	\$ 1,890
2014 Impact Fee:	\$ 2,181
2015 Impact Fee:	\$ 2,202
2016 Impact Fee:	\$ 2,313

Rt. 28  
Corridor

Western  
Segment

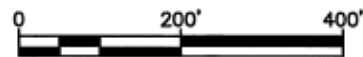
Page Road  
Intersection

Proposed  
Improvements  
Map



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Legend



Notes

- SIGNAL MODIFICATION
- FULL DEPTH BOX WIDENING IN HATCHED AREAS
- OVERLAY EXISTING PAVEMENT AREA

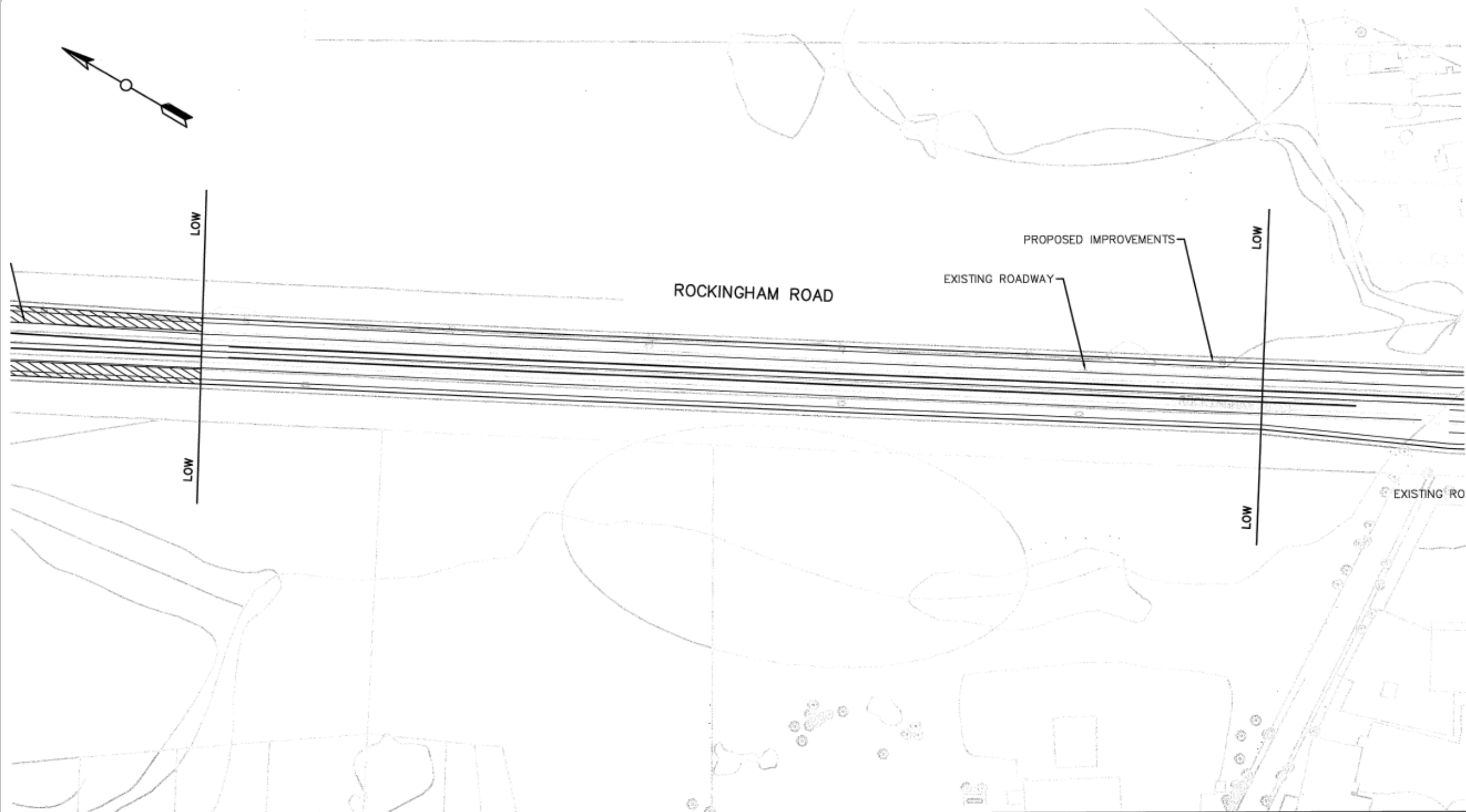
Client/Project  
TOWN OF LONDONDERRY  
ROCKINGHAM ROAD  
CONCEPTUAL DESIGN-FUTURE IMPROVEMENTS  
Figure No.  
1  
Title  
PAGE ROAD INTERSECTION

Rt. 28  
Corridor

Western  
Segment

Road Section  
Between Page  
Road &  
Sanborn Road

Proposed  
Improvements  
Map



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Notes

- FULL DEPTH RECONSTRUCTION

Client/Project  
TOWN OF LONDONDERRY  
ROCKINGHAM ROAD  
CONCEPTUAL DESIGN—FUTURE IMPROVEMENTS

Figure No.  
2

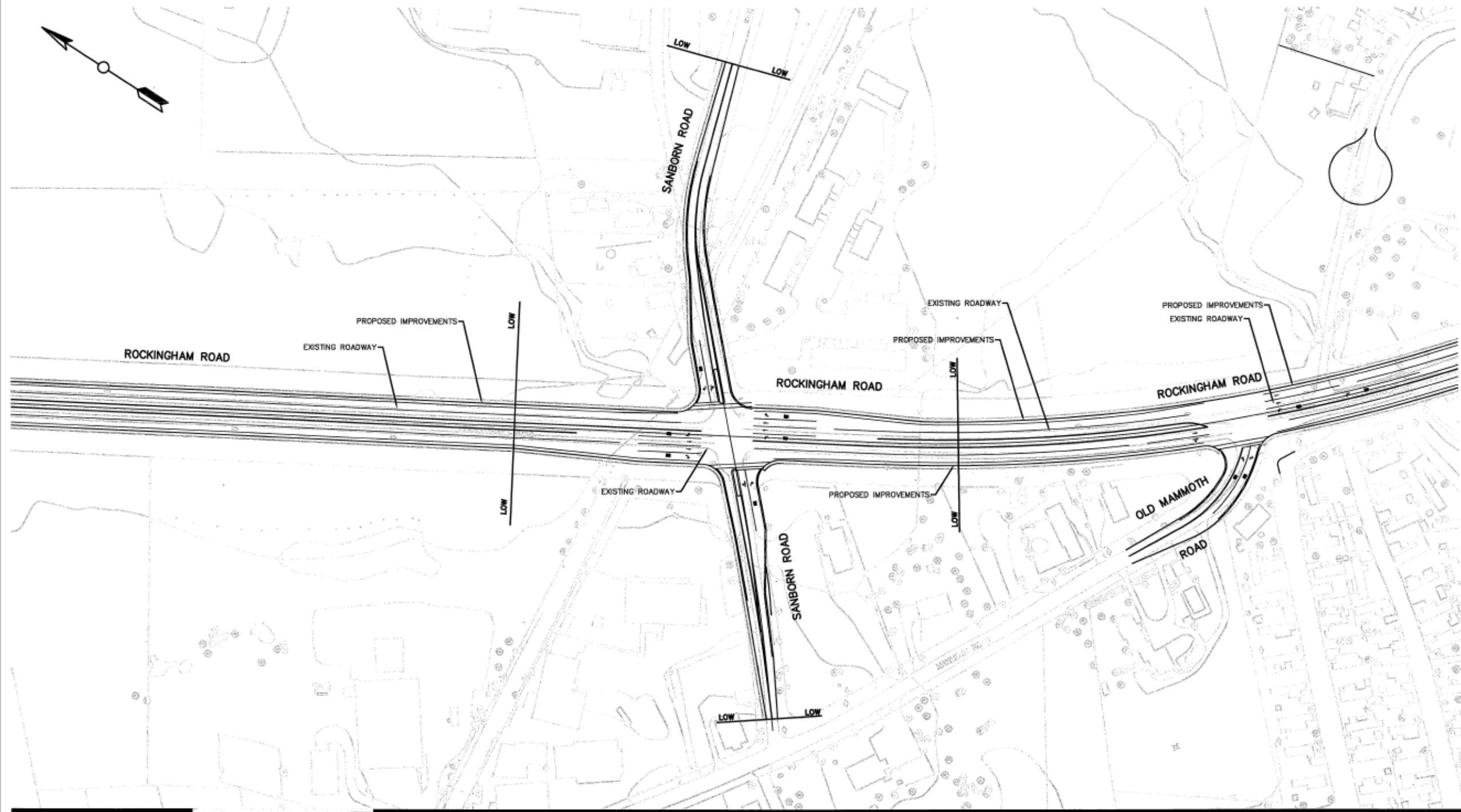
Title  
ROAD SECTION BETWEEN PAGE  
ROAD AND SANBORN ROAD

Rt. 28  
Corridor

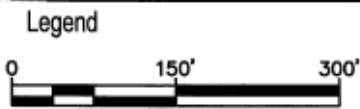
Western  
Segment

Sanborn Road  
Intersection

Proposed  
Improvements  
Map



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- Notes
- FULL DEPTH RECONSTRUCTION
  - SIDEWALK EXTENDS TO NORTH SCHOOL

Client/Project  
TOWN OF LONDONDERRY  
ROCKINGHAM ROAD  
CONCEPTUAL DESIGN-FUTURE IMPROVEMENTS

Figure No.  
3

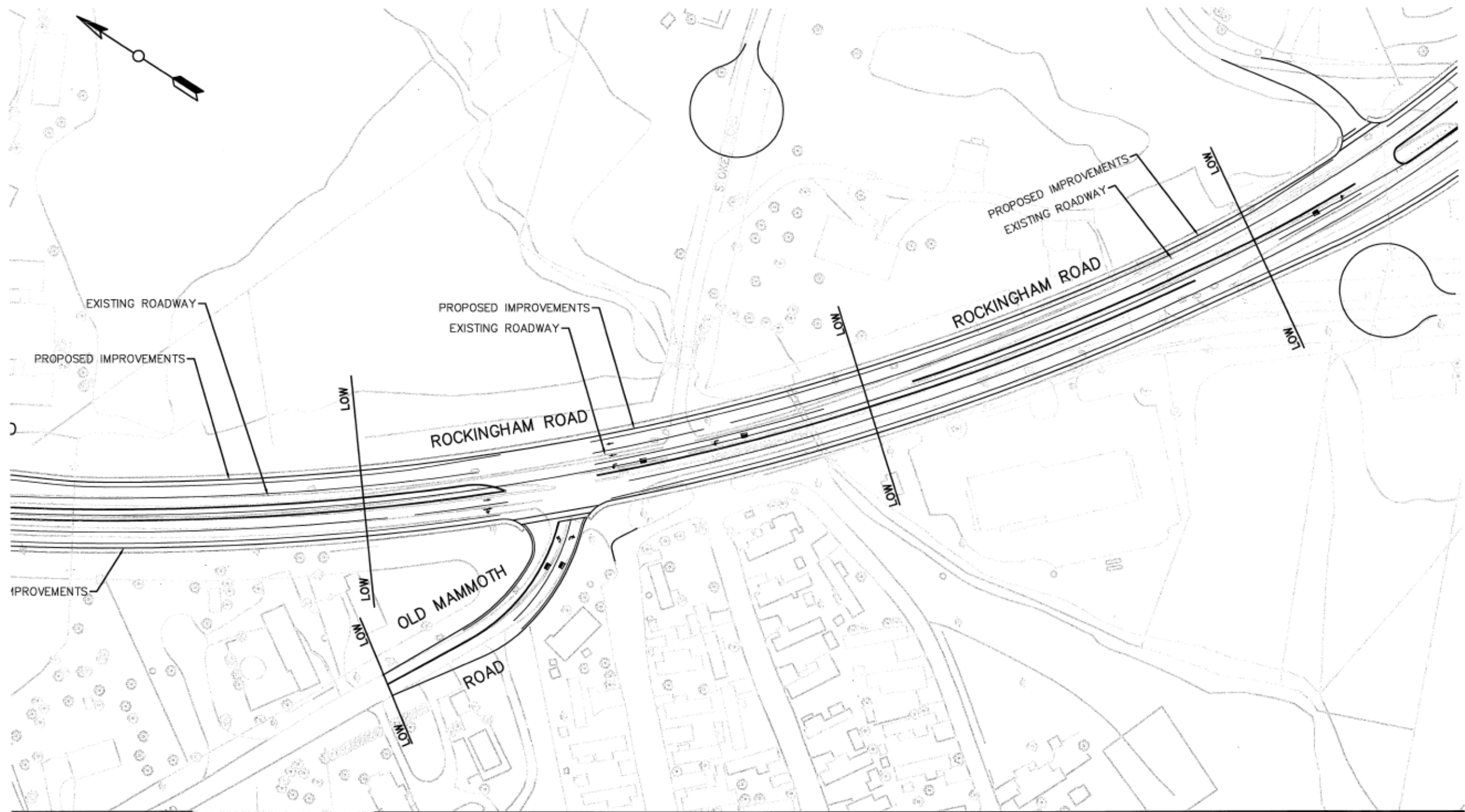
Title  
SANBORN ROAD INTERSECTION

Rt. 28  
Corridor

Western  
Segment

Area between  
Sanborn &  
Mammoth  
Road (N),  
Intersection

Proposed  
Improvements  
Map



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Legend



Notes

- FULL DEPTH RECONSTRUCTION
- REMOVAL OF BRIDGE ON STOKES ROAD
- NEW CUL-DE-SAC ON STOKES ROAD
- NEW BRIDGE UNDER ROUTE 28

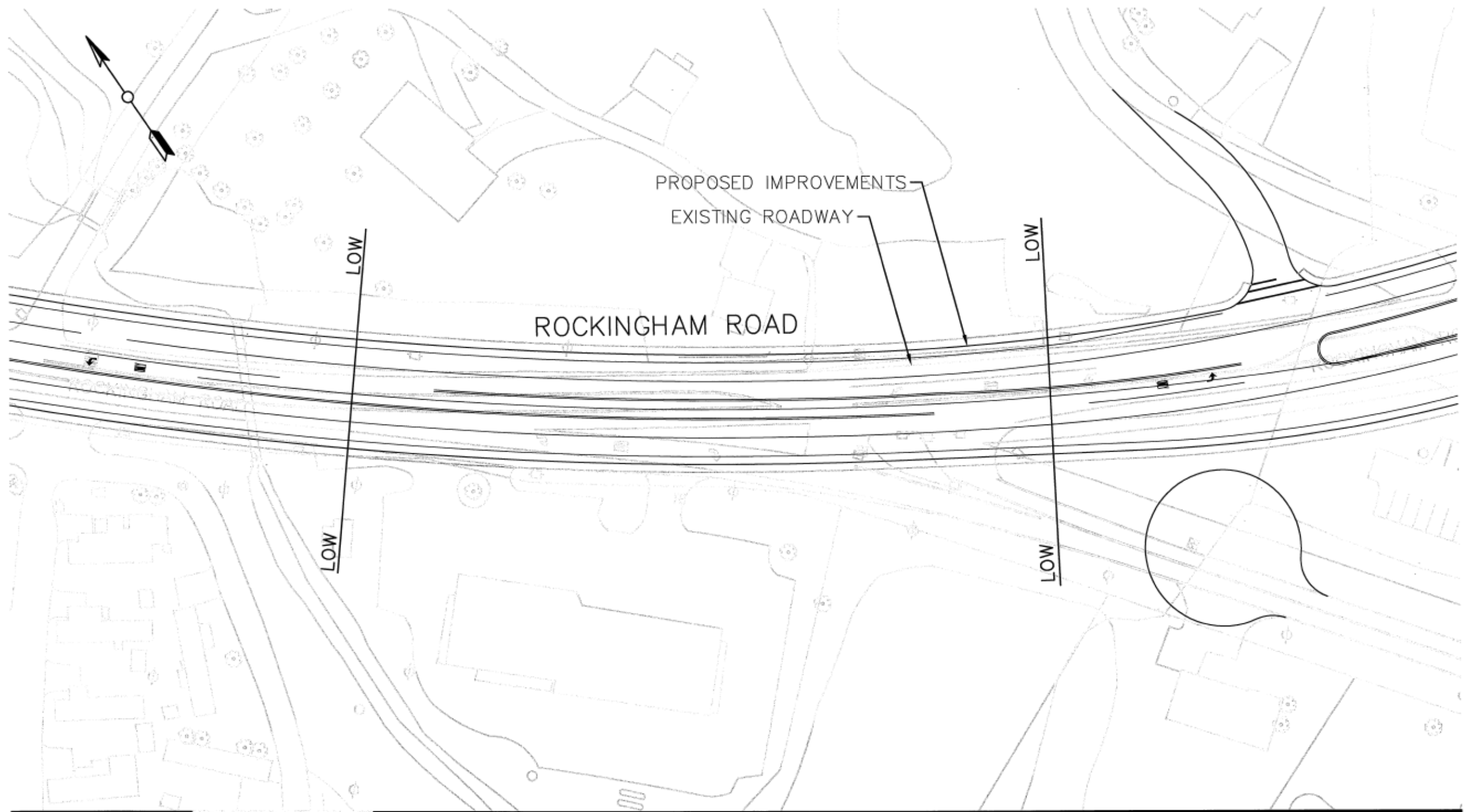
Client/Project  
TOWN OF LONDONDERRY  
ROCKINGHAM ROAD  
CONCEPTUAL DESIGN-FUTURE IMPROVEMENTS  
Figure No.  
4  
Title  
AREA BETWEEN SANBORN AND  
OLD MAMMOTH RD, INTERSECTION

Rt. 28  
Corridor

Western  
Segment

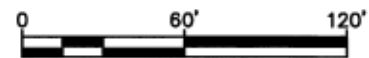
Area between  
Mammoth  
Road (N) and  
Mammoth  
Road (S)

Proposed  
Improvements  
Map



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Legend



Notes

- FULL DEPTH RECONSTRUCTION

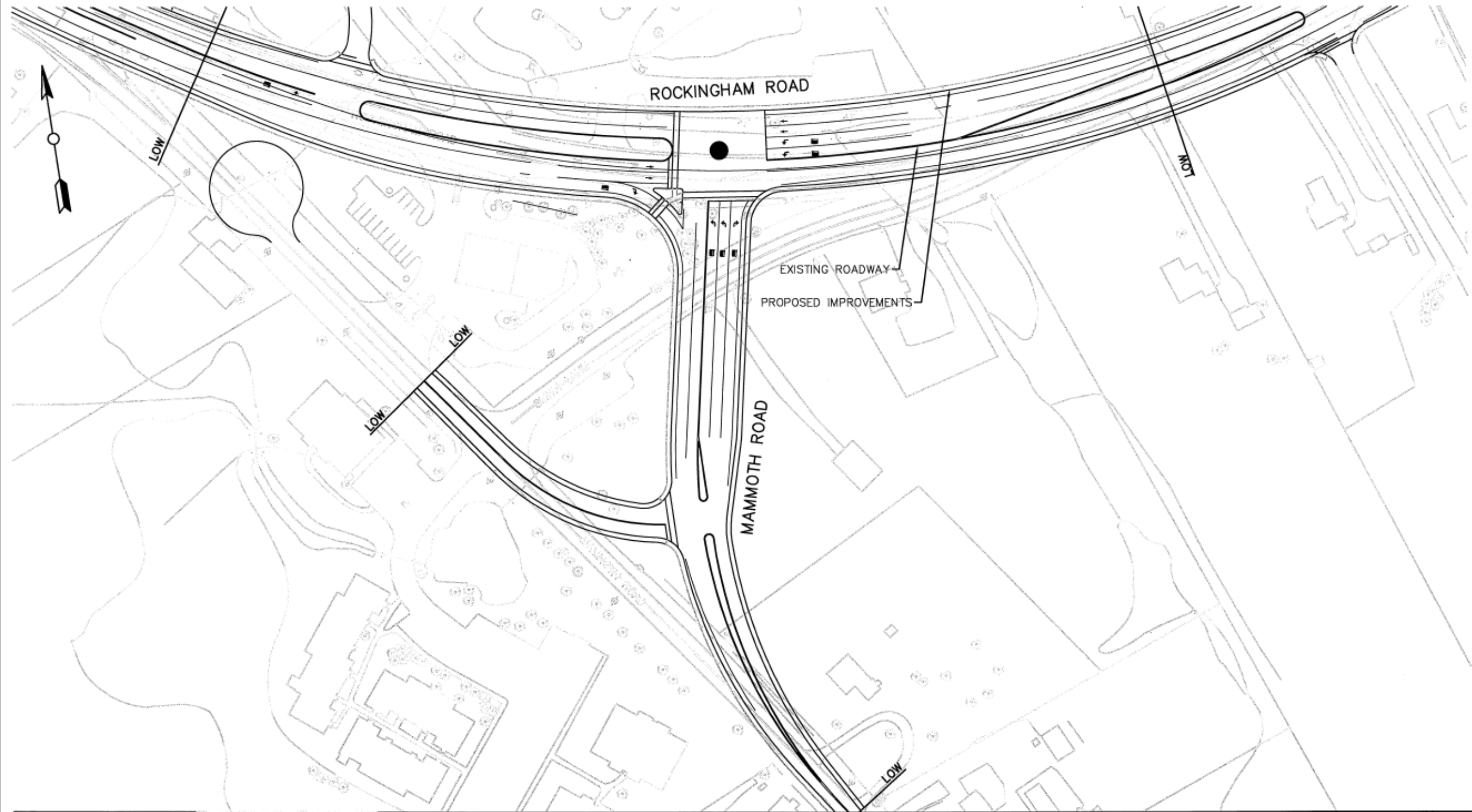
Client/Project  
TOWN OF LONDONDERRY  
ROCKINGHAM ROAD  
CONCEPTUAL DESIGN—FUTURE IMPROVEMENTS  
Figure No.  
5  
Title  
ROAD BETWEEN OLD MAMMOTH  
AND MAMMOTH ROAD

Rt. 28  
Corridor

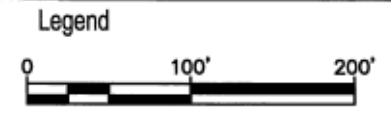
Western  
Segment

Mammoth  
Road (S)  
Intersection

Proposed  
Improvements  
Map



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- Notes
- FULL DEPTH RECONSTRUCTION
  - NEW SIGNALIZED INTERSECTION
  - CUL-DE-SAC ON OLD ROUTE 128

Client/Project  
TOWN OF LONDONDERRY  
ROCKINGHAM ROAD  
CONCEPTUAL DESIGN-FUTURE IMPROVEMENTS

Figure No.  
6

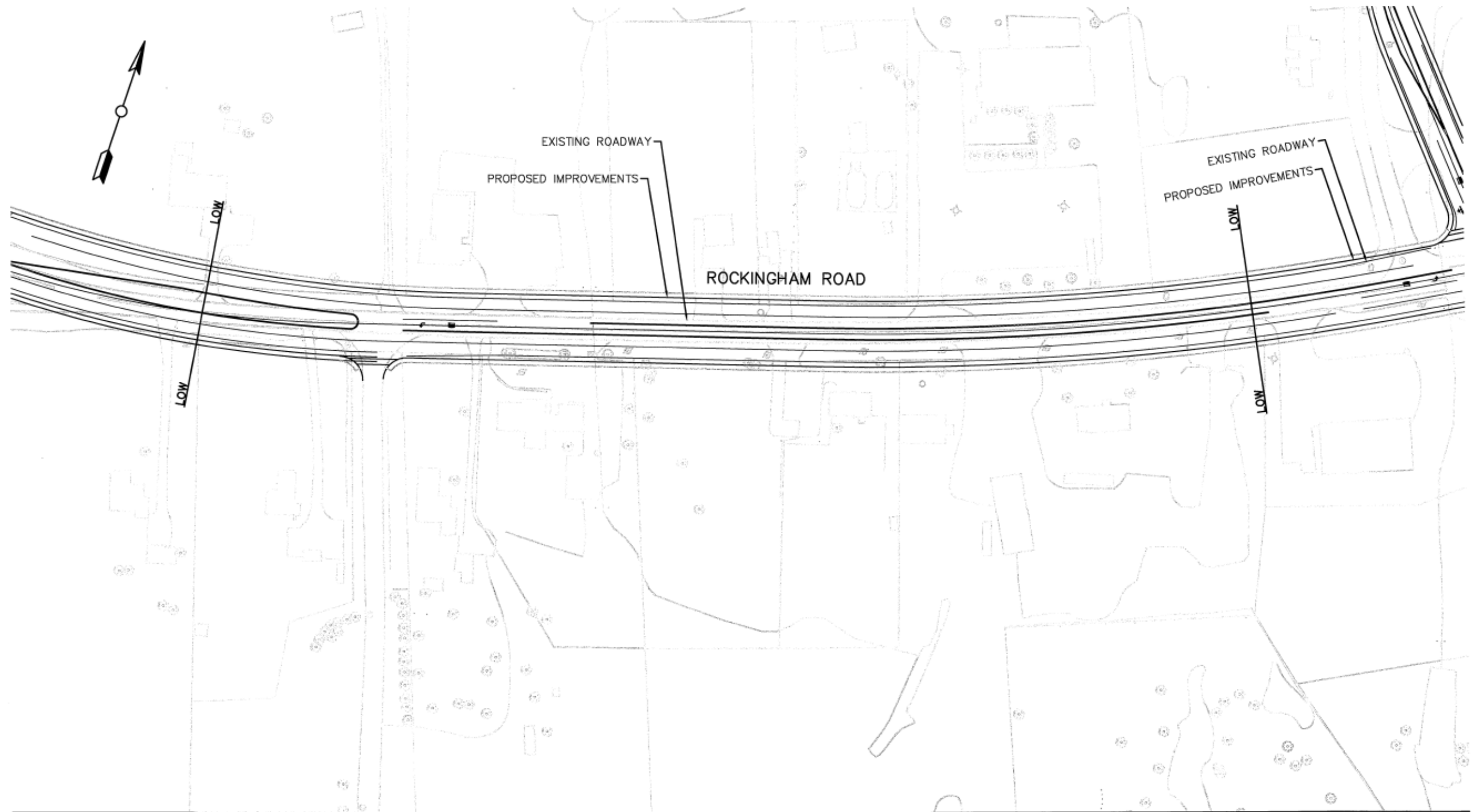
Title  
MAMMOTH ROAD INTERSECTION

Rt. 28  
Corridor

Western  
Segment

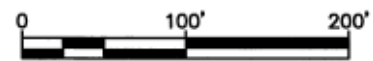
Road Section  
between  
Mammoth (S)  
and Clark/  
Noyes Road

Proposed  
Improvements  
Map



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Legend



Notes

- FULL DEPTH RECONSTRUCTION

Client/Project

TOWN OF LONDONDERRY  
ROCKINGHAM ROAD  
CONCEPTUAL DESIGN-FUTURE IMPROVEMENTS

Figure No.

7

Title

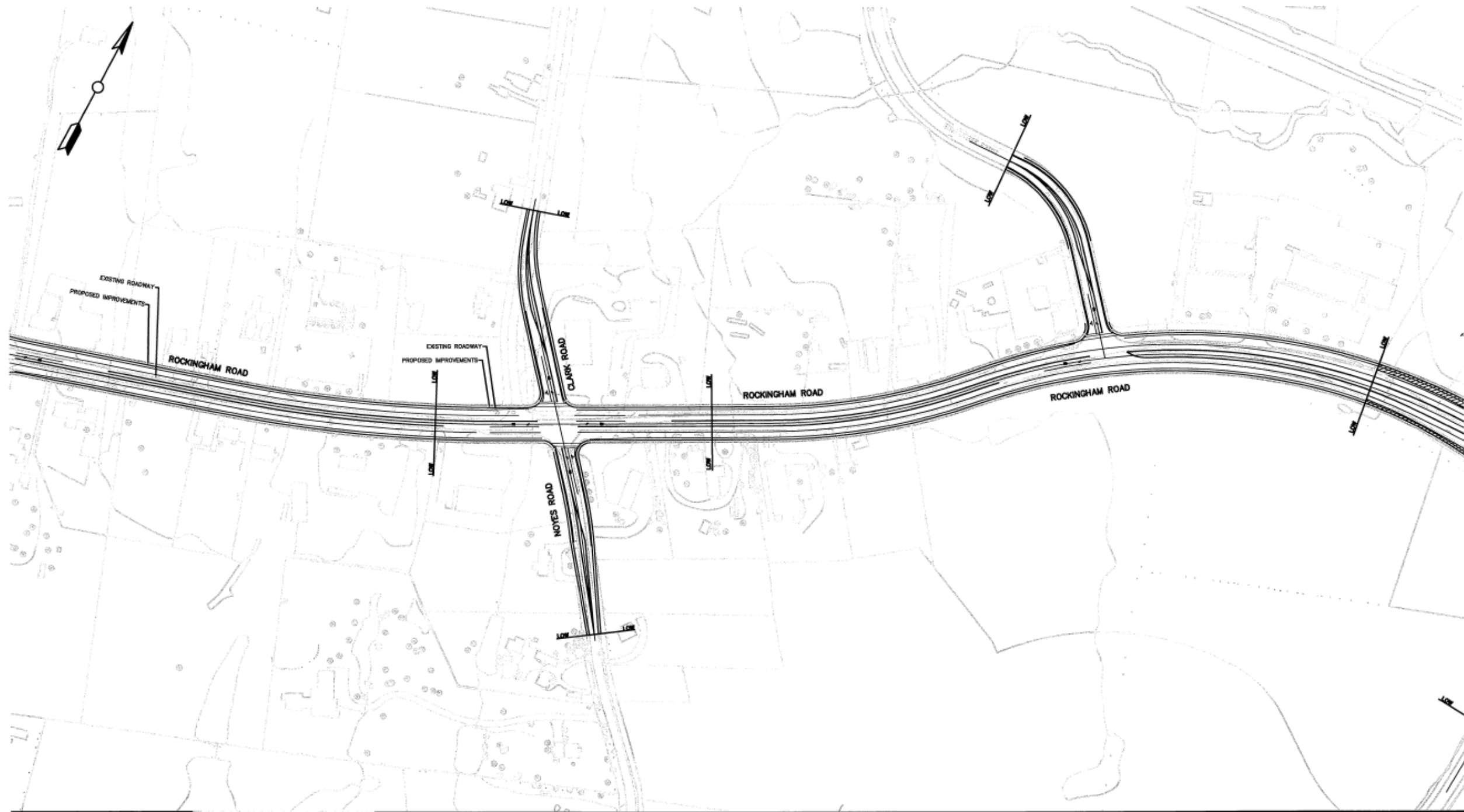
ROAD SECTION BETWEEN  
MAMMOTH AND CLARK/NOYES RD

Rt. 28  
Corridor

Western  
Segment

Clark/Noyes  
Road  
Intersection to  
Symmes Drive  
Intersection

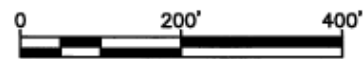
Proposed  
Improvements  
Map



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Legend



Notes

- FULL DEPTH RECONSTRUCTION

Client/Project

TOWN OF LONDONDERRY  
ROCKINGHAM ROAD  
CONCEPTUAL DESIGN-FUTURE IMPROVEMENTS

Figure No.

8

Title

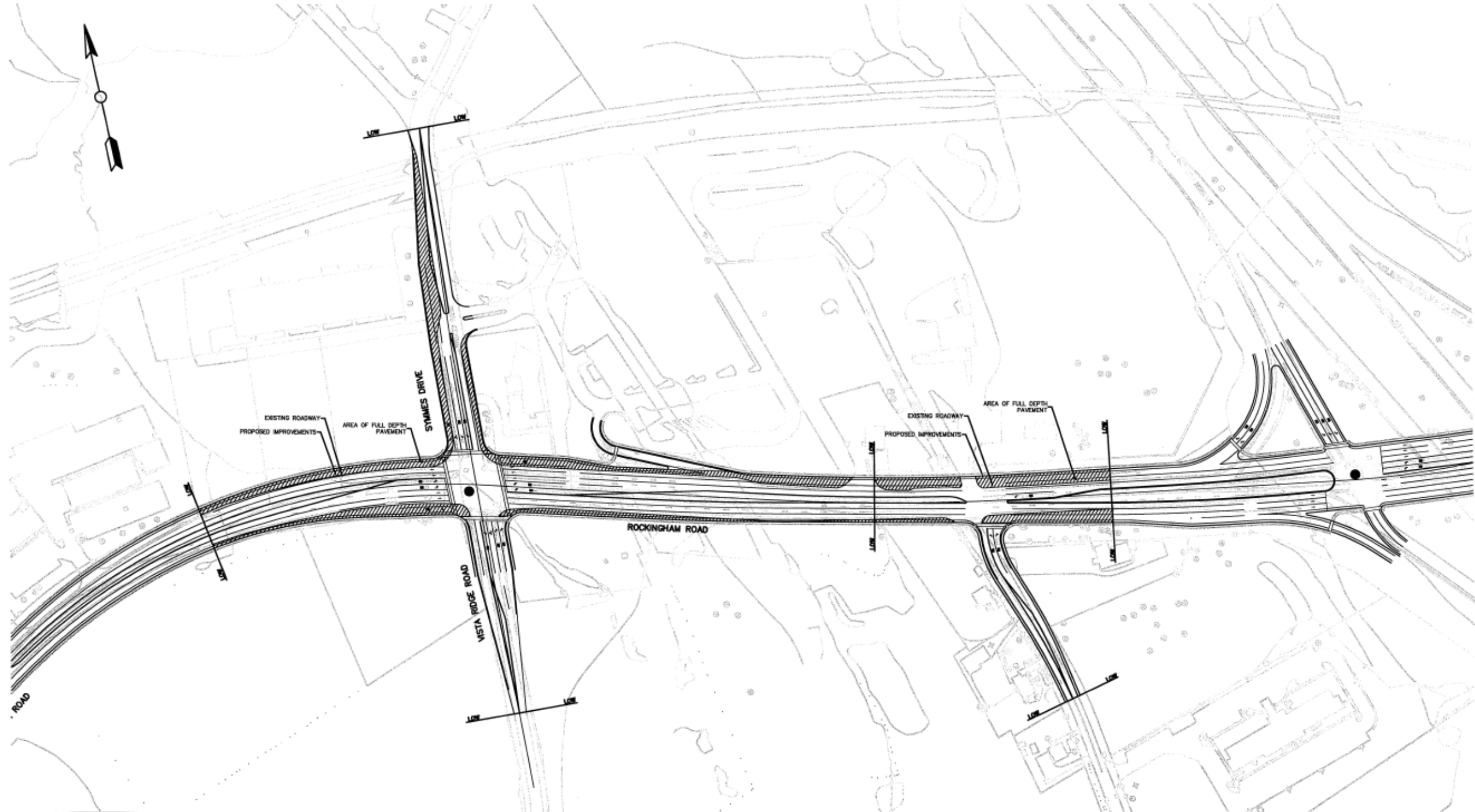
CLARK/NOYES ROAD INTERSECTION  
TO SYMMES DRIVE INTERSECTION

Rt. 28  
Corridor

Western  
Segment

Symmes  
Drive/Vista  
Ridge Drive &  
Perkins Road  
Intersection

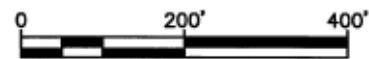
Proposed  
Improvements  
Map



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Legend



Notes

- FULL DEPTH BOX WIDENING IN HATCH AREAS
- MODIFICATIONS TO SIGNALIZED INTERSECTION AT SYMMES DRIVE
- OVERLAY EXISTING PAVEMENT AREAS

Client/Project

TOWN OF LONDONDERRY  
ROCKINGHAM ROAD  
CONCEPTUAL DESIGN—FUTURE IMPROVEMENTS

Figure No.

9

Title

SYMMES DRIVE/ VISTA RIDGE  
ROAD & PERKINS RD INTERSECTION