Londonderry Fire Department
Rules & Regulations
Adopted May 6, 2024

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Chapter 1 Introduction

1-1 The purpose of this document is to ensure that fire code related items with in the Town of Londonderry achieve the following:

a. High reliability;
b. Ease of operation and understanding;
c. Conformity with fire department operations and equipment;
d. Protection of life and property with regard to system design and quality; and
e. Reduction of false and needless alarms or activation.

These requirements are not to be construed to be complete but only as a guide. Each occupancy has unique characteristics, and the Londonderry Fire Department reserves the right to modify or make additional requirements in the interest of life safety. All questions regarding fire protection systems shall be resolved before proceeding with construction.

1-2 Authority:

1-2.1 The Londonderry Fire Department shall have the authority to require and review shop drawings of all fire protection systems.

1-2.2 The Londonderry Fire Department has the authority to promulgate rules necessary to review documents for the purpose of acceptance or provide reasons for Non-acceptance.

1-2.3 Review and approval by the Londonderry Fire Department shall not relieve the applicant of the responsibility of compliance with the code.

1-2.4 The Londonderry Fire Department shall have the right to enforce all local and State fire codes and regulations.

1-3 Definitions:

Approved- Acceptable to the Londonderry Fire Department

Authority Having Jurisdiction - The Chief of the Londonderry Fire Department or his/her designee and/or the New Hampshire State Fire Marshal.

Fire Prevention Bureau - The division of the Londonderry Fire Department that is responsible for inspections of buildings, enforcement of codes, investigating fire origin and public fire education.

Fire Alarm Technician/Service Technician - A professional who is familiar and knowledgeable regarding the installation, testing and maintenance of fire alarm systems and is factory certified or NICET certified level II to work on the system in question.

Fire Lane - A fire department access road, which is marked with approved signs or other approved notices.
Fire Watch - A person or persons assigned to stay alert during hazardous processes or during normal sleeping hours. This person may be required to make regular rounds looking for fires or hazards, or may be specifically assigned to watch over a hazardous operation detect and/ or extinguish fires resulting from a hazardous operation. A fire watch may be required to report into the Londonderry Fire Department Communications on an hourly basis.
HVAC - Heating Ventilation and Air Conditioning
NFPA - The National Fire Protection Association
Sprinkler Technician/Service Technician - A professional who is familiar with and knowledgeable of the installation, testing and maintenance of fire sprinkler systems.
Suppression System Technician/Service Technician - A professional who is familiar and knowledgeable of the installation and maintenance of fire suppression systems that he/she is installing, testing or maintaining.
Shall- Indicates a mandatory requirement.
Should- Indicates a recommendation.

1-4 Referenced Standards: Currently adopted State Fire Code, currently adopted State Building Code, RSA 153:1 and RSA 155-A:1.

Chapter 2 Permits, Plans and Inspections

2-1 Permits:

2-1.1 The installing contractor must secure a permit to install, from the fire department, before starting work on any fire detection and alarm system, fire sprinkler system, fire suppression system, smoke control system or stand pipe system. This permit does not indicate the plans for such system has been reviewed and approved by the fire department.

2-1.2 Prior to conducting any work that has <u>any</u> chance of transmitting a trouble or fire alarm signal, the Londonderry Communications Center shall be notified. (603-432-1125).

2-1.3 Permit numbers are to be kept confidential and not broadcast via 2-way radio.

2-1.4 During periods of system shut down, the permit holder is responsible for occupant and fire department notification should an emergency arise. Unexplained system activations are to be investigated.

2-1.5 Systems shall not be shut down overnight in any occupied occupancy without fire department approval. The fire department should be notified anytime that any fire protection system is left out of service for more than 4 hours.

2-1.6 The permit holder is responsible for restoring the system prior to leaving the building. The permit holder shall verify with the dispatch center the alarm condition and explain if the system is left in trouble.

2-1.7 The permit holders are responsible for system security. Control panels or other equipment is not to be left unlocked nor are keys or codes to be left in the panel or left unsecured.

2-2 Plans:

2-2.1 Fire Detection and Alarm Systems

2-2.1.1 Plans for proposed fire detection and alarm systems shall be submitted to the Londonderry Fire Department at least 30 days prior to any work being performed. The Fire Prevention Bureau shall be provided with plans that shall include:

a. Detailed floor plan showing:
   - Connected and non-connected detection devices;
   - Evacuation signals;
   - Main control panel location;
   - Remote enunciator(s) location;
   - Type of construction;
   - Unique or unusual features (ceiling pockets, sloped or multi leveled ceilings, atria, etc.);
   - Planned use of the building;
   - HVAC intakes and outputs; and
   - Location of the Knox-box (es).

b. A riser diagram of the complete fire alarm system including water flow, tamper, and any connections to other fire protection systems.

c. Associated battery calculations meeting the currently adopted NFPA 72.

d. An enunciator detail drawing showing proposed zone labeling. Zones are not to be solely numbered, but are to be labeled in plan English depicting location (i.e. Second floor west wing).

e. A list of fire alarm device addresses.

2-2.1.2 Detailed component and equipment list with model and Manufacturer's part numbers, and product sheets for each item of equipment.

2-2.1.3 Any changes from the originally proposed or approved plans that should occur during construction will be documented by a written

revision and be approved by the Londonderry Fire Department.

2-2.1.4 Additions or modifications of existing systems shall require a new approval.

2-2.1.5 Plans showing actual "As Built" shall be submitted after completion and acceptance of the system. These plans shall become the record of the Londonderry Fire Department.

2-2.1.6 The Fire Prevention Bureau shall review and approve or disapprove all submittals within thirty days of date of submittal.

2-2.1.7 A complete list of fire alarms device descriptions (address descriptions and verbiage) must be submitted not less than thirty days prior to the acceptance test.

2-2.2 Sprinkler systems, Standpipe systems and Fire Pumps

2-2.2.1 Plans for the proposed system must be submitted to the fire department at least 30 days prior to any work being performed. The Fire Prevention Bureau shall be provided with plans that shall include a detailed floor plan and calculations shall be submitted in accordance with NFPA 13, 13R, and 13D.

2-2.2.2 Manufacturer's equipment cut sheets and specifications must be submitted to the fire department for all equipment proposed to be used.

2-2.2.3 Additions or modifications to an existing system will require a new approval.

2-2.2.4 Material Safety Data Sheets must be submitted if any additives are to be introduced to the system (i.e. antifreeze, etc…)

2-2.2.5 Any changes from originally proposed or approved plans that occur during construction will be documented by written revision and approved by the Londonderry Fire Department.

2-2.2.6 The Fire Prevention Bureau shall review and approve or disapprove all submittals within 30 calendar days of date of submittal

2-2.3 Other Fire Protection Systems

2-2.3.1 A plan of the proposed system must be submitted to the fire department for approval at least 30 days prior to any work starting on the system.

2-2.3.2 The plan must show:

a. The area or hazard the system is designed to protect;
b. The purpose of the system;

c. Any calculations associated with such system (i.e. airflow, agent density, etc.);
d. Location of any control panels;
e. All associated piping and/or duct work;
f. Location of all detection devices;
g. Location of any special occupant notification devices;
h. NFPA standard system is designed to meet;
i. Any unique or unusual features;
j. Any interconnection with other systems (i.e. the kitchen hood system that also shuts down the flow of gas, Smoke detectors which activate elevator recall, etc.);
k. Location of any specialized switches or hardware (i.e. abort switch); and
l. Material Safety Data Sheets for any extinguishing agents used.

2-2.3.3 Manufacturer's equipment cut sheets and specifications must be submitted to the fire department for approval for all equipment proposed to be used.

2-2.3.4 A set of plans indicating the Fire Department approval shall be available at the job site until after completion of the required acceptance test.

2-2.3.5 Any changes from originally proposed or approved plans that should occur during construction will be documented by written revision and approved by the Londonderry Fire Department.

2-2.3.6 Additions or modifications of an existing system shall require a new approval

2-2.3.7 Plans showing actual "As Built" shall be submitted after completion and acceptance of the system. These plans shall become the record of the Londonderry Fire Department.

2-2.3.8 Because each system may have unique characteristics additional requirements may be necessary.

2-2.3.9 The Fire Prevention Bureau shall review and approve or disapprove all submittals within 30 calendar days of date of submittal. Rough inspections on enclosed piping and final acceptance testing shall be required.

2-3 Inspections:

2-3.1 The Londonderry Fire Department will not conduct a fire alarm test unless the fire alarm device description list has

been submitted 30 days prior to said test. (See Section 4-4.14)

2-3.2 The fire protection system must be complete before the final inspection is scheduled. No work shall be on going at the time of inspection.

2-3.3 The installer shall complete and submit to the fire prevention bureau certification that the system has been 100% tested and functions in complete compliance with the applicable codes, system specifications, manufacturer's specifications and the fire department's requirements. This certificate shall be signed by the installer(s).

2-3.4 The installer shall schedule an appointment with the Fire Prevention Bureau to witness a complete system acceptance test within fourteen days of completion of the certification.

2-3.5 The acceptance test shall be conducted by the installer and be witnessed by the Londonderry Fire Department and/or the New Hampshire State Fire Marshal's office. A representative of the equipment manufacturer may also be required to be present.

2-3.6 The installer shall furnish all materials and personnel necessary to conduct the test. This may include but not necessarily limited to sources of heat, canned smoke, inert gases, fog machines, two-way radios, etc. All testing is to be non-destructive and in accordance with the manufacturer's testing criteria.

2-3.7 Acceptance testing will be conducted according to the applicable NFPA standard and the manufacturer's recommendation.

2-3.8 Fire detection devices shall be tested utilizing non-destructive means.

2-3.9 The fire department must witness any testing criteria that must take place before the acceptance test (i.e. fire pump flow test, hydrostatic testing, etc…)

2-3.10 If the system is designed to operate on back-up power supplies, up to 50% of the test will be conducted in the back-up power mode.

2-3.11 No acceptance test will be conducted prior to the installation of the finish floor, walls or ceiling in new or renovated area.

Exception: When on going construction does not adversely affect the system in <u>any</u> way, and when the on-going construction will have no bearing on the system (i.e. conducting a final inspection on a kitchen hood system while <u>unrelated</u> construction is ongoing in other areas of the building).

2-3.12 All parts of the system may be required to be inspected during the acceptance test. The installer must be prepared to provide access to the system; this could include keys to unlock doors, equipment to move ceiling panels, etc.

2-3.13 If the building is occupied at the time of the test and the system activates building audiovisual warning devices, the installer must make provisions to notify all building occupants of the test. Building occupants must again be notified when the test is complete.

2-3.14 If the system is connected to the Londonderry Fire Department Communications Center, the center shall also be notified of the test. (603-432-1125) unless the remote signal transmission is being tested the system shall be completely disconnected from the communications center for the duration of the test. The remote signal transmission shall be fully restored prior to contacting the center regarding the completion of testing. Verification of restoration of the signal shall be made with the communications center.

2-3.15 A technician must be available on site to make any required field modifications to the system. Specifically, with regard to addressable fire alarm systems a technician must be available to make programming changes as required by the Fire Department.

2-3.16 No system will be approved, accepted, or signed-off unless all requirements of these regulations have been satisfied.

2-3.17 Any failure during the final acceptance test indicates that the system has failed and a re-test must be scheduled. The cost associated with the re-test(s) will be billed to the installing contractor based on the Londonderry Fire Department Re-Inspection Fee structure.

2-3.18 Any request for inspections requires a notice of 48 business hours minimum.

2-3.19 In addition to any fees required, any request for special inspections after normal business hours shall be charged $75.00 an hour with a 2-hour minimum. AFTER-HOURS INSPECTION APPROVAL IS SUBJECT TO INSPECTOR AVAILABILITY.

Chapter 3 System Maintenance

3-1 Fire protection equipment and systems shall be properly maintained in full working order at all times.

3-2 Fire protection equipment and systems shall be maintained and tested in accordance with all applicable NFPA standards and the recommendations of the manufacturer.

3-2.1 The Fire Prevention Bureau shall receive written documentation of all required system maintenance and testing.

3-2.2 Any maintenance and testing of fire protection equipment requires a permit from the Londonderry Fire Department in accordance with section 2-1.1.

3-2.3 If applicable, building occupants and the Londonderry Fire Department Communications Center must be notified of maintenance, testing and/or repairs in accordance with sections 2-1.2, 2-3.12 and 2-3.13.

3-3 All fire protection systems in the Town of Londonderry that are connected to the Londonderry Fire Department Communications Center are required to have a satisfactory service contract covering the maintenance, testing, operation and repair of the system. This contract shall be between the building owner and a competent service contractor. The servicing contractor shall provide the following services:

- Provide all required maintenance, testing and repairs of the fire protection system.
- Provide service technician(s) able to conduct maintenance, testing and repair of fire protection systems. These technicians shall be competent and knowledgeable with the installation, maintenance and repair of equipment and with the applicable standards governing the system. Minimum certification required is NICET level II.
- Provide service technician(s) available to make any repairs and to initiate restoration of service following an alarm or trouble condition within twenty-four hours after notification by the property owner.
- Provide written documentation of all required maintenance and testing. A copy of such documentation to be forwarded to the Fire Prevention Bureau.

3-3.1 A copy of the service contract shall be filed with the Londonderry Fire Department. In the event the contract is cancelled or not renewed, the Fire Department shall be notified in writing.

3-3.2 Should the property owner or designee be unavailable for notification, the Londonderry Fire Department may initiate callback if it determines that immediate restoration is needed to continue occupancy of the building. The name and phone number of the system contractor shall be available on or in the control panel.

3-3.3 **Penalty:** Failure to maintain or renew a contract could result in disconnection of the alarm from the Londonderry Fire

Department Communications Center and subsequent evacuation of the premises.

3-3.4 Poor maintenance of a fire protection system can result in unnecessary and unwanted false alarms. False alarms can be subject to fines as determined by the fire department.

Chapter 4 Fire Detection and Alarm Systems

4-1 Where Required: Fire Alarm systems shall be installed in the following occupancies:

a. Where required by the State Fire Code or State Building Code.

4-1.1 All occupancies required by section 4-1 to have a fire detection and alarm system, are also required to have the system connected directly to the Londonderry Fire Department Communications Center or a Listed Central Monitoring company approved by the Londonderry Fire Department.

4-1.1.1 Direct connection to the Londonderry Fire Department Communications Center shall be accomplished by the following:

a. Owner or his/her representative shall make application to the Londonderry Fire Department Communications Center.

b. Owner shall purchase install and connect a radio mater box.

4-1.1.1.2 Central Monitoring shall be by approved Listed AES monitoring systems.

4-2 Equipment: All equipment shall be of a type approved by the Fire Prevention Bureau and listed by an independent testing laboratory.

4-2.1 All equipment shall be utilized in a manner consistent with its intended use and with its approval.

4-2.2 All equipment must be cross-listed and compatible with other equipment being used.

Exception: when doing a partial upgrade of a system it may not be possible or feasible to install cross-listed equipment. Equipment that is not cross-listed may be used only with prior approval of the fire prevention bureau.

4-2.3 All panels, battery boxes and other similar locked equipment cabinets must be provided with CAT-30 lock cylinders only. Radio Boxes may be keyed with a 211 key. Keys shall not be left in key cylinders and access to equipment shall be restricted to the fire department and authorized fire alarm technicians.

4-3 System Powering and Supervision

4-3.1 Systems shall operate on a 24VDC and be fully supervised.

4-3.2 Systems shall have a separate, lockable AC circuit disconnect provided. A circuit breaker in an electrical panel containing other circuits will be acceptable.

4-4 Control Panel Requirements:

4-4.1 Panels shall be labeled “Fire Alarm Control” on the outside of the cabinet front in contrasting lettering at least 1 inch in height and 1/16-inch stroke.

4-4.2 Panels shall be provided with labeling as follows: “Do not store or place anything in front of this panel.” Lettering to be at least 3/4 inch in height and 1/16-inch stroke.

4-4.3 All fire alarm control panels shall be capable of alarm verification in accordance with NFPA 72.

4-4.4 Fire alarm systems shall be stand-alone units. Combination fire alarm and burglar alarm systems shall not be allowed where prohibited by State Fire Code or State Building Code.

4-4.5 Upon activation of any alarm initiating device the panel shall:

a. Sound evacuation signals;
b. Flash evacuation lights;
c. Indicate zone(s) of activation;
d. Signal the remote monitoring station; and
e. Properly interface with other systems such as shutting down HVAC, releasing magnetic door holders, activate elevator recall, initiate smoke evacuation systems, release delayed egress locks, etc.

4-4.6 The panel shall transmit a “trouble” signal whenever a condition exists that is not normal or desired operation. This includes anytime a device or zone is disabled.

4-4.7 Panels shall be provided with the following lamps:

a. Red = Alarm
b. Yellow = Trouble/Supervisory
c. Green = A/C Power

The panel must either be provided with one yellow and one red lamp per zone or there can be a single yellow and a single red lamp provided there is alternative means of zone annunciation approved by the fire prevention bureau i.e. digital read-out.

4-4.8 Fully addressable systems shall be provided with a dedicated printer and/or call history.

4-4.9 The call history shall store the most recent 50 events (25 alarm events & 25 trouble/Supervisory events). Call history shall be accessible through a scrollable alphanumeric display. Call history shall be stored in the non-volatile memory with the time and date of each event. Call history shall remain intact even if there is a complete loss of power to the panel. Call history shall provide separate memory for recording alarm and trouble conditions. If a printer is not provided, accessing call history shall not require the use of any auxiliary equipment.

4-4.10 Panels shall be provided with the following buttons or switches:

a. System reset, this shall be the only reset. All devices, detectors and associated panels must reset when this switch is activated.
b. Alarm acknowledge switch. This switch shall silence interior audio signals. Interior and exterior visual signals and the exterior audio signals shall continue in operation until the system is reset. All audio and visual signals shall resound upon receiving any subsequent alarms.
c. Trouble silence switch. The trouble silence switch shall silence the audio trouble signal while the visual lamp remains illuminated.
d. Means for disabling zones shall be provided. This operation must be simple and approved by the Fire Prevention Bureau. Whenever a zone or device is disabled the panel must show a trouble condition. Also see section 4-4.11.
e. A drill switch that will permit drills without summoning the fire department is required in all educational and daycare facilities. This drill switch shall be a key switch or key accessible switch keyed to a "Cat-30" lock cylinder. It shall not be necessary to access the main fire alarm control panel to activate the drill switch or reset the alarm following a drill. A drill switch shall be optional in occupancies other than educational and day care.
   * Note: occupants should be advised to notify the fire department prior to conducting any fire drill.
f. All control panels having over 25 zones or 25 addressable devices must be equipped with "global acknowledge".

4-4.11 Display clocks shall display 24-hour military time.

4-4.12 Panels shall have zones labeling that is readily visible when the panel door is in either the opened or closed position. "Dymo" type labels are not permitted. Phenolic embossed labels are permitted provided they are properly secured. Alphanumeric type readouts are permitted provided they are suitably backlit and display sufficient characters to indicate the zone and condition being reported (Not less than a 40-character display will be accepted).

4-4.13 Zones or devices shall be labeled in plain English, as approved by the fire department. Zone numbers in them selves are not sufficient zone labeling. Construction room numbers or terminology only used for construction purposes is not permitted. Zone labeling shall correspond as much as possible to permanent building arrangements. Compass direction shall be used to indicate direction. The use of terms such as left, right, old section, new section etc… will not be allowed.

Device addresses shall be formatted as follows:
{Device Type} {Floor} {Compass Direction} {Specific Location}
Smoke Detector Floor 1 North Mechanical
Pull Station Floor 2 West at West Stair

4-4.14 Panel locations shall be:

a. in an area approved by the fire prevention bureau;
b. in an area protected by a smoke detector;
c. in an area provided with emergency lighting; or
d. in an approved fire command room in accordance with NFPA 72.

If the location of the fire alarm control panel is not obvious to responding fire fighters, approved directional signage may be required.

4-4.15 Fire alarm panels shall have built in protection and be able to withstand electrical power surges, momentary power outages, and lightning strikes.

4-5 Installation and Wiring Requirements:

4-5.1 Fire alarm wiring shall be installed in accordance with accepted standards and must be installed in a neat and workmanlike manner.

4-5.2 System wiring shall be installed in accordance with NFPA 70, NFPA 72, and the manufacturer's recommendations and requirements.

4-5.3 Wiring shall be of size and configuration required by code and acceptable to the manufacturer of the associated equipment.

4-5.4 Fire alarm cable shall not be run exposed unless the cable is rated for exposed installation, the cable is adequately shielded and the cable is not subject to physical damage.

4-5.5 Class "A" wiring must be provided in all residential type occupancies. Class "B" configuration may be used in non-residential occupancies with the approval of the Fire Prevention Bureau.

4-5.6 Class "B" systems must be wired with pull stations wired electrically first, followed by heat detectors and then smoke detectors. End-of-line (E.O.L.) devices shall be wired electrically last in the alarm circuit. The location of an E.O.L. shall be clearly marked or returned to the main control panel.

Exception: When the system is wired so that removal of a device from the circuit does not affect other devices on the circuit.

4-5.7 Junction boxes shall be predominately red in color.

4-5.8 Each junction box shall have a capacity of 40% greater than that required for the associated fire alarm wires.

4-5.9 Wires in junction boxes shall be permanently tagged and identified.

4-5.10 Each "fire area" shall be serviced by a zone, "fire areas" are to be as approved by the Fire Prevention Bureau.

4-5.11 All fire suppression equipment hooked into the fire alarm system shall be provided with a separate zone for each system.

4-6 Initiating Devices:

4-6.1 Manual pull stations shall:

a. Be predominately red in color;
b. Be mounted in accordance with NFPA 72;
c. Be labeled "FIRE";

d. Be located within 5 feet of all exit ways from each floor, unless otherwise approved by the Fire Prevention Bureau;
e. Be key reset type, with the lock cylinders to be "CAT-30" cylinders;
f. Be situated perpendicular to the wall;
g. Be of double action design;
h. Not require the use of disposable parts to reset; and

If a manual pull station is located in an area susceptible to malicious false alarms, the fire department may require alarmed lexan type covers over the pull stations.

4-6.2 Automatic fire detection devices shall be located and spaced in accordance with NFPA 72 and in accordance with the manufacturer's recommendations and requirements.

4-6.3 When installing smoke detectors, care shall be given to install the detector in such a fashion as to minimize false alarms. Smoke detectors installed in close proximity to light fixtures or HVAC vents should be avoided.

4-6.4 Smoke detectors shall not be installed prior to the installation of the finish floor and completion of all cutting patching sanding, painting, etc.

Exception: Should fire protection or construction circumstances mandate early installation of smoke detectors, they shall be bagged tightly in clear plastic. If smoke detection is a requirement of occupancy, the plastic bags shall be removed at the conclusion of each workday.

4-6.5 When installing devices consideration should be given to ease of maintenance whenever possible.

4-6.6 All fire and smoke detectors shall be indicating type detectors.

4-6.7 Detectors located in concealed areas and duct smoke detectors shall have remote indication stations in locations approved by the Fire Prevention Bureau.

4-6.8 Detectors that are difficult to access shall be provided with remote test switches.

4-6.9 Self-restoring devices shall not be allowed.

Exception: devices shall be allowed to be self restoring in the "walk test" mode only.

4-7 Evacuation Signal Devices

4-7.1 All devices shall:
a. be predominately red in color;
b. be labeled "FIRE"; and
c. Be in compliance with the Americans with Disabilities Act.

4-7.2 Visual signals shall be a flashing strobe behind translucent lenses. Visual signals must be synchronized.

4-7.3 Devices shall be engineered to comply with NFPA 72.

4-7.4 All buildings required by the State Fire Code or the State Building Code shall be provided with audio evacuation signal followed by a pre-recorded voice evacuation signal.

4-7.5 In addition, the fire alarm system shall have live voice communication capabilities. Live voice communication from the fire alarm panel shall override the pre-recorded message. Should there be a failure of the pre-recorded message; the audio tone shall be continuous.

4-7.6 The Fire Prevention Bureau must approve all pre-recorded messages. A sample evacuation messages are as follows:

"ATTENTION PLEASE, ATTENTION PLEASE. AN EMERGENCY HAS BEEN REPORTED IN THE BUILDING. PLEASE PROCEED TO THE NEAREST EXIT AND EXIT THE BUILDING. DO NOT USE THE ELEVATORS"

"ATTENTION PLEASE, ATTENTION PLEASE. AN EMERGENCY HAS BEEN REPORTED IN THE BUILDING. PLEASE PROCEED TO THE NEAREST EXIT AND EXIT THE BUILDING." (If elevators are part of the designed evacuation plan)

Message is to be repeated twice

4-7.7 Buildings that are routinely subject to occupancy by non-English speaking persons shall make provisions for bilingual voice evacuation.

4-7.8 Exterior **weatherproof** red beacon shall be provided. Such devices shall be placed at or near the main fire department entry point.

4-7.9 In residential occupancies, a system supervised audio unit shall be installed in each living unit as necessary to achieve adequate audio levels in all areas of the living unit. Visual indicators or other approved means are also required if the living unit is subject to occupancy by a disabled person(s).

4-8 Remote Enunciator

4-8.1 Remote enunciator panels shall be located at the main entrance of the building or as approved by the fire department.

4-8.2 In small systems the main control panel can serve as the enunciator when approved by the fire department.

4-8.3 Remote enunciators shall:

a. indicate system trouble and alarm conditions, these indicators remain illuminated when the system is silenced;
b. be provided with key operated or key accessible acknowledge and reset switches, with key cylinders to be "CAT-30";
c. be labeled in a manner and language approved by the Fire Prevention Bureau, with zones labeled identical to the fire alarm control panel;

d. not utilize LED lamps in sunlit areas. If LED lamps are used they must be high intensity types only; and
e. be back-lit with sufficient brilliance to be seen in direct sunlight.

4-8.4 Graphic Enunciators

4-8.4.1 Graphic Enunciators are required in systems protecting occupancies of size or configuration where normal zone labeling is impractical or confusing.

4-8.4.2 The building graphic(s) shall be oriented in respect of the viewer when the enunciator is in its installed location(s).

4-8.4.3 "You are here" text and arrow shall be provided bold and in red.

4-8.4.4 Floor outlines shall be "triple thick" solid black. Interior partitions shall be "double thick" solid black. Areas with building above or below, or not accessible at the identified level shall be depicted with a broken "double thick" line. Other lines of lesser significance shall be "single thick".

4-8.4.5 All shafts shall be depicted with crossed lines from corner to corner.

4-8.4.6 Stairways and elevators shall be labeled identically to stairwell signage package (i.e. west stair, main stair, etc…).

4-8.4.7 Points of egress/ingress shall be clearly indicated with a green arrow.

4-8.4.8 Either breaking the wall line or showing the door swing shall identify all interior doors.

4-8.4.9 Smoke and fire separation lines shall be indicated via zone annunciation and a red dashed line.

4-8.4.10 Roof access point(s) shall be identified.

4-8.4.11 Electrical, mechanical, fire pump and fire alarm rooms shall be identified.

4-8.4.12 All fire alarm, sprinkler, standpipe and other fire control devices shall be shown with red symbols and identification (i.e. FDV's, FDC's, Automatic Sprinkler valves, Riser Valves, etc…)

4-8.4.13 All AHU's, elevator associated initiating devices, and other point specific initiating devices shall be identified and annunciated via a "hot point". All other annunciation shall be via back lighting.

4-8.4.14 Openings in floors such as atriums, light wells, and the like shall state "open to below".

4-8.4.15 Smoke exhaust fan locations shall be identified. ("SEF #…" is an acceptable abbreviation).

4-8.4.16 Major building spaces shall be identified. Examples would include: mezzanine (north, west, main, center etc.), mechanical rooms, fire pump room, and electrical rooms.

4-8.4.17 Rooms housing hazardous materials shall be shaded in orange.

4-8.4.18 Rooms equipped with total flooding systems (Carbon dioxide, halon, FM200, etc…) shall be shaded violet.
4-8.4.19 Elevator shafts shall be shaded yellow
4-8.4.20 Stairways shall be shaded blue.
4-8.4.21 The above noted specifications shall also apply to passive graphic maps.

4-9 Radio Boxes

4-9.1 All Radio boxes shall be labeled with a hard-plastic engraved sign. This sign shall be no less than 4" X 6" Information included on this label shall be: radio box number, street address, and zone labeling

4-9.2 Radio boxes must be capable of transmitting not less than 6 zones.

4-9.2.1 6 Zone Radio boxes shall be programmed as follows:
Zone 1 … Water Flow
Zone 2 … Manual Pull Stations
Zone 3 … Heat Detectors
Zone 4 … Smoke Detectors
Zone 5 … Trouble
Zone 6 … Supervisory

4-9.2.2 8 Zone Radio boxes shall be programmed as follows:
Zone 1 … Water Flow
Zone 2 … Manual Pull Stations
Zone 3 … Heat Detectors
Zone 4 … Smoke Detectors
Zone 5 … Duct Smoke Detectors
Zone 6 … Special Fire Suppression
Zone 7 … Trouble
Zone 8 … Supervisory

Zones not applicable to a specific system will be labeled as spare.

4-9.3 Zone labeling of radio boxes equipped with more than 8 zones will be as directed by the fire prevention bureau.

4-9.4 Trouble signals shall transmit to the communications center as trouble zone 7 not fire alarm zone 7.

4-9.5 Antennas shall be placed as directed by the fire prevention bureau.

4-9.6 All radio boxes shall be equipped with lightning protection.

4-9.7 All radio boxes shall be keyed to a standard 211 or CAT 30. Keys shall not be left in the keyway and access to the radio box shall be restricted to the fire department and authorized fire alarm technicians.

4-10 Knox Boxes

4-10.1 The Londonderry Fire Department utilizes the Knox rapid entry system.

4-10.2 All buildings with a commercial fire alarm system shall install a Knox Box

4-10.3 Knox products can be purchased by going to www.knoxbox.com.

4-10.4 Commercial properties shall utilize commercial grade key boxes as follows:

a. For storage of 10 or fewer keys, utilize a 3200 series Knox box.

b. For storage of more than 10 keys but fewer than 50 keys, utilize the 4400 series Knox box.

c. For more than 50 keys, the 1302 series storage cabinet or multiple Knox Boxes shall be required.

4-10.5 Knox offers a variety of padlocks and key switches for control of site access.

4-10.6 Knox boxes shall be installed within 5 feet of the main fire department entry point approximately 5 feet high. Large buildings or buildings with multiple tenants may require more than one Knox- box.

4-10.7 Residential Knox boxes shall only be used for access to one- and two-family dwellings.

4-11 False Alarms and violations: See Chapter 12.

Chapter 5 Elevators

5-1 All elevators that travel 25 feet or more shall be connected to the building fire alarm system and be equipped with elevator recall. Each elevator lobby, at each level and the elevator machine room(s) shall have a smoke detector connected to the elevator control system. Smoke detector activation in any elevator lobby shall prevent the elevator from stopping and/or opening at that level. The system shall be wired so that in the event that all or no lobby smoke detectors are activated, the elevator will return to and open at a designated level.

5-2 Elevator recall shall be activated anytime there is a fire alarm activation of the smoke detector(s) in either the elevator lobby, elevator shaft or elevator machine room. Elevators shall return to a designated floor as described in 5-1.

5-3 Firefighters control key switches shall be provided at the main elevator lobby.

5-4 All keys required for firefighter recall and emergency access shall be provided in a secure location on site at time of occupancy and maintained thereafter.

5-5 Elevator shafts and machine rooms required to be sprinkled shall meet the following requirements.

a. Shunt trip heat detectors shall be installed as required by code.
b. Shunt trip detectors shall be clearly identified as such.
c. Shunt trip detectors that are not connected to the building fire alarm system shall be labeled as such.
d. Shunt trip detectors shall be designed to activate prior to the sprinkler activation.
e. System smoke detector(s) shall be installed in all areas protected by the shunt trip system. These smoke detectors shall activate the elevator recall system.

5-6 All elevators shall have an emergency telephone.

5-7 All elevators shall have a permanent sign affixed above the emergency phone indicating building address and the elevator's location.

5-8 In buildings constructed after the adoption of this section in which elevators are provided or required by this or other codes, including the Americans with Disabilities Act, at least one elevator car in each bank of elevators shall have a minimum inside clear dimension of 60 inches by 96 inches with a minimum door opening of 42 inches. The elevator shall be designated by the international medical symbol for emergency medical services (Star of Life).

5-9 False Alarms: See Chapter 12.

Chapter 6 Fire Department Command Center

6-1 Fire Department Command Center: All buildings required by the State Fire Code or State Building Code shall be provided with a fire department command center.

6-1.1 The fire command center shall be located in a location approved by the Fire Prevention Bureau.

6-1.2 The fire command center shall be separated from other areas of the building by a two-hour rated fire enclosure with 1½ hour rated fire doors.

6-1.3 The fire command center shall contain the alarm and communications systems necessary to broadcast emergency voice messages to the entire building or selected zones of the building.

6-1.4 There shall be a table or counter top suitable for viewing plans permanently installed in the fire command room.

6-1.5 A cabinet or other approved storage medium, containing a complete set of "as built" building plans shall be permanently installed in the fire command room.

6-1.6 The fire command room shall contain a telephone connected to the public switched telephone network. The telephone shall be independent of the buildings telephone system.

6-1.7 The command center shall be provided with emergency lighting sufficient to provide at least eight hours of lighting.

6-1.8 The fire command center shall be provided with at least one system smoke detector.

6-1.9 The fire command room may be required to contain any or all of the following:

a. A graphic fire alarm enunciator panel.
b. Fire department communications panel.
c. Status indicators of all elevators.
d. Graphic indicators and controls for air handling units and/or smoke control systems.
e. Sprinkler valves and fire pump status indicators.
f. Generator status indicators with manual start and shut down switches.
g. Building lighting controls.
h. Emergency shut down switches (i.e. ammonia system shutdown).
i. Computer internet connection and/or Ethernet connection.

6-1.10 No fire alarm A/V units other than the alert tones from the fire alarm control panel shall be installed in the fire command room.

6-1.11 The fire command center shall be a dedicated space. The command center shall not be used for any other purpose unless specifically permitted by the Fire Prevention Bureau.

Chapter 7 Sprinkler Systems

7-1 Sprinkler systems shall be installed where required by code.

7-2 Sprinkler systems installed in accordance with NFPA 13, or NFPA 13R shall be connected to the building fire alarm.

7-3 All water flow switches shall have 0-60 second retard devices installed. The retard shall be set for approximately 45 seconds. In systems containing more than one sprinkler zone, the main flow switch shall have a retard device set between 60 and 120 seconds.

7-4 Sprinkler systems shall be separated into zones. The maximum sprinkler zone shall be one floor or level of a building, unless modified and approved by the Fire Prevention Bureau.
Exception: Systems installed in accordance with NFPA 13D shall not be required to be divided into zones.

7-4.1 Each sprinkler zone shall be provided with a flow switch, inspector's test valve, and a floor control valve. Closing any floor control valve shall have no effect the remainder of the system.

7-4.2 The discharge from each inspector's test valve shall be piped to the outside of the building; the building owner must approve the location of the discharge. Hose connections will not be allowed.

7-4.3 All sprinkler systems shall be provided with an inspector's test valve.

7-5 All water shut off valves shall be provided with tamper switches. These tamper switches shall report to the fire alarm control panel as a supervisory signal.
Exception: Sprinkler systems not required to be connected to a fire alarm system need not be electrically supervised.

7-5.1 All water control valves located in publicly accessible areas shall also be provided with chains and locks.

7-5.2 Butterfly, OS&Y, PIV and other similar threaded valve actions shall not initiate a supervisory signal if the valve hand-wheel is rotated ¾ of a turn or less from normal supervised condition.

7-6 If provided, fire pumps must report to the fire alarm control panel. Fire pump running and off normal status indicators shall report to the fire alarm control panel as a supervisory condition.

7-6.1 All fire pumps must report to the fire alarm control panel whenever there is a loss of power to the pump or pump controller.

7-7 The Londonderry Fire Department must witness all final tests associated with a sprinkler system. This is to include fire pump test and hydrostatic testing of piping.

7-8 All sprinkler systems must be provided with a fire department connection. The minimum fire department connection shall be installed as follows:

a. NFPA 13R where the main riser is not larger than 2-1/2" pipe - single 2-1/2" National Standard Thread.
b. NFPA 13R where the main riser is large than 2-1/2" – 30-degree elbow and 4" locking Storz
c. NFPA 13 with 8 or fewer heads – single 2-1/2" National Standard Thread.
d. NFPA 13 with 9 or more heads- 30-degree elbow and 4" locking Storz.

7-8.1 When a building is equipped with more than one fire department connection, a sign must be permanently installed at each connection indicating the section of the building serviced by that connection.

7-8.2 When determined by the fire department that the fire department connection may be susceptible to vandalism or tampering, tamper resistant covers may be required.

7-9 In new construction or in buildings which undergo a renovation of more than 50% of the floor area or assessed value, a fire hydrant must be provided within 100 feet of the fire department connection, measured by an unobstructed hose lay. The location of said hydrant to be specifically approved by the fire department. Exception: This does not apply to systems installed in accordance with NFPA 13D.

7-10 All sprinkler systems shall be provided with an electric bell to indicate whenever there is a water flow condition. The electric bell must be easily heard from the main fire department entry point.

7-11 All sprinkler valves shall be labeled with permanent signs indicating the purpose of the valve (i.e. Main control valve, floor control valve, inspector's test etc.). Valves located in concealed areas shall have signs installed as necessary to provide a reasonable indication as to the location of the valve.

7-12 In addition to the supply of spare sprinklers and appropriate wrenches, materials must be provided in the sprinkler cabinet as necessary to seal the pipe threads associated with the sprinkler (pipe tape).

7-13 The fire department may require a legend be installed at the main sprinkler riser or fire command room. This legend to show a floor plan and all sprinkler valves, sprinkler drains and inspector's test valves.

7-14 Pre-action sprinkler systems must be provided with a method to allow the manual operation of all pre-action valves.

7-15 False Alarms and violations: See Chapter 12.

Chapter 8 Standpipe Systems

8-1 Standpipe systems shall be installed as required by code.

8-2 Combination sprinkler and standpipe systems must also comply with Chapter 7 of this manual.

8-3 Whenever a standpipe is installed in a stairway, the hose stations shall be located on the intermediate landings whenever possible.

8-4 Standpipe hose connections shall be 2-1/2" National Standard Thread with a reducer to 1-1/2" Iron Pipe Thread and appropriate chains and caps.

8-5 All fire department pumper connections shall be a 30-degree elbow and 4" locking Storz connection.

Chapter 9 Fire Hydrants

9-1 Spacing between fire hydrants shall be as follows:

9-1.1 A fire hydrant must be located within 100 feet of any fire department sprinkler or standpipe connection, measured by an unobstructed hose lay. If possible, hydrants should be located outside the building collapse zone.

9-1.2 General purpose hydrants shall be spaced every 800 feet in low density residential zones

9-1.3 General-purpose hydrants shall be spaced every 300 feet in high density commercial, industrial or high hazard areas.

9-1.4 General-purpose hydrants shall be spaced every 500 feet in zones and uses not included in 9-1.2 or 9-1.3.

9-2 Hydrants shall be installed as follows:

9-2.1 Hydrants shall be located within 3 feet of a paved road surface capable of withstanding use by fire apparatus.

9-2.2 When possible, hydrants shall not be placed under power lines, adjacent to power stations or in close proximity to other potentially hazardous locations.

9-2.3 Hydrants shall not be located closer than 44 feet from a building

9-2.4 Hydrants must be protected from physical damage when determined by the Londonderry Fire Department.

9-2.5 Hydrants shall be oriented to face the most probable point of Fire Department access, normally toward the street.

9-2.6 Hydrants shall be installed so that the lowest point of the orifice is not less than 24 inches or more than 36 inches from grade. This clearance shall be maintained within a 10-foot radius of the hydrant. Grade variance shall no be more than 1' within the 10-foot radius.

9-2.7 A ten-foot radius around all hydrants shall be free of obstructions that could impede use.

9-3 Hydrant marking and Operation:

9-3.1 Hydrants shall operate via an operating nut. The operating nut shall be a standard A.W.W.A. Pentagon nut 1½" from point to flat. Hydrant caps shall be operable using the same nut.

9-3.2 Hydrants shall open in a counter-clockwise direction and an arrow indicating opening direction shall be permanently indicated on the hydrant.

Exception: dry hydrants need not be provided with a valve

9-3.3 A permanent marking post shall be provided when required by the Londonderry Fire Department.

9-3.3.1 Posts marking pressurized hydrants shall be OSHA Safety Yellow with the top three inches being Reflective 3M or equivalent.

9-3.3.2 Post marking low-pressure or dry hydrants shall be red with the top three inches being 3M reflective or equivalent.

9-4 Dry hydrants shall be installed in as described in NFPA 1142.

9-5 Cisterns shall be installed in as described in NFPA 1142. Minimum cistern size shall be 30,000 gallons.

Chapter 10 Fire Lanes

10-1 Fire lanes shall be required as follows:

10-1.1 Fire lanes shall be provided as required in NFPA 1, Fire Code, allowing for exception in RSA 153:5 VI.

10-1.2 All new construction shall be accessible to Fire Department apparatus by way of fire lanes.

10-2 Construction and Specifications:

10-2.1 Fire lanes shall be constructed of concrete or asphalt. Any other material shall be reviewed and approved by the Londonderry Fire Department.

10-2.2 Fire lanes must be able to withstand the live loads of fire apparatus.

10-2.3 The width of approved fire lanes shall be as follows:

10-2.3.1 Fire lanes 0-500 feet in length shall be at least 20 feet wide.

10-2.3.2 Fire lanes more than 500 feet long shall be at least 26 feet wide.

10-2.3.3 Fire lanes adjacent to hydrants shall be 26 feet wide. Said width shall be maintained for 20 feet in either direction from the hydrant.

10-2.4 Dead end fire lanes shall be provided with approved turnarounds. These turnarounds shall meet the following requirements:

10-2.4.1 For fire lanes up to 150 feet, no turnaround is required.

10-2.4.2 For fire lanes over 150 feet but less than 500 feet at 70-foot diameter cul-de-sac or 60 foot hammerhead turnaround is required.

10-2.4.3 For fire lanes more than 500 feet but less than 750 feet, a 96-foot diameter cul-de-sac or 120 foot hammerhead turnaround must be provided.

Exception: A cul-de-sac meeting the Town of Londonderry Sub-division regulations is acceptable in all cases as an approved turn around.

10-2.5 A fire lane must be located so that the leading edge of the lane is a minimum of 15 feet from the building and a maximum of 25 feet from the building. The fire lane shall be positioned parallel to the entire side of the building.

10-2.6 All fire lanes shall maintain a vertical clearance of not less than 13'6".

10-2.7 The maximum grade for a fire lane shall be as follows:
Concrete surfaces: 15%
Asphalt surfaces: 12%
Other surfaces: 8%

10-2.8 The minimum inside tuning radius of a fire land shall be no less than 30 feet. The minimum outside turning radius shall be not less than 56 feet.

10-3 Marking /Enforcement /Obstructions

10-3.1 The entrance to all required fire lanes shall be posted with an approved sign. Signs shall be posted along the entire lane with not more than 100 feet between signs.

10-3.2 When applicable all curbing that outlines the fire lane shall be painted or hashed with white or yellow highway paint and contrasting lettering reading "NO PARKING – FIRE LANE". Wording shall be placed every 30 feet. Lettering shall be no less than 4 inches high. Under special conditions, additional striping may be required. This striping may be required to accentuate a specific area. In this case, the entire area must be hashed with yellow or white highway paint. Lettering of at least 12" tall and 1 ½" stroke shall be imposed on the hashing in a contrasting color. Lettering to read "NO "PARKING – FIRE LANE".

10-3.3 It is the responsibility of the property owner and the local law enforcement agency to enforce regulations dealing with the obstruction of fire lanes.

10-3.4 Required fire lanes shall not be obstructed in any manner, at any time. This includes parking of vehicles of any kind, plantings, furniture, or any natural or man made barrier.
Exception 1: As approved by the Londonderry Fire Department
Exception 2: Curbing up to four inches high is not considered an obstruction for fire apparatus.

10-3.5 It is the responsibility of the owner of the property to keep fire lanes clear of snow and ice.

Chapter 11 Blasting

11-1 Permits and Notification:

11-1.1 A permit to blast must be obtained from the Londonderry Fire Department prior to any blasting.

11-1.2 A permit is required for each individual blaster; permits will not be issued solely to blasting corporations.

11-1.3 Permittees must provide the following documentation prior to a permit being issued:

11-1.3.1 A valid State of NH certificate of competency;

11-1.3.2 A valid State of NH license to purchase, use and transport; and

11-1.3.3 An insurance binder specifically covering blasting operations for not less than one million dollars.

11-1.4 Notification must be made to the Londonderry Fire Department not less than 1 hour to each blast or series of blasts.

11-2 Operating Guidelines

11-2.1 Blasting hours shall be from 8:00am to 4pm, Monday through Saturday, unless otherwise stated on the permit.

11-2.2 All handling, storage, transportation and use of blasting material shall conform to New Hampshire Code of Administrative Rules § Safe-C-1601.

11-2.3 Warning signals are to be used as follows:

11-2.3.1 3 long – 5 minutes to detonation

11-2.3.2 2 long – 1 minute to detonation

11-2.3.3 DETONATE

11-2.3.4 1 long – All Clear

11.2.4 **Blast mats shall be used to cover all blasts.**

11.2.5 The permittee shall take all reasonable precautions, including but not limited to signage, warning signals, flags and barricades to ensure the public safety.

11-3 Seismic Graph

11-3.1 Whenever a pre-blast inspection is required, a copy of the seismic graph report must be submitted to the Londonderry Fire Department.

Chapter 12 False Alarms and Violations

12-1 4-11 In accordance with adopted, NH RSA, and NH State Fire Marshal Administrative Laws, Rules and Code, which include but are not limited to State Fire Code, the Chief of the Fire Department or

his/her designee shall be empowered to impose the following penalties to an individual, association or corporation, following a Code violation, Ordinance Violation or False Alarm activation, in addition to application of applicable NH RSA. In addition to NH RSA definition, a False Alarm activation shall be any signal or notification, made too, or received by, the Londonderry Fire department, that is not the result of Fire, Hazard and/or needed Rescue.

Penalty Schedule:

First Violation:	Written Warning (30 days to remedy)
Second Violation:	$100 USD (10 days to remedy)
Third Violation:	$200 USD (10 days to remedy)
Fourth Violation:	$500 USD (10 days to remedy)
Fifth or More Violation	$1000 USD (10 days to remedy)

First - Third False Alarm:	Written Warning
Fourth False Alarm:	$100 USD
Fifth False Alarm:	$200 USD
Sixth or More False Alarms:	$500 USD

False alarms are recorded within a twelve-month period starting at the first false alarm received by Londonderry Fire Department.

Remedy documentation must be submitted, to the Londonderry Fire Prevention office and must be accepted by the AHJ, in writing. Submission of documentation does not relieve the responsible party from payment of penalty. The AHJ shall have the right to extend the remedy timeline, after being presenting with documentation, that exhibits a remedy will go beyond 10 business days.

Failure to address the violation within the allotted time frame, can result in progression through the Penalty Schedule. Failure to remedy, after fifth violation, can result in continued penalty, at the $1000.00 USD level daily and/or legal action required by NH RSA.

In cases of imminent threat to life or safety, the AHJ shall have the right to assess penalty at the fifth violation level, in addition to application of NH RSA.

All payments shall be made to the Town of Londonderry, town offices. If fees imposed under this chapter have not been paid within 120 calendar days, the Chief of the Fire Department or his/her designee shall be empowered to impose liens and/or revoke

permits or disconnect fire alarm service which shall result in the revocation of the certificate of occupancy for the building.