



John Chisholm
Interim Fire Chief

CITY OF CONCORD

New Hampshire's Main Street™
Fire Department

FIRE ALARM REGULATIONS DESIGN SUBMITTAL REQUIREMENTS

Fire alarm systems shall be installed when required by codes, ordinances, insurance company requirements or by the request of the property owner.

To provide guidance to those specifying the design of such systems to be installed in the City of Concord NH, the following shall apply.

- NFPA 1: Fire Code, 2018 edition.
- NFPA 70: National Electrical Code, 2020 edition.
- NFPA 72: National Fire Alarm and Signaling Code, 2016 edition.
- NFPA 101 Section 9.6, 2018 edition.
- NFPA 1221: Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems, 2016 Edition
- International Building Code, 2018 edition.

The Authority Having Jurisdiction (AHJ) reserves the right to increase or add to the above standards if in the opinion of the AHJ, it is necessary for adequate fire protection.

The following information will be required for permit submission:

- 2 copies of the plans to scale and battery calculations. **
- 1 copy of the manufacturers cut sheets.
- Working plans shall include **ALL** items detailed in NFPA 72.
- Cat 30 Key for Control Panel, Remote Annunciator and Pull Station.
- Location of **RED** and **GREEN** (if applicable) beacon or strobe shall be indicated on the Fire Alarm plan – Located 13' above finished grade and approved by the AHJ.
- Location of exterior Horn/Strobe shall be indicated on the Fire Alarm plan and approved by the AHJ.
- Knox Box location
- Proposed radio box location, if connecting to Fire Department AES-*IntelliNet* radio box fire alarm system. Actual location will be determined during required pre-installation meeting.
- Remote Annunciator location (if required)

** One copy shall be hard copy and the second may be in an electronic PDF format. If the designer/contractor wishes to receive a copy of the plans and calculations back after the review, one additional set of plans shall be provided.

No formal plan review will occur without the completion of an application for a Fire Prevention Permit. The permit application can be completed by logging in to the City of Concord's Citizen's Self Service Permit Portal:

<http://concordnh.gov/1888/Citizen-Self-Service-Permits>

Requests for variance to the aforementioned regulations shall be made by the property owner or the owner's agent in writing to the State Fire Marshal with a copy to the Concord Fire Department.

NO authorization shall be granted for construction or installation of any system until plans have been approved. One must allow 7-10 working days for plans review to be completed by the Fire Prevention Bureau. Plan reviews can be expedited for an additional fee and a turnaround time of 2-3 business days. It is the responsibility of the fire alarm contractor to make the general contractor aware of this time frame.

Fire alarm requirements are as follows:

- New construction of a multi building property shall have a radio box for every FACP. Multiple FACP assigned to a single radio box shall be PROHIBITED.
- Existing multi building properties with multiple FACP connected to a single Master Box shall be allowed to transition to a single radio box. A FACP in an existing multi building property with multiple FACP connected to a single radio box requiring FACP upgrades or replacement shall transition to its own radio box.
- Knox Box shall be installed adjacent to the main entrance next to the master box and/or remote annunciator (if installed) for FD building access.
- **RED** and **GREEN** (if applicable) beacon or strobe shall be installed on the exterior of the building as specified on the plans and will be located 13' above finished grade. Beacon or strobe shall activate upon Fire Alarm System activation.
- System shall be UL listed or approved by FM.
- FACP shall be RED in color.
- Control panel shall be labeled "FIRE ALARM CONTROL" with minimum 1" contrasting letters.
- System shall operate on DC and be supervised.
- System shall have a separate identifiable AC circuit with a breaker lock installed and a **RED** paint mark adjacent to it.
- System shall be equipped with standby batteries capable of operating the system for twenty-four (24) hours with a fifteen (15) minute ring down for voice evacuation system and five (5) minute ring down for all others.
- Additions or modifications to any existing system will require approval by the Fire Prevention Bureau. Panels that are unable to accommodate upgrades will require the system to be replaced.
- System shall be addressable for 12 or more attached devices.
- System test drill feature will be programmed.
- Remote annunciator shall be required for control panel travel distances greater than 50', not visible through the main door window, or not located in the immediate entrance area.
- Remote annunciator shall be RED in color.
- Remote annunciator (if required) shall be labeled "REMOTE ANNUNCIATOR" with minimum 1" contrasting letters.

- Initiating devices shall have their coded address displayed on the exterior of the device using a permanent ½” white tape label with 3/8” black letters.
- Visual/audible devices on the interior of the building shall follow the regulations set forth in the adopted edition of NFPA 72 while in “**SILENCED MODE**” and until the system has been reset.
- A minimum of one visual/audible device shall be installed on the exterior of the building as specified on the plans. Preferred location is where it shall be visible and heard by the evacuees.
- Visual/audible devices on the exterior of the building shall remain activated while in “**SILENCED MODE**” and until the system has been reset.
- Initiating devices in concealed areas shall have a remote indicator installed at the alarm panel or in the common corridor closest to the device. The location shall be indicated on the plans.
- NFPA 13 and 13R Sprinkler Systems shall be connected to the Fire Alarm System.
- It is the responsibility of the owner to verify with their insurance company or design professional to determine if further monitoring by a listed Central Station Monitoring Company is required. A listed Central Station Monitoring Company is listed by a nationally recognized laboratory such as but not limited to Underwriters Laboratory.
- Concord Fire Department supports a Gamewell municipal master box fire alarm system for receiving fire alarms and an AES-*IntelliNet* radio box fire alarm system for receiving fire, supervisory and trouble alarms from building fire alarm systems requiring direct connection to the fire department.

GAMEWELL MASTER BOX INSTALLATIONS

- Concord Fire Department will be retiring the Gamewell municipal master box fire alarm system on 07/01/2024.
- New Gamewell master box installations or existing Gamewell master box relocations will not be allowed after 7/1/2019.
- All existing Gamewell master boxes must be replaced with AES-*IntelliNet* radio boxes prior to 07/01/2024.
- Replacement AES radio boxes will be provided to existing Gamewell Municipal System subscribers at no cost; however, subscriber is responsible for hiring a qualified alarm contractor to install the radio box at subscriber’s expense.
- Fire Alarm System installations within 2,000 feet of the area served by the municipal alarm system shall be connected to this system by a master fire alarm box with the following conditions:
 - Required commercial Fire Alarm or Sprinkler System.
 - Residential 13R Sprinkler System installed in 11 or more dwelling units.
- The cost for the connection to the municipal system and all work on the private side of the master box shall be the responsibility of the owner.
- All extensions of existing municipal Fire Alarm System cable necessary to connect a private system to the municipal system will be installed by the Fire Department with the cost of extension to be borne by others.
- The Fire Alarm contractor is responsible for advising the owner of the inspection and testing requirements as well as the annual fee (as authorized by Code of Ordinances, Section 26-26-10) for connection of the master box to the municipal circuit. Billing cycle is from July 1 to June 30
- The use of Master Box disable switch is **PROHIBITED**. Switch must be disabled programmatically or with a switch lock.
- Fire Alarm Systems directly connected to the Municipal System shall be subjected to the following:
 - All master boxes shall be approved.
 - Installed at locations listed:

- Near the main entrance of the building.
- Accessible year round from a walkway or entranceway.

EXCEPTION 1 - If a master box serves multiple buildings, a system of private roads and drives are required to access the property, a pedestal mounted box with remote annunciator shall be located at the entrance to the property, or, at the first road intersection in the development.

EXCEPTION 2 -If a master box serves multiple buildings and if access to the development is by a single road, the master box with remote annunciator may be located on the outside of the first building approached providing no roadway intersections have been crossed prior to reaching this annunciator, and the building is not in excess of 35 feet from the curb line.

- Master boxes shall be local energy type only. Shunt type boxes are not approved.
- Master boxes shall be completely covered until accepted by the Code official.
- Used master boxes will not be allowed.
- All master box keys shall be turned over to the Fire Alarm Superintendent.
- The Fire Alarm Superintendent will provide a material list and master box code wheel number and timing to the contractor after an onsite review of the project.
- An indicator lamp having a red globe equipped with a screw-in style bulb with a minimum bulb size of 25 watts (110 volt) shall be provided over the box. Lamp hardware will be approved.
- Absolutely no connections or disconnection will be made to the municipal fire alarm circuits by other than Fire Department personnel.
- Connections shall be in approved junction boxes and painted red if containing municipal circuits.
- Where an underground service is required:
 - The installer shall provide a 2-inch rigid steel or schedule 80 PVC conduit and cable from the manhole or pole riser to the master box or an approved pull point location.
 - The first ten feet above ground of all conduits and all sweeps shall be rigid steel.
 - All duct cable shall be IMSA spec 20-1, #14 gauge, 4 conductor, solid conductors.
 - Ducts shall be run into the building following other utilities.
 - The Fire Alarm Superintendent shall be notified at 225-8667 not less than 3 business days prior to the installation of the cable so that a Fire Department representative may be present to witness the installation.
 - A #10 solid ground wire shall be run in ½ inch conduit from the master box to the street side of the water service and tagged "Fire Department Connection – Do Not Remove".
- Where an aerial service is required:
 - The installer shall provide a suitable solid eye anchor on the building for the aerial connection.
 - The installer shall provide and install Four {4} #14 solid conductors, one white, one black, one green and one red, from the master box via a direct metallic ½" conduit to the point of aerial connection.
 - A #10 solid ground wire shall be run in ½ inch conduit from the master box to the street side of the water service and tagged "Fire Department Connection – Do Not Remove".

AES-INTELLINET RADIO BOX INSTALLATIONS

- As of July 1, 2019, ALL new required connections to Concord Fire Department shall be using the AES-Intellinet radio box network.
- Fire Alarm System installations within the area served by the AES-IntelliNet radio box network shall be connected to this system by an AES model 7707P-88-M radio box with the following conditions:
 - Required commercial Fire Alarm or Sprinkler System.
 - Required Residential 13R Sprinkler System.
- The cost for the connection to the radio box network shall be the responsibility of the owner.
- The fire alarm contractor shall be responsible for advising the owner of the inspection and testing requirements as well as the annual fee (as authorized by Code of Ordinances, Section 26-26-10) for connection of the radio box to the radio box network. Billing cycle is from July 1st to June 30th.
- The form “APPLICATION FOR INSTALLATION OF AES RADIOBOX” shall be completed and sent to Concord Fire Department Fire Alarm Division. Form can be found at the end of this document.
- An onsite pre-installation meeting between the installing contractor and Concord Fire Department Fire Alarm Division shall be required for all installations to determine the radio box location, external antenna requirements, available network signal strength and overall installation plan.
- Radio box shall be an AES model 7707P-88-M with a minimum 10AH battery.
- Used radio boxes will not be allowed without prior approval from Fire Alarm Superintendent.
- Radio box installations shall be performed or overseen by persons who have attended AES Corporation approved installer training.
- To allow for radio box programming and testing, installer shall deliver radio box and a radio box application, completed by the property owner, to the Fire Alarm Superintendent prior to installation. Contact Fire Alarm Superintendent in advance at (603)717-8315 to coordinate delivery arrangements.
- Typical radio box programming will be Zone 1 = Fire, Zone 7 = Trouble and Zone 8 = Supervisory.
- A #10 solid ground wire shall be run in metallic or nonmetallic raceway from the radio box to the street side of the water service and tagged “Fire Department Connection – Do Not Remove”.
- Zone wiring to radio box shall be minimum #18 AWG, 2 conductor solid copper FPLR Fire Alarm cable, shielded with drain wire grounded on one end.
- Only factory knockouts shall be used; do not create new holes in radio box housing without prior approval from Fire Alarm Superintendent.
- Preferred radio box location shall be in close proximity to the Fire Alarm Control Panel; however, actual location will be determined during onsite pre-installation meeting.
- Radio box not installed in the approximate location of the Fire Alarm Control Panel shall have a label affixed to the **INSIDE** bottom portion of the FACP door identifying its location.
- Height to top of radio box shall be between 48”and 76”. Installer shall allow minimum of 10” clear space on left side to allow for transceiver retention screw removal.
- When upgrading from a recessed master box, property owner has option to retain the master box by installing a BZ-RW80X micro-switch and EOL resistor to the front door pull-hook and

wiring to radio box Zone 6 as a local pull-station. All surface mounted master boxes shall be removed when AES changeover occurs.

The Fire Prevention Bureau requires inspection of the work being completed. The Fire Prevention Bureau shall be notified when work commences and prior to cover-up. The Fire Prevention Bureau requires compliance with NFPA 72, Chapter 7.5.6 Record of Completion. The installing contractor shall call the Fire Prevention Bureau a minimum of 72 hours to schedule a time and date for an inspection.

Effective: April 4, 2017

Revised: December 17, 2019, December 31, 2019, January 26, 2020, January 15, 2021, June 9, 2021, September 2, 2021, September 14, 2021, October 19, 2021, December 05, 2021, July 17, 2022, October 1, 2022

APPLICATION FOR INSTALLATION OF AES RADIOBOX

CONCORD FIRE DEPARTMENT

Fire Alarm Division
24 Horseshoe Pond Lane
Concord NH 03301
Phone: (603) 225-8667

Property Info

Property Name: _____

Property Address: _____

Owner's Name: _____

Owner's Phone & Email: _____

Billing Address for Annual Monitoring Fee

Name: _____

Address 1: _____

Address 2: _____

City/State/Zip: _____

Billing Phone & Email: _____

Installer Info

Installer's Name: _____

Installer's Phone & Email: _____

Contact person(s) responsible to receive Trouble & Supervisory Alarm notifications via email

Minimum of one contact person is required

Contact #1 Name & Phone: _____

Email: _____

Contact #2 Name & Phone: _____

Email: _____

Contact #3 Name & Phone: _____

Email: _____

Date: _____

Property Owner's Name (print)

Property Owner's Signature