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Fire Alarm Plan Review Requirements

The following list shall represent the minimum documentation required for all fire alarm and emergency communications system, including new systems and additions, or alterations to existing systems. It is the intent that existing systems that are altered should have design (layout) documents prepared that are applicable only to the portion(s) of the system being altered.

Please review and familiarize yourself with all requirements listed in this document prior to your submittal. Your compliance with these requirements will enable us complete the review process faster and more efficiently with less rejections due to improper submittals.

General

- Two (2) copies of stamped plans and calculations, including manufacturer's equipment and device specifications and data sheets must be submitted to the City of Yonkers Building Department for review. Plans shall not be submitted directly to the Fire Department.
- All plans shall be stamped by a New York State licensed design professional as required by the New York State Department of Education Law with current renewal dates and "wet" signatures. Design professional contact name, address, telephone number and fax number shall be provided.
- Plans that are not legible will be rejected as unacceptable for plan review purposes.
- Preferred plan size is 24"x36". Plans may be submitted on 11"x17" paper provided graphic scale is not less than 1/8" = 1'-0".
- Submission shall include installing contractor's name, address, telephone number and a copy of the contractor's valid State of New York "Business of Installing, Servicing or Maintaining Security or Fire Alarm Systems" license as defined by the General Business Law Article 6D.
- Provide a written narrative describing intent and system description. Description shall include evacuation type (general evacuation, Partial/Selective Evacuation, Mass Notification System)
- If, due to the scope of the work proposed, plans are not required, or plans are not required to be stamped, the plans shall be drawn utilizing accepted engineering practices and procedures. Manufacturer's equipment and device specifications and data sheets must be submitted for any work, regardless if plans are omitted.
- Should the original fire alarm submittal be rejected for any reason, a complete re-submittal shall be required including all drawings, calculations, and device specifications and data sheets. Partial submissions will not be accepted.

Site Plan Information (required where multiple buildings are interconnected or remote monitoring points are provided)

- Drawings shall be to scale and shall indicate compass direction and all structures on the site.
- Locations of all Fire Alarm Panels, Annunciator(s), Power Booster(s), etc. shall be shown.
- Distances of all conduit runs between structures and/or devices.
- Trenching, backfilling and conduit installation details.

Project Information and notes shall include the following:

- Applicable codes and editions applicable to the system(s) must be indicated on the plans.
- Special requirements of the owner, governing authority, or insurance carrier when applicable.
- Deviations from requirements of governing laws, codes, or standards.
- Provide a written narrative describing intent and system description.
- Indicate Use and Occupancy Classification as defined by the Building Code of New York State (BCNYS)
- Indicate occupancy load as defined by BCNYS
- Symbol legend for all symbols utilized on drawings in accordance with nationally recognized standards.
- Fire alarm signal deactivation notes must state "When an alarm signal deactivation means is actuated, both audible and visible notification appliances shall be simultaneously deactivated." as per NFPA-72 2007ed.
- Fire alarm spare capacity notes must state notification appliance circuits serving the employee work areas shall be initially designed with a minimum 20 percent spare capacity per Fire Code of New York State 2010ed. Section 907.10.1.2
- Audible alarm notification appliances shall provide a maximum and minimum sound pressure level above the average ambient sound level in accordance with NFPA 72. All areas shall be tested using a sound level meter, and witnessed by the Fire Department.
- Fire alarm notes shall indicate the ambient noise range for all spaces identified in the plans and the justification for this ambient level. Also indicate the minimum audibility level (dBA) to be used for the acceptance test.
- Fire alarm notes shall indicate that keys and tools required to access and reset all components of the fire alarm system will be left onsite.
- Fire alarm notes shall indicate stereo system or video equipment (as applicable) shall shut down upon fire alarm activation. Music and video shall not reset until fire alarm is reset.

Building Floor Plan Information (to be shown on each drawing)

- Floor or level identification.
- Point of Compass (indication of north).
- Drawing shall be drawn to an indicated scale. (Drawings not drawn to scale will not be accepted).
- All walls and doors.
- All partitions extending to within 10 percent of the ceiling height.
- Room and area descriptions.
- Reflected ceiling plans shall show details of ceiling geometries, including beams, soffits, pockets, solid joists and any construction which will affect device spacing and location where automatic fire detection is being proposed. State type of ceiling being installed (suspended, sheetrock, open joist, etc).
- Show locations of all diffusers where automatic fire detection is being proposed.
- Identify all ceiling heights.
- Identify all fire, smoke and fire/smoke partitions and walls.
- Show locations of fire alarm system devices and components. The type and number of system components and devices on each circuit, on each floor or level shall be clearly indicated.
Example:
N1-1 = Notification Circuit #1, Device 1
P3-4 = Initiation Circuit #3, Device \$
- Show candela rating of each notification appliance on the drawings. General notes will not be accepted for setting candela ratings.
- Show location of fire alarm primary power disconnecting means.
- Show locations of monitor/control interface(s) to other system(s).
- Show system riser locations.
- Type and quantity of conductors and conduit (if used) for each circuit shall be shown.

Riser Diagram Information (Riser diagram shall be device specific and coordinated with the floor plans and shall include the following information)

- General arrangement of the system(s) in building cross-section.
- Indicate the class and/or style for all initiating device circuits, signal line circuits and notification appliance circuits.
- Number of risers.
- Type, size and number of circuits in each riser. Each circuit shall be labeled.

- Number of conductors for each circuit.
- Show locations of fire alarm system devices and components. The type and number of system components and devices on each circuit, on each floor or level shall be clearly indicated as defined on the floor plan(s).
- Candela ratings of each device shall be indicated on the riser diagram and coordinated with the floor plan. General notes indicating candela ratings will not be accepted.

Sequence of Operation

- Provide a detailed sequence of operation with the submittal package in input/output matrix or narrative format.
- Sequence of operation shall detail all alarm, supervisory and trouble conditions, as well as all emergency functions. Details shall include any interface requirements between systems such as fire alarm, Emergency Communication Systems, security, HVAC, smoke control, paging, background music, audio visual equipment, elevators, access control, other fire protection systems, etc.

General Detail Information

- Provide mounting details of all components. Details shall include maximum and minimum heights, wiring details, details for mounting to ceiling(s), wall(s), etc.
- Provide details for fire stopping of penetrations in accordance with wall ratings indicated on plans. Provide through stop fire stopping system details and UL-numbers.

Battery Calculations

- Battery calculation shall be provided for each control panel, sub-panel, power booster, etc. Calculations shall be submitted on a standard calculation format sheet and shall indicate adequate power for 24-hours of stand-by power and 5 minutes of alarm power (15 minutes of alarm for Emergency Communications Systems)
- Calculations for each circuit shall indicate each device, quantity of device(s), current draw of each device, total standby current (amps), total alarm current (amps) and total system current. Current draw of each device shall be matched to the specific current draw as indicated on the manufacturer(s) data sheets for the specific installation. (ie: 15 candela strobes will be indicated separately from 75 candela horn/strobes in the calculations due to different current draws)
- Calculations shall include a 20 percent safety margin to the calculated amp-hour ratings.
- Calculations must be coordinated with floor plans and riser diagrams. Discrepancies between drawings and calculations shall result in a rejected submittal.

Voltage Drop Calculations

- Voltage drop calculations shall be provided for each notification circuit. Calculations shall be submitted on a standard calculation format sheet and shall indicate each appliance voltage draw, circuit length, total voltage draw and drop.
- Voltage drop shall not exceed the allowable percent listed on the manufacturer(s) data sheets for the specific device(s) installed.

- Calculations must be coordinated with floor plans and riser diagrams. Discrepancies between drawings and calculations shall result in a rejected submittal.

Equipment Technical Data Sheets

- Manufacturer's published datasheets shall be provided for each piece of equipment utilized. Data sheets shall be current and shall include all pages of the product data.
- Product data sheets shall include current draw of the components.
- If component(s) from different manufacturer's are to be mixed into any system then a manufacturer's statement of compatibility of all parts shall be included in submission.

EMERGENCY COMMUNICATIONS SYSTEM (ECS)

Emergency communications system is defined as "A system for the protection of life by indicating the existence of an emergency situation and communicating information necessary to facilitate an appropriate response and action." These systems include One Way Emergency Communications Systems, Distributed Recipient Mass Notification Systems, In-Building Fire Emergency Voice/Alarm Communications System, In-Building Mass Notification System, Wide-Area Mass Notification System, and Two-Way Emergency Communications System. Each application of an ECS shall be specific to the nature and anticipated risks of each facility for which it is designed.

Coordination with the City of Yonkers Fire Department Fire Prevention Division for ECS application specific requirements is required prior to submission.