Guidelines for Permitting –
Fire Alarm Systems

Since 1967
Reedy Creek
IMPROVEMENT DISTRICT

Design Professional / Engineered Documents

Additions, alterations or modifications to existing fire alarm systems over $5,000 in valuation and the installation of new fire alarm systems requires signed and sealed drawings from the engineer of record.

Florida Administrative Code (FAC) 61G15-32 can be used as a guide for design professionals on what is required to be on the fire alarm engineering design documents. The following must be included on the engineer of record signed and seals design documents along with all the other requirements of FAC 61G15. Failure to include the items below will cause delays in issuing the permit.

1. The applicable code and standard (including code year) to be used in the preparation of the Fire Protection System Layout Documents
2. Requirements for acceptance testing of the system and all components, based on applicable codes
3. Requirements for activation control systems, sequence, operating parameters, interlocks, safety related devices, indicators and alarms, shall be shown on the Fire Protection System Engineering Documents, unless shown on other related documents
4. Any information deemed appropriate by the Engineer of Record to assist the authority having jurisdiction in understanding the owner's intended use and proposed protection of the building or facility and to provide sufficient direction to the installation contractor or other interested parties regarding the layout of the system(s)
5. The plans shall be clear, with a symbols legend, system riser diagram showing all initiation and notification components, and cabling requirements. Indicate locations where fire ratings are required as determined by the system's survivability requirements. Identify the general occupancy of the protected property, and for each room and area unless it is clear from features shown.
6. Locate initiation and notification devices and connections to related systems on the floor plans and sections when needed for clarity. Related systems include elevator controls smoke control systems, dampers, and doors.
7. Strobe intensity and speaker output ratings for all notification devices.
8. Identify the Class and Style of circuits as listed in the NFPA 72.
9. Identify the functions required by the alarm and control systems including the transmission of emergency signals being monitored or annunciated.
10. Indicate whether the fire alarm is conventional or addressable, and indicate all zoning.
11. Locate surge protective devices and required protective features.
12. Locate system devices that are subject to environmental factors, and indicate requirements for the protection of equipment from temperature, humidity or corrosive atmospheres, including coastal salt air.
13. The plans shall include a site plan of the immediate area around the protected building, structure or equipment when alarm devices are required outside the structure.
14. In buildings were smoke detection will be obstructed by walls, beams or ceiling features, the Engineer of Record shall provide applicable design and details to direct the installer to mitigate the obstructions. In buildings with smoke detection under a pitched roof, the plans shall indicate

the roof pitch and a building section shall be provided as part of the Engineering Design Documents.

15. Fire detection systems utilizing smoke detection in situations where smoke stratification is anticipated, the design shall provide the necessary criteria to mitigate the detection problems.
16. Systems designed using Performance Based criteria shall be identified and referenced to design guides or standards approved by the local authority having jurisdiction consistent with standards adopted by the Florida Fire Prevention Code and the Florida Building Code (2007).
17. The system design must indicate if the system is to provide a general evacuation signal or a zoned evacuation for all high-rise buildings or multi-tenanted properties as defined in the Florida Building Code (2007).
18. Wiring requirements for underground, wet locations, campus style wiring, protection against damage and burial depth shall be specified or indicated on the engineering design documents.
19. Requirements for operations and maintenance procedures, manuals, system documentation, and instruction of Owner's operating personnel, as needed to operate the systems as intended over time.

In the event that the Engineer of Record elects to specify specific equipment and to show the required wiring, battery and voltage drop (circuit analysis) calculations shall be completed. The calculations shall be completed using the equipment manufacture's data and applicable NFPA 72 procedures.

The entire rule can be found by visiting: https://www.flrules.org/gateway/Division.asp?DivID=267

Shop Drawings

Generally, the shop drawings shall address each issue noted in the engineering documents and are not required to be signed and sealed. The shop drawings must include complete information regarding the system or system alterations, including as a minimum:

- Specifications for all devices connected to the system,
- Type of system or service,
- Input/output matrix,
- Battery calculations, and
- Notification appliance circuit voltage drop calculations.

Shop drawings for fire alarm systems are intended to provide basic information consistent with the objective of installing a fully operational, code-compliant fire alarm system and to provide the basis for the record drawings required elsewhere in this Code.

Approval of shop drawings is not intended to imply waiver or modification of any requirements of this Code or any other applicable criteria.

Shop drawings shall include, to an extent commensurate with the extent of the work being performed, floor plan drawings, riser diagrams (except for systems in single-story buildings), control unit wiring diagrams, point-to-point wiring diagrams, and typical wiring diagrams as described herein.

All shop drawings shall include the following information:

1. Name of owner and occupant
2. Location, including street address
3. Device legend
4. Date
5. Input/output programming matrix

Floor plan drawings should be drawn to an indicated scale and should include the following information:

1. Floor identification
2. Point of compass
3. Graphic scale
4. All walls and doors
5. All partitions extending to within 15 percent of the ceiling height
6. Room descriptions
7. Fire alarm device/component locations
8. Locations of fire alarm primary power connection(s)
9. Locations of monitor/control interfaces to other systems
10. Riser locations
11. Routing for Class A compliance, where applicable
12. Methods for compliance with 6.9.10.4 for survivability (emergency voice systems) as shown in Section 6.9, where applicable
13. Ceiling height and ceiling construction details

Fire alarm system riser diagrams should include the following information:

1. General arrangement of the system, in building cross section
2. Number of risers
3. Type and number of circuits in each riser
4. Type and number of fire alarm system components/devices on each circuit, on each floor or level

Control unit wiring diagrams should be provided for all control equipment (i.e., equipment listed as either a control unit or control unit accessory), power supplies, battery chargers, and annunciators and should include the following information:

1. Identification of the control equipment depicted
2. Location(s)
3. All field wiring terminals and terminal identifications
4. All circuits connected to field wiring terminals, and circuit identifications
5. All indicators and manual controls, including the full text of all labels
6. All field connections to supervising station signaling equipment, releasing equipment, and fire safety control interfaces

Typical wiring diagrams should be provided for all initiating devices, notification appliances, remote alarm light emitting diodes (LEDs), remote test stations, and end-of-line and power supervisory devices.

A free, read-only version of NFPA 72 is available at http://www.nfpa.org/72