



## **FIRE PREVENTION MANUAL**

### **ADMINISTRATIVE REQUIREMENTS**

#### **401.012 FIRE ALARM SYSTEM PLAN SPECIFICATIONS**

**EFFECTIVE: OCTOBER 2016**

## SCOPE

This policy establishes the Fresno Fire Department's (FFD or Department) requirements related to the preparation and submission of all fire alarm system plans within the City of Fresno and contract service areas.

## PURPOSE

This policy has been established to clarify the requirements for the preparation and submission of all fire alarm plans.

## BACKGROUND

As noted in the *California Fire Code (CFC)*, the fire code official has the authority to formulate policies they deem necessary based upon local conditions related to plan submittals for all systems and installations.

## REQUIREMENTS

Based upon the need for uniformity in application across the Department's diverse service delivery area, and after careful deliberation, the Department has determined the following:

1. Fire alarm systems shall be drawn with care by a trained person meeting all of the requirements found within the applicable law, code, ordinance, or standard.
2. Plans shall be drawn on a minimum of 24" x 36" paper and shall be drawn to an indicated scale of not less than 1/8 inch = 1 foot.
3. All notes and information on each plan sheet shall be a minimum of 12 pt. font or larger. Fonts shall be either: Engineers font, Architects font, Arial font or Calibri font. Plans using unusual or difficult to read fonts will not be accepted. The Fire Marshal (or designee) shall make the determination of acceptability, and the determination shall be final.

3. An area of no less than 4" X 6", located in the bottom right hand corner of each plan sheet (excluding the title block), shall be left free of any text, mark, etc. to facilitate the marking of plans by Department staff.
4. Drawings shall generally be organized based upon the United States Department of Energy, Fundamentals Handbook for Engineering Symbology, Prints, and Drawings (Vols. 1 & 2) (1993 edition). Available for download at:

<http://edtech2.boisestate.edu/jasonclemens/512/files/DOE-v1.pdf>

4. Drawing line weights, matchlines (where used) and legibility (including printed pages) shall be in accordance with either the *United States Department of Energy, Fundamentals Handbook for Engineering Symbology, Prints, and Drawings (Vols. 1 & 2) (1993 edition)*, or the latest edition of the American Institute of Architects design guidelines.
5. All fire protection symbols shall be in accordance with *National Fire Protection Association (NFPA) 170 – Standard for Fire Safety and Emergency Symbols (2012 edtn)* where a symbol is provided.
6. Each of the following items shall be included on the fire alarm system plan submittal booklet (these items will be verified at the counter). Plans will be rejected when not present:
  - A. A detailed scope of work for the project including a description sufficient to clearly indicate the location, nature and extent of the work. A scope of work indicating "installation of a fire alarm system", or similar non-descript scoping is inadequate and plans will be rejected without review.
  - B. Name of owner, occupant, or contracted construction firm.
  - C. Location of the project, including the City of Fresno officially assigned address, and the City of Fresno building permit number.
  - D. Name of the installing contractor, address, phone number, type of license and license number, with wet stamp and signature on each plan sheet.
  - E. The *California Building Code (CBC)* occupancy group and whether the building is sprinklered or not.
  - F. Equipment legend. Equipment legends shall be prepared in the format shown on the sample legend at the end of this policy.

- G. If the installation will be using dedicated phone lines or radio for signal transmission. If using radio transmission, designer must note that transmitter used is for use as a single transmission path or as a secondary path (drawing must reflect the applicable installation)
  - H. In addition to all of the information noted in this document, the submittal booklet shall also contain all documentation required as noted in *NFPA 72, section 7.2, and 7.3 through 7.3.4.5*. As noted in the referenced standard, this information constitutes the minimum amount of information required to be submitted to the authority having jurisdiction.
7. Each of the following items shall be included on the fire alarm system plan sheets (these items will be verified at the counter). Plans will be rejected when not present:
- A. A site plan of the location on the drawing. A site plan shall show the layout of the building relative to public streets and private drives. A location pin from mapping software does not meet the requirements of a site plan.
  - B. The *CBC* occupancy group and construction type of the proposed building.
  - C. The room use, square footage measurements, room dimensions, finished ceiling heights and occupant loads (in assembly areas) within each space.
  - D. If delayed egress is being requested. Note: Additional notes, etc. are required for delayed egress submittals.
  - J. Fire alarm sequence of operation matrix. Matrices shall be prepared in the format shown on the sample matrix at the end of this policy.
  - K. Equipment legend. Equipment legends shall be prepared in the format shown on the sample legend at the end of this policy.
  - L. HVAC systems that flow a cumulative 2,000 cfm of supply air must be interconnected to the fire alarm system and have automatic shut off. Each HVAC unit must shut off when any unit detects smoke. Plans and sequence of operation matrix shall include HVAC supervision in accordance with the California Mechanical Code.

See OSFM bulletin 08-065 at  
[http://osfm.fire.ca.gov/CODEINTERPRETATION/pdf/2008/08\\_065.pdf](http://osfm.fire.ca.gov/CODEINTERPRETATION/pdf/2008/08_065.pdf).  
(See *FFD Policy number 407.004 HVAC Shut Off*).

- M. Voltage drop calculations shall use a starting voltage of 20.4V.
  - N. If using an exception found in *NFPA 72* or the *CFC*, it is the designer/contractors responsibility to provide adequate and necessary documentation to use the exceptions per *CFC Section 105*. Alternate detector spacing, etc. shall be noted in a sufficient manner. The Fire Marshal (or designee) shall make the determination of acceptability, and the determination shall be final.
  - O. Complete fire alarm riser diagram.
  - P. All information required as noted in *NFPA 72, section 7.4 through 7.4.10*.
  - Q. Resubmittals:
    - a. Revisions or changes shall be called out with a cloud or delta. Each re-submittal shall have a new numbered delta, and previous clouds or deltas shall be removed. Submittals, addendums, revisions, as-builts, etc. without proper clouding, an associated delta, or other substantial clarifying notes regarding the scope of work will be rejected without review. Changes made on plans between versions, etc. that are not identified with a cloud or delta are not approved. Addendum plans shall be in accordance with *FFD policy number 401.016 Fire Related Construction Addenda*.
4. Standard Notes:
- A. It is the contractor's responsibility to make work available for inspection.
  - B. A copy of the approved plan set shall be on site during any fire department inspection.
  - C. Contractor required to provide decibel meter during final acceptance testing to field verify audible characteristics." \*No final will be given by FFD unless required audibility is field verified.
  - D. Installation will comply with section 300.21 of *California Electrical Code*, regarding penetrations through fire resistive assemblies to prevent the spread of fire and toxic products of combustion.

- E. All other extinguishing systems (i.e. commercial cooking, clean agent, etc.) will be/or are interconnected to the fire alarm control panel as required, including on the sequence of operation.
- F. Exterior components shall be mounted in a weather tight manner.
- G. The wiring pathway designations and survivability level shall be shown in accordance with NFPA 72.
- H. Fire Alarm Record of Completion to be provided to Fresno Fire Department at final.
- I. A complete copy of the approved plan set shall be on site during any fire department inspection.
- J. Alarm bell shall not be on a silence-able zone.
- K. All existing equipment. Existing equipment is to be noted with an (E) on all submittal documents. If applicable.
- L. Dwelling units and sleeping units visible alarm notification appliances per CFC 907.5.2.2.3. Group R-1 and R-2, if applicable.
- M. All dwelling units and sleeping units shall be provided with capability to support visible alarm notification appliances CFC 907.5.2.3.4 Group R-2. If applicable.
- N. Designer has verified all new fire alarm equipment to be installed is backward compatible with existing fire alarm equipment. If applicable.
- O. "Shall not be used as a licensed daycare." If applicable.
- P. "No napping permitted." If applicable.
- Q. All applicable code references shall be provided (i.e. NFPA 72 (2016 Edition w/ California Amendments) etc.)

Note: These requirements apply to both required and voluntary systems.

## References

*California Fire Code (CFC)*

*United States Department of Energy, Fundamentals Handbook for Engineering Symbology, Prints, and Drawings (Vols. 1 & 2) (1993 edition).*  
*National Fire Protection Association (NFPA) 170 – Standard for Fire Safety and Emergency Symbols (2012 edtn)*  
*NFPA 72 – National Fire Alarm and Signaling Code*  
*California Building Code (CBC)*  
*California Mechanical Code (CMC)*  
*California Electrical Code (CEC)*  
*FFD policy 401.016 Fire Related Construction Addenda*