



WOODSIDE FIRE PROTECTION DISTRICT

Fire Alarm and Detection Systems Design and Installation Standard

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SCOPE. This standard and guideline applies to the design and installation of automatic fire alarm systems in all buildings and structures except one and two-family dwellings, manufactured homes, and public schools. This guideline is to be used in conjunction with NFPA 72, 2022 edition, 2022 California Fire Code, The Woodside Fire Protection District Ordinance No. 13, and other applicable national standards including manufacturer recommendations.

GENERAL REQUIREMENTS

1. In accordance with Woodside Fire Protection District Ordinance No. 13, Section 907.7, fire alarm systems in commercial structures shall obtain a UL Certificate for the system prior to final inspection.
2. All fire alarm system devices to have U.L. & CA State Fire Marshal listing.
3. All systems shall be fully addressible to a central station.
4. The remote annunciator shall be located at the main entrance to the building, or other location approved by the fire code official.
5. A durable map shall be provided at the remote annunciator indicating the location of the FACP & essential fire service features (roof access, stairs, fire sprinkler riser, utility shut-offs).
6. The fire alarm panel shall have the following: contact phone number, account number, electrical panel/breaker# identified and instructions to silence and reset.
7. Programming and dispatch of alarm must include building and room numbers and device location that correspond with building architectural plan descriptions and property maps.

SYSTEM DESIGN AND INSTALLATION

All individuals and companies who intend to engage in the installation or alteration of fire alarm or monitoring systems are subject to the requirements of this standard.

Plans for a fire alarm or monitoring system are required to be designed by a registered professional engineer (Electrical, Mechanical, or Fire Protection), licensed by the State of California, Board of Professional Engineers. All copies of the plans shall be stamped and signed by the licensed individuals. A C-10 Licensed Contractor shall only design systems that the firm has a contract to install.

The fire alarm or monitoring system needs to be installed by an individual who holds a State of California C-10 Contractor's License.

PLAN CHECK AND SUBMITTAL DOCUMENTS

Please refer to the Plan Check and Submittal Process Section in the Standards and Guidelines Manual.

REQUIRED CONSTRUCTION PLAN INFORMATION

1. Title sheet shall include:
 - a) Project address of alarm
 - b) Project location phone number
 - c) Project location contact name
 - d) Occupancy classification of the building or area
 - e) Whether or not the building is sprinklered
 - f) Designer's contact information
 - g) Codes or standards the system is designed to
 - h) Installing contractor's information
 - i) Input/output matrix
 - j) Required placarding/signs
 - k) Monitoring company name, address, phone number and listing number and certification

2. Equipment List to include:
 - a) Manufacturer's name and model number for each device
 - b) Quantities of each type of device
 - c) Description of each device (i.e. heat detector, ionization detector, duct detector, control unit, etc.)
 - d) California State Fire Marshal's listing number and listing sheet with renewal number
 - e) Mounting requirements (wall, ceiling, flush, etc.)
 - f) Symbols to be used on drawings, along with legend
 - g) Manufacturer's cut sheet

3. Drawings:

Drawings are required to be labeled and legible. Stick on dots or similar materials are not acceptable. All drawings must be to scale and indicated on the plan set.

Floor Plans

- a) Floor identification
- b) Point of compass
- c) Graphic scale
- d) All walls and doors
- e) All wall partitions to within 15% of ceiling
- f) Room description
- g) Device location(s)
- h) Type of device(s)
- i) Control location(s)
- j) Conduit connection and size
 - i) Surface mounted installation
 - ii) Semi-flush mounted installation

- iii) Flush mounted installation
- k) Wire or cable type and size
- l) Weatherproof exterior mounted device(s)
- m) Location of primary power connections
- n) Riser location
- o) Ceiling heights and construction
- p) Complete building cross section
- q) Specs for fire stopping for through penetrations
- r) Device mounting heights
- s) Primary and secondary power supplies
- t) Voltage drop calculations

Point to Point System Wiring Diagram

- a) Interconnection of identified devices and controls
- b) Type of power feed to the control panel
- c) External connection of modules in the control panel

Alarm Circuit load consumption of furthest alarm circuits on drawing showing

- a) Quantity of bells on furthest circuit and current consumption
- b) Length of furthest circuit and resistance wire

Fire Alarm System Riser Diagram

- a) Arrangement of system in building cross section
- b) Number of risers
- c) Type and number of risers on each circuit
- d) Type and number of fire alarm system components/devices on each circuit , on each floor or level
- e) End of line resistors

4. Attachment to Drawings:

Battery Calculations

- a) Standby power consumption of all current drawing devices times the required minimum requirements of NFPA
 - i) Control panel modules
 - ii) All devices on standby, including door holder, relays, etc.
- b) Alarm power consumption of all current drawing devices, multiply the minutes required by minimum requirements of NFPA
 - i) Add power consumption of all operating signals, lights, relays, etc.
 - ii) Omit power consumption of door holders, etc.
 - iii) Formula format battery calculations.

Sequence of Operation Instructions:

- a) Step by step instruction for the operation of each type of initiating device in the system including reset.

Sequence of Test Inspection Operating Instructions:

- a) Identify monitoring company.
- b) Identify what auxiliary function switches or devices are to be disconnected before testing

is to be started.

- c) Selection of operation of at least one type of device in each initiating circuit as outlined in "Sequence of Operation".
- d) What functions are to take place upon operation of selected device.
- e) Identification of equipment supplier and installer.

State Fire Marshal's listing sheets for each device or component

INSPECTION AND TESTING PROCEDURE

1. The fire alarm system and all new fire alarm components shall be tested in accordance with NFPA 72.
2. A sheet shall be provided to the Fire Inspector indicating that a 100% pretest through the central station has occurred, and that the system functions correctly.
3. A copy of the Record of Completion and UL Certificate shall be presented to the Fire Inspector.
4. The building may not be occupied prior to testing of the fire alarm system by the Bureau of Fire Prevention and Life Safety.
5. FACP keys and fire pull station keys to be labeled and installed inside KNOX box.
6. All batteries to be labeled with their installation date.
7. All circuit breakers associated with the fire alarm system shall have locking devices installed.
8. Address or name of building clearly posted on eave or side of building and visible from street w/minimum of 1/2" stroke by 8" high numbers on contrasting background, or if structure is more than 50' from the street, minimum 12" high with 1" stroke is required.