



BST&G Fire District

Fire Prevention Bureau – Community Risk Reduction

Fire Alarm System Submittal Checklist

Date:
Project Name:
Project Address:
Designer's Name:
Company Name:
Phone Number:
Fax:
Email:

All supporting documentation showing items listed below are required for review. The checklist is based upon the 2016 NFPA 72 – The National Fire Alarm Code, 2017 Ohio Fire Code, Chapter 9.

BOXES MUST BE CHECKED UPON COMPLETION.

- Existing building fire alarms – Except as permitted in 2016 NFPA 72 Section 23.8.2.3, the fire alarm systems components shall be permitted to share control equipment or shall be able to operate as a stand-alone subsystem, but shall be arranged to function as a single system.

General (All submissions shall include the following):

- Paper Media:** One (1) full set of shop drawings 30"x42" of standard engineer scale (1:10, 1:20, 1:30, 1:40, 1:50, 1:60) shall be of sufficient clarity to indicate the location,

nature and extent of the work proposed and shown in detail that it will conform to the provisions of this code, relevant laws and specific provisions.

- Electronic Media:** One (1) AutoCAD base drawing w/TIFF image of each sheet PDF or Jpeg on a USB drive.

All Fire Alarms shall contain the following information as a minimum:

- Name of the building owner and occupant
- Location of the building
- Building address
- Building identification or suite
- A device legend
- Date of the plans
- An input / output programming matrix

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

- Floor identification
- A point of compass
- The graphic scale(s) used on the plans
- All walls and doors
- All partitions extending to within 15 percent of the ceiling height
- Room descriptions of occupancy
- The location(s) of all fire alarm system devices and components
- The location of fire alarm system primary power connection
- The location of the monitor / control interfaces to other systems (tamper, flow and hood suppression systems)
- Weatherproof exterior A/V device at the address side of the building, visible from the street (Water Flow Alarms) in lieu of electric bell.
- Alarm Riser locations.
- Routing for Class "A" circuits for compliance with **2016 NFPA 75**, where applicable.
- Indicate the method(s) of compliance for survivability of emergency voice systems as shown where applicable.
- The submitted plans shall indicate the ceiling height and ceiling construction details

Fire alarm riser details shall include:

- The general arrangement of the system shown in a building-cross section
- The numbers of risers
- The type and number of circuits in each riser.
- The type and number of fire alarm system components and devices on each circuit, on each floor or level
- Remote FACP shall be located at the right side of the main (public entrance) from door (facing the door from the outside) no more than 3 feet inside this door per **2016 NFPA 72 Section 10.17.3.1**. The location shall be approved by BST&G prior to installation.

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

- Identification of the control equipment depicted
- The location(s) of the control equipment
- All field wiring terminals and terminal identification
- All circuits connected to the field wiring terminals and circuit identification
- All indicators and manual controls, including the full text of all labels
- All field connections to the supervising station signaling equipment, releasing equipment, or fire safety control interfaces.

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

- The installer is required to be certified and placarded in accordance with **2016 NFPA 72 Section 10.5.2** provided on the plans the location of the placard and design criteria information.

- Fire Alarm Record Cabinet shall be located next to the Main Fire Panel, be red in color and be labeled “**FIRE ALARM DOCUMENTS**” per **2016 NFPA 72 7.2.2.5**

- The floor plans shall be drawn to recognize scale or dimensioned showing the layout of the building including wall and/or partitions for the verification of device spacing.

- The submitted plans shall include the location of all fire rated assemblies and indicate how the rated assemblies will be maintained when penetrated by equipment and / or wiring. Indicate what each room or space is used for by the occupants per **2017 Ohio Building Code**.

- Provide a device-to-device wiring arrangement in the plan view from fire alarm panel to all devices, inclusive of last device, indicating the location of end of line resistor. Indicate the style of wiring used for the verification of system performance under different conditions associated with the functionality. Indicate the size of wiring, the number of conductors used, and the protection methods required by **2016 NFPA 72**.
- The floor plan drawings shall indicate the location and number of all alarm-initiating devices and alarm-notification appliances with the dBA rating in the plan view. The plans shall indicate the mounting height of all devices and where devices are ceiling mounted, such as smoke detectors, heat detectors, beam detectors, the plan shall indicate type of ceiling layout (flat, cathedral, sloped, peaked, solid joist construction) and device mounting detail. **2010 NFPA 72 Sections 7.4 thru 7.4.10**
- The submitted plans shall indicate how each fire alarm zone is designed and laid out in the building to meet provisions of the manufacturer's accepted practices (number of devices permitted on a zone) and/or a (per floor, maximum of 22,500 square feet, and/or maximum of 300 feet in any direction. **2017 Ohio Fire Code Section 907.6.4**

Riser Diagram: Provide a single line riser diagram for devices on the fire alarm system for:

- All initiating devices
- All indicating devices
- Elevator capture function
- Door hold open functions
- Special locking devices
- HVAC controls

Stand Alone Alarm Information:

- The HVAC system shall be appropriately balanced prior to testing of the duct mounted smoke detectors. A note to this effect shall be placed on the plans. Contractors shall be capable of performing air pressure differential testing of the duct mounted smoke detector to verify the proper placement of the device.
- If the duct mounted smoke detectors or are smoke detectors are used to control smoke dampers, the plans shall indicate if the HVAC system is dynamic or static.
- Remote reset / test stations per **2016 NFPA 72 Section 17.4.7** where smoke detectors are installed in concealed locations more than ten feet (10") above finished floor, the remote shall be equipped with a reset key.

Primary and Secondary Power Sources:

- The submitted plans shall indicate the location of the circuit breaker for the primary power source and shall have a red marking (red circuit breaker switch). The circuit shall be identified in the circuit breaker panel as “FIRE ALARM CIRCUIT”. The circuit breaker shall also be equipped with breaker lock. **2016 NFPA 72 Section 10.6.5.2.2**
- The submitted plans shall indicate the location of and the identification of the circuit breaker panel and circuit number to be dedicated to the fire alarm system. The location of and identification of the circuit breaker panel and dedicated fire alarm circuit shall be permanently identified at the fire alarm control panel. **2016 NFPA 72 Section 10.6.5.2.1**
- The submitted plans shall include calculations for all secondary power sources based on the type and amount of equipment and devices to be installed. **2016 NFPA 72 Section 10.6.7.2**
- The submitted plans shall include system voltage drop calculations. **2016 NFPA 72 Section 10.6.7.2.1.1**
- The submitted plans shall show the name, address, and telephone number of the central station monitoring the fire alarm system. Submit a copy of the companies UL Listed Central Station or Remote Station Certification.

Cut Sheets:

Manufacturer’s data sheets shall be submitted for all equipment used or attached to the system, regardless of who the equipment is provided by or installed by. Where manufacturer’s data sheets cover multiple devices, the submitted data sheet shall indicate those devices used in the system. Specifically provide information for the Digital Alarm Communicator Transmitter (DACT) programming options.

- DACT
- All smoke detectors
- All heat detectors
- All pull stations
- All duct detectors
- All sprinkler attachments (water flow, tampers and pressure switches)
- All other initiation device attached to the FACP
- Control functions initiate through the fire alarm control panel
- All control relays
- All special locking devices
- All notification devices
- All audio / visual appliances
- Other _____

- In R-1 and R-2 occupancies equipped with Type “A” Accessible Units, the requirements for sleeping areas using a combination smoke detector and visible notification appliance(s) or a combination smoke alarm and visible notification appliance(s), the location of the devices and the effective intensity of the visible notification appliance(s) shall comply with **2016 NFPA 72 Section A 18.5.5.4.6**
- The plans shall include an operational input/output matrix for fire alarm systems that Interface with and control the operation of other fire protection devices or peripherals. Use the format indicated in **2016 NFPA 72 Figure A. 14.6.2.**
- **Provide a signal schedule to include the following information for INTELLIGENT SYSTEMS:**

<u>POINT</u>	<u>TYPE OF SIGNAL</u>	<u>ALPHA NUMERICAL NOMENCLATURE</u>	<u>LOCAL FUNCTION</u>	<u>OFF SITE SIGNAL</u>
<u>(A)</u>	<u>(B)</u>	<u>(C)</u>	<u>(D)</u>	<u>(E)</u>

(A) POINT – Designated by designer of numeric point

(B) TYPE OF SIGNAL – Alarm, Supervisory or Trouble signal

(C) ALPHA NUMERICAL NOMENCLATURE – Type of initiating device (i.e., manual pull, sprinkler, water flow, HVAC smoke detector, OS&Y tamper switch, PIV tamper switch)

(D) LOCAL FUNCTION – Fire alarm system (A.V. activation, door closure, HVAC control function, suppression system activation)

(E) OFF / SITE SIGNAL – Generic / specific signal correlating with each point as transmitted to monitoring company.

NOTE:

ARE MULTIPLE COMMON SIGNAL TYPES GROUPED TO TRANSMIT A GENERIC SIGNAL TO THE MONITORING SERVICE?

DOES EACH POINT / ZONE TRANSMIT DISTINCTIVELY TO THE MONITORING SERVICE?

Provide a signal schedule to include the following information for

NON-INTELLIGENT SYSTEMS:

ZONE (A)	TYPE OF SIGNAL (B)	ZONE DESCRIPTION (C)	LOCAL FUNCTION (D)	OFF SITE SIGNAL (E)

(A) POINT – Designated by designer of numerical point or zone identification

(B) TYPE OF SIGNAL – Alarm, Supervisory or Trouble signal

(C) ZONE DESCRIPTION – Floor level or area of zone

(D) LOCAL FUNCTION – Fire alarm system (A.V. activation, Door closure, HVAC Control Function, Suppression System Activation)

(E) OFF / SITE SIGNAL - Generic/Specific signal correlating with each point as transmitted to the monitoring company.

Note:

ARE MULTIPLE COMMON SIGNAL TYPES GROUPED TO TRANSMIT A GENERIC SIGNAL TO THE MONITORING SERVICE?

DOES EACH POINT / ZONE TRANSMIT DISTINCTIVELY TO THE MONITORING SERVICE?

STATE OF OHIO, FIRE MARSHAL LICENCES:

Submit a copy of the installing company licenses and each installers license for this job.

Rev: December 2020