



FIRE CONSTRUCTION PERMIT SUBMITTAL CHECKLIST

SERVING THE CITIES OF LAKE STEVENS, MONROE AND SULTAN

FIRE ALARM AND DETECTION SYSTEMS

PROJECT INFORMATION

Site address:	Associated Permits:
Project Name / Tenant:	Property Owner:

Electronic file standards

File naming standard: Electronic plans and documents shall be named as specified in bold type under “permitting requirements”. For example, the seating plan must be named “Seating Plan”.

Acceptable file types: Plans, calculations, specifications and supporting documents shall be uploaded as a PDF file.

Document Orientation: All plans must be uploaded in “Landscape” format in the horizontal position. All other documents can be in “Portrait” format.

CODE EDITIONS

- 2021 Washington State Fire and Building Code, 2019 NFPA 72 and as applicable - Lake Stevens Municipal Code 14.84, Monroe Municipal code 15.04.110, Sultan Municipal Code 15.05.

PERMITTING REQUIREMENTS

A Fire Construction Permit is required to install or modify a **Fire alarm and detection system** required by Section 105.6.6 of the 2021 Washington State Fire Code and local code amendments. **The following information is required at time of application for the Fire Construction Permit.**

- Completed Fire Construction permit submittal application.
- Completed "Fire Alarm and Detection systems submittal checklist."
- Plans
- Completed design standard checklist.

The following is a list of information required on all plan submittals for review of a "Fire Alarm and Detection System" permit application. The plan shall be drawn to 1/8"=1'-0" minimum scale. The applicant is required to submit all of this information so an accurate and timely review may be done:

NOTE – The fire alarm systems shall be designed in accordance with 2019 NFPA 72, 2021 WSFC, WSBC, and WSMC, 2017 ICC A117.1, and the SRFR Fire Alarm Design Standard (attached)

MINIMUM REQUIRED DOCUMENTATION

- Written narrative providing intent and system description.
- Riser diagram
- Floor plan layout showing locations of all devices, control equipment, and supervising station and shared communications equipment with each sheet showing the following:
 - Point of compass
 - A graphic representation of the scale used.
 - Room use identification

- Building features that will affect the placement of initiating devices and notification appliances.
- Sequence of operation in an input/output matrix
- Equipment technical data sheets
- Manufacturers' published instructions, including operation and maintenance instructions.
- Battery capacity and de-rating calculations
- Voltage drop calculations for notification appliance circuits
- Mounting height elevation for wall mounted devices and appliances
- Minimum sound pressure levels that must be produced by the audible notification appliances in applicable covered areas.
- Pathway diagrams between the control unit and the supervising station and shared communications equipment
- Completed record of completion in accordance with 2016 NFPA 72 7.5.6 and 7.8.2
- For software-based systems, a copy of site-specific software, including specific instructions on how to obtain the means of system and software access (password)
- Record (as built) drawings.
- Records, record retention, and record maintenance in accordance with Section 7.7 of 2016 NFPA 72
- Completed record of inspection and testing in accordance with 7.6.6 and 7.8.2 of 2016 NFPA 72
- Documents shall identify the name and contact information of the system designer, including the certification type and number (NICET, PE, ETC.)
- All fire alarm drawings shall use symbols described in NFPA 170, or all symbols shall be annotated on the drawing in a symbol identification chart.
- Notification design documentation – 2016 NFPA 72
 - Include the ambient sound pressure levels and audible design pressure levels in accordance with 18.4.1.4.3
 - Analysis and design documentation for narrow band tone signaling in accordance with 18.4.6.4
 - Documentation of acoustic distinguishable spaces in accordance with 18.4.10
 - The maximum sound pressure level shall not exceed 110 dB, and for public mode appliances, the maximum sound pressure level shall not exceed 30 dBA over the ambient sound level. 2018 WSFC 907.5.2.1.2
- Detection design documentation – 2016 NFPA 72
 - Heat detection design documentation shall be provided in accordance with Section 17.6
 - Smoke-sensing fire detectors documentation shall be provided in accordance with Section 17.7

- Radiant energy-sensing fire detectors design documentation shall be provided in accordance with Section 17.8
- Gas detectors design documentation shall be provided in accordance with Section 17.10
- Identification of all zones to be shown. 2018 WSFC 907.6.3
- Occupancy classification as shown on the building plans or certificate of occupancy and occupant load of each floor/area.
- Mechanical systems installed in building such as smoke removal, duct detectors, elevator functions, access control systems, exiting control systems – delayed egress systems, show the interconnection/integration of systems.

SHOP DRAWING REQUIREMENTS

- Drawings shall be submitted in electronic format, in PDF
- Drawings shall be drawn in the indicated scale.
- Shop drawings shall include the following:
 - Name of protected premises, owner, and occupant (where applicable)
 - Name of installer or contractor
 - Location of protected premises
 - Device legend and symbols in accordance with NFPA 170, or other symbols as identified on the drawings.
 - Date of issue and any revision dates
- Floor plan drawings shall be drawn to indicated scale and include the following:
 - Floor or level identification
 - Point of compass (indication of North)
 - Graphic scale
 - All windows and doors
 - All partitions extending to within 15 percent of the ceiling height
 - Room and area descriptions
 - System devices / component locations
 - Locations of fire alarm primary power disconnecting means
 - Locations of monitor / control interfaces to other systems
 - System riser locations
 - Type and number of system components / devices on each circuit, on each floor or level
 - Type and quantity of conductors and conduit for each circuit
 - Identification of any ceiling over 10 feet in height where automatic fire detection is being proposed.
 - Details of ceiling geometries, including beams and solid joists, where automatic fire detection is being proposed.

- Where known, acoustic properties of spaces.
- System riser diagrams shall include the following information.
 - General arrangement of the system in building cross-section
 - Number of risers
 - Type and number of circuits in each riser
 - Type and number of system components / devices on each circuit, on each floor or level
 - Number of conductors for each circuit
- Control unit diagrams shall be provided for all control equipment, power supplies, battery chargers, and annunciators and shall include the following:
 - Identification of the control equipment depicted.
 - Location of control equipment
 - All field wiring terminals and terminal identifications
 - All circuits connected to field wiring terminals and circuit identifications.
 - All indicators and manual controls
 - Field connections to supervising station signaling equipment, releasing equipment, or emergency safety control interfaces.
- Typical wiring diagrams shall be provided for all initiating devices, notification appliances, remote indicators, annunciators, remote test stations, and end-of-line and power supervisory devices.

SNOHOMISH REGIONAL FIRE AND RESCUE DESIGN STANDARD

Design standards/code editions: 2021 Washington State Fire and Building Code, NFPA 72 2019 edition, and as applicable - Lake Stevens Municipal Code 14.84, Monroe Municipal code 15.04, Sultan Municipal Code 15.05.

Designer certification requirements: All construction documents shall be reviewed by a NICET III, an ESA/NTS Certified Fire Alarm Designer (CFAD) Level III Fire in fire alarms, or a licensed professional engineer (PE) in Washington prior to being submitted for permitting.

Fire alarm panels: All new fire alarm panels shall be the addressable type. Each building shall have one panel. A fire wall or other means of separation for this purpose does not constitute two separate buildings requiring individual panels. Combination fire/security panels are not allowed. Fire alarm panels shall be located in the Fire Control Room and a remote annunciator shall be installed within 5' of the front door to the building, in the largest suite (if applicable). For non-sprinklered buildings, the fire alarm panel shall be located in the electrical room or in a location coordinated with the Fire Marshal.

Campus Style Fire Alarm Systems: All buildings that are part of a campus style fire alarm system are each required to have a fire alarm control panel. Campus style fire alarm systems are limited to buildings within a single parcel number and mailing address as identified by the Snohomish County Auditor's Office.



FIRE ALARM AND DETECTION SYSTEM DESIGN STANDARD

DESIGNATION

DS-002

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10-26-2021

SNOHOMISH REGIONAL FIRE AND RESCUE DESIGN STANDARD

Means of signal communication: All fire alarm, trouble, and supervisory signals shall be transmitted to the listed monitoring company utilizing a private one-way radio (AES), a cellular data transmitter, or an IPDACT listed for fire alarm signal transmission. Utilizing phone lines is not allowed unless it is proven to the AHJ that cellular, radio transmission, or a listed IPDACT is not feasible. All methods shall comply with chapter 26 of NFPA 72, 2019 edition. All addressable fire alarm systems shall be required to utilize a communicator that is capable of transmitting point identification fire alarm signals to the monitoring company.

One way radio installation (AES Radio): AES Radios are required to be supervised by the Fire Alarm Control Panel.

The radio is required to transmit point identification data to the monitoring company for all addressable fire alarm control panels. Zone inputs are acceptable as a primary signal transmission to the alarm company, followed by point ID transmission – if FACP is addressable.

All radios are required to be mounted in the same room as the FACP and be readily accessible to responding personnel and be no more than 6' above the finished floor level.

The radio primary power source shall utilize one of the following:

1. The 120 volt fire alarm circuit.
2. A 24 volt output from the FACP. This will require updated battery calculations for the fire alarm system.

*A 24-hour battery test will be required to ensure properly sized batteries are installed.

Cellular Data Transmitter: A cellular transmitter shall be listed for fire alarm signal transmission. The cellular transmitter is required to be supervised by the FACP, cause the FACP to indicate a trouble signal when the transmitter is not in a normal mode/configuration. The transmitter is required to be installed in the same room as the FACP and be readily accessible to responding personnel, not more than 6' above the floor. AC power be the same circuit as the FACP, with battery B/U. If powered by the FACP, updated battery calculations are required for the fire alarm system. A 24 hour battery test is required to be performed. 60 minute polling time required.

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IPDACT data signal transmission: IPDACT data transmitters shall be listed for fire alarm signal data transmission. The installation of an IPDACT shall have a 60-minute polling time programmed into the device and is required to be shown to the fire inspector.

The location of the IPDACT is required to be in the same room as the FACP, with AC power on the same circuit as the FACP. Battery backup is required to be provided for the IPDACT, lasting 24 hours minimum.

Central Station Monitoring and Runner Service: All fire alarm systems shall be monitored by a UL Listed Central Station. All trouble and supervisory signals lasting longer than 24 hours shall be reported to FireMarshal@SRFR.org

Signed runner service contracts are required to be provided at time of permit submittal, if required.

Fire Alarm occupant notification requirements: All new fire alarm systems, including dedicated function fire alarms and spec buildings, shall provide alarm notification throughout the building. These notification circuits shall comply with IFC 907.5 and NFPA 72, 2019 edition.

Exterior notification requirements: Fire alarm exterior notification is required to be located as follows:

1. At building exterior entrances
2. In exterior public gathering places
3. At the exterior door to the room where fire alarm and the fire sprinkler system riser is located
4. On the side of the building facing the fire apparatus access roadway – to be seen from the roadway.



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