FIRE ALARM SYSTEM PLAN SUBMITTAL CHECKLIST

All fire alarm system plan submittals must include this Fire Alarm Plan Submittal Checklist and a completed Fire Services Permit Application. By providing all the information requested in this checklist, you are assuring the quickest turnaround time for plan review. Electrical Contractors and Fire Alarm Companies registered with the state can pull the permit and perform the installation.

- A low voltage electrical permit is also required and must be submitted along with the Fire Alarm application.
- The valuation for the Fire Alarm is 75% of the total project and the Electrical is 25% of the total project.

Original Design and Installation Documents (Unless otherwise noted, provide **three sets** of each).

- **Installation drawings:**
  - Maximum size of 24" x 36"
  - Drawn to an indicated scale (1/8" = 1'- 0" minimum)
  - Containing the job title, site address, owner's name, and designer's name, address, phone, and fax numbers.
  - Floor plans, clearly indicating:
    - The use and / or function of all rooms and areas
    - The location of all alarm initiating, control, notification, annunciation, or trouble signaling devices or equipment, device addresses
    - Ceilings, ceiling height and ceiling surfaces (Example: beams, joists, ceiling slope, drop ceiling, refer to NFPA 72 section 3.3.40, 3.3.41, 3.3.42)
    - Elevations as needed to clearly indicate construction features
    - Power connections – high and low voltage if applicable
    - Wiring diagram including point-to-point connections for all equipment.
  - A legend clearly identifying all device symbols (NFPA 170 symbols are required.)
    - Conductor types and sizes.
    - A single-line riser diagram of all devices, circuits, power connections and interfaces
    - Circuit class and style.
    - Cut sheets or other necessary information for all devices and equipment:
    - Device manufacturer, model number, operational requirements, and limitations, listing information (per UL 864) shall be clearly identifiable or hi-lighted.
    - Listed compatibility with existing equipment (if applicable) shall be indicated.
  - If system layout is a performance-based design, include design parameters and values per NFPA 72, 2022, Appendix C.
  - Plans submitted for Fire Alarm System permits shall be prepared under the supervision of individuals possessing a NICET (National Institute for Certification in Engineering Technologies) Level III certification in Fire Alarm Systems; or shall be licensed by the State of Washington as a Professional Fire Protection or Electrical Engineer or certified by the State of Washington. Plans shall identify certification and/or licensing information.
- **System Calculations**
  - Battery calculations including a minimum 1.2 derating factor.
  - Voltage drop calculations.

- **A project narrative to include:**
  - Design assumptions for detection and notification
  - Current and projected occupancy type
  - Scope of work
  - Type of panel and number of devices.
  - The interface of all fire safety control functions.
  - A Sequence of Operation/Alarm Matrix.
- **Equipment.**
  - Systems and their components shall be listed and approved for the purpose for which they are installed.
  - All new alarm systems shall be addressable.
  - Each device shall have its own address and shall annunciate individual addresses at the approved supervising station. Descriptive identification of initiating devices shall include device type, floor, and location on each floor.
- **System installation.**
  - Fire alarm systems shall be installed and maintained in accordance with ~~this~~ the adopted Code by persons under the direct supervision of individuals that have factory training and certification on the system being installed.
  - Systems shall be monitored in accordance with IFC 907.6.6.
  - Keys for access to the fire alarm control panel room/location, to the FACP itself, and pull stations shall be provided. If no Knox box exists, one shall be required to be installed.

Additional Submittal Requirements

For ADA conformance and in accordance with the International Fire Code section 907.5.2.3.3, and 907.5.2.3.3.1 Wired Equipment:

"In Group R-2 occupancies required by Section 907 to have a fire alarm system, each *story* that contains *dwelling units* and *sleeping units* shall be provided with the capability to support future visible alarm notification appliances in accordance with Chapter 11 of ICC A117.1. Such capability shall accommodate wired or wireless equipment."

The following guidelines shall be utilized to meet the intent of this code section for newly constructed buildings. For fire alarm installations in existing buildings the wiring to the in-unit horns will satisfy the pre-wiring requirement.

All apartments shall have fire alarm audible/visual devices pre-wired for adaptability to meet the barrier free requirements. All pre-wired audible/visual devices shall have an electrical backbox and wire installed.

1. Common areas of each apartment shall also be pre-wired for audible/ visual devices.
2. Bathrooms shall be pre-wired for strobe only.
3. Bedrooms shall be pre-wired for future visual devices with an electrical backbox and wire installed for future adaptability.
   a. The bedroom backbox shall be installed 24" from the top of the box to the ceiling.
   b. If a 110 cd strobe is installed on the wall, the strobe shall be installed within 16' of the pillow, and no closer than 24" from the ceiling.
   c. The wall mounted strobe should not be installed above the pillow. Install the 110 cd strobe within 180° of the pillow, per NFPA 72 and the manufacturer.
   d. A ceiling mounted strobe requires a 177 cd strobe.

4. See NFPA 72, 2022 and IFC 907.5.2.1 for minimum sound requirements in residential occupancies. Audibility shall be 15 dBA above the average ambient sound throughout all areas of the apartment/living unit (living rooms, sleeping areas, bathrooms, etc.) and shall not exceed 110 dBA.
    a. Per 907.5.2.1.3, audible signal frequency requirements in Group R-1 and R-2 sleeping rooms for fire alarm system signals shall be a 520-Hz low-frequency signals, and smoke alarms shall be a 520-Hz signal.