

**SANTA ROSA FIRE DEPARTMENT  
FIRE PREVENTION BUREAU  
PLAN REVIEW CHECKLIST**

July 1, 2010



**FIRE ALARM SYSTEM INSTALLATION**

<b>Address:</b>		<b>Permit #:</b>
<b>Inspector:</b>	<b>Date:</b>	<b>Status:</b>
<b>Inspector:</b>	<b>Date:</b>	<b>Status:</b>
A-Approved; AC-Approved w/comments; I-Incomplete; D-Denied		

This Checklist outlines general requirements. Information contained herein applies to typical instances and may not address all circumstances.

**FILE REVIEW**

**FEES** – Permit fees entered in Permits Plus. 3<sup>rd</sup> or greater checks require an hourly fee for the review.

**Y N**

1.   Three sets of drawings are provided.
2.   Equipment is listed for intended use and compatible with the system, specification data sheets and CA State Fire Marshal listing are required, 4.3.1, 4.4.2.

**DRAWINGS SHALL DETAIL THE FOLLOWING ITEMS, IFC 907.1.1 AND NFPA 72 4.5.1.1:**

3.   Scale: a common scale is used and plan information is legible.
4.   Rooms are labeled and room dimensions are provided.
5.   Equipment symbol legend is provided.
6.   The type of fire alarm circuits (Class A or B) is indicated, IFC 907.9.
7.   When detectors are used, device locations, mounting heights, and building cross sectional details are shown on the plans.
8.   The type of devices installed is indicated on the plans.
9.   Wiring for alarm initiating and alarm signaling indicating devices are detailed.
10.   The location of the Fire Alarm Control Unit (FACU) and when required, the Remote Annunciator panel are located near the main entrance or as approved by the AHJ, 4.4.6.3. A map displaying the device locations and zones shall be mounted next to the annunciator in a glass frame.
11.   If more than one building is served by a system, each building is indicated separately on the FACU or annunciator and it is noted as such on the plans. Systems serving multiple buildings shall have individual annunciators in each building. Notification shall be per building. 4.4.6.6.2.
12.   Type and gauge(s) of conductors .

Plan Review  
Fire Alarm System Installation

Y N

13.   Sectional views of structure, roof, and ceiling, and rooms with beam or solid joists and drop ceilings, etc unless plans declare them smooth ceiling.
14.   The riser diagram illustrates the number and type of devices installed on each circuit, identification of fire alarm zones (if the system is not addressable), and the primary and secondary power supplies. The primary power supply shall be a minimum 120 volt alternating current branch circuit labeled *Fire Alarm Circuit* Control whose access is limited to authorized personnel, installed in a separate circuit box and locked. Breaker locks are not acceptable, 4.4.1.4, 4.4.1.4.2.

**POINT TO POINT SYSTEM WIRING DIAGRAM:**

15.   Interconnection and wire routing of identified devices and controls for each circuit.
16.   Indicate the number of conductors and wire gauge for each circuit run.
17.   Identify separate zones, circuits and end of line locations.

**ALARM INDICATING CIRCUIT VOLTAGE DROP CALCULATIONS:**

18.   Indicate the number of signaling devices, current consumption, the end of line voltage for each circuit, and the lowest nameplate operating voltage range for audible and visual notification devices.
19.   Indicate the approximate length of each circuit and resistance of wire using the National Electrical Code conductor ampacity values or provide manufacturer data sheet.
20.   Provide calculations for the acceptable circuit limits including:
- A. Standby power consumption of all current drawing devices times the hours required by NFPA 72 (24 hours) including power consumption of the control panel modules.
  - B. Power consumption of all devices on standby power.
  - C. The power consumption of all current consuming devices multiplied by the minutes required by NFPA (5 minutes for fire alarms or 15 minutes for emergency voice/alarm communication service).

**PRIMARY AND SECONDARY POWER:**

21.   The secondary power supply has a minimum capacity of 24 hours and will alarm for 5 minutes, 4.4.1.5.3.1.
22.   The secondary power supply for a emergency voice/communication alarm system has a minimum capacity of 24 hours capacity and will alarm for 15 minutes, 4.4.1.5.3.1(A)
23.   If batteries are used as a means of secondary power, they shall be sized to at least 100 percent of maximum normal load.

**PERFORMANCE BASED DESIGN**

24.   Documents are provided outlining each performance objective, applicable scenarios, any calculations, modeling and other technical support in establishing the proposed fire design and life safety performance in accordance with 5.3. Readers should consult the Society of Fire Protection Engineers *Code Official's Guide to Performance-based Design Review*.

**INITIATING DEVICES; THE FOLLOWING ITEMS ARE DETAILED ON THE PLANS:**

- |     | <b>Y</b>                 | <b>N</b>                 |  |
|-----|--------------------------|--------------------------|--|
| 25. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke and heat detection device coverage is designed in accordance with total coverage (5.5.2.1), partial coverage (5.5.2.2), selective coverage (5.5.2.3) or nonrequired coverage (5.5.2.4).  |
| 26. | <input type="checkbox"/> | <input type="checkbox"/> | Detection devices: wiring details for devices are provided.  |
| 27. | <input type="checkbox"/> | <input type="checkbox"/> | Detection devices: type and location for the occupancy type is in accordance with IFC 907.   |
| 28. | <input type="checkbox"/> | <input type="checkbox"/> | Duct detector locations in air/heat ducts. The air flow rate per minute ratings are provided: including the manufacturer data sheet and a matrix or note detailing what size sampling tubes are to be used for each duct size, 5.16.5.   |
| 29. | <input type="checkbox"/> | <input type="checkbox"/> | Heat detectors are listed and equipment data sheets are provided.  |
| 30. | <input type="checkbox"/> | <input type="checkbox"/> | Heat detector spacing: identify which ceilings are smooth, sloped, have solid joist or beam construction, 5.6.5  |
| 31. | <input type="checkbox"/> | <input type="checkbox"/> | Heat detector heat classification color is indicated by detector location on the plan, 5.6.2.  |
| 32. | <input type="checkbox"/> | <input type="checkbox"/> | Heat detector spacing for rooms with smooth ceilings shall comply with the spacing requirements in Section 5.6.5.1.  |
| 33. | <input type="checkbox"/> | <input type="checkbox"/> | Heat detector spacing for irregularly shaped areas shall comply with the spacing requirements in Section 5.6.5.2.  |
| 34. | <input type="checkbox"/> | <input type="checkbox"/> | Heat detector spacing for ceilings 10 ft. to 30 ft. is in compliance with Table 5.6.5.5.1.   |
| 35. | <input type="checkbox"/> | <input type="checkbox"/> | Heat detector located at right angles to solid joist construction is not greater than 50 percent of the smooth ceiling spacing, 5.6.5.2.   |
| 36. | <input type="checkbox"/> | <input type="checkbox"/> | Heat detector spacing at right angles to beams projecting greater than 4 in. below the ceiling do not exceed 66 percent of the smooth ceiling spacing noted in 5.6.5.1.1 and .2 or if beams project greater than 18 in. below the ceiling and are spaced greater than 8 ft. on center then each bay is a separate area, 5.6.5.3.   |
| 37. | <input type="checkbox"/> | <input type="checkbox"/> | Heat detector spacing for sloped ceilings: for peaked ceilings a row of detectors are spaced and located at or within 3 ft. of the ceiling peak and additional detectors, if any, shall be spaced based on the horizontal projection of the ceiling; for shed ceilings the sloped ceiling will have detectors located within 3ft. of the high side of the ceiling measured horizontally and additional detectors, if any, shall be spaced based on the horizontal projection of the ceiling; for roof slopes less than 30 degrees, detectors shall be spaced using the height at the peak and slopes greater than 30 degrees use the average slope height for detectors other than those at the peak, 5.6.5.4. |
| 38. | <input type="checkbox"/> | <input type="checkbox"/> | Unless listed for such use, smoke detectors shall not be installed in an environment where the temperature, relative humidity, and the air velocity do not exceed the prescribed limits in section 5.7.1.8.  |
| 39. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detector spacing is in accordance with the listing data sheet.   |
| 40. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detector location and spacing shall be based on anticipated smoke flows due to the plume and ceiling jet produced by an anticipated fire, which should take into account: 1) ceiling shape and surface, 2) ceiling height, 3) configuration of contents, 4) combustion characteristics of fuel load, 5) compartment ventilation, 6) ambient pressure, pressure, altitude, and humidity. Provide  |

Plan Review  
Fire Alarm System Installation

document confirming these variables were considered, 5.7.3.1.2. The fire code official may require supporting documentation.

- |     | Y                        | N                        |  |
|-----|--------------------------|--------------------------|--|
| 41. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detectors in high air movement areas are not located in the supply vent air stream and shall be spaced in accordance with Table 5.7.5.3.3 and Figure 5.7.5.3.3.  |
| 42. | <input type="checkbox"/> | <input type="checkbox"/> | If two smoke detectors are used to initiate an alarm, verify that at least two detectors are provided in each protected area that and alarm verification is not being used, 6.8.5.4.3.   |
| 43. | <input type="checkbox"/> | <input type="checkbox"/> | Room cross sectional details are provided for smoke detector designs listed in worksheet Items 45 and 46.  |
| 44. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detector spacing for smooth ceiling is based on a minimum 30 ft. spacing and the manufacturer's data sheet. 5.7.3.2.3.   |
| 45. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detector spacing for solid joist and beam construction: for level ceilings, 5.7.3.2.4.   |
|     | <input type="checkbox"/> | <input type="checkbox"/> | A. If the beam depth is less than 10 percent of ceiling height then use smooth ceiling spacing criteria,   |
|     | <input type="checkbox"/> | <input type="checkbox"/> | B. If the beam depth is more than 10 percent of the ceiling height and beam spacing is more than 40 percent of the ceiling height, smoke detectors shall be located in each beam pocket,   |
|     | <input type="checkbox"/> | <input type="checkbox"/> | C. For waffle or pan-type ceiling with beams up to 24 in. and up to 12 ft. center-to-center spacing then use smooth ceiling spacing including spacing criteria for irregular areas. For these ceilings detectors can be placed on the ceiling or at the bottom of the beams, |
|     | <input type="checkbox"/> | <input type="checkbox"/> | D. Corridors up to 15 ft. in width with beams perpendicular to the corridor length require smooth ceiling spacing including spacing criteria for irregular areas. The detectors can be placed on the ceiling or bottom of the beams.   |
| 46. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detector spacing for solid joist and beam construction: for sloped ceilings, 5.7.3.2.4.3.  |
|     | <input type="checkbox"/> | <input type="checkbox"/> | A. For beams running parallel to the slope use level beam ceiling spacing criteria,  |
|     | <input type="checkbox"/> | <input type="checkbox"/> | B. Ceiling height is determined as the average height over the length of the slope   |
|     | <input type="checkbox"/> | <input type="checkbox"/> | C. Smoke detectors are not required at the low end of the slope using the 50 percent spacing requirement and where the ceiling slope is more than 10 degrees.  |
|     | <input type="checkbox"/> | <input type="checkbox"/> | D. Spacing is based on the horizontal projection of the ceiling.   |
| 47. | <input type="checkbox"/> | <input type="checkbox"/> | For beams running perpendicular to the sloped ceilings, the detectors are spaced the same as level beamed ceilings, 5.7.3.2.4.4.   |
| 48. | <input type="checkbox"/> | <input type="checkbox"/> | Detectors are on the bottom of the solid joists of sloped ceilings, 5.7.3.2.4.5.   |
| 49. | <input type="checkbox"/> | <input type="checkbox"/> | Air sampling smoke detector design calculations are within the maximum air sample transport time of 120 seconds, 5.7.3.3.2.  |
| 50. | <input type="checkbox"/> | <input type="checkbox"/> | Air sampling smoke detector sampling pipe network is detailed on the plans with pipe size and lengths, with calculations showing flow characteristics of the piping network and each sampling port, 5.7.3.3.4.   |

Plan Review  
Fire Alarm System Installation

- |     | Y                        | N                        |   |
|-----|--------------------------|--------------------------|---|
| 51. | <input type="checkbox"/> | <input type="checkbox"/> | Air sampling smoke system: provided are details of pipe mounting system and signage for each pipe at changes of direction or pipe branches, each side of wall penetration, and at least every 20 ft., 5.7.3.3.8   |
| 52. | <input type="checkbox"/> | <input type="checkbox"/> | Projected beam smoke detector locations are detailed on the plans and the manufacturer's design data sheets are provided, 5.7.3.4.1   |
| 53. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke stratification was considered during the selection of the projected beam smoke beam detectors. The fire code official is authorized to require documentation of this evaluation, 5.7.3.4.2 and 4.5.1.1.   |
| 54. | <input type="checkbox"/> | <input type="checkbox"/> | Projected beam smoke detectors shall be equivalent to a row of spot-type detectors on level or slope ceilings, 5.7.3.4.5.   |
| 55. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detector spacing located on peaked ceilings shall be spaced and located within 3 ft. of the peak, measured horizontally, and additional detectors, if any, shall be based on the horizontal projection of the ceiling, shed ceilings shall have detectors located on the ceiling within 3 ft. of the high side of the ceiling measured horizontally, and additional detectors, if any, shall be based on the horizontal projection of the ceiling, and room cross sectional are provided, 5.7.3.5 and .6. |
| 56. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detector spacing under raised floors or above suspended ceilings shall be treated as separate rooms and spacing is in accordance with 5.7.3.7.  |
| 57. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detector spacing: when partition distance to the ceiling is within 15 percent of the ceiling height, treat each partitioned area as a separate room, 5.7.3.8.   |
| 58. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detectors used in plenums are listed for anticipated environment and shall not be used in lieu of open area detectors, 5.7.4.   |
| 59. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detectors are not installed in areas that exceed the prescribed limits of temperature, humidity or air movement in section 5.7.1.8.   |
| 60. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detectors in high air movement areas are spaced in accordance with Table 5.7.5.3.3 and Figure 5.7.5.3.3   |
| 61. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detection is provided in areas not continuously occupied where the FACU and other control units are located, 4.4.5.   |
| 62. | <input type="checkbox"/> | <input type="checkbox"/> | Radiant energy-sensing fire detectors, detector device is detailed and the manufacturer's data sheets are provided.   |
| 63. | <input type="checkbox"/> | <input type="checkbox"/> | Radiant energy-sensing fire detector data sheets show the detector matches the spectral emissions of the fire or fires to be detected and how false alarms will be minimized, 5.8.2.2.  |
| 64. | <input type="checkbox"/> | <input type="checkbox"/> | Radiant energy-sensing fire detector spacing will be in accordance with its listing or inverse square law and the number of detectors is based on complete unobstructed view coverage of the area, 5.8.3.   |
| 65. | <input type="checkbox"/> | <input type="checkbox"/> | Radiant energy-sensing flame detectors and spark/ember, location and spacing are based on an engineering evaluation to include fire size, fuel involved, detector sensitivity, detector field of view, distance from fire to detector, radiant energy absorption, extraneous radiant emissions, purpose of coverage, and the response time required, 5.8.3.2 and 5.8.3.3.   |
| 66. | <input type="checkbox"/> | <input type="checkbox"/> | Video image flame, combination, multi-criteria, and multi-sensor detectors are in compliance with 5.8.5 and 5.9.  |

Plan Review  
Fire Alarm System Installation

- |     | Y                        | N                        |   |
|-----|--------------------------|--------------------------|---|
| 67. | <input type="checkbox"/> | <input type="checkbox"/> | Other fire detectors not previously covered are installed in accordance with listing requirements, an engineering evaluation which includes structural features, occupancy and use, ceiling height, ceiling configuration, ventilation, ambient conditions, fuel load and content configuration, 5.10.  |
| 68. | <input type="checkbox"/> | <input type="checkbox"/> | For elevator recall service, smoke detectors shall be provided in the elevator lobby, elevator machine room, hoist ways, and control room. The detectors shall be connected to the fire alarm system, 6.16.3.1.   |
| 69. | <input type="checkbox"/> | <input type="checkbox"/> | In a building not equipped with an automatic fire alarm system, smoke detectors installed for elevator recall service shall be connected to a dedicated fire alarm control unit and labeled as such, all of which is detailed on the plans, 6.16.3.2.   |
| 70. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detectors for elevator recall service shall initiate the fire alarm and have a distinct visual indicator at the FACU and annunciator. Activation of fire alarm indicating devices are not required if the smoke detector signal is transmitted to a constantly attended location 6.15.3.8 and 6.15.3.9.   |
| 71. | <input type="checkbox"/> | <input type="checkbox"/> | For elevator recall the primary and alternate floors for recall are noted on the plans.   |
| 72. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detectors for elevators shall be located in accordance with the requirements in 6.16.3.5 and, if sprinklered, the shunt trip is to be activated by heat detectors mounted near the sprinkler. See 6.16.4.1  |
| 73. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinkler water flow alarm device is shown on the plan as part of an initiation circuit, 5.11 and IFC 907.7.  |
| 74. | <input type="checkbox"/> | <input type="checkbox"/> | Other automatic extinguishing systems are shown on the plan as part of an initiation circuit, 5.11 and IFC 907.14.  |
| 75. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detectors used in air duct systems are listed for such use and are appropriate for air velocities, temperatures, and humidity expected, 5.16.5.6.   |
| 76. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detectors used in smoke control systems: duct detectors for preventing recirculation of smoke beyond a room or space from which the smoke is generated have their location detailed and are in the return air duct or plenum upstream of any filters of the air-handling system when the air system exceeds 2,000 cfm, Exception: detectors are not required in the return air if all portions of the building that are served by the air system are protected by area smoke detection, 5.16.4.2 and IMC 606.2. |
| 77. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detectors used for smoke control systems: multi-air systems that share common supply or return air ducts or plenums with a capacity exceeding 2,000 cfm the return air system shall be provided with smoke detectors in accordance with item 78. above, consult the list of exceptions, IMC 606.2.2.  |
| 78. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detectors used for smoke control systems: return air risers serving 2 or more stories and serve any portion of a return air system exceeding 15,000 cfm has smoke detectors at each story, IMC 606.2.3.   |
| 79. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detectors used for smoke control systems, access to detectors are detailed, IMC 606.3 and IFC 907.13.   |
| 80. | <input type="checkbox"/> | <input type="checkbox"/> | Smoke detectors used for smoke control systems, detectors are connected to fire alarm system and the visual/audible supervisory signals are shown located at a constantly attended location, Exceptions: 1) supervisory signal not required at constantly attended location if the duct smoke detectors activate the fire alarm system, 2) building without a fire alarm, the plans show the detector activates a visual/audible signal in an approved location (front entry) and the same for                        |

Plan Review  
Fire Alarm System Installation

showing detector trouble conditions and it is shown to be signed/lettered as an air duct detector trouble, IMC 606.4.1 and IFC 907.12.

- |     | Y                        | N                        |   |
|-----|--------------------------|--------------------------|---|
| 81. | <input type="checkbox"/> | <input type="checkbox"/> | Positive Alarm Sequence if used is approved by fire code official, and must comply with 6.8.1.3.  |
| 82. | <input type="checkbox"/> | <input type="checkbox"/> | Fire safety control functions: door release smoke detector locations are detailed and in compliance with 5.16.6 and 6.16.6.   |
| 83. | <input type="checkbox"/> | <input type="checkbox"/> | Fire safety control functions: exit door unlocking devices are connected to the fire alarm system and release on alarm activation, 6.16.7 and IFC 907.2.15.   |
| 84. | <input type="checkbox"/> | <input type="checkbox"/> | Fire safety control functions: fan controls or door controls are interconnected with fire alarm system and detailed; any listed relays that initiate control are within 3 ft. of the control circuit or appliance and the relay data sheet is provided, and wiring is monitored for integrity, 6.16.2.  |
| 85. | <input type="checkbox"/> | <input type="checkbox"/> | Fire safety control functions: fire pump is supervised by fire alarm system, 6.8.5.9.   |
| 86. | <input type="checkbox"/> | <input type="checkbox"/> | Combination system design (fire alarm with non-fire alarm systems) complies with 6.8.4.   |
| 87. | <input type="checkbox"/> | <input type="checkbox"/> | Notification zones and circuits coincide with building outer walls, fire or smoke compartment boundaries, and floor separations, 6.8.6.3.   |
| 88. | <input type="checkbox"/> | <input type="checkbox"/> | Zones: each floor will be zoned separately, not to exceed 22,500 sq. ft. nor exceed 300 ft. in length in any direction and each zone is clearly identified on the plans, IFC 907.9.   |
| 89. | <input type="checkbox"/> | <input type="checkbox"/> | Zones: each floor is considered a zone and if fire or smoke barriers are used for relocating occupants from one zone to another on the same floor, then each zone shall be annunciated separately and all zones are clearly identified on the plans, 4.4.6.   |
| 90. | <input type="checkbox"/> | <input type="checkbox"/> | Zones: a zone indication panel and controls are provided and the panel location is approved, IFC 907.9.1.   |
| 91. | <input type="checkbox"/> | <input type="checkbox"/> | Zones: each floor of a high-rise building is separately zoned and each zone includes smoke detectors, sprinkler water flow devices, manual pull boxes, and other approved automatic detection devices or suppression systems on that floor, IFC 907.9.2.  |
| 92. | <input type="checkbox"/> | <input type="checkbox"/> | Emergency voice/alarm communication system complies with 6.9.   |
| 93. | <input type="checkbox"/> | <input type="checkbox"/> | Circuits required for the emergency voice/alarm communication system shall be protected in accordance with Sections 6.9.10.4.2 and 6.9.10.4.3.  |
| 94. | <input type="checkbox"/> | <input type="checkbox"/> | If a Fire Command Center is required to contain an emergency voice/alarm communication system It shall comply with 6.9.6 and IFC section 509.   |
| 95. | <input type="checkbox"/> | <input type="checkbox"/> | Manual fire alarm boxes: cross sectional detail shows mounting is not less than 42 in. and not greater than 48 in. from the floor, IFC 907.42.  |
| 96. | <input type="checkbox"/> | <input type="checkbox"/> | Manual fire alarm boxes are noted on the plans as being red in color and double action, IFC907.4.3.   |
| 97. | <input type="checkbox"/> | <input type="checkbox"/> | Manual fire alarm boxes: shall be on each floor level, within 5 ft. of each exit door, at every floor exit, on both sides of grouped openings exceeding 40 ft. in width and within 5 ft. of the opening, and within 200 ft. of travel, 5.13 and IFC 907.4.1. Manual boxes are not required for E occupancies that are sprinklered throughout and the fire alarm is initiated by the sprinkler water flow and by a manual means located in a normally occupied location, IFC 907.4.1 |

Plan Review  
Fire Alarm System Installation

- |      | Y                        | N                        |  |
|------|--------------------------|--------------------------|--|
| 98.  | <input type="checkbox"/> | <input type="checkbox"/> | Manual fire alarm boxes: if the system is not monitored by a supervising station, the plan notes signs are required at the pull station "Local Alarm Only-Call the Fire Department," unless it is manufactured in the device, IFC 907.4.4. |
| 99.  | <input type="checkbox"/> | <input type="checkbox"/> | 24 hour monitoring is required, the type of supervisory service and the service company name is noted on the plans, IFC 907.15 and NFPA 72 Chapter 8.  |
| 100. | <input type="checkbox"/> | <input type="checkbox"/> | 24 hour monitoring: sprinkler alarm, supervisory, and trouble signals are distinctly different, 4.4.3.3, IFC 903.4.1.  |
| 101. | <input type="checkbox"/> | <input type="checkbox"/> | 24 hour monitoring: sprinkler alarm, supervisory, and trouble signals are transmitted to a Central, Remote or Proprietary supervisory station, 4.4.3.2, 4.4.3.5, and Chapter 8, IFC 903.4.1.   |
| 102. | <input type="checkbox"/> | <input type="checkbox"/> | 24 hour monitoring service: transmitting device is detailed and it is listed.  |
| 103. | <input type="checkbox"/> | <input type="checkbox"/> | 24 hour monitoring: When a digital alarm communicator transmission (DACT) is used dual monitoring of the device is required, 8.6.3.2.1.4 (B).  |

**NOTIFICATION APPLIANCES:**

- |      |                          |                          |   |
|------|--------------------------|--------------------------|---|
| 104. | <input type="checkbox"/> | <input type="checkbox"/> | Fire alarm audible devices in public mode shall provide at least a minimum sound pressure level of 15 dBA above the average ambient sound pressure level or 5 dBA above maximum sound pressure level that lasts for 60 seconds, whichever is greater, in every occupied space 7.4.2 and IFC 907.10.2.         |
| 105. | <input type="checkbox"/> | <input type="checkbox"/> | Fire alarm audible devices in private mode shall provide at least a minimum sound pressure level of 10 dBA above the average ambient sound pressure level or 5 dBA above maximum sound pressure level that lasts for 60 seconds, whichever is greater, 7.4.3 and IFC 907.10.2.                                |
| 106. | <input type="checkbox"/> | <input type="checkbox"/> | Fire alarm audible device sound pressure level rating shall be not less than 70 dBA in R and I-1 occupancies, 90 dBA in mechanical rooms, 60 dBA in other occupancies and not more than 120 dBA, IFC 07.10.2 In R-1 and R-4 occupancies, at least one mini-horn shall be installed within each dwelling unit. |
| 107. | <input type="checkbox"/> | <input type="checkbox"/> | Visible signaling devices are provided in areas where average ambient noise level is greater than 105 dBA, IFC 907.10.2.  |
| 108. | <input type="checkbox"/> | <input type="checkbox"/> | Sleeping areas shall have a minimum sound pressure level of 15 dBA above the average ambient sound pressure level or 5 dBA above maximum sound pressure level that lasts for 60 seconds or a sound pressure level of at least 75 dBA, whichever is greater, measured at the pillow, 7.4.4.1.                  |
| 109. | <input type="checkbox"/> | <input type="checkbox"/> | For narrow band tone signaling the calculations, noise data, documentation and sound pressure design is in compliance with 7.4.5.   |
| 110. | <input type="checkbox"/> | <input type="checkbox"/> | The design for exit marking audible notification appliances complies with 7.4.6.  |
| 111. | <input type="checkbox"/> | <input type="checkbox"/> | Exit marking audible notification appliances are located at each area of refuge, exit and exit discharge, 7.4.6.4.  |
| 112. | <input type="checkbox"/> | <input type="checkbox"/> | Visual signaling devices are permitted in I-2 critical care areas in lieu of audible devices, IFC907.10.2.  |
| 113. | <input type="checkbox"/> | <input type="checkbox"/> | Audible design: devices are not less than 90 in. above the floor and are greater than 6 in. from the ceiling unless listed for ceiling mount, 7.4.6.1. Use mounting height criteria from 7.5.4 for audible/visible appliances, 7.4.7.3.   |

Plan Review  
Fire Alarm System Installation

- |      | Y                        | N                        |  |
|------|--------------------------|--------------------------|--|
| 114. | <input type="checkbox"/> | <input type="checkbox"/> | Audible design: mounting heights different than noted in worksheet item 113 is permitted if the sound pressure level requirements are met, 7.4.6.5.  |
| 115. | <input type="checkbox"/> | <input type="checkbox"/> | Audible notification devices shall be programmed for a three-pulse temporal pattern, 4.4.3.1, 8.6.5.1, and A.6.8.6.5.1.  |
| 116. | <input type="checkbox"/> | <input type="checkbox"/> | Audible design: speakers listed for notification use shall not be used for non-emergency use, consult the two exceptions, 6.8.4.5.   |
| 117. | <input type="checkbox"/> | <input type="checkbox"/> | Visual alarm notification appliances are provided in public and common areas, e.g. restrooms, meeting rooms and classrooms, hallways, and lobbies, IFC 907.10.1.   |
| 118. | <input type="checkbox"/> | <input type="checkbox"/> | In employee work areas equipped with audible fire alarms the fire alarm system shall be designed with an additional 20 percent capacity to permit the addition of future visual alarm notification appliances, IFC907.10.1.2.  |
| 119. | <input type="checkbox"/> | <input type="checkbox"/> | Visual alarm notification appliances shall be limited to a flash rate of 1 to 2 flashes per second based on the listed device's voltage range, 7.5.2.1.  |
| 120. | <input type="checkbox"/> | <input type="checkbox"/> | Wall-mounted visual alarm notification appliances are located between 80 in. and 96 in. above the floor level, 7.5.4. Ceiling-mounted visual alarm notification appliances are located in accordance with Table 7.5.4.3.1(b).  |
| 121. | <input type="checkbox"/> | <input type="checkbox"/> | Visual alarm notification appliances: device spacing and effective intensity (cd) for an area are in compliance with Fig. 7.5.4.3.1, Tables 7.5.4.3.1 (a) and 7.5.4.3.1 (b), and sections 7.5.4.3.1 and 7.5.4.3.2.   |
| 122. | <input type="checkbox"/> | <input type="checkbox"/> | In corridors with a width of 20 feet or less, visual alarm notification appliances within corridors with 2 or more devices that are in the field of view shall be synchronized, 7.5.4.4.7.   |
| 123. | <input type="checkbox"/> | <input type="checkbox"/> | Visual alarm notification appliances: for corridors greater than 20 ft. wide, device spacing is in accordance with Tables 7.5.4.3.1 (a, b) and Figure 7.5.4.3.1, 7.5.4.4.4.  |
| 124. | <input type="checkbox"/> | <input type="checkbox"/> | In corridors with a width of 20 feet or less, visual alarm notification devices located within 15 ft. of the ends of corridor and the spacing between each device is 100 ft. or, 7.5.4.4.5.  |
| 125. | <input type="checkbox"/> | <input type="checkbox"/> | Visual alarm notification appliances located in sleeping areas shall comply with the requirements of Section 7.5.4.6.  |
| 126. | <input type="checkbox"/> | <input type="checkbox"/> | Visual alarm notification appliances installed in rooms with ceilings exceeding 30 ft. in height, the visual devices shall be suspended below 30 ft. or wall mounting and spaced in accordance with Table 7.5.4.3.1(a). Center of room ceiling mounted visual device complies with Table 7.5.4.3.1(b), 7.5.4.3.6 and .7. |
| 127. | <input type="checkbox"/> | <input type="checkbox"/> | A performance based design that provides a minimum illumination of 0.0375 lumens/Ft. <sup>2</sup> is permitted provided the design satisfies the requirements in Section 7.5.4.5.  |
| 128. | <input type="checkbox"/> | <input type="checkbox"/> | Textual audible appliances meet the sound pressure level as required in 7.4.2, 7.4.3, and C907.10.2., NFPA 7.8   |

**OTHER REQUIREMENTS:**

- |      |                          |                          |  |
|------|--------------------------|--------------------------|--|
| 129. | <input type="checkbox"/> | <input type="checkbox"/> | Miscellaneous: speaker amplifier, tone generating equipment, and emergency phone circuit integrity are monitored, 4.4.7.2. |
|------|--------------------------|--------------------------|--|

Plan Review  
Fire Alarm System Installation

- |      | Y                        | N                        |   |
|------|--------------------------|--------------------------|---|
| 130. | <input type="checkbox"/> | <input type="checkbox"/> | Miscellaneous: class A circuit wiring, each circuit out and back is routed separately from the redundant circuit, the redundant circuits are not in same cable assembly, conduit or raceway, 6.4.2.2.2.                 |
| 131. | <input type="checkbox"/> | <input type="checkbox"/> | Miscellaneous: the sprinkler supervisory switch is connected to the fire alarm system; the audible signals shall be different between tamper switch and flow alarm, show how that is accomplished, 4.4.3.3 and 4.4.3.6. |
| 132. | <input type="checkbox"/> | <input type="checkbox"/> | Emergency voice/ alarm communications systems: a sample of the evacuation message is submitted for approval, A.6.9.   |
| 133. | <input type="checkbox"/> | <input type="checkbox"/> | Emergency voice/ alarm communications systems: speakers are located in compliance with IFC 907.2.12.2 and NFPA 72 Chapter 7, 6.9.7.   |
| 134. | <input type="checkbox"/> | <input type="checkbox"/> | Fire department communications system: equipment is listed for two-way communication, 4.3.1, 6.10.1.1.  |
| 135. | <input type="checkbox"/> | <input type="checkbox"/> | Fire department communications system: the design is in compliance with 6.10.1.1 through 6.10.1.16. The manufacturers' data sheets are provided to verify compliance.   |
| 136. | <input type="checkbox"/> | <input type="checkbox"/> | Fire department communications system: the number of handsets provided is indicated.  |
| 137. | <input type="checkbox"/> | <input type="checkbox"/> | Fire department communications system: fire alarm fire emergency phone jack locations are illustrated on the shop drawings and complies with IFC 907.2.12.3.  |
| 138. | <input type="checkbox"/> | <input type="checkbox"/> | Fire department communications system: the system is designed to allow 5 phones to operate simultaneously, 6.10.1.6.  |
| 139. | <input type="checkbox"/> | <input type="checkbox"/> | Telephone communications: 2 or more phone handsets are provided in the Fire Command Room, 6.10.1.15.  |
| 140. | <input type="checkbox"/> | <input type="checkbox"/> | Circuits service the fire department communications system shall be protected in accordance with the one of the five approved methods in Section 6.10.1.6.  |
| 141. | <input type="checkbox"/> | <input type="checkbox"/> | Wireless systems (low power radio) are listed for use and meet the requirements of 6.16.  |
| 142. | <input type="checkbox"/> | <input type="checkbox"/> | Relays or appliances used to initiate other fire safety functions are listed and within 3 ft. of the controlled circuit or appliance, 6.16.2.2.   |
| 143. | <input type="checkbox"/> | <input type="checkbox"/> | The wiring between the relay or appliance and FACU is supervised for integrity, 6.16.2.4.   |