MOBILE FIRE - RESCUE DEPARTMENT
FIRE CODE ADMINISTRATION

Fire Alarm System Plan Review
2018 International Fire Code and NFPA 72

Date of Review___/___/_____ **BLDC20__-_____**

Project Address:_____Project Name: _____

Professional Engineer's Name:_____Phone: _____

Fire Alarm Contractor's Business Name:_____Phone: _____

Fire Alarm Contractors Name:_____Phone: _____

Fire Alarm Contractor's Email Address: _____

Occupancy Type: _____

Fire Alarm Manufacturer:_____Fire Alarm Model: _____

Reference numbers following checklist statements represent an NFPA code section unless otherwise specified.

Checklist Legend: √ **or OK** = acceptable **N** = need to provide **NA** = not applicable

1. _Two sets of drawings are provided.

2. _____Equipment is listed for intended use and compatible with the system, specification data sheets are required.

<u>Drawings shall detail the following items, IFC 907 and NFPA 72</u>:

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. _____Class A or B system is declared and alarms zones do not exceed 22,500 sq. ft. (unless fully sprinkler and area limit is set by NFPA 13), the length of any zone does not exceed 300 ft., and each floor is a separate zone.

7. _____When detectors are used, device locations, mounting heights, and building cross-sectional details are shown on the plans.

8. _____The type of devices used.

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 is located near the main entrance or as approved by the AHJ,

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.

12. _____Type and gauge(s) of conductors_____.

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. _____Riser diagram which shows quantity and type of devices per circuit, zone ID, 120 AC dedicated circuit, batteries, panel, generator, etc. It shall be noted on the plans that the 120 AC dedicated circuit is labeled *Fire Alarm Circuit* and accessible only to authorized personnel.

Point to point system wiring diagram shall be provided and detail the following:

15. _____Interconnection and wire routing of identified devices and controls per circuit.

16. _____Indicate the number of conductors and wire gauge for each circuit run.

17. _____Identify separate zones, circuits, and EOL locations.

Show alarm indicating circuit load consumption (voltage drop) on drawing with:

18. _____Quantity of signaling devices, current consumption, EOL voltage for each circuit, and the lowest Nameplate operating voltage range for audible and visual notification devices.

19. _____Approximate length of each circuit and resistance of wire, use *National Electrical Code* (NEC) conductor resistance criteria or provide manufacturer specification sheet.

20. _____Show the formula and acceptable circuit limits on the drawing or on an attached sheet including:

A. Standby power consumption of all current drawing devices times the hours required by NFPA (24 hours) including power consumption of the control panel modules.
B. Power consumption of all devices on standby power; including door holders, relays, smoke detectors, etc.
C. Alarm power consumption of all current drawing devices multiplied by the minutes required by NFPA (5 minutes for fire alarms or 15 minutes for emergency voice/alarm communication service).
D. Formula format for battery calculations.

Power requirements to be shown on the plans:

21._____Power: secondary power supply capacity for the type of system is identified as 24 hours and will alarm for 5 minutes.

22. _____Power: secondary power supply for voice/alarm system is provided with 24 hours capacity and will alarm for 15 minutes.

23._____A 20 percent safety factor is incorporated into the calculations.

24. _____Supervisory stations will be supported for 24 hours.

25. _____Mass notification with high-power speaker arrays has power for 7 days in standby and 1 hour at full load.

26. _____Textual visual devices have power to operate for 2 continuous hours.

27. _____Mass notification central control stations have power to support 24 hours of operation,

28. _____Mass notification in a building has power to support 24 hours of standby load and 15 minutes of full load.

Performance Based Design

29. _____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 17. Readers should consult the Society of Fire Protection Engineers (SFPE) *Code Official's Guide to Performance-based Design Review*.

Initiating Devices; the following items are detailed on the plans:

30. ____Smoke and heat detection device coverage is designed in accordance with total coverage partial coverage , and non-required coverage .

31. _____Detection devices: wiring details for devices are provided.

32. _____Detection devices: Indicate the type and location of detection devices for the occupancy in accordance with IFC 907.

33. _____Duct detector locations in air/heat ducts. The airflow rate per minute ratings is provided: including the manufacturer data sheet and a matrix or note detailing what size sampling tubes are to be used for each duct size, and IFC 907.

34. _____Heat detectors: listing and spacing data sheets are provided.

35. _____Heat detector spacing: provided is a list of rooms that indicate which ceilings are smooth, sloped, have solid joist or beam construction.

36. _____Heat detector heat classification color is written at detector location on the plan or by legend symbol.

37. _____Heat detector spacing for rooms with smooth ceilings shall not exceed listed spacing and shall be within 1/2 of the listed spacing at right angles to all walls or partitions extending within 15 percent of the ceiling or all points of a ceiling are within a distance that is .7 (70%) of its listed spacing.

38. _____Heat detector spacing for irregularly shaped areas spacing can exceed listing provided the maximum spacing from detector to farthest point of sidewall or corner within its zone does not exceed .7 (70%) of its listed spacing.

39. _____Heat detector spacing for ceilings 10 ft. to 30 ft. shall be reduced in accordance with Table 17.6 prior to reductions for sloped, joist, or beam construction and not less than .4 (40%) of the height of the ceiling, alternate designs can be in accordance with Annex B.

40. _____Heat detector spacing at right angles to solid joist construction is not greater than 50 percent of the smooth ceiling spacing.

41. _____Heat detector spacing at right angles to beams projecting greater than 4 in. below the ceiling does not exceed 66 percent of the smooth ceiling spacing, 17.6.3.3.1.2 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.

42. _____Heat detectors may be placed on the bottoms of beams when the beam is less than 12 in. and beam spacing does not exceed 8 ft..

43. _____Heat detector spacing for sloped ceilings: for peaked ceilings a row of detectors is 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 3 ft. 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.

44. _____Unless listed for such use, smoke detectors shall not be installed in an environment where the temperature is below 32°F, above 100LF, relative humidity above 93 percent, and the air velocity exceeds 300 ft/min..

45. _____Smoke detector spacing is in accordance with the listing data sheet.

46. _____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) ceiling jet, and (7) ambient pressure, pressure, altitude, and humidity. Provide document attesting that these items were applied. The AHJ may require supporting documentation.

47. _____Smoke detectors in high air movement areas are not located in the supply vent air-stream and shall be spaced in accordance with Table 17.7.6 and Figure 17.7.6.

48. _____Smoke detectors, the designer has declared if the system will use two detectors to initiate the alarm. If designed as such, then the AHJ must approve the design, two detectors are required in each protected area, and alarm verification shall not be used,

49. _____Room cross sectional views are provided for smoke detector designs listed in checklist items 50 and 51.

50. _____Smoke detector spacing for smooth ceiling will use 30 ft. spacing as a guide, manufacturer's data sheet listing criteria shall be followed. Other spacing is permitted depending on ceiling height, etc., for detecting flaming fires the guidelines of Annex B can be used, all points of a ceiling are within .7 (70%) of the selected spacing.

51. _____Smoke detector spacing for solid joist and beam construction: for level ceilings,

_____ A. Beam depth less than 10 percent of ceiling height then use smooth ceiling spacing criteria, detectors can be on ceiling or bottom of beams.

_____ B. Beam depth 10 percent or greater than ceiling height and beam spacing is 40 percent or greater than ceiling height, detectors are in each beam pocket.

_____ C. Beam spacing less than 40 percent then smooth ceiling detector spacing can be used parallel to beams and ½ spacing when perpendicular to beams.

_____ D. Waffle or pan-type ceiling with beams less than 10 percent of ceiling height then use smooth ceiling spacing criteria, detectors can be on ceiling or bottom of beams.

_____ E. Waffle or pan-type ceiling with beams equal to or more than 10 percent of ceiling height detectors are in each beam pocket.

_____ F. Corridors up to 15 ft. in width with beams perpendicular to the corridor length then use smooth ceiling spacing including spacing criteria for irregular areas and detectors can be placed on the ceiling or bottom of the beams.

_____ G. Just one detector required for rooms up to 900 sq. ft. of area.

52. _____Smoke detector spacing for solid joist and beam construction running parallel to sloped ceilings.

____ A. For beams running parallel to the slope use level beamed ceiling spacing criteria.

____ B. Ceiling height is determined as the average height over the length of the slope.

____ C. No detector required at 50 percent spacing from the low end if the slope does not exceed 10 degrees.

____ D. Spacing is based on the horizontal projection of the ceiling.

____ E. For beam depths less than 10 percent of ceiling height use the smooth ceiling spacing criteria perpendicular to beams.

____ F. Beam depth 10 percent or greater than ceiling height then use detector spacing perpendicular to the beams shall (a) have detectors in each beam pocket when beam spacing is 40 percent or greater than ceiling height, (b) have detectors spaced in accordance with smooth ceiling spacing when beam spacing is less than 40 percent of ceiling height.

53. _____Smoke detector spacing for beams running perpendicular to the sloped ceilings,

____ A. Place detector on bottom of beams.

____ B. Ceiling height is determined as the average height over the length of the slope.

____ C. Within beam pockets use smooth ceiling spacing.

____ D. Spacing is based on the horizontal projection of the ceiling.

____ E. Beam depth 10 percent or less of ceiling height then use smooth ceiling spacing criteria.

____ F. Beam depth greater than 10 percent ceiling height then detector spacing shall (a) have detectors spacing no closer than 40 percent of ceiling height and be within 50 percent of smooth ceiling spacing.

54. _____Smoke detector spacing for intersecting beam pockets on sloped ceilings,

____ A. Placed detector on bottom of beams.

____ B. Ceiling height is determined as the average height over the length of the slope.

____ D. Spacing is based on the horizontal projection of the ceiling.

____ E. Beam depth 10 percent or less of ceiling height then up to three beams may be between detectors and smooth ceiling spacing will not be exceeded.

____ F. Beam depth greater than 10 percent ceiling height then then up to two beams may be between detectors but detectors spacing shall be no closer than 40 percent of ceiling height and be within 50 percent of smooth ceiling spacing.

55. _____Smoke detector spacing for raised floors and suspended ceilings is in accordance with

56. _____Air sampling smoke detector: design calculations limit the maximum air sample transport time to 120 seconds, system calculations and a manufacturer design manual is provided.

57. _____Air sampling smoke detector: sampling network is detailed on the plans with pipe diameters and lengths sampling port diameter, and calculations showing flow characteristics of the pipe network.

58. _____Air sampling smoke system: provide 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.

59. _____Projected beam smoke detectors: locations are detailed on the plans and the manufacturer's design data sheets are provided,

60. _____Projected beam smoke detectors: stratification for a high ceiling was considered in the beam detector's use and documentation is provided attesting that this evaluation was done.

61. _____Projected beam smoke detectors shall be equivalent to a row of spot-type detectors on level or slope ceilings.

62. _____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 sectionals are provided.

63. _____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.

64. _____Smoke detectors used in plenums are listed for anticipated environment and shall not be used in lieu of open area detectors.

65. _____Smoke detection is provided in areas not continuously occupied where the FACU and other control units are located. *Control Unit is a system component that monitors inputs and outputs.*

66. _____Radiant energy-sensing fire detectors, detector device is detailed and the listing data sheets are provided.

67. _____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,

68. _____Radiant energy-sensing fire detector spacing will be in accordance with its listing or inverse square law (fire size versus distance curve for the detector) and the quantity of detectors is based on complete unobstructed view coverage of the area.

69. _____Radiant energy-sensing flame detectors, location and spacing are based on a documented and submitted 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.

70. _____Radiant energy-sensing spark/ember detector location and spacing are based on a documented and submitted 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.

71. _____Video image flame, combination, multi-criteria, and multi-sensor detectors are in compliance with 17.8.

72. _____Combination, multi-criteria, and multi-sensor detectors are installed in accordance with their listing and Chapter 17.

73. _____Gas detection system is installed in accordance with their listing, an engineering evaluation and Chapters 1, 10, 14, 17, and 23, 17.10.

74. _____Other fire detectors not previously covered are installed in accordance with listing requirements, an engineering survey which includes structural features, occupancy and use, ceiling height, ceiling configuration, ventilation, ambient conditions, fuel load and content configuration.

75. _____Smoke detectors used for elevator recall: detectors in the elevator lobby, elevator machine room, hoist-ways, and control room are connected to the facility fire alarm system.

76. _____Smoke detectors for elevators, in non-fire alarmed buildings, shall be connected to a dedicated fire control unit and labeled as such, all of which is detailed on the plans,

77. _____Smoke detectors for elevators shall initiate the fire alarm and have a distinct visual indicator at the FACU and annunciator, the activation of fire alarm indicating devices is not required if the signal transmits to a constantly attended location.

78. _____For elevator recall the primary and alternate floors for recall are noted on the plans,

79. _____Smoke detectors for elevators, a lobby detector is located within 21 ft. of the centerline of each elevator door within the elevator bank controlled by the detector.

80. _____**Sprinkler water flow alarm device is shown on the plan as part of an initiation circuit, 17 and IFC 907.**

81. _____Other automatic extinguishing systems are shown on the plan as part of an initiation circuit, 17 and IFC 907.

82. _____Smoke detectors used in air duct systems are listed for such use and are appropriate for air velocities, temperatures, and humidity expected.

83. _____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,

84. _____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 83. above, consult the list of exceptions,

85. _____Smoke detectors used for smoke control systems: return air risers serving 2 or more stories and serving any portion of a return air system exceeding 15,000 cfm have smoke detectors at each story,

86. _____Smoke detectors used for smoke control systems, access to detectors is detailed, IMC

87. _____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 showing detector trouble conditions and it is shown to be signed/lettered as an air duct detector trouble,

88. _____Positive Alarm Sequence if used is approved by AHJ, and must comply with 23.

89. _____Fire safety control functions: door release smoke detector locations are detailed and in compliance with 17 and 21.

90. _____Fire safety control functions: exit door unlocking devices are connected to the fire alarm system and release on alarm activation, .

91. _____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, .

92. _____Fire safety control functions: fire pump is supervised by fire alarm system, .

93. _____Combination system design (fire alarm with non-fire alarm systems) complies with

94. _____Notification zones and circuits coincide with building outer walls, fire or smoke compartment boundaries, and floor separations, .

95. _____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

96. _____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, .

97. _____Zones: a zone indication panel and controls are provided and the panel location is approved,.

98. _____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, .

99. _____Emergency voice/alarm communication system complies with 24, and a code study is provided, which details how compliance is met. For high-rise buildings refer to the informational document in the fire alarm section of this book.

100. ____Emergency voice/alarm communication system used for partial evacuation or relocation of occupants has its circuits protected in accordance with survivability criteria,

101. ____Emergency voice/alarm communication system: Fire Command Center complies with 24 and IFC 508.

102. ____Manual fire alarm boxes: cross-sectional detail shows mounting is not less than 42 in. and not greater than 48 in. from the floor, 17, and IFC 907.

103. ____Manual fire alarm boxes are noted on the plans as being red in color, IFC 907.

104. ____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, 17.14 and IFC 907. Manual boxes are not required for A, B, E, F, M, R-1 and R-4 (one box required at an approved location), R-2 occupancies that are sprinkled 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.

105. _____Manual fire alarm boxes: if the system is not monitored by a supervising station, the plan notes signs are required at the pull station "When Alarm Sounds-Call the Fire Department," unless it is manufactured in the device, .

106. _____24-hour monitoring is required, the type of supervisory service and the service company name are noted on the plans, .

107. _____24-hour monitoring: sprinkler alarm, supervisory, and trouble signals are distinctly different, .

108. _____24- hour monitoring service: transmitting device is detailed and its listing data sheet is provided.

109. _____24-hour monitoring: important, for digital alarm communicator transmission (DACT), **dual monitoring control is required in case the primary transmission method fails,**

Notification Appliances; the following items are detailed on the plans:

110. _____Fire alarm audible device design 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, (it will be verified during the field test), and the sound pressure level rating of each audible device is noted adjacent to each audible device on the plans,

111. _____Fire alarm audible device design 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 (it will be verified during the field test), and the sound pressure level rating of each audible device is noted adjacent to each audible device on the plans, .

112. _____Audible design: the device sound pressure level rating shall be not less than 75 dBA in R and I-1 occupancies, 90 dBA in mechanical rooms, 60 dBA in other occupancies and not more than 110 dBA,

113. _____Audible design: in areas where average ambient noise level is greater than 95 dBA, visible signals are provided,

114. _____Audible design: sleeping areas 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 or a sound pressure level of at least 75 dBA, whichever is greater, at the pillow,

115. _____For narrow band tone signaling, the calculations, noise data, documentation and sound pressure design is in compliance with 18.

116. _____The design for exit marking audible notification appliances is in compliance with 18..

117. _____Exit marking audible notification appliances are located at each area of refuge and exit entrance such as exterior doors, exit discharge, interior stairs, exit passageway, fire escapes, horizontal exits, etc., 18.

118. _____Audible design: visuals are permitted in I-2 critical care areas in lieu of audible devices, 18.

119. _____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, 18.4.8.1. Use mounting height criteria from 18. for audible/visible appliances, 18.. Other mounting heights are permitted when in accordance with 18.

120. _____Audible design: mounting heights different than noted in checklist item 119 is permitted if the sound pressure level requirements are met, 18..

121. _____Audible design: the notification signal device is noted to be a three-pulse temporal pattern, 18..

122. _____Audible design: speakers used for notification shall function in accordance with their listing, 18..

123. _____Visual alarm notification appliances are provided in public and common areas, e.g., restrooms, meeting rooms and classrooms, hallways, and lobbies,

124. ____Visual alarm notification appliances: when employee work areas are provided with audible fire alarms, then the fire alarm system is designed with at least an additional 20 percent capacity to permit the addition of visual alarm notification appliances in the future,

125. ____Visual alarm notification appliances: listing data sheet indicates the flash rate does not exceed 2 flashes or less than one per second, .

126. ____Visual alarm notification appliances: details are provided that show wall mounting is between 80 in. and 96 in. above the floor level, 18.5.4.1 and ceiling mounting is in accordance with 18..

127. ____Visual alarm notification appliances: device spacing and effective intensity (cd) for an area are in compliance with Figure 18.

128. ____Visual alarm notification appliances for rooms with ceilings exceeding 30 ft. in height are mounted in accordance with 18.

129. ____Visual alarm notification appliances: for corridors with 2 or more devices that are in the field of view the devices shall be synchronized,

130. ____Visual alarm notification appliances: for corridors 20 ft. or less in width, device spacing is in accordance with Table 18.5.

131. ____Visual alarm notification appliances: for corridors greater than 20 ft. wide, device spacing is in accordance with Tables 18.5.

132. ____Visual alarm notification appliances: devices in corridors are within 15 ft. of the ends of corridor and do not exceed 100 ft. separation,

133. ____Visual alarm notification appliances: sleeping area pillows are within 16 ft. of a device and devices mounted less than 24 in. from ceiling are 177 cd or devices mounted greater than 24 in. from the ceiling are 110 cd,

134. ____A performance-based design that provides at least 0.4036 lumens/m^2 and is in compliance with 18.5.is permitted.

135. ____Textual audible appliances meet the sound pressure level as required in 18. and IFC 907.

136. ____Mass notification appliances are mounted in accordance with the AHJ, manufacturer's instructions, and accepted designed plans,

137. ____Voice evacuation/alarm systems; voice intelligibility is provided in spaces approved as acoustically distinguishable spaces and the spaces are identified on the plans,

138. ____Voice evacuation/alarm systems: a written sample of the evacuation message is submitted for approval.

139. ____Voice evacuation/alarm systems: speakers are listed for fire system use,

140. ____Voice evacuation/alarm systems: speakers are located in compliance with 24.

141. ____Voice evacuation/alarm systems: manual voice transmission feature is provided and can be applied to one or more zones,

142. ____Voice evacuation/alarm systems: the voice message is preceded by an alert tone and this sequence occurs at least three times, .

143. ____Voice evacuation/alarm systems: speakers in stairways are on separate manual paging zones,

144. ____Voice evacuation/alarm systems: system fire survivability is designed in accordance with 24.4.

145. ____Voice evacuation/alarm systems: multiple signal circuits within a signaling zone shall operate simultaneously,

146. _____Mass notification systems: speakers are located in compliance with 24.4.

147. _____Voice evacuation/alarm systems: speakers are located in compliance with 24.4.

148. _____Voice evacuation/alarm systems: speakers are located in compliance with 24.4..

Other requirements to be detailed on the plans:

149. _____Miscellaneous: speaker amplifier, tone generating equipment, and emergency phone circuit integrity are monitored,

150. _____Miscellaneous: Class A circuit wiring, out and back, is not routed in same conduit or raceway,

151. _____**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, .**

152. _____Telephone communications: equipment is listed for two-way communication,

153. _____Telephone communications: the design is in compliance with 24.. Manufacturing data sheets are provided to verify the design and operational features.

154. _____Telephone communications: the number of handsets provided for telephone jack systems is provided.

155. _____Telephone communications: fire alarm fire emergency phone jack locations and mounting height are shown on the plans,

156. _____Telephone communications: the system can permit up to 5 phones to operate simultaneously,

157. _____Telephone communications: 2 or more phone handsets are in the command room for fire department use, .

158. _____Wireless systems (low power radio) are listed for use and meet the requirements of

159. ____Relays or appliances used to initiate other fire safety functions are listed and within 3 ft. of the controlled circuit or appliance,

160. ____The wiring between the relay or appliance and FACU is supervised for integrity,

Elevator Service

161. ____Elevator recall for fire fighters is designed in accordance with 21.3.

162. ____Elevator shutdown from a heat detector: the detector temperature is lower and its sensitivity higher than adjacent sprinklers, . The detector location is in accordance with

163. ____Power, elevator status (location, direction, and door status), and elevator and machine room temperatures are monitored for emergency responder use elevators,.

164. ____All the requirements of 21. apply to occupant evacuation use elevator, .

165. ____Smoke detectors in elevator lobbies, machine rooms, and shafts are connected to the FACU.

166. ____Building without a fire alarm system: Smoke detectors in elevator lobbies, machine rooms, and shafts are provided a dedicated FACU, which is identified as the elevator recall control and supervisory control unit.

167. ____Smoke detectors in elevator lobbies, machine rooms, and shafts initiate elevator recall unless otherwise permitted by the AHJ.

168. ____Smoke detectors in elevator lobbies, machine rooms, and shafts shall annunciate at the FACU and anunnciator.

169. ____Smoke detectors in machine rooms and shafts have distinct visual annunciation at the FACU.

170. ____The designated and alternate recall levels are noted on the plans.

Mass Evacuation, In-Building

171. _____Provide an emergency response plan (NFPA 1600 and 1620) and a risk analysis in accordance with 24.

172. _____In-building mass evacuation interconnection with emergency control functions is in accordance with Chapter 21, 24.

173. _____Provide plan details and listing specification for the system components noted in 24.4.

174. _____Recorded messages are prioritized in accordance with the emergency response plan,

175. _____In-building system operation design is in accordance with 24.4..

176. _____In-building and surrounding area notification zones are identified in accordance with the risk analysis,

177. _____In-building system speaker circuits that are not fire alarm system circuits need not be monitored and their survivability is compliant with the risk analysis, .

178. _____In-building system initiating devices are provided and detailed in accordance with 24.4..

179. _____The autonomous control unit and the local operating console are detailed in accordance with 24.

180. _____The in-building system evacuation message shall have a pre- and post tone that is in accordance with 18., 24..

181. _____ The in-building system is provided with visual notification appliances in accordance with 18., and 24..

182. _____When in-building system uses textual visible notification, the devices shall be detailed and provided in accordance with 24.

183. ____Public address system being considered for emergency communications shall meet the requirements of 24., and .28.
184. Sole path or cellular communication systems shall be shown on plans.

Mass Evacuation, Wide-Area System is not covered in this document, refer to NFPA 72:

Two-way Radio Communication System is not covered by this document, refer to NFPA 72:

Review Date: _____ **_____**

Fire Code Administration Staff Captain