

SANTA ROSA FIRE DEPARTMENT
FIRE PREVENTION BUREAU
PLAN REVIEW

July 1, 2010



SPRINKLER SYSTEM PLAN REVIEW
PER NFPA 13 - 2002 EDITION

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

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

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. 3rd or greater checks require an hourly fee for the review.

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| | Y | N | |
| 1. | <input type="checkbox"/> | <input type="checkbox"/> | A minimum of three sets of drawings are provided. |
| 2. | <input type="checkbox"/> | <input type="checkbox"/> | Equipment is listed for intended use and compatible with the system; specification data sheets are provided. |

DRAWINGS SHALL DETAIL THE FOLLOWING (14.1.3.1-14.1.3.44):

GENERAL:

3. Type of system is noted; hydraulic calc, pipe schedule, wet, dry, preaction, deluge, antifreeze. The plans declare the design standard is the 2002 edition year of NFPA 13.
4. Scale: a common scale shall be used and plan information shall be legible.
5. Plot plan illustrates fire protection water mains and pipe diameter(s) supplying the building.
6. The location of smoke or fire partitions, fire walls, and building elevation views.
7. Occupancy class and or use of each room or area. 5.1.1.
8. Full height cross sectional drawing including ceiling construction.
9. Total area protected by each system for each floor is provided.
10. Dimensions for system piping, sprinkler spacing and branch line spacing and elevation changes.
11. Equipment symbol legend and a north orientation arrow is provided.
12. Area limitations for hazard classification; 52,000 sq. ft. for light and ordinary hazard, 25,000 sq. ft. for extra hazard pipe schedule, 40,000 sq. ft. for extra hazard-hydraulic calculations, and 40,000 for high-piled storage, 8.2.1.

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| 13. | <input type="checkbox"/> | <input type="checkbox"/> | Hydrant flow test determining water supply capacity at 20 PSI residual pressure is provided. |
| 14. | <input type="checkbox"/> | <input type="checkbox"/> | When used as a basis for design, hydraulic calculations are provided with summary, detail worksheets, and graph sheet, 14.3. |
| 15. | <input type="checkbox"/> | <input type="checkbox"/> | Dry pipe system capacity in gallons is provided _____ gal., not to be greater than 750 gal. unless the requirements of 7.2.3.2 or 7.2.3.3 are met, 7.2.3. |
| 16. | <input type="checkbox"/> | <input type="checkbox"/> | All water supply valves and water flow switches shall be electrically supervised, IFC 903.4. |
| 17. | <input type="checkbox"/> | <input type="checkbox"/> | Exterior flow alarm location is detailed. Note: if electric, it shall be listed for outdoor use, IFC 904.3.2. |
| 18. | <input type="checkbox"/> | <input type="checkbox"/> | When installed backflow prevention device pressure loss data is provided in the hydraulic calculations. |

SPRINKLERS:

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| 19. | <input type="checkbox"/> | <input type="checkbox"/> | Total number of each type of sprinkler is noted, 8.3.2.1. |
| 20. | <input type="checkbox"/> | <input type="checkbox"/> | If the hazard classification of the occupancy is changed, the temperature of rating of sprinklers shall be evaluated in accordance with Section 8.3.2.6. |
| 21. | <input type="checkbox"/> | <input type="checkbox"/> | Light hazard occupancies shall have quick-response or residential sprinklers, 8.3.3.1, IFC 903.3.2. |
| 22. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinkler are located correctly for branch line spacing and area of protection limits, ceiling and roof cross sectional views are provided for clarification, 14.1.3. |
| 23. | <input type="checkbox"/> | <input type="checkbox"/> | For each type of sprinkler the K factor, temperature rating, and orifice size are provided, 14.1.3.(12). |
| 24. | <input type="checkbox"/> | <input type="checkbox"/> | Each sprinkler coverage area is installed in accordance with its area limitations or its listing, 8.6.2.2, Table 8.6.2.2.1 (a-c). |
| 25. | <input type="checkbox"/> | <input type="checkbox"/> | Specialty sprinklers, extra coverage, early suppression fast response, large drop, sidewall, etc. comply with the standard and listing limitations, 6.1.1 and 8.4.1–8.4.9. |
| 26. | <input type="checkbox"/> | <input type="checkbox"/> | Maximum perpendicular distance to the walls is not greater than 1/2 of allowable distance between sprinklers, 8.6.3.2 and Tables 8.6.2.2.1(a through d), for sidewall sprinklers, 8.7.3.2. and Table 8.7.2.2.1. |
| 27. | <input type="checkbox"/> | <input type="checkbox"/> | Standard sprinkler spacing from vertical obstructions complies with Table 8.6.5.1.2 and for floor mounted obstructions, Table 8.6.5.2.2. |
| 28. | <input type="checkbox"/> | <input type="checkbox"/> | Sidewalls sprinkler spacing for front obstructions refer to Table 8.7.5.1.3, for a side obstruction refer to Table 8.7.5.1.4, and for floor mounted obstructions refer to Table 8.7.5.2.2. |
| 29. | <input type="checkbox"/> | <input type="checkbox"/> | Extended coverage uprights and pendent spacing for ceiling or wall obstructions refer to Table 8.8.5.1.2 and for floor mounted obstructions refer to Table 8.8.5.2.2. |
| 30. | <input type="checkbox"/> | <input type="checkbox"/> | Extended coverage sidewall spacing for front obstructions refer to Table 8.9.5.1.3 and for floor mounted obstructions, Table 8.9.5.2.2. |

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| 31. | <input type="checkbox"/> | <input type="checkbox"/> | Residential upright and pendent sprinkler spacing from vertical obstructions complies with Table 8.10.6.1.2 and for floor mounted obstructions, Table 8.10.6.2.2. |
| 32. | <input type="checkbox"/> | <input type="checkbox"/> | Residential sidewall sprinkler spacing from ceiling or hanging obstructions complies with Table 8.10.7.1.3 and for floor mounted obstructions, Table 8.10.7.2.2. |
| 33. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinkler coverage shall be provided beneath obstructions greater than 4 ft. wide, 8.5.5.3.1. |
| 34. | <input type="checkbox"/> | <input type="checkbox"/> | Baffles are provided for sprinklers less than 6 ft. apart in accordance with Section 8.6.3.4.2. |
| 35. | <input type="checkbox"/> | <input type="checkbox"/> | Locations or conditions requiring special consideration, 8.14. |
| 36. | <input type="checkbox"/> | <input type="checkbox"/> | A. concealed spaces, for the 15 omissions, see 8.14.1.2. |
| 37. | <input type="checkbox"/> | <input type="checkbox"/> | B. vertical shafts, 8.14.2. |
| 38. | <input type="checkbox"/> | <input type="checkbox"/> | C. stairways, 8.14.3. |
| 39. | <input type="checkbox"/> | <input type="checkbox"/> | D. vertical openings, 8.14.4. |
| 40. | <input type="checkbox"/> | <input type="checkbox"/> | E. elevator hoistways and machine rooms, 8.14.5. |
| 41. | <input type="checkbox"/> | <input type="checkbox"/> | F. spaces under ground floors, exterior docks, and platforms, 8.14.6. |
| 42. | <input type="checkbox"/> | <input type="checkbox"/> | G. exterior roof and canopy, 8.14.7. |
| 43. | <input type="checkbox"/> | <input type="checkbox"/> | H. dwelling unit, 8.14.8. |
| 44. | <input type="checkbox"/> | <input type="checkbox"/> | I. library stack room, 8.14.9. |
| 45. | <input type="checkbox"/> | <input type="checkbox"/> | J. electrical equipment, 8.14.10. |
| 46. | <input type="checkbox"/> | <input type="checkbox"/> | K. ceilings: open-grid, drop-out, 8.14.12 and 8.14.13. |
| 47. | <input type="checkbox"/> | <input type="checkbox"/> | L. stages, 8.14.15. |
| 48. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinkler is provided at top of shaft, refer to exceptions, shafts with combustibile surfaces require coverage at alternate levels, accessible noncombustible shaft has sprinkler at bottom, 8.14.2. |
| 49. | <input type="checkbox"/> | <input type="checkbox"/> | Vertical shaft has sprinklers at top opening, above bottom opening and alternate levels when it has combustibile surfaces, 8.14.2.1, 8.14.2.2. |
| 50. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinklers are provided beneath combustibile stairs, 8.14.3.1. |
| 51. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinklers are provided at the top of the stairway, under the first landing above the stairway shaft bottom when the shaft and stairs are noncombustibile, 8.14.3.2. |
| 52. | <input type="checkbox"/> | <input type="checkbox"/> | Closely spaced sprinklers with draft stops are provided around unenclosed floor openings except large openings like found in malls or atriums, and openings between floors of a common dwelling unit, 8.14.4.1 and 8.14.4.2. |
| 53. | <input type="checkbox"/> | <input type="checkbox"/> | Elevator shaft has a sprinkler within 2 ft. of the shaft floor unless the shaft is noncombustibile and there are no combustibile hydraulic fluids, 8.14.5. |

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| 54. | <input type="checkbox"/> | <input type="checkbox"/> | Ordinary or intermediate temperature sprinklers are in the elevator machine room or at the top of the elevator shaft, 8.14.5.1- 8.14.5.1.5. |
| 55. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinklers are provided under combustible ground floor, exterior dock, and platforms, 8.14.6. |
| 56. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinklers are provided under roofs and canopies unless constructed of noncombustible or limited combustible materials, less than 4 ft. wide, and no storage, refer to exceptions 8.14.7.1–8.14.7.4 |
| 57. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinklers are not required in noncombustible dwelling unit bathrooms, less than 55 sq. ft. or limited combustible with a 15 minute thermal barrier, except in nursing homes (I-1 and I-2) and in bathrooms that have direct access into corridors and exitways used by the public, 8.14.8.1. |
| 58. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinklers are not required in hotel or motel dwelling unit clothes closet, pantries, or linen closets less than 24 sq. ft. and the least dimension is not greater than 3 ft., 8.14.8.2. |
| 59. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinklers are provided in every aisle and at every tier stack, distance is not more than 12 ft. in library stack rooms, 8.14.9. |
| 60. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinklers are provided in electrical equipment rooms, exception: the room is dedicated use, has dry type equipment, 2 hour equipment enclosures, and no combustible storage, 8.14.10. Also consult the exceptions pertaining to spaces containing telecommunication equipment and associated power supplies as specified in IFC section 903.2. |
| 61. | <input type="checkbox"/> | <input type="checkbox"/> | Open grid ceilings shall not be installed under sprinklers, unless the grid opening and sprinkler placement criteria of section 8.14.12 are met. |
| 62. | <input type="checkbox"/> | <input type="checkbox"/> | Drop-out ceilings are installed under sprinklers in accordance with their listing, and sprinklers are not located below the ceilings, 8.14.13. |
| 63. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinklers for stages shall be provided in accordance with section 8.14.15. |
| 64. | <input type="checkbox"/> | <input type="checkbox"/> | Proscenium openings for stages shall be protected in accordance with section 8.14.15.2. |

PIPE SUPPORT AND HANGERS:

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| 65. | <input type="checkbox"/> | <input type="checkbox"/> | Type and locations of hangers, sleeves, and braces are shown, 14.1.3. Non-listed hangers shall meet 5 performance criterion and the design shall be sealed by a registered professional engineer, 9.1.1.2 |
| 66. | <input type="checkbox"/> | <input type="checkbox"/> | If trapeze hangers are used, the locations are shown, a legend provided to specify span, size of pipe supported, angle and pipe used, and section modulus are provided and comply with section, 9.1.1.6. |
| 67. | <input type="checkbox"/> | <input type="checkbox"/> | Pipe hanger spacing is in accordance with Table 9.2.2.1. |
| 68. | <input type="checkbox"/> | <input type="checkbox"/> | Branch lines show one hanger for each section of pipe, exceptions are listed, 9.2.3.2. |
| 69. | <input type="checkbox"/> | <input type="checkbox"/> | Cross mains show one hanger between each branch lines or in compliance with Table 9.2.2.1, and for additional spacing variations refer to section 9.2.4. |
| 70. | <input type="checkbox"/> | <input type="checkbox"/> | Supports can be on the horizontal pipe section if within 24 in. of the vertical pipe centerline, 9.2.5.1. |
| 71. | <input type="checkbox"/> | <input type="checkbox"/> | Risers in multi-story buildings show supports at the lowest level, each alternate level, below offsets, and at the top, 9.2.5.3. |

72. **Y** **N** The distance between supports for a riser does not exceed the limit specified in 9.2.5.4.

PIPE AND VALVES:

73. Main drain pipe diameter is detailed and complies with Table 8.15.2.4.2, 8.15.2.4.
74. Main drain routing is to the exterior or to an interior drain but ensure that the drain capacity is adequate, 8.15.2.4.4
75. Auxiliary drain location is detailed and its size is in accordance with section 8.15.2.5.
76. When required, the location of the listed backflow prevention device is detailed, 8.15.1.1.3.
77. A listed control valve is provided on each side of the check valve, 8.15.1.1.4.1. Only one control valve on the system side of the check valve is necessary when the water supply is provided from the city connection, 8.15.1.1.4.3.
79. If a pressure reducing valve is used, its location and installation criteria are detailed in accordance with section 8.15.1.2.
80. If used, outside post-indicator control valve (PIV) locations and installation criteria are detailed in accordance with section 8.15.1.3.
81. If PIVs are approved to be located in a pit, the pit construction, location, and marking are designed and detailed in accordance with section 8.15.1.4.2.

SEISMIC BRACING:

82. Flexible couplings may be used for pipe 2½ in. or larger in accordance with sections 9.3.2.2 and 9.3.2.3.
83. A seismic separation assembly for piping is provided at building seismic joints, 9.3.3.
84. Proper pipe clearance is noted on the plans for pipe penetrations in walls, floors, platforms or foundations, 9.3.4. Minimum clearance is in accordance with section 9.3.4.2 - .5.
85. Lateral sway bracing is required at a maximum spacing of 40 ft. for all feed and cross mains, and branch lines 2½ in. and larger, 9.3.5.3.1.
86. Lateral sway bracing can be spaced up to 50 ft. if the design is in compliance with 9.3.5.3.3.
87. Lateral sway bracing is within 20 ft. of the end of the pipe, 9.3.5.3.2.
88. A lateral sway brace is provided on the last pipe of a feed or cross main, 9.3.5.3.4.
89. Lateral sway bracing is required unless all the pipe is supported by rods less than 6 in. or by 30° wrap-around U-hooks for any size pipe, 9.3.5.3.7 and .8.

Special CA amendment “where pipe is used for sway bracing, it shall have a wall thickness of not less than Schedule 40.

90. Longitudinal sway bracing is a maximum of 80 ft. for mains and cross mains and within 40 ft. of the end of the pipe, 9.3.5.4.

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| 91. | <input type="checkbox"/> | <input type="checkbox"/> | Four-way sway brace spacing on a riser does not exceed 25 ft. and a four-way sway brace is located at the top of the riser if the top of the riser exceeds 3 ft. in length, 9.3.5.5. |
| 92. | <input type="checkbox"/> | <input type="checkbox"/> | Seismic bracing calculations are provided for each brace to be used as shown in Figure A.9.3.5(d). |

Special CA amendment “Lag screws or powder-driven fasteners shall not be used to attach braces to the building structure.

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| 93. | <input type="checkbox"/> | <input type="checkbox"/> | Longitudinal and lateral bracing is provided for each run of pipe between the change of direction unless the run is less than 12 ft. and supported by adjacent pipe run bracing, 9.3.5.11. |
| 94. | <input type="checkbox"/> | <input type="checkbox"/> | Branch line method of restraint is detailed and in accordance with section 9.3.6.1-.3. |
| 95. | <input type="checkbox"/> | <input type="checkbox"/> | Restraints of branch lines shall be in accordance with section 9.3.6.1. |

FIRE DEPARTMENT CONNECTION (FDC):

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| 96. | <input type="checkbox"/> | <input type="checkbox"/> | The FDC location is detailed on the street side or response side of building or as approved by the fire official, and when connected to the water supply it will not obstruct emergency vehicle access to the building, IFC 912.2. |
| 97. | <input type="checkbox"/> | <input type="checkbox"/> | Local water flow alarm is provided when the sprinkler system exceeds 20 sprinklers and its location is detailed, 8.16.1.1. |
| 98. | <input type="checkbox"/> | <input type="checkbox"/> | FDCs for fire engine or fire boat are sized and arranged in accordance with, 8.16.2.3, and .4. |
| 99. | <input type="checkbox"/> | <input type="checkbox"/> | The arrangement of the FDC piping supplying wet pipe, dry pipe, pre-action or deluge sprinklers shall be in accordance with section 8.16.2.4.2. |

HYDRAULIC CALCULATIONS, 11.2 AND 14.1.3:

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| 100. | <input type="checkbox"/> | <input type="checkbox"/> | Indicate the calculation method used: density area method or room design method, 11.2.3.2. and .3. |
| 101. | <input type="checkbox"/> | <input type="checkbox"/> | Reference points in the calculation worksheet match with points on the plans, the occupancy hazard classifications are correct for the occupancy or use, 14.1.3. |
| 102. | <input type="checkbox"/> | <input type="checkbox"/> | If design area adjustments are made, the selected shall be indicated, 11.2.3.2.7. |
| 103. | <input type="checkbox"/> | <input type="checkbox"/> | Designs using QR sprinklers shall be in accordance with section 11.2.3.2.3. |
| 104. | <input type="checkbox"/> | <input type="checkbox"/> | Pipe size and length references in the calculation worksheet match the plans, 14.1.3(19). |
| 105. | <input type="checkbox"/> | <input type="checkbox"/> | Sloped ceiling may require a 30 percent increase of design area, 11.2.3.2.4. |
| 106. | <input type="checkbox"/> | <input type="checkbox"/> | Sprinkler data sheet information matches information on the plans. |
| 107. | <input type="checkbox"/> | <input type="checkbox"/> | Water flow information is provided with static PSI, residual PSI, and available GPM at 20 PSI residual with graphed results. |
| 108. | <input type="checkbox"/> | <input type="checkbox"/> | Density and design areas information are provided and comply with 12 conditions listed in section 11.2.3.1.8, Figure 11.2.3.1.5. |

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| 109. | <input type="checkbox"/> | <input type="checkbox"/> Calculations are correct: static PSI, pipe length, GPM, calculated K-factor values for drops or branch lines, elevation data, hose allowance, friction loss, and equivalent pipe and fitting lengths, 11.2.3. |
| 110. | <input type="checkbox"/> | <input type="checkbox"/> For the room design method the design area includes the most demanding room and if any, adjacent connecting compartments, 14.4.4.1.2. |
| 111. | <input type="checkbox"/> | <input type="checkbox"/> A minimum of two summary calculations are provided for a grid system, refer to the one exception, 14.4.4.2. |
| 112. | <input type="checkbox"/> | <input type="checkbox"/> Additional calculations may be required by the AHJ if the building design and room uses do not make the most demanding area obvious. |
| 113. | <input type="checkbox"/> | <input type="checkbox"/> Legend for calculation abbreviations is provided. |
| 114. | <input type="checkbox"/> | <input type="checkbox"/> Calculations are provided for extra hazard occupancies, deluge automatic sprinkler systems, and exposure protection systems. |
| 115. | <input type="checkbox"/> | <input type="checkbox"/> Dry pipe and double interlock preaction design areas are increased 30 percent but the density remains the same (11.2.3.2.5), use of high-temp sprinklers in extra hazard occupancies may reduce design area by 25 percent but not less than the area specified in 11.2.3.2.6. |

RESIDENTIAL SPRINKLERS IN A 13 SYSTEM:

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| 116. | <input type="checkbox"/> | <input type="checkbox"/> The design area shall be in accordance with the requirements in Section 11.2.3.5.1. |
| 117. | <input type="checkbox"/> | <input type="checkbox"/> The calculation is based on the number of sprinklers and at the flow specified in 11.2.3.5.2. |
| 118. | <input type="checkbox"/> | <input type="checkbox"/> Hose streams and water duration requirements are for light hazard in accordance with Table 11.2.3.1.1, 11.2.3.5.5. |

SPECIAL DESIGN:

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| 119. | <input type="checkbox"/> | <input type="checkbox"/> Special design considerations for exposure protection, water curtain, and dry system are in accordance with 11.2.3.7–11.2.3.9. |
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PIPE SCHEDULE:

Note: For systems less than 5000 sq. ft. the minimum water flow is proven to be available in accordance with Table 11.2.2.1. Systems less than 5,000 sq. ft. shall have 50 PSI residual pressure and meet the requirements of Table 11.2.2.1.

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| 120. | <input type="checkbox"/> | <input type="checkbox"/> Only ½ in. orifice sprinklers (nominal K-factor of 5.3 to 5.8) shall be used, 14.5.2. |
| 121. | <input type="checkbox"/> | <input type="checkbox"/> Light Hazard: 8 sprinklers maximum for each branch line, 14.5.2.1, 9 and 10 are permitted, see 14.5.2. |
| 122. | <input type="checkbox"/> | <input type="checkbox"/> A. Pipe size, material and number of sprinklers are in accordance with Table 14.5.2.2.1. |
| 123. | <input type="checkbox"/> | <input type="checkbox"/> B. Sprinklers above and below the ceiling are in accordance with Table 14.5.2.4. |
| 124. | <input type="checkbox"/> | <input type="checkbox"/> Ordinary Hazard: 8 sprinklers maximum for each branch line, 14.5.3.2. |
| 125. | <input type="checkbox"/> | <input type="checkbox"/> A. Pipe size, material and number of sprinklers are in accordance with Table 14.5.3.4. |

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| 126. | <input type="checkbox"/> | <input type="checkbox"/> | B. Sprinklers greater than 12 ft. separation are in accordance with Table 14.5.3.5. |
| 127. | <input type="checkbox"/> | <input type="checkbox"/> | C. Sprinklers above and below the ceiling are in accordance with Table 14.5.3.7. |
| 128. | <input type="checkbox"/> | <input type="checkbox"/> | Extra Hazard: the pipe schedule method is not allowed, 14.5.4. |

WET SYSTEM:

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| 129. | <input type="checkbox"/> | <input type="checkbox"/> | Relief valve not less than ¼ in. is detailed for gridded system, 7.1.2.1. |
| 130. | <input type="checkbox"/> | <input type="checkbox"/> | An alarm test connection location for the waterflow alarm is provided and in compliance with 8.16.4.2.1–8.16.4.2.3. |

DRY SYSTEM, 7.2:

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| 131. | <input type="checkbox"/> | <input type="checkbox"/> | Only upright, listed dry sprinklers are used, see exceptions for return bends and sidewall sprinklers, 7.2.2. |
| 132. | <input type="checkbox"/> | <input type="checkbox"/> | System capacity is provided, 14.1.3(17). |
| 133. | <input type="checkbox"/> | <input type="checkbox"/> | Only one dry pipe valve is permitted for each system that does not exceed 750 gallons unless the design complies with 7.32.3.2 or 7.2.3.3, 7.2.3.1. |
| 134. | <input type="checkbox"/> | <input type="checkbox"/> | Water delivery calculations complying with 11.2.3.9 are provided for systems exceeding 750 gallons in order to confirm a water delivery time to be within 60 seconds, 7.2.3.3. |
| 135. | <input type="checkbox"/> | <input type="checkbox"/> | A trip test connection sized according to 8.16.4.3.1 is equipped with a shutoff valve and the test connection is located in the upper story at the most remote sprinkler pipe, 8.16.4.3. |
| 136. | <input type="checkbox"/> | <input type="checkbox"/> | Compressor capacity specification sheet is provided, restores system within 30 minutes, 7.2.6. |
| 137. | <input type="checkbox"/> | <input type="checkbox"/> | Compressor piping system, air fill line not less than ½ in., and check-relief-shutoff valves are shown or noted, 7.2.6.3. |
| 138. | <input type="checkbox"/> | <input type="checkbox"/> | Shown is the location for the quick opening device (QOD) for systems greater than 500 gallons, see exception in 7.2.4. |
| 139. | <input type="checkbox"/> | <input type="checkbox"/> | Shown is the location of the check valve for QOD and the antiflooding device between the riser and the QOD, 7.2.4.6. |

PREACTION OR DELUGE:

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| 140. | <input type="checkbox"/> | <input type="checkbox"/> | System capacity is provided, 14.1.3(17). |
| 141. | <input type="checkbox"/> | <input type="checkbox"/> | Pressure gauge locations are above and below the preaction valve and on the air supply, 7.3.1.3. |
| 142. | <input type="checkbox"/> | <input type="checkbox"/> | Location and spacing of the detection devices are detailed, 7.3.1.6. |
| 143. | <input type="checkbox"/> | <input type="checkbox"/> | The preaction system is limited to 1,000 sprinklers, refer to the exception, 7.3.2.1., 750 gal. limit per valve. |
| 144. | <input type="checkbox"/> | <input type="checkbox"/> | Only upright, listed dry sprinklers are used, see exceptions for return bends and sidewall sprinklers, 7.3.2.4. |
| 145. | <input type="checkbox"/> | <input type="checkbox"/> | Double interlock systems are not gridded, 7.3.2.5, and valve room is heated, 7.3.1.8. |

COMBINED DRY PIPE AND PREACTION:

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| 146. | <input type="checkbox"/> | System capacity is provided, 14.1.3(17). |
| 147. | <input type="checkbox"/> | Dry pipe riser location is shown. |
| 148. | <input type="checkbox"/> | Two 6 in. dry pipe valves are provided for systems greater than 600 sprinklers or greater than 275 sprinklers in a fire area, 7.4.2.1. |
| 149. | <input type="checkbox"/> | Multi-dry pipe valves are interconnected with 1 in. pipe with shut-off valve for simultaneous tripping, 7.4.2.4. |
| 150. | <input type="checkbox"/> | QOD is provided at the dry pipe valves, 7.4.2.8. |
| 151. | <input type="checkbox"/> | A minimum 2 in. exhaust valve is shown at the end of the common feed main, 7.4.3.1. |
| 152. | <input type="checkbox"/> | Fire areas requiring greater than 275 sprinklers shall divide the system into sections of 275 sprinklers or less by the use of check valves, and a building with multi-fire areas shall limit 600 sprinklers per check valve, 7.4.4.2. |
| 153. | <input type="checkbox"/> | The manual method of activating the detection system is within 200 ft. of travel, 7.4.1.3. |

VALVES:

- | | | |
|------|--------------------------|--|
| 154. | <input type="checkbox"/> | All water supply control valves, pressure switches and water flow switches are electrically supervised in accordance with IFC 903.4. |
| 155. | <input type="checkbox"/> | Check valve is at/near connection to water supply, 8.15.1. |
| 156. | <input type="checkbox"/> | Control valves are provided in accordance with 8.15.1.1.4. |
| 157. | <input type="checkbox"/> | Water supply exceeding 175 PSI requires pressure reducing valves (PRVs), locations are detailed, 8.15.1.2. |
| 158. | <input type="checkbox"/> | Gauges are provided on the inlet and outlet of the PRVs and an indicating valve is provided on the inlet side, 8.15.1.2. |

MISCELLANEOUS STORAGE:

- | | | |
|------|--------------------------|--|
| 159. | <input type="checkbox"/> | Class I-IV commodities, Group A plastics, and tires stored up to 12 ft. are protected as miscellaneous storage in accordance with Section 12.1.10. |
| 160. | <input type="checkbox"/> | Rolled paper stored up to 10 ft. and idle pallets stored up to 4 ft. are protected as miscellaneous storage in accordance with Section 12.1.10. |
| 161. | <input type="checkbox"/> | Hose stream demand has been added to the hydraulic calculation in accordance with 12.1.10.2. |
| 162. | <input type="checkbox"/> | In-rack sprinkler location, operating pressure, and the design water flow demand is in compliance with 12.1.12 |
| 163. | <input type="checkbox"/> | Rack storage of Class I-IV commodities do not require hose connections, 12.3.1.3. |
| 164. | <input type="checkbox"/> | The matching of the density design to the appropriate sprinkler K-factor is in compliance with 12.1.13 |

Flushing:

165. **Y** **N** Flushing instructions and criteria are on the plans. Flushing requirements shall be 880 GPM for 6 in. pipe, 1,560 GPM for 8 in., 2,440 GPM for 10 in., 3,520 GPM for 12 in., and the flush should be pitoted and calculated to ensure the flow and the velocity is at least 10 ft/sec.

Antifreeze System:	Refer to 7.5	Protection against Exposure Fire:	Refer to 7.7
Refrigerated Areas:	Refer to 7.8	Commercial Cooking Equipment:	Refer to 7.9
Storage:	Refer to Chapter 12	Special Occupancy Requirements:	Refer to Chapter 13
Private Fire Service Water Mains:	Refer to Chapter 10, NFPA 24.		

Additional Comments:

Review Date:	Approved <input type="checkbox"/> or Disapproved <input type="checkbox"/>	FD Reviewer:
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