



## Fire Sprinkler System Design and Installation Requirements

The Park City Fire Service District (PCFD) and Park City Municipal Corporation (PCMC) have made the following amendments to the State of Utah adopted codes and standards for the design and installation of fire sprinkler systems:

1. **NFPA-13:** Standard for the Installation of Sprinkler Systems - 2013 edition. . . . . Page 1
2. **NFPA-13D:** Standard for the Installation of Sprinkler Systems in. . . . . Page 2  
One- and Two-Family Dwellings and Manufactured Homes - 2013 edition
3. **NFPA-13R:** Standard for the Installation of Sprinkler Systems in. . . . . Page 4  
Residential Occupancies up to and Including Four Stories in Height - 2013 edition
4. **IBC:** International Building Code - 2015 edition. . . . . Page 5
5. **IFC:** International Fire Code - 2015 edition. . . . . Page 8
6. **IRC:** International Residential Code - 2015 edition. . . . . Page 9
7. **Use of Anti-Freeze Additives in Residential Fire Sprinkler Systems.** . . . . . Page 10
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**Revision 1:** April 20, 2017  
**Issue Date:** July 1, 2016

1. **NFPA 13 - 2013**

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- 1.1 **Section 8.15.22 - System Subdivision - Floor/Zone Control Valves:** Section 8.15.22, System Subdivision, is deleted and replaced as follows:
  - 1.1.1 **8.15.22 - System Subdivision - Floor/Zone Control Valves:** Individual floor/zone control valves shall be used at the riser at each floor for connections to piping serving floor areas in excess of 5000 ft<sup>2</sup>. Floor/zone control valves shall be provided and installed in accordance with NFPA 13, section 8.16.1.5.
- 1.2 **Section 8.16.1.5 - Floor Control Valve Assemblies.**
  - 1.2.1 Section 8.16.1.5.1- Multistory buildings exceeding two stories in height shall be provided with a floor control valve, check valve, main drain valve, and flow switch for isolation, control, and annunciation of water flow on each floor level.
  - 1.2.2 Section 8.16.1.5.2 The floor control valve, check valve, main drain valve, and flow switch required by 8.16.1.6.3 shall not be required where sprinklers on the top level of a multistory building are supplied by piping on the floor below.
  - 1.2.3 Section 8.16.1.5.3 The floor control valve, check valve, main drain valve, and flow switch required by 8.16.1.6.3 shall not be required where the total area of all floors combined does not exceed the system protection area limitations of 8.2.1.
- 1.3 **Section 8.17.1.1 - Local Waterflow Alarms:** Amended in the Utah State Fire Code Revisions by adding the following new subsections after 8.17.1.1:
  - 1.3.1 **8.17.1.1.1 - Single Tenant Occupancies:** An approved audible / visual waterflow alarm (horn / strobe) shall be provided in the interior of the building, in a normally occupied location, to alert the occupants of the fire sprinkler system activation.
  - 1.3.2 **8.17.1.1.2 - Multi-Tenant Occupancies:** An approved audible / visual waterflow alarm (horn / strobe) shall be provided in the interior of each tenant space, in a normally occupied location, to alert the occupants of the fire sprinkler system activation.
  - 1.3.3 **8.17.1.1.3 - Exterior Waterflow Alarm:** An approved audible and visual waterflow alarm (horn/strobe) shall be provided on the exterior of the building in an approved location, facing the street front of the building.

**2. NFPA 13D - 2013 edition is modified as follows:**

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- 2.1 **7.6 - Alarms:** Amended in the Utah State Fire Code Revisions by adding the following new subsections:
- 2.1.1 **7.6.1 - Exterior Waterflow Alarm:** When an alarm initiating device is included, an approved audible/visual waterflow alarm (horn/strobe) shall be provided on the exterior of the building in a location approved by the AHJ.
  - 2.1.2 **7.6.2 - Interior Alarm:** When an alarm initiating device is included, an interior fire alarm notification appliances is required to sound throughout the dwelling. An approved audible sprinkler flow alarm to alert the occupants of the dwelling in a normally occupied location when flow switch is activated must be provided.
  - 2.1.3 **7.6.3 - Monitoring:** **[Amended by PCFD/PCMC]** Fire sprinkler system with 50 or more fire sprinklers, or is in a subdivision which is isolated from the main or common arterial roads, off-premise monitoring is required to be provided and maintained.
- 2.2 **8.3 - Location of Sprinklers:** Subsection 8.3.4 is deleted and replaced with the following:
- 2.2.1 **8.3.4** Fire sprinklers shall be required in garages, open attached porches, carports and similar structures when the requirements from section 8.3.4.1 and 8.3.4.2 **are not met**. Fire sprinklers **shall only be required in residential subdivisions**, where each residential private garage wall has been designed based on Table R302.1(2), Footnote a, of the 2015 International Residential Code (IRC) and as outlined in section 8.3.4.3.
  - 2.2.2 **8.3.4.1 - Opening Protection:** Openings between the garage and residence shall be equipped with solid wood doors not less than 1-3/8 inches in thickness, solid or honeycomb-core steel doors not less than 1-3/8 inches thick, or 20-minute fire-rated doors, equipped with a self-closing device.
  - 2.2.3 **8.3.4.2 - Dwelling-Garage Fire Separation:** The garage shall be separated from the dwelling by one of the following methods:
    - 2.2.3.1 **8.3.4.2.1.** From the residence and attics - Not less than 1/2-inch gypsum board or equivalent applied to the garage side.
    - 2.2.3.2 **8.3.4.2.2.** From habitable rooms above the garage - Not less than 5/8-inch Type X gypsum board or equivalent.
    - 2.2.3.3 **8.3.4.2.3.** Structure(s) supporting floor/ceiling assemblies used for separation required by this section - Not less than 1/2-inch gypsum board or equivalent.
    - 2.2.3.4 **8.3.4.2.4.** Garages located less than 3 feet from a dwelling unit on the same lot - Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area.

2.2.4 **8.3.4.3 - Garages and Carports - Fire Sprinklers:** Fire sprinklers **shall only be required in residential subdivisions**, where each residential private garage wall has been designed based on Table R302.1(2), Footnote a, of the 2015 International Residential Code (IRC), and where all dwellings in residential subdivision are equipped throughout with an automatic sprinkler system installed, such that the fire separation distance for non-rated exterior walls and rated projections shall be permitted to be reduced to 0 feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining lot provides an open setback yard that is 6 feet or more in width on the opposite side of the property line.

2.2.4.1 **8.3.4.3.1** The fire sprinklers in garages shall be connected to the automatic fire sprinkler system for the residence.

2.2.4.2 **8.3.4.3.2** Garage fire sprinklers shall be residential sprinklers or quick-response sprinklers, designed to provide a density of 0.05 g.p.m./ft<sup>2</sup>.

2.2.4.3 **8.3.4.3.3** Garage doors shall not be considered obstructions with respect to sprinkler placement.

2.3 **11.2.1 - Hydrostatic Tests:** Section 11.2.1.1 is deleted and replaced with the following:

2.3.1 **11.2.1.1 - PCFD:** Where a fire department pumper connection is not provided, the system shall be hydrostatically tested for leakage at a pressure of not less than 100 p.s.i. or at the normal system operating pressure, whichever is higher.

2.3.2 **11.2.1.1 - PCMC:** Where a fire department pumper connection is not provided, the system shall be hydrostatically tested for leakage at a pressure of not less than 200 p.s.i. or at the normal system operating pressure, whichever is higher.

3. **NFPA 13R - 2013 edition is modified as follows:**

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- 3.1 **Section 6.8 - Valves:** Amended in the Utah State Fire Code Revisions by adding the following new section 6.8.8 as follows:
  - 3.1.1 **6.8.9 - Floor/Zone Control Valves:** Individual floor/zone control valves shall be used at the riser at each floor for connections to piping serving floor areas in excess of 5000 ft<sup>2</sup>. Floor/zone control valves shall be provided and installed in accordance with NFPA 13, section 8.16.1.5.
- 3.2 **Section 6.16 - Alarms:** Amended in the Utah State Fire Code Revisions by adding the following new subsections after 6.16.1:
  - 3.2.1 **6.16.1.1 - Local Waterflow Alarms:** An approved audible / visual waterflow alarm (horn / strobe) shall be provided in the interior of each residential unit / tenant space, in a normally occupied location, to alert the occupants of the fire sprinkler system activation.
  - 3.2.2 **16.6.1.2 - Exterior Waterflow Alarm:** An approved audible and visual waterflow alarm (horn/strobe) shall be provided on the exterior of the building in an approved location, facing the street front of the building.

4. **International Building Code - 2015 edition is modified as follows:**

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- 4.1 **Section (F)901.8 - Pump and Riser Room Size:** Amended in the Utah State Construction Code by deleting IBC, Section (F)901.8, and replacing with the following: [Utah State Amendment-15A-3-104(1)]
- 4.1.1 **(F)901.8 Pump and riser room size.** Fire pump and automatic sprinkler system riser rooms shall be designed with adequate space for all installed equipment necessary for the installation and to provide sufficient working space around the stationary equipment. Clearances around equipment shall be in accordance with manufacturer requirements and not less than the following minimum elements:
- 4.1.1.1 **901.8.1.** A minimum clear and unobstructed distance of 12-inches shall be provided from the installed equipment to the elements of permanent construction.
- 4.1.1.2 **901.8.2.** A minimum clear and unobstructed distance of 12-inches shall be provided between all other installed equipment and appliances.
- 4.1.1.3 **901.8.3.** A clear and unobstructed width of 36-inches shall be provided in front of all installed equipment and appliances, to allow for inspection, service, repair or replacement without removing such elements of permanent construction or disabling the function of a required fire-resistance-rated assembly.
- 4.1.1.4 **901.8.4.** Automatic sprinkler system riser rooms shall be provided with a clear and unobstructed passageway to the riser room of not less than 36-inches, and openings into the room shall be clear and unobstructed, with doors swinging in the outward direction from the room and the opening providing a clear width of not less than 34-inches and a clear height of the door opening shall not be less than 80-inches.
- 4.1.1.5 **901.8.5.** Fire pump rooms shall be provided with a clear and unobstructed passageway to the fire pump room of not less than 72-inches, and openings into the room shall be clear, unobstructed and large enough to allow for the removal of the largest piece of equipment, with doors swinging in the outward direction from the room and the opening providing a clear width of not less than 68-inches and a clear height of the door opening shall not be less than 80-inches.

- 4.2 **Section (F)903.2 - Where Required:** IBC, Section (F)903.2, is deleted and replaced with the following:
- 4.2.1 **(F)903.2 Where required.** Approved automatic sprinkler systems in new buildings and structures shall be provided in the location described in this section.
- 4.2.1.1 All new construction having more than 6,000 square feet on any one floor, except R-3 occupancy.
- 4.2.1.2 All new construction having more than two (2) stories, except R-3 occupancy.
- 4.2.1.3 All new construction having three (3) or more dwelling units, including units rented or leased, and including condominiums or other separate ownership.
- 4.2.1.4 All new construction in the Historic Commercial Business zone district, regardless of occupancy.
- 4.2.1.5 All new construction and buildings in the General Commercial zone district where there are side yard setbacks or where one or more side yard setbacks is less than two and one half (2.5) feet per story of height.
- 4.2.1.6 All existing building within the Historic District Commercial Business zone.
- 4.3 **Section 903.3 - Installation Requirements:** - Section 903.3 is modified by adding the following new sections:
- 4.3.1 **Section 903.3.1.1.3 - Fire Sprinkler Floor Control Valves:** Floor control valves shall be provided on each floor for fire sprinkler piping, when the floor area is in excess of 5,000 ft<sup>2</sup>. Floor control valves shall be provided and installed in accordance with NFPA 13, section 8.16.1.5.
- 4.3.2 **Section 903.3.1.2.3 - Fire Sprinkler Floor Control Valves:** Floor control valves shall be provided on each floor for fire sprinkler piping, when the floor area is in excess of 5,000 ft<sup>2</sup>. Floor control valves shall be provided and installed in accordance with NFPA 13, section 8.16.1.5.
- 4.3.3 **Section 903.3.1.4 - Required Access to Fire Sprinkler Risers Rooms.** In other than one and two family dwellings, direct exterior access shall be provided and readily accessible for emergency access by the fire department to all fire sprinkler riser rooms. An approved access walkway leading from fire apparatus access roads to exterior openings for the fire sprinkler riser room shall be provided. When direct access is not provided to the fire sprinkler riser room, an electrically supervised post indicator valve (PIV) in accordance with section 903.4 of this code is permitted.

- 4.4 **Section 903.4.2 - Alarms:** Section 903.4.2 is modified by deleting this section in its entirety and replacing with the following:
- 4.4.1 **903.4.2 - Alarms.** An approved audible / visual waterflow alarm (horn / strobe) shall be provided in an approved location and shall be connected to each automatic sprinkler system. Such sprinkler water-flow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system.
  - 4.4.2 **903.4.2.1 - Single Tenant Occupancies:** An approved audible / visual waterflow alarm (horn / strobe) shall be provided in the interior of the building, in a normally occupied location, to alert the occupants of the fire sprinkler system activation.
  - 4.4.3 **903.4.2.2 - Multi-Tenant Occupancies:** An approved audible / visual waterflow alarm (horn / strobe) shall be provided in the interior of each tenant space, in a normally occupied location, to alert the occupants of the fire sprinkler system activation.
  - 4.4.4 **903.4.2.3 - Exterior Waterflow Alarm:** An approved audible and visual waterflow alarm (horn/strobe) shall be provided on the exterior of the building in an approved location, facing the street front of the building.



**5. International Fire Code - 2015 edition is modified as follows:**

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- 5.1 **Section 504: Access to Building Openings and Roofs:** - Section 504 is modified by adding a new section 504.4 Required Access to Fire Sprinkler Riser Rooms.
- 5.1.1 **Section 504.4 Required Access to Fire Sprinkler Risers Rooms.** In other than one and two family dwellings, direct exterior access shall be provided and readily accessible for emergency access by the fire department to all fire sprinkler riser rooms. An approved access walkway leading from fire apparatus access roads to exterior openings for the fire sprinkler riser room shall be provided. When direct access is not provided to the fire sprinkler riser room, an electrically supervised post indicator valve (PIV) in accordance with section 903.4 of this code is permitted.
- 5.2 **Section 903.3: Installation Requirements:** Section 903.3 is modified by adding the following new sections:
- 5.2.1 **Section 903.3.1.1.3 - Fire Sprinkler Floor Control Valves:** Floor control valves shall be provided on each floor for fire sprinkler piping, when the floor area is in excess of 5,000 ft<sup>2</sup>. Floor control valves shall be provided and installed in accordance with NFPA 13, section 8.16.1.5.
- 5.2.2 **Section 903.3.1.2.3 - Fire Sprinkler Floor Control Valves:** Floor control valves shall be provided on each floor for fire sprinkler piping, when the floor area is in excess of 5,000 ft<sup>2</sup>. Floor control valves shall be provided and installed in accordance with NFPA 13, section 8.16.1.5.
- 5.2.3 **Section 903.4.2 - Alarms:** Section 903.4.2 is deleted and replaced with the following:
- 5.2.3.1 **903.4.2 - Alarms.** An approved audible / visual waterflow alarm (horn / strobe) shall be provided in an approved location and shall be connected to each automatic sprinkler system. Such sprinkler water-flow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system.
- 5.2.3.2 **903.4.2.1 - Single Tenant Occupancies:** An approved audible / visual waterflow alarm (horn / strobe) shall be provided in the interior of the building, in a normally occupied location, to alert the occupants of the fire sprinkler system activation.
- 5.2.3.3 **903.4.2.2 - Multi-Tenant Occupancies:** An approved audible / visual waterflow alarm (horn / strobe) shall be provided in the interior of each tenant space, in a normally occupied location, to alert the occupants of the fire sprinkler system activation.
- 5.2.3.4 **903.4.2.3 - Exterior Waterflow Alarm:** An approved audible and visual waterflow alarm (horn/strobe) shall be provided on the exterior of the building in an approved location, facing the street front of the building.

**6. International Residential Code - Utah State Amendment-15A-4-206(1) modified as follows:**

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- 6.1 **PCMC - IRC - Appendix P - 2006 Edition:** The following amendment is adopted as an amendment to the IRC for the Park City Corporation, Appendix P, of the 2006 IRC is adopted.
- 6.1.1 **AP101 Fire sprinklers.** An approved automatic fire sprinkler system shall be installed in new one- and two-family dwellings and townhouses in accordance with Section 903.3.1.3 of the International Building Code.
- 6.2 **2015 IRC - Section R302.5.1 Opening Protection.** Openings between the garage and residence shall be equipped with solid wood doors not less than 1-3/8 inches (35 mm) in thickness, solid or honeycomb-core steel doors not less than 1-3/8 inches (35 mm) thick, or 20-minute fire-rated doors, equipped with a self-closing device.
- 6.3 **2015 IRC - Section R302.6 Dwelling-Garage Fire Separation.**
- 6.3.1 The garage shall be separated as required by Table R302.6.
- 6.3.1.1 From the residence and attics - Not less than 1/2-inch gypsum board or equivalent applied to the garage side.
- 6.3.1.2 From habitable rooms above the garage - Not less than 5/8-inch Type X gypsum board or equivalent.
- 6.3.1.3 Structure(s) supporting floor/ceiling assemblies used for separation required by this section - Not less than 1/2-inch gypsum board or equivalent.
- 6.3.1.4 Garages located less than 3 feet from a dwelling unit on the same lot - Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area.
- 6.3.2 Openings in garage walls shall comply with Section R302.5.
- 6.3.3 Attachment of gypsum board shall comply with Table R702.3.5.
- 6.3.4 The wall separation provisions of Table R302.6 shall not apply to garage walls that are perpendicular to the adjacent dwelling unit wall.
- 6.4 **2015 IRC - Garages and Carports - Section R309.5 - Fire Sprinklers:** Private garages shall be protected by fire sprinklers where the garage wall has been designed based on Table R302.1(2), Footnote a, in residential subdivisions where all dwellings are equipped throughout with an automatic sprinkler system installed, such that the fire separation distance for non-rated exterior walls and rated projections shall be permitted to be reduced to 0 feet, and unlimited unprotected openings and penetrations shall be permitted, where the adjoining lot provides an open setback yard that is 6 feet or more in width on the opposite side of the property line.
- 6.4.1 The fire sprinklers in garages shall be connected to an automatic sprinkler system that complies with Section P2904.
- 6.4.2 Garage fire sprinklers shall be residential sprinklers or quick-response sprinklers, designed to provide a density of 0.05 g.p.m./ft<sup>2</sup>.
- 6.4.3 Garage doors shall not be considered obstructions with respect to sprinkler placement.

## 7. Use of Anti-Freeze Additives in Residential Fire Sprinkler Systems

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- 7.1 Where preventing fire sprinkler pipes from freezing is a concern, fire sprinkler piping must still be run/installed within a heated/warm space to avoid freezing conditions.
- 7.2 The use of an anti-freeze additive in the fire sprinkler system will need to meet the following criteria:
- 7.2.1 A signed statement from the homeowner, general contractor, and fire sprinkler contractor must be provided to PCFD/PCMC requesting to allow the use of an antifreeze additive and identify that all parties understand the concerns associated with the use of antifreeze in the fire sprinkler system including the potential increase in fire intensity, the possibility that antifreeze may not be available in the future, and concerns associated with the annual servicing of the system.
- 7.2.2 Operating pressures within the fire sprinkler system must not exceed 100 psi. This may require the installation of a "pressure reducing valve" in addition to the culinary pressure reducing valve. This valve will need to be taken into account when the hydraulic calculations are done and be shown on the plans.
- 7.2.3 Minimum pipe size for the fire sprinkler piping supplying the antifreeze system:
- 7.2.3.1 **Underground Piping Supply:** 1-1/2 inches in diameter minimum.
- 7.2.3.2 **Antifreeze System Piping:**
- 7.2.3.2.1 All piping containing antifreeze must be a minimum of 1-inch in diameter.
- 7.2.3.2.2 Antifreeze systems greater than 40 gallons in size, must calculate the friction loss and pipe size using the Darcy-Weisbach formula. (See NFPA13-23.4.2.1.3)
- 7.2.4 An expansion chamber must be provided to compensate for thermal expansion of the antifreeze solution within the fire sprinkler system. **We recommend that a listed expansion chamber be installed.** The size of the expansion chamber must include the pre-charge air temperature and pre-charge air pressure. The size of the expansion chamber must be such that the maximum system pressure does not exceed the rated pressure for any components of the antifreeze system.
- 7.2.5 The fire sprinkler contractor shall indicate the type of anti-freeze solution to be used and the concentration/mixture proportions. Antifreeze solution shall not exceed a maximum concentration of 38% premixed propylene glycol or 48% premixed glycerin.
- 7.2.6 The fire sprinkler contractor shall indicate on the fire sprinkler drawings the total amount of anti-freeze to be used the system.
- 7.2.7 **Updated: March 15, 2017**

**8. Request - Use of Anti-Freeze Additives in Residential Fire Sprinkler Systems**

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Date:

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Property Address:

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Permit Number (If applicable):

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Variance on Amount of Antifreeze Additive:

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The owner and contractors are requesting the use of an antifreeze additive for the fire sprinkler system, based on the extreme cold temperatures in this area.

All parties acknowledge this request and understand the concerns with the use of either propylene glycol or glycerin in residential fire sprinkler systems, including the potential increase in fire intensity, the possibility that antifreeze may not be available in the future, and concerns associated with the annual servicing of the fire sprinkler system.

General Contractor Name:

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General Contractor Signature:

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Homeowner's Name:

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Homeowner's Signature:

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Fire Sprinkler Contractor's Name:

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Fire Sprinkler Contractor's Signature:

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## 9. Fire Sprinkler System Submittals

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- 9.1 Installation of the fire sprinkler system cannot begin until the installation drawings, hydraulic calculations and equipment data sheets have been reviewed and accepted.
- 9.2 **Submitting Drawings:** Submitting fire sprinkler shop drawings to be reviewed:
  - 9.2.1 Provide the completed Plan Submittal Form and pay all the associated fees. Incomplete forms and/or non-payment of fees will not be tolerated, and review will be held until the fees and/or form is completed and provided. **No Exceptions!**
  - 9.2.2 Electronically - [fireprev@pcfd.org](mailto:fireprev@pcfd.org)
  - 9.2.3 Hard Copies - Provide three (3) sets for all fire sprinkler shop drawings to be reviewed.
    - 9.2.3.1 PCFD / PCMC will retain one (1) set and will return two (2) sets of drawings with any applicable conditions of approval.
    - 9.2.3.2 One (1) set of approved drawings shall be available on-site at all times.
- 9.3 **Submitting Hydraulic Calculations:** Submitting hydraulic calculations to be reviewed:
  - 9.3.1 Electronically - [fireprev@pcfd.org](mailto:fireprev@pcfd.org)
  - 9.3.2 Hard Copies - Provide two (2) sets for all hydraulic calculations to be reviewed.
    - 9.3.2.1 PCFD / PCMC will retain one (1) set and will return two (2) sets of drawings with any applicable conditions of approval.
- 9.4 **Manufacture Cut-Sheets:** Provide one (1) copy of each manufacture cut-sheet for all fire sprinkler heads, valves, pipe hangers, etc. and details on the seismic and sway bracing.
- 9.5 **Working Drawings:** Working drawings must be prepared and submitted in accordance with the applicable standard used for design of the fire sprinkler system:
  - 9.5.1 NFPA 13 - Chapter 22 - Plans and Calculations.
  - 9.5.2 NFPA 13D - Chapter 10 - Discharge and Hydraulic Calculations.
  - 9.5.3 NFPA 13R - Chapter 8 - Plans and Calculations.
- 9.6 **Hydraulic Calculations:** Hydraulic calculations must be provided for each area to be reviewed. Hydraulic calculations must be prepared and submitted in accordance with the applicable standard used for design of the fire sprinkler system:
  - 9.6.1 NFPA 13 - Chapter 22 - Plans and Calculations.
  - 9.6.2 NFPA 13D - Chapter 10 - Discharge and Hydraulic Calculations.
  - 9.6.3 NFPA 13R - Chapter 8 - Plans and Calculations.
- 9.7 Full height cross section of the structure/facility/residence must be provided for each fire sprinkler system.
- 9.8 Underground piping drawing showing location and elevation of static and residual test gauges with relation to the riser reference point and flow hydrant location.
- 9.9 Occupancy of each room/area to be protected.

## 10. Required Inspections - Before and During Construction

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- 10.1 **Rough-In:** The PCFD/PCMC requires a Rough-In Inspection be arranged before any ceilings are installed. The Rough-In Inspection is made to avoid any unnecessary alterations to building construction to survey the installations of the fire sprinkler system.
- 10.2 **Above Ground Fire Sprinkler Piping:** PCFD/PCFD must witness the above ground fire sprinkler hydrostatic test and acceptance test.
- 10.3 **Fire Sprinkler Piping Insulation Inspection:** Fire Sprinkler and General Contractor to meet with PCFD/PCMC on-site to show how fire sprinkler piping will be protected from freezing, including running the fire sprinkler piping in heated/warm spaces, tenting of the insulation over the fire sprinkler piping, etc. before ceilings are installed.
- 10.4 **Fire Sprinkler System Final Inspection / Acceptance Test:** PCFD/PCMC must witness the final acceptance testing for the fire sprinkler system.
  - 10.4.1 **Final Inspection will Not Be Scheduled, until all required items in section 11 have been provided and completed. See section 11, Project Completion.**
- 10.5 **Scheduling Inspections:**
  - 10.5.1 PCFD - (435) 940-2532
  - 10.5.2 PCMC - (435) 615-5100

## 11. Project Completion

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- 11.1 At the completion of the project, the fire sprinkler contractor must provide and/or verify that the following has been done:
- 11.2 **Material and Test Certificates:**
  - 11.2.1 Aboveground Piping. [NFPA 13-Figure 25.1]
  - 11.2.2 Under Ground Fire Main Piping. [NFPA 24-Figure 10.10.1]
- 11.3 **As-Built's:**
  - 11.3.1 Digital copy of the As-Built Shop Drawings.
  - 11.3.2 Digital copy Hydraulic Calculations - If changes made to the fire sprinkler systems.
- 11.4 **Hydraulic Design Information Sign:** Provide a Hydraulic Design Information Sign for each Design Area on the riser to indicate the location of the design area, the discharge densities over the design area, the required flow and residual pressure demand at the base of the riser and the hose stream demand included in addition to sprinkler demand. [NFPA 13-24.5]
- 11.5 **Stock of Spare Sprinklers:** Provide a supply of spare fire sprinklers in accordance with the applicable standard:
  - 11.5.1 NFPA 13 - Section 6.2.9 - Stock of Spare Sprinklers.
  - 11.5.2 NFPA 13R - Section 11.19 - Sprinklers.
  - 11.5.3 NFPA 13D:
    - 11.5.3.1 PCFD - Not Required.
    - 11.5.3.2 PCMC - Two (2) types of each fire sprinkler installed.
- 11.6 **Audible / Visual Waterflow Alarm (Horn / Strobe):** Verify that power has been provided to the outside audible / visual waterflow alarm (horn / strobe) and that it is operational.
- 11.7 **Pressure Gauges:** Provide pressure gauges such that a gauge is located above and below the back flow prevention device, to measure the supply and system pressures.
- 11.8 **Address for Structure/Facility/Residence:** Verify that the General Contractor has provided the correct address identification for the structure/facility/residence. **Note:** If the address is not installed, a final inspection will not be conducted, nor the Certificate of Occupancy issued.

## 12. **Contact Information**

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### 12.1 **PCFD - Park City Fire Service District - Fire Prevention Bureau:**

12.1.1 **Telephone:** (435) 940-2532

12.1.2 **Tele-Fax:** (435) 658-5247

12.1.3 **Mailing Address:** P.O. Box 980010 - Park City, Utah 84098-0010

12.1.4 **Shipping Address:** 736 West Bitner Road - Park City, Utah 84098

### 12.2 **PCMC - Park City Municipal Corporation - Building Department:**

12.2.1 **Telephone:** (435) 615-5100

12.2.2 **Tele-Fax:** (435) 658-8931

12.2.3 **Mailing Address:** P.O. Box 1480 - Park City, Utah 84060-1480

12.2.4 **Shipping Address:** 445 Marsac Avenue - Park City, Utah 84060