



Fire Suppression Services Incorporated  
3802 South 2300 East, Millcreek, UT 84109. Ph (801) 277-6464

## EXTRACT from TWO Documents REQUIRED

## Background reading Notes to Owner & Architect & Underground I

### items you MUST supply for Fire Suppressing Equipment

Master Format 2015

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Errors & Omissions to [ArunFSS@live.com](mailto:ArunFSS@live.com)

## What is required,

### FROM other divisions by the Fire Suppression Wet Suppression Team

From Notes2Owner 1

A reminder to Owner, Architect and those who may be interested, of the various items that need attending to, by 'other-trades' when fire suppression equipment is being installed.

This includes: both high & low voltage wiring of various equipment; and the heating & lighting of certain areas; and the water supply; and what you should be aware of in the process of the various installations.

**PLEASE BE ADVISED:** *Designers for all divisions of Fire Suppression need a FULL set of CAD files. We are currently not equipped to handle Revit (BIM)*

This document will serve as a reminder that the item is: (Code) and/or should be put in someone's scope of work: (Scope) and most importantly: **All the items are required.**

Most items, not only are required, they are part of Building IBC, or Fire IFC Code and affect Insurances & Occupancy permits.

The trade codes used, are from *MasterFormat® Numbers & Titles* issued April-2015 by CSI<sup>1</sup>

## 1. The Wet Sprinkler Fire Suppression system team

Our Wet Suppression Installation Technicians will require the following from:

**Div-31 Trench & Backfill to supply underground utility water to sprinkler riser**

**Div-33 Section 11 19 Fire Suppression Utility Water Distribution Piping**

- A water supply is required from your Utility to the flange for the riser AND to fire pump/s
- Drains holes from riser room floors; and drain hole through outside wall for Sprinkler System drain.
- Fire Pumps require drains from their gland-sealing & bleed valves. Diesel units require valve-drain/s from the fuel bund wall.



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- d. Document from Fire Marshal/AHJ witnessing a test of the utility piping system to the flange, using high velocity flows to remove debris from the piping system prior to it being placed in service. AKA: *Contractors Material & Test Certificate for Underground Piping*. Thus certifying that all flushing & pressures testing of the mains has been completed & witnessed by the Local AHJ. (Code NFPA-13)
- e. The flushing operation shall be continued for a sufficient time to ensure thorough cleaning.
- f. All tees, plugs, caps, bends, reducers, valves, and hydrant branches shall be restrained against movement by using thrust blocks in accordance with 10.8.2 or restrained joint systems in accordance with 10.8.3. See Drawing below.
- g. When flushing, make proper directing of high velocity water away from building to prevent damage and to prevent the formation of an ice-rink or lake.
- h. Bacteria Test of water from certified city-water testing laboratory. (Consider Chlorination) (AHJ)
- i. Monitored Isolation Valve between Utility & inside-flange; Fitted with chain & Break-Away lock.
  - a. Often known as a (PIV) Post & Indicator Valve.
- j. PIV must be outside building.
  - a. AHJ decides whether it can be on wall or on land 20 feet away from outside wall. (Check with AHJ)
  - b. May require connection to-monitoring by, the Fire Alarm Control Panel.

And From another Document Notes2Owner 3:

### Div-31 Earthwork

(either if within FSSI's bid/scope of work or another) AND ...

### Div-33 Water Utilities Fire Suppression Utility Water (AKA "UnderGround")

(either if within FSSI's bid/scope of work or anothers)

Fire Suppression Services or the Underground Contractor, requires at least **THREE, preferably FOUR, business days'** notice before commencement of any underground trenching or pavement cutting for the installation of Public Utility connection to the building riser room. (In order to schedule Blue Stakes, Local permits, etc.)

### Riser - points to note

- 1. Blue Stakes will need at least two business days notice.
- 2. Permitting may take up to four days
- 3. It is possible to put down a concrete pour leaving a five-foot by five-foot un-concreted square, where the 6" riser comes up through the floor. You may use an Ames IBR (In-Building Riser)
- 4. The inside Riser flange cannot be greater than ten feet from the outside wall on the business address side of the building. <sup>1</sup> & <sup>ii</sup>(Guideline/Code)
- 5. Door (To Be Done by Others) to the riser room must include a 'Riser Room' label on its exterior side.(Code)
  - a. Most AHJ's require a door for the riser room, opening directly to the OUTSIDE of the building
  - b. And a sign on the door "Fire Riser Room"
- 6. No more than one hundred fifty (150) feet of trench shall be left open at any time.

<sup>1</sup> There are occasions where this can occur: When adding on to an EXISTING building, where that addition extends the building, thereby putting the Utility-Riser stack in the 'middle' of the building. See also the EndNote



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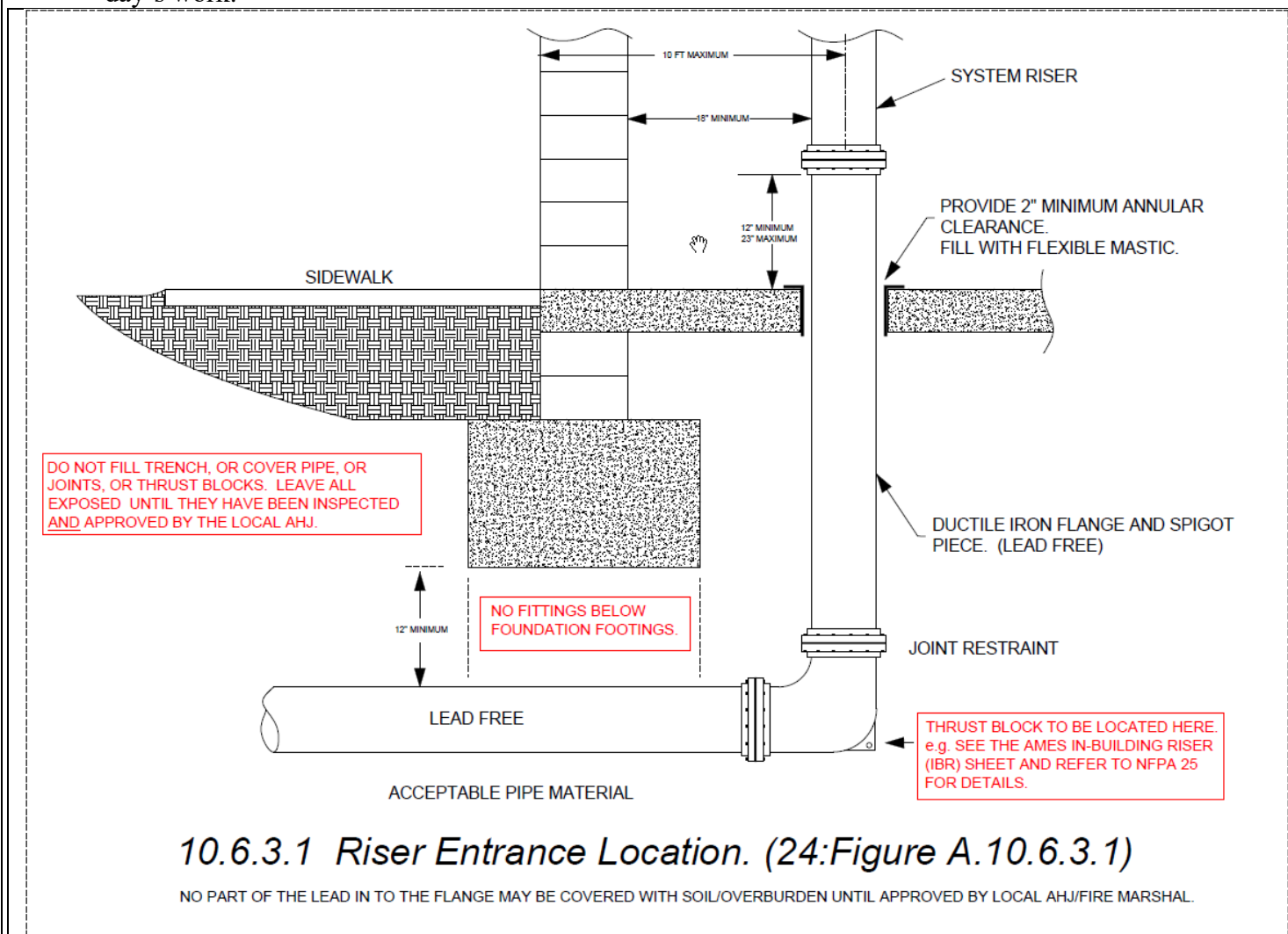
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7. The entire trench shall be backfilled to within fifty (50) feet of the open trench upon conclusion of each day's work.



8. The trench shall not be backfilled until the pipe installation is found acceptable by AHJ (Code)
9. Trench shall be backfilled within one hundred (100) feet of the pipe installation at all times.
10. Clean-up shall be maintained within four hundred (400) feet of the trench excavation.
11. Prior to placement in the trench, all pipes, fittings, and appurtenances shall be cleaned and examined for defects by CONTRACTOR.
12. If found defective, CONTRACTOR shall reject the defective pipe, fitting, or appurtenance.
13. CONTRACTOR shall advise ENGINEER of all defective materials.
14. Surplus Excavation:
- All surplus excavation shall be placed, in an orderly manner.
  - If material is stockpiled on private property, written permission shall be obtained from the property owner and provided to ENGINEER.
15. All trenching and pipe-work has to remain uncovered for inspection. (Code)



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16. The thrust block must remain uncovered for inspection. AHJ
17. A ***“Contractors Material & Test Certificate for Underground Piping”*** must be supplied to the Fire Suppression Services Inc. Project Manager (PM) before the fitters can stack the Riser Assembly. (Code NFPA-13)
  - a. Flush test and water running clear must be observed by AHJ before Riser can be installed on IBR flange.(Code)
  - b. Bacteria test is also part of the above certificate.
    - i. (Document must go to Div-21 Project Manager before riser is stacked)
18. You may use EITHER: a Grooved OR: a Flanged termination in the riser room, on the IBR. Check with local AHJ.
19. Riser area pipe-work has to be minimum of one-foot six inches (18”) away from any wall. (Code)
  - a. (Common sense:-Wrench swing, Tamper wiring and OS&Y valve clearances.)

### Maintenance

- k. Of the Sprinkler pipe work, Inspection, Draining, Operation Testing:
  - a. Every six months. (Code)
  - b. Bacteria test every five years. (Code).
- l. Hydrants & their supply lines (Private Service Mains) require flushing & inspection every six-months. (Code)
- m. Paint colors for hydrants must conform to ANSI/AWWA C502-05, Appendix B or LATEST revision of same.
  - a. PRIVATE hydrants must be painted RED
  - b. All other hydrants paint colors must conform to NFPA 291, with reflective type paint.
  - c. Tops are: Class AA Light Blue; Class A: Green; Class B: Orange; Class C: Red.<sup>iii</sup>
- n. **Fire Suppression Services Inc.** offers a full featured fee-based Inspection & Test Service.
- o. **You should know...**

#### How-To:

- a. Shut off the riser in the riser room, and the floor-supply valve on the standpipe at each floor.
- b. Operate your PIV's
- c. Wedge off a broken sprinkler head.
  - i. Keep rubberized door-type wedges handy.
- d. Start/Stop fire pumps; maintain fuel & engine oil levels.
- e. Call your alarm company, know the code for the alarm company monitoring division
- f. Your POTS lines (2) that provide Dial-Tone for the Fire Alarm Panel.
  - i. If you disconnect these telephone lines, you have no Fire Alarm.
- g. Find & clearly label the Circuit breakers at the Electrical Panels (Code)
  - i. Fire Alarm Panel (FACP)
  - ii. Fire Pump if electric
  - iii. Lights and Heater for the Riser room
  - iv. Dry Suppression System air compressor

### References

CSI Master Format numbers 2015 <http://www.csinet.org/>  
NFPA 10: Standard for Portable Fire Extinguishers.  
NFPA 13: Installation of Sprinkler Systems.  
NFPA 14: Standard for the Installation of Standpipes and Hose Systems, 2010 edition.



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NFPA 17 & 17A Standard for Dry/Wet Chemical Extinguishing Systems  
NFPA 20: Standard for the Installation of Stationary Pumps for Fire Protection, 2010 (if applicable)  
NFPA 24 Standard for the Installation of Private Fire Service Mains and Their Appurtenances  
NFPA 25 Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems  
NFPA 30: Flammable and Combustible Liquids Code 2003 Edition. (if applicable)  
NFPA 72: National Fire Alarm Code  
NFPA 96: Standard for Ventilation Control and Fire Protection of Commercial Cooking Ops/Grease-laden vapors.  
NFPA 101: Life Safety Code  
NFPA 170: Standard for Fire Safety and Emergency Symbols  
NFPA 291: Recommended Practice for Fire Flow Testing and Marking of Hydrants.  
NFPA 750: Standard on Water Mist Fire Protection Systems  
NFPA 2001 Standard on Clean Agent Fire Extinguishing  
Incorporated into this document are other NFPA Codes as referenced and where applicable.  
NFPA Home: [http://www.nfpa.org/aboutthecodes/list\\_of\\_codes\\_and\\_standards.asp](http://www.nfpa.org/aboutthecodes/list_of_codes_and_standards.asp)  
NFPA Data: <http://www.nfpa.org/codes-and-standards/document-information-pages>  
EN 12845: Fixed firefighting systems, Automatic sprinkler systems, Design, installation and maintenance.  
International Fire & Building Code/s and Life Safety Code **if** installed according to Code..  
<http://publicecodes.cyberregs.com/icod/ffc/2012/index.htm>

The Water Utility Supply Code for the working city you are in R746-330 for State of Utah.  
[http://www.slcdocs.com/utilities/PDF%20Files/Std\\_practices\\_090105.pdf](http://www.slcdocs.com/utilities/PDF%20Files/Std_practices_090105.pdf)

Contractors Material & Test Certificate for **U**nder ground Piping.

Contractors Material & Test Certificate for **A**bove ground Piping.

Ansul - R-102 UL300 MANUAL Rev 10 - (143 Pages)

UL Standard 1254 & UL Standard 300

Fire Suppression Services Inc. Bid, Contract documents, & Terms & Conditions

#### Credits

Bill Gubler, Tek Pursler, Heath Dangerfield, Tim Strickland, BJ Mills, Zachary Hagblom, Shan Christensen, Scott Benson.

i Refer: <http://www.csinet.org/masterformat>

ii There is no code that addresses run length from the outside wall to riser flange, only offsets from the walls.

Although standard,/common practice, avoids putting a riser in the middle of the building so far from an outside wall. Drainage and pipe breakage & convenience should be a consideration.

If you do put riser in the middle of the building, you will need a Post-Indicator-Valve (remote monitored and chained off with break-away lock) on the outside wall or free-standing outside with vehicle protection. ....

... and a remote FDC (with attendant bell & strobe)

iii Fire Hydrant colors; Utah PU adopted Standard AWWA C502-5 Appendix B. Tops and nozzle caps of hydrants shall be painted as follows:

Color	Class	Flow (gpm) <sup>2</sup>
Sail <b>BLUE</b>	AA	OVER 1500
Hunter <b>GREEN</b>	A	1,000 to 1,499
<b>Orange</b>	B	500 to 999
Regal <b>Red</b>	C	Less than 500
<b>BLACK</b>	Inactive	Dry Hydrant

The marking of the hydrant is not to be considered as in any way guaranteeing the capacity indicated by the color. Charles H. Call, Jr., P.E., Chief Engineer SLCPU