



# Stafford County Fire and Rescue Department Office of the Fire Marshal

1225 Courthouse Road, PO BOX 339, Stafford, VA 22555  
(540) 658-8648 · [www.staffordfireandrescue.com/fm](http://www.staffordfireandrescue.com/fm)



Guidelines and Specifications For:

## Underground Fire Lines and Fire Department Connections (FDC)

### Applicable Codes and Standards:

- VSFPC - Virginia Statewide Fire Prevention Code (2018)
- SCWSS – Stafford County Water and Sewer Standards
- NFPA 13, Standard for the Installation of Automatic Sprinkler Systems (2016)
- NFPA 14, Standard for the Installation of Standpipe and Hose Systems (2016)
- NFPA 24, Standard for the Installation of Private Fire Mains (2016)

### Underground Fire Lines

Location	Code Section
Underground Fire Lines (sprinkler system supply lines and FDC lines) should enter a building in a <b>designated sprinkler room with a door to the exterior</b> . Otherwise an underground vault and exterior Post-Indicating-Valve (PIV) may be required. A designated sprinkler room is strongly encouraged.	NFPA 13, 8.16.1.1.1
Unless a sprinkler room with exterior door is provided, a listed <b>PIV</b> is required on the sprinkler supply line and no other valves shall be between the riser and street valve.	NFPA 13, 8.16.1.1.1.2
Site plans must include a detail (elevation view) for the piping and riser entering under and into the building. Piping is not permitted to run under buildings but shall enter up through the slab as soon as it enters the building.	NFPA 13, 10.6.1

Piping	Code Section
All piping for Fire Lines and FDC lines shall be of <b>Ductile Iron Piping</b> and comply with the SCWSS for installation. Pipe size shall be <b>at least 6”</b> unless calculated.	SCWSS 2.4.1 NFPA 24, 5.2.2
Minimum <b>depth of cover required is 42 inches</b> and at least 18 inches of separation is required between other piping.	SCWSS 2.1.12 and 1.3.2.3
All piping must be <b>fully restrained</b> . Any 90 degree bends must include thrust blocks unless other calculated methods of restraint are provided and approved.	SCWSS 2.5.4 and NFPA 13, 10.8.1.1
All piping must be <b>wrapped</b> with a minimum <b>.8 mil thick</b> polyethylene plastic.	SCWSS 3.4.1

### Fire Department Connections

Location and Signs	Code Section
FDCs must be located on the <b>front, street side of a building</b> . An FDC may be free-standing or building mounted but hoses connected between the hydrant and the FDC cannot obstruct access to the building from other fire apparatus.	NFPA 13, 8.17.2.4.6 VSFPC 912.2
A <b>fire hydrant</b> must be located within <b>50 feet</b> of the FDC.	SCWSS 2.1.4(B)
The connections on the FDC must be located at <b>least 18 inches but not more than 48 inches</b> from grade level. The FDC must be visible, and free from obstructions.	NFPA 13, 8.17.2 and VSFPC 912.3
Where <b>free-standing FDCs</b> are provided, the site plan shall include a detail (elevation view) of the installation and <b>drainage</b> . A sample is provided below.	NFPA 13, 8.17.2.6
All FDCs must be provided with <b>Stafford County Standard FDC signs</b> . See the Stafford County FDC Sign Guideline for information and the MANDITORY detail.	VSFPC 912.4

Size	Code Section
For systems supplying <b>only sprinklers</b> , the FDC must be two (2) female 2 ½ inch NST connections with caps or an approved 4 inch “ <i>Storz</i> ” connection.	NFPA 24, 5.9.2
Where the FDC supplies a <b>standpipe system</b> or <b>combination sprinkler and standpipe system</b> , only 2 ½ inch NST connections are allowed and there must be at least one 2 ½ inch connection for every 250gpm required.	NFPA 14, 7.12.3
FDCs must be <b>interconnected</b> to supply all risers and standpipes in a building.	VSFPC 905.4.2

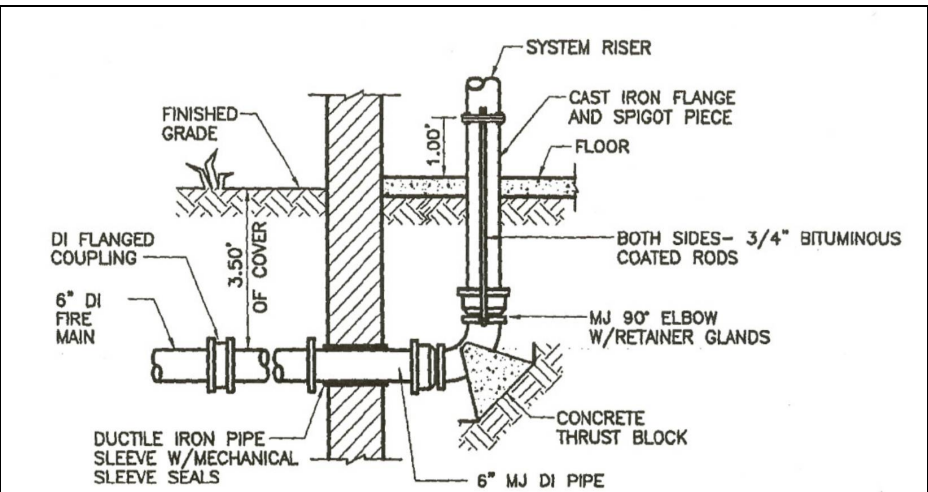
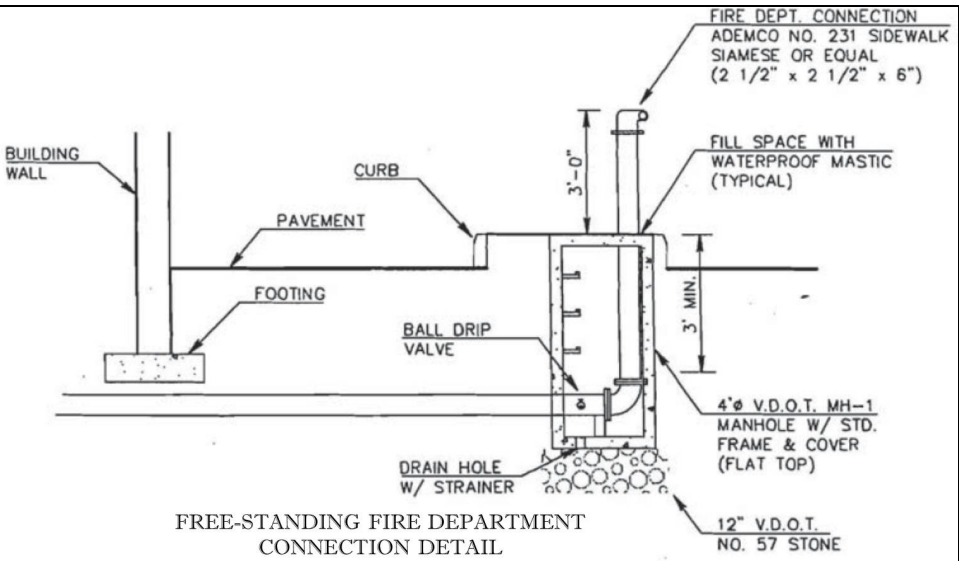


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## Sample Design Details

FDC and Fire Protection System Riser Details	Code Section
 <p>NOTE: WHERE MAIN PASSES BELOW FOOTING, CLEARANCE SHALL BE PROVIDED TO PREVENT PIPE BREAKAGE DUE TO BUILDING SETTLEMENT.</p> <p><b>FIRE PROTECTION SYSTEM RISER DETAIL</b> NOT TO SCALE</p>	<p>SCWSS 5.2, NFPA 13, 8.17.2 and Figure A.10.8.3</p>
 <p><b>FREE-STANDING FIRE DEPARTMENT CONNECTION DETAIL</b> NOT TO SCALE</p>	