



Stafford County Fire and Rescue Department Office of the Fire Marshal

1225 Courthouse Road, PO BOX 339, Stafford, VA 22555
(540) 658-7200 · FAX (540) 658-4545 · www.staffordfirerescue.com/fm



Guidelines and Specifications For:

Underground Fire Lines and Fire Department Connections (FDC)

Applicable Codes and Standards:

- VSFPC - Virginia Statewide Fire Prevention Code (2009)
- SCWSS – Stafford County Water and Sewer Standards
- NFPA 24, Standard for the Installation of Private Fire Mains (2007)
- NFPA 13, Standard for the Installation of Automatic Sprinkler Systems (2007)

Underground Fire Lines

Location	Code Section
Underground Fire Lines (sprinkler system supply lines and FDC lines) should enter a building in a designated sprinkler room with a door to the exterior. 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 designated sprinkler room is provided, a listed PIV is required on the sprinkler supply line and no other valves are permitted 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 Ductile Iron Piping and comply with the SCWSS for installation. Pipe size shall be at least 6" unless calculated.	SCWSS 2.4.1
Minimum depth of cover required is 42 inches 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 fully restrained. 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 wrapped with a minimum .8 mil thick approved polyethylene plastic	SCWSS 3.4.1

Fire Department Connections

Location	Code Section
FDCs must be located on the front, street side of a building. An FDC may be free-standing or building mounted.	NFPA 13, 8.17.2.4.6
A fire hydrant must be located within 50 feet of the FDC.	SCWSS 2.1.4(B)
The connections on the FDC must be located at least 18 inches but not more than 48 inches from grade level. The FDC must be visible, and free from obstructions.	NFPA 13, 8.17.2 and VSFPC 912.3
Where free-standing FDCs are provided, the site plan shall include a detail (elevation view) of the installation.	NFPA 13, 8.17.2.6
Size	Code Section
The two connections on the FDC must be female 2 ½ inch NST with caps.	NFPA 24, 5.9.2
Where the calculated sprinkler demand area exceeds 750 GPM, an additional 2 ½ inch connection must be provided. Where more than 1000 GPM is necessary, a 4 inch "Storz" connection should be provided along with the two 2 ½ inch connections.	NFPA 13, 8.17.2.3
Signs	Code Section
All FDCs must be provided with Stafford County Standard FDC signs. See the Stafford County FDC Sign Guideline for information and the MANDATORY detail.	VSFPC 912.4

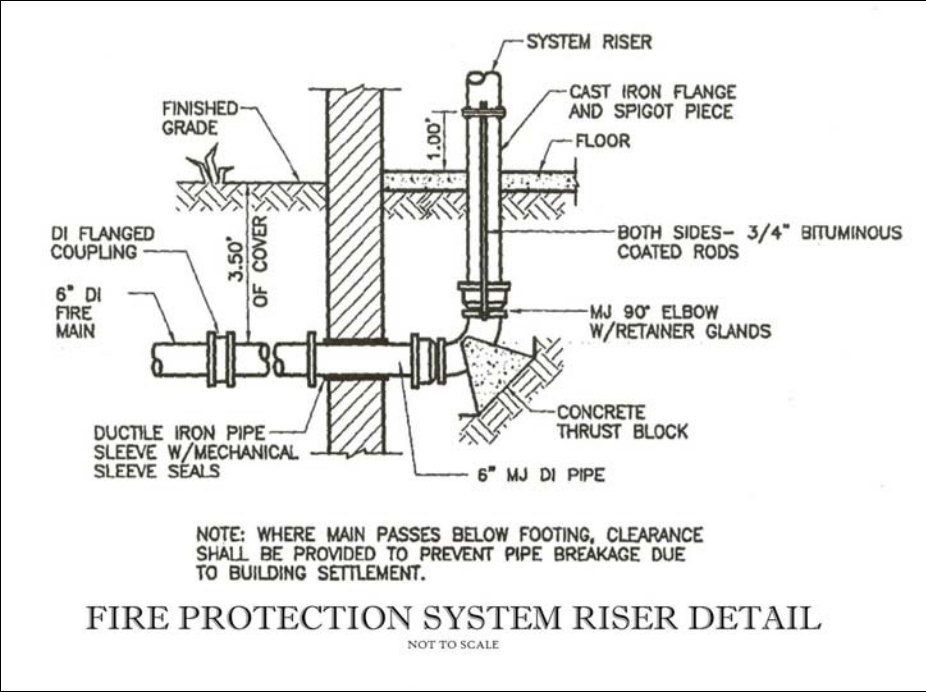
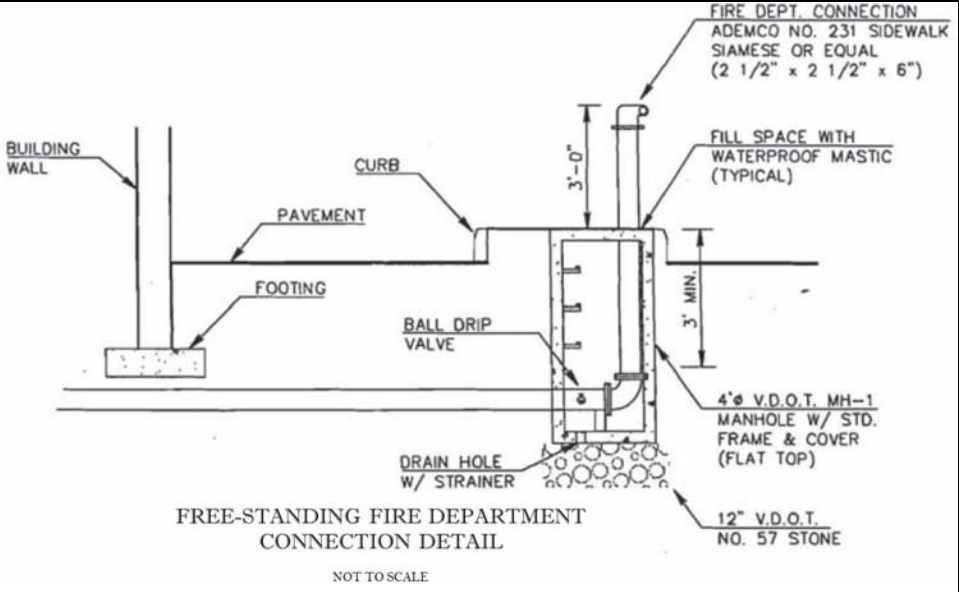


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Sample Design Details

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>FIRE PROTECTION SYSTEM RISER DETAIL NOT TO SCALE</p>	<p>SCWSS 5.2, NFPA 13, 8.17.2 and Figure A.10.8.3</p>
 <p>FREE-STANDING FIRE DEPARTMENT CONNECTION DETAIL NOT TO SCALE</p>	