MINNESOTA DEPARTMENT OF PUBLIC SAFETY
State Fire Marshal Division

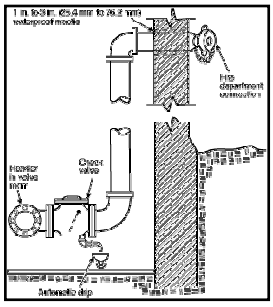
INTERPRETATION

Interpretation #:	Subject of Interpretation:		
INTERP FP-04 (2007)	Fire Department Connection supply sizing.		
Reviewed and Approved By:	Title:	Effective Date:	Revision:
Jerry Rosendahl	State Fire Marshal	July 10, 2007	July 10, 2007

A question has been submitted to the Minnesota State Fire Marshal – Fire Protection Section regarding the proper sizing of the supply piping to the fire department connection (FDC) inlet. In particular, when the FDC is connected to the sprinkler system in a location other than the system riser, how is the piping between the sprinkler system and FDC inlet sized?

13(02) 8.16.2.3 Size: *The size of the pipe for the fire department connection shall be in accordance with one of the following:*
(1) Pipe size shall be a minimum of 4 in. (102 mm) for fire engine connections
(2) Pipe size shall be a minimum of 6 in. (152 mm) for fire boat connections
(3) For hydraulically calculated systems, the fire department connection shall be permitted to be less than 4 in. (102 mm) and no less than the size of system riser, where serving one system riser
(4) A single-outlet fire department connection shall be acceptable where piped to a 3-in. (76-mm) or smaller riser.

13(02) 8.16.2.4.1: *The fire department connection shall be on the system side of the water supply check valve.*



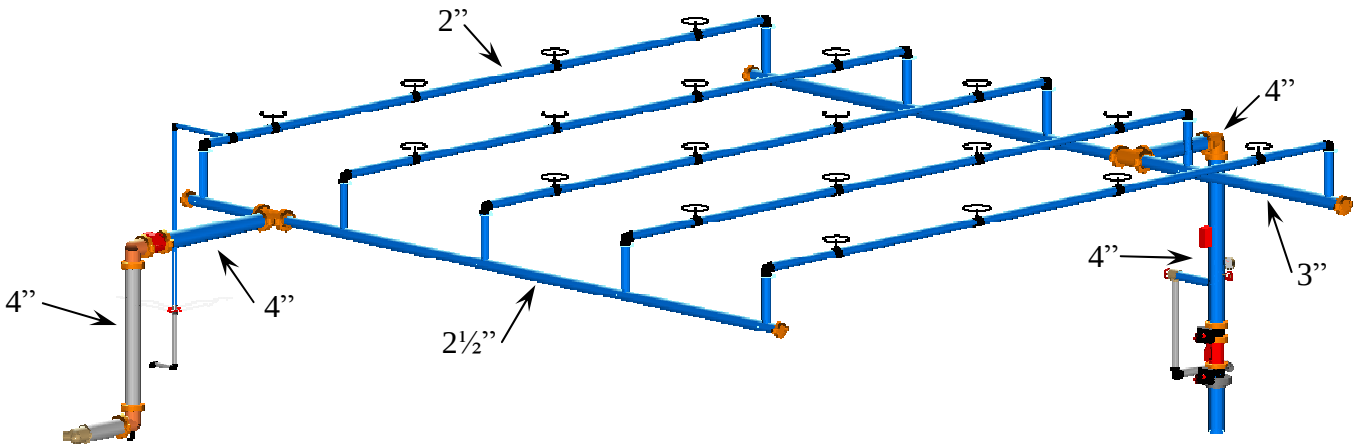
13(02) Figure 8.16.2.1

Answer/Rationale: The fire department connection (FDC) can be thought of as only consisting of the inlet body that is commonly seen protruding from exterior walls or on top of freestanding yard risers. However, the FDC is actually made up of the inlet, check valve, and piping connecting to the sprinkler system riser or main NFPA 13 (2002 edition). Figure 8.16.2.1 illustrates an FDC from the inlet to a system header. NFPA 13 (2002 edition) 8.16.2.4.1 says that the FDC shall be on the system side of the water supply check valve. This provision refers to the inlet, piping, check valve, etc. as being one unit. The sizing of all these components from the connection to the sprinkler system to the inlet shall be determined by NFPA 13 (2002 edition) 8.16.2.3.

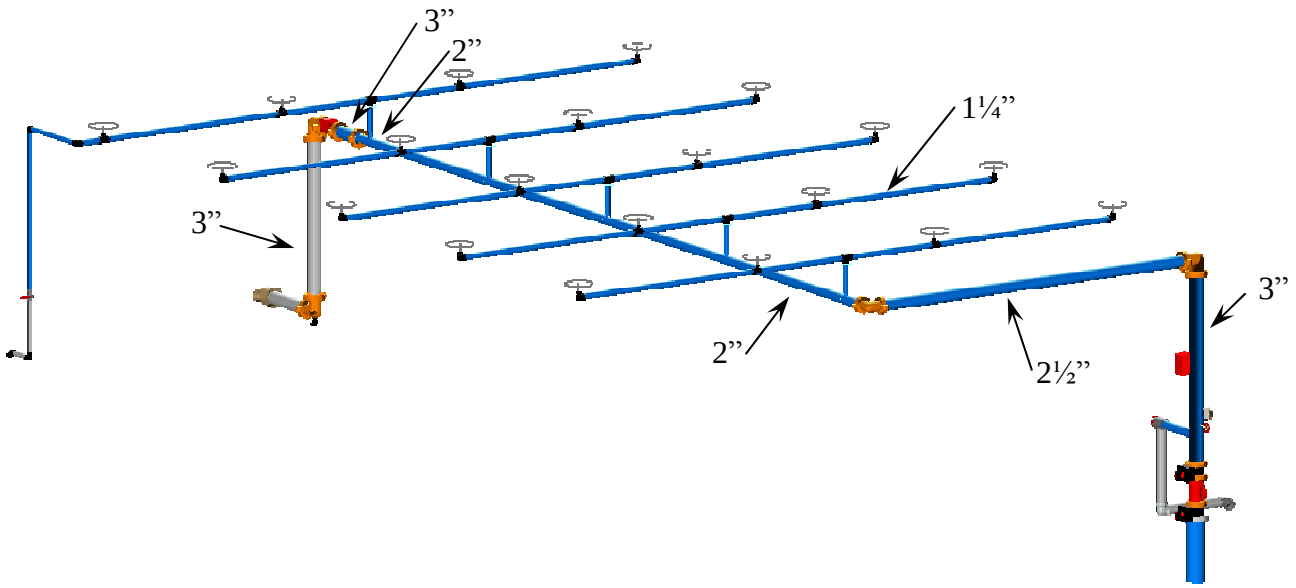
In recent Report on Proposals (ROP) A2006 (13-110 Log #CP111) and Report on Comments (ROC) A2006 (13-96 Log #253) the NFPA 13 Technical Committee affirmed the purpose of the Fire Department Connection is to supplement the water supply, but not necessarily provide the entire sprinkler system demand. Fire department connections are not intended to deliver a specific volume of water. The committee also clarified that the fire department connection shall only connect to main piping on the system it serves and not to branch line piping. (ROP 13-355 Log #557)

The following two examples are typical of the types of arrangements that are allowed.

Example #1: A gridded wet system with a 4” riser, 4” feed main, 3” primary main, 2½” secondary main and 2” branch lines. If the FDC is connected to the system riser, the FDC piping and associated components from the riser to the inlet shall be 4”. If the FDC is connected to the 2½” secondary main, the FDC piping and associated components from the 2½” secondary main to the inlet shall be 4”.



Example #2: A wet tree system with a 3” riser, 2½” feed main, 2” cross main, and 1¼” branch lines. If the FDC is connected to the system riser, the FDC piping and associated components from the riser to the inlet shall be 3”. If the FDC is connected to the 2” cross main, the FDC piping and associated components from the 2” cross main to the inlet shall be 3”.



It is not the SFMD’s position to retroactively cause the removal of existing connections installed by contractors and approved by state or local AHJs acting in good faith.