



# EL DORADO COUNTY REGIONAL FIRE PROTECTION STANDARD

**Fire Department Connection (FDC) & Control Valve Installation**  
STANDARD #D-001 EFFECTIVE 03-24-2009

## **PURPOSE:**

To provide consistent guidelines regarding the installation requirements, identification and location of automatic fire sprinkler system water supply appurtenances.

## **SCOPE:**

Installation of all control valves and fire department connections (FDC) for private fire main systems within El Dorado County.

## **AUTHORITY:**

This standard is in accordance with latest version of NFPA 13, NFPA 24, and the 2007 California Fire Code.

## **REQUIREMENTS:**

1. Fire System Control Valves (PIV's, Wall PIV's, Double Check Valve Detector Assemblies)
  - A. Each sprinkler system shall be provided with a sprinkler control valve to isolate the fire protection system from the water supply. The Double Check Valve Detector Assembly may be used in place of the Post Indicator Valve (see El Dorado Irrigation Districts Specifications).
  - B. Valves provided for each sprinkler system shall be outside indicating. More than one riser may be fed off of one double check valve detector assembly. The number of risers shall be determined by the Local AHJ after reviewing building size and use. If more than one riser is to be installed, each riser shall have a check valve as well as a separate sectional control valve.
  - C. The installation height of the PIV shall be 36" above the adjacent grade to the PIV handle's socket. See El Dorado Irrigation District's specifications, at the end of this document, for the installation height of a double check valve detector assembly.
  - D. There shall be no obstruction that would inhibit access to the devices mentioned in this section (includes plants, trees, fences...).

- E. Protection of the control valves is required when the potential for damage from vehicle traffic may occur. The AHJ shall make the determination if crash protection is required during the plan review but may find protection is needed upon final inspection. See standard E003, Bollard Protector Posts for the installation requirements.
  - F. Working clearance for control valves shall be an unobstructed 3-foot radius around the control valve. Consideration shall be taken as to the height of the plants and vegetation when mature.
  - G. When providing control in a multi-story building, indicating valves may be located within fire resistant stair shafts which provide access to fire department personnel from the exterior, provided: (1) the valve is monitored by the fire alarm system; (2) the valve is recessed into the wall, equipped with a access panel 3' x 3' (or large enough to allow for service of sprinkler riser) fire rated access panel and (3) access panel identified by a metal sign stating "sprinkler control valve 1<sup>st</sup> floor" etc. The sign's lettering shall be white, no less than 2" in height, with a 3/8-inch stroke and with a red background. Stick-on type letters are not permitted.
  - H. Sectional control valves shall be aboveground indicating. The conduit shall be secured to the pipe with stainless steel clamps to protect from damage.
  - I. The PIV shall have a lock suitable in size as to hold the handle down in the locked position.
  - J. Double check valve detection assembly wheel valves shall have a medium duty chain with a breakaway lock securing the valves together.
  - K. Double check valve detection assemblies shall have a thermal protection blanket installed to prevent freezing.
2. Fire Department Connections (FDC's):
- A. Whenever possible, FDC's shall be located on the address side of the street, close to curb face, facing the street.
  - B. FDC's shall not be installed where there is the possibility of injury by falling objects.
  - C. FDC's shall be installed so that the centerlines of the inlets are located at a minimum height of 24" and a maximum height of 36" above the adjacent finish grade.

- D. FDC's shall be located within 50' of a public hydrant on the same side of the street and/or driveway.
- E. FDC's shall be installed on the downstream side of the double check valve detector assembly. The FDC can be installed off of the double check valve detector assembly itself or remotely depending on the location of the fire hydrant and fire apparatus access.

F. Required number of FDC outlets:

The number and size of FDC inlets shall be determined by the fire flow of the sprinkler system and/or standpipe system. Interior hose streams shall be included in the sprinkler demand for determining the number and size of inlets when standpipes and/or hose stations are a part of the sprinkler system.

- (a) Any sprinkler system with a required water flow below 750 gpm requires that the FDC be equipped with (2) 2-1/2 inch female swivel inlets. The threads shall be 2.5-7.5 American National Fire Hose connection screw threads (NH). The riser to the FDC must be a minimum 4" diameter pipe.
- (b) Any sprinkler system with a required water flow greater than 750 gpm requires that the FDC be equipped with (4) 2-1/2 inch female swivel (2.5-7.5 NH) inlets. The riser to the FDC's must be at least 6" diameter pipe. A listed check valve device shall be installed at each inlet in addition to the clapper.

- G. Protection of the FDC is required in accordance with the Fire Department standard for protection posts, E003, when the FDC is subject to impact from vehicular traffic.
- H. For working clearance, an unobstructed radius of 3-feet shall be maintained around the FDC. Consideration shall be taken as to the height of the plants and vegetation when mature.
- I. The FDC shall be painted with Safety White or Red enamel paint. Contact the AHJ for the details.
- J. The FDC shall have metal caps with breakaway tabs installed on each 2-1/2 inch female swivel inlet.
- K. The FDC shall have a debris trap on the horizontal run between the inlets and the 90 degree elbow

3. Signage:

- A. All indicating valves, including PIV's, and FDC's, shall be identified in accordance with this standard and D-002.