

**SAN BERNARDINO COUNTY FIRE PROTECTION DISTRICT
OFFICE OF THE FIRE MARSHAL - COMMUNITY SAFETY**



620 South 'E' Street
San Bernardino, CA 92415-0179
(909) 386-8400

Standard Number

F-4

Revision Date:
July 1, 2021

FIRE PREVENTION STANDARD

POST INDICATOR VALVES AND FIRE DEPARTMENT CONNECTIONS

AUTHORITY

Section 104 of the 2019 California Fire Code (CFC) and Sections 4 and 8 of Ordinance FPD 20-01 of the San Bernardino County Fire Protection District Fire Code (Fire Code) state that the Fire Code Official of the San Bernardino County Fire Protection District (SBCFPD) shall have the authority to adopt policies, procedures, rules, and regulations in order to clarify the application of the Fire Code and to determine requirements not specifically provided for by the Fire Code. For further requirements on this subject, see section 507 of the 2019 California Fire Code, and the 2016 editions of NFPA 13, NFPA 13R, and NFPA 24, as amended. This standard may be modified with the approval of the Fire Code Official.

PURPOSE

The purpose of this standard is to provide minimum requirements and guidelines for the installation of Post Indicator Valves (PIV's) and Fire Department Connections (FDC's) for fire sprinkler systems and onsite fire hydrant systems.

SCOPE

This Standard, in conjunction with the 2016 edition of NFPA 13, NFPA 13R and NFPA 24, shall apply to the design and installation of, and the modification to, all new and existing fire sprinkler systems in commercial and industrial buildings and multi-family dwellings. This Standard and its interpretation is not intended to be applied or enforced where there is any conflict with NFPA standards or the California Fire Code.

DISCLAIMER

These Standards may change without notice. Whenever applicable statutes, regulations and Standards are updated and adopted, the latest shall apply. Please contact the Community Safety Division at (909) 386-8400 to determine if these Standards have changed. These requirements do not exempt any individual from complying with other applicable state, county, or city codes and Standards.

SUBMITTALS

- 1) Submit an application and all required documentation online through the county EZOP website, <https://wp.sbcounty.gov/ezop/>.

NOTE: If the project is in the City of Fontana, please contact (909) 428-8890 for submittal information.

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- 2) The following shall be submitted to the SBCFPD for approval and permit prior to performing any work on any fire alarm system:
 - a) Detailed plans describing the work to be done. (For information on what must be included on plans, see sections below in this Standard and the SBCFD Plan Submittal Checklist.)
 - b) Hydraulic calculations for all design areas (if required.)
 - c) Manufacturer's specification sheets (cut sheets) for all proposed materials and equipment.
 - d) For other submittal requirements, see SBCFPD Standards F-1, F-3 and W-2.
 - e) Any other important details and information as required by this Standard.
 - f) Payment of all appropriate fees.

GENERAL

- 1) Each fire sprinkler system shall have at least one Post Indicator Valve or other indicating control valve as approved by the fire code official, and one Fire Department Connection, unless otherwise required by the California Fire Code, NFPA 13, NFPA 13D, or NFPA 13R.
- 2) The number and locations of all PIV's and FDC's shall be approved by the Fire Code Official, and shall be based on this Standard as well as on the type of construction of the building, the uses and occupancy classifications within the building, and any special hazards being protected.
- 3) A minimum of three (3) feet of clearance of obstructions is required around all PIV's and FDC's. Limited ground cover type vegetation may be allowed with the approval of the Fire Code Official.
- 4) PIV's and FDC's shall be painted OSHA Safety Red or equivalent and maintained painted and in an operable condition by the property owner.

INSTALLATION

- 1) All PIV's and FDC's shall be located in an accessible area, as approved by the Fire Code Official. Additional signage per this Standard may be required by the Fire Code Official for PIV's and FDC's that are located on the sides or rear yard of buildings, or in areas that may be less visible to emergency responders.
- 2) PIV's and FDC's shall be located a minimum of twenty feet (20') from the structure protected or a minimum of ten feet (10') farther from the building than the height of the wall adjacent to the

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connection and valve, whichever is greater. In areas where this is not practical or possible due to site constraints, PIV's or FDC's may be installed closer but not less than three (3) feet from buildings.

- 3) Wall mounted FDCs or PIVs may be used when approved by the Fire Code Official. Wall mounted PIVs or FDCs shall be only installed in walls of non-combustible or fire-resistive construction, located away from building openings, and in an area accessible to emergency responders.
- 4) PIV's and FDC's shall be set back a minimum of three (3) feet from the face of all concrete curbs in a raised planter or similar protected area **(See DIAGRAM F-4.1)** or shall be protected from vehicular damage with bollards or guard posts that comply with the section 312 of the 2019 California Fire Code. Bollards and guard posts shall be painted with high-visibility OSHA safety yellow paint. The distance between a PIV and FDC, when side by side, shall be at least three feet (3').

SPECIFIC REQUIREMENTS FOR FIRE DEPARTMENT CONNECTIONS

- 1) Buildings up to 100,000 square feet in floor area shall install all FDC's with a four-inch (4") riser and two (2), two-and-a-half inch (2 ½") female inlet connections on a "Siamese" style fitting (4" x 2 ½" x 2 ½"). **(See DIAGRAM F-4.2)** Buildings 100,000 sq. ft. or larger in floor area, and any size buildings with a fire protection supply that is boosted by a fire pump, shall install all FDC's with a six-inch (6") riser and with one four-inch (4") and two (2), two-and-a-half inch (2 ½") female inlet connections on a "Siamese" style fitting (6" X 4" X 2 ½" X 2 ½"). **(See DIAGRAM F-4.3)**
- 2) All hose connections on FDC's shall be of National Standard Hose Thread (NH or NST) and shall be provided with threaded plugs (plastic or brass) to protect the FDC connection. Break-away metal caps may be used when the FDC is located in secured areas that are not subject to vandalism. If required by the Fire Code Official because of concerns of vandalism, threaded locking plugs, such as Knox[®] plugs, shall be provided on all inlets.
- 3) All exposed brass components on FDC's shall be secured by with a ¼" x # 20, grade 6, case- hardened steel bolt through the fitting and into the threads of the riser or steel inlet pipe. The head of the bolt shall be filed flush with the FDC fitting. Other equivalent methods of theft protection shall be accepted on a case by case basis, as approved by the Fire Code Official.
- 4) All FDC's shall be provided with a welded flange and either a wafer check or swing check valve. In areas subject to freezing, the check valve shall be located one foot (1') below frost line and shall have a ball drip valve. A bed of gravel shall be provided to allow for proper drainage of the above grade piping. **(See DIAGRAM F-4.4)**



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- 5) All FDC's serving a standpipe system or sprinkler system shall be installed within one-hundred feet (100') of a fire hydrant that takes supply from a public circulating water main, unless otherwise approved by the Fire Code Official. This distance shall be along an approved unobstructed path of travel, such as along vehicle access roads. (See **DIAGRAM F-4.5**)
- 6) Each building and each point of connection to the public water system shall have a separate FDC, installed in an approved location. FDC's shall be located at the property entrance or onsite near the building(s) protected. When approved by the Fire Code Official, FDCs may serve multiple buildings. All FDCs serving multiple buildings shall be clearly identified with signs provided per the 'Signage' section below.
- 7) FDCs shall be installed as an individual appliance or, when approved by the Fire Code official, they shall be installed as part of, or attached to, a Double Detector Check Assembly (DDCA.) (See **DIAGRAM F-4.6** and SBCFPD Standard W-2.) FDC's installed on DDCA's must meet all applicable requirements of this Standard.
- 8) FDC's shall serve only automatic fire sprinkler systems and standpipe systems and shall not be connected to onsite fire hydrants unless approved by the Fire Code Official.

IDENTIFICATION AND SIGNAGE

- 1) Signage shall be provided on all PIV's and FDC's in accordance with this standard and the current editions of NFPA 13 and NFPA 24. (See **DIAGRAM F-4.7**)
- 2) Identification signs on PIV's and FDC's shall be red or white in color with engraved one (1) inch block type contrasting white or red letters. Signs shall measure a minimum of ten (10) inches wide by five (5) inches high and be made of metal not less than ten (10) gauge (3 mm) in thickness. The sign shall be fastened by means of a "U" bolt, or other similar secure method
- 3) Identification signs shall indicate the following information:
 - a) The street address, number, letter or other means of identification, of the building(s), served, as applicable.
 - b) The area(s) systems (s) or zone(s) of a building served, if applicable
 - c) The type of system the PIV or FDC serves, i.e. sprinklers, standpipe, sectional valves etc. All nomenclature shall be consistent.



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- d) Where the system demand pressure exceeds one hundred and fifty (150) psi., the sign shall indicate the required design pressure of the system served.

EXISTING SYSTEMS

- 1) When additions or upgrades are made to existing buildings with automatic sprinkler systems, the PIV's and FDC's shall conform to this standard when required by the Fire Code Official.
- 2) Existing breakaway caps on FDC's shall be replaced with threaded plugs and chains when deemed necessary by the Fire Code Official.
- 3) Existing FDC's that are vandalized or removed shall comply with this standard when replaced.



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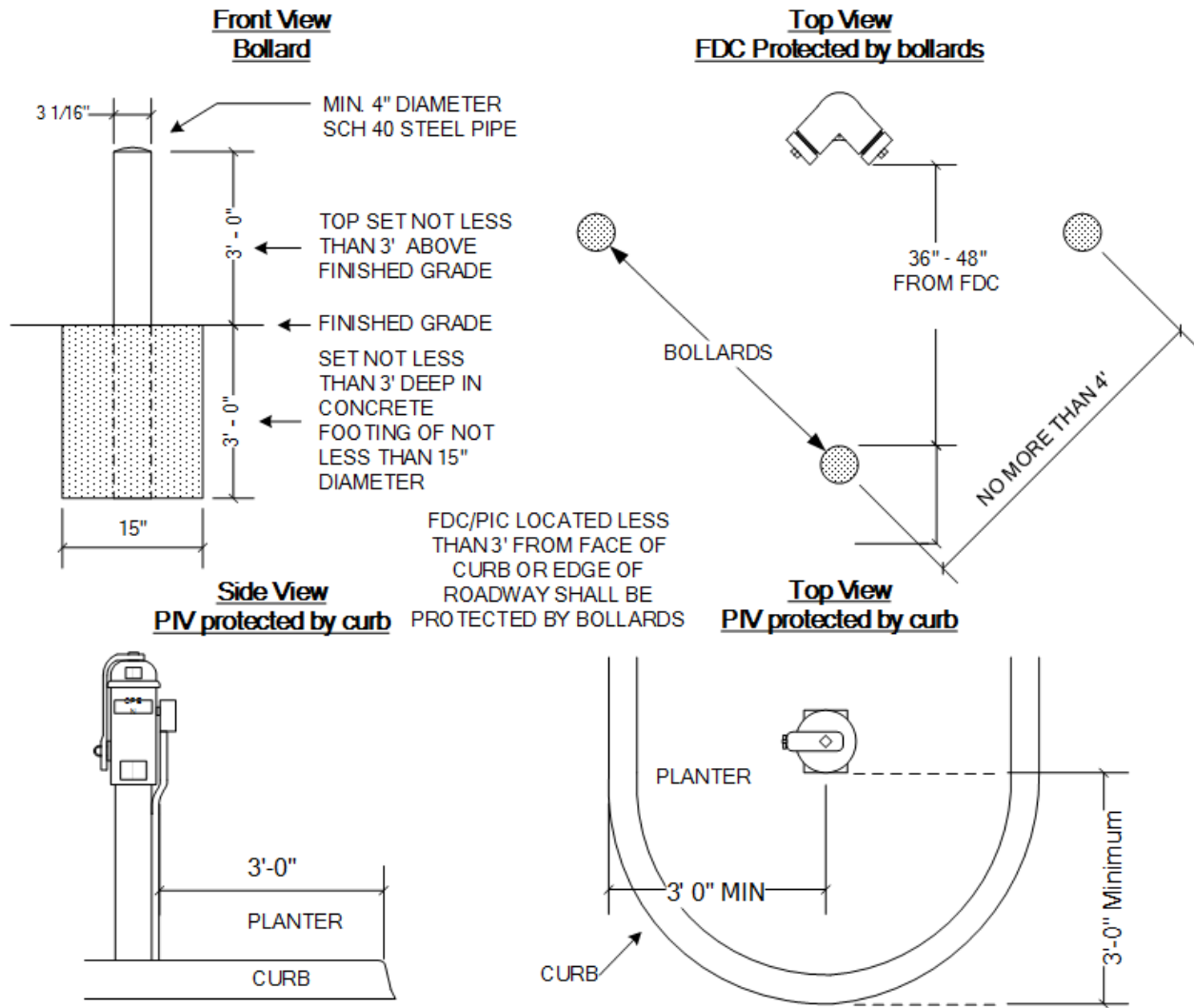
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DIAGRAM F-4.1: PIV AND FDC PROTECTION



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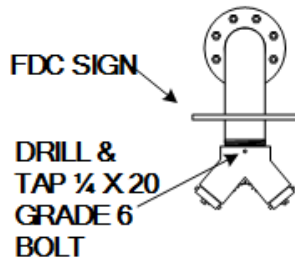
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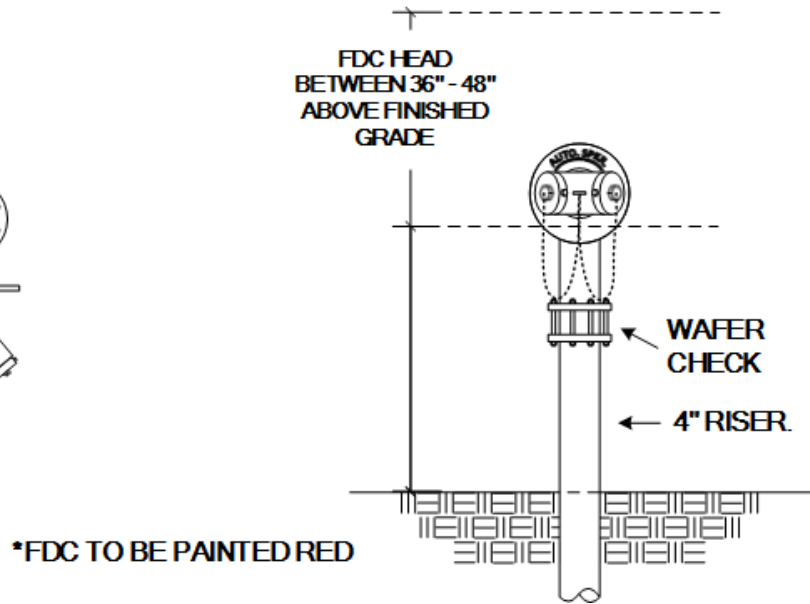
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DIAGRAM F-4.2: SINGLE 4" X 2 1/2" X 2 1/2" FDC DETAIL

TOP VIEW



FRONT VIEW





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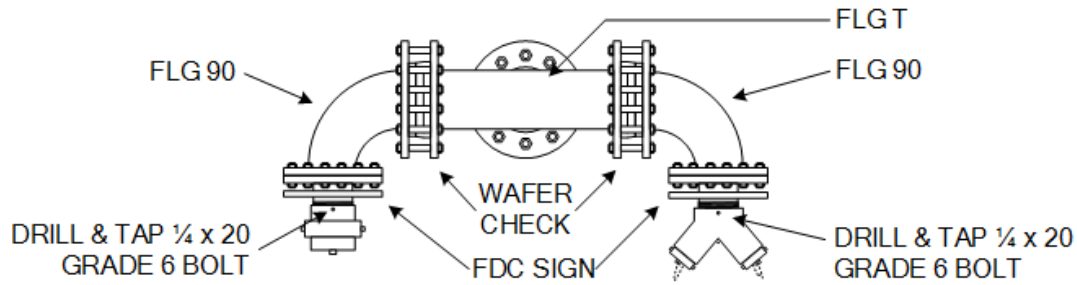
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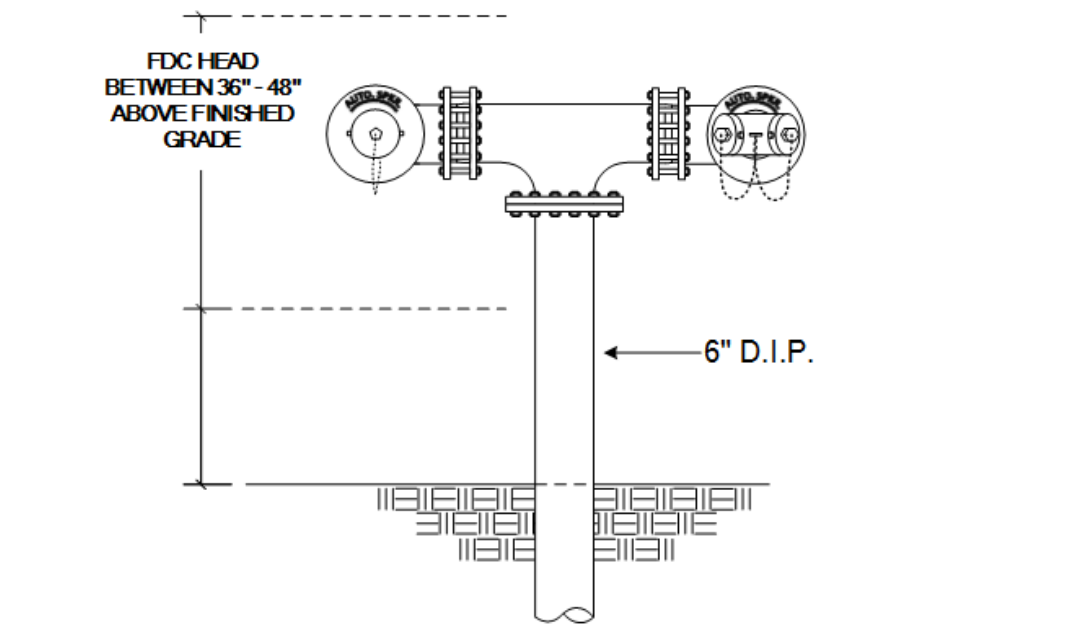
DIAGRAM F-4.3: COMBINED 6" X 4" X 2 1/2" X 2 1/2" FDC DETAIL

FDC TOP VIEW



**FDC TO BE PAINTED RED*

FDC FRONT VIEW





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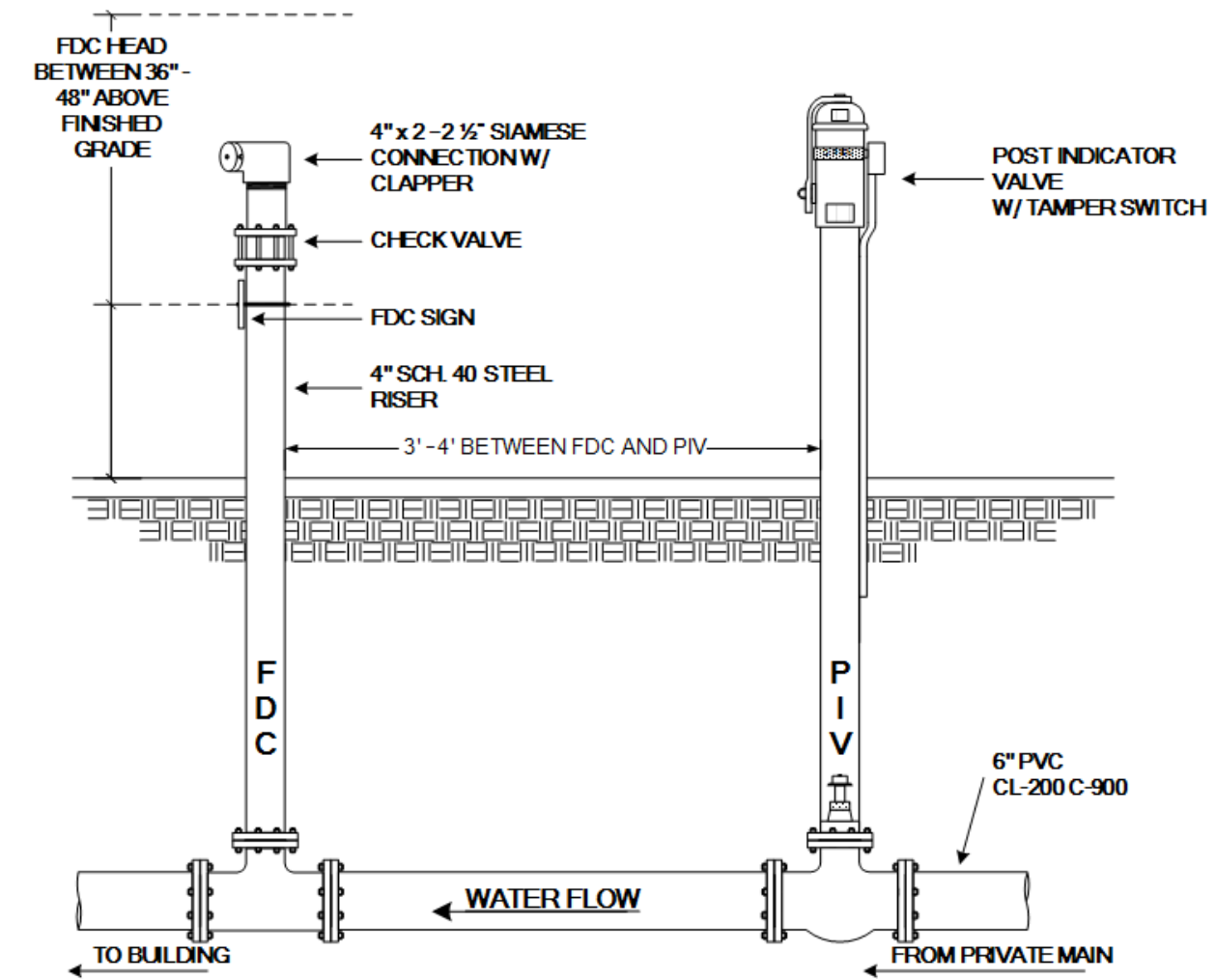
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DIAGRAM F-4.4: FDC CHECK VALVE DETAIL



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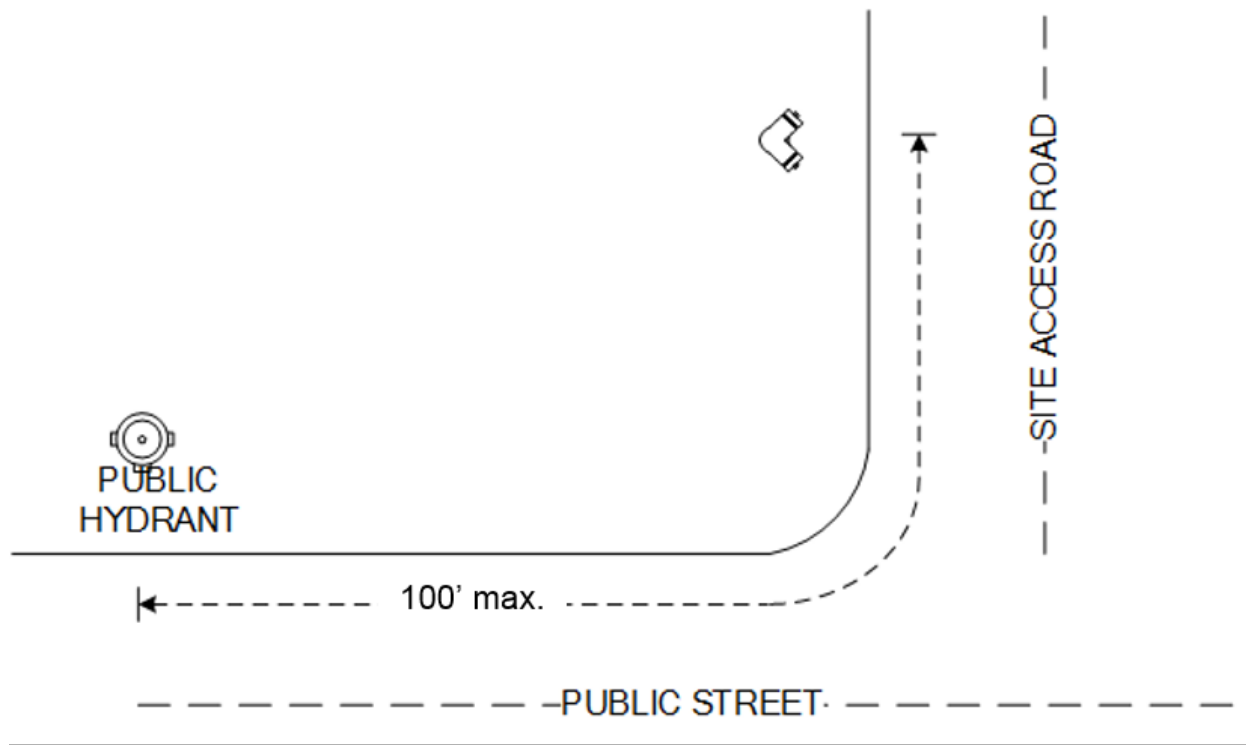
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DIAGRAM F-4.5: FIRE HYDRANT AND FDC DETAIL





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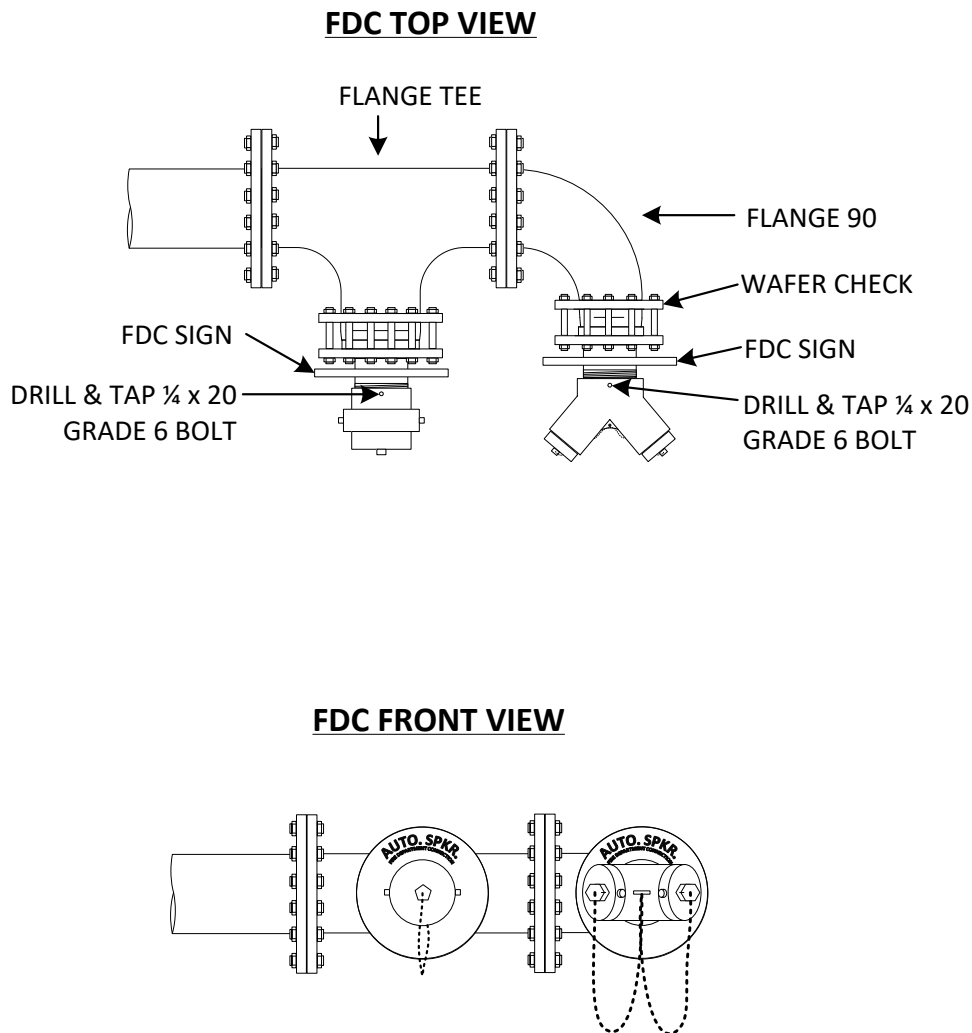
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DIAGRAM F-4.6: FDC ON DOUBLE DETECTOR CHECK VALVE ASSEMBLY





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DIAGRAM F-4.7: FDC IDENTIFICATION SIGNAGE DETAIL

