SUISUN CITY FIRE DEPARTMENT
Fire Prevention Division
621 Pintail Drive · Suisun City, CA 94585
Tele. (707) 421-7205 · Fireprevention@suisun.com

FIRE PREVENTION DIVISION GUIDE

Underground Piping for Private Fire Hydrants and Sprinkler Supply Lines

This guide is applicable to all private underground piping for fire hydrants, fire sprinkler systems, and all associated appurtenances within the jurisdiction of the Suisun City Fire Department. This guideline is not applicable to underground piping serving fire sprinkler systems designed in accordance with NFPA 13D and some systems designed in accordance with NFPA 13R.

The requirements set forth in this guide are based on the current edition of the California Fire Code, NFPA 13, and NFPA 24 standards as adopted and amended by the State of California and Suisun City. Projects may be subject to additional requirements not stated herein upon examination of actual site and project conditions or disclosure of additional information.

1. **GENERAL REQUIREMENTS**
   - 1.1. Private fire service main working plans shall be submitted on a **separate** page from the other utilities.
   - 1.2. Installation work shall be done by fully experienced and responsible contractors. Contractors shall be appropriately licensed in the State of California to install private fire service mains and their appurtenances.
   - 1.3. Suisun City Fire Department jurisdiction starts at the downstream side of the last valve on the detector check assembly. Verify design and installation requirements for the portion of the system preceding this point with Suisun-Solano Water Authority (SSWA).
   - 1.4. Sectional valves shall be located so that no more than five fire appurtenances are affected by shut-down of any single portion of the fire service main. Each fire hydrant, fire sprinkler system riser, and standpipe riser shall be considered a separate fire appurtenance.
   - 1.5. Vegetation shall be selected and maintained in such a manner as to allow immediate location of and unobstructed access to; all hydrants, control valves, fire department connections, and other devices or areas used for firefighting purposes.
   - 1.6. Impact protection shall be provided for all appurtenances where subject to mechanical damage. I.E., located in open areas that are not behind curbs and / or raised sidewalks. Protection provided shall not interfere with the appurtenance operation. Posts shall be installed as noted on impact protection detail of this standard.
   - 1.7. All tees, plugs, caps, bends and hydrant branches shall be restrained against movement by utilizing pipe clamps and tie rods, thrust blocks, locked mechanical or push on joints, or other approved methods. Thrust blocks shall be concrete and sized according to plans and poured against compacted soil. Thrust block calculations and dimensions shall be included on plans.
   - 1.8. A minimum three-foot clearance shall be provided around all hydrants and above ground control valves. Front of FDCs shall be free of any obstructions.
   - 1.9. Any future modification to the approved private underground piping system is subject to review, inspection, and approval by the Suisun City Fire Department.

1.10. A metal sign with raised letters not less than 1 inch in size shall be mounted on all fire department connections and indicate the type of system for which the connection is intended.

1.11. All above ground valves controlling water supply shall be electrically supervised (monitored).

1.12. All materials shall be approved/listed for use on fire service systems.

2. DOCUMENT SUBMITTAL REQUIREMENTS

2.1. Plans for all private underground piping for private hydrants and/or sprinkler supply line(s) shall be submitted to the Suisun City Fire Department for review and approval prior to installation. Submittals and revisions shall be made by any of the following methods:

2.1.1. Electronic (Preferred): Electronic packet may be e-mailed to fireprevention@suisun.com Submission must include plans and applicable supporting documentation (i.e. spec sheets). Files that are too large to submit via e-mail must be submitted utilizing a file share service such as, but not limited to, Drop Box, Google Drive, etc.

2.1.2. Paper Hardcopies: Hardcopies could be mailed or hand delivered to Suisun City Fire Department Fire Prevention Division, 621 Pintail Drive, Suisun City, CA 94585. Submission must include 3 sets of plans, and supporting documentation (i.e. spec sheets).

2.2. A Shared Utility and Maintenance Agreement shall be recorded at the public recorder's office having jurisdiction and provided to the Suisun City Fire Department for all private fire hydrant systems serving multiple parcels or properties.

2.3. Water flow test results from nearest public water supply shall be provided. Test results will be used to ensure required fire flow is available to the site and for fire sprinkler design purposes. Test results shall not exceed 6 months from design date.

2.4. Plans shall be legible, scaled to nationally recognized standards, and printed as a blue or blackline drawing. Pen & ink changes to plans are not permitted.

2.5. Information on Title Page shall include the following:

2.5.1. Applicable codes and standards used for the system design (e.g., 2019 CFC, 2019 CBC, 2016 NFPA 24, etc.).

2.5.2. Project location, including the full legal address of the facility, and building number(s) if applicable.

2.5.3. Contractor's name, telephone number, address, and California State Contractor's license number and classification. If piping plan is designed by a P.E., the plan shall contain the name, license number, and classification of the installing contractor, along with the P.E. wet stamp. If contractor information is not available at the time the plans are submitted, information must be provided to the Suisun City Fire Department prior to installation.

2.6. Information on remaining plan set shall include the following:

2.6.1. Location of public mains and all public hydrants within 300 feet of the site.

2.6.2. Location and type of all valves and connections. Specify type for each post indicator valve (PIV), key gate valve, system control valve, double detector check (DDC) assembly, outside stem and yoke (OS&Y), FDC, etc.

2.6.3. Pipe size, class, and type; specify lined or unlined if applicable.

2.6.4. Applicable installation details embedded on plans. Details are located at the end of this document.

2.6.5. Location and size of all thrust blocks.

2.6.6. Bollard location and detail (as applicable).

2.6.7. Detail of the spigot piece and/or in-building riser turn and embedment material.

2.6.8. Type of fittings/joints, methods of connection and rod size.

3. PIPE AND TRENCH REQUIREMENTS

3.1. Class 150 will be used as a minimum, and Class 200 pipe shall be used where water pressure exceeds 150 psi. The use of galvanized pipe is prohibited when a portion of the pipe is buried.

3.2. Pipe running under a building or building foundation shall not contain mechanical joints. When a pipe runs under footings or foundations, a single corrosion resistant stainless steel pipe unit assembly shall be used. Pipe shall terminate 18 to 24

inches from an exterior wall and 6 inches above the finished floor. A 2-inch minimum clearance (annular space) shall be provided where the pipe passes through the floor or wall.

3.3. All ferrous pipe, bolts and fittings used for underground connections shall be cleaned and thoroughly coated with asphalt or other corrosion retarding material after assembly and prior to wrapping. Wrapping used shall be either 8-mil linear low density (LLD) or 4-mil high-density, cross-laminated (HDCL) polyethylene sheets or tubes in accordance with American Water Works Association Standard C105/A21.5-05, Polyethylene Encasement for Ductile-Iron Pipe Systems.

3.4. All runs of non-metallic water pipe shall have a No. 10 gauge solid soft drawn copper locator wire taped on top of the pipe to facilitate locating the pipe at a later date. The wire shall be stubbed up inside each valve box. Continuity test shall be conducted on each splice at all locations.

3.5. A strand of 3" wide non-detectable blue tape marked "WATER" shall be placed 12 inches above all piping.

3.6. Backfill shall be well tamped in layers or puddle under and around pipes to prevent settlement or lateral movement. Backfill shall consist of clean fill sand or pea gravel to a minimum 6 inches below and minimum 12 inches above pipe and shall contain no ashes, cinders, refuse, organic matter, or other corrosive materials. Other backfill materials and methods are permitted where designed by a registered professional engineer and approved by the enforcing agency.

3.7. Pipe shall be buried at least 36" below finished grade where subject to loading (e.g., driveways, parking lots) and at least 30" elsewhere.

4. HYDRANT REQUIREMENTS

4.1. Hydrant supply piping shall be a minimum of six inches in diameter.

4.2. Hydrants shall be listed with two 2 ½ inch outlets and one 4 ½ inch outlet. 4½ inch outlet shall face the fire department access road.

4.3. Control valve shall be installed within 20 feet of each hydrant. Valves shall be clearly marked and shall not be placed in locations that may not be readily accessible (i.e. parking stalls).

4.4. Fire hydrant shall be CLOW 960 with factory applied "Bright White" epoxy coating. Field applied touch-up may be required after installation and testing.

4.5. Fire hydrant shall be installed per Suisun-Solano Water Authority / SID Detail W-7. Break off riser shall be installed with break-away bolts and nuts on the upper flange with the bolts facing up. Standard bolts and nuts shall be used for the lower flange.

4.6. Hydrants shall be within 8 feet of the approved fire department access road and not less than 40 feet from the building being protected.

4.7. All fire hydrants shall have a "Blue Reflective Pavement Marker" indicating their location. In locations where hydrants are situated on corners, blue markers shall be installed on both approaches fronting the hydrant.

5. POST INDICATING VALVE (PIV) AND FIREDEPARTMENT CONNECTION (FDC) REQUIREMENTS

5.1. PIV (when one is required) shall be installed 32" to 42" above finished grade (to the top of the valve) and be provided with a handle secured in place with a break-away lock.

5.2. FDCs shall be installed 18" – 48" above finished grade measured to the center of cap.

5.3. FDC installation shall be by one of the following three options (see detail). Note: Consult with Suisun City Fire Department to determine what configuration will be required or better suited. **1.)** Attached to DDC assembly (preferred when no on-site hydrants and fire line is only supplying fire sprinkler system) **2.)** Attached to fire sprinkler riser through wall (preferred when fire line is supplying fire sprinkler system ***and*** on-site hydrants). This configuration shall be dependent on fire sprinkler riser location and distance from fire location. **3.)** Remote FDC and PIV assembly.

5.4. Remote PIVs shall be installed not less than 40' from the building.

5.5. When not readily apparent which building and or area a PIV and / or FDC serves, identifying markings shall be provided. Signage shall be made of permanent weather resistant red plastic or metal with a minimum 2 inch white letters or

numbers identifying the address, portion of the building, or building letter/number as applicable. Sign shall be securely attached to the PIV or FDC stem. FDCs and PIVs shall be painted OSHA safety red.

5.6. Where the FDC is not visible to approaching fire apparatus, the FDC shall be indicated by an approved sign mounted on the street front or on the side of the building. Sigh shall have the letters "FDC" not less than 6 inches high and the words in letters not less than 2 inches. For example: FDC IN REAR, or FDC with an arrow indicating the location.

5.7. Check valves shall be accessible for 5-year inspection. If located underground, check valve shall be installed within a meter can/valve box and in a fashion to prevent circular water flow during fire ground pumping operations.

5.8. Remote FDC connections shall be located at the nearest point of fire apparatus accessibility or at a location approved by the AHJ; and arranged so that hose lines could be connected without interference.

5.9. The FDC shall contain a minimum of two female thread 2½ inch inlets. When sprinkler system or standpipe demand is greater than 500 gpm four female thread 2½ inch inlets shall be provided.

5.10. FDC must be within 50 feet of a fire hydrant. FDC installed in a "yard" shall have 12" x 12" x 4" concrete pad placed at the base to provide additional stability.

5.11. The FDC shall discharge into the system on the discharge side of the pump if a pump is present.

6. INSPECTION REQUIREMENTS

6.1. The following inspections are required for underground piping serving fire sprinkler systems and/or private hydrants: 1) Pre-pour inspection; 2) Restraint inspection; 3.) Visual and Hydro inspection; 3) Flush inspection. Inspections shall be scheduled at least 48 hours (two business days) in advance. Copy of approved plans must be on site at time of inspection for inspector review. Failure to cancel a scheduled inspection by 5:00 pm the day prior or not having approved plans will result in a failed inspection and subject a re-inspection fee. Inspections could be scheduled via the Inspection Line at (530) 661-5857, Monday-Friday, 8:00 am – 5:00 pm or via e-mail at fireprevention@suisun.com

6.2. **Pre-pour inspection*:*** Thrust block excavation shall be completed; but thrust blocks shall not be poured. All pipe shall be in place and exposed for visual inspection. Pipe shall be laid on a minimum six-inch bed of clean sand, pea gravel or quarry fines. Trench shall be of a sufficient depth to allow the required cover above the pipe. Ferrous pipe and fittings shall be wrapped and tightly taped to inhibit water infiltration. Bolts and ferrous joints, pipe, and fittings shall be coated with asphalt or other corrosion retarding material.

6.3. **Visual / Hydro Testing:** Thrust blocks shall be in place and cured. Pipe shall be center-loaded with clean sand to prevent uplift, but all joints shall remain exposed. The system shall be hydrostatically tested at 200 psi (or 50 psi over maximum static pressure, whichever is greater) for a duration of at least two hours. If the inspector is not available to witness the initial pressurization, and preapproved by the AHJ, a date and time stamped photo of the marked pressure gauge, with pump disconnected, may be provided.

6.4. **Flush Inspection:** All portions of the underground system shall be flushed to remove debris prior to connection to overhead piping. Flush shall be through at least the same diameter as the pipe being flushed. Hose or pipes shall be restrained to prevent injury or damage. De-chlorination, water containment and/or discharge shall be the responsibility of the contractor. Note: The flush and hydro inspections may be scheduled concurrently.

6.5. In addition to ensuring all conditions of this guide have been met, the following items will be required as part of the building project final.

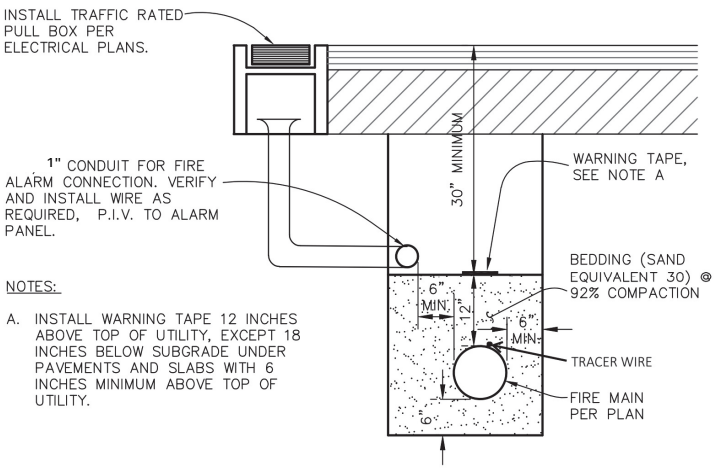
6.5.1. Contractor's Material and Test Certificate for Underground Piping form shall be signed by the installing contractor and owners' representative. A copy of this form shall be provided to the Fire Department prior to final acceptance of the underground work.

6.5.2. All system valves being fully closed and fully opened under working pressure is witnessed.

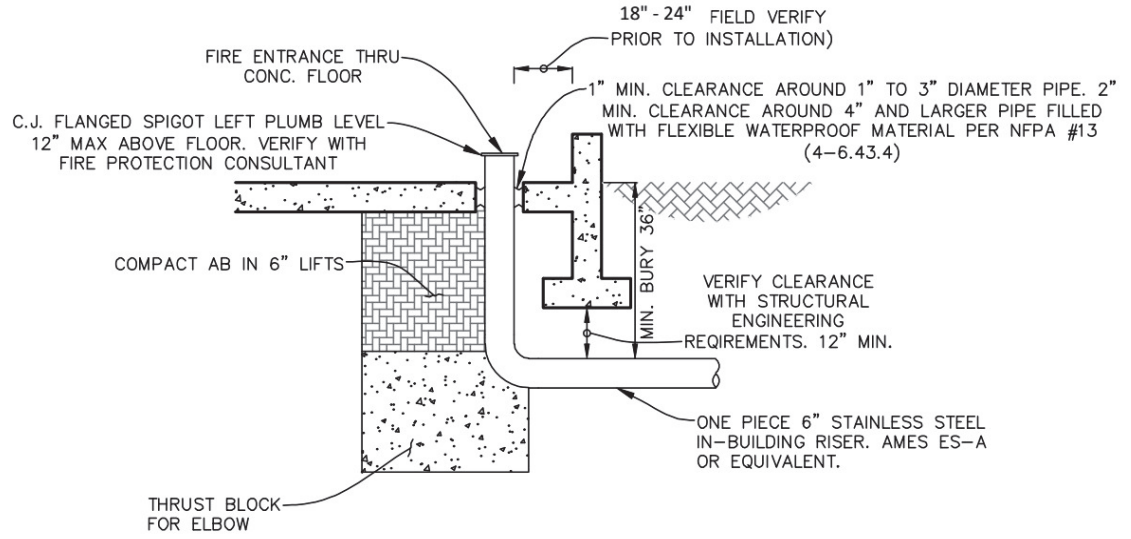
6.5.3. The hydrant flow test was witnessed, graphed, and documented. The results document the static pressure, residual pressure, and available GPM at 20 PSI residual pressure.

Suisun City Fire Department Details

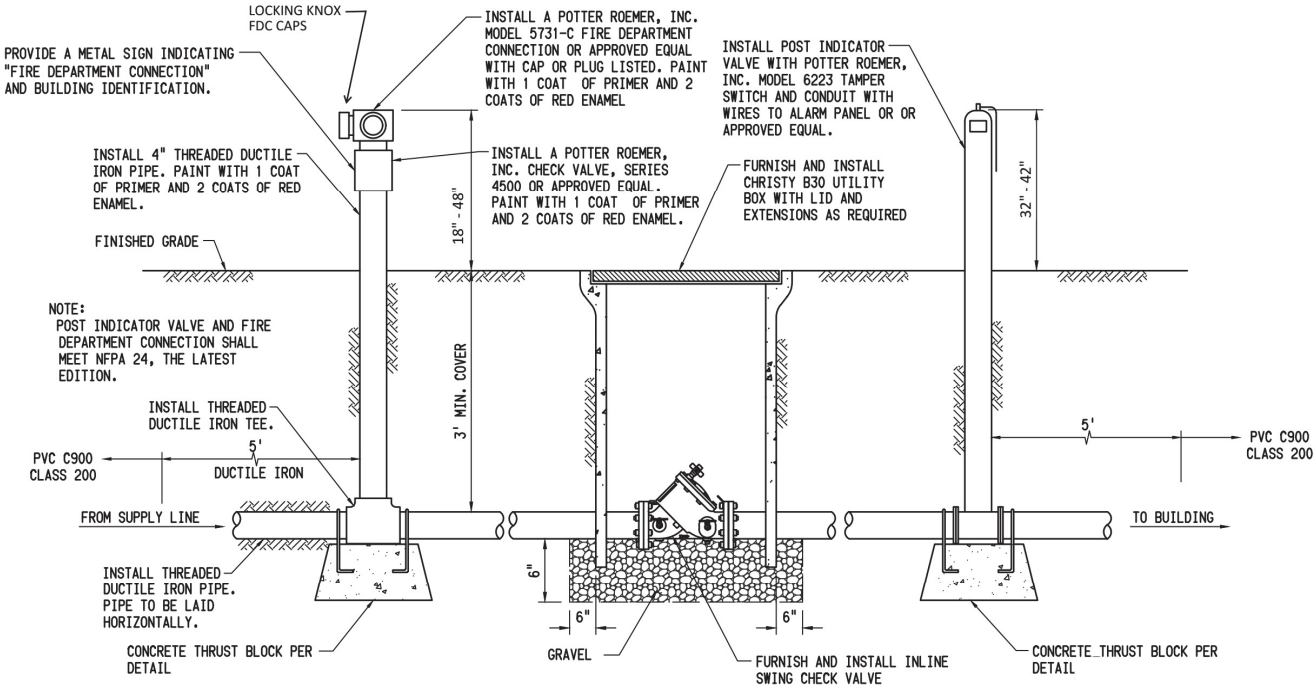
Note:. fire hydrant, backflow, etc. fall under the authority of Suisun – Solano Water Authority



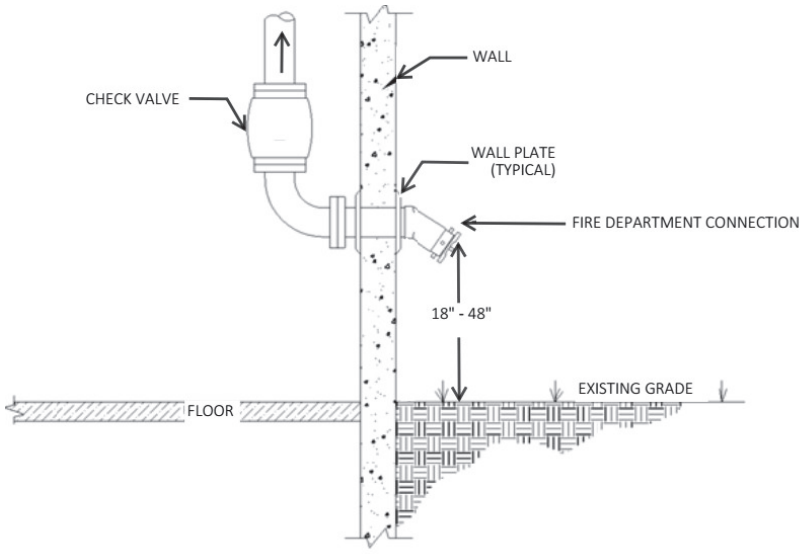
FIRE SERVICE TRENCH



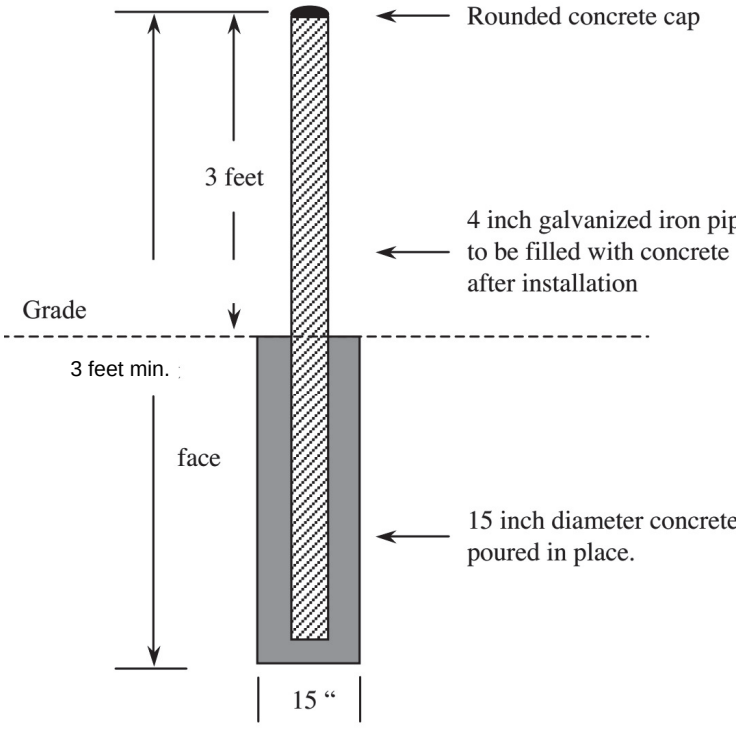
FIRE RISER UNDERGROUND FLOOR PENETRATION



REMOTE PIV, FDC AND CHECK VALVE ASSEMBLY

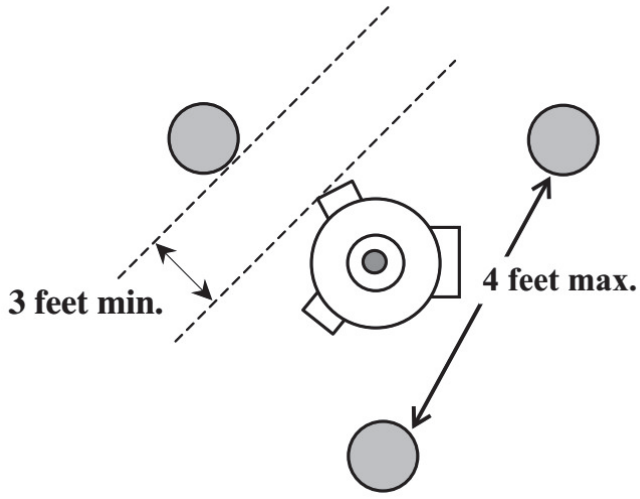


FDC / CHECK VALVE DETAIL



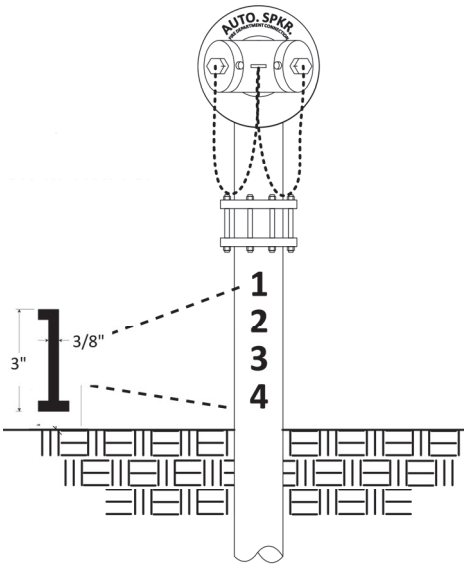
BOLLARD INSTALLATION

Bollards shall be **three** (3) feet minimum from the face of fire hydrant. All orifices shall be unobstructed.



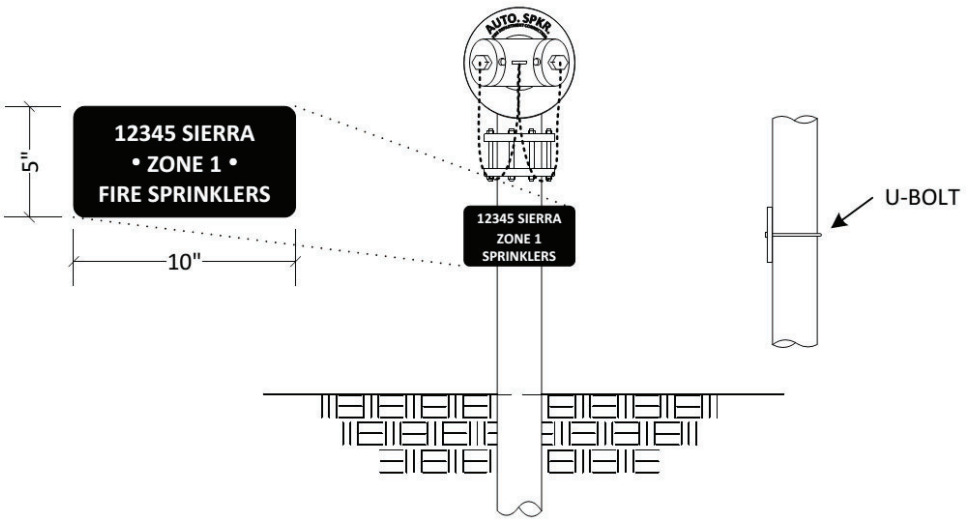
BOLLARD LOCATIONS

Identification



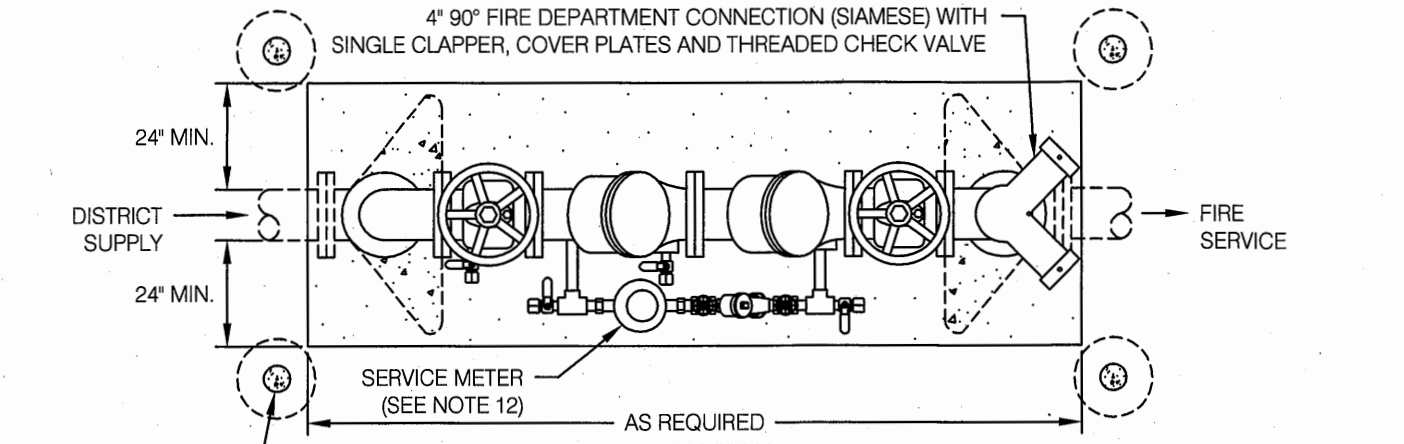
STENCIL DETAIL

***STENCILING APPLIES TO FDC AND PIV**

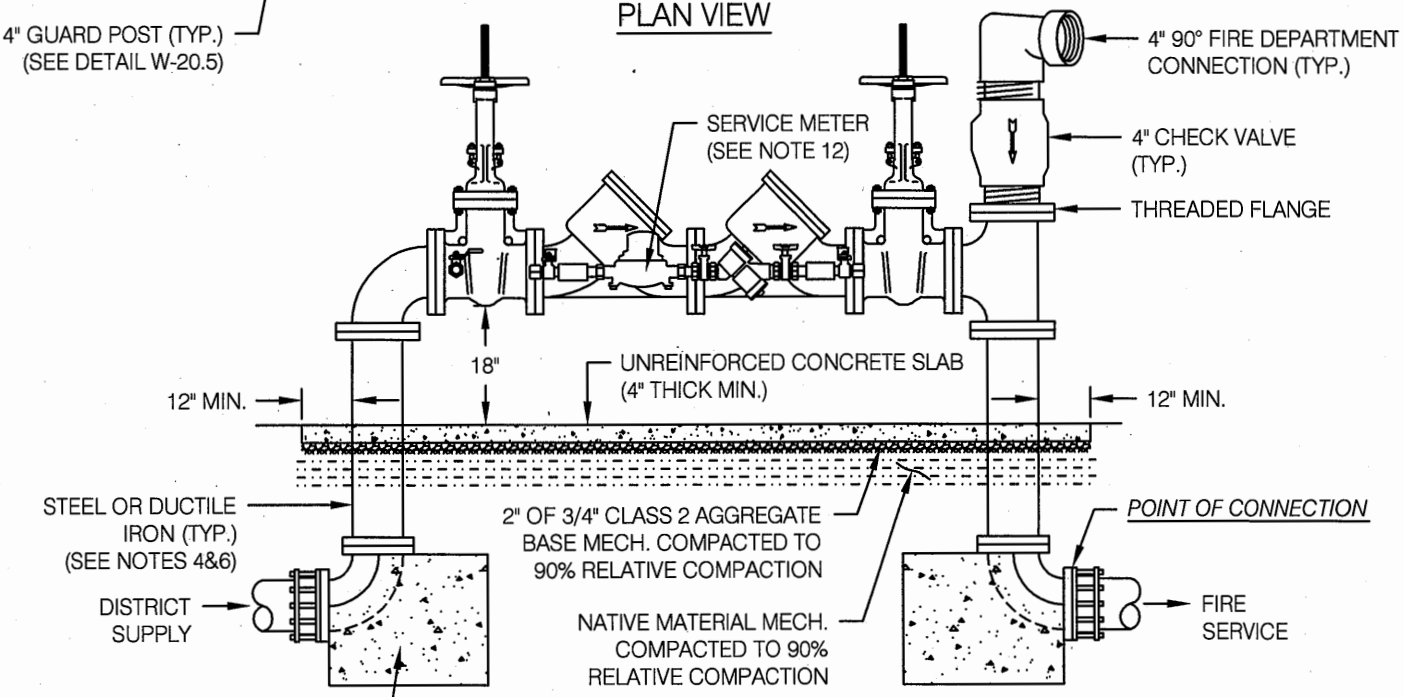


SIGN DETAIL

***SIGNAGE APPLIES TO FDC AND PIV**



PLAN VIEW



PROFILE

(GUARD POSTS NOT SHOWN FOR CLARITY)

NOTES:

1. ALL BACKFLOW PREVENTERS SHALL BE FROM THE APPROVED LIST FROM THE FOUNDATION FOR CROSS CONNECTION CONTROL AND HYDRAULIC RESEARCH AT THE UNIVERSITY OF SOUTHERN CALIFORNIA. THEY SHALL BE TESTED BY THE DISTRICT PRIOR TO ACTIVATION.
2. BACKFLOW PREVENTER MUST BE CHAINED OPEN AND HAVE TAMPER SWITCHES INSTALLED FOR SPRINKLER SYSTEMS.
3. FIRE DEPARTMENT CONNECTION SHALL CONSIST OF TWO 2-1/2" FEMALE CONNECTIONS, UNLESS OTHERWISE SPECIFIED, WITH METAL COVER PLATES ONLY, AND MUST BE FM/UL APPROVED WITH STAMPED MARKINGS ON THE DEVICE.
4. ALL STEEL PIPE SHALL BE 1/4" WALL MINIMUM AS PER AWWA C-200; LINED AND COATED WITH FUSION BONDED EPOXY AS PER AWWA C-213, 20 MILS MINIMUM.
5. ALL STEEL FLANGES SHALL BE CLASS D AS PER AWWA C-207.
6. ALL DUCTILE IRON PIPE AND FITTINGS SHALL MEET AWWA C-110 & C-153, CLASS 150. THE INTERIOR SHALL BE MORTAR LINED AS PER AWWA C-104 AND EXTERIOR SHALL HAVE A COAL TAR COATING AS PER AWWA C-203.
7. ALL NUTS AND BOLTS BELOW GROUND SHALL BE POLYETHYLENE ENCASED AS PER AWWA C-105 OR TAPE WRAPPED AS PER AWWA C-209, 20 MILS MINIMUM IN BOTH CASES.
8. BACKFLOW PREVENTER ASSEMBLY SHALL BE PROPERLY PREPARED AND PAINTED WITH "VISTA GREEN" INDUSTRIAL EPOXY PAINT AFTER FINAL TESTING BY THE DISTRICT. FIELD APPLIED TOUCH-UP MAY BE REQUIRED AFTER INSTALLATION.
9. FIRE DEPARTMENT CONNECTION AND CHECK VALVE SHALL BE PROPERLY PREPARED AND PAINTED WITH "YELLOW" INDUSTRIAL EPOXY PAINT. FIELD APPLIED TOUCH-UP MAY BE REQUIRED AFTER INSTALLATION
10. DOUBLE CHECK DETECTOR ASSEMBLY SHALL HAVE A FREEZE PROTECTION BLANKET PROVIDED AND INSTALLED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. BLANKET DESIGN DRAWINGS CAN BE OBTAINED FROM THE DISTRICT ENGINEER.
11. AT THE CONTRACTOR'S EXPENSE, THE DISTRICT MAY REQUIRE A PROTECTIVE ENCLOSURE WHICH MAY INCLUDE RIGID INSULATION.
12. METER FOR THE DOUBLE CHECK DETECTOR ASSEMBLY SHALL BE SENSUS MODEL SR-EB II.

SOUTH COAST WATER DISTRICT SINCE 1948

NOTE: CALL U.S.A. AT LEAST 48 HOURS PRIOR TO EXCAVATION 1-800-642-2444

REFER TO THE STANDARD SPECIFICATIONS

DOUBLE CHECK DETECTOR ASSEMBLY INSTALLATION

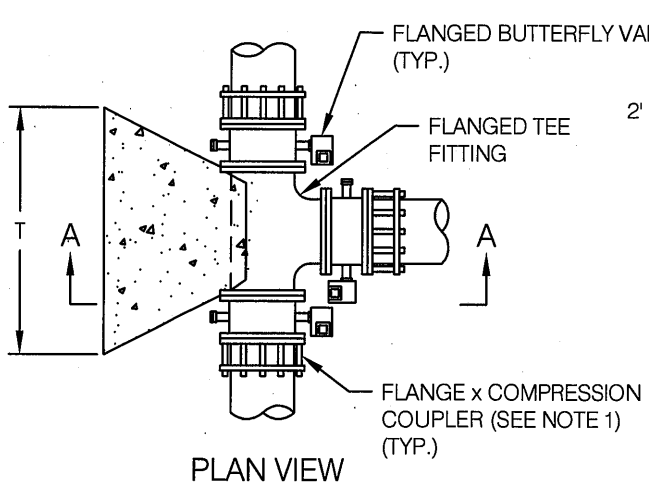
DETAIL W-20

APPROVED BY: _____

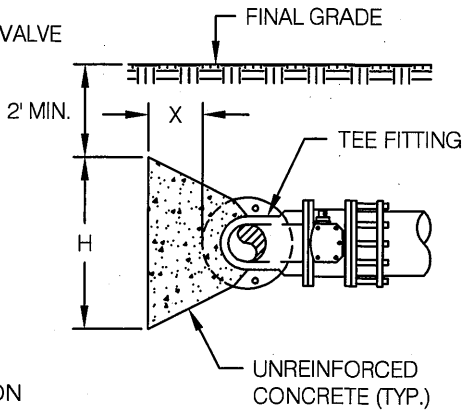
DIRECTOR OF ENGINEERING — RCE #66517 — 7-18-12 DATE

REVISION 3 7-18-12

PIPE SIZE	TEES		
	H	T	X
4"	1.5'	1.5'	1'
6"	1.5'	3'	1'
8"	2.5'	3.5'	1.5'
10"	3'	4'	1.5'
12"	3'	6'	1.5
14"	4'	5.5'	1.5'
16"	4.5'	5.5'	1.5'
18"	5'	5.5'	1.5'
20"	5'	6.5'	1.5'



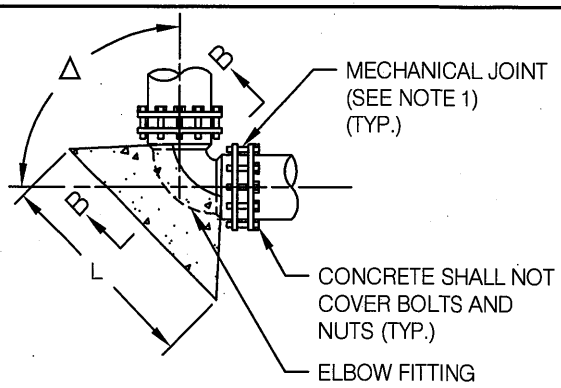
PLAN VIEW



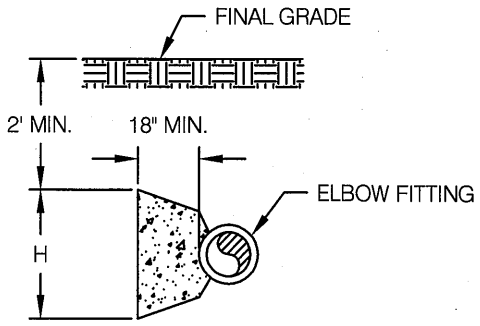
SECTION A-A

TEES

HORIZONTAL BENDS MINIMUM DIMENSIONS										
PIPE SIZE	BENDS (Δ)									
	11¼°		22½°		45°		60°		90°	
	H	L	H	L	H	L	H	L	H	L
4"	n/a	n/a	0.75'	1'	1.5'	1'	1.5'	1.5'	1.5'	2'
6"	1'	1'	1'	1.5'	1.5'	2.5'	1.5'	3'	2'	3'
8"	1'	1.5'	1.5'	2'	2'	3'	2.5'	3.5'	2.5'	4.5'
10"	1.5'	1.5'	2'	2.5'	3'	3'	3'	4'	3.3'	5'
12"	1.5'	2'	2.2'	3'	3'	4.5'	3'	5.5'	4'	6'
14"	2'	2.5'	3'	3'	3.5'	5'	4'	5.5'	4.5'	7.5'
16"	2'	3'	3'	4'	4.5'	5'	5'	6'	5.3'	8'
18"	2'	3.5'	3.5'	4.5'	5'	6'	5.5'	7'	6'	9'
20"	3'	3.5'	3.5'	5'	6'	6'	6'	8'	7'	9.5'



PLAN VIEW



SECTION B-B

BENDS

NOTES:

1. FLANGE BY COMPRESSION COUPLERS MAY BE FLANGE BY MECHANICAL JOINT OR FLANGED COUPLING ADAPTER.
2. FITTINGS SHALL BE EITHER FLANGED OR MECHANICAL JOINT TYPE.
3. ALL FLANGED OR MECHANICAL JOINT TEES AND BENDS SHALL BE DUCTILE IRON (AWWA C-110 OR C-153) CLASS 150.THE INTERIOR SURFACES SHALL BE CEMENT MORTAR LINED PER AWWA C-104 AND THE EXTERIOR SURFACES SHALL BE COAL TAR COATED PER AWWA C-203 OR FUSION BONDED EPOXY LINED AND COATED (AWWA C-116).
4. ALL BELOW GROUND NUTS, BOLTS AND MISCELLANEOUS STEEL SHALL BE POLYETHYLENE ENCASED AS PER AWWA C-105 OR TAPE WRAPPED PER AWWA C-209, 20 MILS MINIMUM IN BOTH CASES.
5. ALL THRUST BLOCKS SHALL BE CAST AGAINST UNDISTURBED NATIVE MATERIAL OR APPROVED BACKFILL MECHANICALLY COMPACTED TO 95% RELATIVE COMPACTION. COMPACTION SHALL BE TESTED BY AN OUTSIDE AGENCY AND THE RESULTS SUBMITTED TO THE ENGINEER FOR APPROVAL.
6. THE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI. ALL CEMENT SHALL BE TYPE II PORTLAND CEMENT WITH A MINIMUM OF 5 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.
7. FOR DESIGN PRESSURES GREATER THAN 150 PSI, THRUST BLOCK DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

SOLANO IRRIGATION DISTRICT SINCE 1948

NOTE: CALL U.S.A. AT LEAST 48 HOURS PRIOR TO EXCAVATION 1-800-642-2444

REFER TO THE STANDARD SPECIFICATIONS

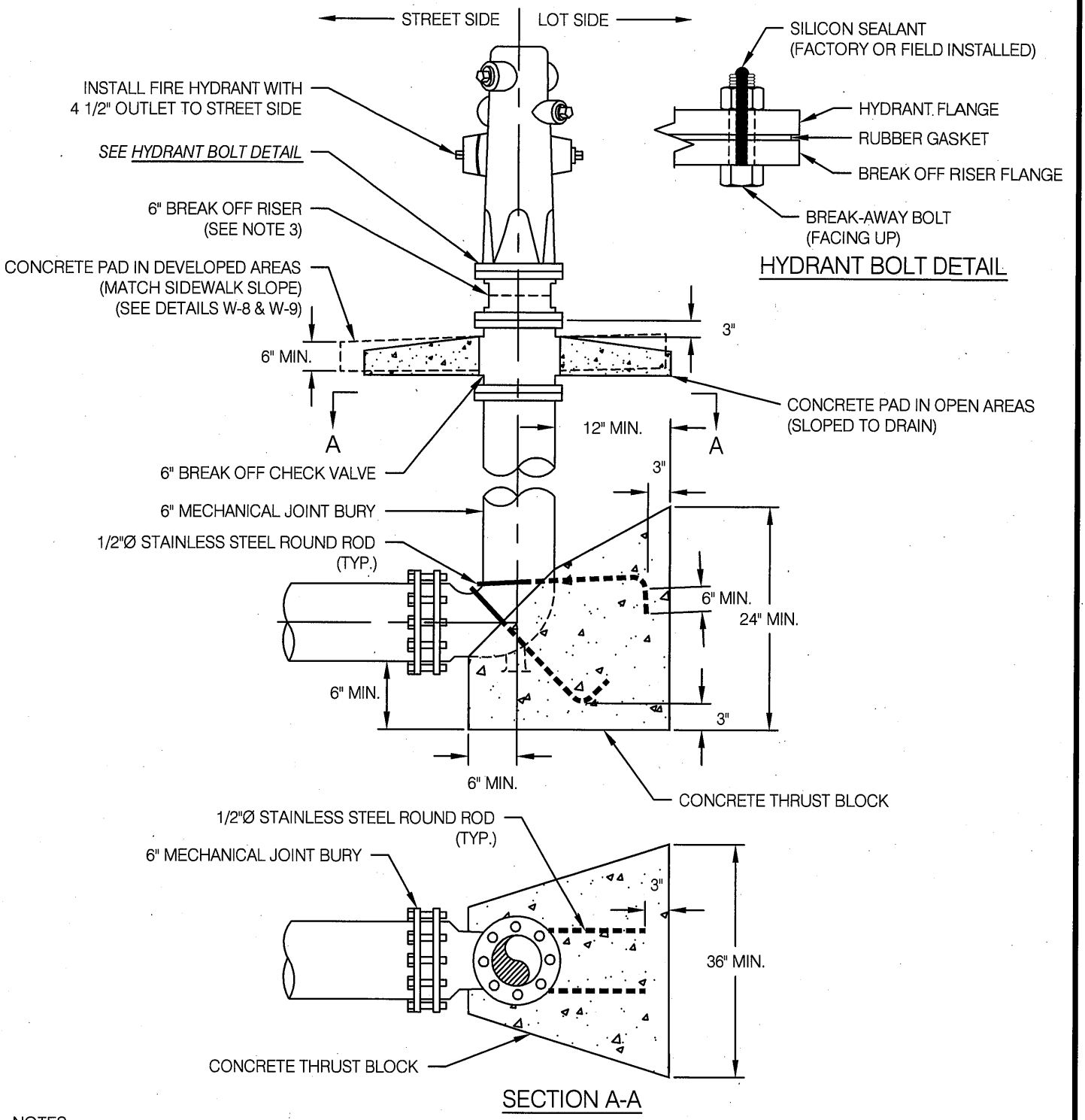
FITTINGS & THRUST BLOCKS FOR HORIZONTAL BENDS AND TEES

DETAIL W-3

APPROVED BY:

DIRECTOR OF ENGINEERING RCE #66517 DATE 7-18-12

REVISION 3 7-18-12



SECTION A-A

NOTES:

1. FIRE HYDRANT SHALL BE CLOW 960 WITH FACTORY APPLIED "BRIGHT WHITE" EPOXY COATING. FIELD APPLIED TOUCH-UP MAY BE REQUIRED AFTER INSTALLATION AND TESTING.
2. ALL EXPOSED METAL SHALL BE PROPERLY PREPARED AND PAINTED WITH "BRIGHT WHITE" INDUSTRIAL EPOXY PAINT. FIELD APPLIED TOUCH-UP MAY BE REQUIRED AFTER INSTALLATION AND TESTING.
3. BREAK OFF RISER SHALL BE INSTALLED WITH BREAK-AWAY BOLTS AND NUTS ON THE UPPER FLANGE WITH THE BOLTS FACING UP. STANDARD BOLTS AND NUTS SHALL BE USED FOR THE LOWER FLANGE.
4. ALL BELOW GROUND NUTS, BOLTS, AND MISCELLANEOUS STEEL SHALL BE POLYETHYLENE ENCASED AS PER AWWA C-105 OR TAPE WRAPPED AS PER AWWA C-209, 20 MILS MINIMUM IN BOTH CASES.
5. THE CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI. ALL CONCRETE SHALL HAVE A MINIMUM OF 5 SACKS TYPE II PORTLAND CEMENT PER CUBIC YARD OF CONCRETE.
6. HYDRANT LATERAL SHALL BE INSTALLED AND BACKFILLED AS PER DETAIL W-1. VALVE FOR HYDRANT LATERAL SHALL BE INSTALLED PER DETAIL W-10.

SOLANO IRRIGATION DISTRICT SINCE 1948

NOTE: CALL U.S.A. AT LEAST 48 HOURS PRIOR TO EXCAVATION 1-800-642-2444

REFER TO THE STANDARD SPECIFICATIONS

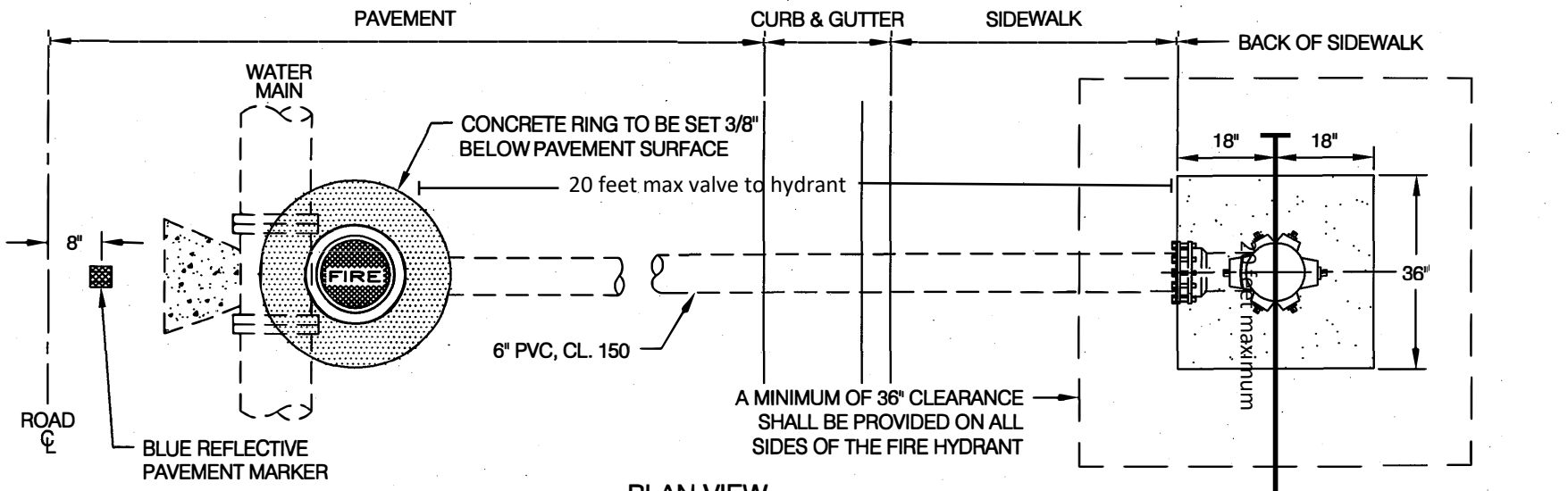
FIRE HYDRANT DETAIL

DETAIL W-7

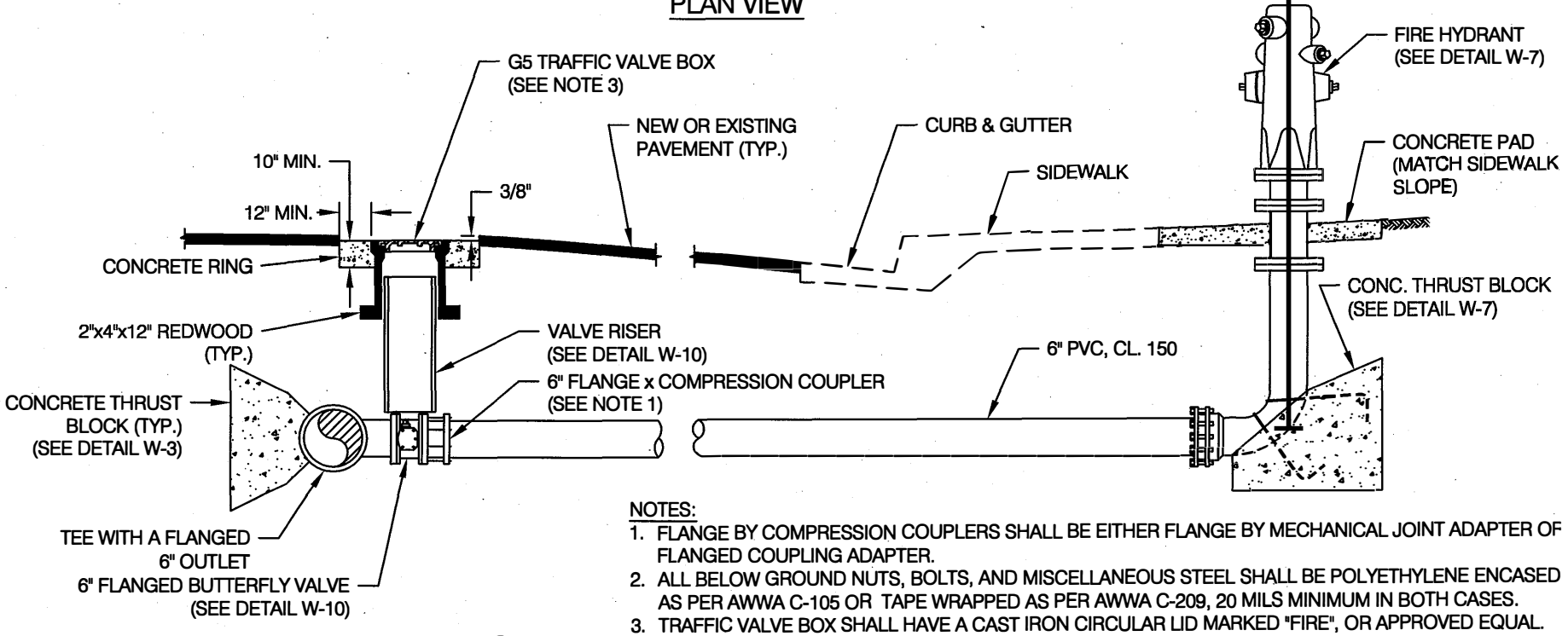
APPROVED BY:

DIRECTOR OF ENGINEERING — RCE #66517 — 7-18-12 DATE

REVISION 3 7-18-12



PLAN VIEW



PROFILE

NOTES:

1. FLANGE BY COMPRESSION COUPLERS SHALL BE EITHER FLANGE BY MECHANICAL JOINT ADAPTER OF FLANGED COUPLING ADAPTER.
2. ALL BELOW GROUND NUTS, BOLTS, AND MISCELLANEOUS STEEL SHALL BE POLYETHYLENE ENCASED AS PER AWWA C-105 OR TAPE WRAPPED AS PER AWWA C-209, 20 MILS MINIMUM IN BOTH CASES.
3. TRAFFIC VALVE BOX SHALL HAVE A CAST IRON CIRCULAR LID MARKED "FIRE", OR APPROVED EQUAL.
4. FIRE HYDRANT LATERAL SHALL BE PERPENDICULAR TO THE WATER MAIN AND THE HYDRANT IN-LINE WITH THE STREET VALVE.
5. SEE DETAIL W-7 FOR HYDRANT INSTALLATION REQUIREMENTS.
6. SEE DETAIL W-10 FOR VALVE INSTALLATION REQUIREMENTS.

DETAIL W-8

REVISION 3 7-18-12

FIRE HYDRANT INSTALLATION FOR DEVELOPED AREAS - ATTACHED SIDEWALK

APPROVED BY: DIRECTOR OF ENGINEERING RCE #66517 DATE 7-18-12

NOTE: CALL U.S.A. AT LEAST 48 HOURS PRIOR TO EXCAVATION 1-800-642-2444

REFER TO THE STANDARD SPECIFICATIONS

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FIRE HYDRANT INSTALLATION FOR DEVELOPED AREAS - DETACHED SIDEWALK

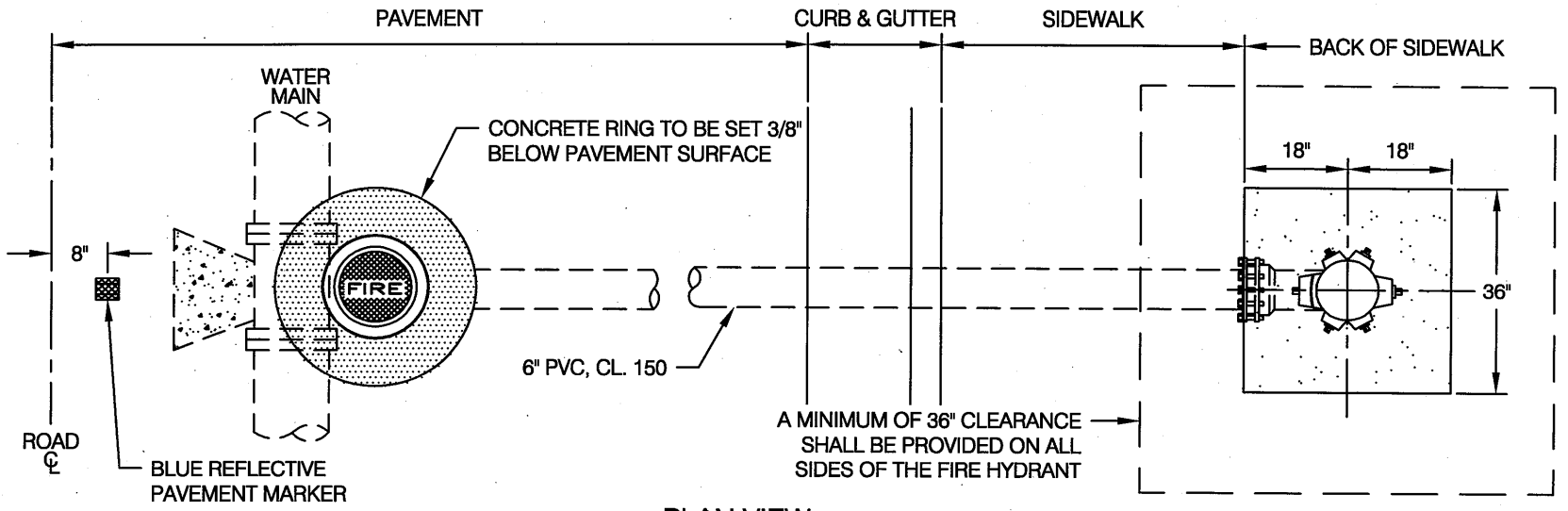
APPROVED BY:
DIRECTOR OF ENGINEERING

RCE #66517

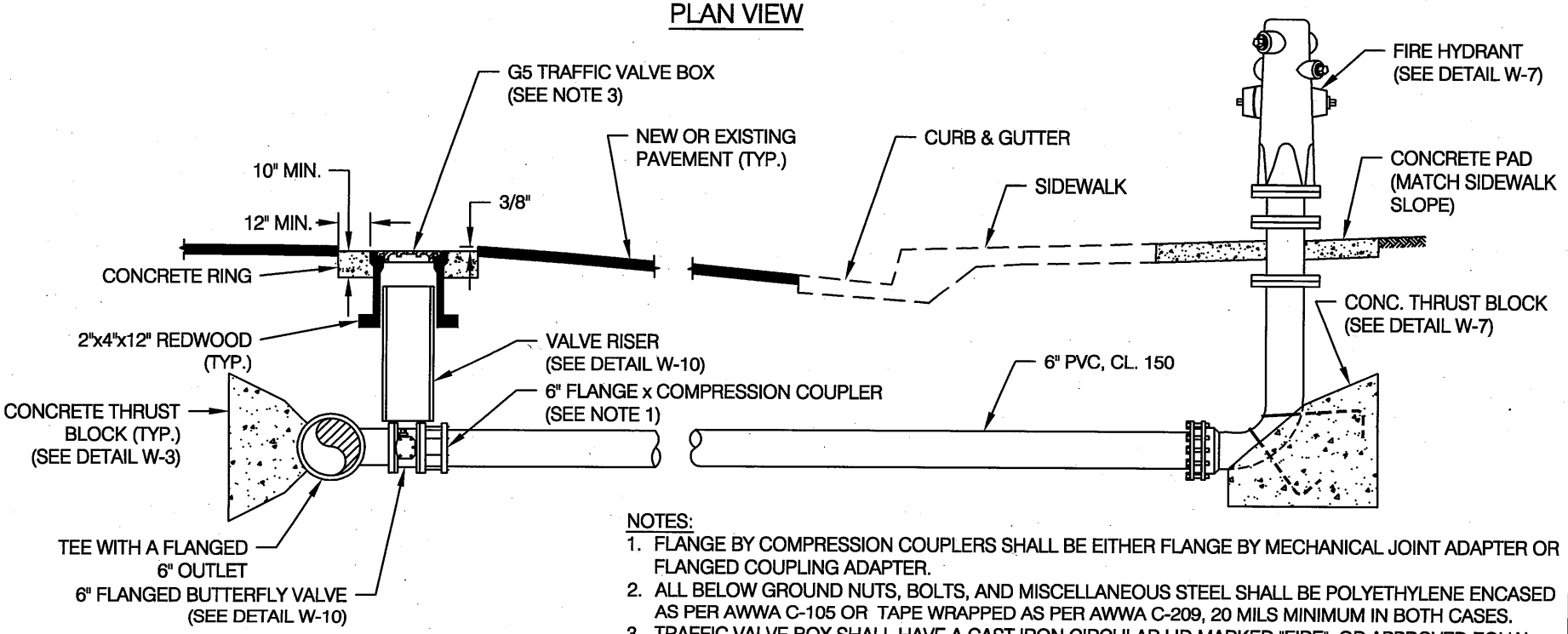
7-19-12
DATE

DETAIL W-8.5

REVISION 3 7-18-12



PLAN VIEW



PROFILE

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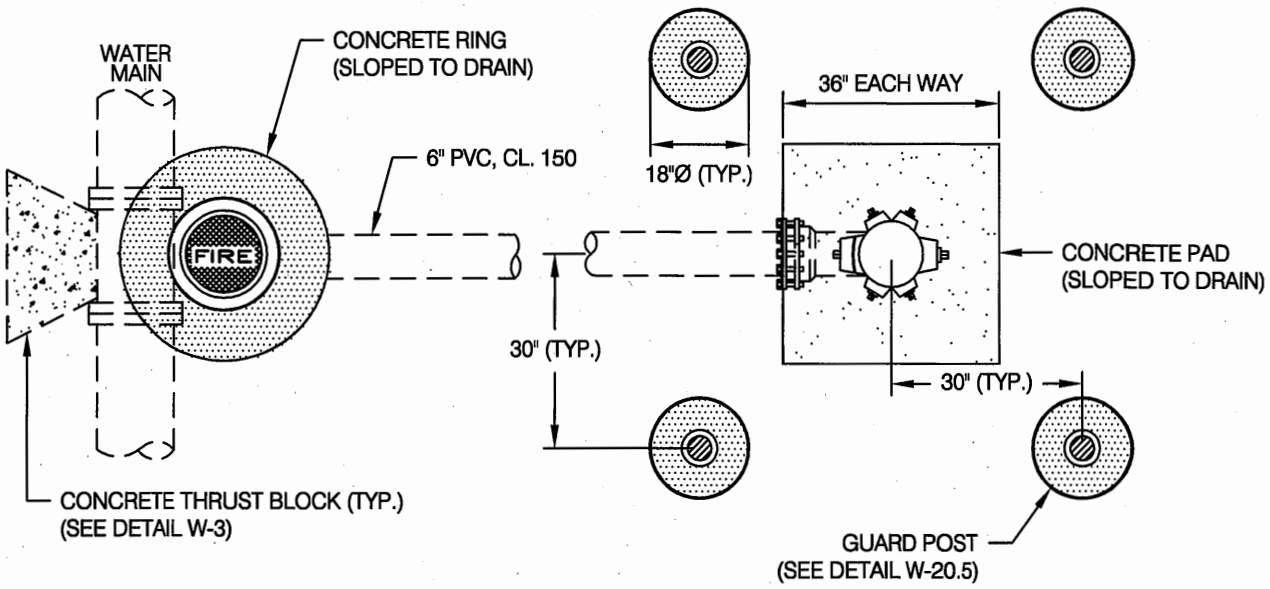
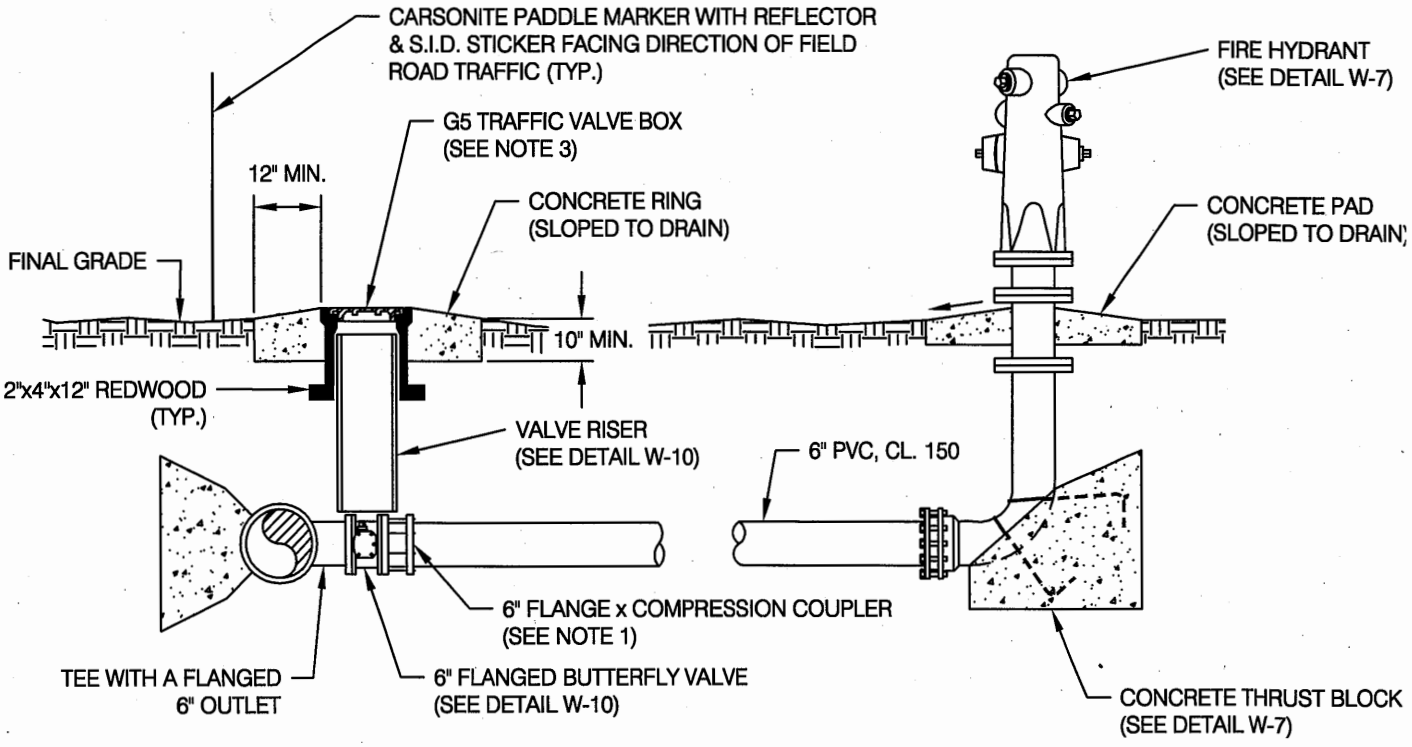


PLAN VIEW



PROFILE

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SOLANO IRRIGATION DISTRICT SINCE 1948	NOTE: CALL U.S.A. AT LEAST 48 HOURS PRIOR TO EXCAVATION 1-800-642-2444 REFER TO THE STANDARD SPECIFICATIONS	FIRE HYDRANT INSTALLATION FOR OPEN AREAS	DETAIL W-9
		APPROVED BY: _____ DIRECTOR OF ENGINEERING RCE #66517	DATE 7-18-12
			REVISION 3 7-18-12