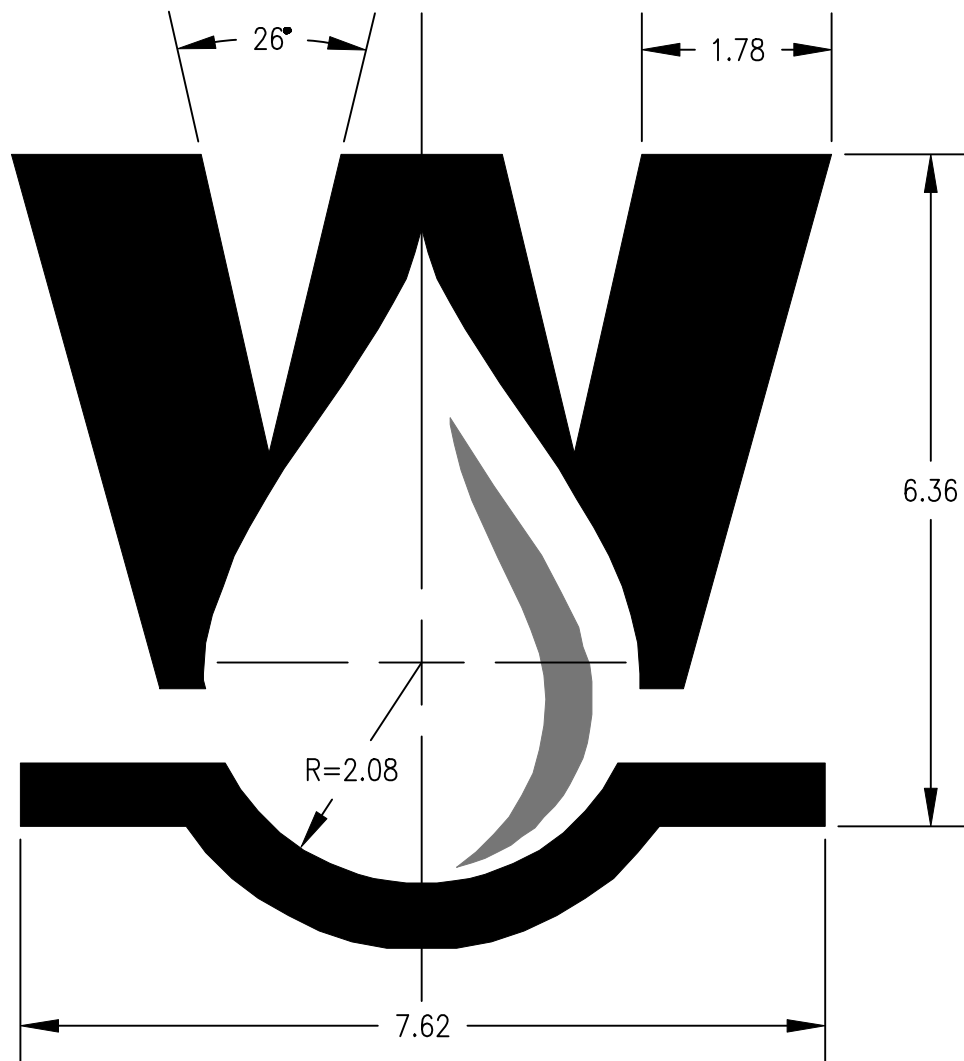




## STANDARD DETAILS



SEPTEMBER 2023

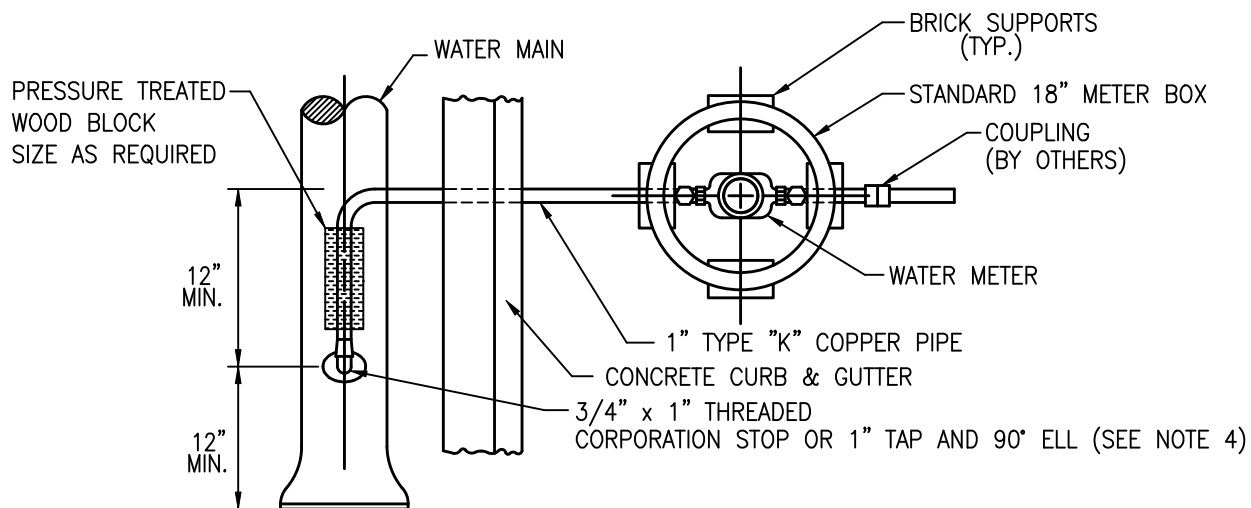
# FAIRFAX WATER - STANDARD DETAILS

## Table of Contents

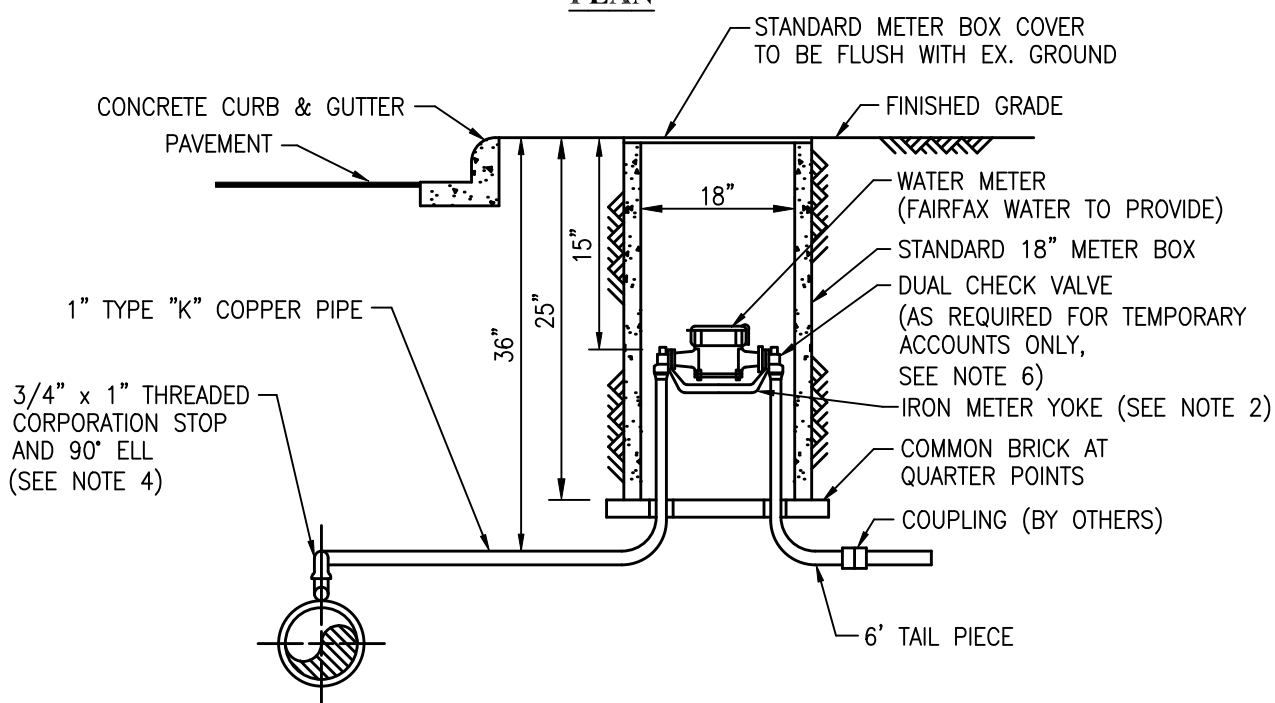
<u>Detail No.</u>	<u>Title</u>
1A	1" Service Connection with 5/8" or 3/4" Meter
1B	1" Service Connection with 1" Meter
2	1" Service Connection with Curb Stop
3	1" Service Reconnection
4	Cast Iron Meter Box Cover
5A	Interior Main Meter Installation - 5/8" Through 1" Meter Sizes
5B	Cooling Tower Blow Down Line to Sanitary System
6	Exterior Meter Installation – 5/8" Through 1" Meter Sizes
7	Interior Meter Installation – 1 1/2" And 2" Meter Sizes
8	Exterior Meter Installation – 1 1/2" And 2" Meter Sizes
9	Interior Meter Installation with Bypass – 2" And Larger Turbine Meters
10	Interior Meter Installation for Irrigation System – 2" And Larger Turbine Meters
11	Interior Meter Installation with Bypass – 3" And Larger Meters
12	Trench – Ductile Iron Pipe
13	Trench – High Density Polyethylene Pipe
14	Trenchless Crossing - Steel Casing
15	Trenchless Crossing - Casing Insulators and Casing End Seal
16	Trenchless Crossing – Liner Plate
17	Sanitary Sewer Protection - Water Main Crossing Under Sewer
18	Stream Crossing Scour Protection
19	D.I.P. Pipe Closure for Prestressed Concrete Cylinder Pipe

<u>Detail No.</u>	<u>Title</u>
20	H.D.P.E. / M.J. Adapter
21	Cut and Cap
22	Concrete Thrust Anchors
23	Concrete Vertical Blocking – Water Mains Less Than or Equal to 12”
24	Thrust Collar - 6” To 12” Water Main
25	Thrust Collar - 16” To 24” Water Main
26	Valve Box
27	Valve Box Concrete Pad
28	Valve Stem and Box Extension
29	Standard Hydrant Installation
30	Standard Hydrant – Greater Than 8’ Bury
31	Hydrant Protection – Guard Posts
32	Guard Post
33	Methods of Flushing Fire Hydrants and Blow-Offs
34	2” Air Release
35	Air Release and Blow-Off Piping – Ductile Iron Pipe 12” & Larger
36	2” Blow-Off
37	Automatic Flushing Device and Drainage Piping
38	8” & 12” Headwall Blow-Off
39A	4” Through 12” Pressure Reducing Valve Vault
39B	4” Through 12” Pressure Reducing Valve Vault – Vault Notes
40	Vault Access Door Installation and Drain Pipe
C1	Type FD Corrosion Control Test Station – Foreign Pipeline Crossing
C2	Type CS Corrosion Control Test Station – Trenchless Crossing
C3	Type TD Corrosion Control Test Station – Standard

<u>Detail No.</u>	<u>Title</u>
C4	Type I Corrosion Control Test Station – Isolator (P.V.C. or H.D.P.E. Insert)
C5	Isolator (P.V.C. or H.D.P.E. Insert)
C6	Type IS Corrosion Control Test Station – Insulated Flange
C7	Test Station Installation
C8	Typical Test Station Box for Non-Paved Areas
C9	Typical Test Station Box for Paved Areas
C10	Insulating Flange
C11	Insulating Union
C12	Pipe Joint Bonding
C13	Hotspot Cathodic Protection Coating and Anode Placement
C14	Thermite Weld
C15	Type GM Corrosion Control Test Station – Grounding Mat
C16	Grounding Mat – Fire Hydrant
C17	Typical Wire Splice
C18	Ribbon Anode to Cable Splice
C19	Anode Header Cable Splice
C20	Type FD Test Station Terminal Board and Wiring
C21	Type CS Test Station Terminal Board and Wiring
C22	Type TD Test Station Terminal Board and Wiring
C23	Type IS and I Test Station Terminal Board and Wiring
C24	Type GM Test Station Terminal Board and Wiring
C25	Typical Backfilling and Anode Bed Placement Area
C26	Typical Separator to Avoid Electrical Contact
C27	Corrosion Control Test Station Schedule



**PLAN**



**ELEVATION**

**NOTES:**

1. NO PLASTIC TUBING TO BE USED INSIDE METER BOX.
2. METER BOX, METER BOX COVER, AND METER YOKE TO BE FAIRFAX WATER STANDARD TYPE.
3. THREADED SERVICE CLAMP TO BE USED ON 3" AND 20" & LARGER WATER MAINS.
4. COAT WITH PETROLATUM TAPE PER SECTION 13110 CATHODIC PROTECTION.
5. NO STRUCTURES, POLES, SIGN POSTS, TREES OR SHRUBS TO BE INSTALLED WITHIN FOUR FEET OF METER CROCK.
6. DUAL CHECK VALVE BACKFLOW PREVENTER SHALL BE INSTALLED ON OUTLET SIDE OF THE WATER METER IN A LOCATION THAT IS ACCESSIBLE, WITH CAP EXPOSED TO FACILITATE REMOVAL, SERVICING, OR TESTING. PIPE MUST BE THOROUGHLY FLUSHED TO REMOVE FOREIGN MATERIALS BEFORE INSTALLING THE CHECK VALVE.



**FAIRFAX WATER  
STANDARD DETAILS**

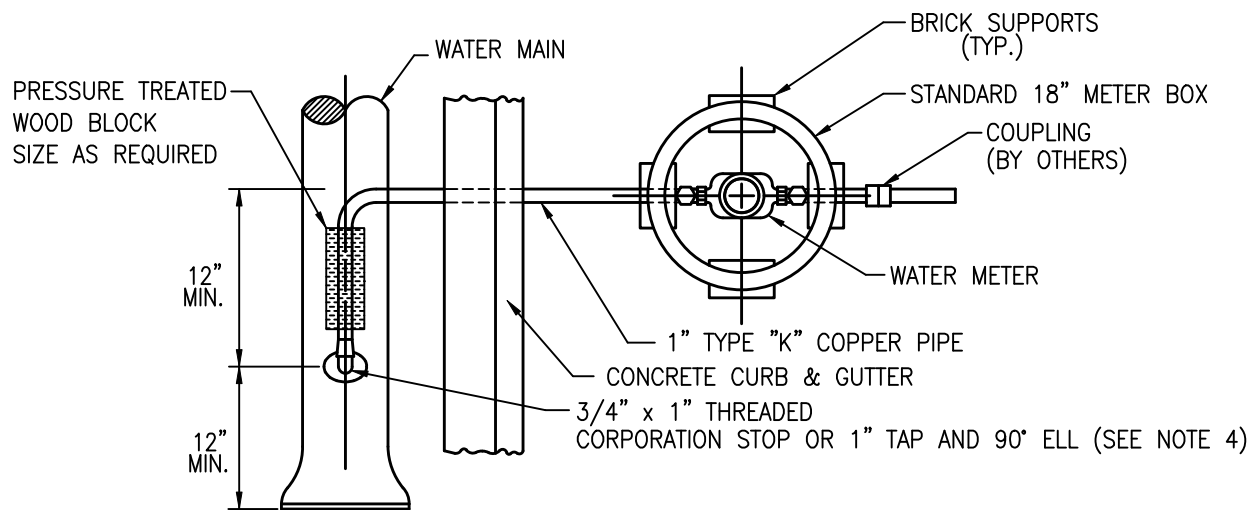
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**1" SERVICE CONNECTION  
WITH 5/8" OR 3/4" METER**

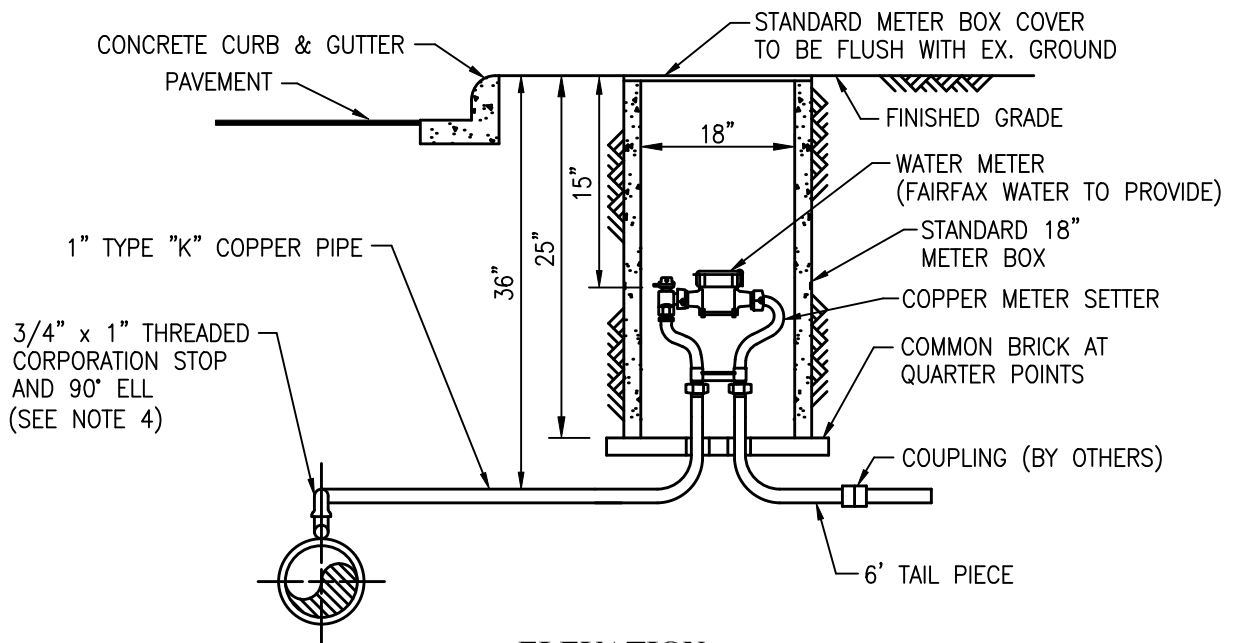
DETAIL NO.:

**1A**

DATE: 9/23



**PLAN**



**ELEVATION**

**NOTES:**

1. NO PLASTIC TUBING TO BE USED INSIDE METER BOX.
2. METER BOX, METER BOX COVER AND COPPER METER SETTER TO BE FAIRFAX WATER STANDARD TYPE.
3. THREADED SERVICE CLAMP TO BE USED ON 3" AND 20" & LARGER WATER MAINS.
4. COAT WITH PETROLATUM TAPE PER SECTION 13110 CATHODIC PROTECTION.
5. NO STRUCTURES, POLES, SIGN POSTS, TREES OR SHRUBS TO BE INSTALLED WITHIN FOUR FEET OF METER CROCK.



DATE: 9/23

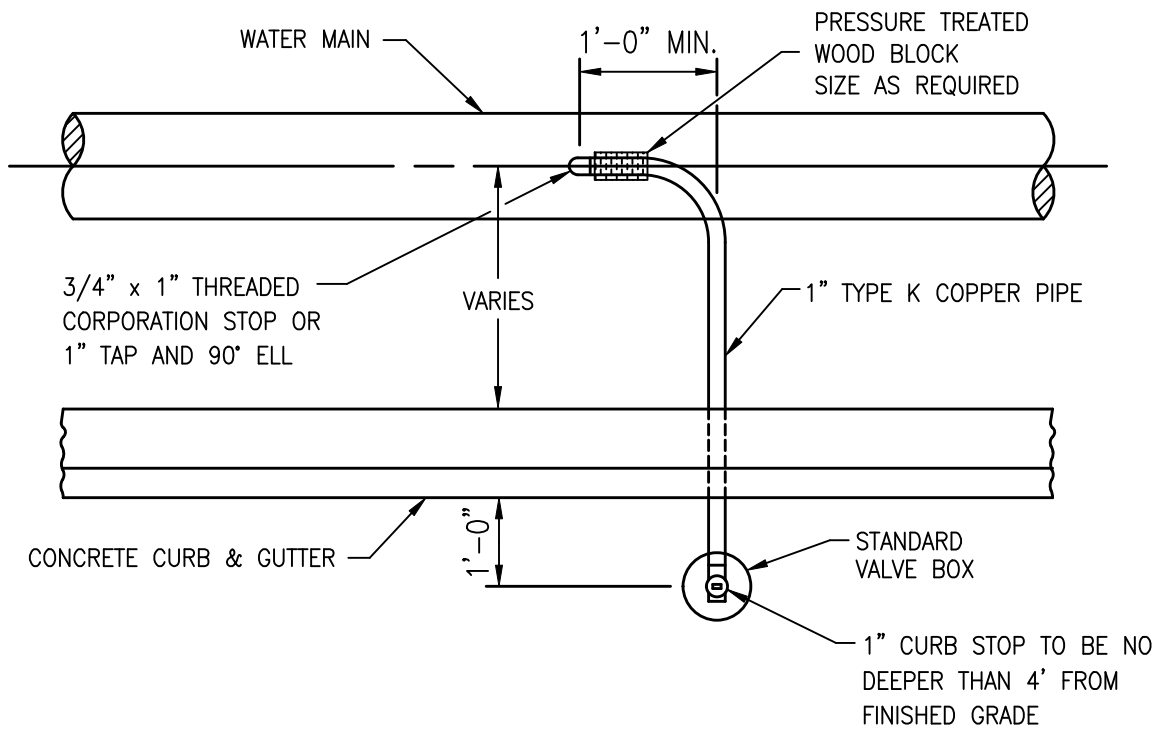
**FAIRFAX WATER  
STANDARD DETAILS**

**1" SERVICE CONNECTION  
WITH 1" METER**

SCALE:  
NOT TO SCALE

DETAIL NO.:

**1B**



**NOTE:**

WHERE CURB BOX IS LOCATED IN PAVEMENT, USE VALVE BOX INSTEAD OF CURB BOX.



**FAIRFAX WATER  
STANDARD DETAILS**

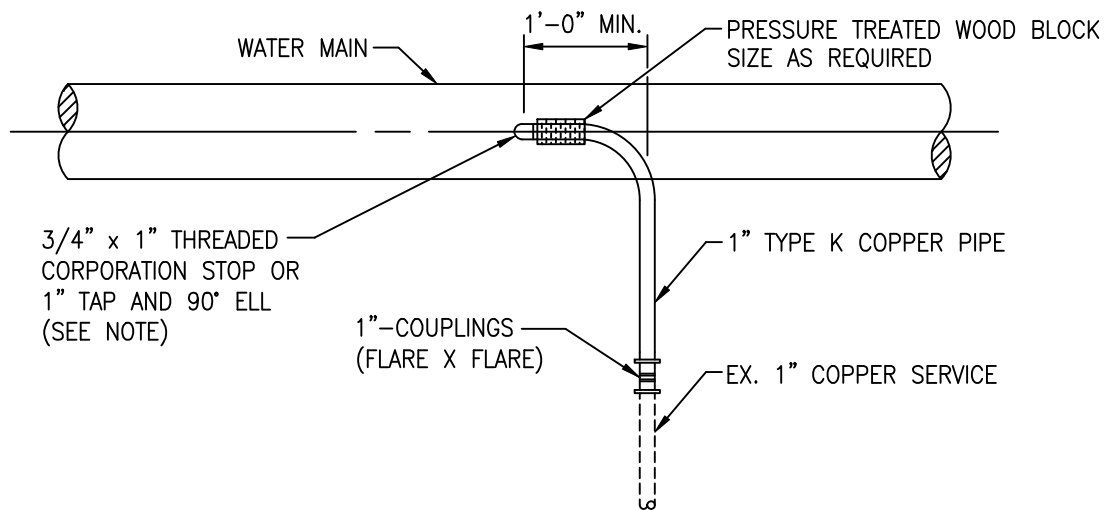
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**1" SERVICE CONNECTION  
WITH CURB STOP**


DETAIL NO.:

**2**

DATE: 9/23

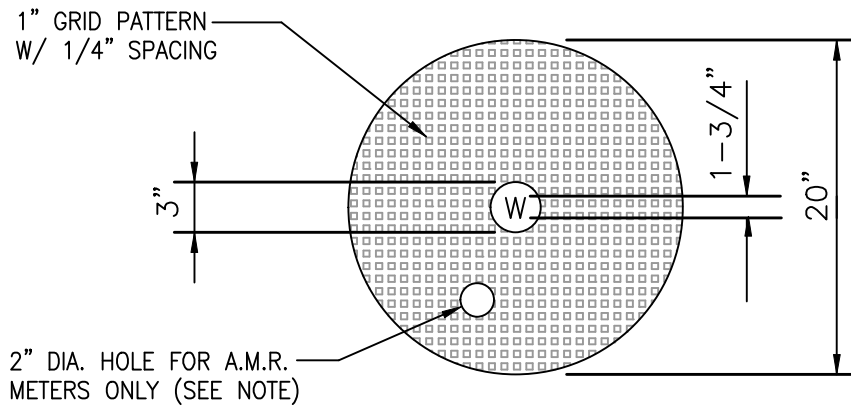


NOTE:  
 COAT WITH PETROLATUM TAPE PER SECTION 13110 CATHODIC PROTECTION

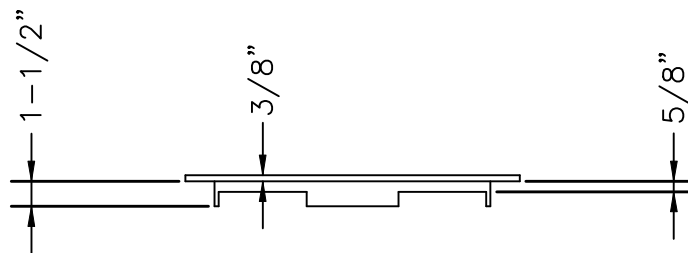
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	<b>1" SERVICE RECONNECTION</b>		DETAIL NO.: <b>3</b>

DATE: 9/23

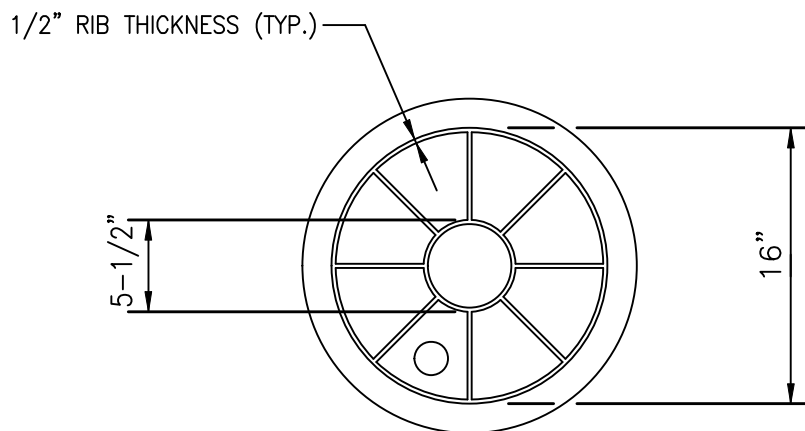




**TOP VIEW**



**SIDE VIEW**



**BOTTOM VIEW**

**NOTE:**

INSTALL 2" DIAMETER HOLE BETWEEN RIBS FOR AUTOMATIC METER READING METERS WHERE INDICATED ON THE PLANS OR BY FAIRFAX WATER.



**FAIRFAX WATER  
STANDARD DETAILS**

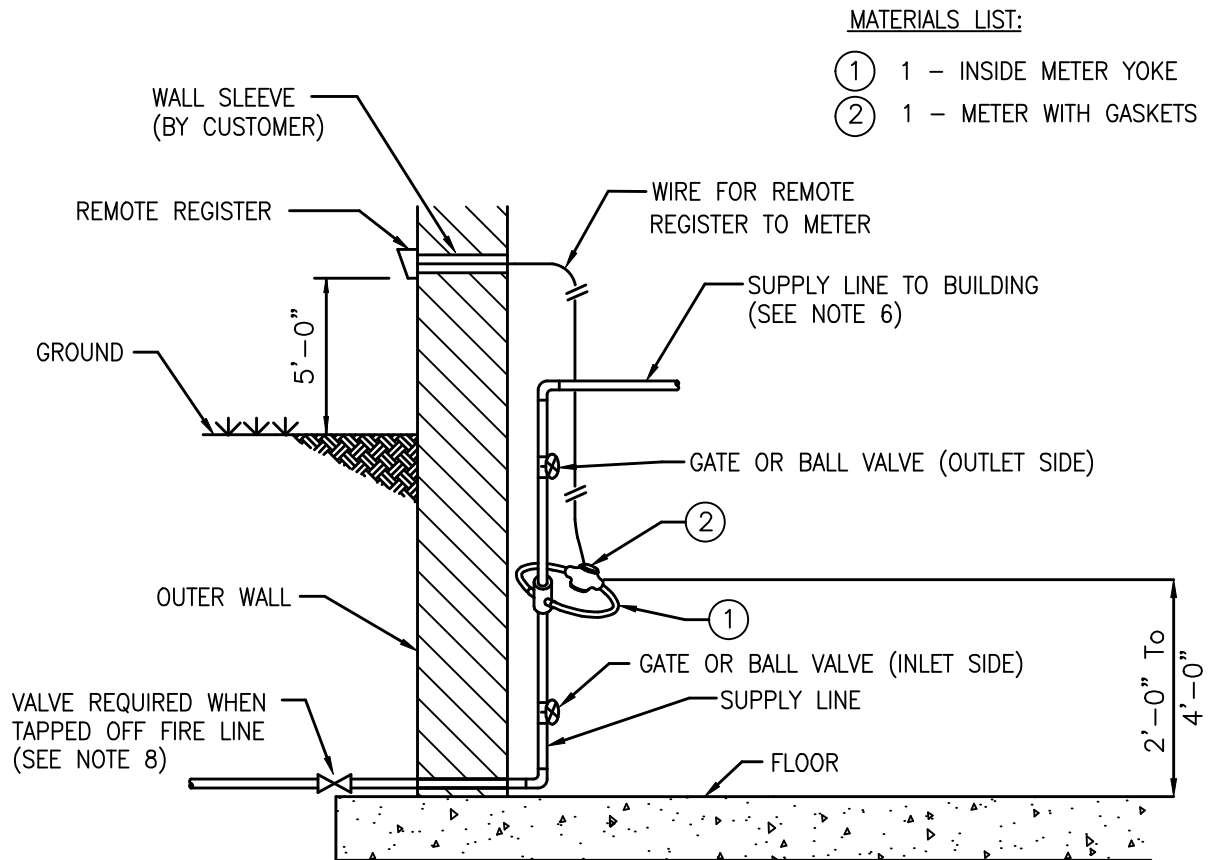
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**CAST IRON METER BOX COVER**

DETAIL NO.:

**4**

DATE: 9/23



NOTES:

1. THE WATER METER SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION. CRAWL SPACES ARE NOT ACCEPTABLE.
2. THE WATER METER MUST BE INSTALLED BETWEEN 2'-0" AND 4'-0" ABOVE THE FLOOR.
3. THE CUSTOMER MUST CALL 703-289-6402, FOR WIRING AND INSPECTION OF THE METER PRIOR TO FINISHING INTERIOR WALLS OF THE BUILDING.
4. GATE OR BALL VALVES SHALL BE INSTALLED APPROXIMATELY 12 INCHES ON EITHER SIDE OF THE METER SETTING.
5. IT IS THE CUSTOMER'S RESPONSIBILITY TO PREVENT THE METER FROM FREEZING.
6. BACKFLOW PREVENTION WILL BE REQUIRED IN ACCORDANCE WITH FAIRFAX COUNTY'S REGULATIONS.
7. FAIRFAX WATER MAINTAINS THE METER AND REMOTE REGISTER ONLY.
8. A 4" MINIMUM GATE VALVE WITH A 2" OPERATING NUT MUST BE INSTALLED ON THE SERVICE LINE WHEN TAPPED OFF THE FIRE LINE.
9. NO TAPS, PRV'S, STRAINERS, OR BACKFLOW PREVENTION DEVICES ARE TO BE INSTALLED BEFORE THE METER.
10. FAIRFAX WATER TO SUPPLY ITEMS SHOWN IN MATERIALS LIST. ALL OTHER MATERIALS TO BE SUPPLIED BY THE CUSTOMER.
11. FAIRFAX WATER TO SUPPLY AND INSTALL REMOTE REGISTER. WIRE FOR REMOTE REGISTER TO BE FURNISHED BY FAIRFAX WATER AND INSTALLED BY CUSTOMER IF REQUIRED.



**FAIRFAX WATER  
STANDARD DETAILS**

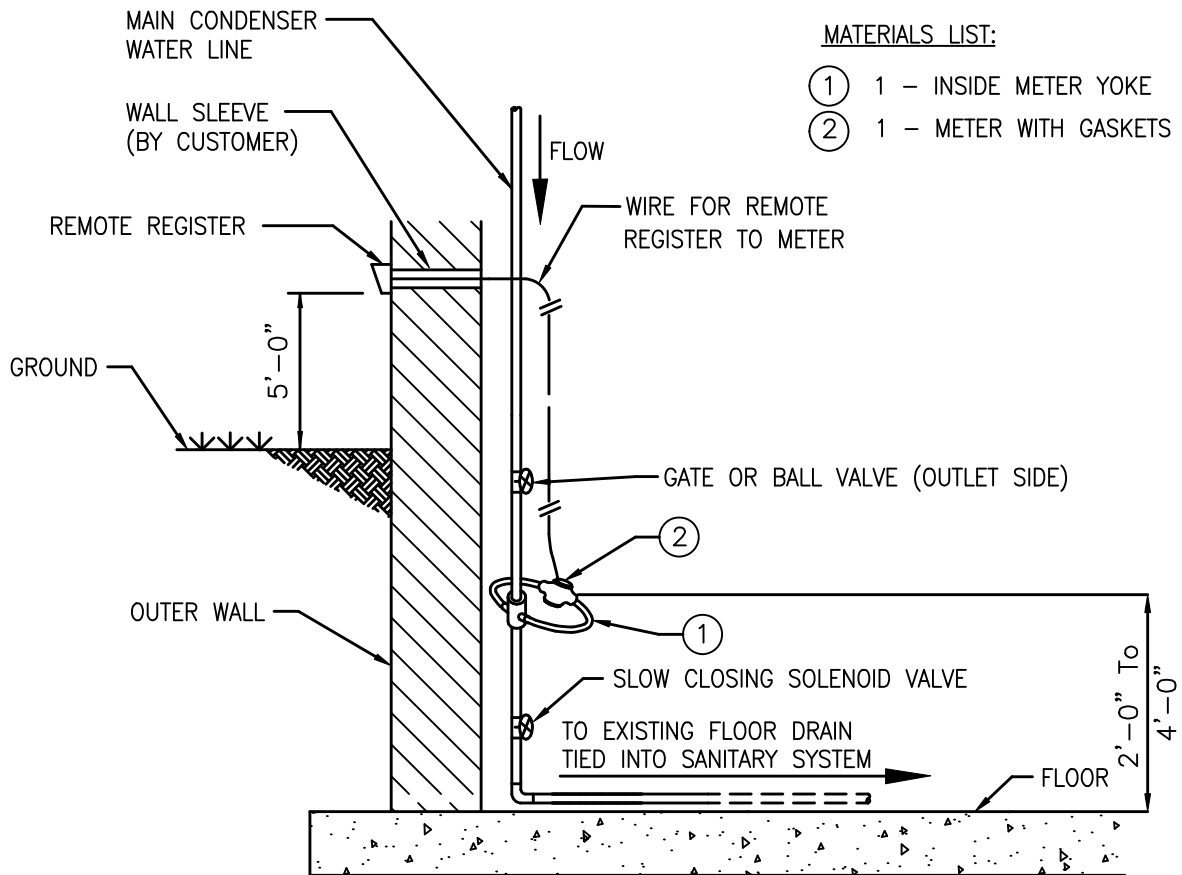
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**INTERIOR MAIN METER INSTALLATION  
5/8" THROUGH 1" METER SIZES**

DETAIL NO.:

**5A**

DATE: 9/23



**NOTES:**

1. THE WATER METER SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION.
2. THE WATER METER MUST BE INSTALLED BETWEEN 2'-0" AND 4'-0" ABOVE THE FLOOR.
3. THE CUSTOMER MUST CALL 703-289-6402, FOR WIRING AND INSPECTION OF THE METER PRIOR TO FINISHING INTERIOR WALLS.
4. GATE OR BALL VALVES SHALL BE INSTALLED APPROXIMATELY 12 INCHES UPSTREAM OF THE METER SETTING, AND A SLOW CLOSING SOLENOID VALVE SHALL BE APPROXIMATELY 12 INCHES DOWNSTREAM OF THE METER SETTING.
5. PIPE MUST REMAIN FULL AT ALL TIMES.
6. FAIRFAX WATER MAINTAINS THE METER AND REMOTE REGISTER ONLY.
7. FAIRFAX WATER TO SUPPLY ITEMS SHOWN IN MATERIAL LIST. ALL OTHER MATERIALS TO BE SUPPLIED BY THE CUSTOMER.
8. 5/8" UP TO 1" ULTRASONIC METER TO BE UTILIZED FOR THIS APPLICATION.
9. FAIRFAX WATER TO SUPPLY AND INSTALL REMOTE REGISTER. WIRE FOR REMOTE REGISTER TO BE FURNISHED BY FAIRFAX WATER AND INSTALLED BY CUSTOMER IF REQUIRED.



DATE: 9/23

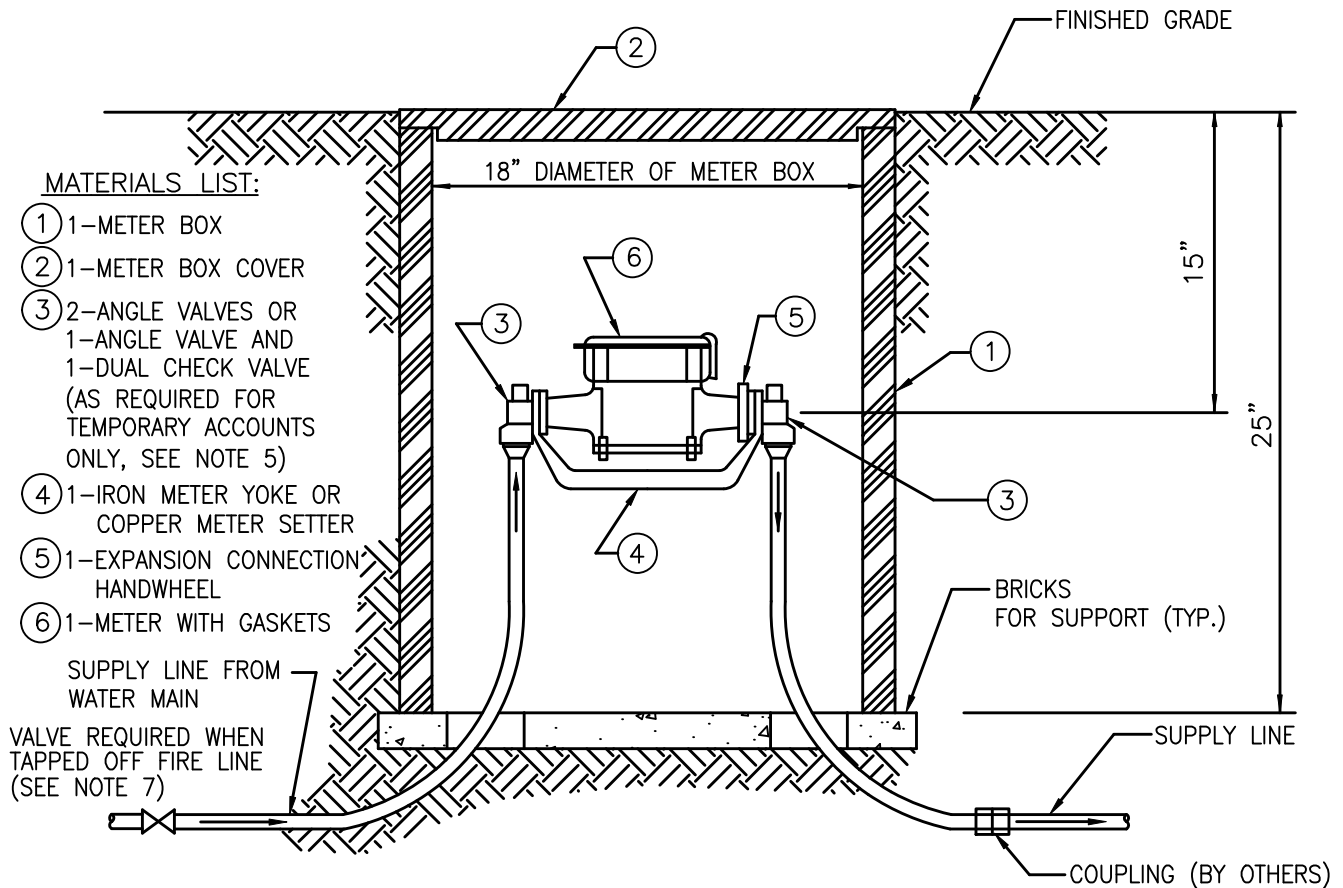
**FAIRFAX WATER  
STANDARD DETAILS**

**COOLING TOWER BLOW DOWN LINE  
TO SANITARY SYSTEM**

SCALE:  
NOT TO SCALE

DETAIL NO.:

**5B**



**NOTES:**

1. THE WATER METER BOX SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION IN A GREEN SPACE AND SO AS NOT TO BE A TRIP HAZARD.
2. WATER METER TO BE INSTALLED BY FAIRFAX WATER AS SHOWN IN THE DIAGRAM ABOVE. METER TO BE INSTALLED BY CUSTOMER WHEN TAPPED OFF FIRE LINE.
3. THE METER INSTALLATION WILL BE INSPECTED AND APPROVED BY FAIRFAX WATER. CALL 703-289-6402 FOR INSPECTION PRIOR TO PLACING LINE IN SERVICE.
4. FAIRFAX WATER TO SUPPLY ITEMS SHOWN IN MATERIALS LIST. ALL OTHER MATERIALS TO BE SUPPLIED BY THE CUSTOMER.
5. DUAL CHECK VALVE BACKFLOW PREVENTER SHALL BE INSTALLED ON OUTLET SIDE OF THE WATER METER IN A LOCATION THAT IS ACCESSIBLE, WITH CAP EXPOSED TO FACILITATE REMOVAL, SERVICING, OR TESTING. PIPE MUST BE THOROUGHLY FLUSHED TO REMOVE FOREIGN MATERIALS BEFORE INSTALLING THE CHECK VALVE.
6. FAIRFAX WATER MAINTAINS THE SUPPLY LINE BETWEEN THE METER AND THE MAIN, METER, METER BOX, AND METER BOX COVER ONLY. FAIRFAX WATER WILL NOT MAINTAIN SUPPLY LINE WHEN TAPPED OFF FIRE LINE.
7. A 4" MINIMUM GATE VALVE WITH A 2" OPERATING NUT MUST BE INSTALLED ON THE SERVICE LINE WHEN TAPPED OFF THE FIRE LINE.
8. NO STRUCTURES, POLES, SIGN POSTS, TREES OR SHRUBS TO BE INSTALLED WITHIN FOUR FEET OF METER CROCK.



**FAIRFAX WATER  
STANDARD DETAILS**

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**EXTERIOR METER INSTALLATION  
5/8" THROUGH 1" METER SIZES**

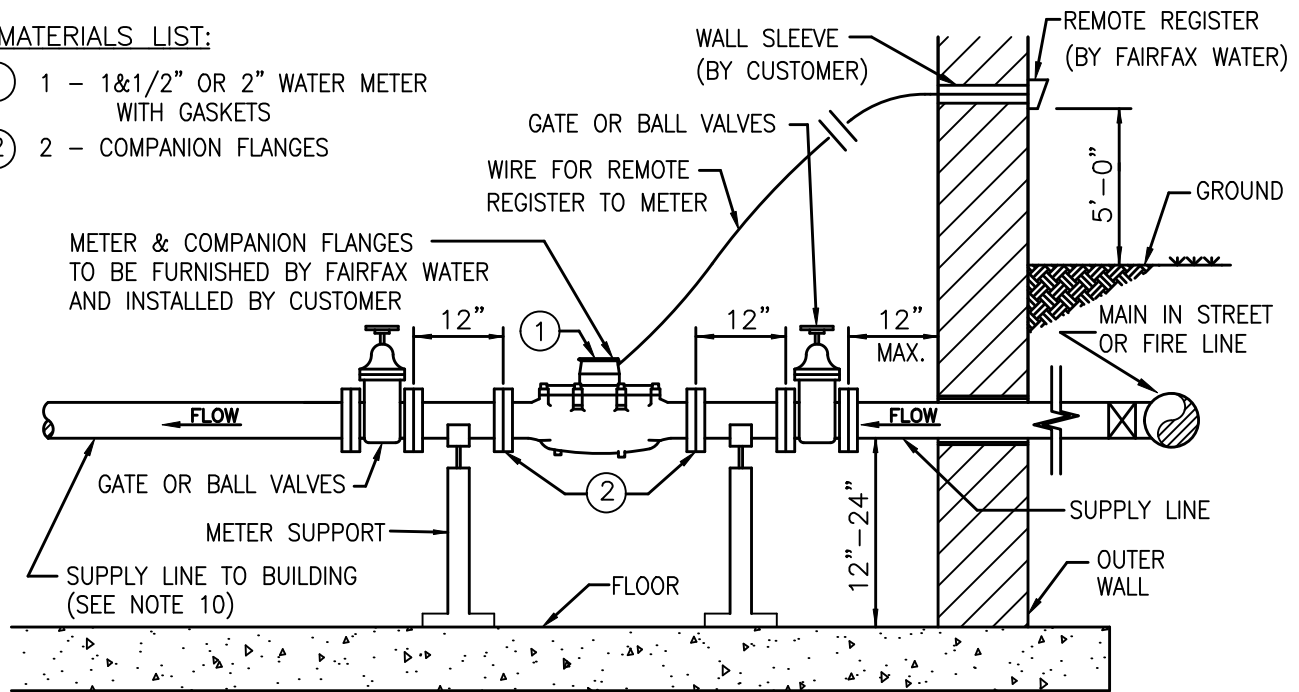
DETAIL NO.:

**6**

DATE: 9/23

# MATERIALS LIST:

- ① 1 - 1½" OR 2" WATER METER WITH GASKETS
- ② 2 - COMPANION FLANGES



## NOTES:

1. THE WATER METER SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION. CRAWL SPACES ARE NOT ACCEPTABLE.
2. THE METER MUST BE INSTALLED NOT MORE THAN 2' ABOVE THE FLOOR, OR CLOSER THAN 1' TO ANY WALL OR OTHER FIXED OBJECT.
3. PROVISIONS FOR DISCHARGE OF A LARGE VOLUME OF WATER RESULTING FROM METER TESTING AND REPAIRS SHALL BE MADE AS REQUIRED BY FAIRFAX WATER.
4. THE METER INSTALLATION WILL BE INSPECTED AND APPROVED BY FAIRFAX WATER. CALL 703-289-6402 FOR INSPECTION PRIOR TO PLACING LINE IN SERVICE.
5. IT IS THE CUSTOMER'S RESPONSIBILITY TO PREVENT THE METER FROM FREEZING.
6. SUPPORT IS REQUIRED FOR THE METER.
7. GATE OR BALL VALVES SHALL BE INSTALLED APPROXIMATELY 12 INCHES ON EITHER SIDE OF THE METER SETTING.
8. INCOMING LINE SIZE MUST BE THE SAME AS METER SIZE AT LEAST 3' BEFORE THE METER.
9. FAIRFAX WATER MAINTAINS THE METER AND REMOTE REGISTER ONLY.
10. BACKFLOW PREVENTION WILL BE REQUIRED IN ACCORDANCE WITH FAIRFAX COUNTY'S REGULATIONS.
11. A 4" MINIMUM GATE VALVE WITH A 2" OPERATING NUT MUST BE INSTALLED ON THE SERVICE LINE WHEN TAPPED OFF THE FIRE LINE.
12. NO TAPS, PRV'S, STRAINERS, OR BACKFLOW PREVENTION DEVICES ARE TO BE INSTALLED BEFORE THE METER.
13. FAIRFAX WATER TO SUPPLY ITEMS SHOWN IN MATERIALS LIST. ALL OTHER MATERIALS TO BE SUPPLIED BY THE CUSTOMER.
14. FAIRFAX WATER TO SUPPLY AND INSTALL REMOTE REGISTER. WIRE FOR REMOTE REGISTER TO BE FURNISHED BY FAIRFAX WATER AND INSTALLED BY CUSTOMER IF REQUIRED.



## FAIRFAX WATER STANDARD DETAILS

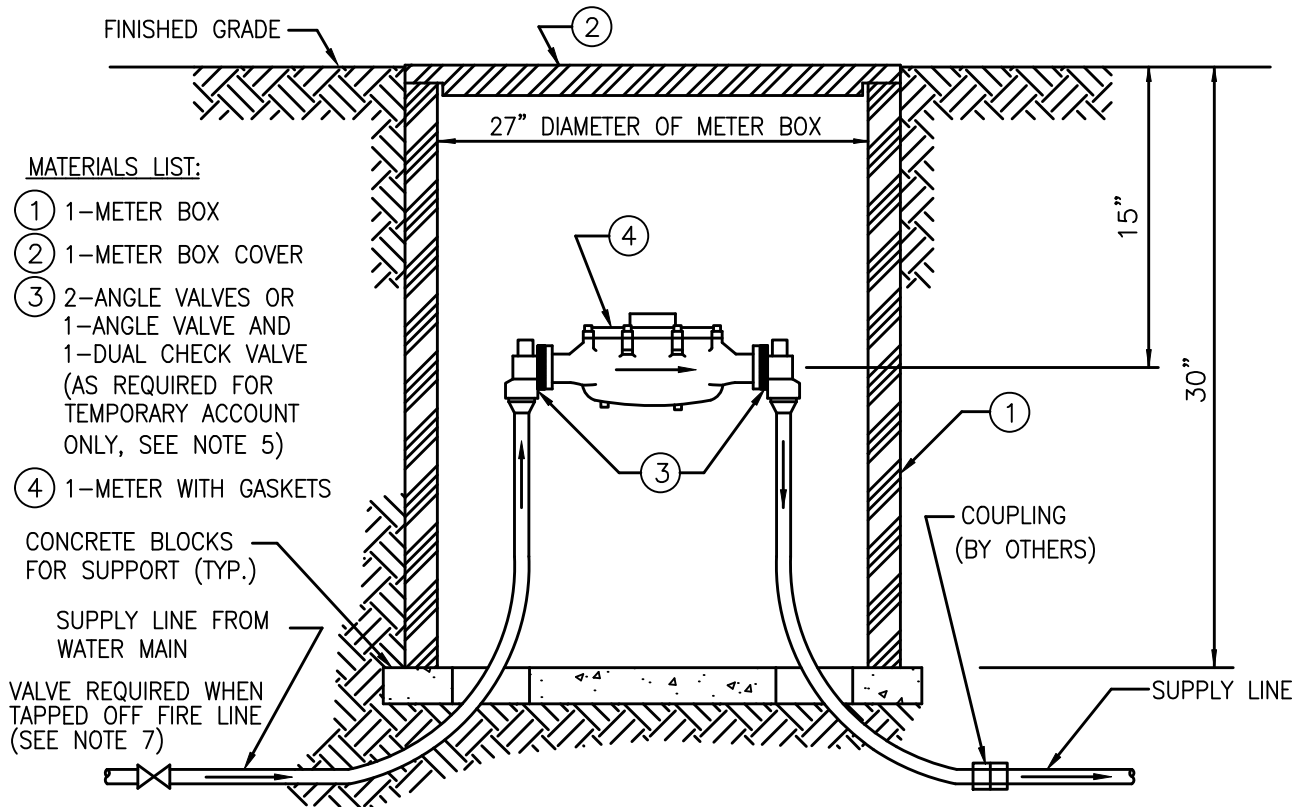
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## INTERIOR METER INSTALLATION 1 1/2" AND 2" METER SIZES

DETAIL NO.:

7

DATE: 9/23



**NOTES:**

1. THE WATER METER BOX SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION IN GREEN SPACE AND SO AS NOT TO BE A TRIP HAZARD.
2. WATER METER TO BE INSTALLED BY FAIRFAX WATER AS SHOWN IN THE DIAGRAM ABOVE. METER TO BE INSTALLED BY CUSTOMER WHEN TAPPED OFF FIRE LINE.
3. THE METER INSTALLATION WILL BE INSPECTED AND APPROVED BY FAIRFAX WATER. CALL 703-289-6402 FOR INSPECTION PRIOR TO PLACING LINE IN SERVICE.
4. FAIRFAX WATER TO SUPPLY ITEMS SHOWN IN MATERIALS LIST ONLY. ALL OTHER MATERIALS TO BE SUPPLIED BY THE CUSTOMER.
5. DUAL CHECK VALVE BACKFLOW PREVENTER SHALL BE INSTALLED ON OUTLET SIDE OF THE WATER METER IN A LOCATION THAT IS ACCESSIBLE, WITH CAP EXPOSED TO FACILITATE REMOVAL, SERVICING, OR TESTING. PIPE MUST BE THOROUGHLY FLUSHED TO REMOVE FOREIGN MATERIALS BEFORE INSTALLING THE CHECK VALVE.
6. FAIRFAX WATER MAINTAINS THE SUPPLY LINE BETWEEN THE METER AND THE MAIN, THE METER, METER BOX, AND THE METER BOX COVER ONLY. FAIRFAX WATER WILL NOT MAINTAIN SUPPLY LINE WHEN TAPPED OFF FIRE LINE.
7. A 4" MINIMUM GATE VALVE WITH A 2" OPERATING NUT MUST BE INSTALLED ON THE SERVICE LINE WHEN TAPPED OFF FIRE LINE.



**FAIRFAX WATER  
STANDARD DETAILS**

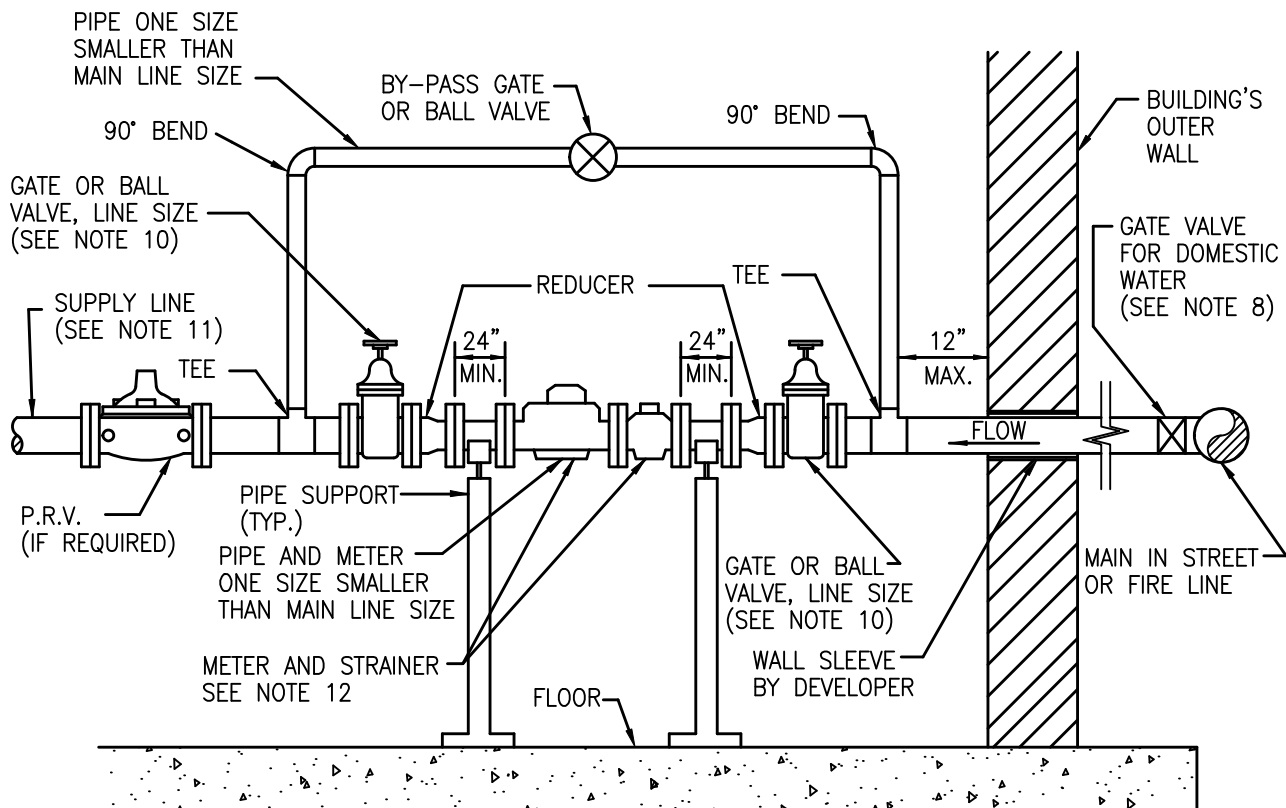
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**EXTERIOR METER INSTALLATION  
1 1/2" AND 2" METER SIZES**

DETAIL NO.:

**8**

DATE: 9/23



**NOTES:**

1. THE WATER METER WILL BE LOCATED IN AN ACCESSIBLE LOCATION AND WILL NOT BE INSTALLED UNDER EXISTING PIPING OR CLOSE TO OTHER FACILITIES. CRAWL SPACES ARE UNACCEPTABLE.
2. WATER METER TO BE INSTALLED NOT MORE THAN 2.0' ABOVE THE FLOOR, OR CLOSER THAN 1.0' TO ANY WALL OR OTHER FIXED OBJECT.
3. PROVISIONS FOR DISCHARGE OF A LARGE VOLUME OF EXCESS WATER RESULTING FROM METER TESTING AND METER REPAIRS SHALL BE MADE AS REQUIRED BY FAIRFAX WATER.
4. THE METER INSTALLATION WILL BE INSPECTED AND APPROVED BY FAIRFAX WATER. CALL 703-289-6402 FOR INSPECTION PRIOR TO PLACING LINE IN SERVICE. (REMOTE REGISTER TO BE INSTALLED OUTSIDE BUILDING IF REQUIRED).
5. IT IS THE CUSTOMER'S RESPONSIBILITY TO PREVENT THE METER FROM FREEZING.
6. SUPPORT IS REQUIRED FOR THE METER.
7. INCOMING LINE SIZE MUST BE THE SAME AS METER SIZE AT LEAST 3' BEFORE THE METER.
8. IF THE SERVICE CONNECTION IS 3" OR LARGER, A 4" MINIMUM GATE VALVE WITH 2" OPERATING NUT MUST BE INSTALLED AT THE MAIN IN THE STREET OR FIRE LINE.
9. NO TAPS, PRV'S, STRAINERS, OR BACKFLOW PREVENTORS ARE TO BE INSTALLED BEFORE METER.
10. GATE VALVES OR BALL VALVES MUST BE INSTALLED ON BOTH SIDES OF THE METER AND ON THE BYPASS. BUTTERFLY VALVES ARE NOT ACCEPTABLE.
11. BACKFLOW PREVENTION WILL BE REQUIRED IN ACCORDANCE WITH FAIRFAX COUNTY'S REGULATIONS.
12. TURBINE METER, STRAINER AND COMPANION FLANGE TO BE FURNISHED BY FAIRFAX WATER AND INSTALLED BY CUSTOMER.



**FAIRFAX WATER  
STANDARD DETAILS**

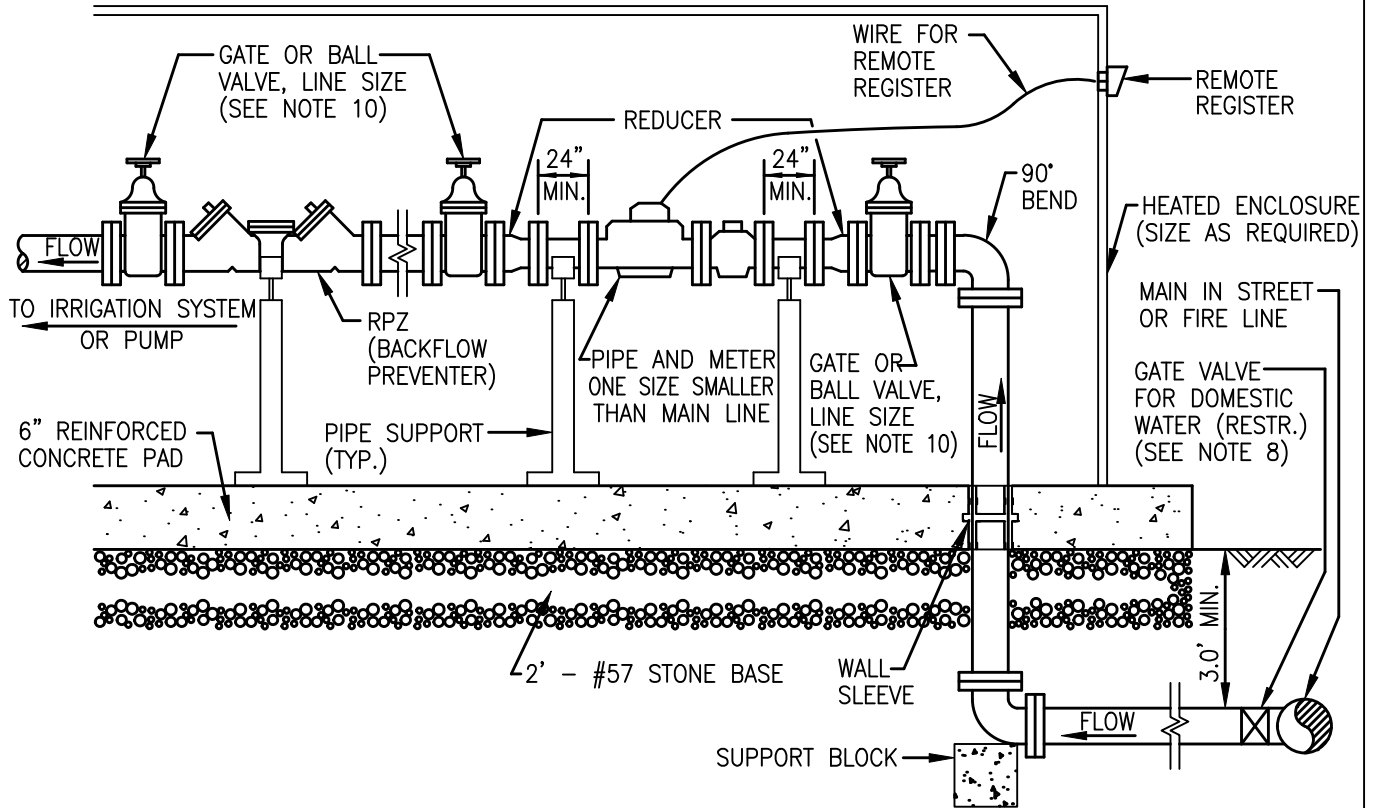
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**INTERIOR METER INSTALLATION WITH  
BYPASS SYSTEM 2" AND LARGER TURBINE METERS**

DETAIL NO.:

**9**

DATE: 9/23



**NOTES:**

1. THE WATER METER WILL BE LOCATED IN AN ACCESSIBLE LOCATION AND WILL NOT BE INSTALLED UNDER EXISTING PIPING OR CLOSE TO OTHER FACILITIES. CRAWL SPACES ARE UNACCEPTABLE.
2. WATER METER TO BE INSTALLED NOT MORE THAN 2.0' ABOVE THE BASE SLAB, OR CLOSER THAN 1.0' TO ANY WALL OR FIXED OBJECT.
3. PROVISIONS FOR DISCHARGE OF A LARGE VOLUME OF EXCESS WATER RESULTING FROM METER TESTING, RPZ OPERATION AND METER REPAIRS SHALL BE MADE AS REQUIRED BY FAIRFAX WATER.
4. THE METER INSTALLATION WILL BE INSPECTED AND APPROVED BY FAIRFAX WATER. CALL 703-289-6402 FOR INSPECTION PRIOR TO PLACING LINE IN SERVICE. (REMOTE REGISTER TO BE INSTALLED OUTSIDE BUILDING IF REQUIRED).
5. IT IS THE CUSTOMER'S RESPONSIBILITY TO PREVENT THE METER FROM FREEZING.
6. SUPPORT IS REQUIRED FOR THE METER AND RPZ.
7. INCOMING LINE SIZE MUST BE THE SAME AS METER SIZE AT LEAST 3' BEFORE THE METER.
8. THE SERVICE CONNECTION SHALL BE MADE OF DUCTILE IRON PIPE. IF THE SERVICE CONNECTION IS 3" OR LARGER, A 4" MINIMUM RESTRAINED GATE VALVE WITH 2" OPERATING NUT MUST BE INSTALLED AT THE SUPPLY MAIN.
9. NO TAPS, PRV'S, STRAINERS, OR BACKFLOW PREVENTOR ARE TO BE INSTALLED BEFORE METER.
10. GATE VALVES OR BALL VALVES MUST BE INSTALLED ON BOTH SIDES OF THE METER AND ON THE BYPASS. BUTTERFLY VALVES ARE NOT ACCEPTABLE.
11. ENCLOSURE SHALL PROVIDE UNRESTRICTED ACCESS TO METER, RPZ, AND INTERIOR PIPING.
12. TURBINE METER, STRAINER AND COMPANION FLANGE TO BE FURNISHED BY FAIRFAX WATER AND INSTALLED BY CUSTOMER.



**FAIRFAX WATER  
STANDARD DETAILS**

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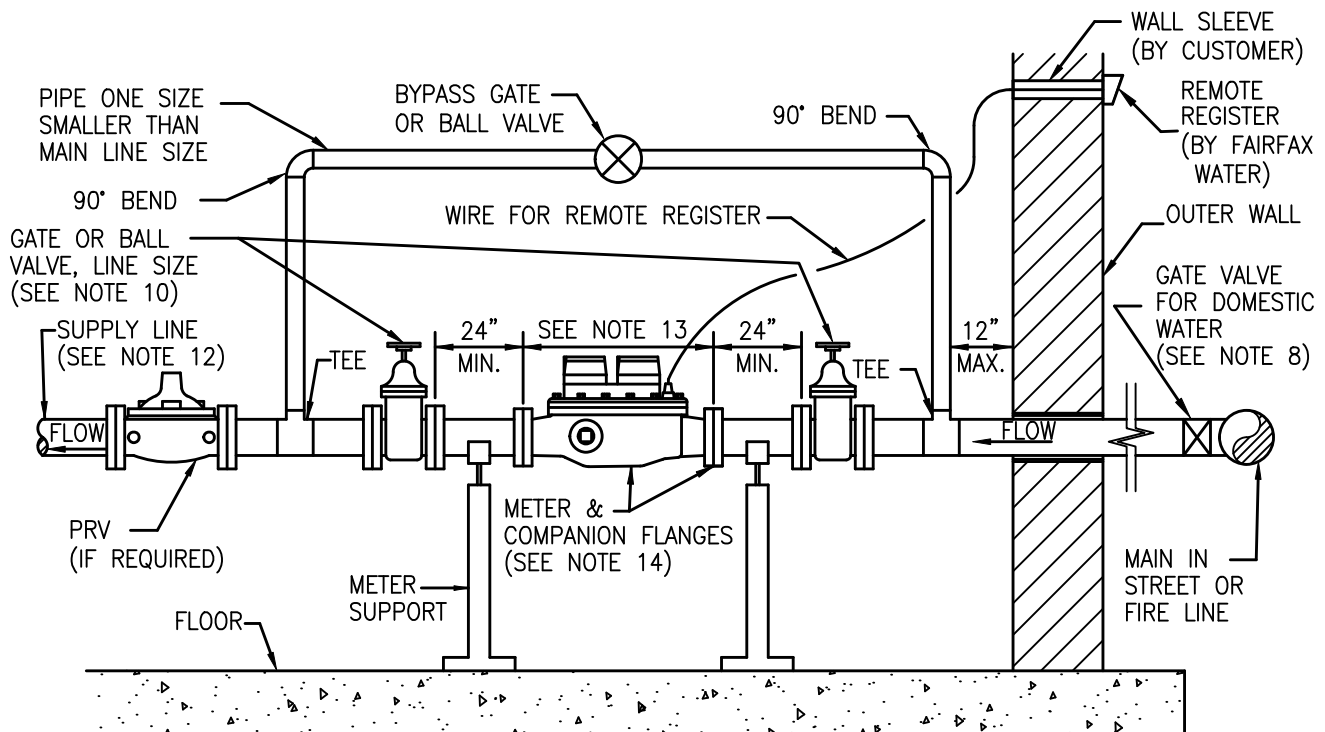
**INTERIOR METER INSTALLATION FOR  
IRRIGATION SYSTEM 2" AND LARGER  
TURBINE METERS**

DETAIL NO.:

**10**

DATE: 9/23





**TYPICAL INSTALLATION SECTION VIEW**

**NOTES:**

1. THE WATER METER WILL BE LOCATED IN AN ACCESSIBLE LOCATION AND WILL NOT BE INSTALLED UNDER EXISTING PIPING OR CLOSE TO OTHER FACILITIES. CRAWL SPACES ARE UNACCEPTABLE.
2. WATER METER TO BE INSTALLED NOT MORE THAN 2.0' ABOVE THE FLOOR, OR CLOSER THAN 1.0' TO ANY WALL OR OTHER FIXED OBJECT.
3. PROVISIONS FOR DISCHARGE OF A LARGE VOLUME OF EXCESS WATER RESULTING FROM METER TESTING AND METER REPAIRS SHALL BE MADE AS REQUIRED BY FAIRFAX WATER.
4. THE METER INSTALLATION WILL BE INSPECTED AND APPROVED BY FAIRFAX WATER. CALL 703-289-6402 FOR INSPECTION PRIOR TO PLACING LINE IN SERVICE. (REMOTE REGISTER TO BE INSTALLED OUTSIDE BUILDING IF REQUIRED).
5. IT IS THE CUSTOMER'S RESPONSIBILITY TO PREVENT THE METER FROM FREEZING.
6. SUPPORT IS REQUIRED FOR THE METER.
7. INCOMING LINE SIZE MUST BE THE SAME AS METER SIZE AT LEAST 3' BEFORE THE METER.
8. A 4" MINIMUM GATE VALVE WITH A 2" OPERATING NUT MUST BE INSTALLED AT THE MAIN IN THE STREET OR FIRE LINE.
9. NO TAPS, PRV'S, STRAINERS, OR BACKFLOW PREVENTOR ARE TO BE INSTALLED BEFORE METER.
10. GATE VALVES OR BALL VALVES MUST BE INSTALLED ON BOTH SIDES OF THE METER, AND ON THE BYPASS. BUTTERFLY VALVES ARE NOT ACCEPTABLE.
11. FAIRFAX WATER TO SUPPLY AND INSTALL REMOTE REGISTER. WIRE FOR REMOTE REGISTER TO BE FURNISHED BY FAIRFAX WATER AND INSTALLED BY CUSTOMER IF REQUIRED.
12. BACKFLOW PREVENTIONS WILL BE REQUIRED IN ACCORDANCE WITH FAIRFAX COUNTY'S REGULATIONS.
13. 3" METER IS 24" LONG, 4" METER IS 29" LONG, AND 6" METER IS 36" LONG.
14. METER AND COMPANION FLANGES TO BE FURNISHED BY FAIRFAX WATER AND INSTALLED BY CUSTOMER.



**FAIRFAX WATER  
STANDARD DETAILS**

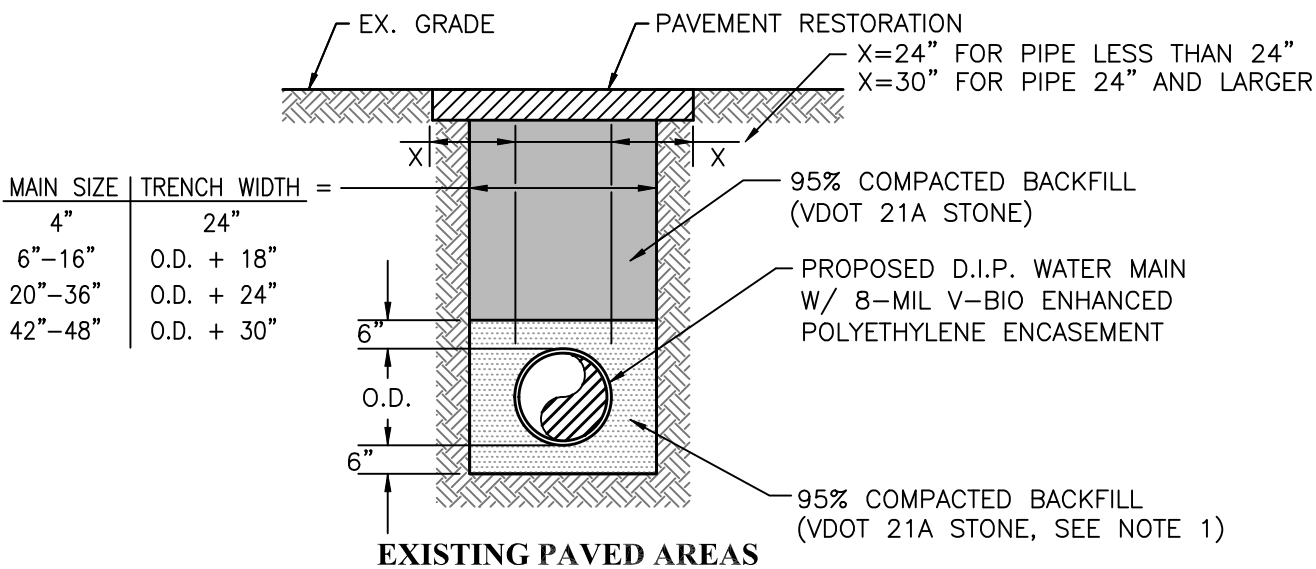
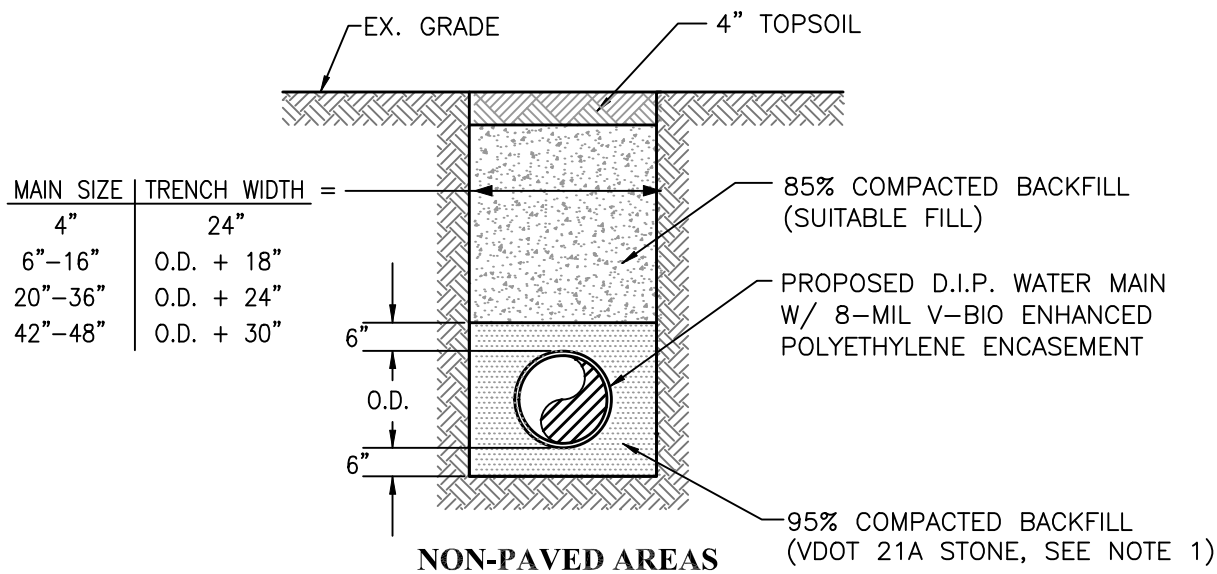
SCALE:  
NOT TO SCALE

**INTERIOR METER INSTALLATION WITH  
BYPASS 3" AND LARGER METERS**

DETAIL NO.:

**11**

DATE: 9/23



**NOTES:**

1. VDOT NO. 57 STONE SHALL BE USED AT CREEK CROSSINGS OR IN AREAS WHERE TRENCH CONTAINS GROUND WATER.
2. ALL PAVEMENT RESTORATION AND COMPACTED BACKFILL WITHIN VDOT RIGHT-OF-WAY SHALL ADHERE TO ALL APPLICABLE VDOT SPECIFICATIONS.
3. RESTRAINED JOINT PIPE SHALL BE IDENTIFIED WITH MARKING TAPE PLACED 2 FEET ABOVE PIPE.
4. ALL WATER MAIN INSTALLATION IN AREAS WITH PROPOSED PAVING SHALL ADHERE TO APPROVED DEVELOPMENT PLAN.



**FAIRFAX WATER  
STANDARD DETAILS**

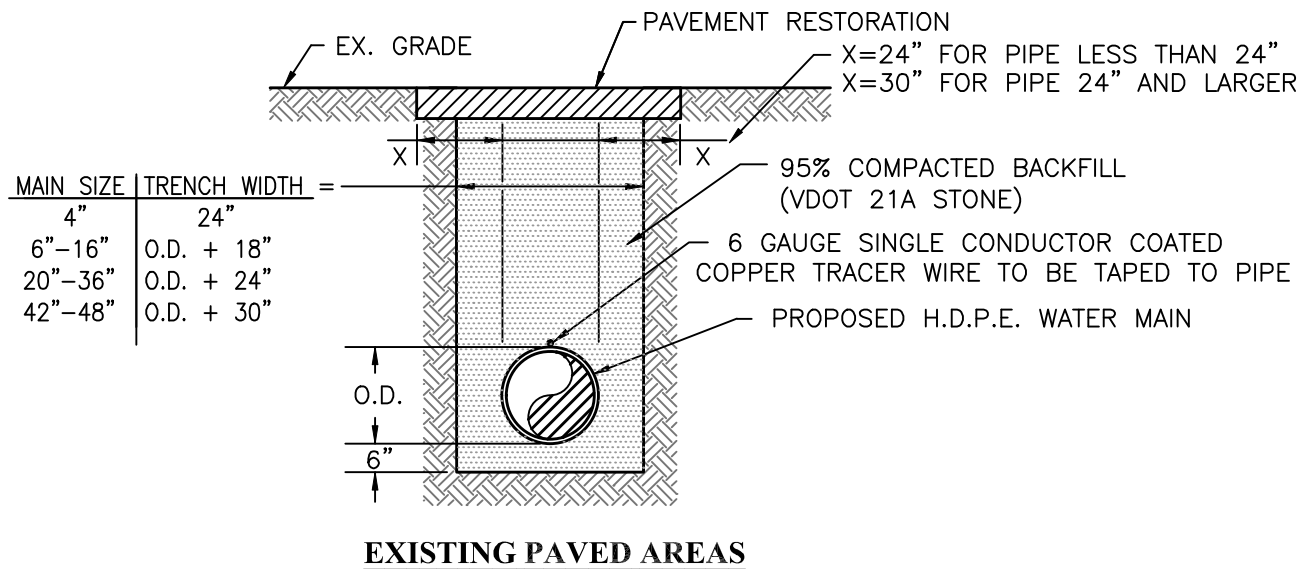
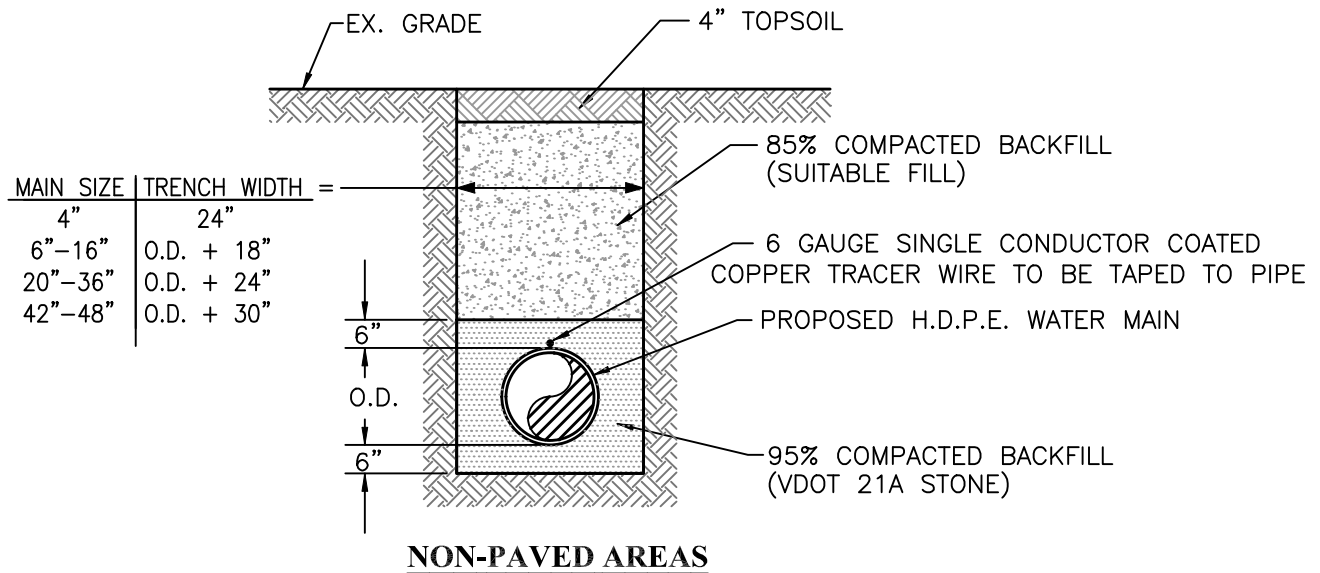
SCALE:  
NOT TO SCALE

**TRENCH - DUCTILE IRON PIPE**

DETAIL NO.:

**12**

DATE: 9/23



**NOTES:**

1. VDOT NO. 57 STONE SHALL BE USED AT CREEK CROSSINGS OR IN AREAS WHERE TRENCH CONTAINS GROUND WATER.
2. ALL PAVEMENT RESTORATION AND COMPACTED BACKFILL WITHIN VDOT RIGHT-OF-WAY SHALL ADHERE TO ALL APPLICABLE VDOT SPECIFICATIONS.
3. ALL WATER MAIN INSTALLATION IN AREAS WITH PROPOSED PAVING SHALL ADHERE TO APPROVED DEVELOPMENT PLAN.



**FAIRFAX WATER  
STANDARD DETAILS**

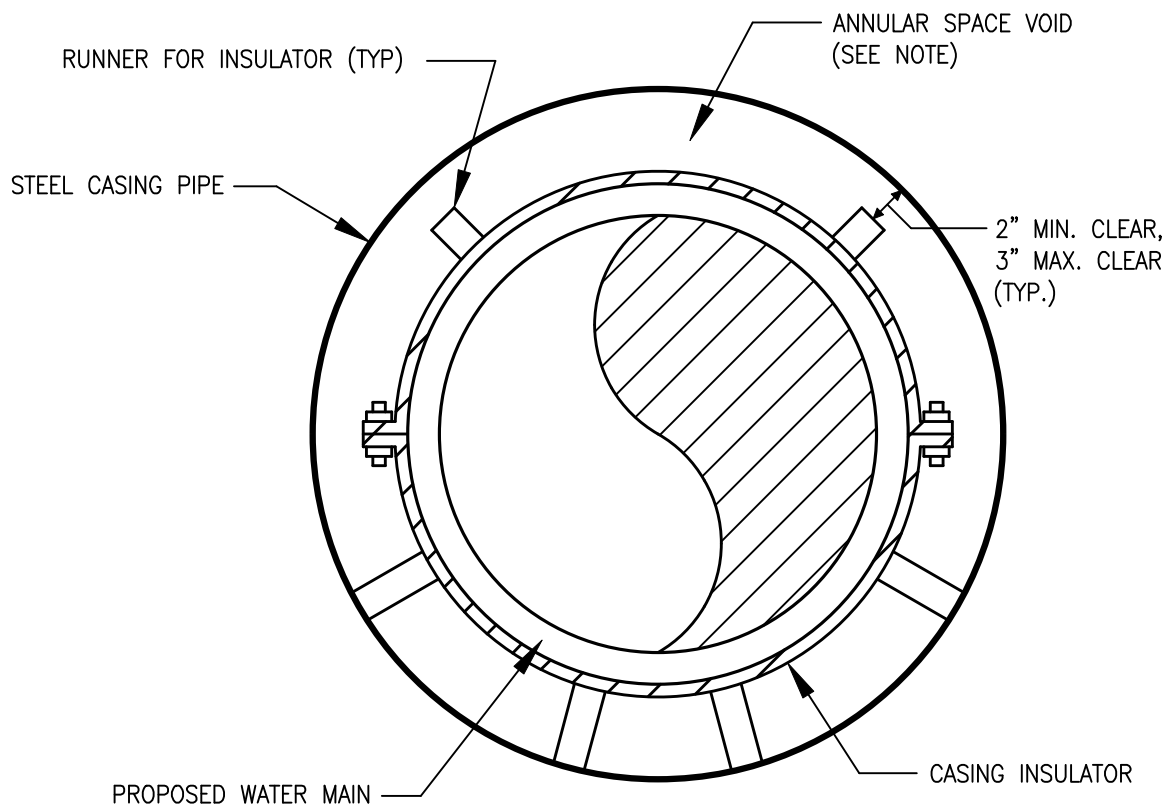
SCALE:  
NOT TO SCALE

**TRENCH – HIGH DENSITY POLYETHYLENE PIPE**

DETAIL NO.:

**13**

DATE: 9/23



CASING PIPE SIZES		
WATER MAIN PIPE SIZE (INCHES)	CASING PIPE SIZE (INCHES)	CASING THICKNESS (INCHES)
6	16	0.500
8	20	0.500
12	24	0.500
16	30	0.500
20	36	0.500
24	42	0.500
30	48	0.500
36	54	0.500

**NOTE:**

ANNULAR SPACE MAY BE FILLED AT THE DISCRETION OF FAIRFAX WATER.



**FAIRFAX WATER  
STANDARD DETAILS**

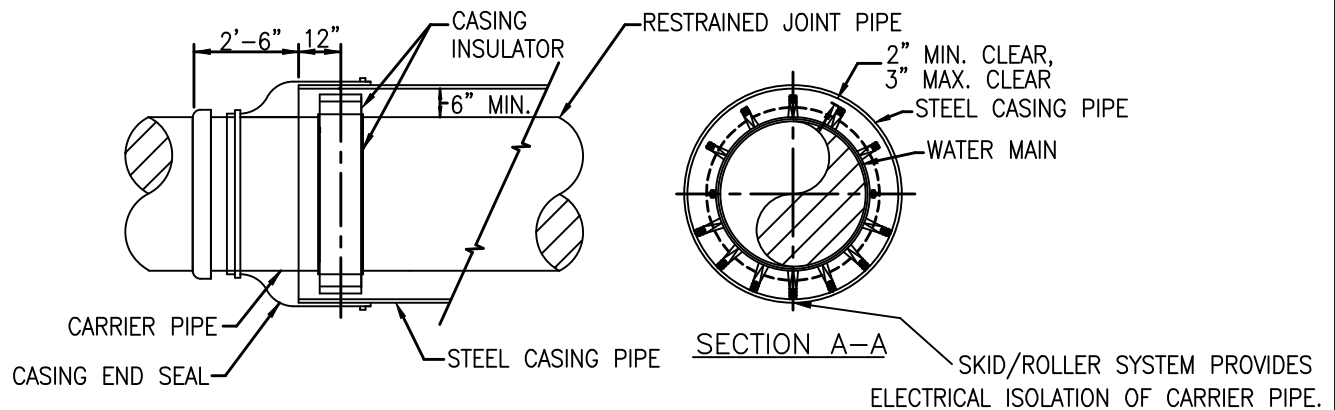
SCALE:  
NOT TO SCALE

**TRENCHLESS CROSSING  
STEEL CASING**

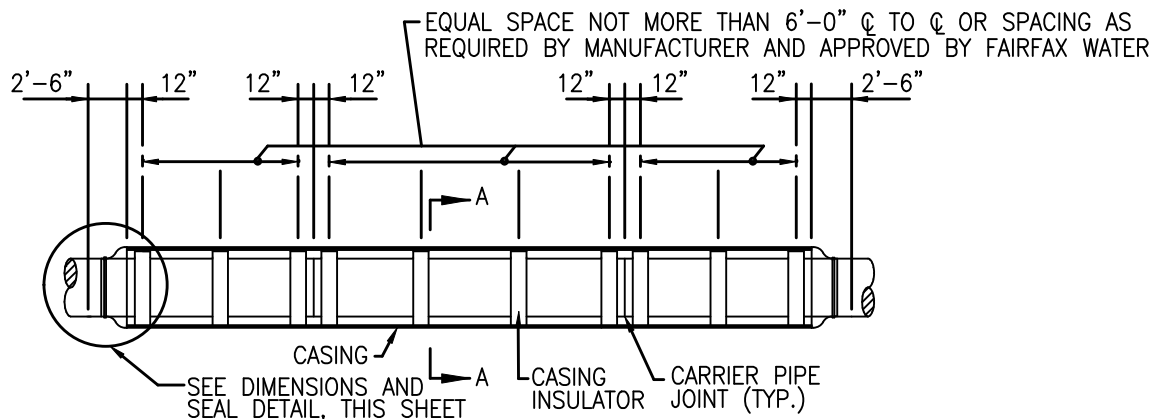
DETAIL NO.:

**14**

DATE: 9/23



### END DIMENSIONS AND SEAL DETAIL



### ELEVATION: CARRIER PIPE AND INSULATORS

#### NOTES:

1. THE CONTRACTOR MAY INSTALL TUNNEL LINER PLATE IN LIEU OF THE STEEL CASING SHOWN, IN ACCORDANCE WITH SECTION 02400 OF FAIRFAX WATER'S SPECIFICATIONS, AT NO ADDITIONAL COST TO FAIRFAX WATER. IF THE CONTRACTOR CHOOSES TO INSTALL TUNNEL LINER PLATE, SHOP DRAWINGS AND A DETAIL OF THE TUNNEL LINER PLATE INSTALLATION SHALL BE SUBMITTED, WHICH INDICATE THE ABILITY OF THE TUNNEL PLATE LINER TO WITHSTAND THE APPLIED LOADS. SUBMITTAL SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF VIRGINIA.
2. RESTRAINED JOINT PIPE SHALL BE INSTALLED WITHIN CASING PIPE.
3. SEE PLAN FOR TEST STATION AND ANODE REQUIREMENTS.
4. CARRIER PIPE DOES NOT REQUIRE POLYETHYLENE ENCASEMENT WITHIN CASING PIPE.
5. ALL PIPE JOINTS 24-INCH AND LARGER WITHIN CASING PIPE SHALL BE BONDED.
6. CASING END SEALS SHALL BE MADE OF NEOPRENE, NITRILE, OR EPDM RUBBER AND SECURED TO THE CASING AND CARRIER PIPE WITH STAINLESS STEEL BRANDS.
7. CASING PIPE JOINTS SHALL BE BEVELED AND CONTINUOUSLY WELDED.



FAIRFAX WATER  
STANDARD DETAILS

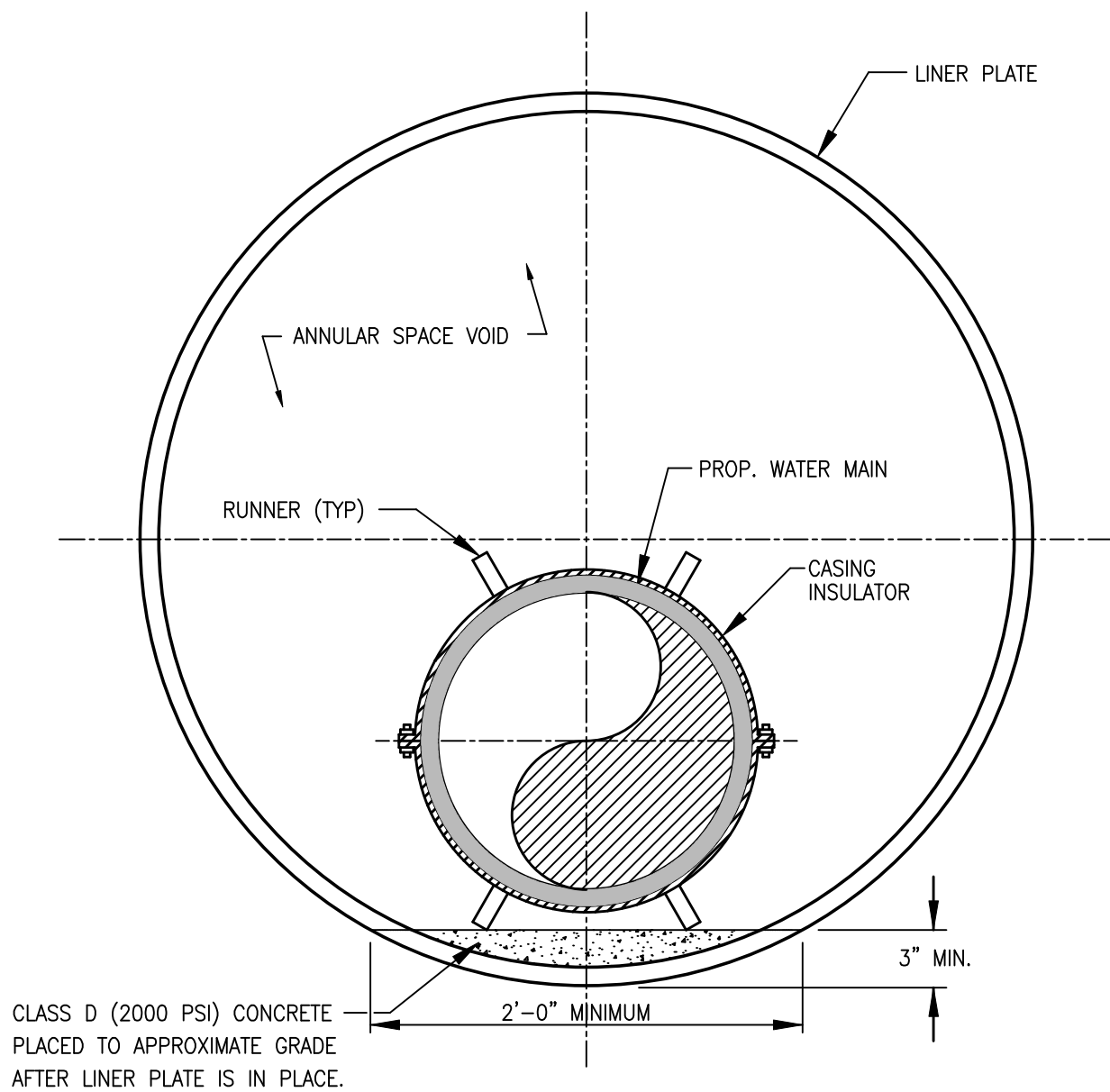
SCALE:  
NOT TO SCALE

TRENCHLESS CROSSING CASING INSULATORS  
AND CASING END SEAL

DETAIL NO.:

15

DATE: 9/23



**NOTE:**  
ANNULAR SPACE MAY BE FILLED AT THE DISCRETION OF FAIRFAX WATER.



# FAIRFAX WATER STANDARD DETAILS

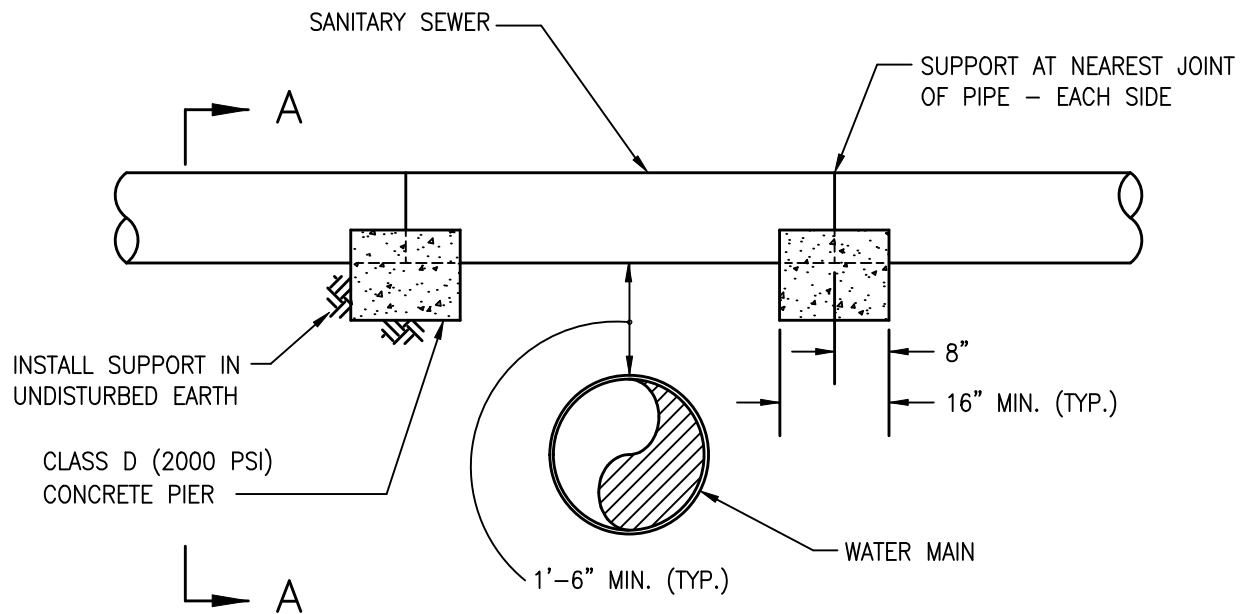
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## TRENCHLESS CROSSING LINER PLATE

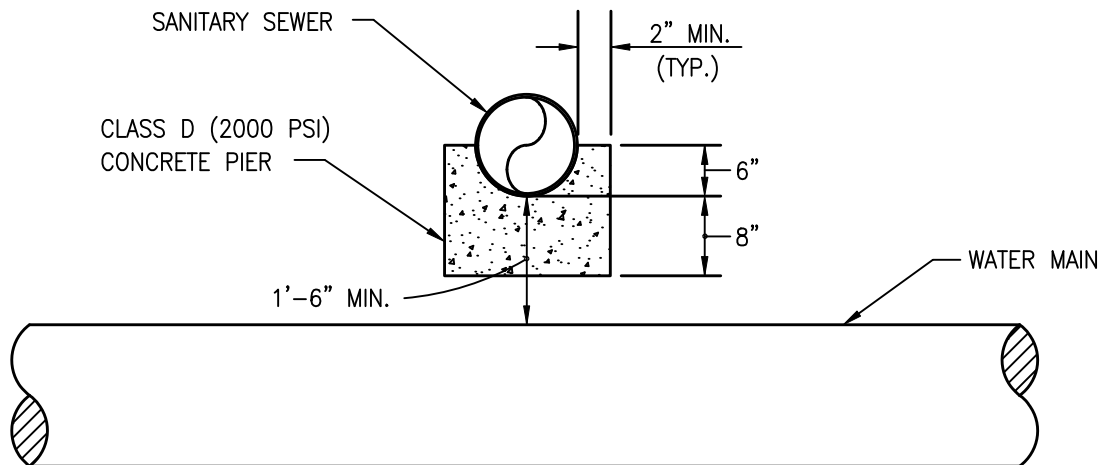
DETAIL NO.:

16

DATE: 9/23



**ELEVATION**



**SECTION A-A**

**CONCRETE PIER DETAIL**

**NOTE:**

SANITARY AND WATER MAIN PIPE JOINTS SHALL BE LOCATED EQUIDISTANT FROM CROSSING SO AS TO CENTER THE PIPE SECTIONS OVER THE CROSSING. NO JOINT SHALL BE LOCATED CLOSER THAN 4 FEET TO THE CROSSING.



DATE: 9/23

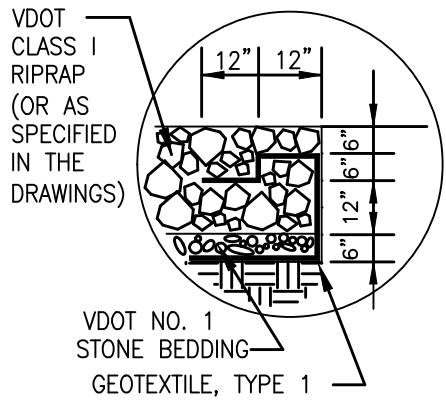
**FAIRFAX WATER  
STANDARD DETAILS**

**SANITARY SEWER PROTECTION WATER  
MAIN CROSSING UNDER SEWER**

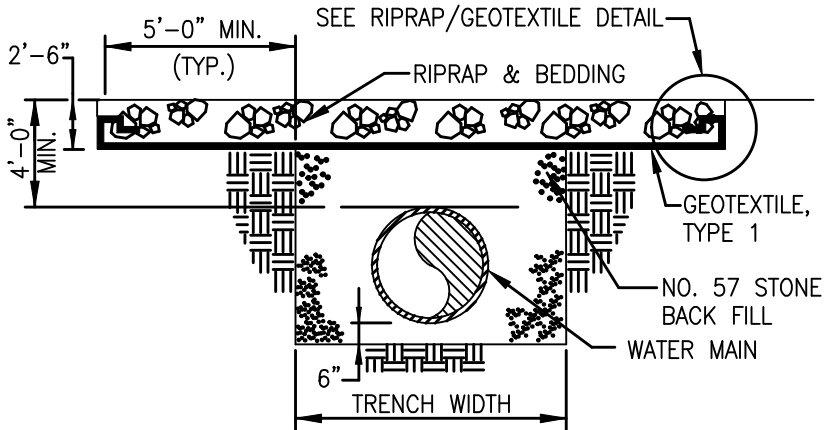
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DETAIL NO.:

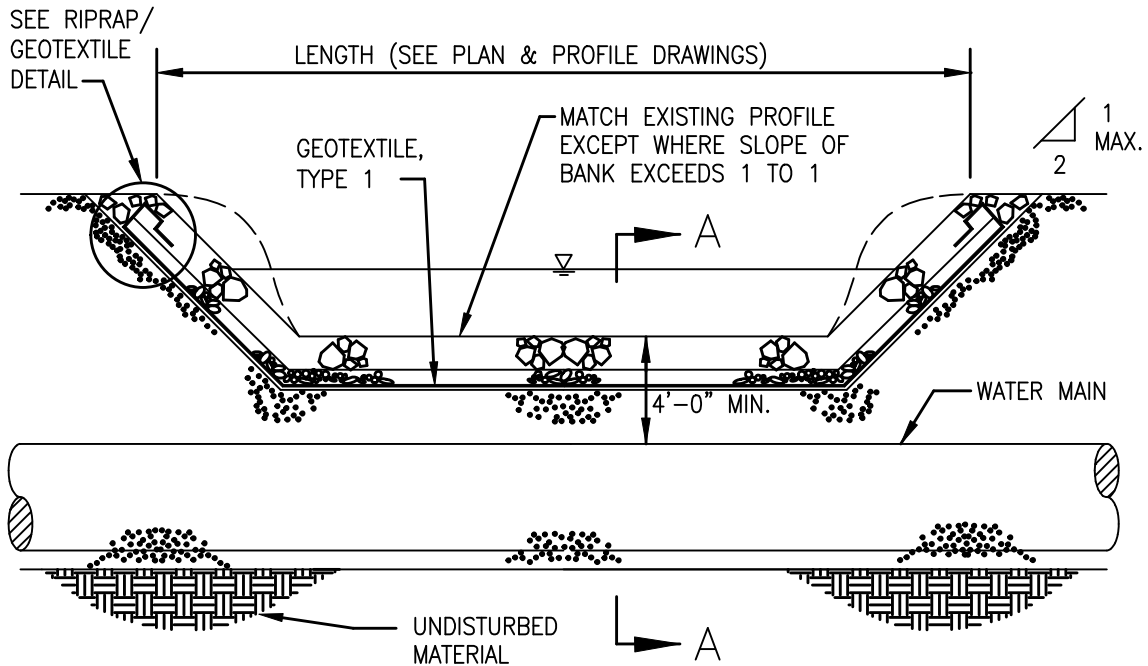
**17**



**RIPRAP/GEOTEXTILE  
DETAIL**



**SECTION A-A**



**ELEVATION**



**FAIRFAX WATER  
STANDARD DETAILS**

SCALE:  
NOT TO SCALE

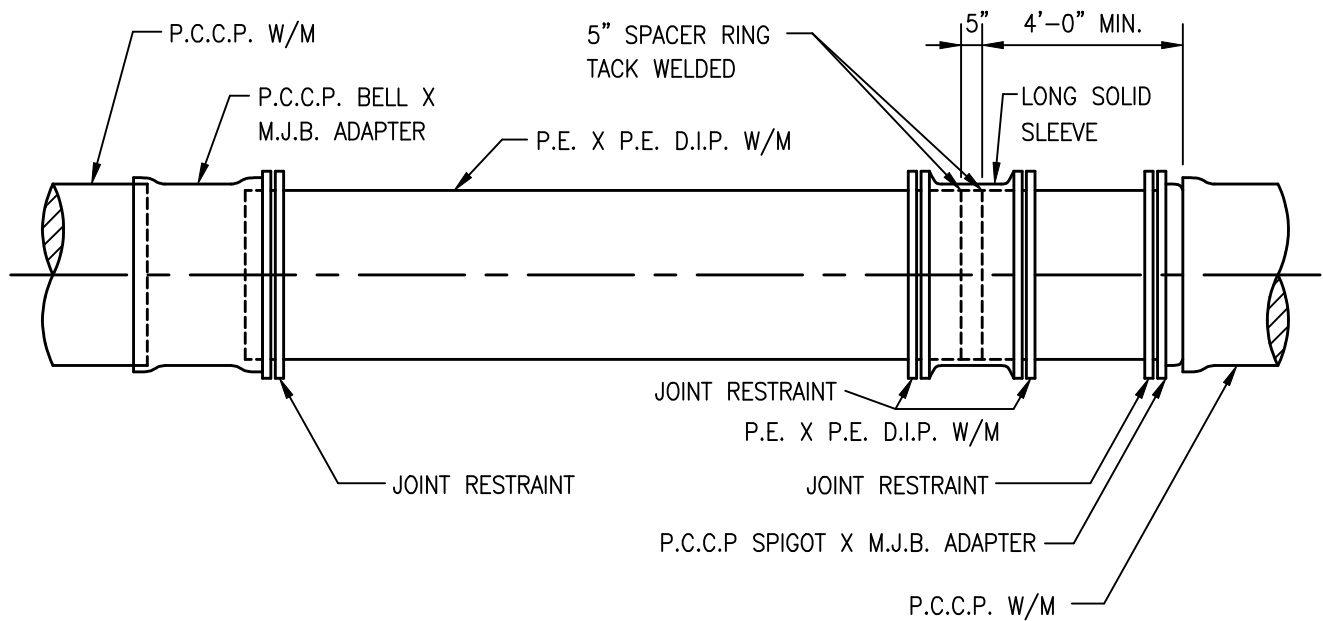
**STREAM CROSSING  
SCOUR PROTECTION**

DETAIL NO.:

**18**

DATE: 9/23





**NOTES:**

1. DETAILS SHOWN ARE FOR ALL PIPE DIAMETERS.
2. DUCTILE IRON PIPE TO BE INSTALLED WITH POLYETHYLENE ENCASEMENT.



DATE: 9/23

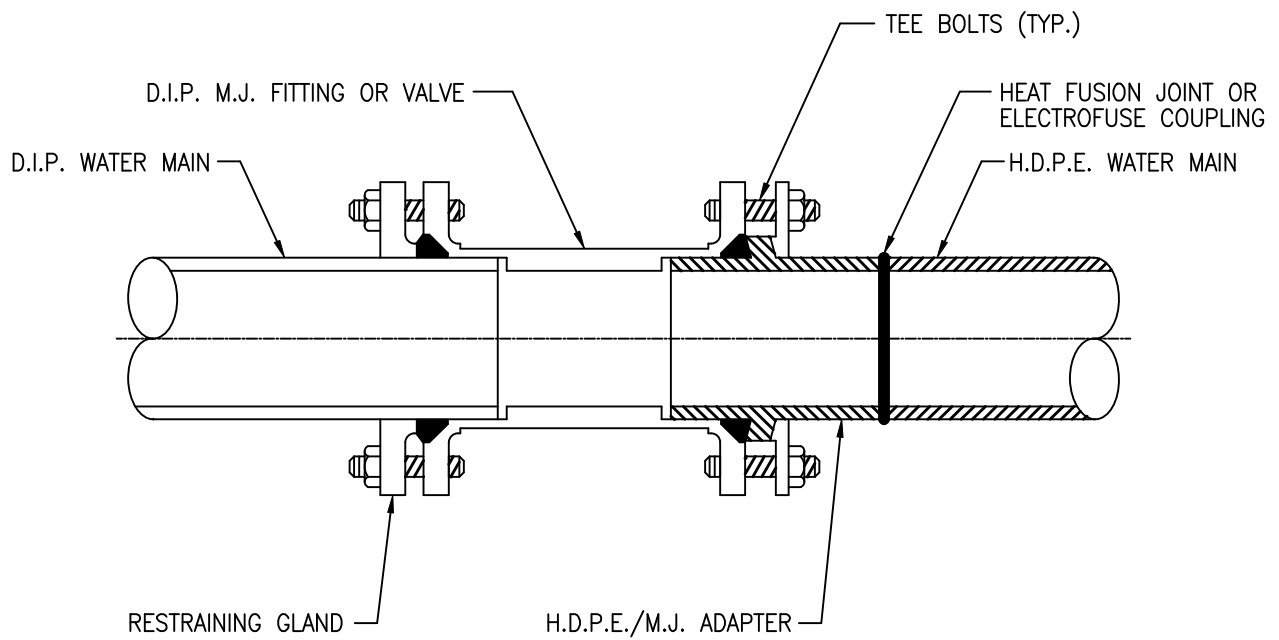
**FAIRFAX WATER  
STANDARD DETAILS**

**D.I.P. PIPE CLOSURE FOR PRESTRESSED  
CONCRETE CYLINDER PIPE**

SCALE:  
NOT TO SCALE

DETAIL NO.:

**19**



**FAIRFAX WATER  
STANDARD DETAILS**

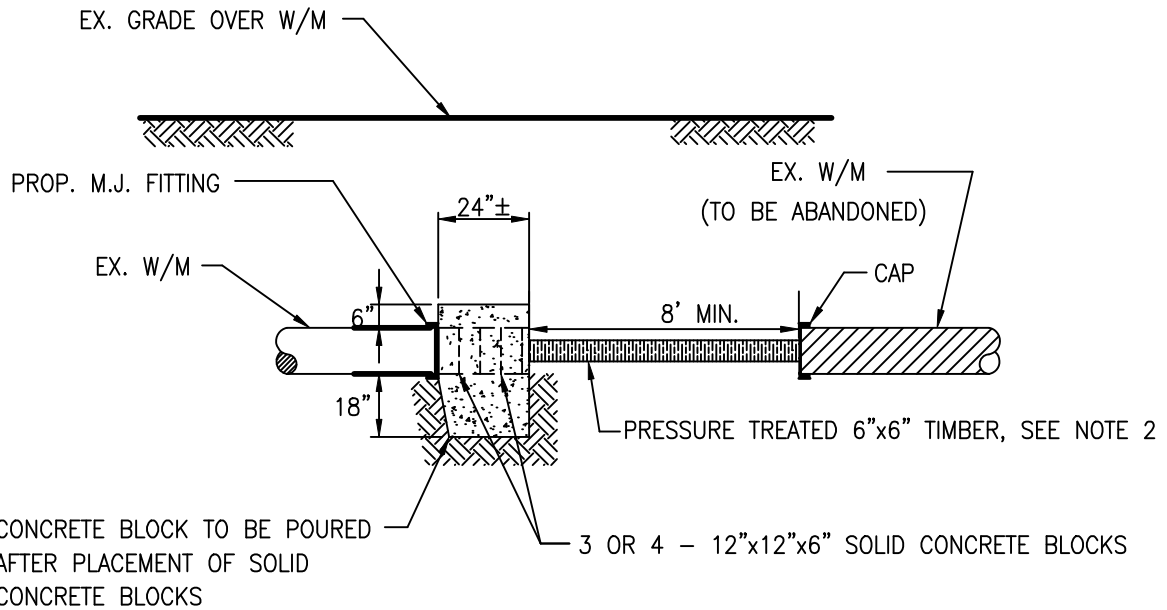
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**H.D.P.E./M.J. ADAPTER**

DETAIL NO.:

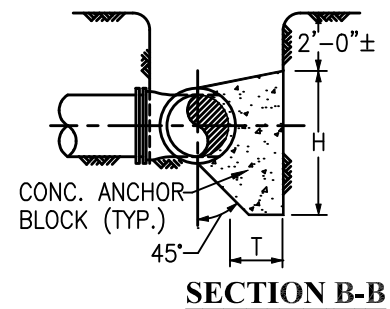
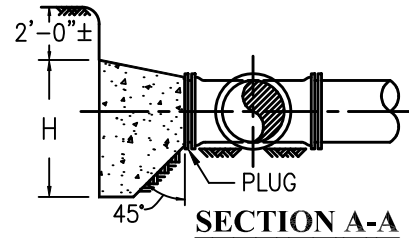
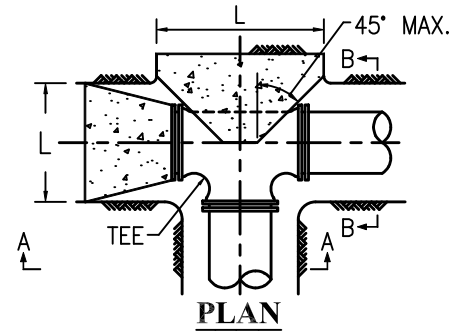
**20**

DATE: 9/23



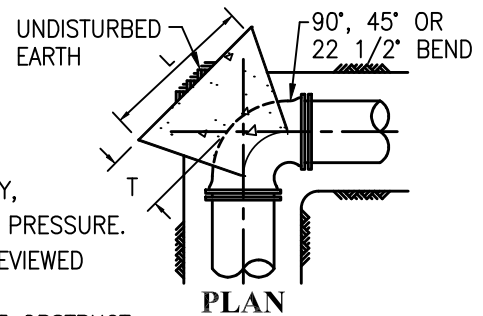
DATE: 9/23

PIPE SIZE INCHES	DEGREE OF BEND ( $\phi$ )	(1) TEST PRESSURE 175 PSI		
		L	H	T
6	90	3.0	2.0	1.25
	45	2.0	1.5	1.0
	22.5	1.5	1.0	1.0
8	90	4.0	2.5	1.75
	45	2.5	2.0	1.0
	22.5	2.0	1.5	1.0
12	90	5.5	4.0	2.25
	45	4.0	3.0	1.5
	22.5	3.0	2.0	1.0
16	90	7.5	5.0	3.25
	45	5.0	4.5	2.0
	11.25/22.5	4.0	3.0	1.5
20	90	9.5	6.0	4.0
	45	7.0	4.5	2.75
	11.25/22.5	5.5	3.0	2.0
24	90	13.0	6.5	5.5
	45	9.0	5.0	3.5
	11.25/22.5	6.0	4.0	2.0



**NOTES:**

1. MINIMUM CONCRETE ANCHOR BLOCK DIMENSIONS IN FEET.
2. PROVIDE FORM WORK FOR ALL CONCRETE.
3. CONCRETE SHALL BE CLASS D 2000 PSI.
4. THE ABOVE TABLE IS BASED ON 2000 PSF SOIL BEARING CAPACITY,  $R=2PA \sin (\phi/2)$  AND FOR A TEST PRESSURE = 1.5 x WORKING PRESSURE.
5. ANCHOR BLOCK DESIGN FOR PIPE LARGER THAN 24" SHALL BE REVIEWED ON AN INDIVIDUAL BASIS BY FAIRFAX WATER.
6. WRAP FITTING WITH POLYETHYLENE SHEETING. CONCRETE MUST NOT OBSTRUCT ACCESS TO MECHANICAL JOINT ASSEMBLY.
7. CONCRETE ANCHOR BLOCK DIMENSIONS FOR TEES TO BE SAME AS FOR 90° BENDS, AND BASED ON THE SIZE OF THE BRANCH PIPING.
8. HEIGHT OF CONCRETE ANCHOR BLOCK ABOVE PIPE CENTERLINE IS 1/3 THE H DIMENSION.
9. BLOCKING SHALL BACK TO UNDISTURBED EARTH.



**FAIRFAX WATER  
STANDARD DETAILS**

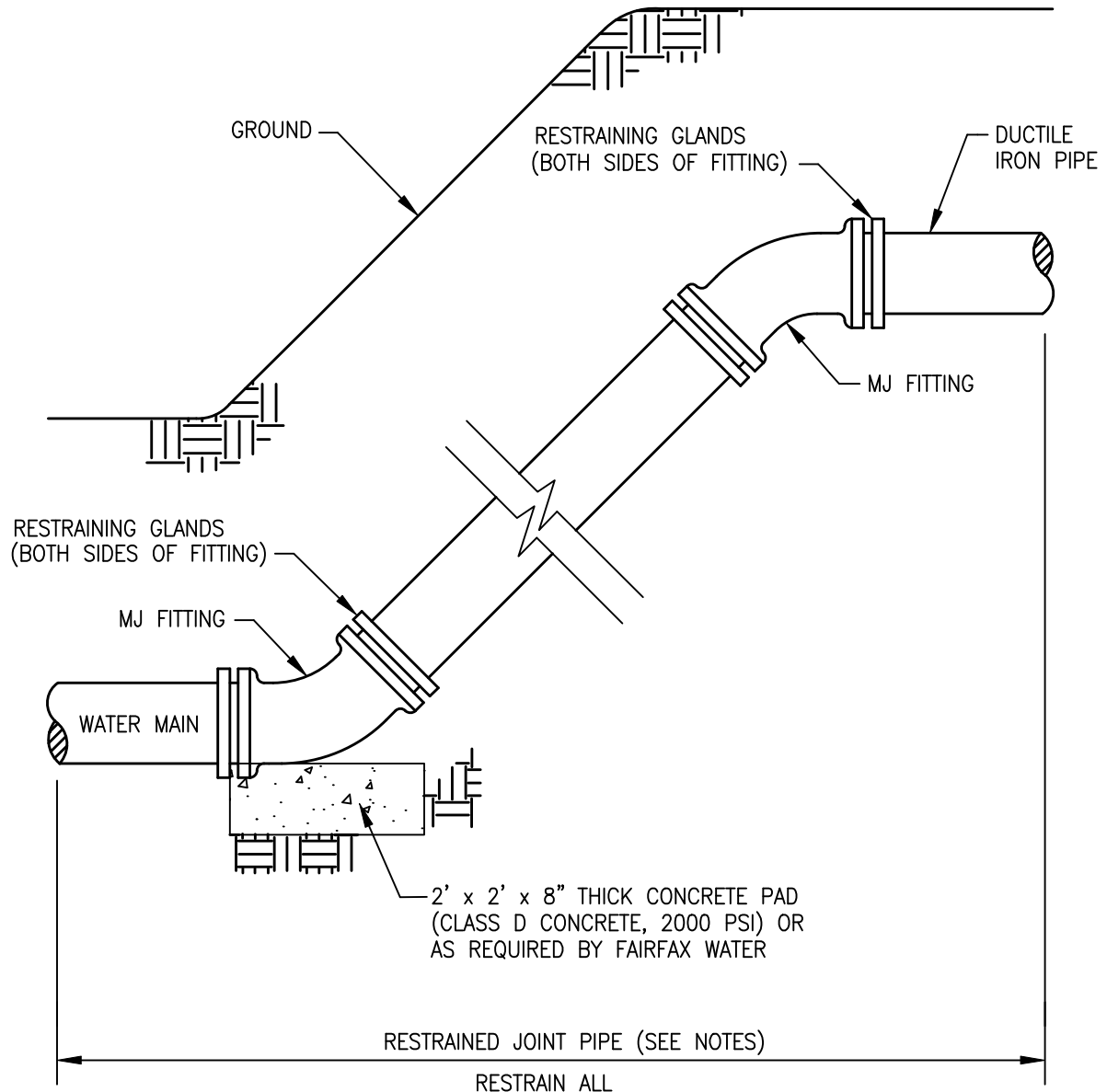
SCALE:  
NOT TO SCALE

**CONCRETE THRUST ANCHORS**

DETAIL NO.:

**22**

DATE: 9/23



**NOTES:**

1. RESTRAIN MINIMUM 3 FULL JOINTS OF PIPE BEFORE AND AFTER FITTING FOR 8" DIAMETER WATER MAIN OR SMALLER, 4 FULL JOINTS OF PIPE FOR 12" DIAMETER WATER MAIN, OR AS REQUIRED BY FAIRFAX WATER. IF SUFFICIENT PIPE JOINT RESTRAIN CANNOT BE ACHIEVED, THRUST COLLAR SHALL BE USED.
2. OFFSET BENDS REQUIRE SIMILAR BLOCKING AND PIPE RESTRAINT.



**FAIRFAX WATER  
STANDARD DETAILS**

SCALE:  
NOT TO SCALE

**CONCRETE VERTICAL BLOCKING  
WATER MAINS LESS THAN OR EQUAL TO 12"**

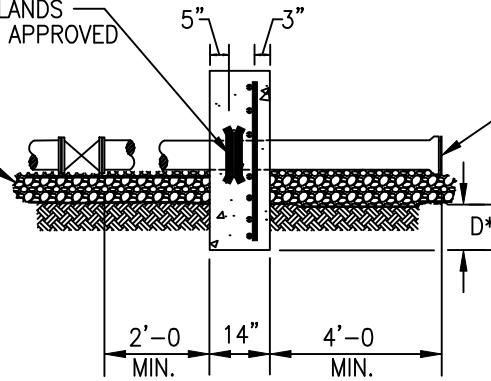
DETAIL NO.:

**23**

DATE: 9/23

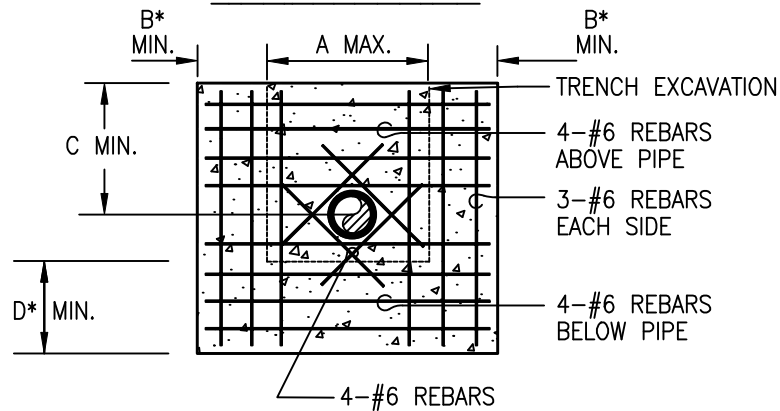
2 OPPOSING RESTRAINING GLANDS  
(MEGA-LUG OR EQUAL, SEE APPROVED  
PRODUCT LIST)

GRAVEL BEDDING  
SEE STANDARD  
TRENCH DETAIL



MJ PLUG  
W/ CONCRETE  
ANCHOR

**SIDE ELEVATION**



**FRONT ELEVATION**

**NOTES:**

1. BEARING AREA IS BASED ON 200 PSI TEST PRESSURE AND A SOIL BEARING CAPACITY OF 2000 POUNDS PER SQUARE FOOT. INCREASE BLOCK DIMENSIONS AS REQUIRED FOR HIGHER TEST PRESSURES AND IN SOILS WITH LOWER BEARING VALUES.
2. \*DIMENSIONS "B" AND "D" ARE MINIMUM VALUES FOR BEARING IN UNDISTURBED EARTH.
3. CONCRETE STRENGTH SHALL BE CLASS B (4000 PSI).
4. MAINTAIN MINIMUM 1.5" CLEARANCE BETWEEN PIPE AND REBAR.

THRUST COLLAR SCHEDULE				
LINE SIZE	A	B*	C	D*
6"	2'-0"	1'-0"	1'-6"	1'-0"
8"	2'-0"	1'-3"	1'-6"	1'-0"
10"	2'-3"	1'-6"	1'-6"	1'-6"
12"	2'-6"	2'-0"	1'-6"	1'-6"



**FAIRFAX WATER  
STANDARD DETAILS**

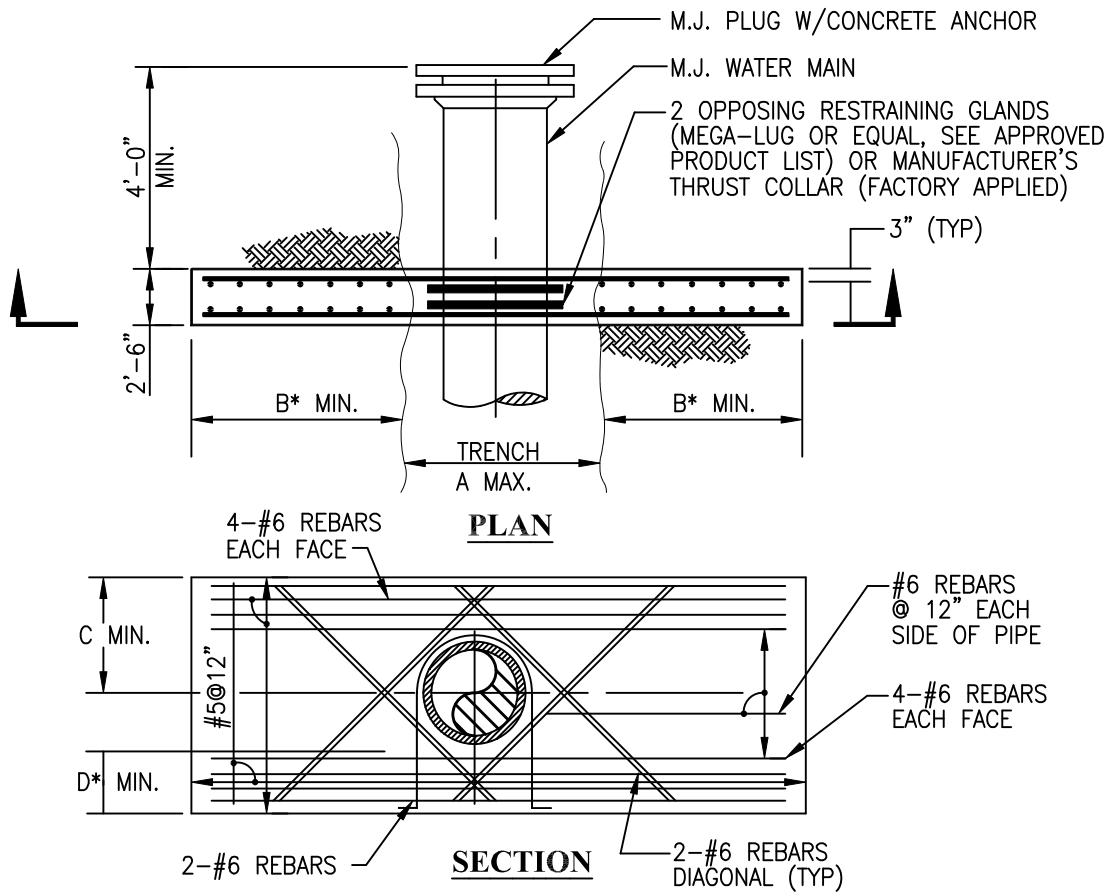
SCALE:  
NOT TO SCALE

**THRUST COLLAR  
6" TO 12" WATER MAIN**

DETAIL NO.:

**24**

DATE: 9/23



**NOTES:**

1. BEARING AREA IS BASED ON 200 PSI TEST PRESSURE AND A SOIL BEARING CAPACITY OF 2000 POUNDS PER SQUARE FOOT. INCREASE BLOCK DIMENSIONS AS REQUIRED FOR HIGHER TEST PRESSURES AND IN SOILS WITH LOWER BEARING VALUES.
2. \*DIMENSIONS "B" AND "D" ARE MINIMUM VALUES FOR BEARING IN UNDISTURBED EARTH.
3. CONCRETE STRENGTH SHALL BE CLASS B (4000 PSI).
4. MAINTAIN MINIMUM 1.5" CLEARANCE BETWEEN PIPE AND REBAR.

THRUST COLLAR SCHEDULE				
LINE SIZE	A	B*	C	D*
16"	2'-9"	3'-0"	2'-0"	1'-6"
24"	3'-6"	4'-0"	2'-6"	2'-0"



DATE: 9/23

**FAIRFAX WATER  
STANDARD DETAILS**

**THRUST COLLAR  
16" TO 24" WATER MAIN**

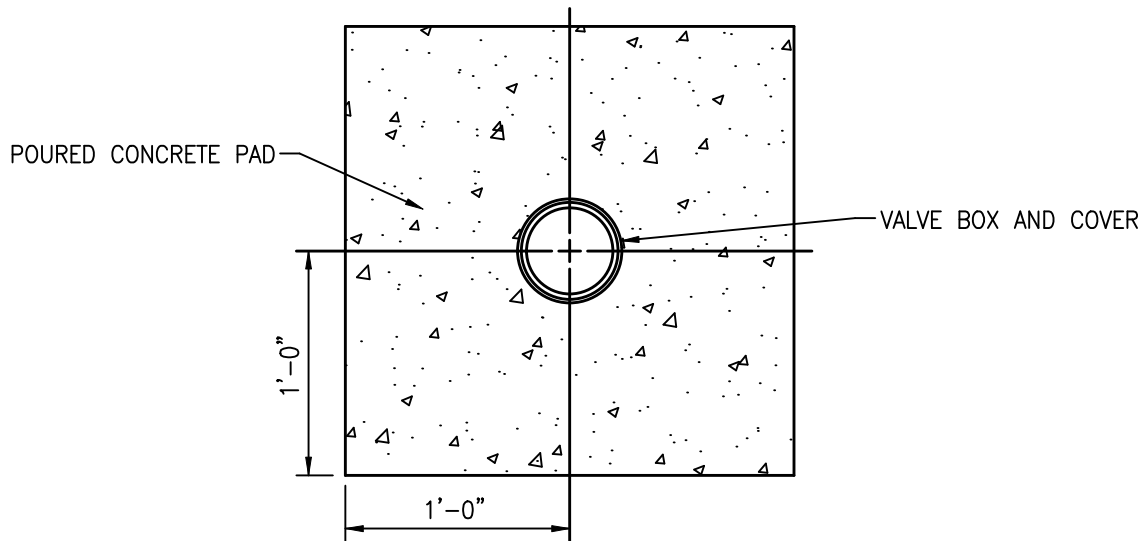
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DETAIL NO.:

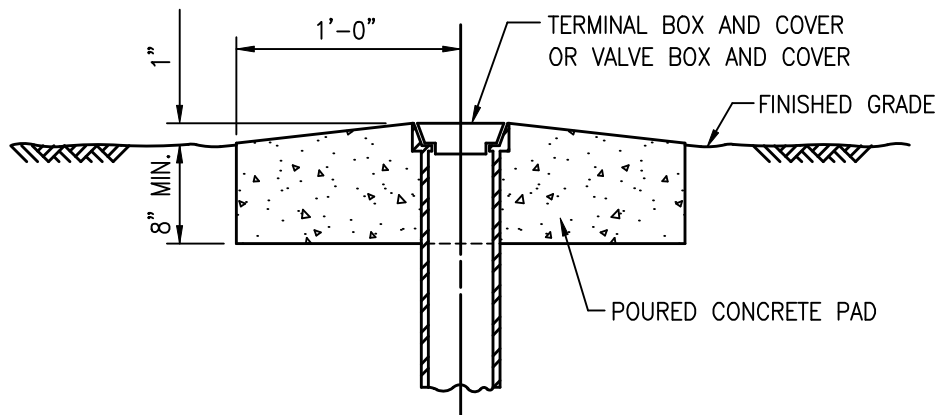
**25**







**PLAN**



**ELEVATION**

**NOTES:**

1. CONCRETE PADS FOR WATER MAIN VALVE AND TERMINAL BOX ARE TO BE INSTALLED USING REQUIREMENTS FOR CLASS D CONCRETE (2000 PSI).
2. PADS TO BE FORMED AND PROPERLY FINISHED.
3. VALVE BOX CONCRETE PAD TO BE INSTALLED ON ALL VALVES IN NON-PAVED AREAS OR AS DIRECTED BY FAIRFAX WATER.
4. GUARD POSTS ARE NOT TO BE INSTALLED AT VALVES UNLESS INDICATED ON DRAWINGS, OR AS SPECIFIED BY FAIRFAX WATER.



**FAIRFAX WATER  
STANDARD DETAILS**

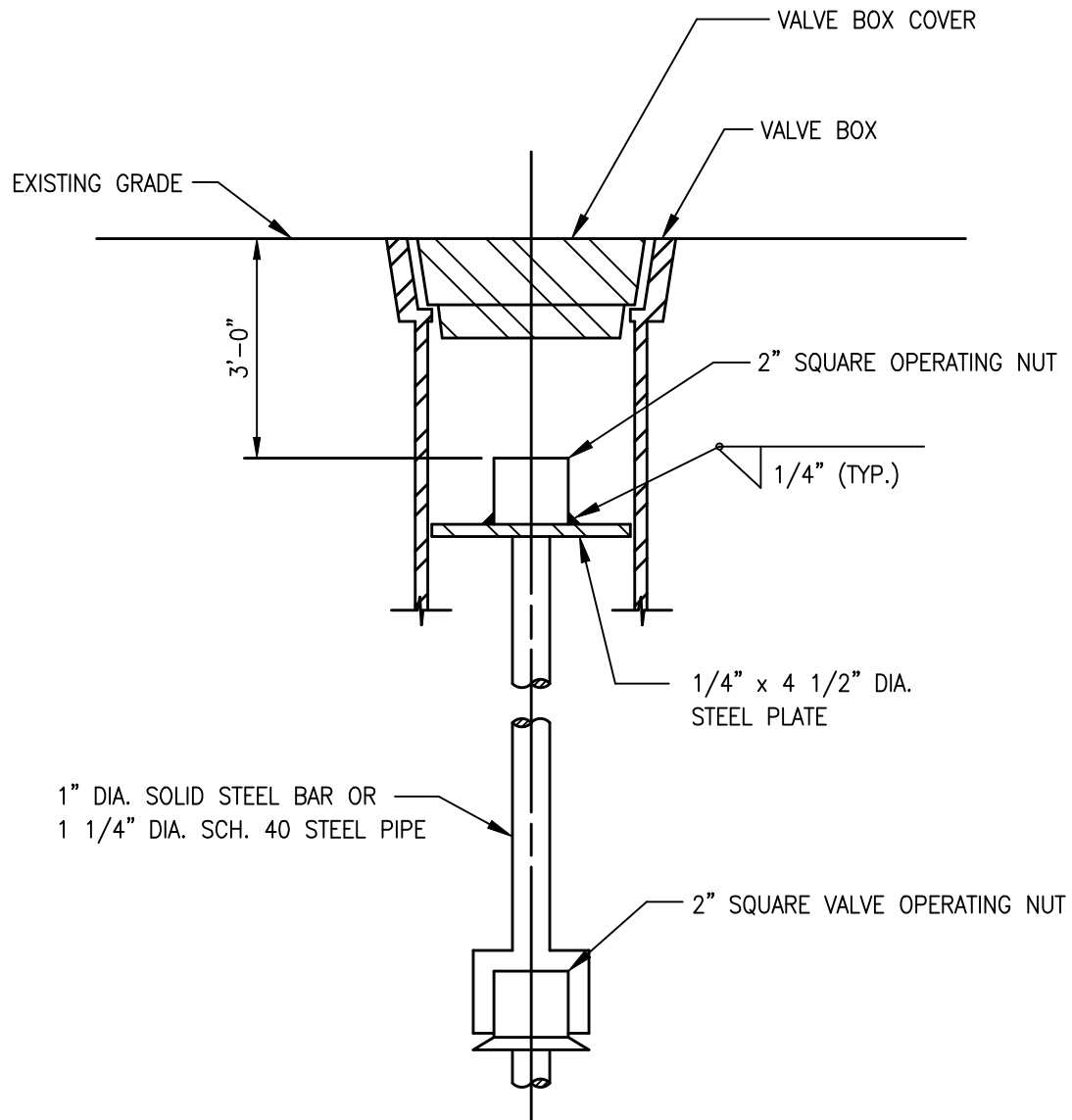
SCALE:  
NOT TO SCALE

**VALVE BOX CONCRETE PAD**

DETAIL NO.:

**27**

DATE: 9/23



**NOTES:**

1. FOR VALVE BOXES DEEPER THAN SIX FEET, USE 5-INCH DIAMETER GRAY CAST IRON (SOIL) PIPE TO EXTEND STANDARD TOP AND BOTTOM SECTIONS.
2. STACKING OF VALVE BOX SECTIONS IS NOT ACCEPTABLE.



**FAIRFAX WATER  
STANDARD DETAILS**

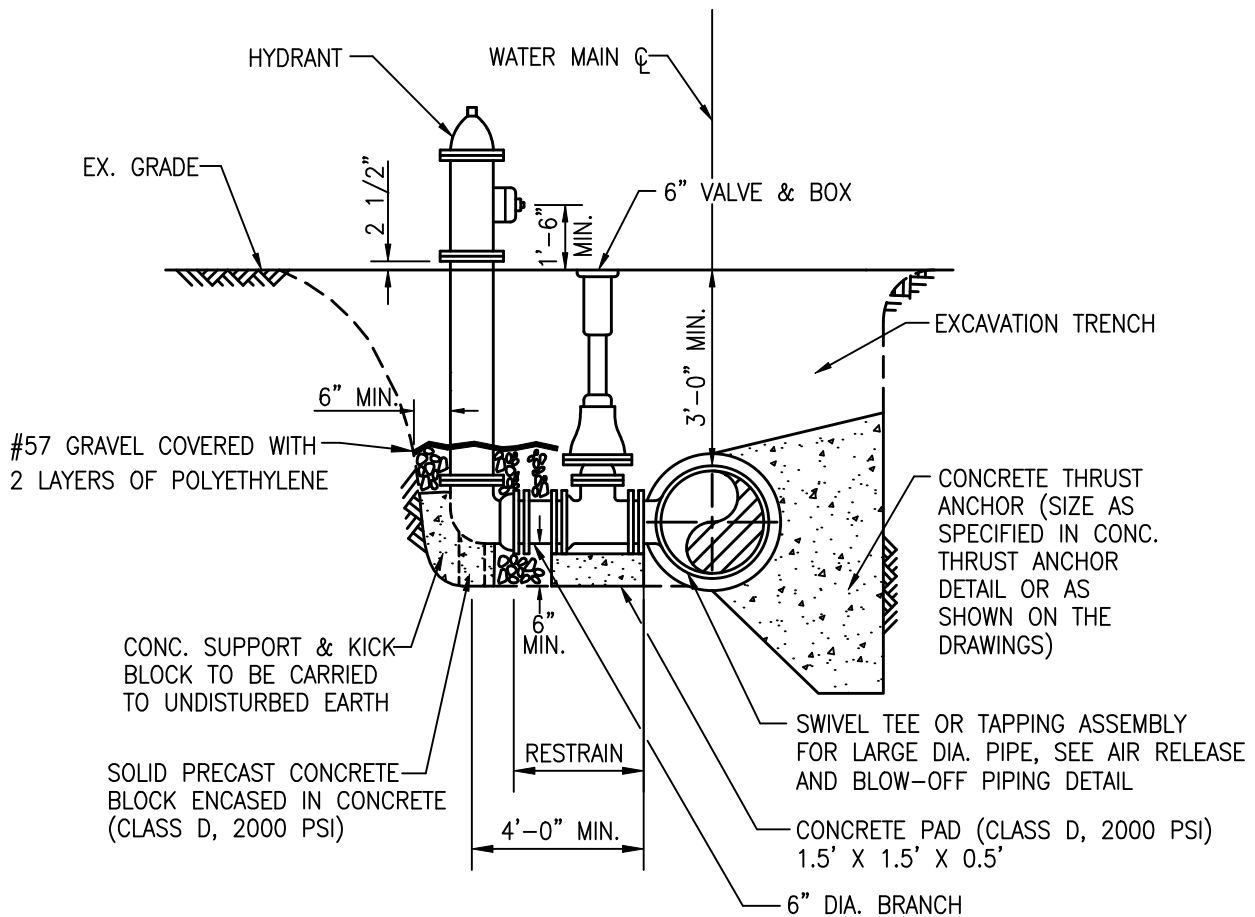
SCALE:  
NOT TO SCALE

**VALVE STEM AND BOX EXTENSION**

DETAIL NO.:

**28**

DATE: 9/23



**NOTES:**

1. FOR HYDRANT LOCATION IN REGARD TO FACE OF CURB, SEE FAIRFAX COUNTY PUBLIC FACILITIES MANUAL.
2. IF SWIVEL TEE IS NOT USED, VALVE MUST BE RESTRAINED TO TEE WITH RESTRAINING GLANDS BY CONTRACTOR.
3. HYDRANTS SHALL HAVE SHOP-APPLIED COATINGS AS FOLLOWS:
  - HYDRANT BARREL: KENNEDY SAFETY RED OR MUELLER RED #10
  - TOPS AND CAPS: KENNEDY SILVER OR MUELLER SILVER #18
4. POLYETHYLENE ENCASEMENT TO BE INSTALLED UP TO THE BASE (BOOT) OF THE HYDRANT AND SHALL NOT TO PREVENT DISCHARGE OF WATER THROUGH HYDRANT DRAIN HOLES.
5. PROVIDE ADEQUATE CLEARANCE FROM EXISTING GRADE TO ACCESS FLANGE BOLTS.
6. THE DRAIN HOLE SHALL BE PLUGGED WHEN HYDRANT IS INSTALLED IN AN AREA SUBJECT TO HIGH GROUND WATER LEVELS, FLOODING, CONTAMINANT OR POLLUTION SPILLS, OR SURFACE WATER PONDING AS IDENTIFIED BY ENGINEER OR AS CALLED OUT ON THE PLANS.



**FAIRFAX WATER  
STANDARD DETAILS**

SCALE:  
NOT TO SCALE

**STANDARD HYDRANT INSTALLATION**

DETAIL NO.:

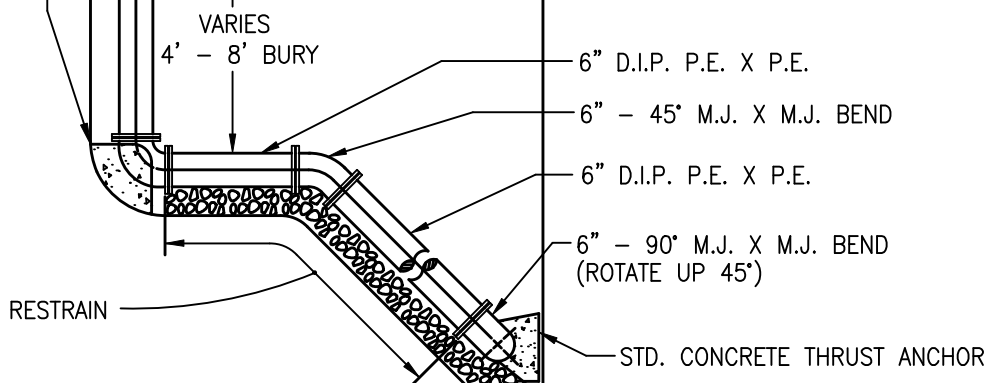
**29**

DATE: 9/23

SEE STANDARD HYDRANT  
INSTALLATION DETAIL

ALIGN HYDRANT NOZZLE SO DISCHARGE  
FLOWS DOWNSTREAM IF APPLICABLE

EX. GRADE



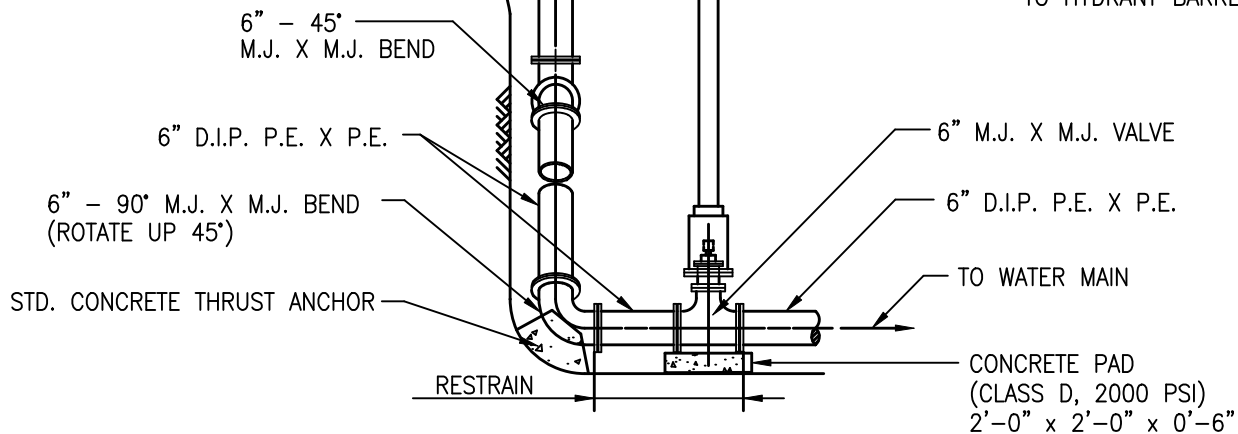
**SIDE ELEVATION**

SEE STANDARD HYDRANT  
INSTALLATION DETAIL

EX. GRADE

STD. VALVE BOX WITH  
VALVE STEM EXTENSION

NOTE: RESTRAIN PIPING  
FROM WATER MAIN  
TO HYDRANT BARREL.



**FRONT ELEVATION**



DATE: 9/23

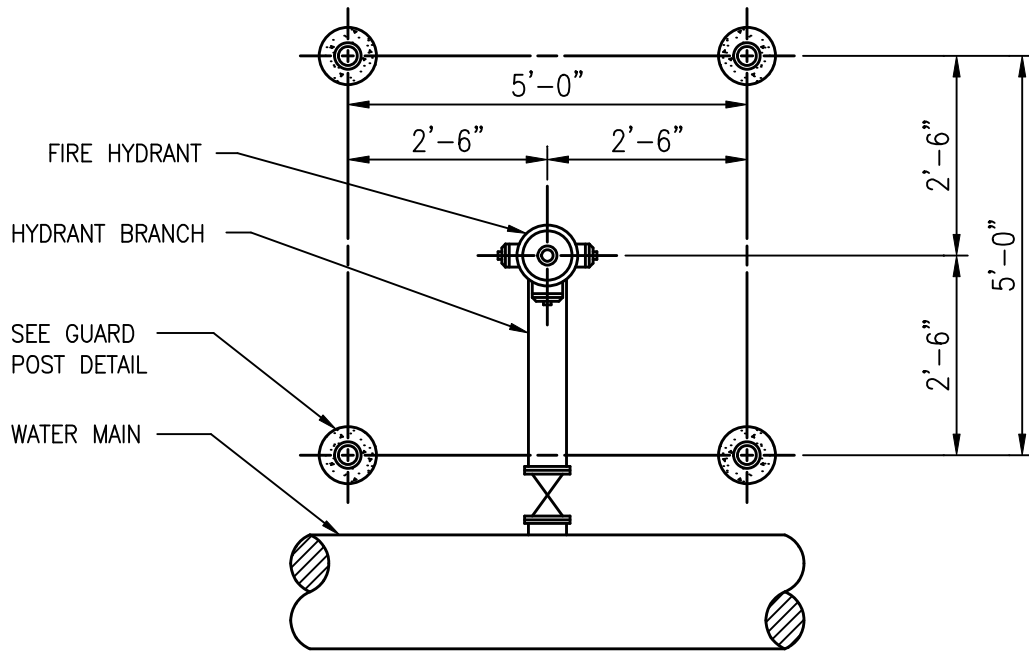
**FAIRFAX WATER  
STANDARD DETAILS**

**STANDARD HYDRANT  
GREATER THAN 8' BURY**

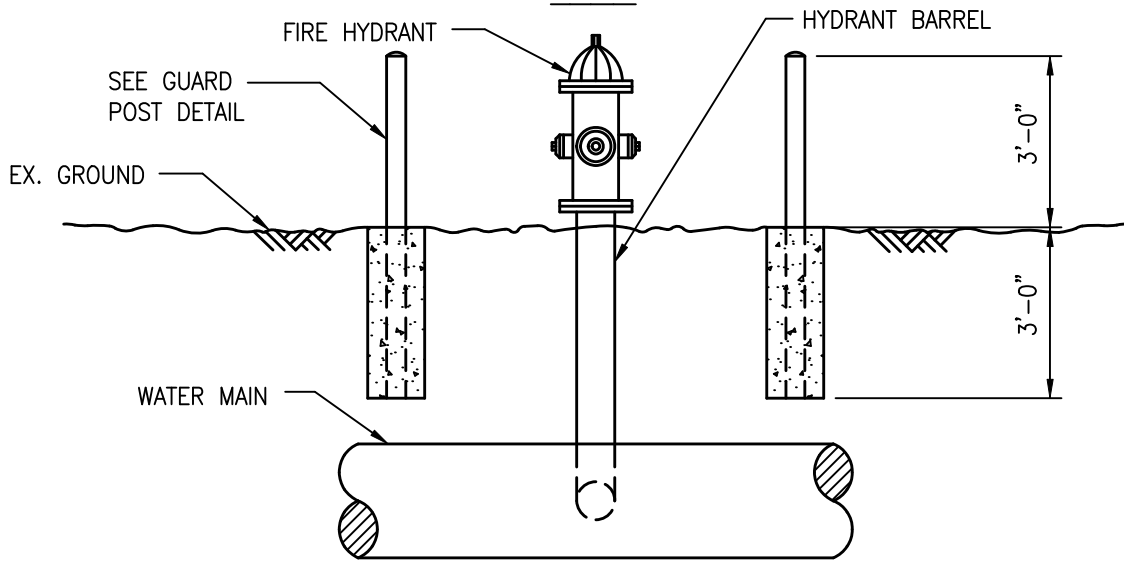
SCALE:  
NOT TO SCALE

DETAIL NO.:

**30**



**PLAN**



**ELEVATION**

**NOTES:**

1. GUARD POSTS ARE USED TO PROTECT A HYDRANT IN AREAS WHERE VEHICULAR OR EQUIPMENT TRAFFIC MAY BE ENCOUNTERED. THE PLANS OR FAIRFAX WATER TO SPECIFY THE INSTALLATION OF GUARD POSTS. DO NOT INSTALL GUARD POSTS WITHIN VDOT RIGHT-OF-WAY UNLESS DIRECTED BY FAIRFAX WATER.
2. NO STRUCTURES, POLES, SIGN POSTS, TREES, OR SHRUBS TO BE INSTALLED WITHIN FOUR FEET OF FIRE HYDRANT.



DATE: 9/23

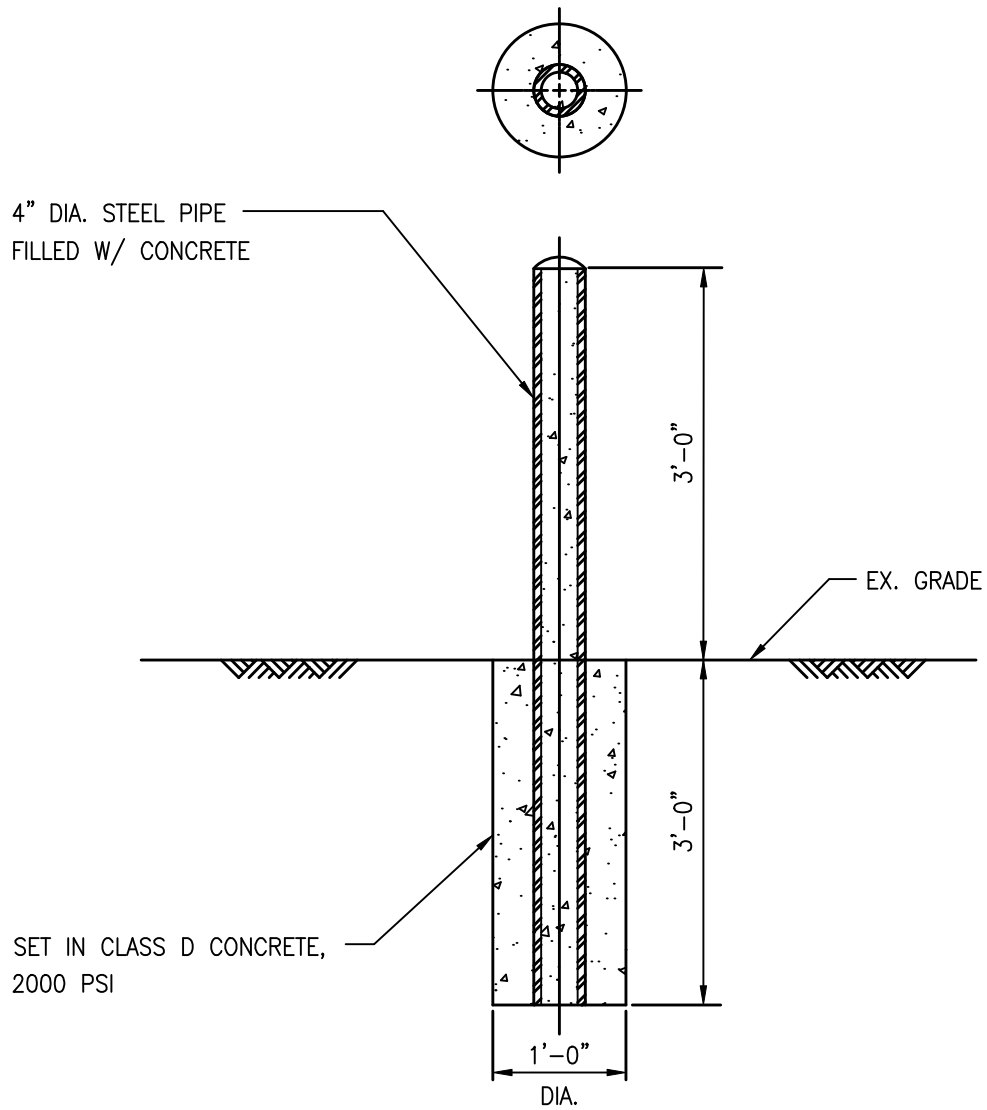
**FAIRFAX WATER  
STANDARD DETAILS**

**HYDRANT PROTECTION  
GUARD POSTS**

SCALE:  
NOT TO SCALE

DETAIL NO.:

**31**



**NOTE:**

GUARD POSTS SHALL BE PRIMED AND PAINTED BY CONTRACTOR AS FOLLOWS:

1. PRIMER: SHERWIN-WILLIAMS DTM WASH PRIMER
2. TOP COAT (2 COATS ARE REQUIRED): SHERWIN-WILLIAMS SHER-CRYL HPA – ROBOTIC BLUE (SW4063)



**FAIRFAX WATER  
STANDARD DETAILS**

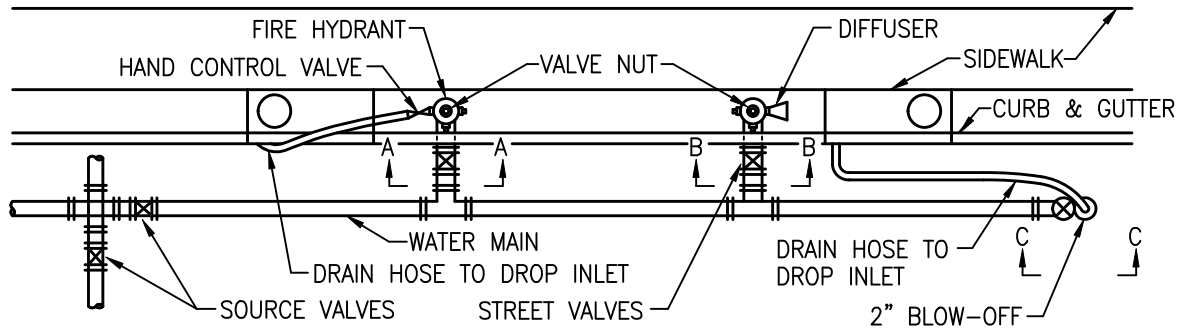
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**GUARD POST**

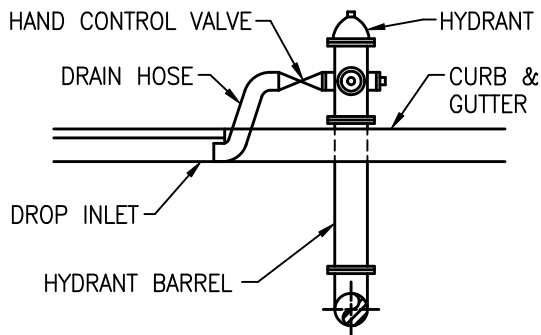
DETAIL NO.:

**32**

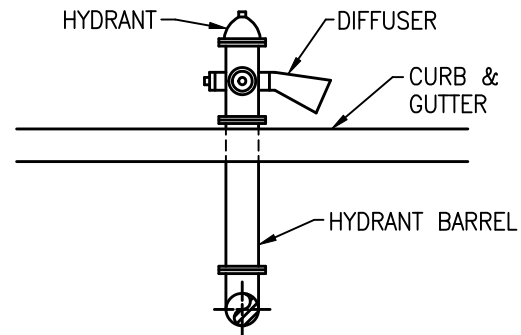
DATE: 9/23



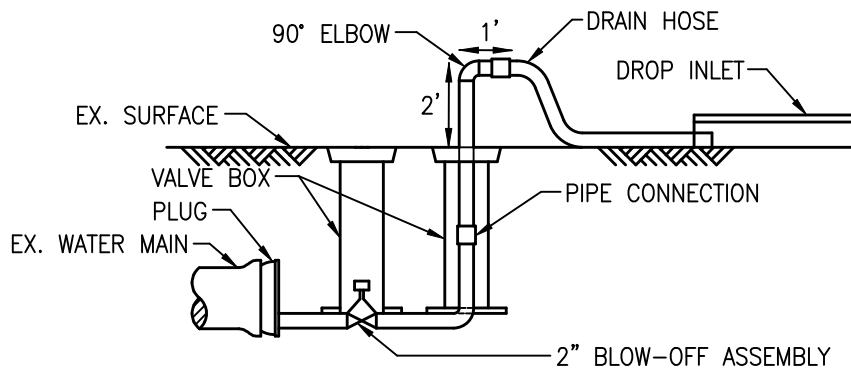
**PLAN**



**SECTION A-A**



**SECTION B-B**



**SECTION C-C**

**NOTES:**

1. DO NOT SUBMERGE DISCHARGE END OF DRAIN HOSE, PROVIDE AIR GAP.
2. DECHLORINATE AS APPROPRIATE.



DATE: 9/23

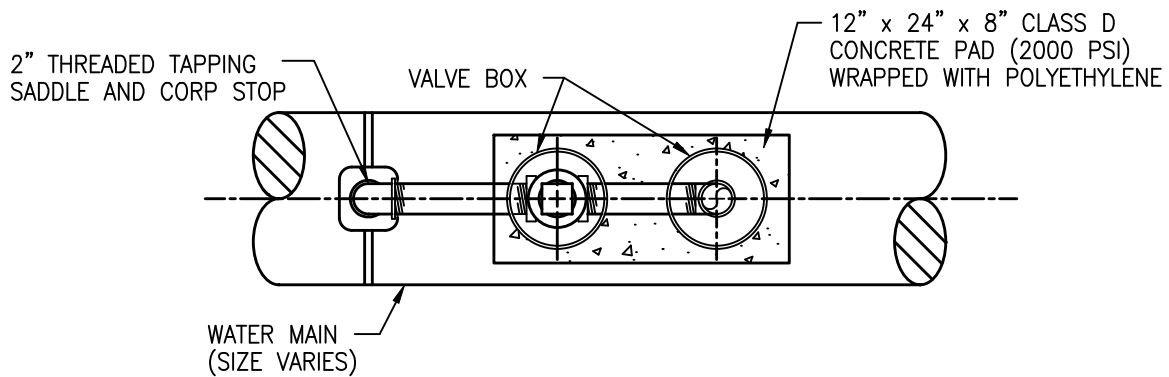
**FAIRFAX WATER  
STANDARD DETAILS**

**METHODS OF FLUSHING  
FIRE HYDRANTS AND BLOW-OFFS**

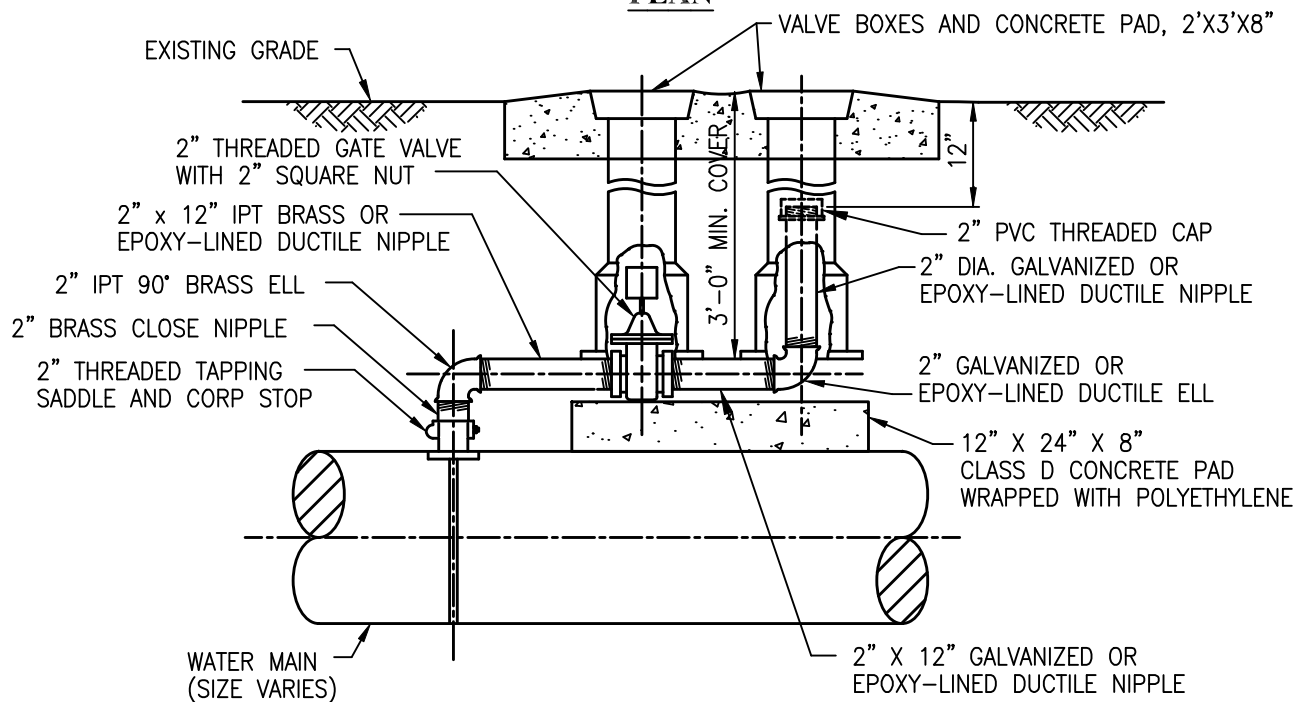
SCALE:  
NOT TO SCALE

DETAIL NO.:

**33**



### PLAN



### ELEVATION

#### NOTES:

1. THREADED SADDLE TO BE USED ON 24" & LARGER WATER MAINS.



## FAIRFAX WATER STANDARD DETAILS

SCALE:  
NOT TO SCALE

## 2" AIR RELEASE

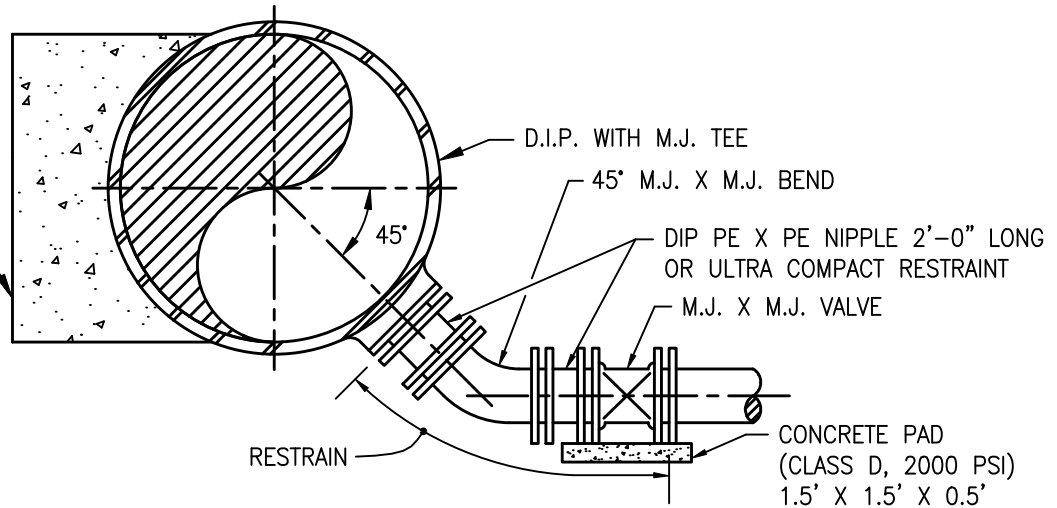
DETAIL NO.:

**34**

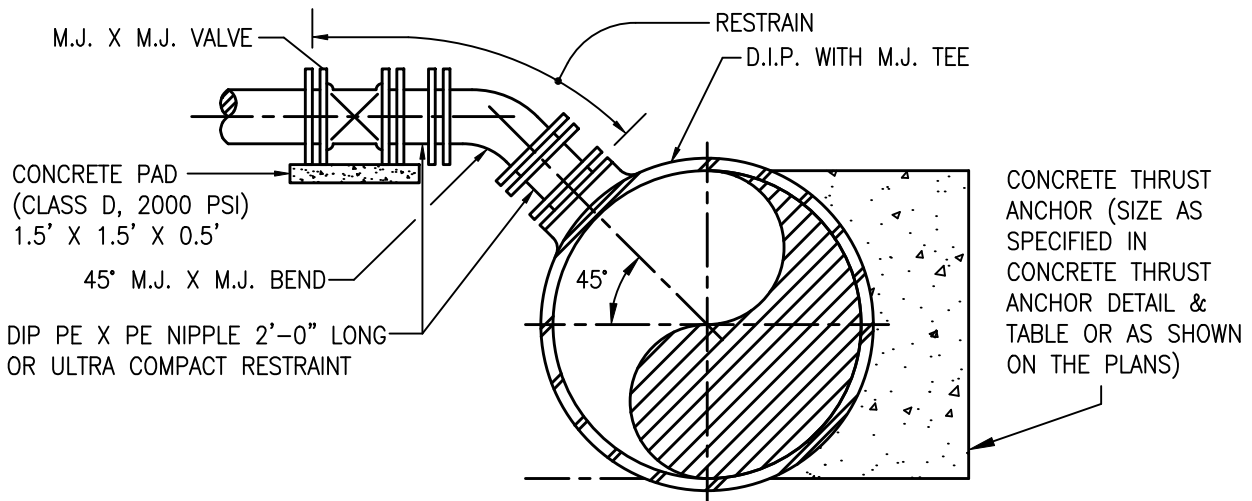
DATE: 9/23



CONCRETE THRUST  
ANCHOR (SIZE AS  
SPECIFIED IN  
CONCRETE  
THRUST ANCHOR  
DETAIL & TABLE  
OR AS SHOWN  
ON THE PLANS)



### BLOW-OFF PIPING



### AIR RELEASE PIPING

#### NOTES:

1. CONCRETE PAD DIMENSIONS, APPURTENANT SIZES AND LAYOUT IN ACCORDANCE WITH THE DRAWINGS.
2. HYDRANT INSTALLATION FOR AIR RELEASE OR BLOW-OFF SHALL BE IN ACCORDANCE WITH STANDARD HYDRANT INSTALLATION.
3. ULTRA COMPACT RESTRAINT USED IN PLACE OF DIP NIPPLE, AS DIRECTED BY FAIRFAX WATER, SHALL BE A FOSTER ADAPTER OR EQUAL APPROVED BY FAIRFAX WATER.



### FAIRFAX WATER STANDARD DETAILS

SCALE:  
NOT TO SCALE

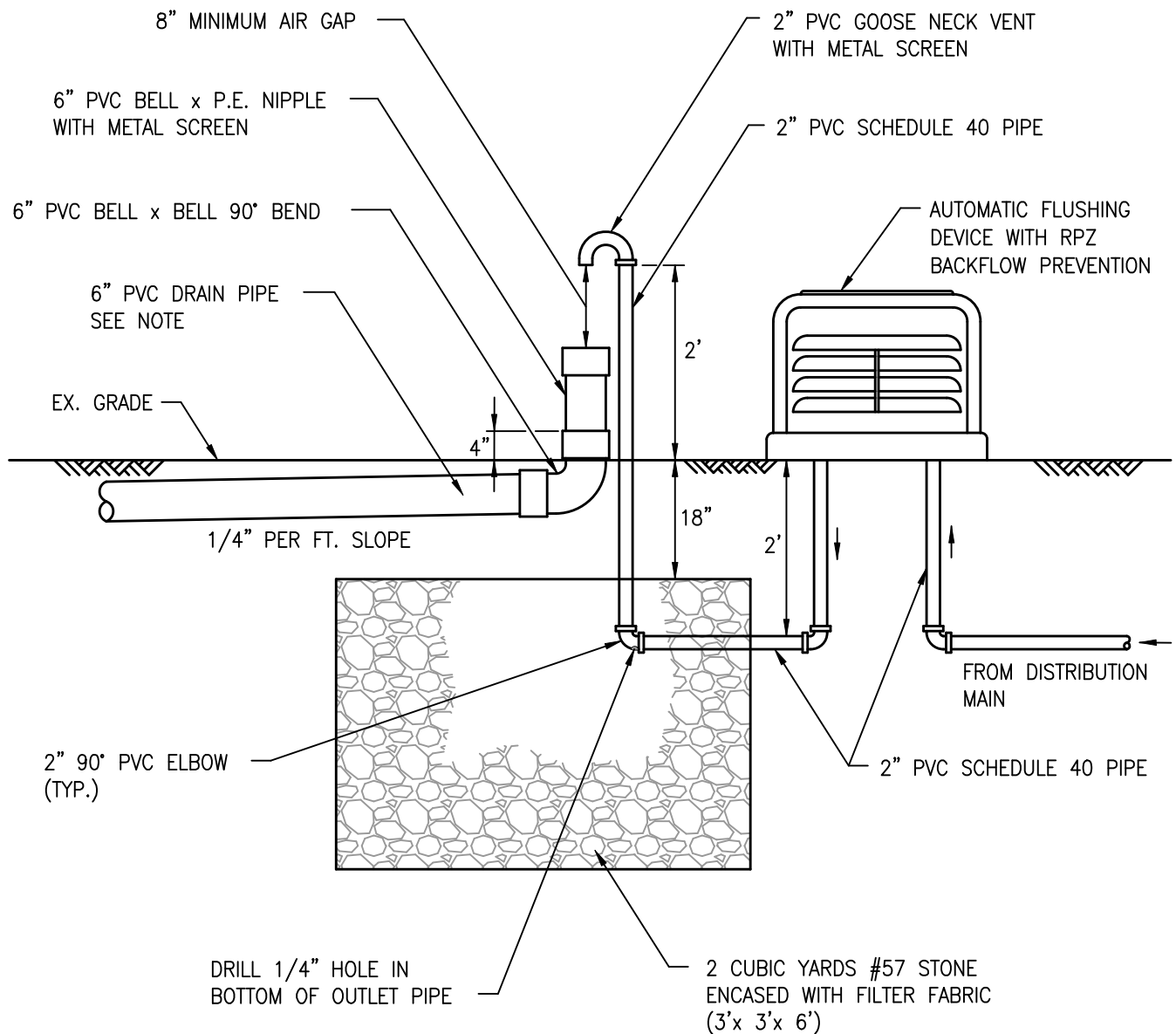
### AIR RELEASE AND BLOW-OFF PIPING DUCTILE IRON PIPE 12" & LARGER

DETAIL NO.:

35

DATE: 9/23





**NOTE:**

ROUTE DRAIN TO DAYLIGHT WITH A RIP-RAP CHANNEL DITCH TO NEAREST ESTABLISHED DRAINAGE FACILITY.



DATE: 9/23

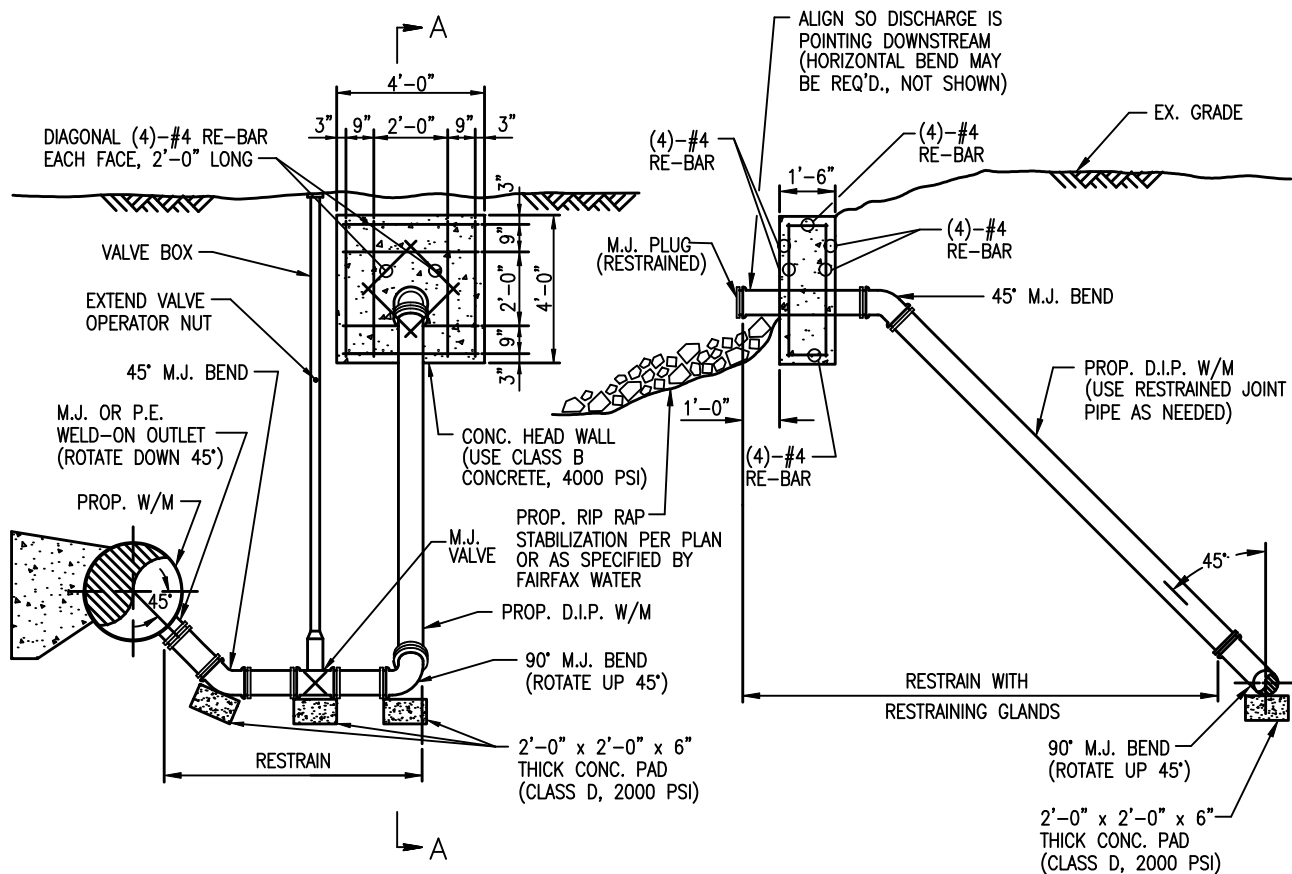
**FAIRFAX WATER  
STANDARD DETAILS**

**AUTOMATIC FLUSHING DEVICE  
AND DRAINAGE PIPING**

SCALE:  
NOT TO SCALE

DETAIL NO.:

**37**



**PLAN**

**SECTION A-A**

**NOTE:**

LENGTH OF PIPING AND NUMBER OF FITTINGS VARY BY LOCATION.  
SEE PLANS FOR HORIZONTAL ALIGNMENT OF BLOW-OFF.



**FAIRFAX WATER  
STANDARD DETAILS**

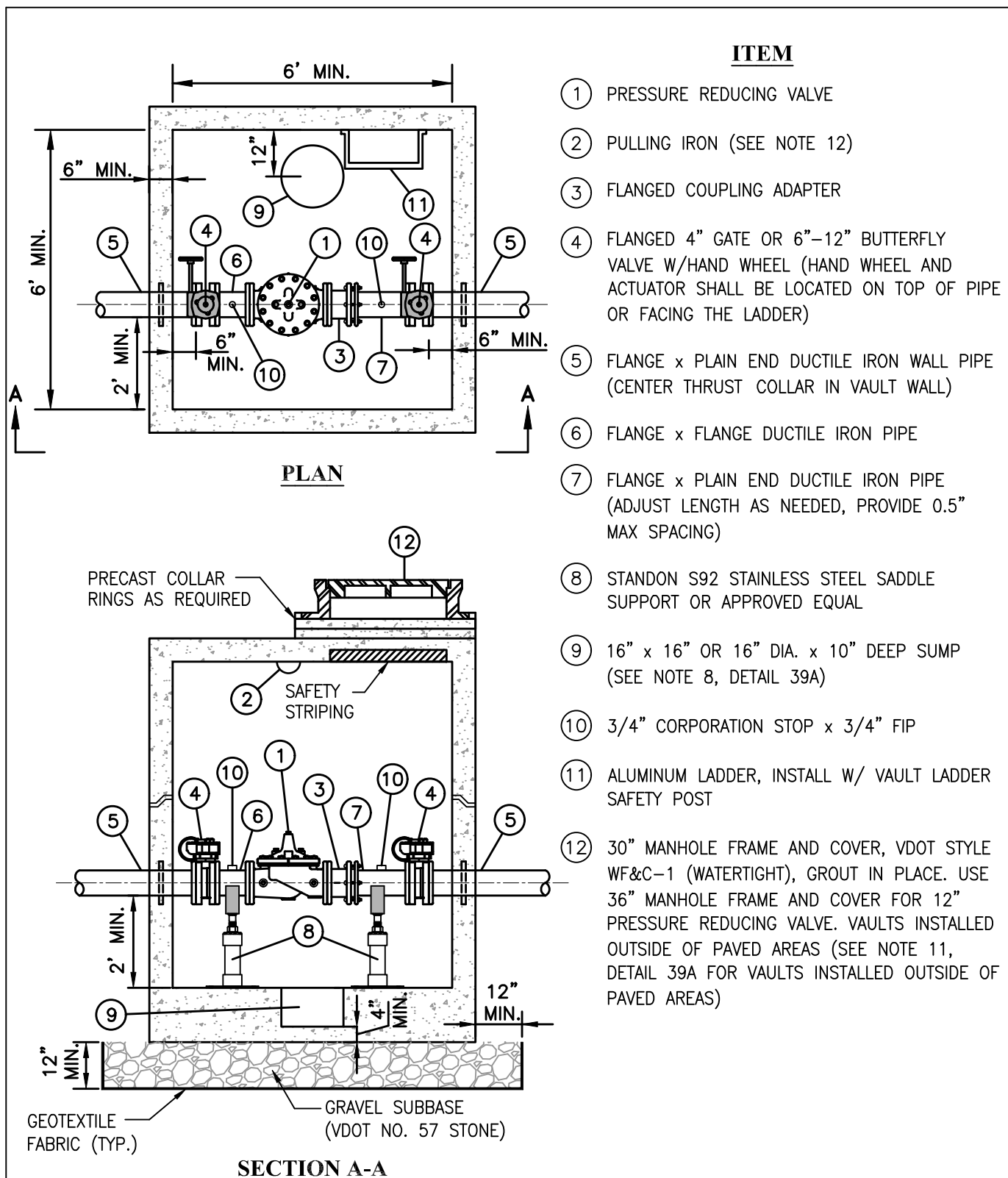
SCALE:  
NOT TO SCALE


**8" & 12" HEADWALL BLOW-OFF**

DETAIL NO.:

**38**

DATE: 9/23



 <p>DATE: 9/23</p>	<p><b>FAIRFAX WATER STANDARD DETAILS</b></p>	<p>SCALE: NOT TO SCALE</p>
	<p><b>4" THROUGH 12" PRESSURE REDUCING VALVE VAULT</b></p>	<p>DETAIL NO.: <b>39A</b></p>

VAULT NOTES:

1. ITEMS #1 THRU #12 SHALL BE PROVIDED IN ACCORDANCE WITH FAIRFAX WATER'S APPROVED PRODUCT LIST AND STANDARD DETAILS.
2. MANHOLE FRAME AND COVER SHALL BE SET IN CEMENT MORTAR AND SECURED TO THE PRECAST CONCRETE COLLAR WITH INSERT TYPE FASTENERS AND BOLTS.
3. ALUMINUM SURFACES COMING IN CONTACT WITH MASONRY OR CONCRETE AND ALL TIE RODS SHALL BE COATED WITH CARBOLINE BITUMASTIC 50 OR EQUAL.
4. ALL PIPING INSIDE VAULT AND SAFETY STRIPING SHALL BE COATED IN ACCORDANCE WITH SECTION 09900 SPECIAL COATINGS.
5. FOR PRECAST VAULTS, THREE MAXIMUM NUMBER OF JOINTS ALLOWED, TO CONSIST OF BASE/WALL SECTION, MIDDLE SECTION, AND TOP/LID SECTION. WALL OF BASE/WALL SECTION TO BE A MINIMUM OF 1-FOOT ABOVE CROWN OF PIPE.
6. JOINTS SHALL BE KEYED AND MASTIC TYPE ROPE SEALANT APPLIED, AS MANUFACTURED BY MULTISEAL, INC. OR CONCRETE SEALANTS, INC. (CONSEAL).
7. FACTORY APPLIED EXTERIOR BITUMASTIC WATERPROOFING, MINIMUM DRY THICKNESS REQUIRED 9-12 MILLS.
8. PROVIDE 1" WIDE DRAINAGE CHANNELS, SLOPED 0.25" PER FOOT, FROM VAULT CORNERS TO SUMP PIT. MANUFACTURER TO PROVIDE DESIGN OF THE DRAINAGE CHANNELS AND ENSURES THEY DO NOT CONFLICT WITH PLACEMENT OF FLANGE/SADDLE SUPPORTS.
9. VAULTS SHALL ACCOMMODATE AASHTO H-20 LIVE LOAD WITH IMPACT.
10. VAULTS SHALL BE NON-BUOYANT WHEN INSTALLED. MANUFACTURER TO PROVIDE BUOYANCY CALCULATIONS WITH ASSUMED WATER TABLE ELEVATION AT THE GROUND SURFACE. CALCULATIONS SHALL NOT INCLUDE THE WEIGHTS OF THE PIPING OR EQUIPMENT INSTALLED AND SHALL BE SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE COMMONWEALTH OF VIRGINIA. PROVIDE ANTI-FLOATATION COLLARS AS NECESSARY.
11. VAULTS INSTALLED OUTSIDE OF PAVED AREAS SHALL INCLUDE THE FOLLOWING:
  - A. WHERE FEASIBLE, LIDS SHALL BE BETWEEN 3" AND 6" ABOVE GRADE WITH POSITIVE DRAINAGE AWAY FROM LID.
  - B. 3'-0" X 3'-0" BILCO ALUMINUM ACCESS DOOR (TYPE J-AL WITH H-20 LOADING) WITH LADDER SAFETY POST AND RECESSED HASP FOR PAD LOCK (5" LENGTH AND 3" WIDTH MINIMUM). FOR 12" PRESSURE REDUCING VALVE, USE 3'-6" X 3'-6" BILCO ALUMINUM ACCESS DOOR.
  - C. PROVIDE 1 1/2" DIAMETER PVC DRAIN WITH SCREEN FROM ACCESS DOOR FRAME CHANNEL TO DAYLIGHT. WHERE RISERS ARE REQUIRED, SEE DETAIL 40.
  - D. MILLER DURAHOIST WALL MOUNT SLEEVE, MODEL DH-8ZP (LOCATE WITHIN HATCH OPENING AND SECURE WITH 4 INSERT FASTENERS AND BOLTS).
12. PULLING IRON AND VAULT LID SHALL BE SIZED AND RATED TO SUPPORT THE WEIGHT OF THE PRV.



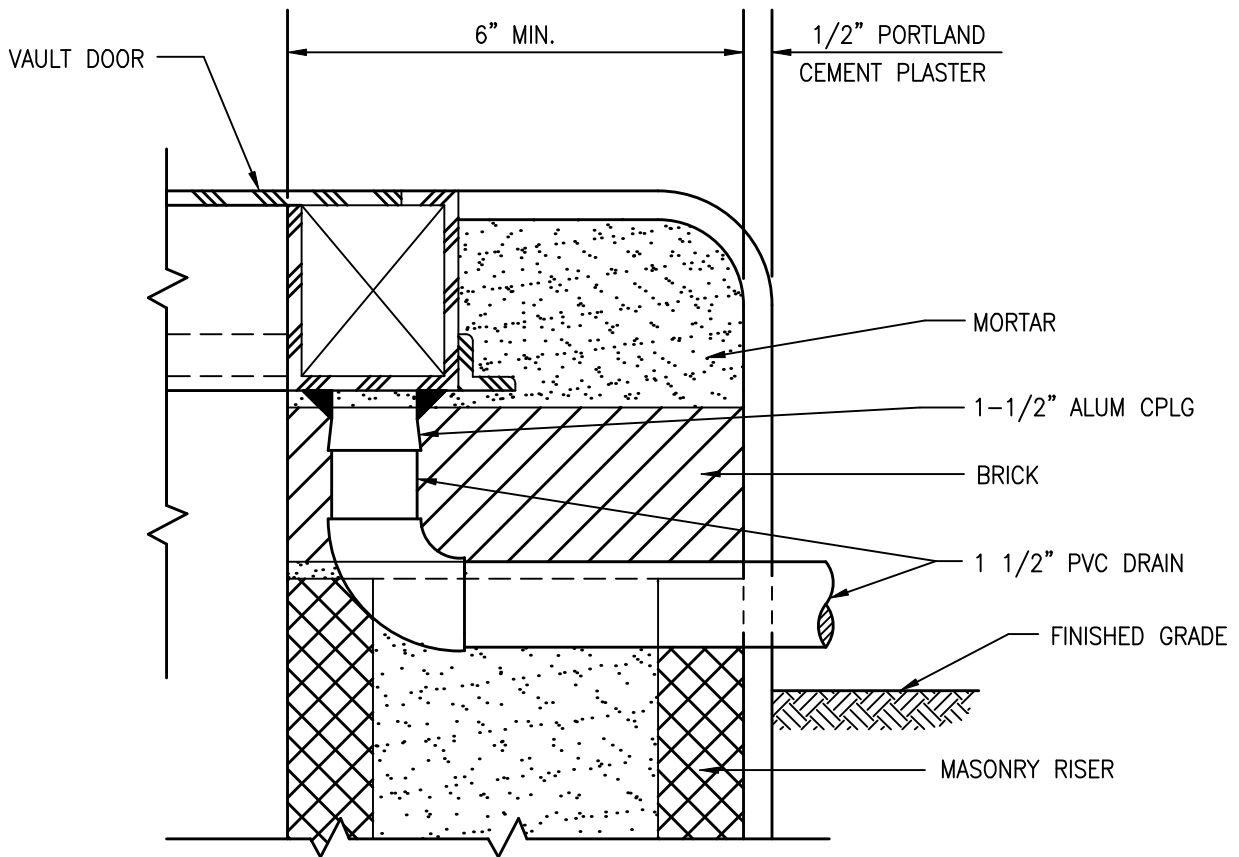
DATE: 9/23

**FAIRFAX WATER  
STANDARD DETAILS**

**4" THROUGH 12" PRESSURE REDUCING VALVE VAULT  
VAULT NOTES**

SCALE:  
NOT TO SCALE

DETAIL NO.:  
**39B**



**NOTES:**

1. APPLY DAMPPROOFING AS SPECIFIED IN SECTION 09900 SPECIAL COATINGS.
2. 6" THICK MASONRY RISER FOR PRECAST VAULT.
3. FILL RISER BLOCK CORES WITH MORTAR.
4. USE NO MORE THAN THREE BRICK COURSES TO ADJUST TOP ELEVATION.
5. PRECAST CONCRETE COLLARS CAN BE USED UP TO BRICK COURSES.



**FAIRFAX WATER  
STANDARD DETAILS**

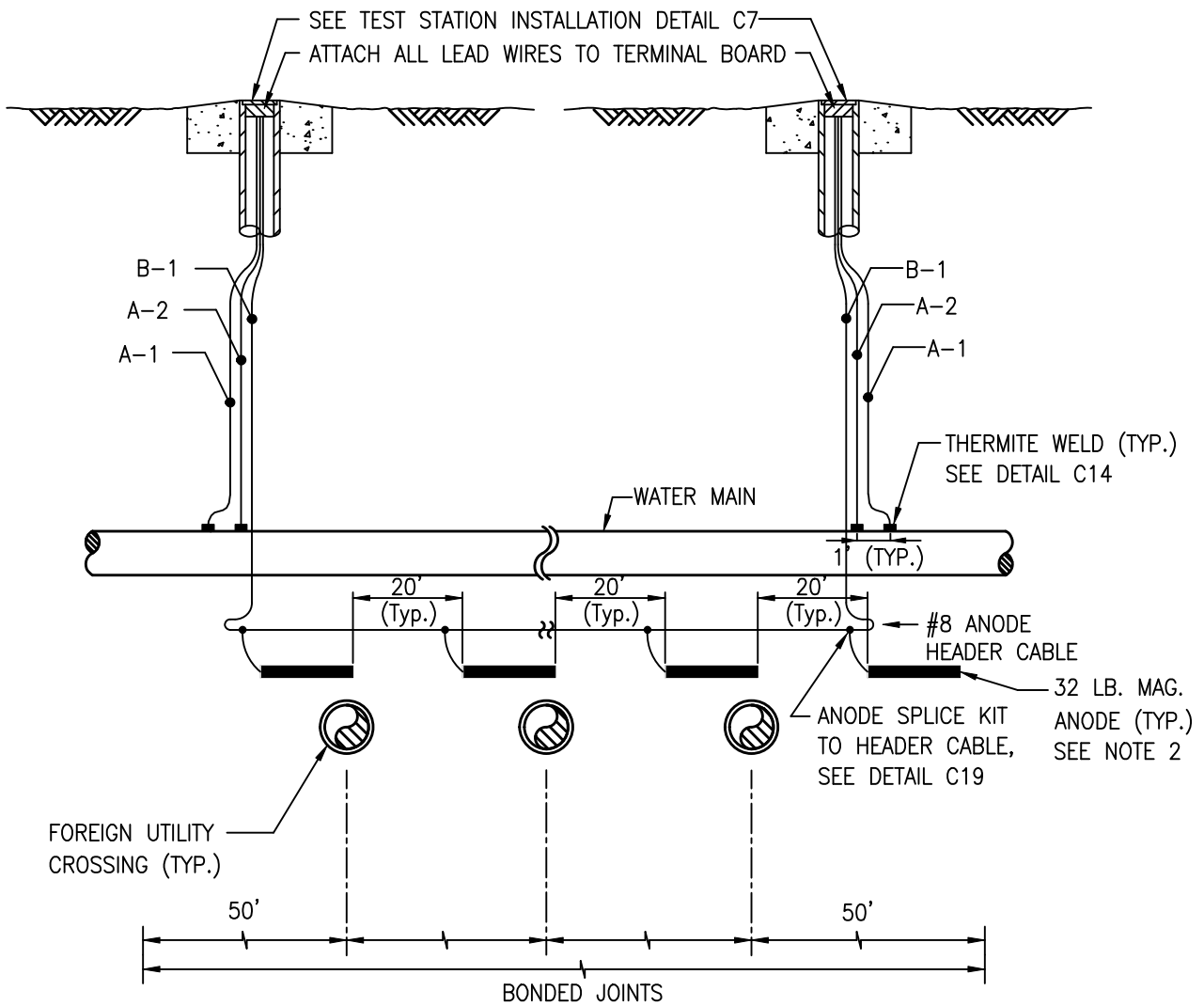
SCALE:  
NOT TO SCALE

**VAULT ACCESS DOOR  
INSTALLATION AND DRAIN PIPE**

DETAIL NO.:

**40**

DATE: 9/23



**NOTES:**

1. FOR USE ON 16" OR LARGER WATER MAINS WHERE FOREIGN UTILITY IS PROTECTED BY IMPRESSED CURRENT OR AS OTHERWISE REQUIRED BY FAIRFAX WATER.
2. MINIMUM 4 - 32 LBS MAGNESIUM ANODES INSTALLED OR AS SPECIFIED BY FAIRFAX WATER, SEE DETAIL C25 & C27 FOR QUANTITY, SPACING, AND PLACEMENT.
3. SEE DETAIL C20 FOR WIRING DETAIL.



DATE: 9/23

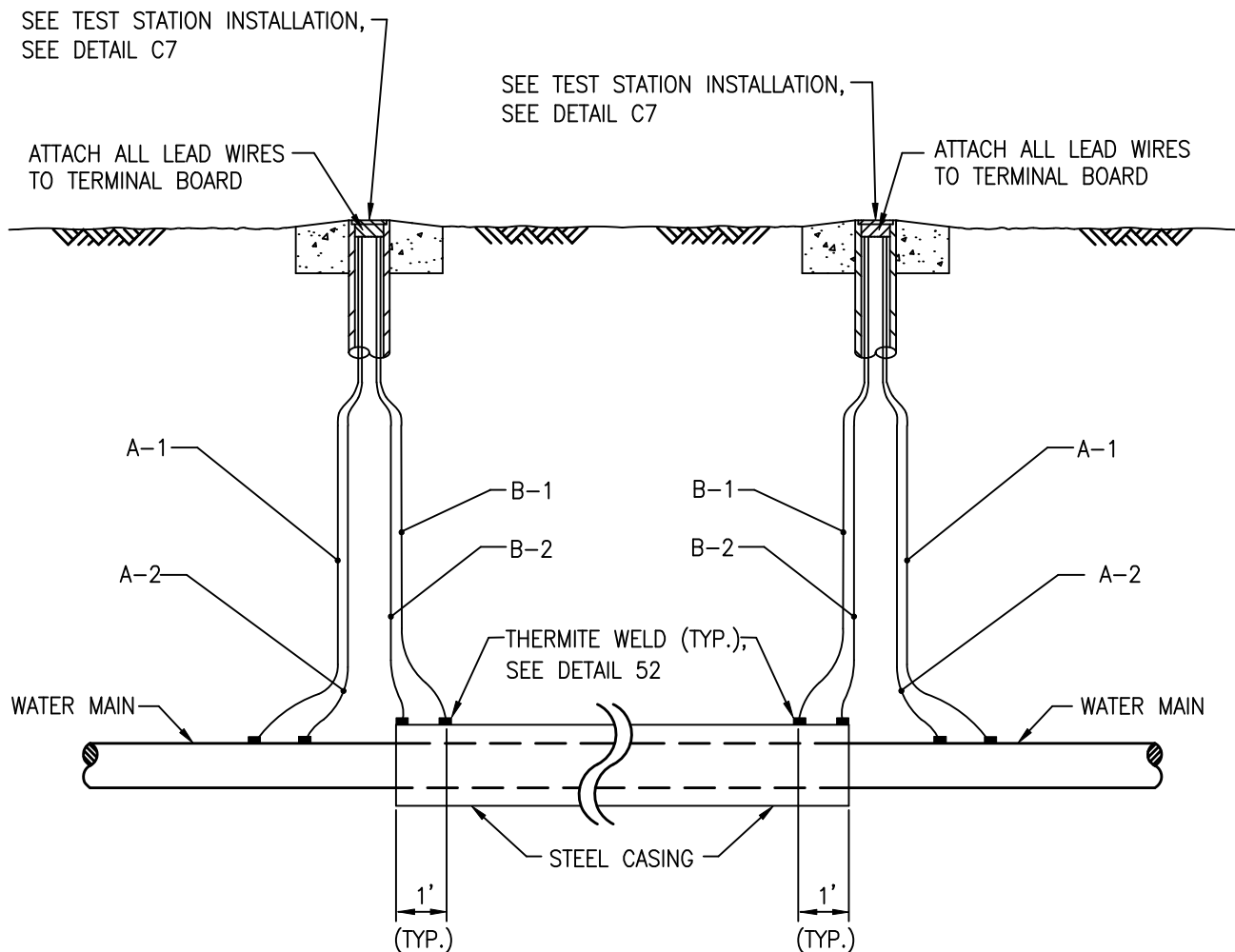
**FAIRFAX WATER  
STANDARD DETAILS**

**TYPE FD CORROSION CONTROL  
TEST STATION - FOREIGN PIPELINE CROSSING**

SCALE:  
NOT TO SCALE

DETAIL NO.:  
**C1**





**NOTES:**

1. ONLY FOR USE WHEN WATER MAIN HAS AN EXISTING OR PROPOSED CATHODIC PROTECTION SYSTEM.
2. CARRIER PIPE (WATER MAIN) WITHIN STEEL CASING DOES NOT REQUIRE POLYETHYLENE ENCASEMENT, BUT DOES REQUIRE ALL PIPE JOINTS TO BE BONDED FOR 24" AND LARGER.
3. TEST STATION REQUIRED AT BOTH ENDS OF CASING.
4. SEE DETAIL C21 FOR WIRING DETAIL.
5. SEE DETAIL C27 FOR TEST STATION LOCATIONS.



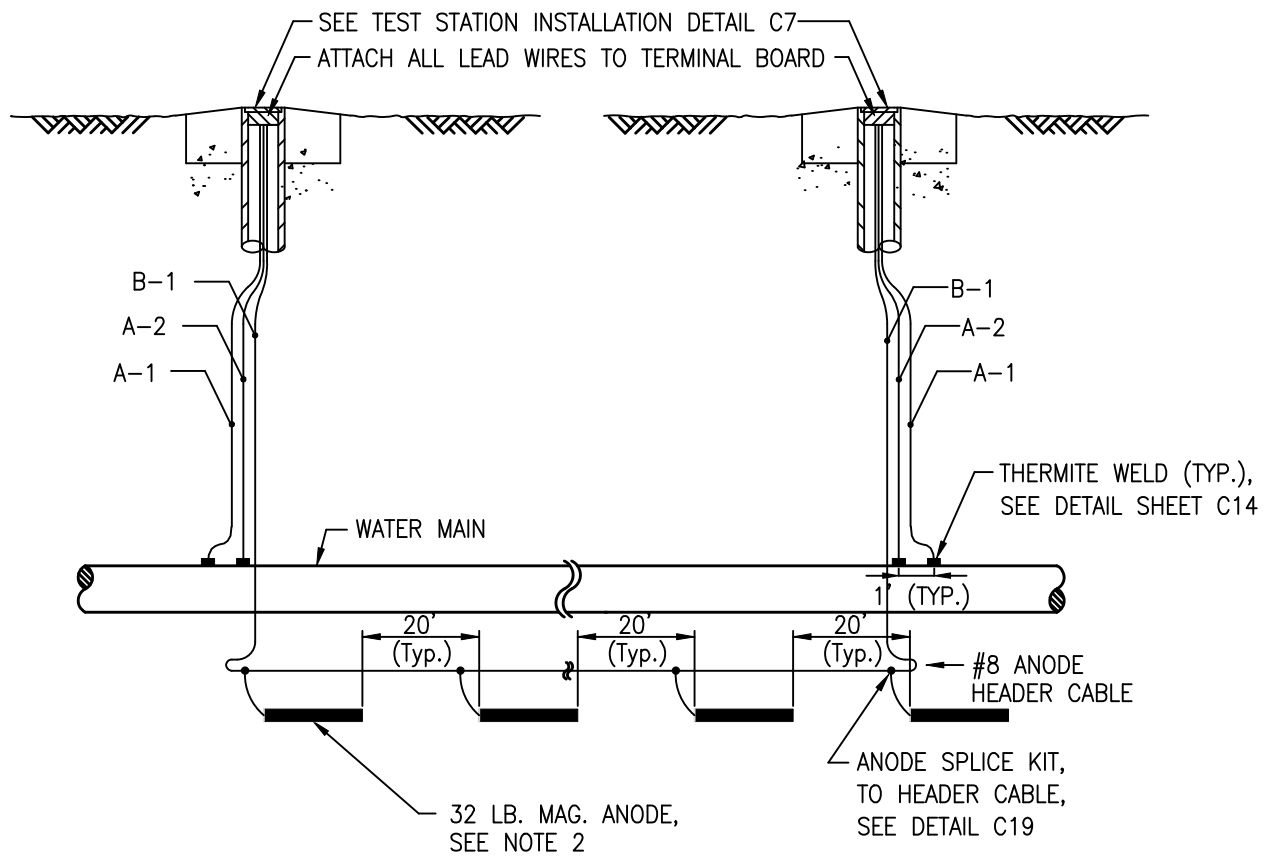
DATE: 9/23

**FAIRFAX WATER  
STANDARD DETAILS**

**TYPE CS CORROSION CONTROL  
TEST STATION – TRENCHLESS CROSSING**

SCALE:  
NOT TO SCALE

DETAIL NO.:  
**C2**



**NOTES:**

1. FOR USE WHEN INSTALLING WATER MAIN IN CORROSIVE SOILS (GENERALLY, TRANSMISSION MAINS ONLY).
2. SEE DETAIL C25 FOR PLACEMENT OF ANODES.
3. SEE DETAIL C27 FOR TEST STATION LOCATIONS.
4. SEE DETAIL C22 FOR WIRING DETAIL.



DATE: 9/23

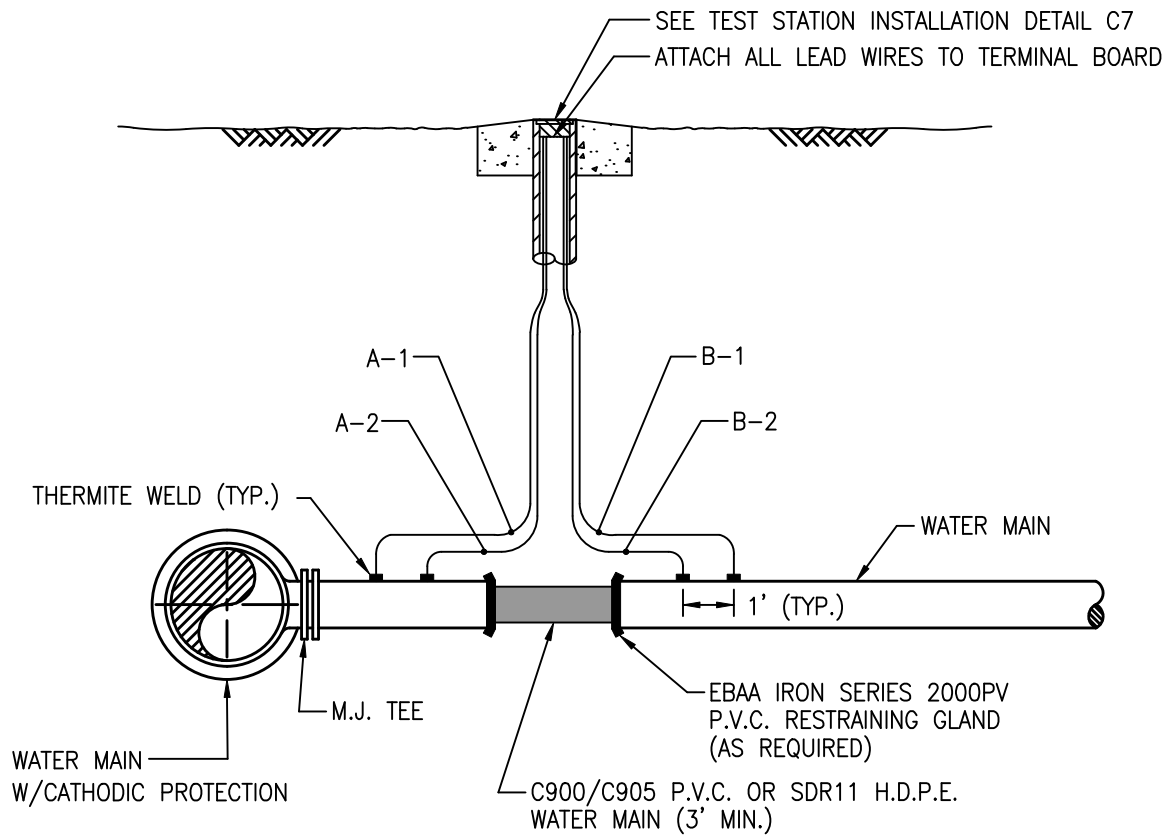
**FAIRFAX WATER  
STANDARD DETAILS**

**TYPE TD CORROSION CONTROL  
TEST STATION – STANDARD**

SCALE:  
NOT TO SCALE

DETAIL NO.:

**C3**



**NOTES:**

1. TYPICALLY FOR USE WHEN ISOLATING A CATHODICALLY PROTECTED TRANSMISSION WATER MAIN FROM NON-CATHODICALLY PROTECTED DISTRIBUTION MAIN OR OTHER DESIRED ELECTRICAL ISOLATION POINTS.
2. SEE DETAIL C23 WIRING DETAIL.



DATE: 9/23

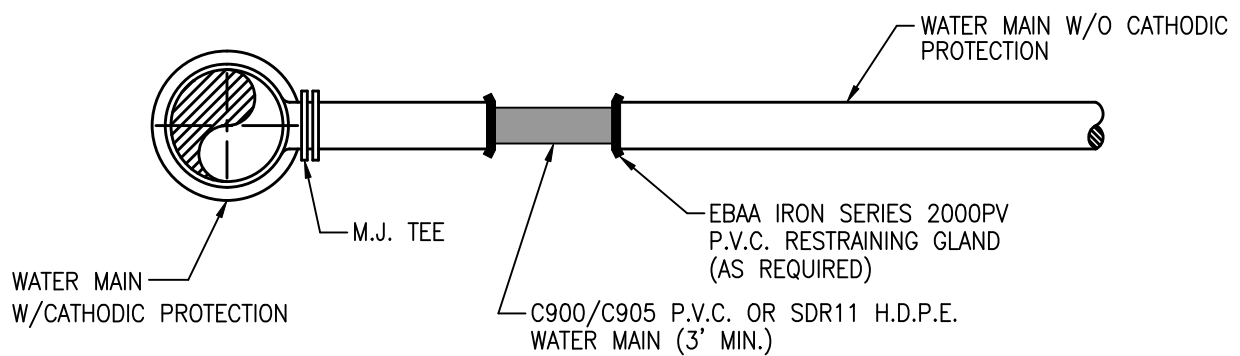
**FAIRFAX WATER  
STANDARD DETAILS**

**TYPE I CORROSION CONTROL  
TEST STATION - ISOLATOR  
(P.V.C. OR H.D.P.E. INSERT)**

SCALE:  
NOT TO SCALE

DETAIL NO.:

**C4**



**NOTE:**

TYPICALLY FOR USE WHEN ISOLATING A CATHODICALLY PROTECTED TRANSMISSION WATER MAIN FROM NON-CATHODICALLY PROTECTED DISTRIBUTION MAIN OR OTHER DESIRED ELECTRICAL ISOLATION POINTS.



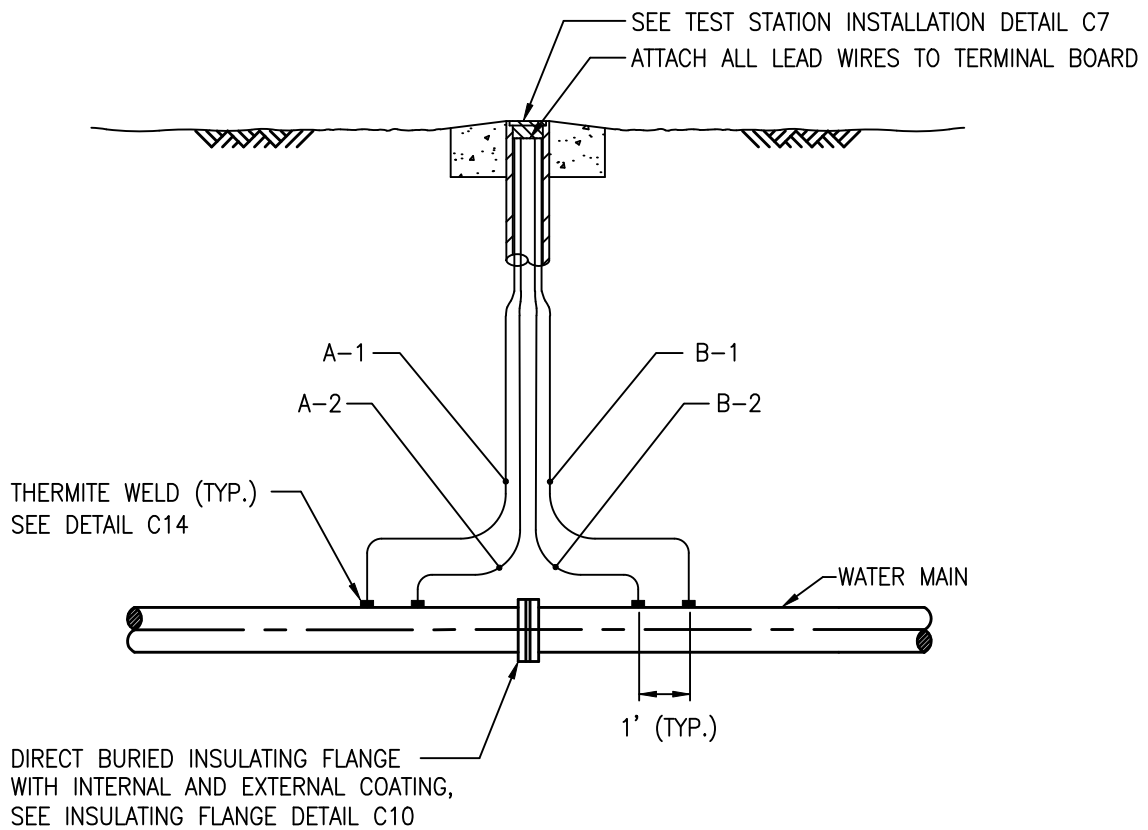
DATE: 9/23

**FAIRFAX WATER  
STANDARD DETAILS**

**ISOLATOR  
(P.V.C. OR H.D.P.E. INSERT)**

SCALE:  
NOT TO SCALE

DETAIL NO.:  
**C5**



**NOTES:**

1. FOR USE WHEN ISOLATING CATHODICALLY PROTECTED TRANSMISSION MAIN FROM NON-CATHODICALLY PROTECTED TRANSMISSION MAINS, TRANSMISSION MAINS OF DISSIMILAR MATERIALS, OR OTHER DESIRED ELECTRICAL ISOLATION POINTS.
2. SEE DETAIL C23 FOR WIRING DETAIL.
3. SEE DETAIL C27 FOR TEST STATION LOCATIONS.



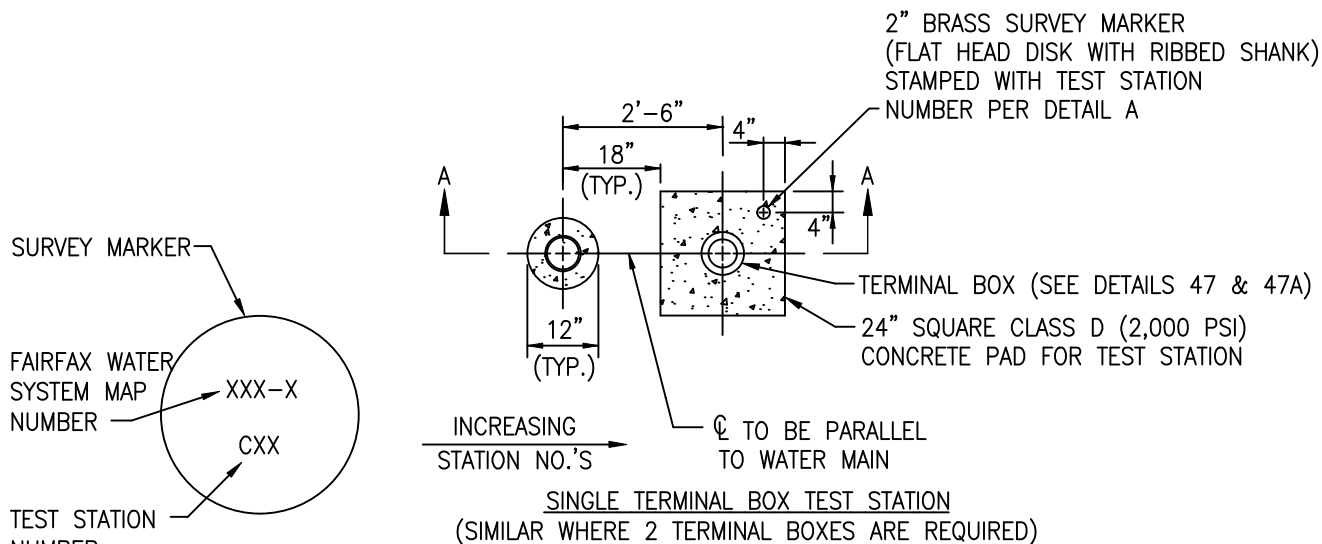
DATE: 9/23

**FAIRFAX WATER  
STANDARD DETAILS**

**TYPE IS CORROSION CONTROL  
TEST STATION – INSULATED FLANGE**

SCALE:  
NOT TO SCALE

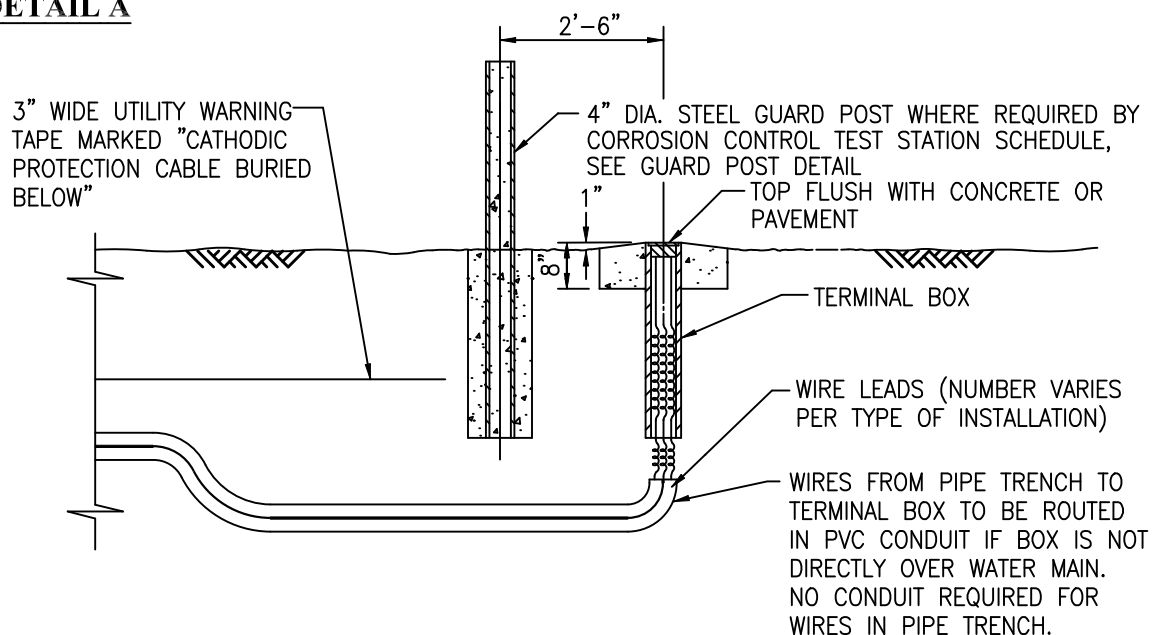
DETAIL NO.:  
**C6**



### PLAN

3/8-INCH CHARACTER HEIGHT

### DETAIL A



### SECTION A-A

#### NOTES:

1. TEST STATIONS SHALL BE LOCATED ABOVE WATER MAIN WHEN POSSIBLE.
2. CONCRETE PAD TO BE INSTALLED ON ALL TEST STATIONS IN NON-PAVED AREAS. USE TEST STATION BOX FOR NON-PAVED AREAS DETAIL (DETAIL C8).
3. FOR TEST STATIONS LOCATED IN PAVED AREAS, ENGRAVE TEST STATION NUMBER DIRECTLY ON TERMINAL BOARD. USE TEST STATION BOX FOR PAVED AREAS DETAIL (DETAIL C9).



## FAIRFAX WATER STANDARD DETAILS

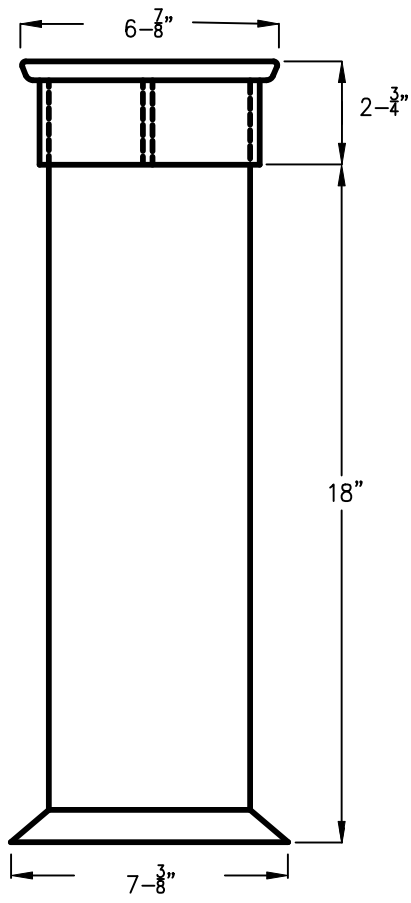
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## TEST STATION INSTALLATION

DETAIL NO.:

**C7**

DATE: 9/23

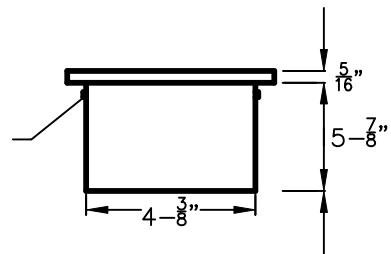


SIDE VIEW  
TEST BOX BODY



TOP VIEW

LUGS FOR LOCKING  
CAPS INTO COLLAR



SIDE VIEW  
TEST BOX LID



DATE: 9/23

**FAIRFAX WATER  
STANDARD DETAILS**

**TEST STATION BOX FOR NON-PAVED AREAS**

SCALE:  
NOT TO SCALE

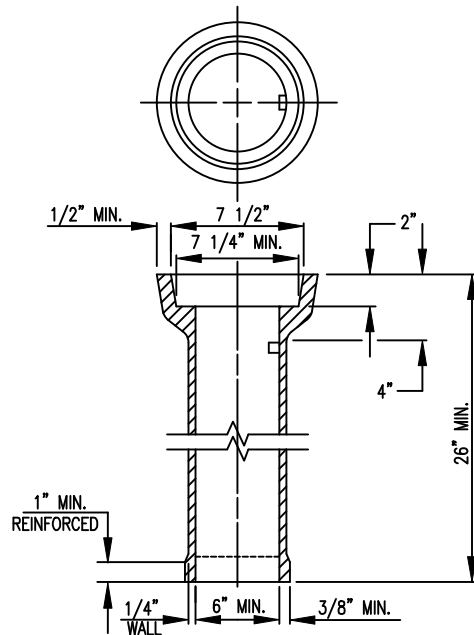
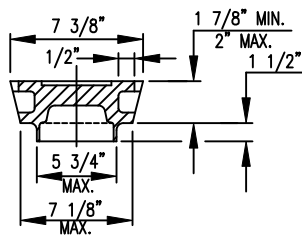
DETAIL NO.:

**C8**

MANUFACTURER NAME  
OR LOGO



**COVER**



**NOTES:**

1. THE MANUFACTURER IDENTIFICATION AND COUNTRY OF ORIGIN (IF OTHER THAN U.S.) SHALL BE CAST INTO ALL PARTS.
2. MUST MEET SPECIFICATIONS CONTAINED IN FAIRFAX WATER'S APPROVED PRODUCTS LIST FOR VALVE BOXES.



**FAIRFAX WATER  
STANDARD DETAILS**

SCALE:  
NOT TO SCALE

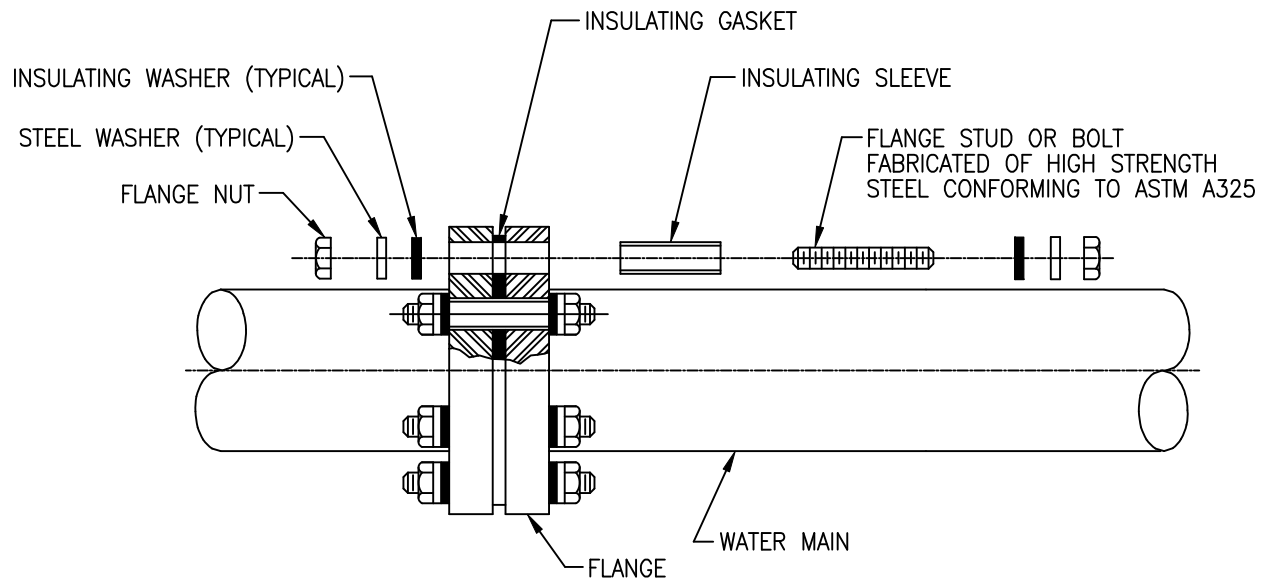
**TEST STATION BOX FOR PAVED AREAS**

DETAIL NO.:

**C9**

DATE: 9/23





**NOTES:**

1. EXTERNAL COATING OF INSULATING FLANGE SHALL CONSIST OF COMPATIBLE PRIMER, MASTIC, PETROLATUM IMPREGNATED FABRIC TAPE AND OUTER PROTECTIVE WRAP, SEE FAIRFAX WATER'S APPROVED PRODUCTS LIST.
2. INTERNAL COATING SHALL BE SHOP-APPLIED CEMENT MORTAR LINING OR FUSION-BONDED EPOXY, IN ACCORDANCE WITH FAIRFAX WATER'S APPROVED PRODUCTS LIST.
3. BOLTS AND BOLT STUDS SHALL EXTEND COMPLETELY THROUGH THE NUTS.



**FAIRFAX WATER  
STANDARD DETAILS**

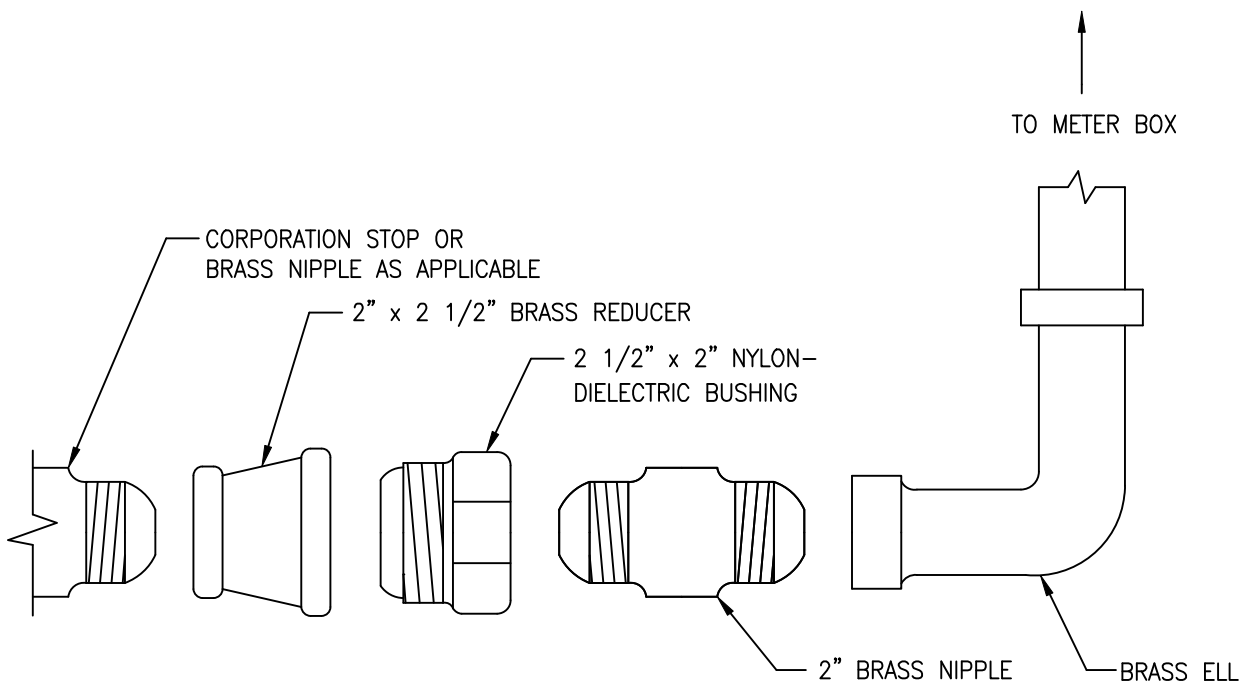
SCALE:  
NOT TO SCALE

**INSULATING FLANGE**

DETAIL NO.:

**C10**

DATE: 9/23



**NOTE:**  
FOR USE WHERE SERVICE LINE IS CONNECTED TO A CATHODICALLY PROTECTED WATER MAIN.



# **FAIRFAX WATER STANDARD DETAILS**

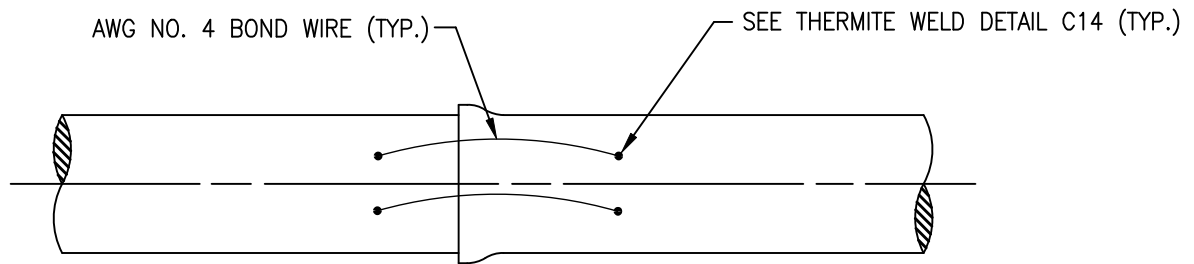
SCALE:  
NOT TO SCALE

## **INSULATING UNION**

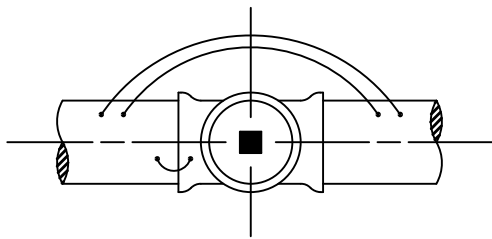
DETAIL NO.:

**C11**

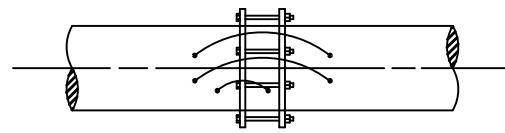
DATE: 9/23



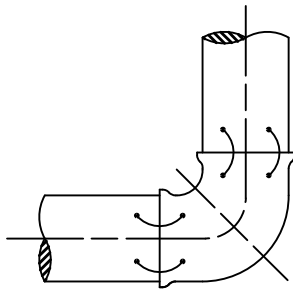
### TYPICAL PIPE JOINT BOND



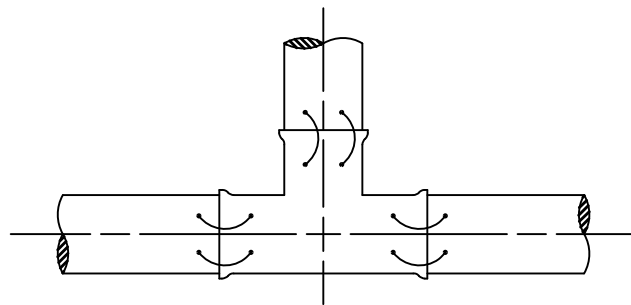
VALVE



MECHANICAL COUPLING/LONG SOLID SLEEVE



BEND, REDUCER, SOLID SLEEVE



TEE

### TYPICAL BONDING FOR FITTINGS

#### NOTES:

1. BOND JOINTS ON UNDERGROUND PIPING WHERE INDICATED ON DRAWINGS AND WITHIN ALL TRENCHLESS CROSSINGS.
2. THERMITE WELD BONDING WIRES TO TOP OF PIPE OR FITTINGS.



DATE: 9/23

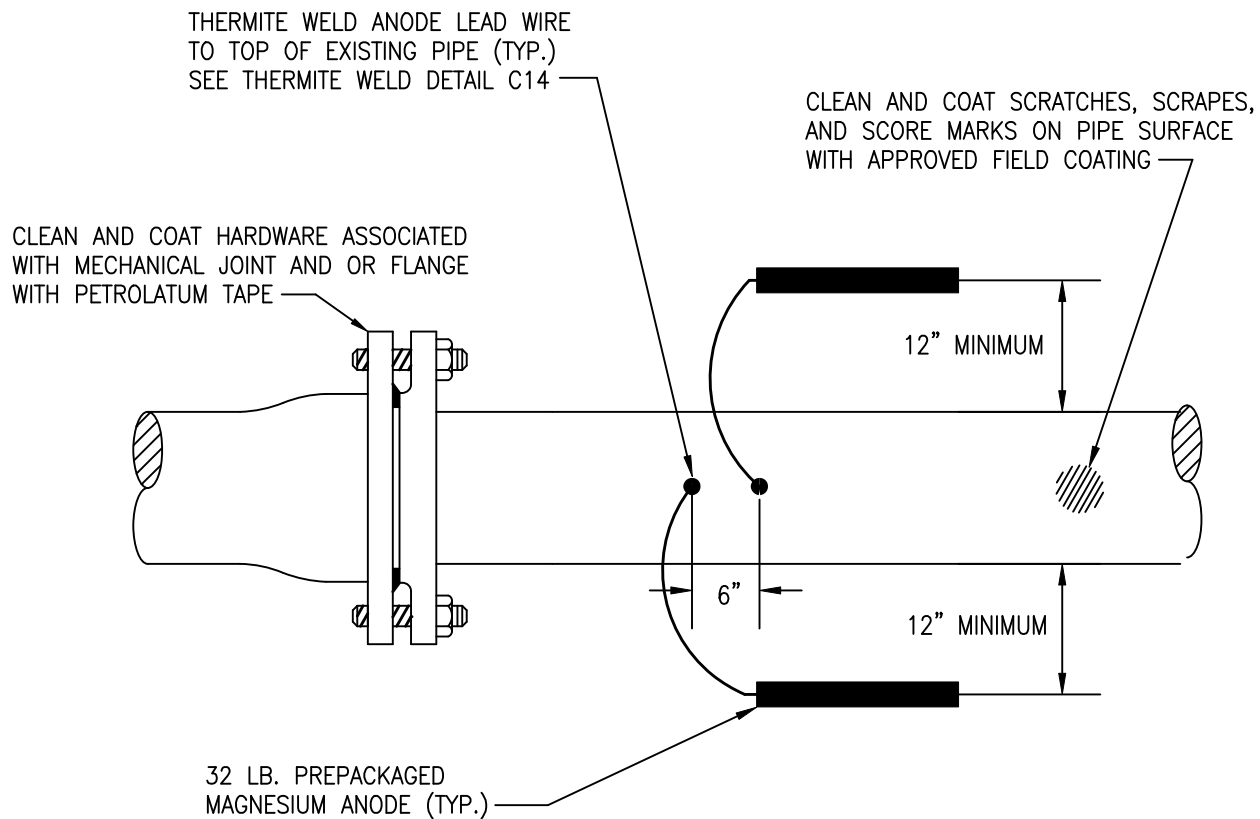
**FAIRFAX WATER  
STANDARD DETAILS**

**PIPE JOINT BONDING**

SCALE:  
NOT TO SCALE

DETAIL NO.:

**C12**



**PLAN**

**NOTES:**

1. INSTALL ANODES IN THE VICINITY OF ALL REPAIRED PIPE FAILURES DUE TO CORROSION.
2. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE TO EDGE OF PIPE.
3. HOTSPOT CATHODIC PROTECTION TO BE APPLIED TO CAST AND DUCTILE IRON PIPING, DO NOT INSTALL ON COPPER PIPING.
4. INSTALL ANODES ON BOTH SIDES OF PIPE.
5. ANODES MUST BE PLACED IN NATIVE SOIL. DO NOT BACKFILL AROUND ANODES WITH SAND OR STONE.
6. PRESOAK ANODE WITH FIVE GALLONS OF WATER AFTER PLACEMENT AND BEFORE BACKFILLING.



**FAIRFAX WATER  
STANDARD DETAILS**

SCALE:  
NOT TO SCALE

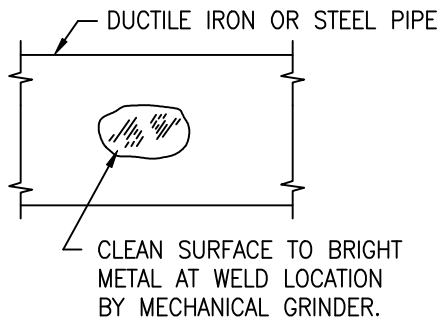
**HOTSPOT CATHODIC PROTECTION  
COATING AND ANODE PLACEMENT**

DETAIL NO.:  
**C13**

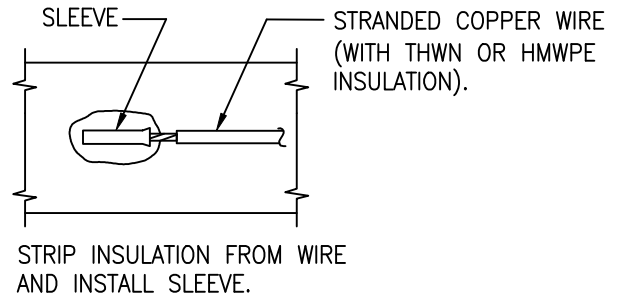
DATE: 9/23

**FOR GENERAL INFORMATION ONLY - FOLLOW MANUFACTURER'S RECOMMENDATIONS**

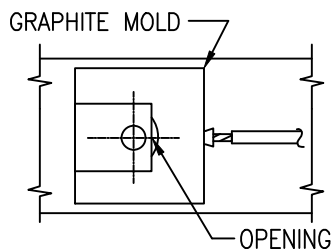
**STEP 1**



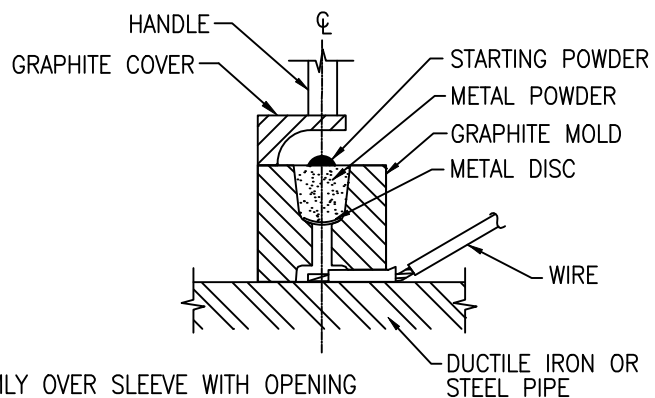
**STEP 2**



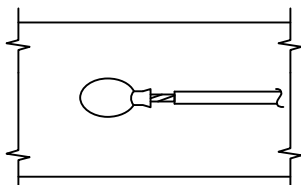
**STEP 3**



HOLD GRAPHITE MOLD FIRMLY OVER SLEEVE WITH OPENING AWAY FROM OPERATOR – IGNITE STARTING POWDER.



**STEP 4**

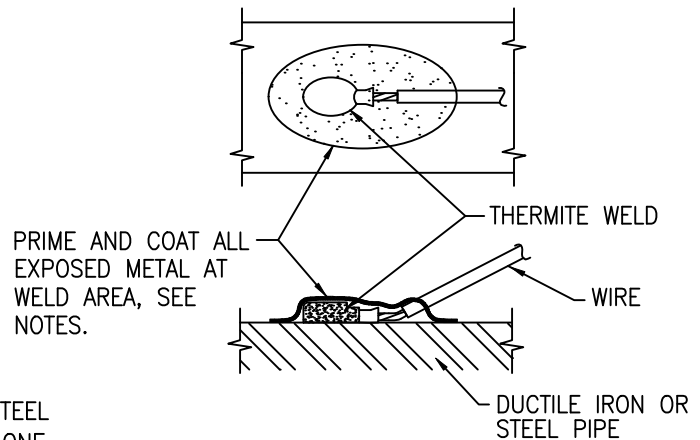


REMOVE SLAG FROM CONNECTION. THOROUGHLY CLEAN WELD AREA. STRIKE WELD SHARPLY ON THE SIDE WITH 2 LB HAMMER TO CHECK ADHESION.

**NOTE:**

THERMITE WELDS MADE TO DUCTILE IRON AND STEEL PIPE SHALL BE COATED WITH A PREFABRICATED ONE PIECE, ELASTOMERIC CAP OR APPROVED EQUAL. SEE FAIRFAX WATER'S APPROVED PRODUCTS LIST.

**STEP 5**



**FAIRFAX WATER  
STANDARD DETAILS**

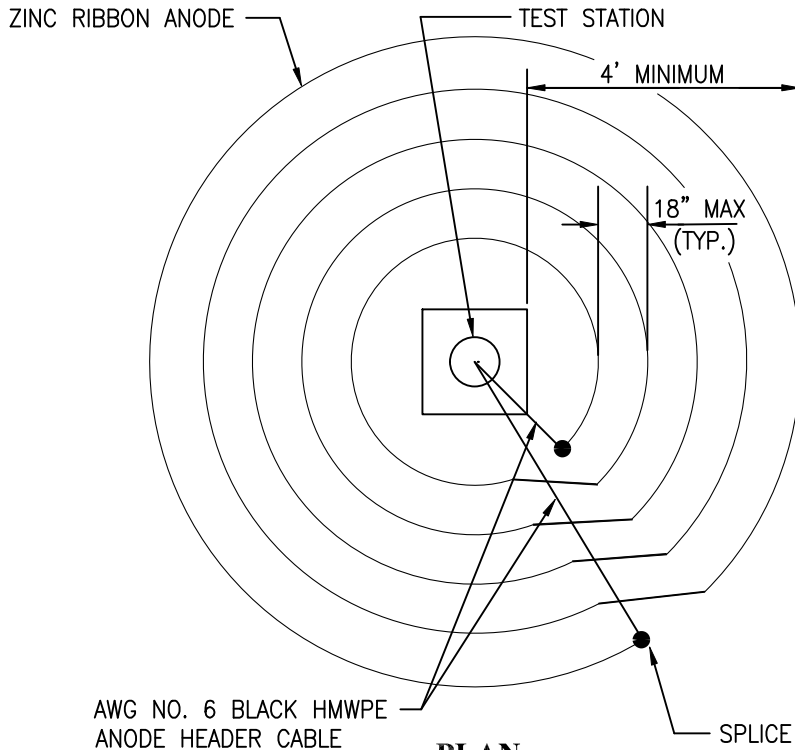
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**THERMITE WELD**

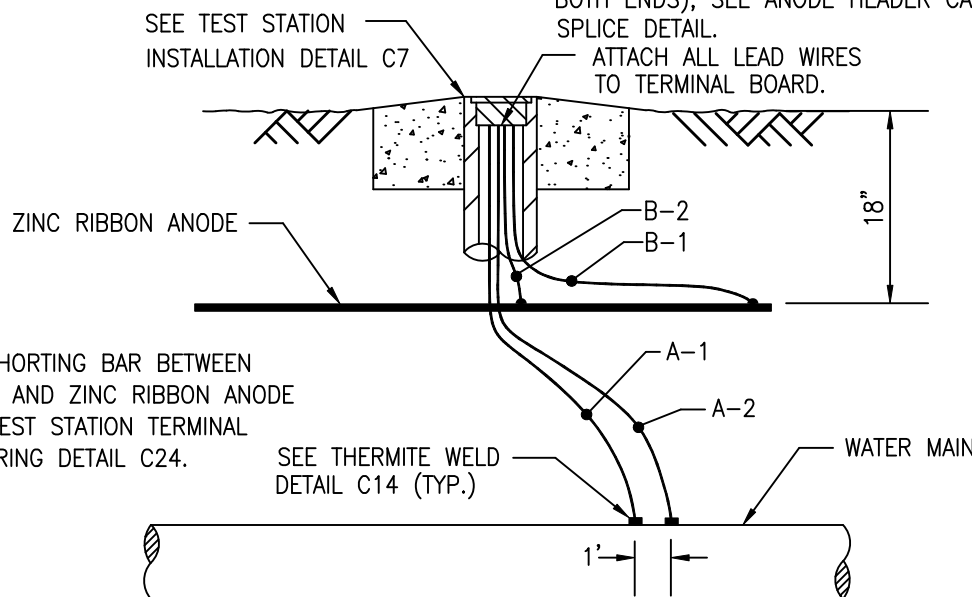
DETAIL NO.:

**C14**

DATE: 9/23



**PLAN**



**PROFILE**

**NOTES:**

1. INSTALL AC GROUND MAT WHERE INDICATED ON PLANS OR CORROSION CONTROL TEST STATION SCHEDULE.
2. CONNECT ANODE HEADER CABLE TO PIPE LEADS IN TEST STATION.
3. WHEN GROUND MAT IS INSTALLED AT APPURTENANCE OTHER THAN TEST STATION, CIRCLE APPURTENANCE WITH ZINC RIBBON ANODE AND CONNECT ANODE HEADER CABLES DIRECTLY TO PIPE IMMEDIATELY ADJACENT TO APPURTENANCE.
4. AC GROUND MAT TYPICALLY USED IN CONJUNCTION WITH OTHER TEST FACILITIES. OTHER TEST WIRES NOT SHOWN FOR CLARITY.
5. TO PROTECT THE OPERATOR FROM ACCIDENTAL SHOCK, THIS GROUNDING MAT CONFIGURATION SHALL BE USED WHENEVER HIGH VOLTAGE POWER LINES ARE WITHIN 50' OF THE WATER MAIN.
6. GROUNDING MATS SHOULD NOT BE PLACED UNDER IMPERVIOUS SURFACES UNLESS OTHERWISE DIRECTED.

**NOTES:**

1. INSTALL SHORTING BAR BETWEEN PIPE WIRE AND ZINC RIBBON ANODE
2. SEE GM TEST STATION TERMINAL BOARD WIRING DETAIL C24.

SEE THERMITE WELD  
DETAIL C14 (TYP.)



DATE: 9/23

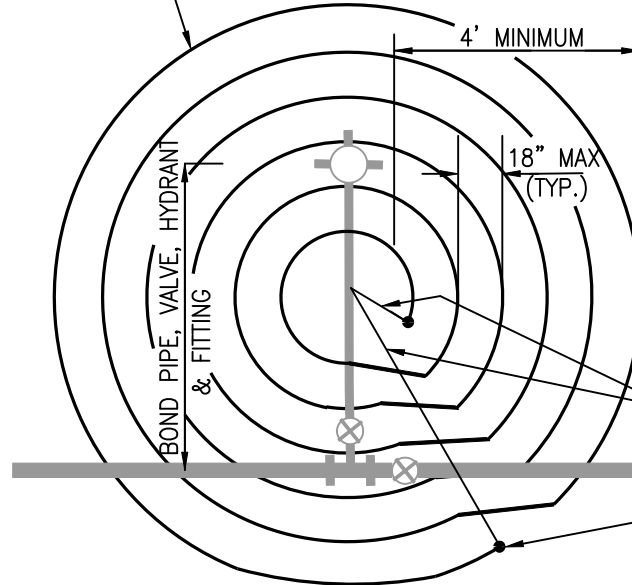
**FAIRFAX WATER  
STANDARD DETAILS**

**TYPE GM CORROSION CONTROL  
TEST STATION – GROUNDING MAT**

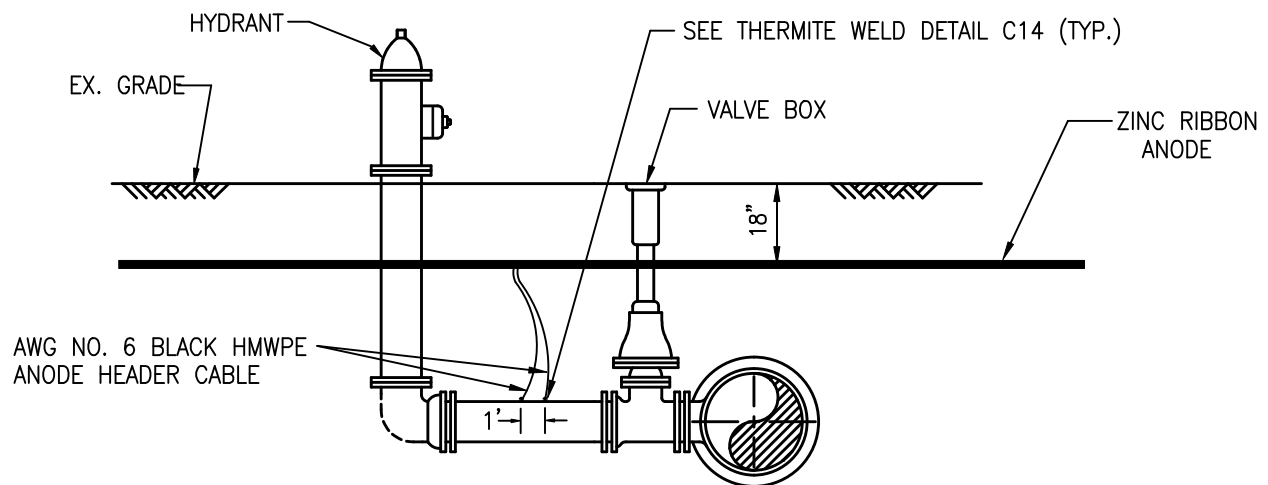
SCALE:  
NOT TO SCALE

DETAIL NO.:  
**C15**

ZINC RIBBON ANODE



**PLAN**



**ELEVATION**

**NOTES:**

1. CIRCLE APPURTENANCE(S) WITH ZINC RIBBON ANODE AND CONNECT ANODE HEADER CABLES DIRECTLY TO PIPE IMMEDIATELY ADJACENT TO APPURTENANCE.
2. ALL PIPING FITTINGS, VALVES AND HYDRANT SHALL BE BONDED.
3. TO PROTECT THE OPERATOR FROM ACCIDENTAL SHOCK, THIS GROUNDING MAT CONFIGURATION SHALL BE USED WHENEVER HIGH VOLTAGE POWER LINES ARE WITHIN 50' OF THE WATER MAIN.
4. GROUNDING MATS SHOULD NOT BE PLACED UNDER IMPERVIOUS SURFACES UNLESS OTHERWISE DIRECTED.



DATE: 9/23

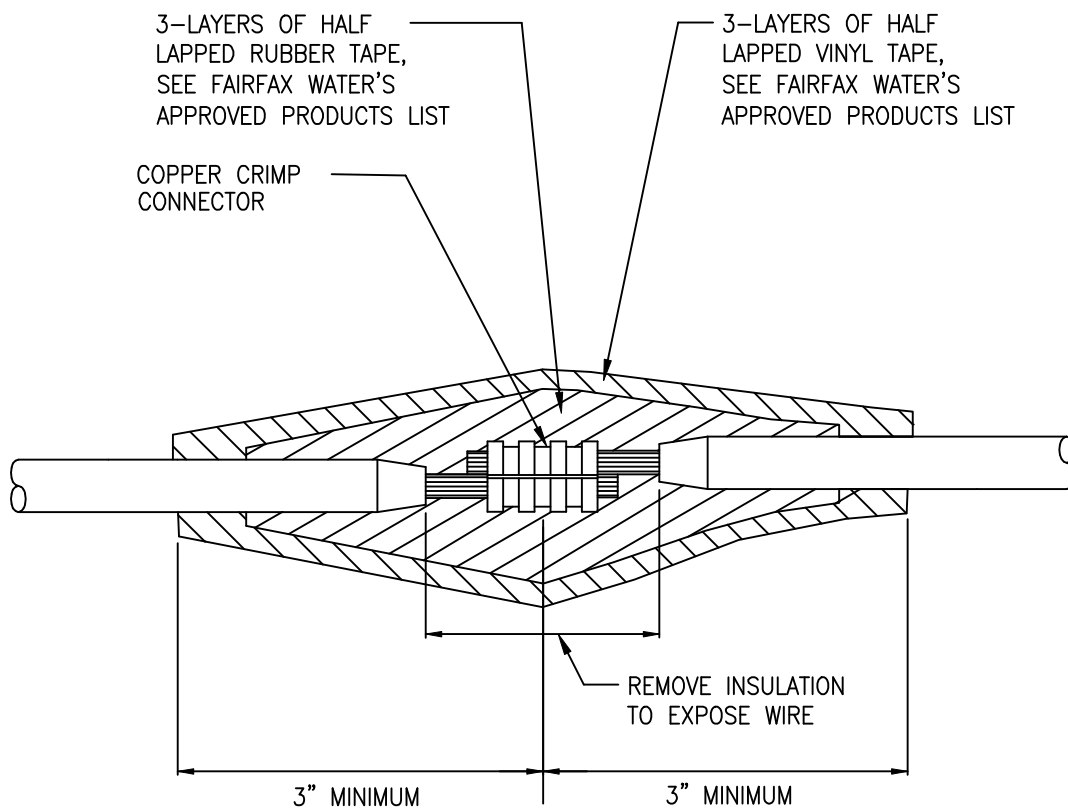
**FAIRFAX WATER  
STANDARD DETAILS**

**GROUNDING MAT – FIRE HYDRANT**

SCALE:  
NOT TO SCALE

DETAIL NO.:

**C16**



**FAIRFAX WATER  
STANDARD DETAILS**

SCALE:  
NOT TO SCALE

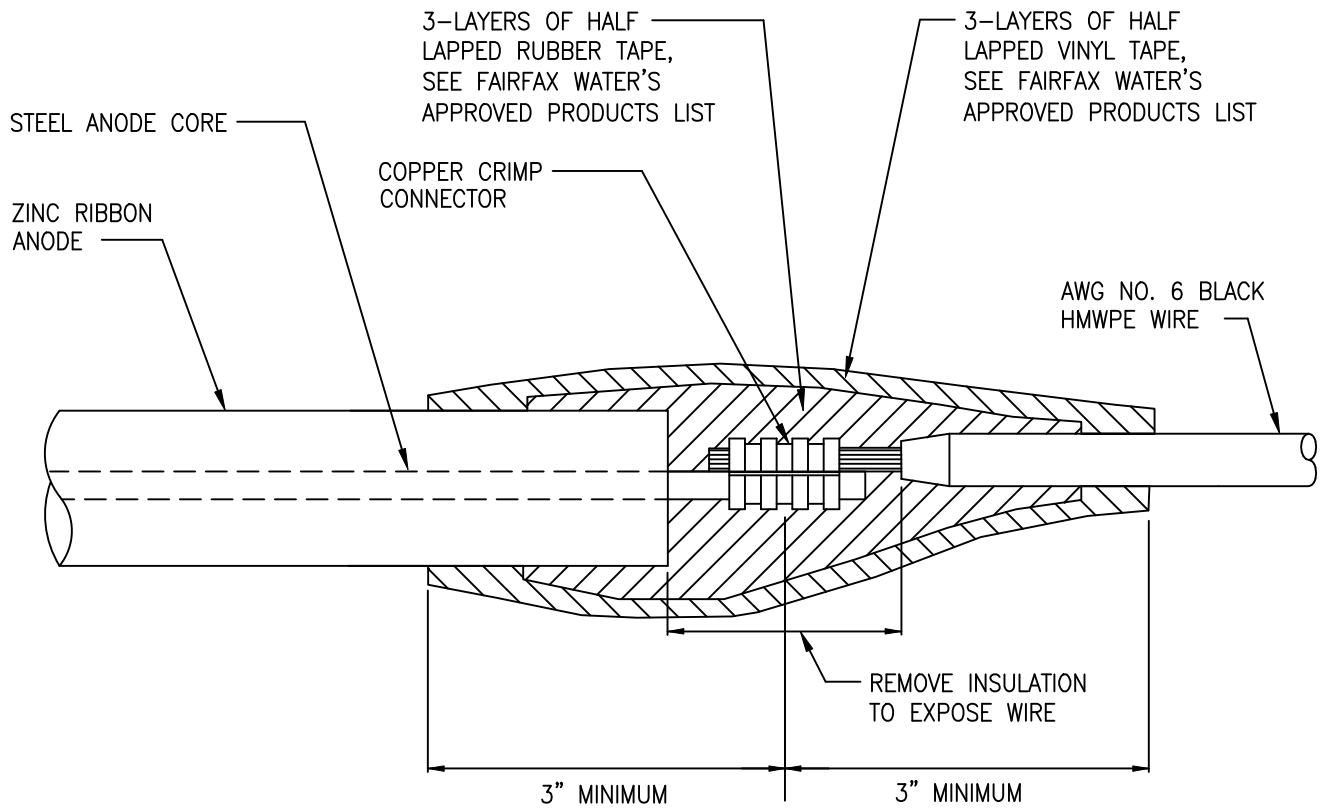
**TYPICAL WIRE SPLICE**

DETAIL NO.:

**C17**

DATE: 9/23





**FAIRFAX WATER  
STANDARD DETAILS**

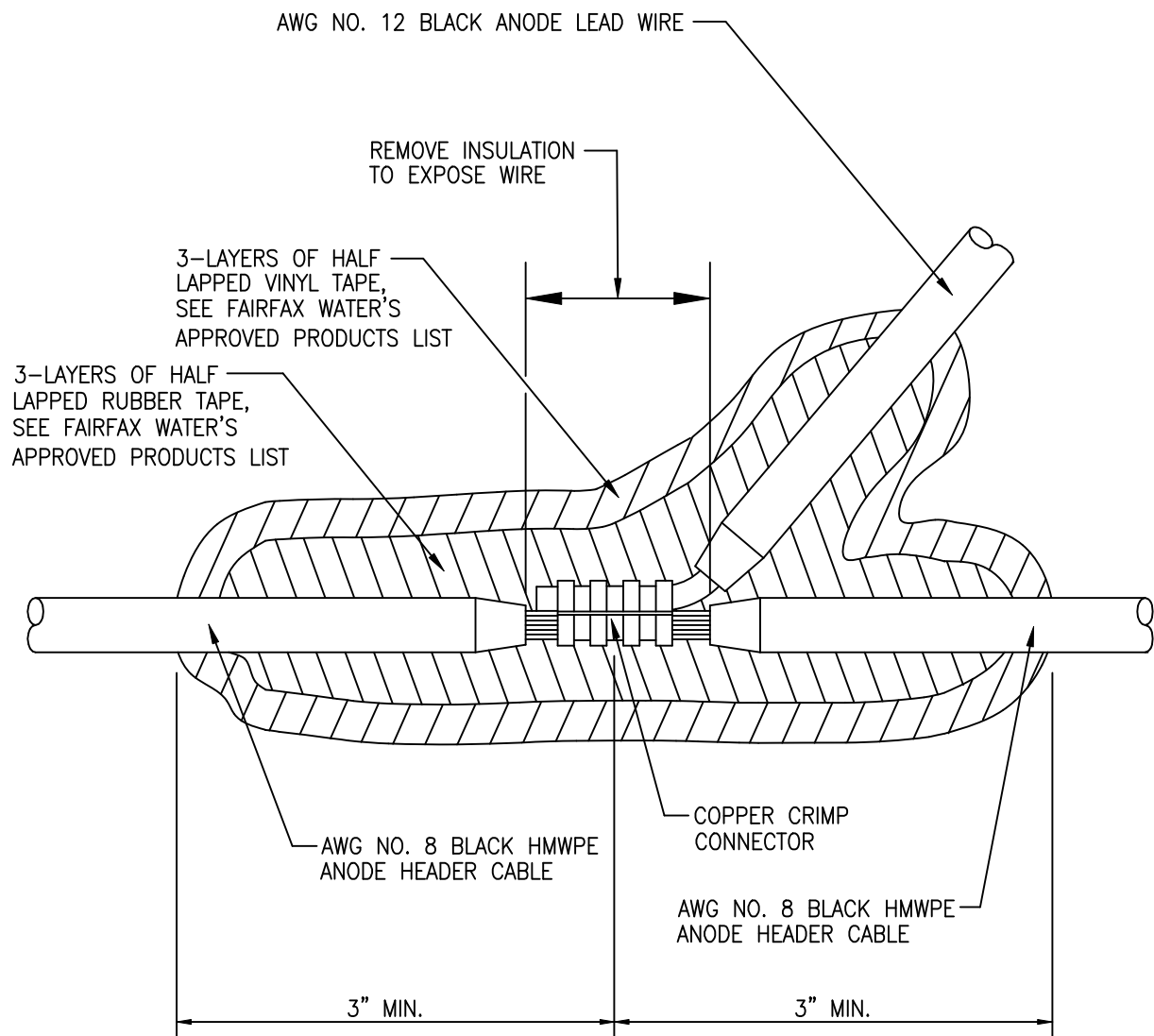
SCALE:  
NOT TO SCALE

**RIBBON ANODE TO CABLE SPLICE**

DETAIL NO.:

**C18**

DATE: 9/23



**FAIRFAX WATER  
STANDARD DETAILS**

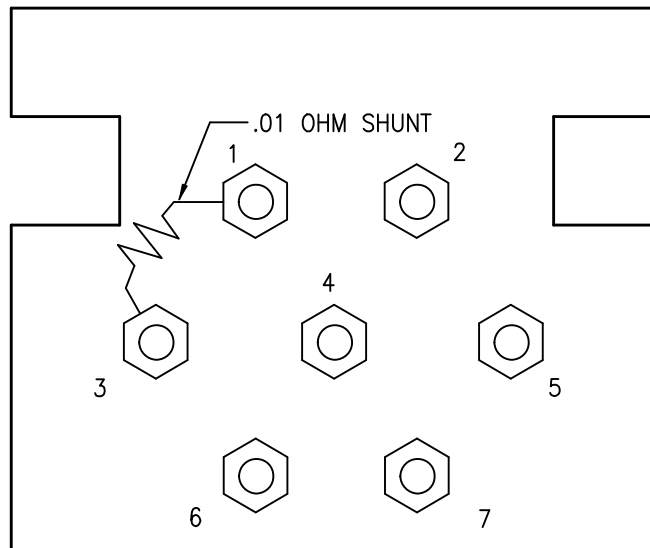
SCALE:  
NOT TO SCALE

**ANODE HEADER CABLE SPLICE**

DETAIL NO.:

**C19**

DATE: 9/23



TEST STATION TERMINAL	WIRE DESIGNATION	COLOR/AWG	DESCRIPTION
1	A-1	WHITE #12	PIPE/THWN
2	A-2	BLACK #12	PIPE/THWN
3	B-1	BLACK #8	ANODE HEADER CABLE

NOTES:

1. INSTALL .01 OHM SHUNT BETWEEN PIPE WIRE AND ANODE CABLE.
2. TERMINAL BOARD NUMBERS SHALL BE ENGRAVED ON TERMINAL BOARDS.



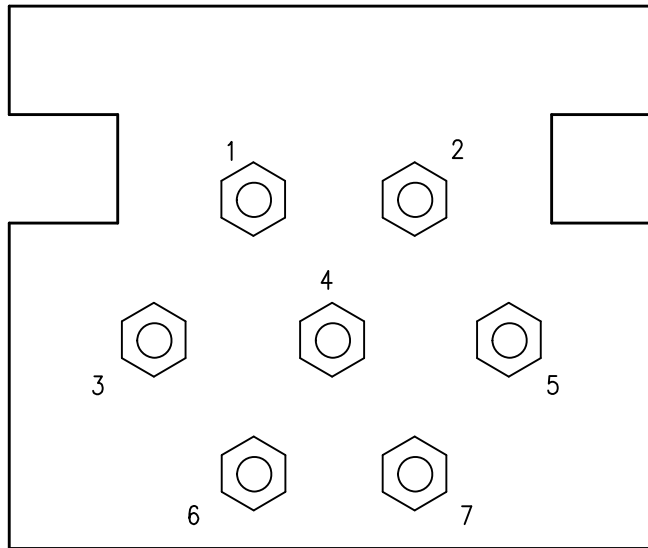
DATE: 9/23

**FAIRFAX WATER  
STANDARD DETAILS**

**TYPE FD TEST STATION  
TERMINAL BOARD AND WIRING**

SCALE:  
NOT TO SCALE

DETAIL NO.:  
**C20**



TEST STATION TERMINAL	WIRE DESIGNATION	COLOR/AWG	DESCRIPTION
1	A-1	WHITE #12	PIPE/THWN
2	A-2	WHITE #12	PIPE/THWN
3	B-1	BLACK #12	PIPE/THWN
4	B-2	BLACK #12	PIPE/THWN

NOTE:

TERMINAL BOARD NUMBERS SHALL BE ENGRAVED ON TERMINAL BOARDS.



**FAIRFAX WATER  
STANDARD DETAILS**

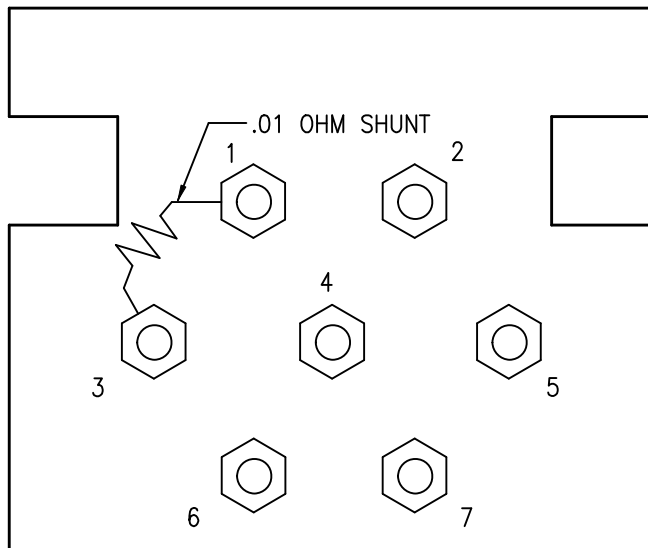
SCALE:  
NOT TO SCALE

**TYPE CS TEST STATION  
TERMINAL BOARD AND WIRING**

DETAIL NO.:

**C21**

DATE: 9/23



TEST STATION TERMINAL	WIRE DESIGNATION	COLOR/AWG	DESCRIPTION
1	A-1	BLACK #12	PIPE/THWN
2	A-2	BLACK #12	PIPE/THWN
3	B-1	BLACK #8	ANODE HEADER CABLE

**NOTES:**

1. INSTALL .01 OHM SHUNT BETWEEN TEST STATION TERMINAL 1 AND 3 (A-1, B-1).
2. TERMINAL BOARD NUMBERS SHALL BE ENGRAVED ON TERMINAL BOARDS.



**FAIRFAX WATER  
STANDARD DETAILS**

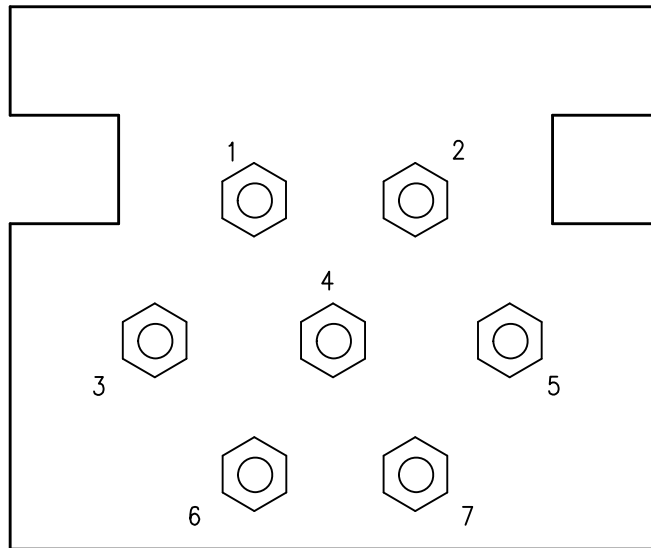
SCALE:  
NOT TO SCALE

**TYPE TD TEST STATION  
TERMINAL BOARD AND WIRING**

DETAIL NO.:

**C22**

DATE: 9/23



TEST STATION TERMINAL	WIRE DESIGNATION	COLOR/AWG	DESCRIPTION
1	A-1	WHITE #12	PIPE/THWN
2	A-2	WHITE #12	PIPE/THWN
3	B-1	BLACK #12	PIPE/THWN
4	B-2	BLACK #12	PIPE/THWN

NOTES:

1. TERMINAL BOARD NUMBERS SHALL BE ENGRAVED ON TERMINAL BOARDS.



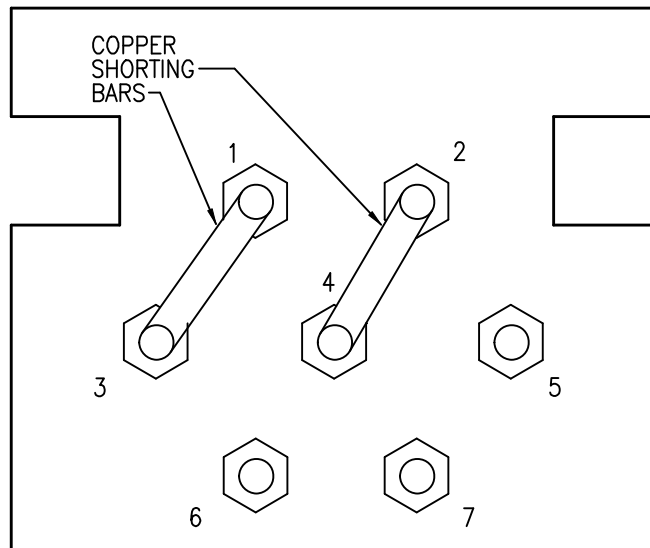
DATE: 9/23

**FAIRFAX WATER  
STANDARD DETAILS**

**TYPE IS AND I TEST STATION  
TERMINAL BOARD AND WIRING**

SCALE:  
NOT TO SCALE

DETAIL NO.:  
**C23**



TEST STATION TERMINAL	WIRE DESIGNATION	COLOR/AWG	DESCRIPTION
1	A-1	WHITE #12	PIPE/THWN
2	A-2	WHITE #12	PIPE/THWN
3	B-1	BLACK #6	AWG
4	B-2	BLACK #6	AWG

NOTES:

1. INSTALL SHORTING BAR BETWEEN PIPE WIRE AND ZINC RIBBON ANODE.
2. TERMINAL BOARD NUMBERS SHALL BE ENGRAVED ON TERMINAL BOARDS.



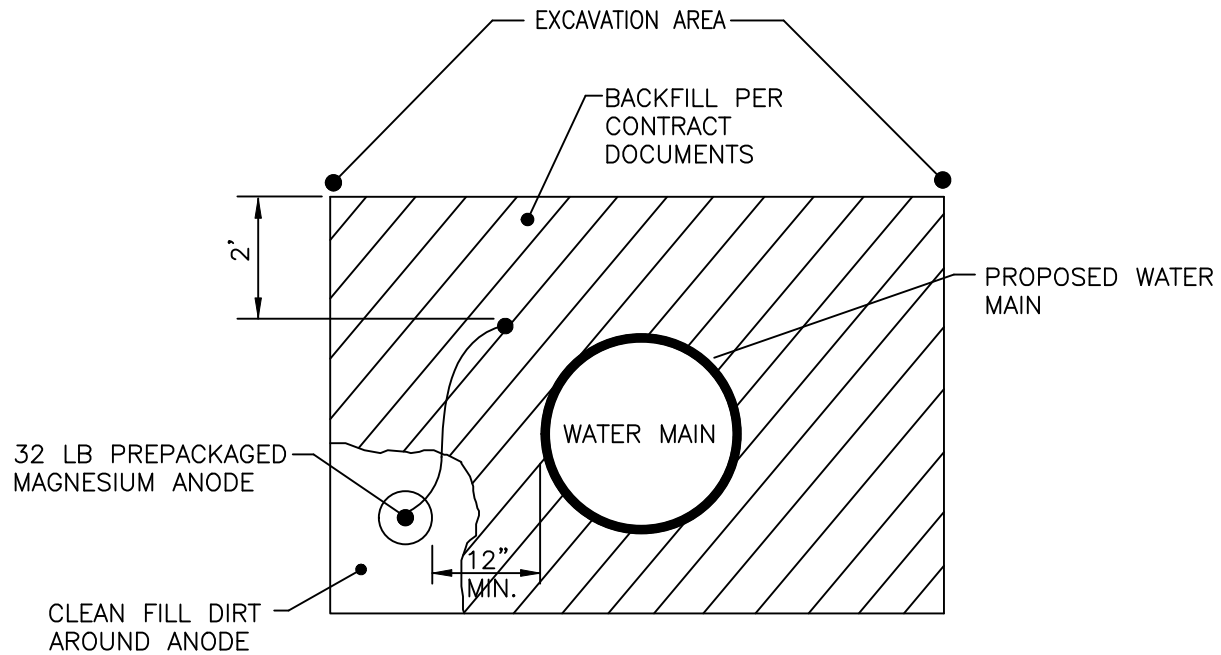
DATE: 9/23

**FAIRFAX WATER  
STANDARD DETAILS**

**TYPE GM TEST STATION  
TERMINAL BOARD AND WIRING**

SCALE:  
NOT TO SCALE

DETAIL NO.:  
**C24**



DATE: 9/23

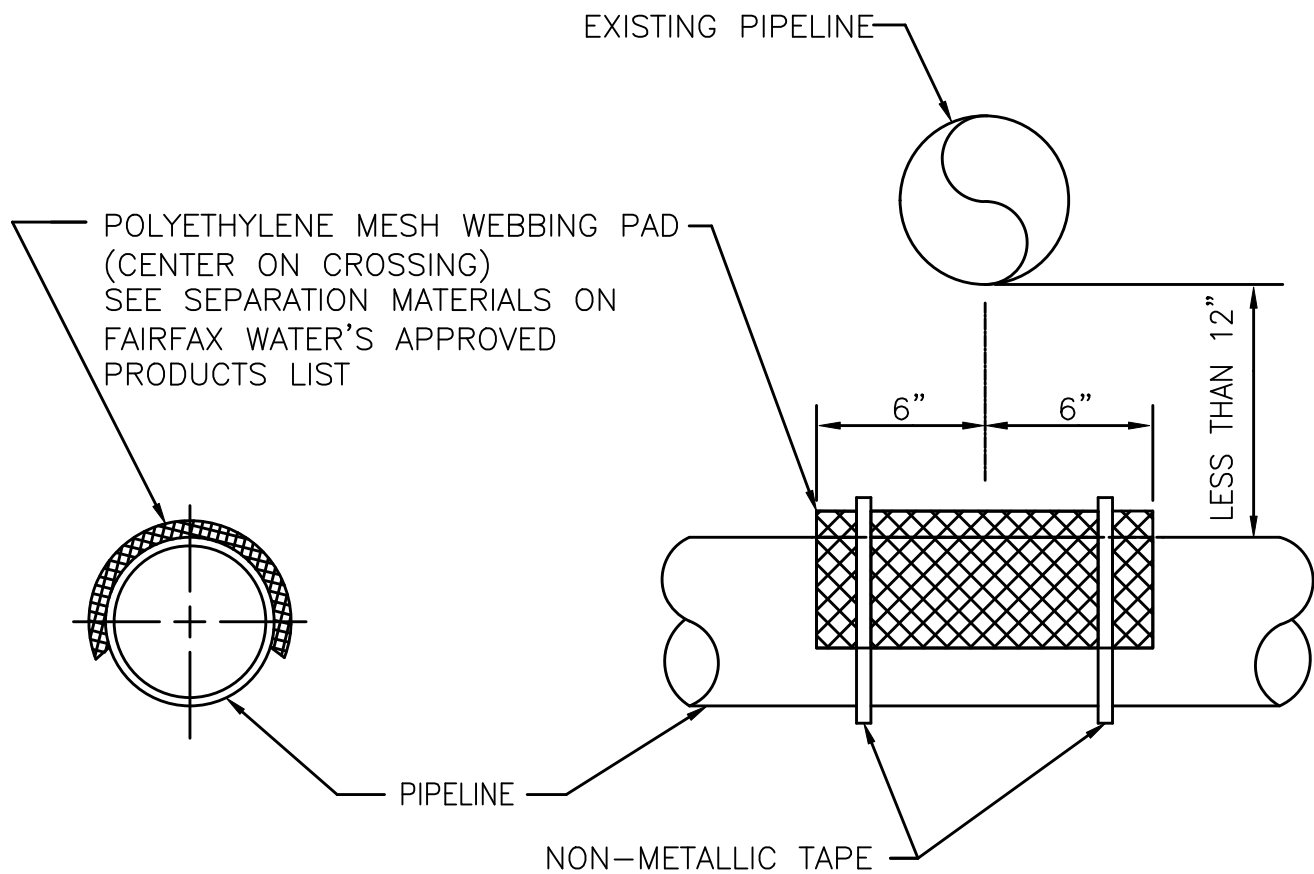
# **FAIRFAX WATER STANDARD DETAILS**

## **TYPICAL BACKFILLING AND ANODE BED PLACEMENT AREA**

SCALE:  
NOT TO SCALE

DETAIL NO.:  
**C25**





NOTE:  
USE ONLY WHEN PIPES ARE LESS THAN 12" APART.



DATE: 9/23

**FAIRFAX WATER  
STANDARD DETAILS**

**TYPICAL SEPARATOR TO  
AVOID ELECTRICAL CONTACT**

SCALE:  
NOT TO SCALE

DETAIL NO.:  
**C26**

CORROSION CONTROL TEST STATION SCHEDULE										
PLAN SHEET NUMBER	APPROXIMATE WATER MAIN STATION	TEST STATION NO.	TEST STATION TYPE	TEST STATION DETAIL NO.	ANODE SPACING (FEET)	NO. OF 32 LB. PREPACKAGED MAGNESIUM ANODES	NO. OF INSULATING FLANGES	NO. OF A.C. GROUND MATS	NO. OF TEST STATIONS	NO. OF GUARD POSTS