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PRV-PS	TYPICAL PIPE SUPPORT
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SER-CM	TYPICAL HP PROTECTUS COMPOUND METER INSTALLATION
MAIN-JP	JUMPER TIE-IN DETAIL
MAIN-TW	TRACER WIRE INSTALLATION

TEXAS WATER COMPANY

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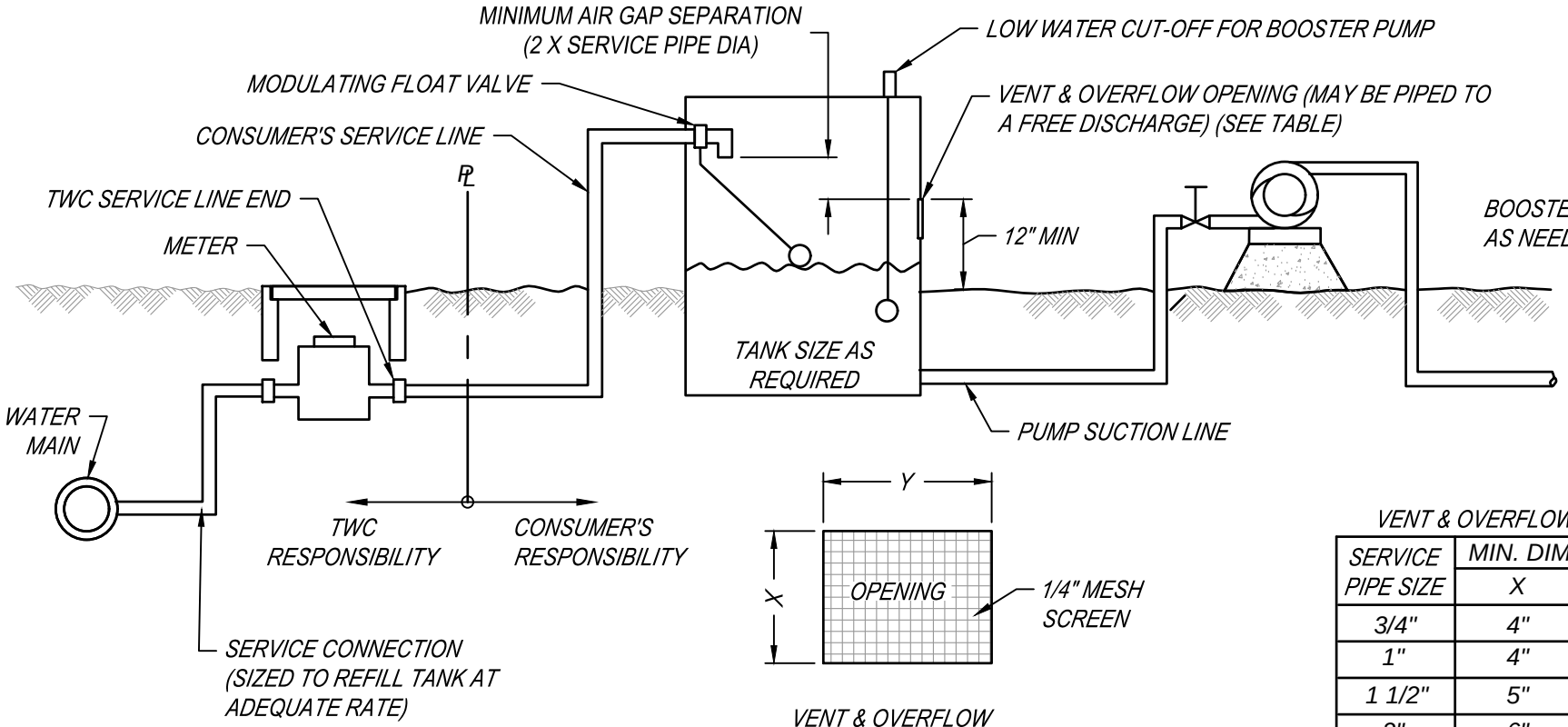
June 11, 2026

TEXAS WATER COMPANY STANRD DETAILS - SHEET INDEX

SHEET NO.

INDEX



VENT & OVERFLOW TABLE

SERVICE PIPE SIZE	MIN. DIMENSIONS	
	X	Y
3/4"	4"	3"
1"	4"	4 1/2"
1 1/2"	5"	6"
2"	6"	7"
3"	7"	10"
4"	7"	10"
6"	7"	15"

NOTES:

1. DESIGN, FABRICATION, INSTALLATION AND OPERATION MUST COMPLY WITH STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION (AWWA) AND ALL FEDERAL, STATE AND LOCAL LAWS, RULES, REGULATIONS, ORDERS, CODES AND ORDINANCES.
2. THE AIR GAP SEPARATION SHALL BE INSTALLED SUBJECT TO THE APPROVAL OF TWC. ANY DEVIATION FROM THE METHODS DESCRIBED HEREON MUST RECEIVED APPROVAL PRIOR TO INSTALLATION.
3. NO CONNECTIONS SHALL BE MADE BETWEEN METER AND CONSUMER'S TANK.
4. THE OVERFLOW OPENING AND SCREEN SIZE SHALL BE AS SHOWN HEREON OR OF GREATER CAPACITY AS REQUIRED TO MAINTAIN THE SPECIFIED AIR GAP SEPARATION.

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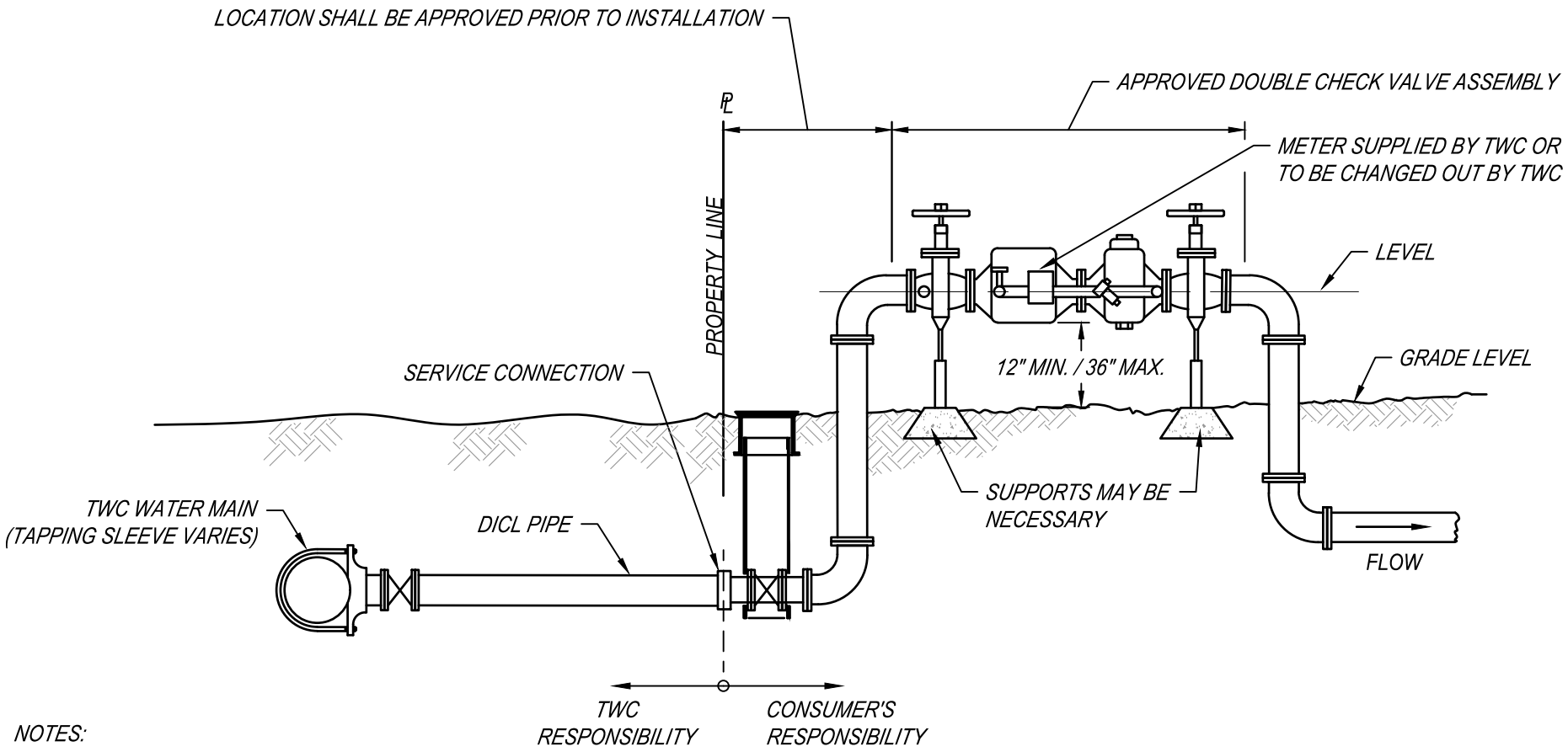
AIR GAP SEPARATION

March 19, 2026

SHEET NO.

BK-AG



NOTES:

1. APPROVED ASSEMBLIES ARE REQUIRED TO HAVE RESILIENT SEATED SHUT-OFF VALVES AND TEST COCKS AS INTEGRAL PARTS OF THE ASSEMBLIES OTHERWISE THE APPROVAL IS VOIDED.
2. ASSEMBLY MUST BE ACCESSIBLE FOR TESTING AND MAINTENANCE.
3. PROTECTION FROM FREEZE DAMAGE MAY BE REQUIRED IN EXPOSED AREAS.
4. NO CONNECTIONS OR TEES WILL BE ALLOWED BETWEEN METER AND ASSEMBLY.
5. INSTALLATION AND OPERATION MUST COMPLY WITH STANDARDS SET FORTH BY A.W.W.A. AND ALL FEDERAL, STATE, AND LOCAL LAWS, RULES, REGULATIONS, ORDERS, CODES, AND ORDINANCES.
6. THE D.C.V. ASSEMBLY SHALL BE INSTALLED AS CLOSE TO THE METER AS PRACTICAL. ANY DEVIATION FROM THIS METHOD MUST BE APPROVED BY TWC PRIOR TO INSTALLATION.
7. ASSEMBLY MAY BE INSTALLED BELOW GRADE WITH APPROVAL BY TWC.

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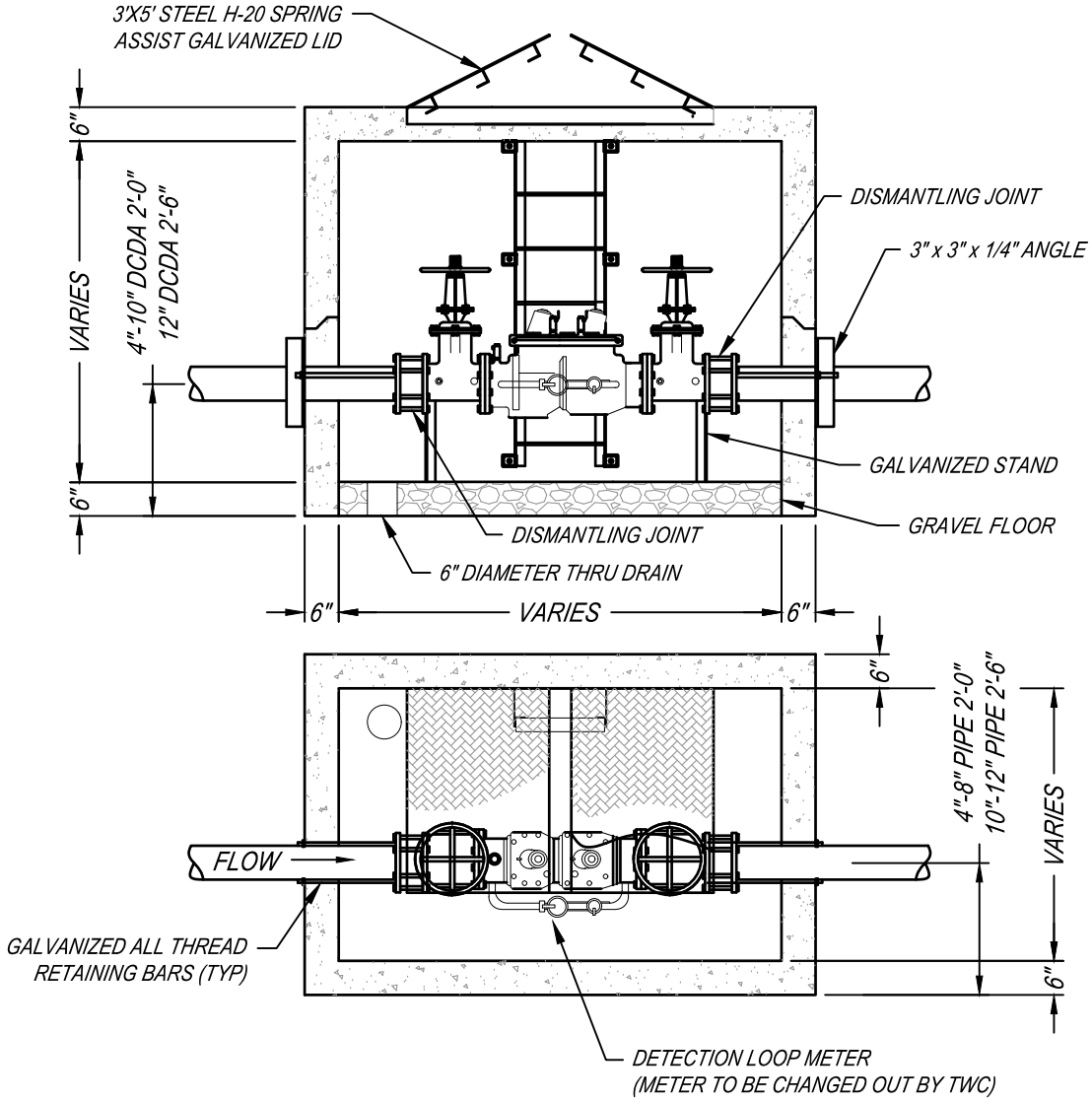
APPROVED DOUBLE CHECK DETECTOR ASSEMBLY INSTALLATION

March 19, 2026

SHEET NO.

BK-DCDA

4"-12" DOUBLE CHECK DETECTOR ASSEMBLY



NOTES

1) APPROVED ASSEMBLIES ARE REQUIRED TO HAVE RESILIENT SEATED SHUT-OFF VALVES AND TEST COCKS AS INTEGRAL PARTS OF THE ASSEMBLIES OTHERWISE THE APPROVAL IS VOIDED.
2) ASSEMBLY MUST BE ACCESSIBLE FOR TESTING AND MAINTENANCE.
3) INSTALLATION AND OPERATION MUST COMPLY WITH STANDARDS SET FORTH BY A.W.W.A. AND ALL FEDERAL, STATE, AND LOCAL LAWS, RULES, REGULATIONS, ORDERS, CODES AND ORDINANCES.
4) DCDA MUST MEET CURRENT CLWSC STANDARDS FOR BACKFLOW PREVENTION DEVICES. CONTACT TWC FOR LIST OF APPROVED DEVICES.
5) CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND OTHER INFORMATION AS NECESSARY FOR VAULT AND BACKFLOW DEVICE FOR APPROVAL PRIOR TO INSTALLATION.
6) THE FOLLOWING MANUFACTURES ARE PRE-APPROVED FOR BOTH VAULT AND BACKFLOW DEVICE REQUIREMENTS: CAPITAL PRECAST, INC. 6905 S. OLD BASTROP HWY SAN MARCOS, TX 78666 (830)-606-6200

VAULT SIZE AND DIMENSION (ID)			
DCDA SIZE	Width	Length	Height
4"DCDA	4'-0"	6'-6"	5'-0"
6"DCDA	4'-0"	6'-6"	5'-0"
8"DCDA	4'-0"	6'-6"	5'-0"
10"DCDA	5'-0"	7'-0"	6'-0"
12"DCDA	5'-0"	10'-0"	7'-0"

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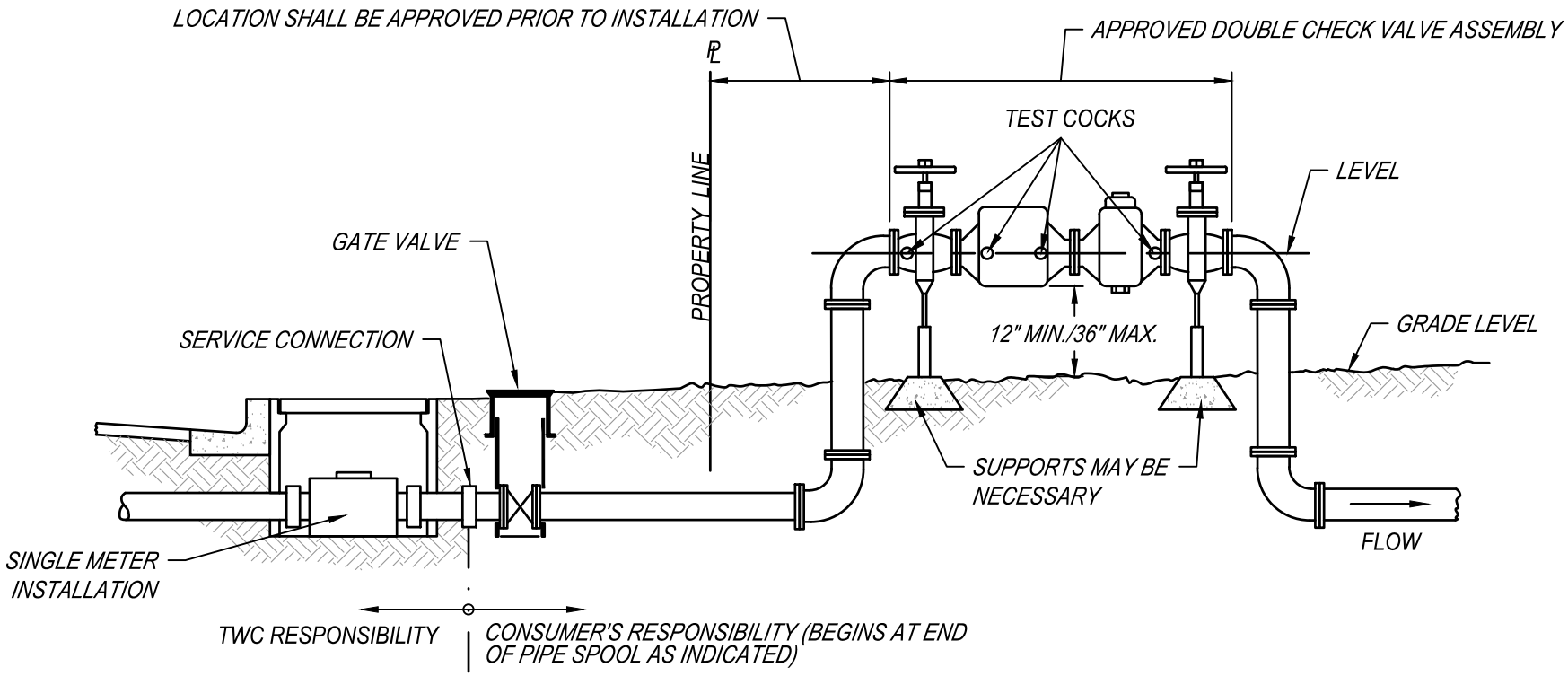
BELOW GRADE DOUBLE CHECK DETECTOR ASSEMBLY INSTALLATION

March 19, 2026

SHEET NO.

BK-DCDA1



NOTES:

1. APPROVED ASSEMBLIES ARE REQUIRED TO HAVE RESILIENT SEATED SHUT-OFF VALVES AND TEST COCKS AS INTEGRAL PARTS OF THE ASSEMBLIES OTHERWISE THE APPROVAL IS VOIDED.
2. ASSEMBLY MUST BE ACCESSIBLE FOR TESTING AND MAINTENANCE.
3. PROTECTION FROM FREEZE DAMAGE WILL BE REQUIRED IN EXPOSED AREAS.
4. NO CONNECTIONS OR TEES WILL BE ALLOWED BETWEEN METER AND ASSEMBLY.
5. INSTALLATION AND OPERATION MUST COMPLY WITH STANDARDS SET FORTH BY A.W.W.A. AND ALL FEDERAL, STATE, AND LOCAL LAWS, RULES, REGULATIONS, ORDERS, CODES, AND ORDINANCES.
6. THE D.C.V. ASSEMBLY SHALL BE INSTALLED AS CLOSE TO THE METER AS PRACTICAL. ANY DEVIATION FROM THIS METHOD MUST BE APPROVED BY TWC PRIOR TO INSTALLATION.
7. IN NO CASE SHALL THIS ASSEMBLY BE INSTALLED BELOW GRADE WITHIN A VAULT OR IN A PIT.

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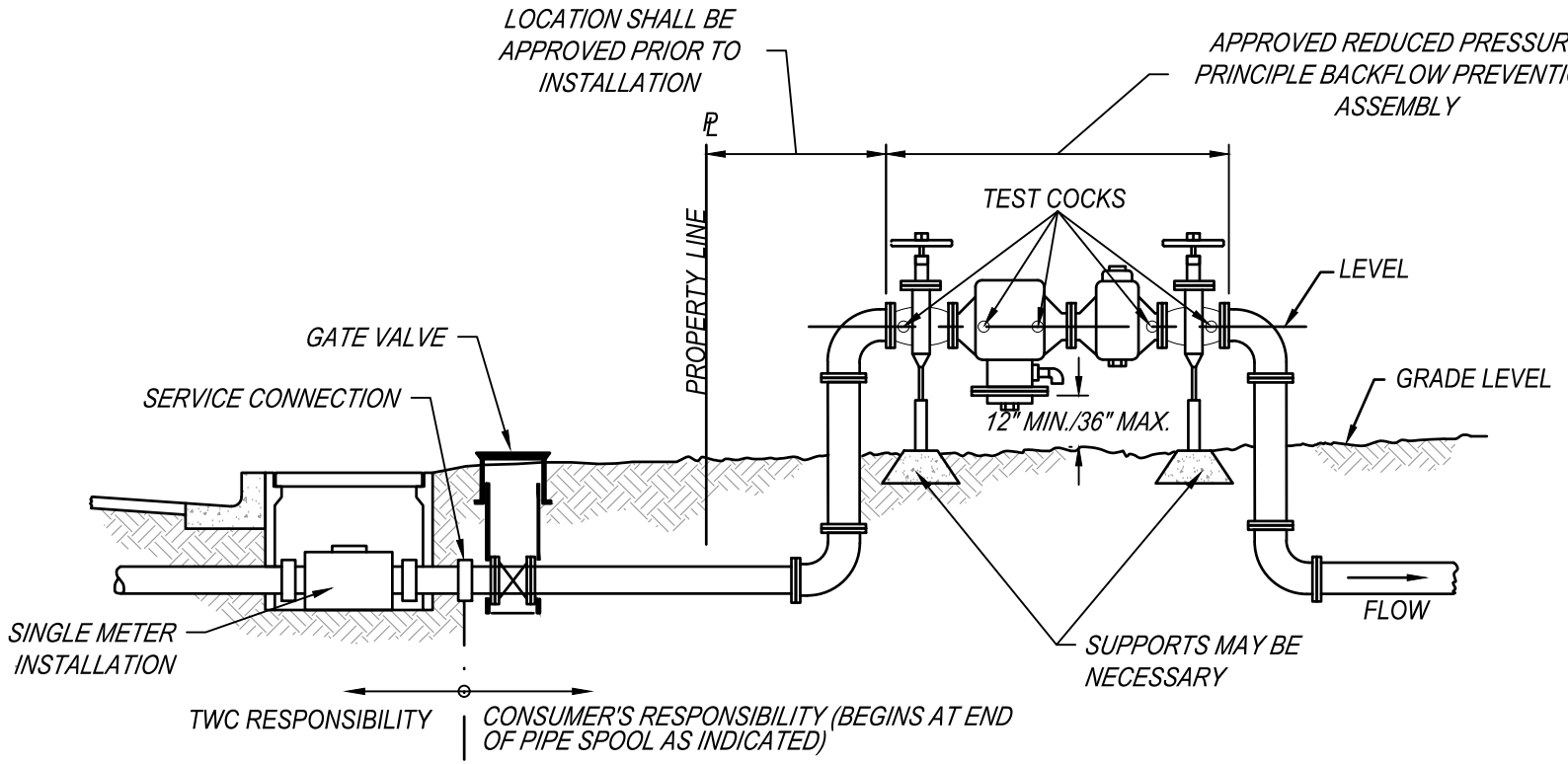
APPROVED DOUBLE CHECK VALVE ASSEMBLY INSTALLATION

March 19, 2026

SHEET NO.

BK-DCV



NOTES:

1. APPROVED ASSEMBLIES ARE REQUIRED TO HAVE RESILIENT SEATED SHUT-OFF VALVES AND TEST COCKS AS INTEGRAL PARTS OF THE ASSEMBLIES OTHERWISE THE APPROVAL IS VOIDED.
2. ASSEMBLY MUST BE ACCESSIBLE FOR TESTING AND MAINTENANCE.
3. PROTECTION FROM FREEZE DAMAGE WILL BE REQUIRED IN EXPOSED AREAS.
4. NO CONNECTIONS OR TEES WILL BE ALLOWED BETWEEN METER AND ASSEMBLY.
5. INSTALLATION AND OPERATION MUST COMPLY WITH STANDARDS SET FORTH BY A.W.W.A. AND ALL FEDERAL, STATE, AND LOCAL LAWS, RULES, REGULATIONS, ORDERS, CODES, AND ORDINANCES.
6. THE R.P.P. ASSEMBLY SHALL BE INSTALLED AS CLOSE TO THE METER AS PRACTICAL. ANY DEVIATION FROM THIS METHOD MUST BE APPROVED BY TWC PRIOR TO INSTALLATION.
7. IN NO CASE SHALL THIS ASSEMBLY BE INSTALLED BELOW GRADE WITHIN A VAULT OR IN A PIT.
8. BACKFLOW ASSEMBLY SHALL BE LEAD FREE.

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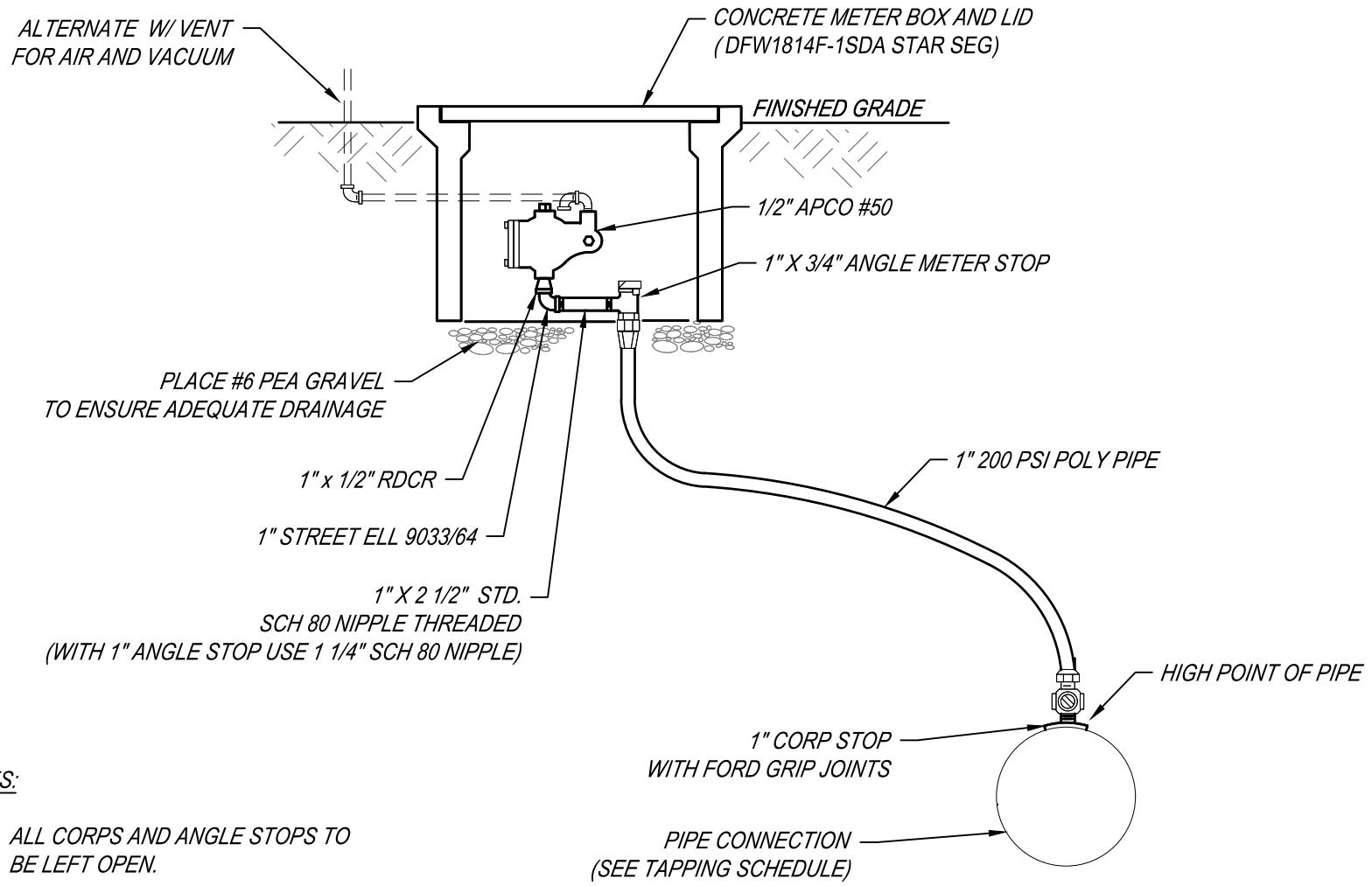
APPROVED REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTOR

March 19, 2026

SHEET NO.

BK-RPP



NOTES:

1. ALL CORPS AND ANGLE STOPS TO BE LEFT OPEN.
2. BLOW OFF MAIN BEFORE INSTALLING AIR VALVE.
3. AIR RELEASE ONLY, NOT VACUUM.

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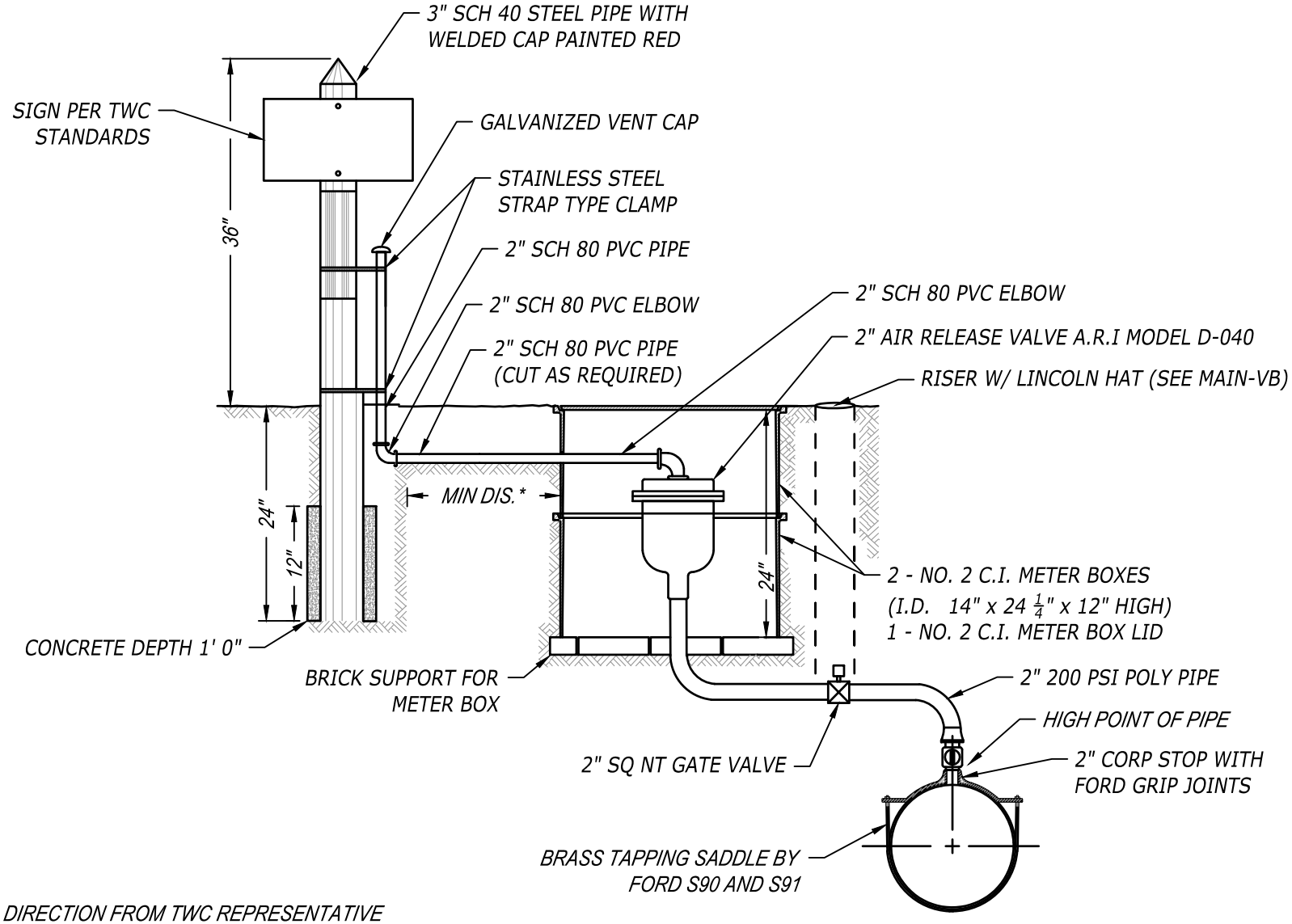
AIR VALVE INSTALLATION (HALF INCH)

March 19, 2026

SHEET NO.

MAIN-AV12



* PER DIRECTION FROM TWC REPRESENTATIVE

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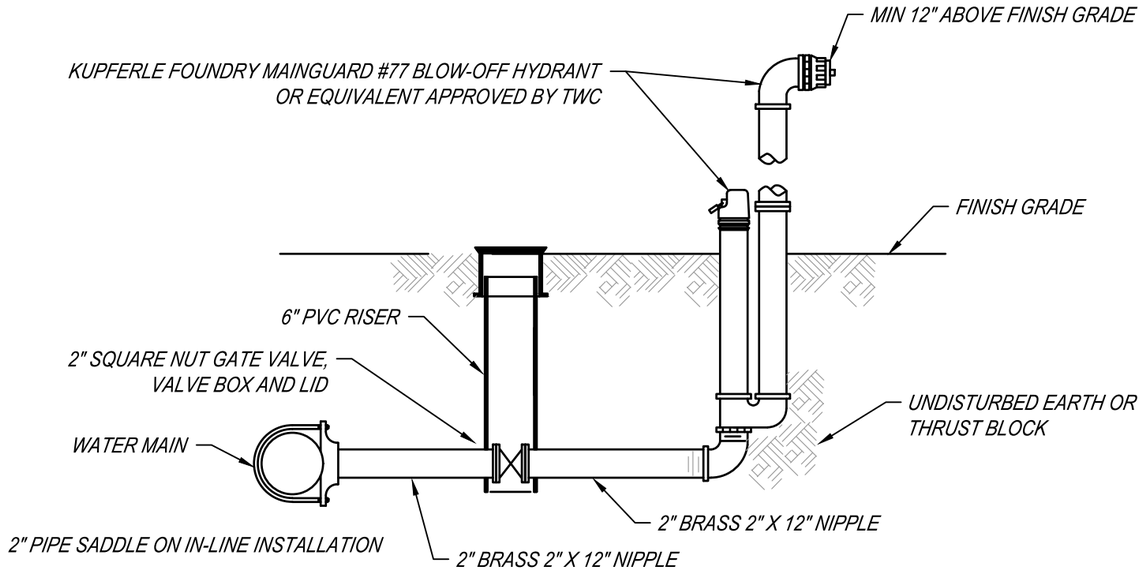
AIR VALVE INSTALLATION (2 INCH)

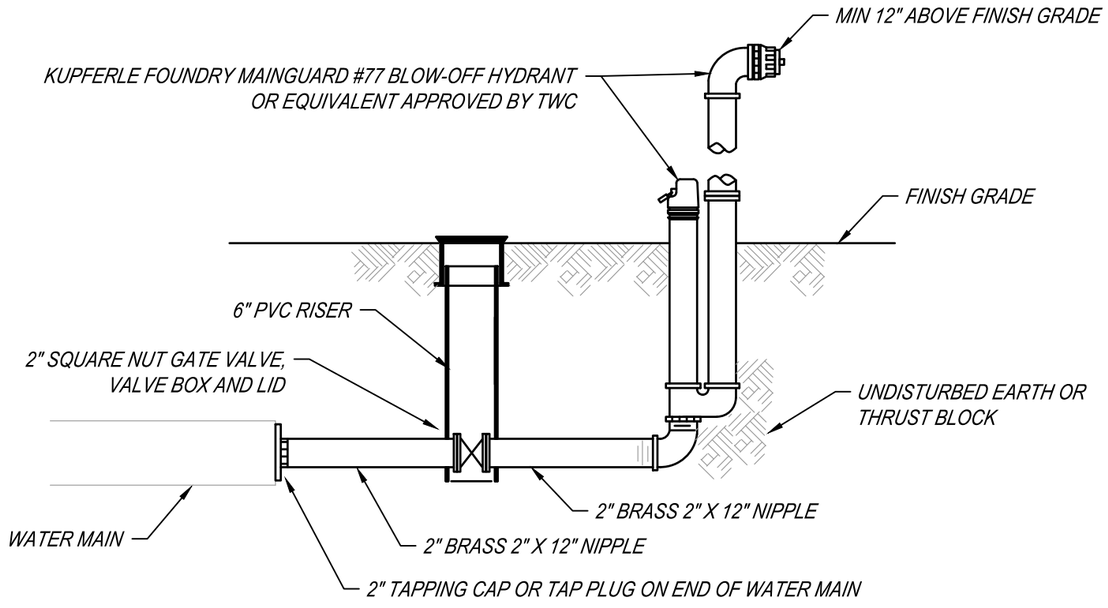
March 19, 2026

SHEET NO.

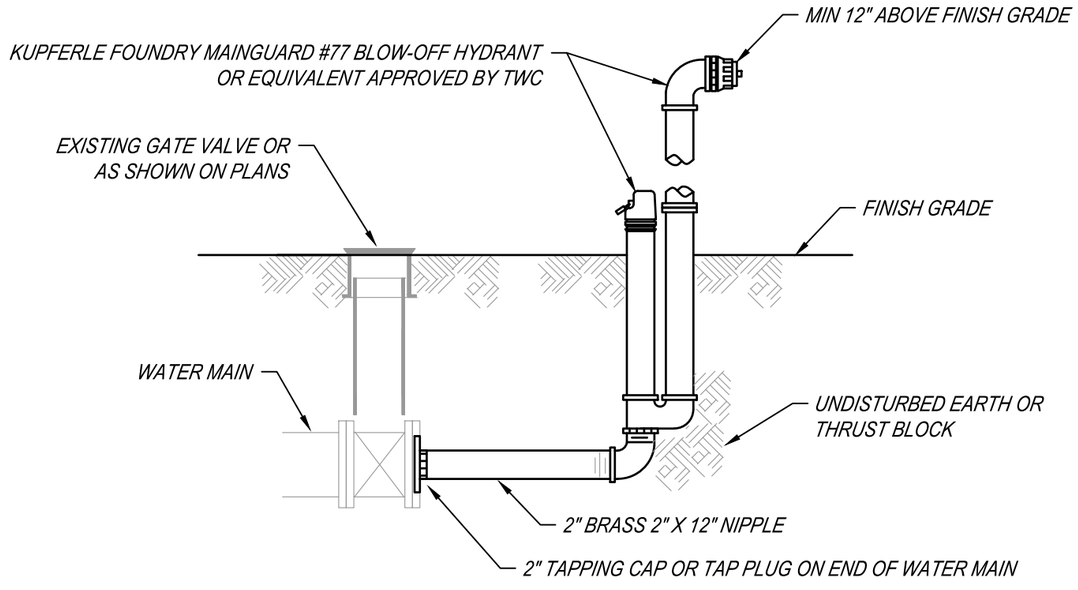
MAIN-AV2



TYPE 1



TYPE 2



TYPE 3

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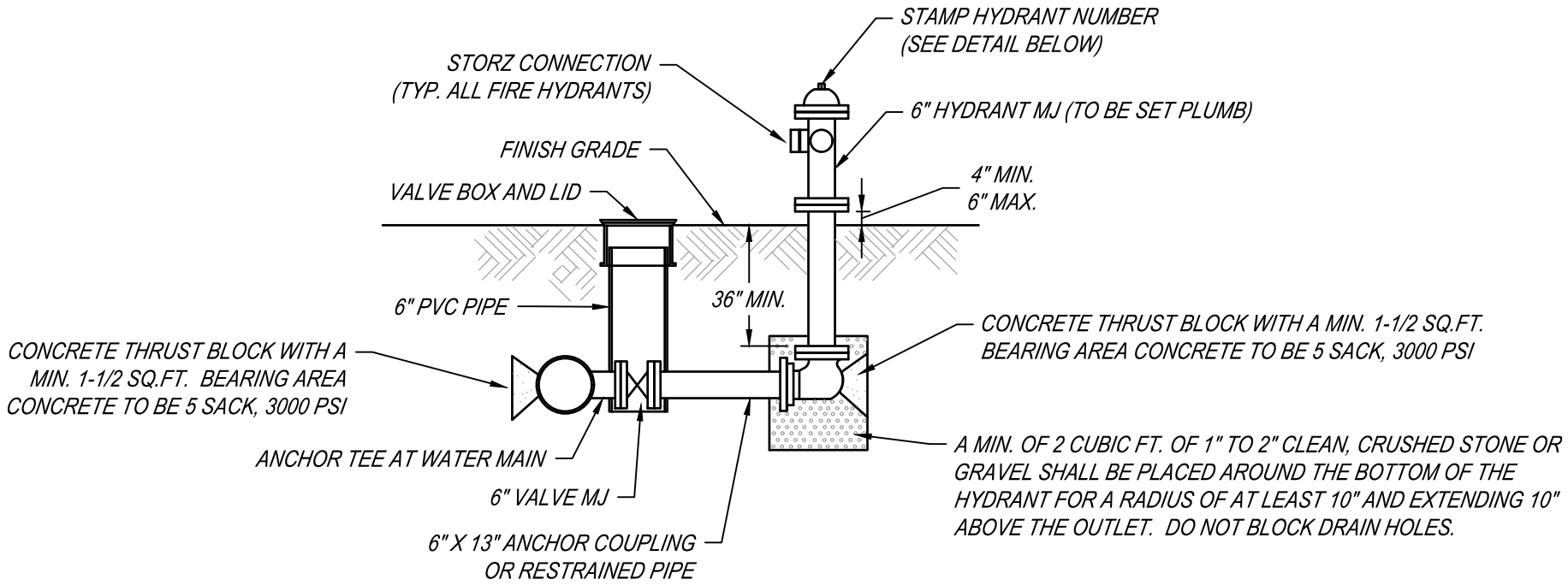
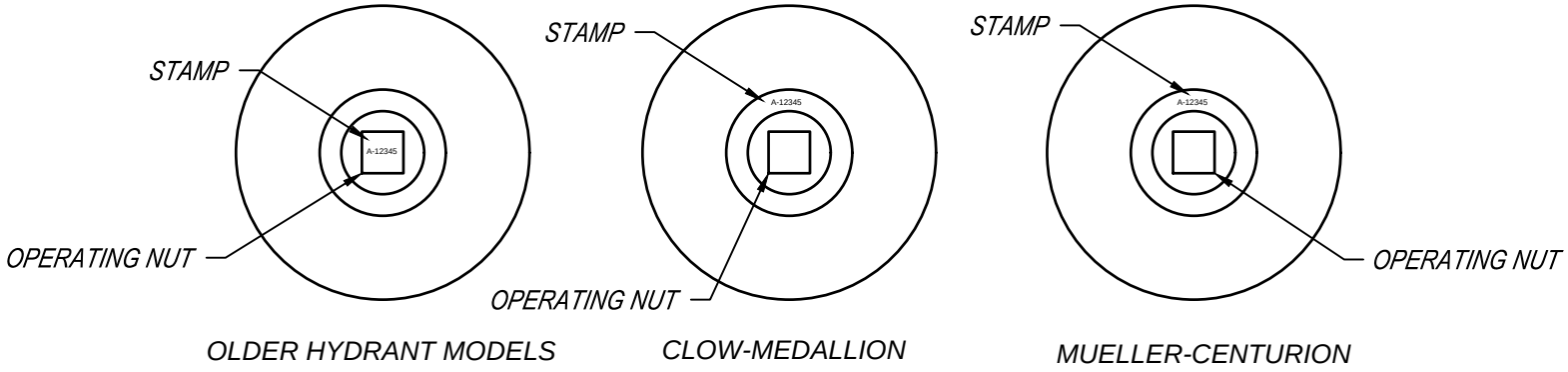
March 19, 2026

TYPICAL BLOW-OFF ASSEMBLY INSTALLATION

SHEET NO.

MAIN-BO





HYDRANT NUMBER LOCATION TOP VIEW

NOTE:

1. ALL HYDRANTS SHALL BE TURN LEFT TO OPEN.
2. FIRE HYDRANTS SHALL BE INSTALLED WITH STORZ TYPE CONNECTION, INTEGRAL CONNECTION OR STORZ ADAPTORS SHALL BE REQUIRED ON ALL FIRE HYDRANTS.
3. SEE STD. DWG. MAIN-VB FOR VALVE BOX INSTALLATION

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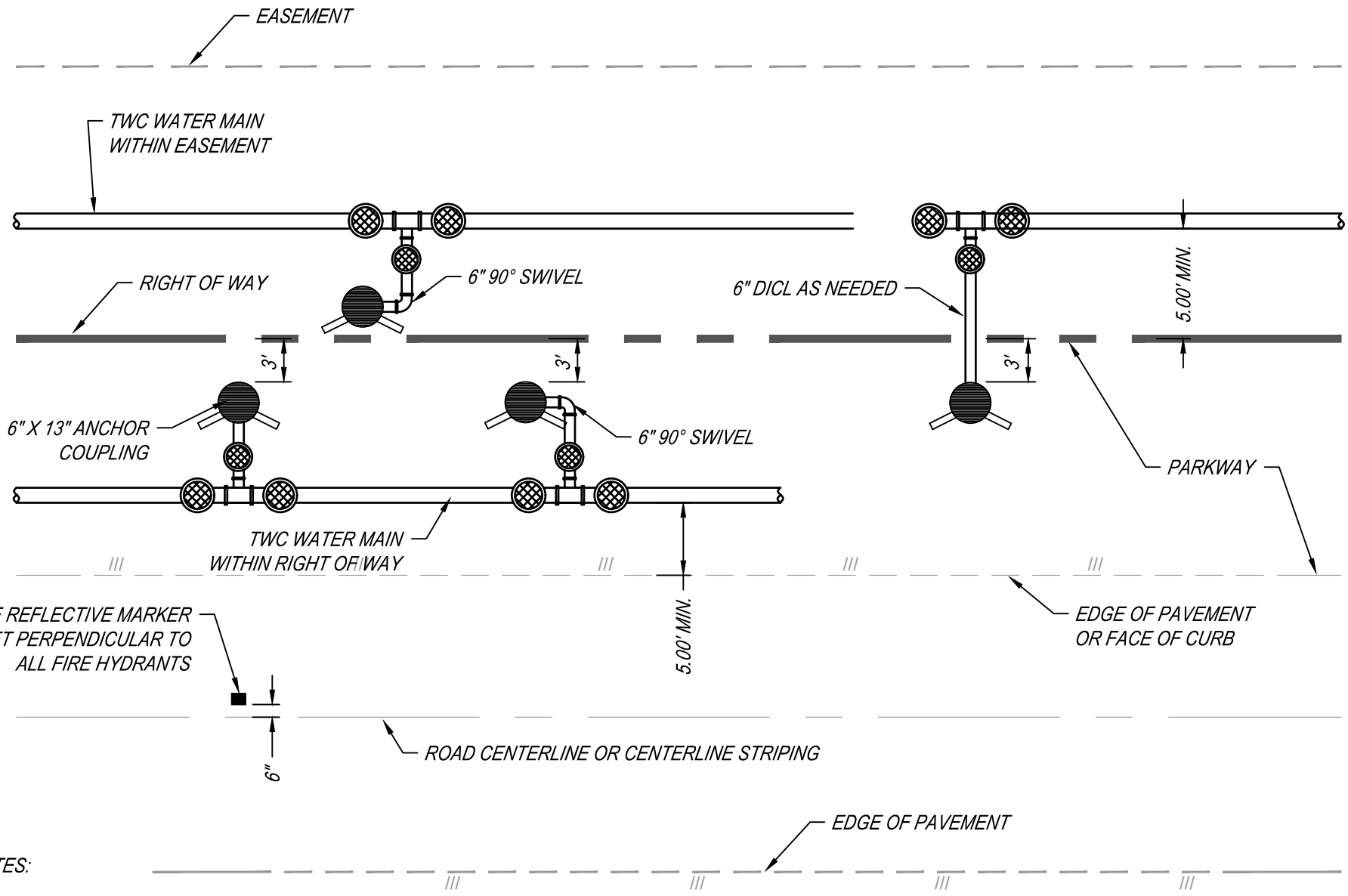
STANDARD FIRE HYDRANT INSTALLATION

March 19, 2026

SHEET NO.

MAIN-HYD



NOTES:

1. SEE TWC STANDARDS FOR VALVE BOX INSTALLATION.
2. SEE TWC STANDARDS FOR FIRE HYDRANT INSTALLATION

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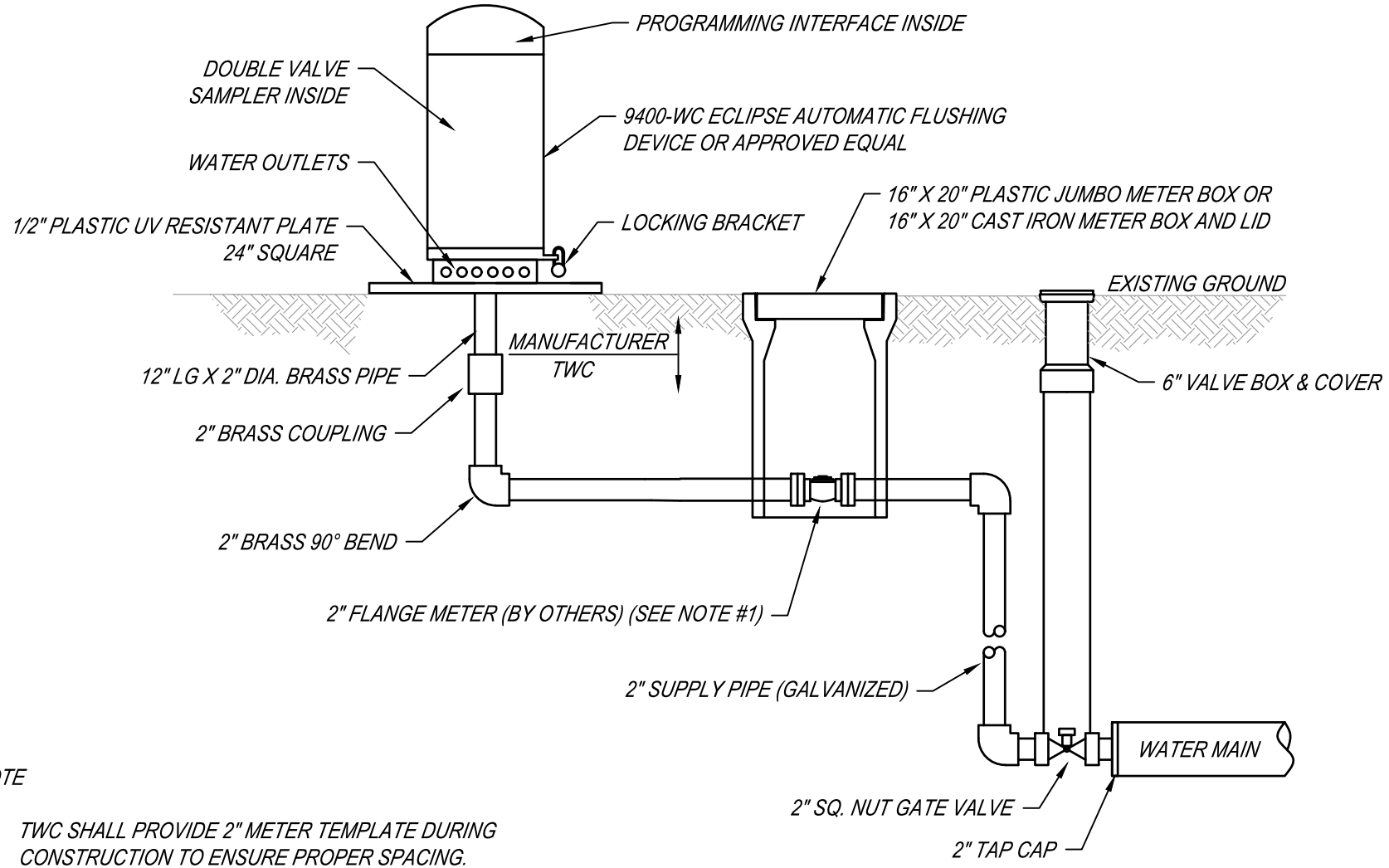
TYPICAL FIRE HYDRANT PLACEMENT

March 19, 2026

SHEET NO.

MAIN-HYDP



NOTE

1. TWC SHALL PROVIDE 2" METER TEMPLATE DURING CONSTRUCTION TO ENSURE PROPER SPACING.

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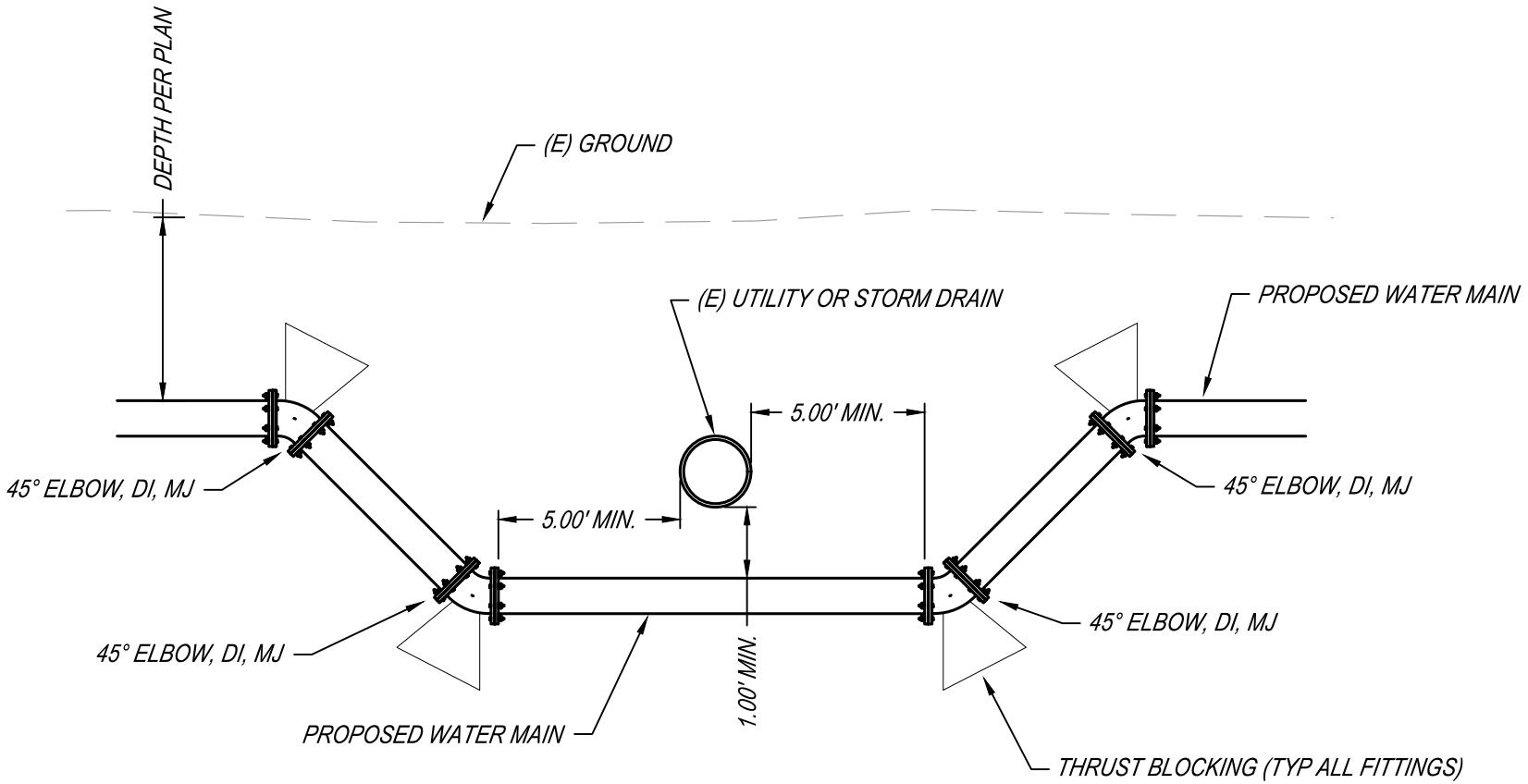
AUTOFLUSH HYDRANT

March 19, 2026

SHEET NO.

MAIN-AFH



NOTES:

1. ALL MATERIAL SHALL BE DICL FOR WATER LOWERING.
2. ALL JOINTS SHALL BE RESTRAINED.

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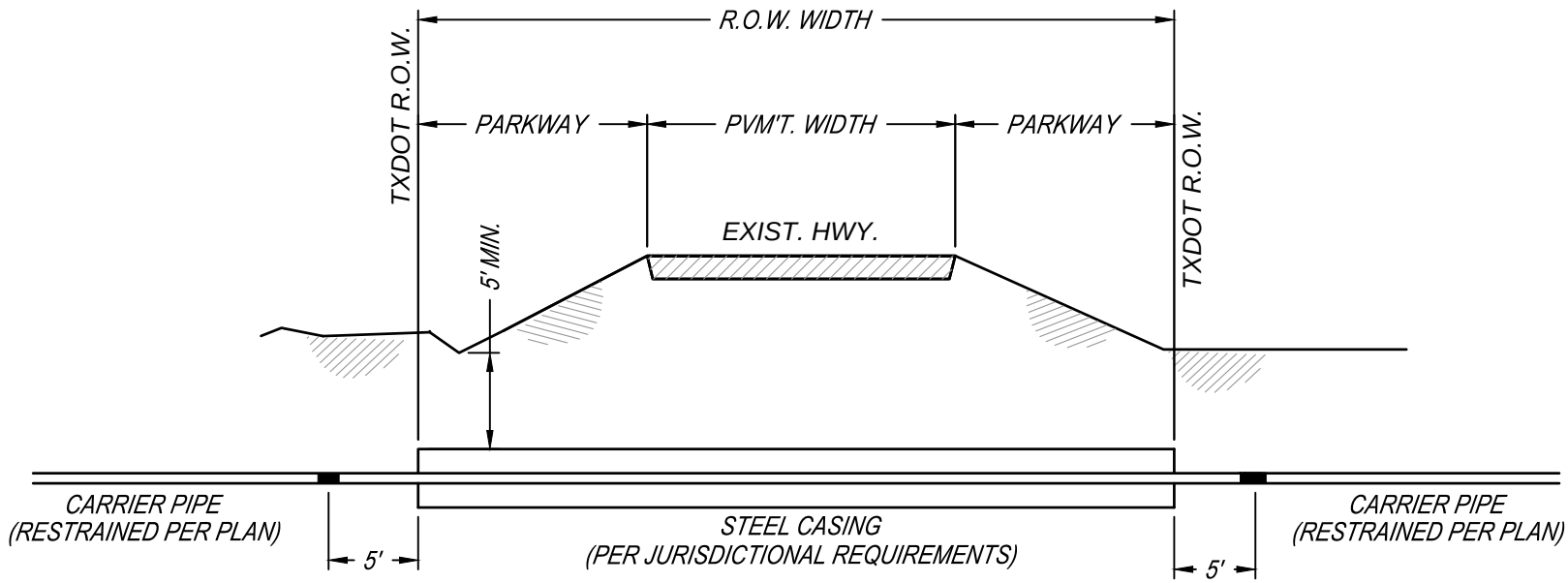
TYPICAL WATER MAIN LOWERING - UTILITY CROSSING

March 19, 2026

SHEET NO.

MAIN-LOW



NOTE:

1. CASING SPACER AND END SEALS SEE TWC DETAIL MAIN-CSG.

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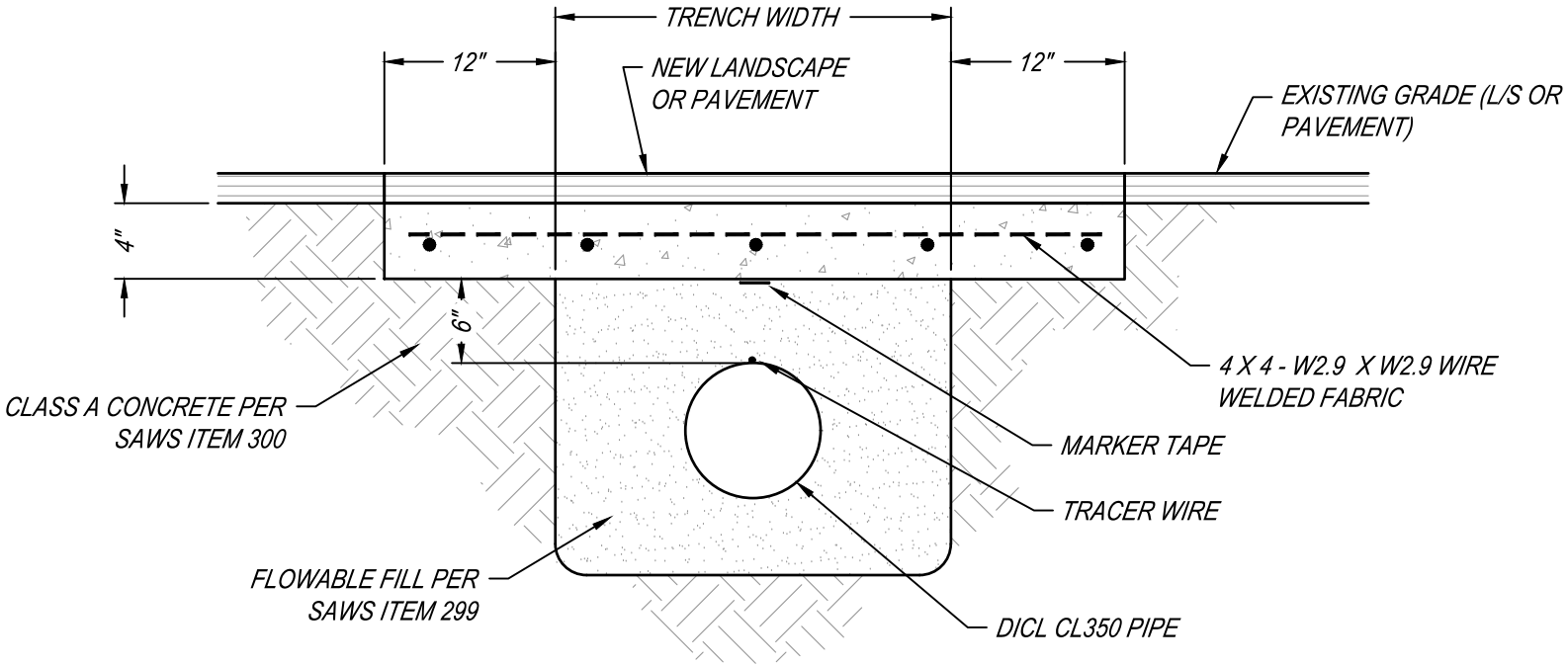
ROAD BORING AT HIGHWAY CROSSING

March 19, 2026

SHEET NO.

MAIN-BRG



NOTE:

1. INSTALL CONCRETE CAP WHERE MAIN IS LESS THAN 30" COVER.

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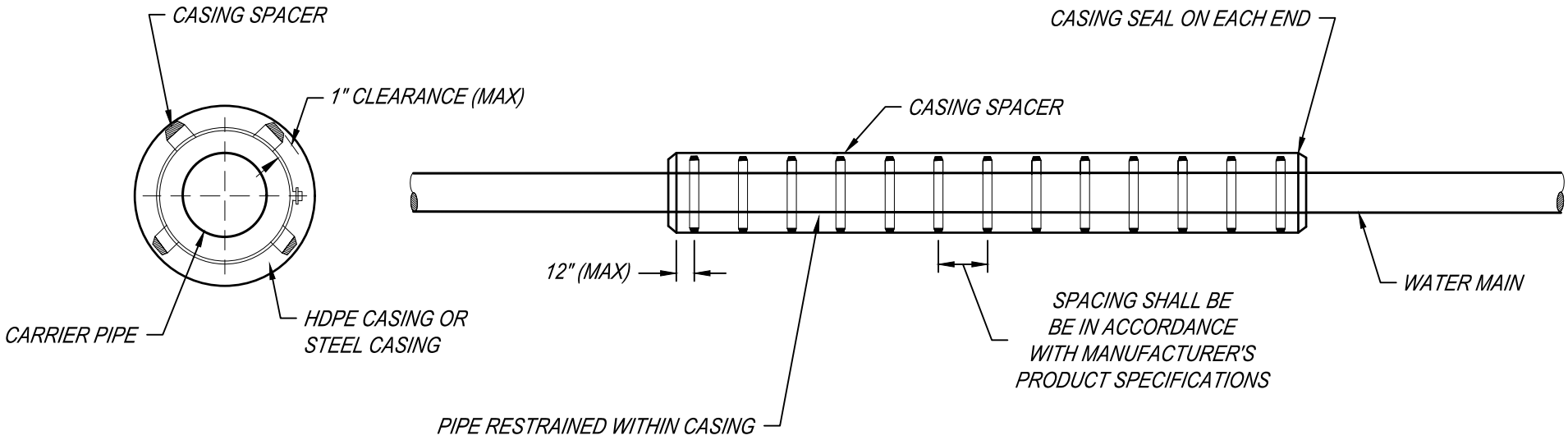
CONCRETE CAP ON SHALLOW MAINS

March 19, 2026

SHEET NO.

MAIN-CC



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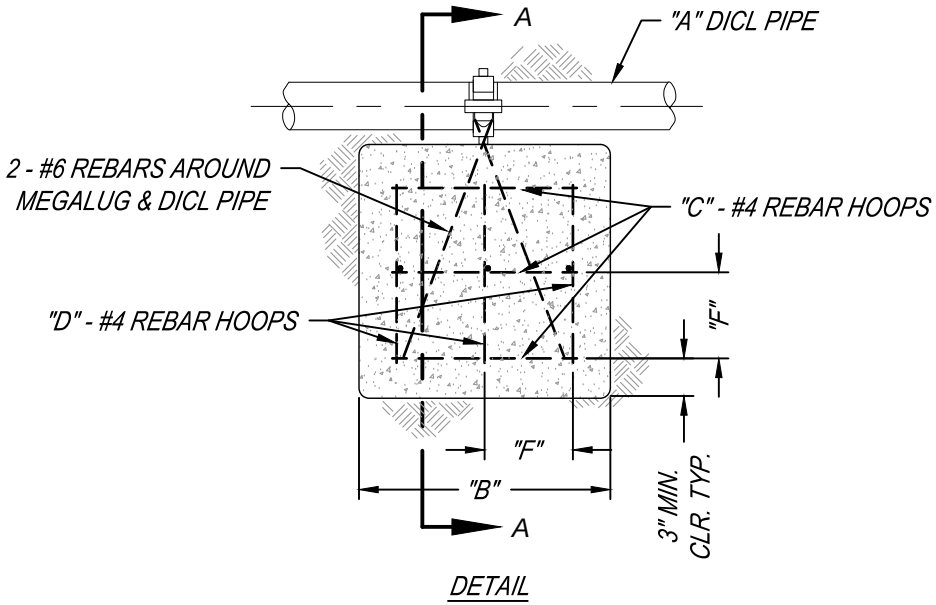
CASING DETAIL

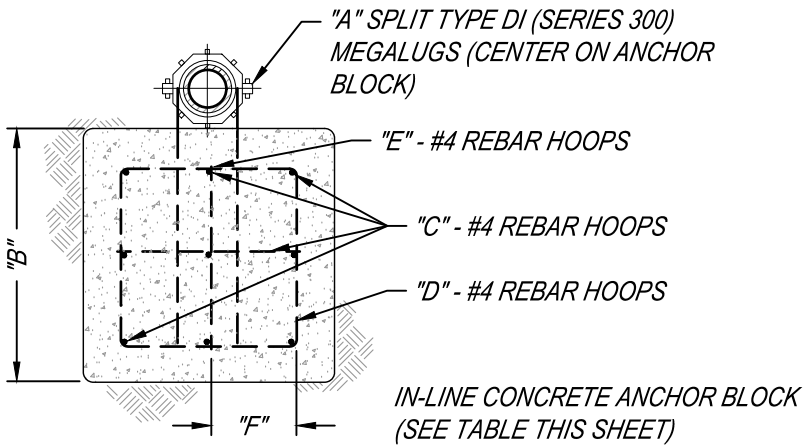
March 19, 2026

SHEET NO.

MAIN-CSG



DETAIL



SECTION AA

NOTES:

1. IN-LINE ANCHOR BLOCK SHALL BE POURED AGAINST UNDISTURBED GROUND.
2. APPLY TWO COATS OF SUPER TANK SOLUTION ON ALL METAL EXPOSED TO SOIL.
3. ANCHOR BLOCK SIZES ARE BASED ON 150 PSI WORKING PRESSURE (SAFETY FACTOR OF 1.5) AND 2000 LBS./SQ. FT. BEARING SOIL.
4. CONCRETE SHALL BE KEPT CLEAR OF FLANGES, NUTS, AND BOLTS.

"A" NOMINAL SIZE (IN)	"B" LENGTH OF ONE SIDE OF ANCHOR BLOCK (IN)	"C" QUANTITY OF HORIZONTAL REBAR HOOPS	"D" QUANTITY OF REBAR HOOPS	"E" QUANTITY OF VERTICAL REBAR HOOPS	"F" APPROX. CENTER DIS. BETWEEN REBARS (IN)
4"	30"	3	3	1	12"
6"	39"	4	4	2	11"
8"	45"	4	4	2	13"
10"	54"	5	5	3	12"
12"	60"	6	6	4	11"

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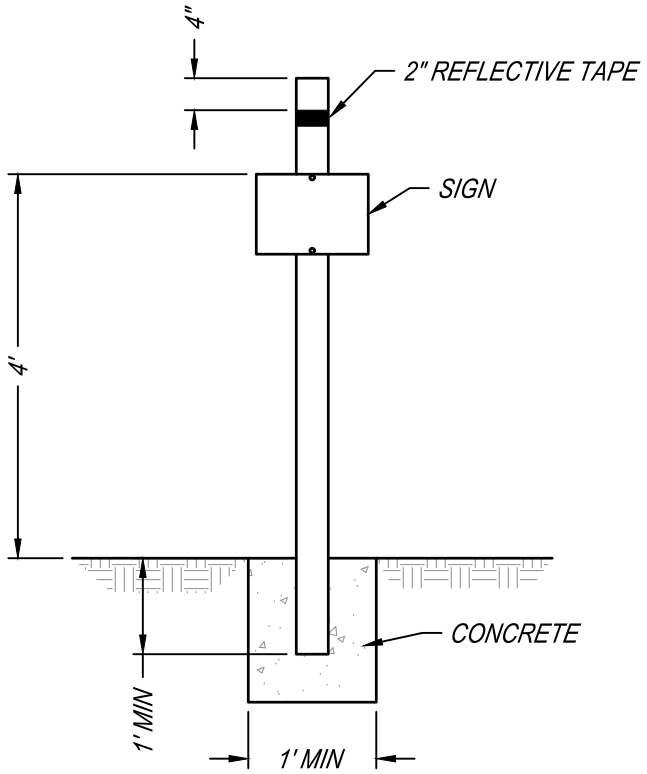
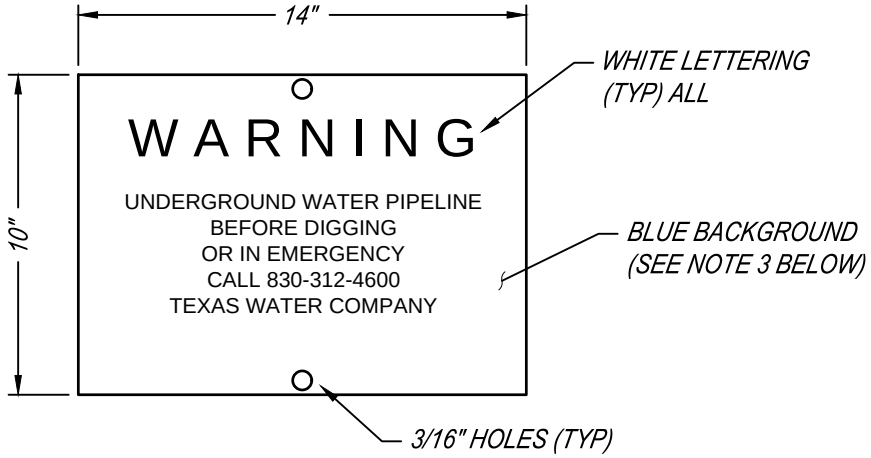
INLINE ANCHOR BLOCK

March 19, 2026

SHEET NO.

MAIN-LAB





NOTES:

1. MARKERS TO BE PAINTED 0.08" THINK ALUMINUM WITH STANDARD NO DIG SYMBOL.
2. INSTALL MARKER POST AT LOCATIONS INDICATED ON THE PLANS OR AS DIRECTED BY TWC.
3. COLORS AND LABELS SHOWN ARE FOR POTABLE WATER. WASTEWATER BACKGROUND SHALL BE GREEN AND LABELED "SEWER". RECLAIMED BACKGROUND SHALL BE PURPLE AND LABELED "RECLAIMED"

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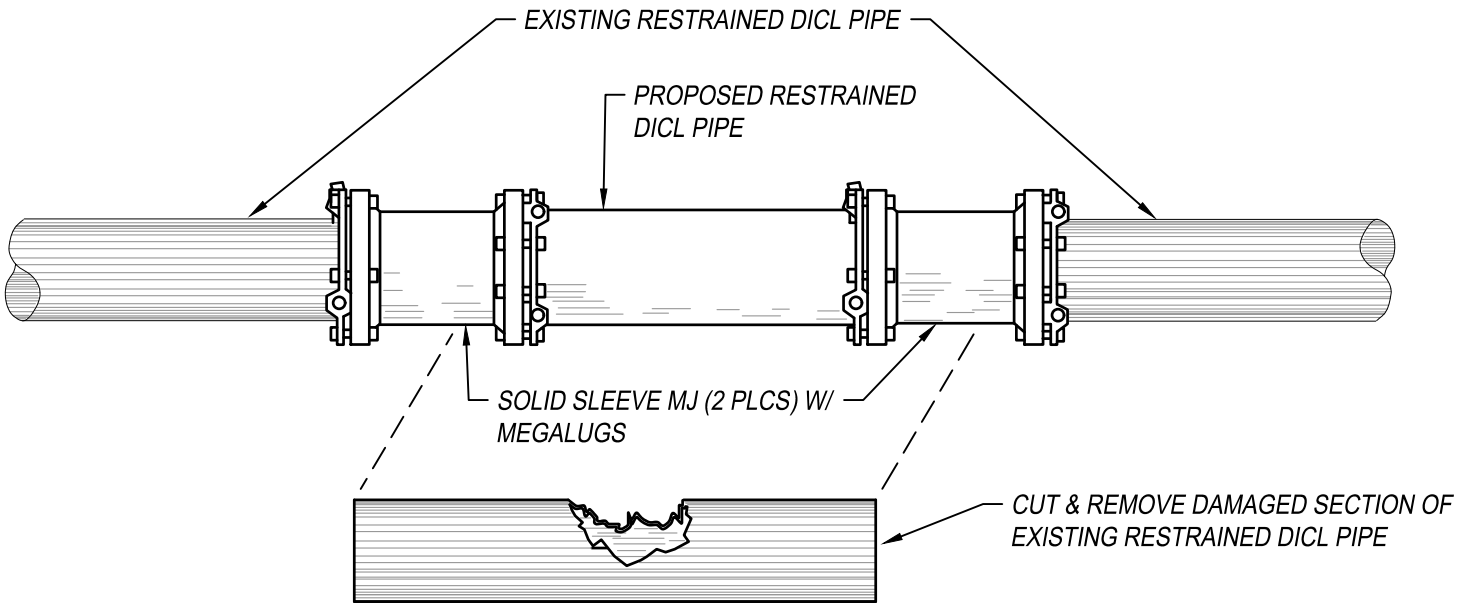
MARKER POST DETAIL

March 19, 2026

SHEET NO.

MAIN-MP



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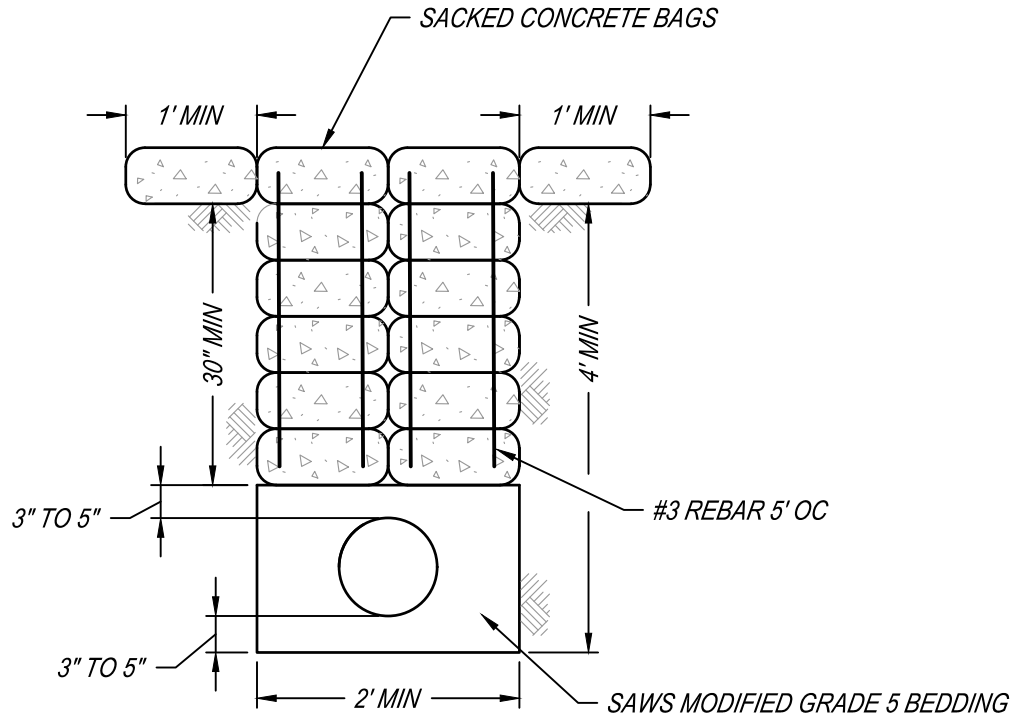
RESTRAINED PIPE REPAIR

March 19, 2026

SHEET NO.

MAIN-RPR



NOTES:

1. DETAIL TO BE USED WHERE EXISTING SLOPE AT GRADE IS > 10%.
2. TOP ROW OF SACKED CONCRETE TO BE ANGLED TO DIVERT WATER TO THE DOWNWARD NATURAL CROSS SLOPE DIRECTION WHERE POSSIBLE.
3. PLACEMENT OF CONCRETE BAGS SHALL BE AT 36' TO 45' INTERVALS, MAINTAIN AT LEAST 4' CLEARANCE FROM PIPE JOINTS.

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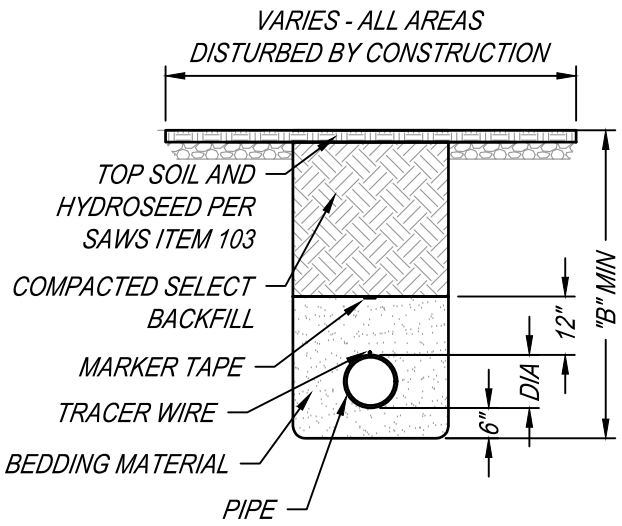
SLOPED TRENCH DETAIL

March 19, 2026

SHEET NO.

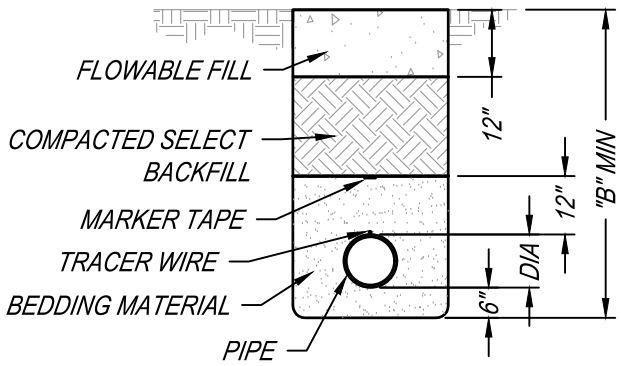
MAIN-ST

TYPE 1



TYPE 2

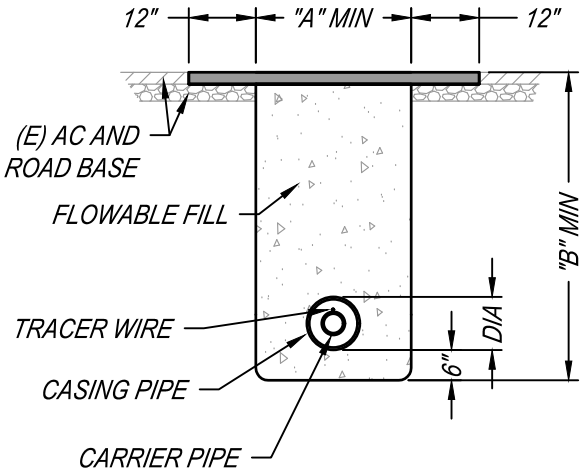
CONCRETE CAP



PIPE DIA	WIDTH "A"	DEPTH "B"
2"	16"	36"
4"	16"	36"
6"	18"	42"
8"	20"	44"
12"	30"	52"
16"	36"	56"
>16"	DIA + 24"	DIA + 40"

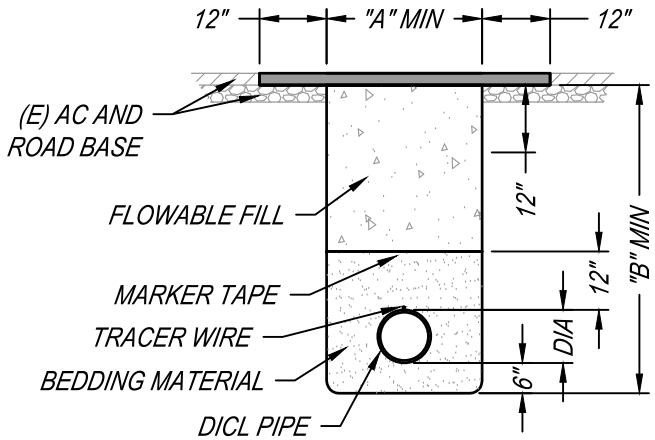
TYPE 3

COUNTY AND CITY ROAD REPAIR
4" FULL DEPTH HMA OR DEPTH OF (E)
PAVEMENT WHICHEVER IS GREATER



TYPE 4

COUNTY AND CITY ROAD REPAIR
4" FULL DEPTH HMA OR DEPTH OF (E)
PAVEMENT WHICHEVER IS GREATER



NOTES:

1. SEE GENERAL NOTES CONCERNING BEDDING AND COMPACTION.
2. ALL TRENCHES UNDER OR WITHIN 5 FEET OF PAVEMENT OR STRUCTURES SHALL BE FILLED IN MAXIMUM 6 INCH LIFTS, COMPACTED TO 95% STANDARD PROCTOR DENSITY. TRENCHES IN OTHER AREAS TO BE COMPACTED TO THE DENSITY OF THE ADJACENT UNDISTURBED SOIL.
3. ALL ASPHALT MATERIAL SHALL BE TYPE C GRADATION, USING AC-10 OIL AND SHALL BE COMPACTED TO AT LEAST 97% OF MAXIMUM DENSITY.
4. TRACER WIRE SHALL BE ATTACHED TO THE TOP OF PIPE WITH DUCT TAPE.
5. INSULATED 12 AWG SOLID DIRECT BURIAL RATED (30 MIL POLYETHYLENE JACKET MINIMUM) COPPER TRACER WIRE SHALL BE INSTALLED ABOVE AND ALONG ALL WATER LINES.
6. SEE TEST STATION DETAIL FOR TRACER WIRE TERMINATION.
7. ALL FLOWABLE FILL SHALL BE PER SAWS ITEM 299.
8. ALL BEDDING MATERIAL SHALL BE SAWS MODIFIED GRADE 5.

TEXAS WATER COMPANY
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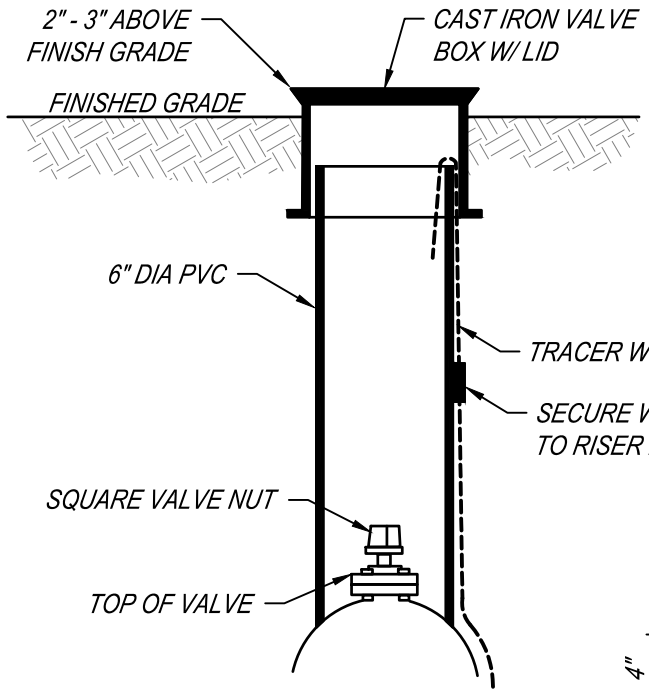
(830) 312-4600

PIPE TRENCH DETAIL

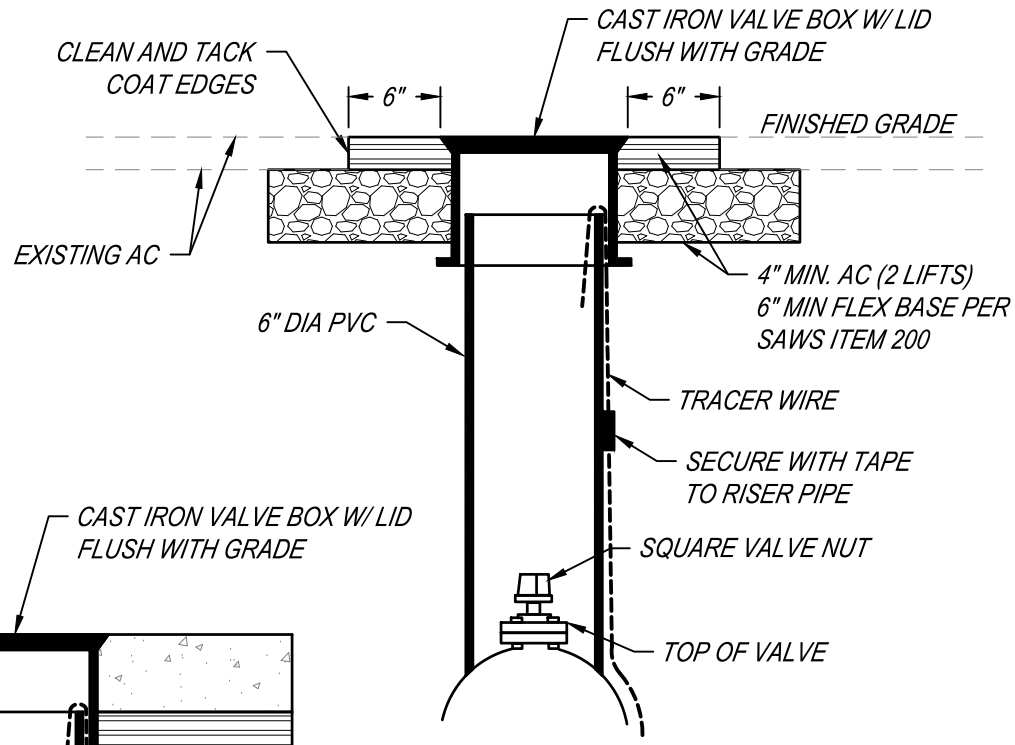
March 19, 2026

SHEET NO.

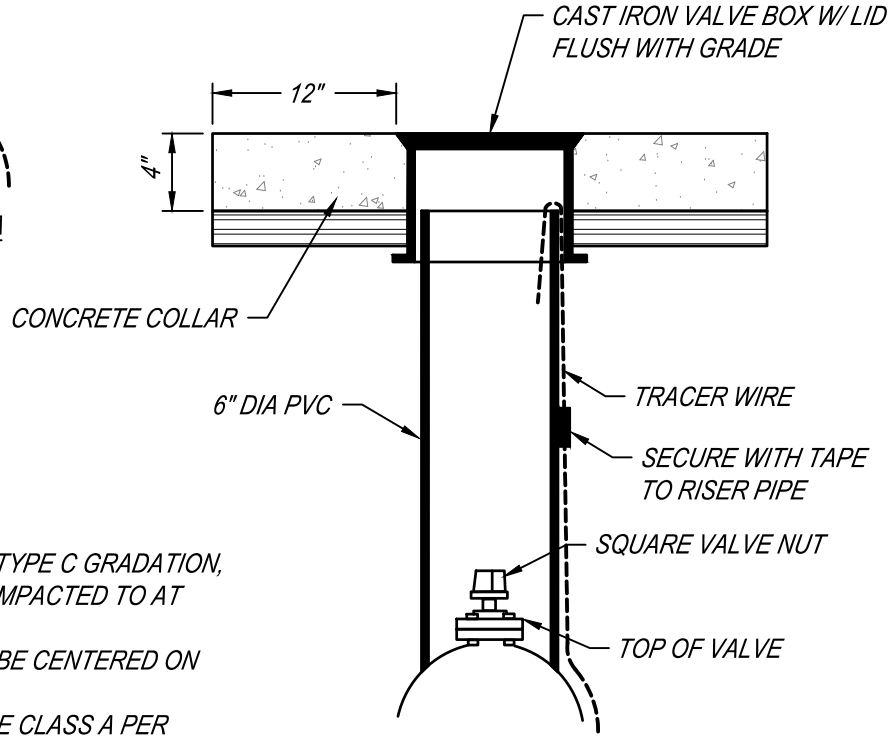
MAIN-TRN



VALVE BOX IN UNIMPROVED AREA



VALVE BOX IN ASPHALT AREA



VALVE BOX SET IN CONCRETE COLLAR

NOTES:

1. ALL ASPHALT MATERIAL SHALL BE TYPE C GRADATION, USING AC-10 OIL AND SHALL BE COMPACTED TO AT LEAST 97% OF MAXIMUM DENSITY.
2. VALVE BOX AND PVC RISER SHALL BE CENTERED ON VALVE AND SET PLUMB.
3. ALL CONCRETE MATERIAL SHALL BE CLASS A PER SAWS ITEM 300.

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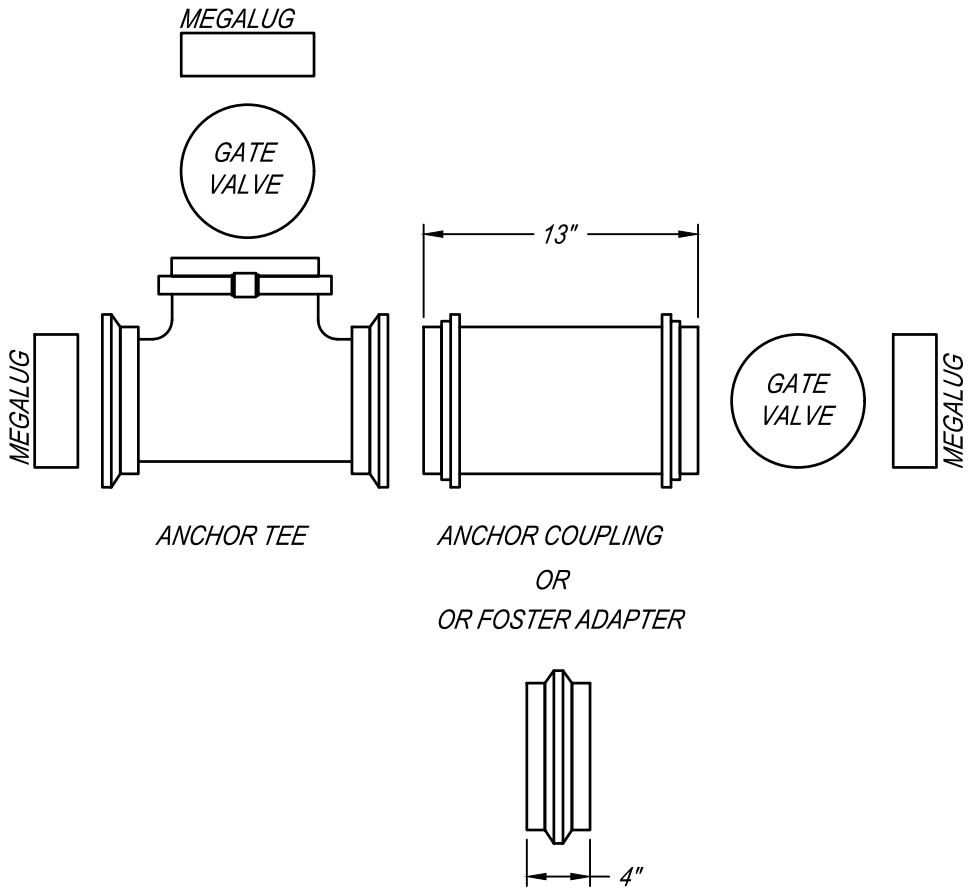
VALVE BOX INSTALLATION

March 19, 2026

SHEET NO.

MAIN-VB



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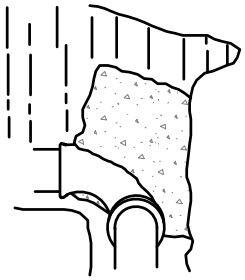
VALVE BANK INSTALLATION

March 19, 2026

SHEET NO.

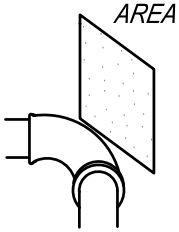
MAIN-VBK

TYPICAL BLOCKING FOR 90° BEND



AREA IN SQ. FT. FOR EACH OF THE FOLLOWING PIPE SIZES.

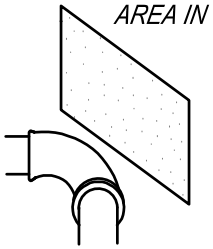
AREA IN SQ. FT.



2 SQ. FT. IN ROCK & 4 SQ. FT. IN OTHER SOILS

6" CLASS 200

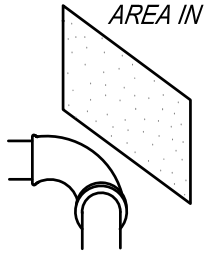
AREA IN SQ. FT.



4 SQ. FT. IN ROCK & 6 SQ. FT. IN OTHER SOILS

8" CLASS 200

AREA IN SQ. FT.



9 SQ. FT. IN ROCK & 14 SQ. FT. IN OTHER SOILS

12" CLASS 200

SQ. FT. OF BLOCKING REQUIRED FOR OTHER THAN ROCK EXCAVATION

PIPE SIZE	TEES & DEAD ENDS	90° BENDS	45° BENDS	22.5° BENDS
6"	3	4	2	1
8"	4	6	4	2
12"	10	14	8	4
16"	18	25	14	7

SQ. FT. OF BLOCKING REQUIRED FOR ROCK EXCAVATION

PIPE SIZE	TEES & DEAD ENDS	90° BENDS	45° BENDS	22.5° BENDS
6"	2	2	1	1
8"	3	4	2	1
12"	6	9	5	2
16"	11	15	8	4

BLOCKING AREA FOR 200 PSI TESTS AND 175 PSI WORKING PRESSURE

ON BASIS OF 200 PSI WATER PRESSURE USED FOR TESTS, THE BLOCKING REQUIRED FOR TWO TYPES OF SOILS ARE NOTED BELOW. IN ONE CASE, A SOIL PRESSURE OF 5000 PSI IS USED FOR ROCK EXCAVATION AND FOR SOILS OTHER THAN ROCK A 3000 PSI BEARING SOIL PRESSURE IS USED. THE DISTRIBUTION ON SYSTEM IS DESIGNED TO OPERATE WITH A MAXIMUM WATER PRESSURE OF 175 PSI ALL CALCULATIONS APPLY TO ALL TYPES OF PIPE APPROVED FOR USE BY TWC AND MEETING TWC SPECIFICATIONS AND STANDARDS .

TRANSIT 2500 PSI CONCRETE MIX SHALL BE USED HOWEVER FOR SMALL VOLUME REQUIREMENTS CONCRETE MIXED AT JOB SITE WILL BE ACCEPTABLE ONLY IF A CONCRETE MIXER IS USED, ALL AGGREGATE SHALL BE CLEAN AND THE FIELD MIX SHALL BE IN THE RATIO OF 1:3:4 AND CONTAIN NOT LESS THAN 4 SACKS OF CEMENT PER CUBIC YARD.

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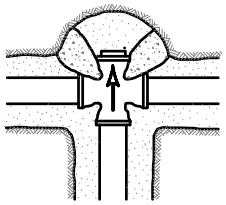
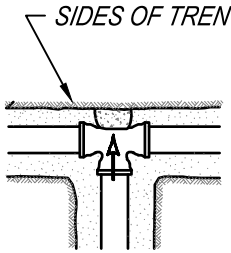
THRUST BLOCKING (1 of 2)

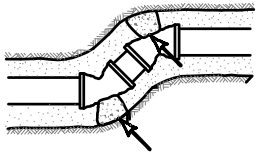
March 19, 2026

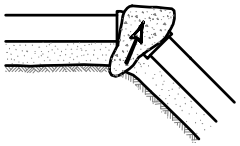
SHEET NO.

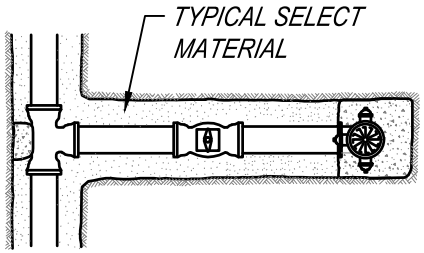
TB-HP

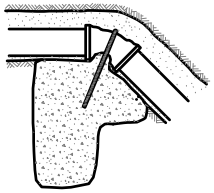


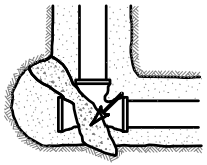


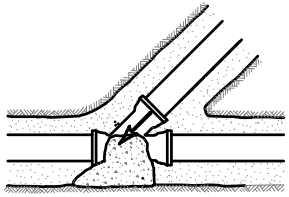


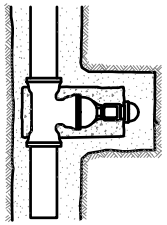




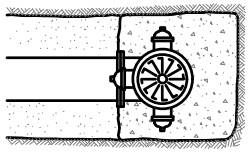




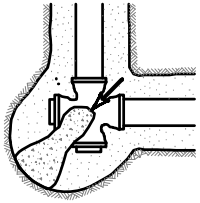


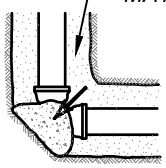


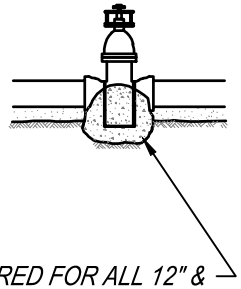
PLAN



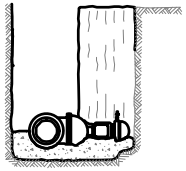
PLAN
POUR BASE AFTER
HYDRANT HAS BEEN
PLACED



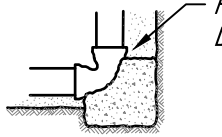




CONCRETE BLOCKING REQUIRED FOR ALL 12" & LARGER, EXCEPT IN HIGH PRESSURE DISTRIBUTION SYSTEM WHERE BLOCKING IS REQUIRED FOR ALL VALVES.



ELEVATION



ELEVATION

TEXAS WATER COMPANY

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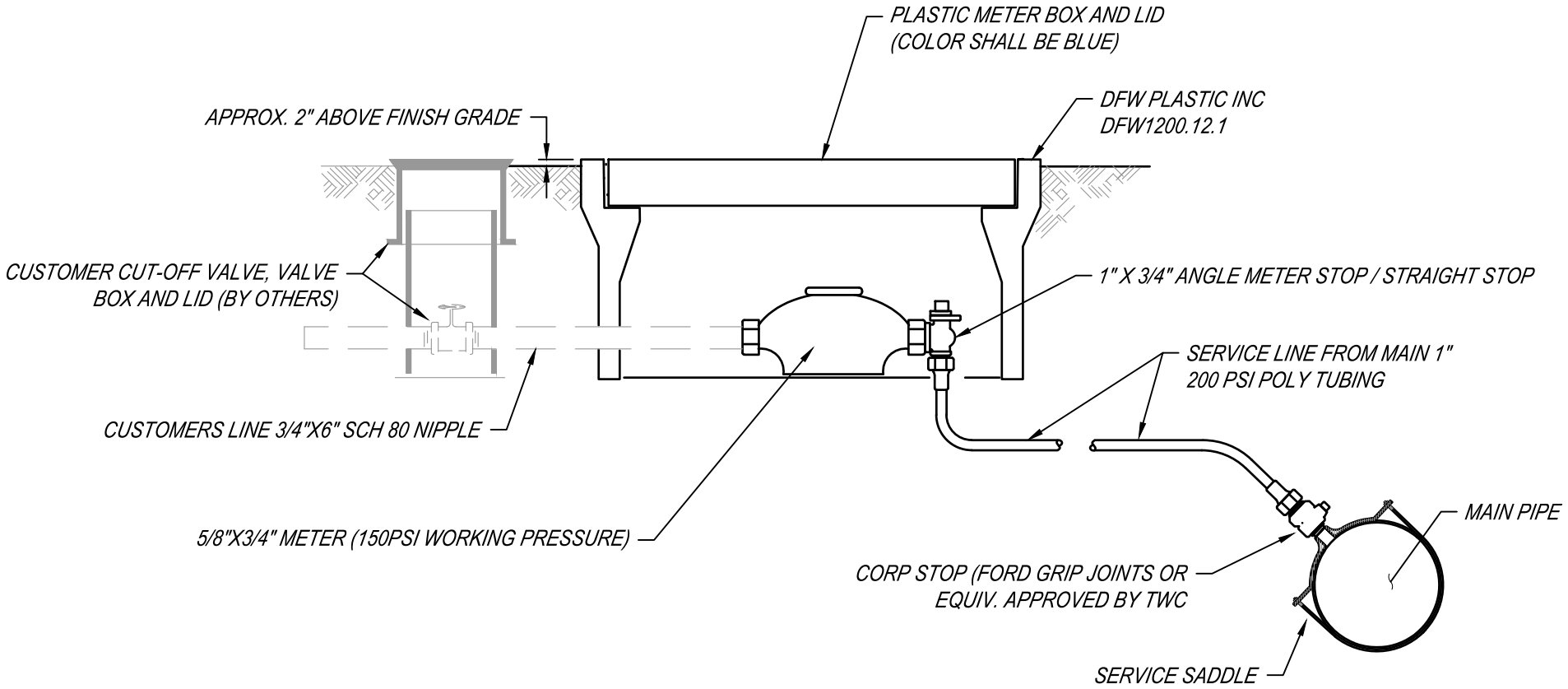
THRUST BLOCKING (2 of 2)

March 19, 2026

SHEET NO.

TB-STD



NOTES:

1. SERVICE SADDLES SHALL BE WRAPPED COMPLETELY WITH 8 MIL. POLYETHYLENE FILM.
2. PIPING AND TUBING SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED IN THE SPECIFICATIONS.
3. METERS SUPPLIED BY TWC.

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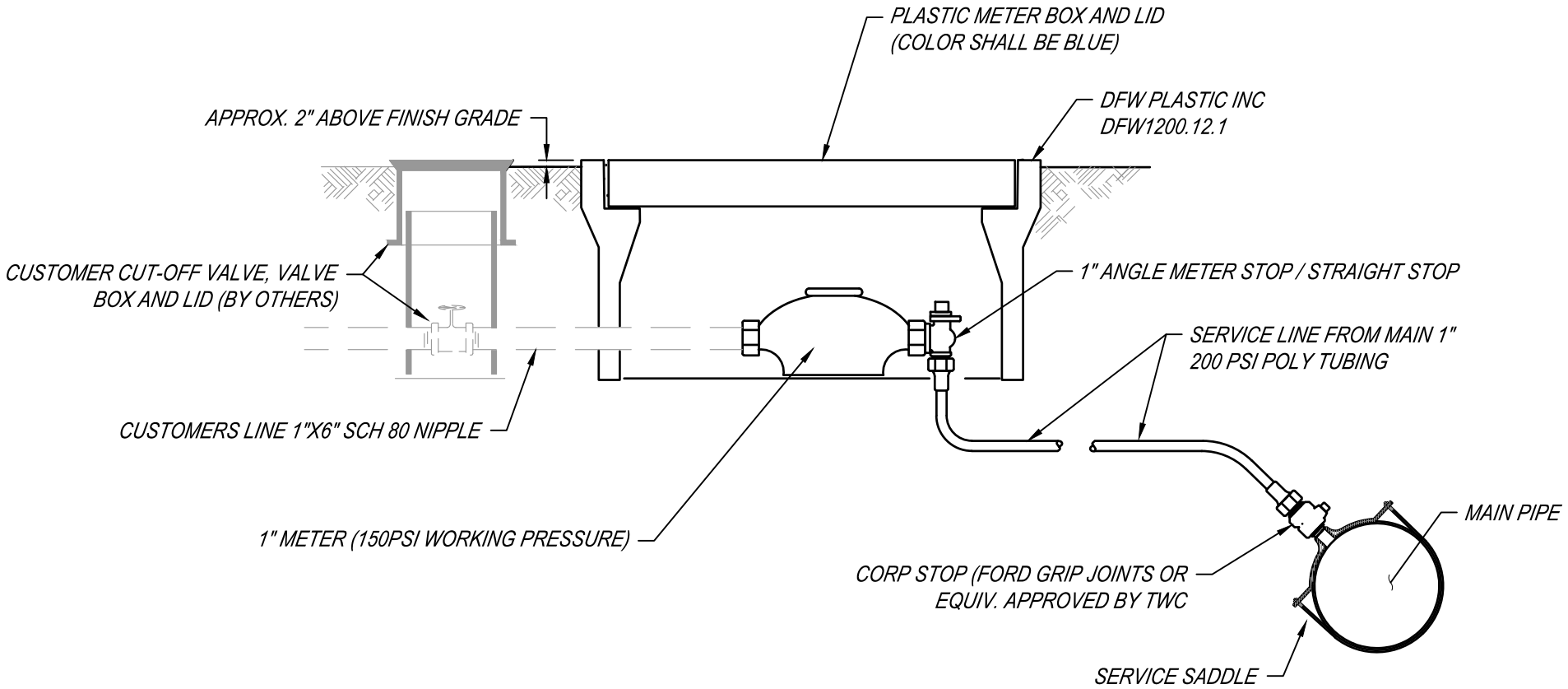
5/8" OR 3/4" SERVICE

March 19, 2026

SHEET NO.

SER-58-34



NOTES:

1. SERVICE SADDLES SHALL BE WRAPPED COMPLETELY WITH 8 MIL. POLYETHYLENE FILM.
2. PIPING AND TUBING SHALL BE BEDDED IN GRANULAR MATERIALS AS REQUIRED IN THE SPECIFICATIONS.
3. METERS SUPPLIED BY TWC.

TEXAS WATER COMPANY

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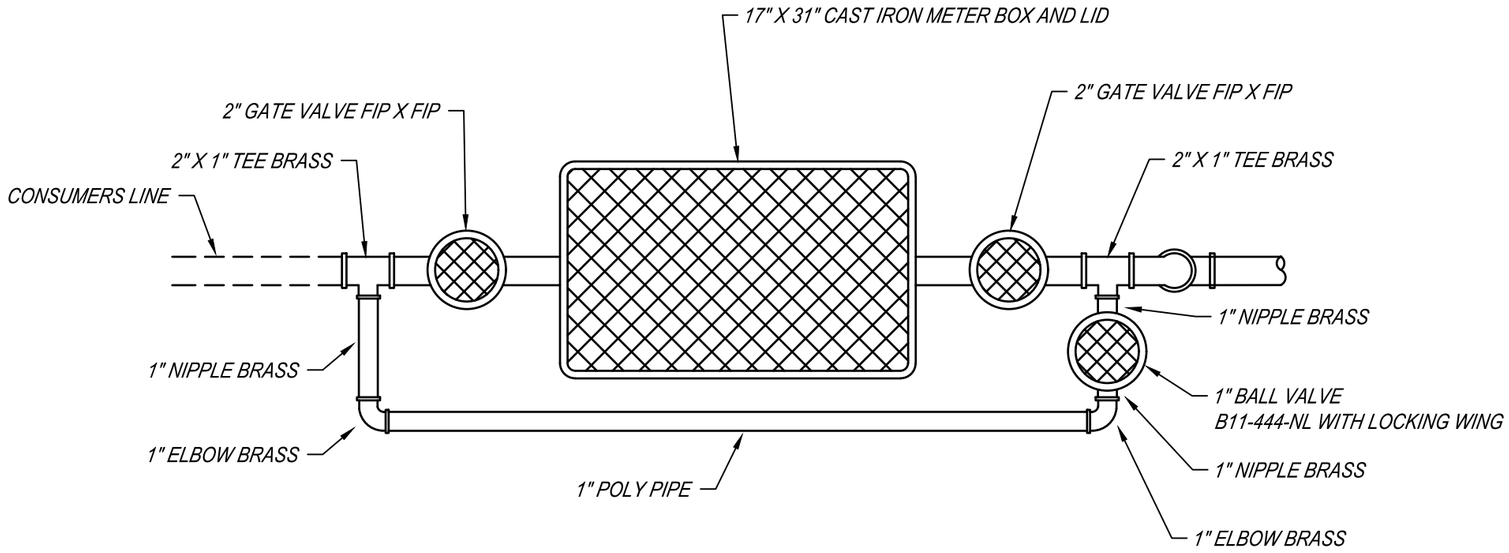
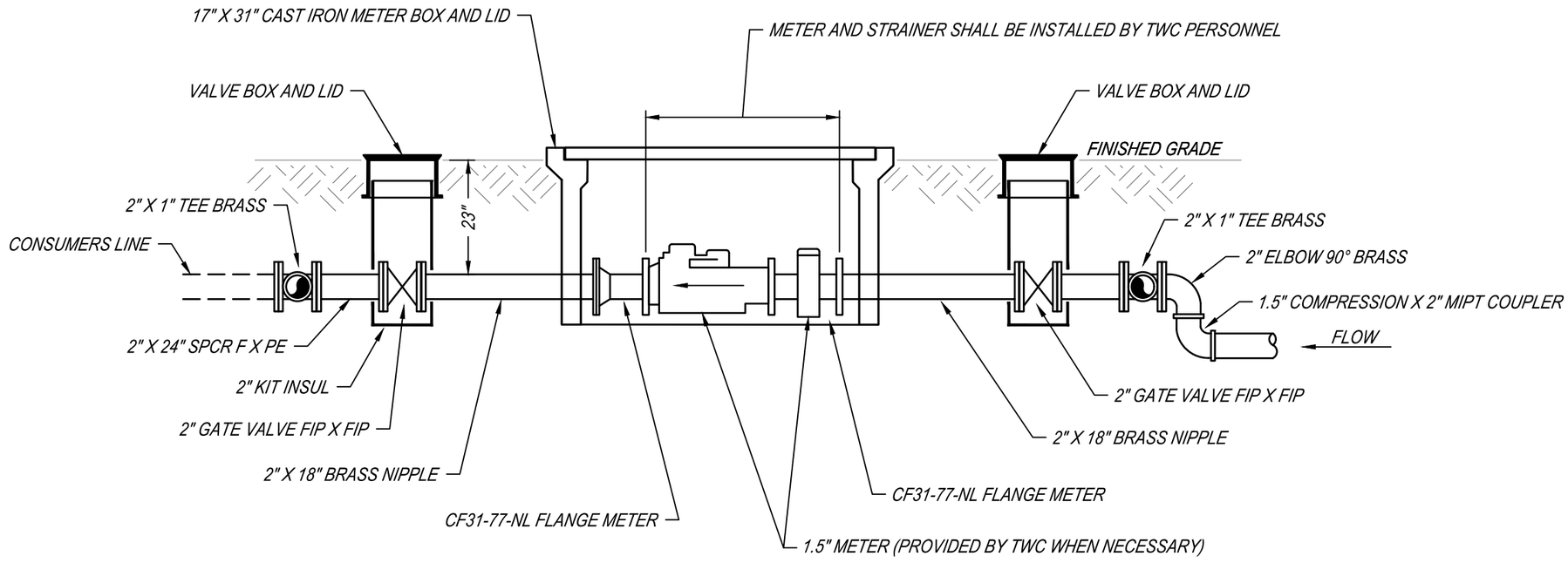
1" SERVICE

March 19, 2026

SHEET NO.

SER-1





NOTES:

1. USE TRAFFIC RATED BOXES FOR METERS INSTALLED WITHIN DRIVEWAYS OR SIDEWALKS.
2. METER SUPPLIED BY TWC.

TEXAS WATER COMPANY
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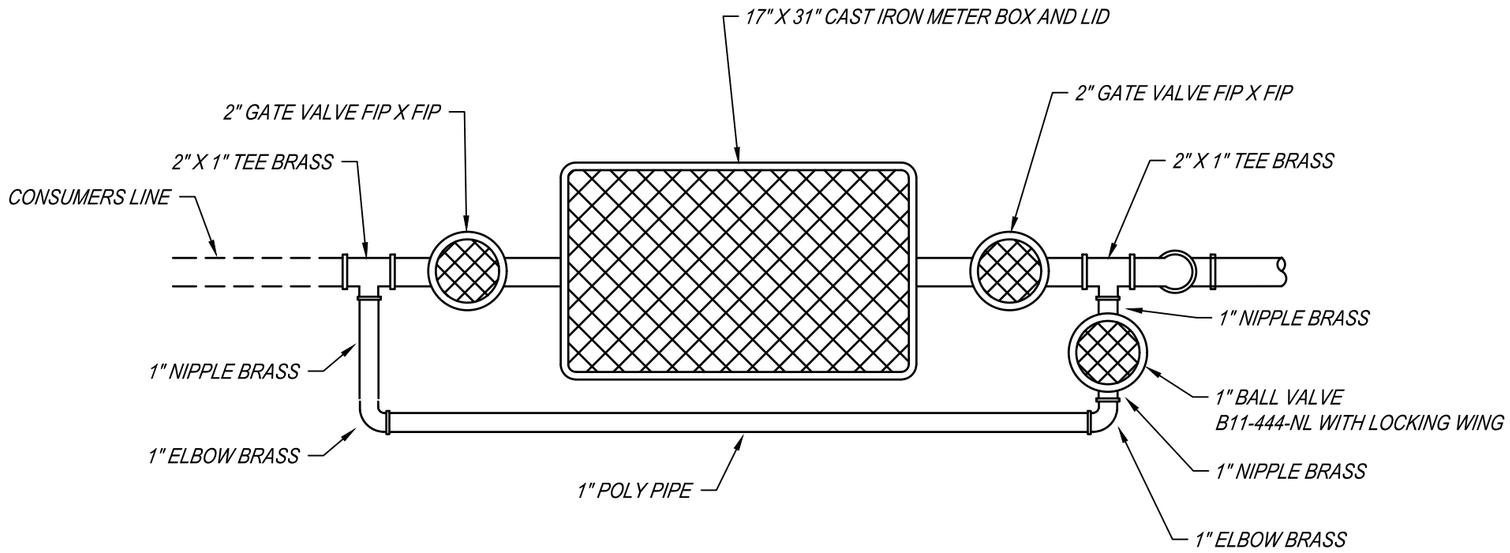
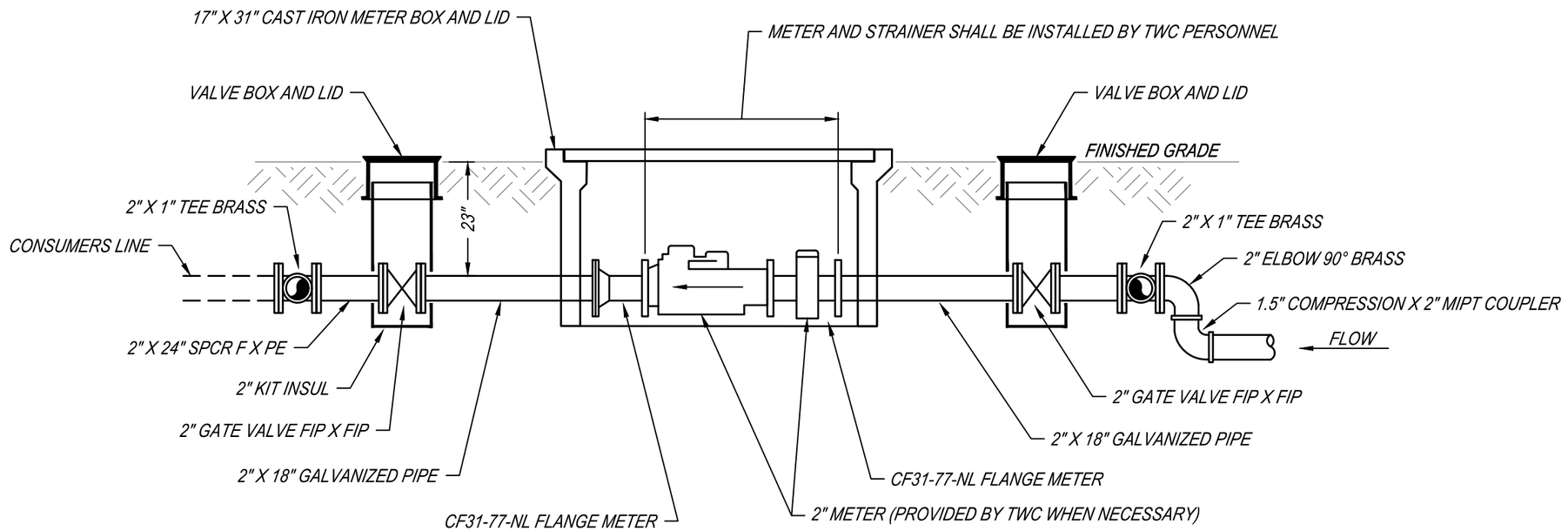
March 19, 2026

1.5 INCH SERVICE WITH BYPASS

SHEET NO.
SER-1.5B





NOTES:

1. USE TRAFFIC RATED BOXES FOR METERS INSTALLED WITHIN DRIVEWAYS OR SIDEWALKS.
2. METER SUPPLIED BY TWC.

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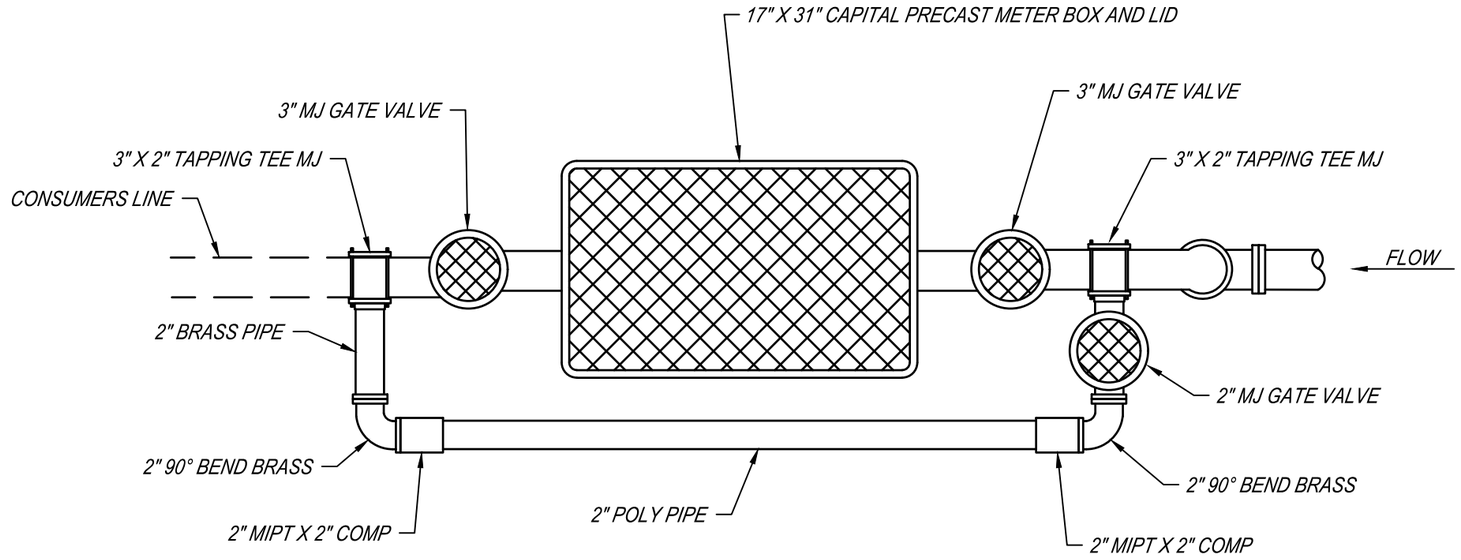
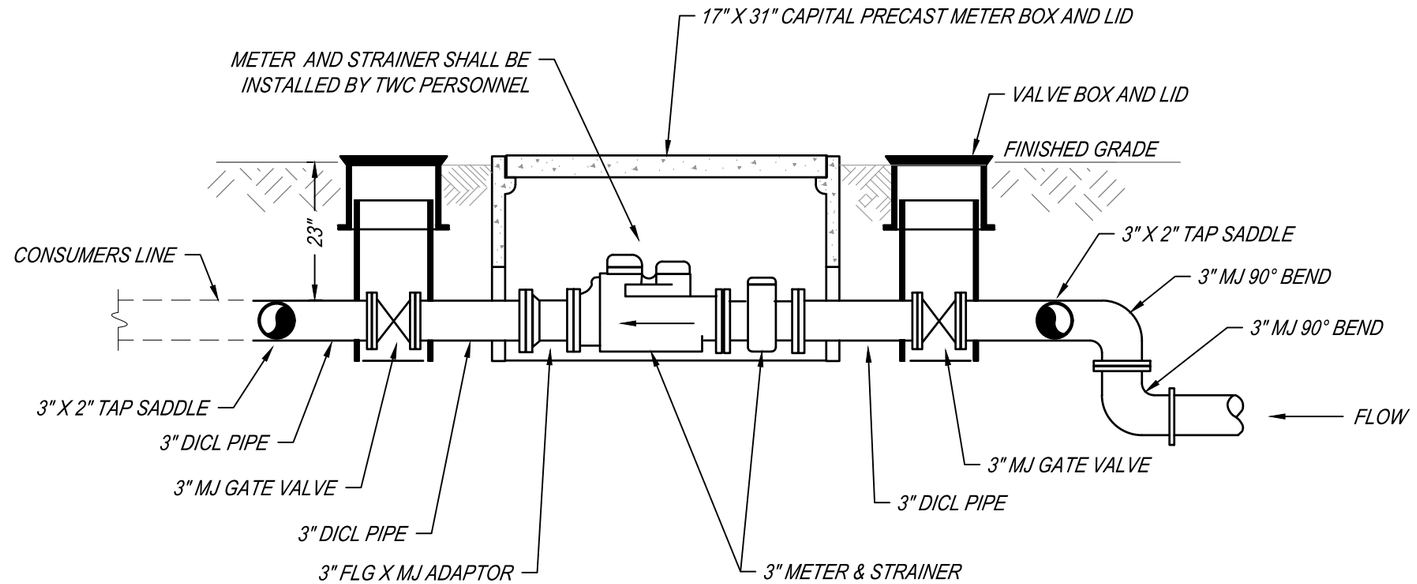
March 19, 2026

2 INCH SERVICE WITH BYPASS

PRELIMINARY PLANS
--- NOT FOR CONSTRUCTION ---

SHEET NO.
SER-2B





NOTES:

1. USE TRAFFIC RATED BOXES FOR METERS INSTALLED WITHIN DRIVEWAYS OR SIDEWALKS.
2. METER SUPPLIED BY TWC.

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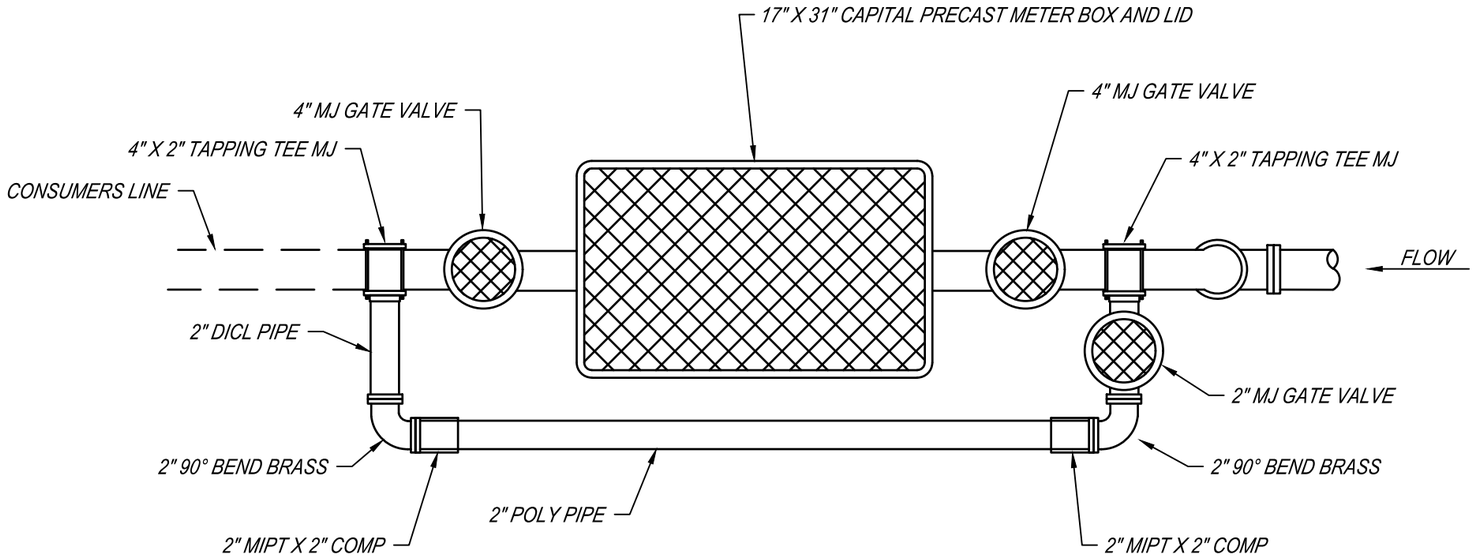
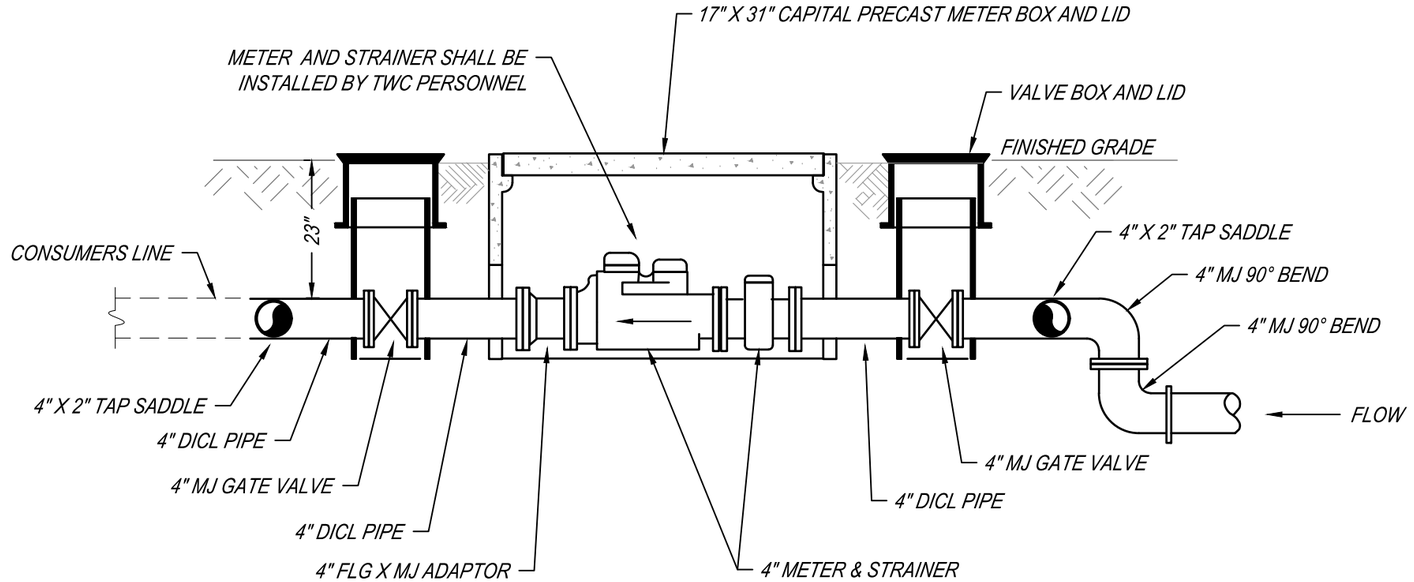
March 19, 2026

3 INCH SERVICE WITH BYPASS

SHEET NO.
SER-3B





NOTES:

1. USE TRAFFIC RATED BOXES FOR METERS INSTALLED WITHIN DRIVEWAYS OR SIDEWALKS.
2. METER SUPPLIED BY TWC.

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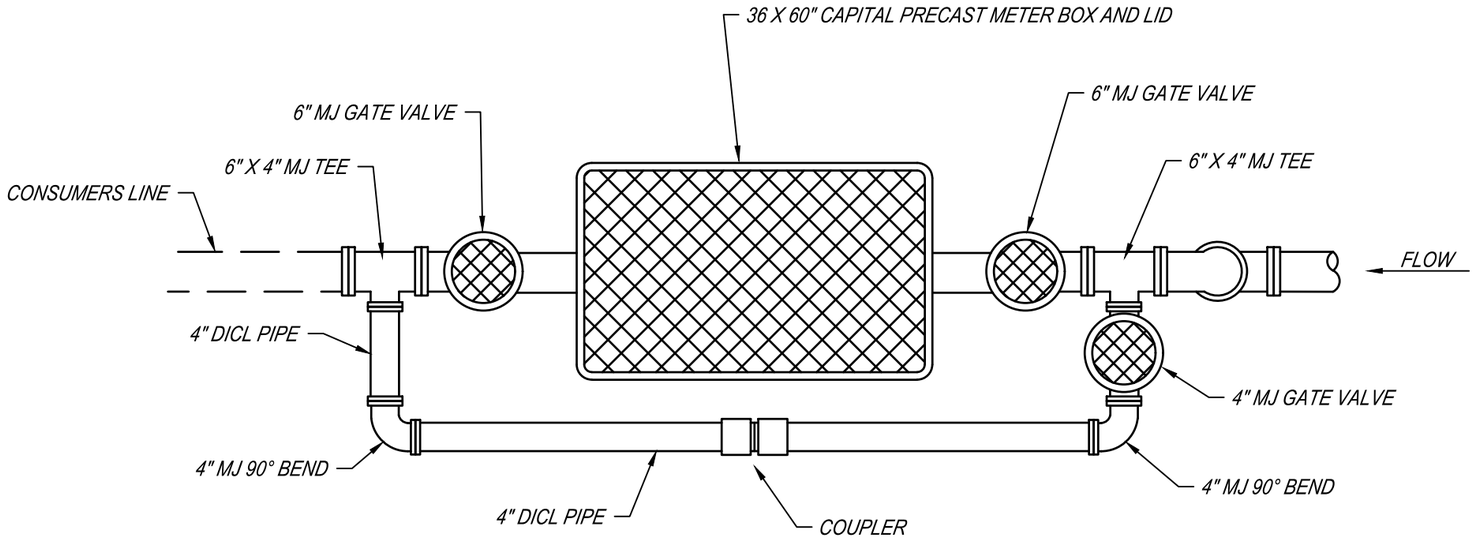
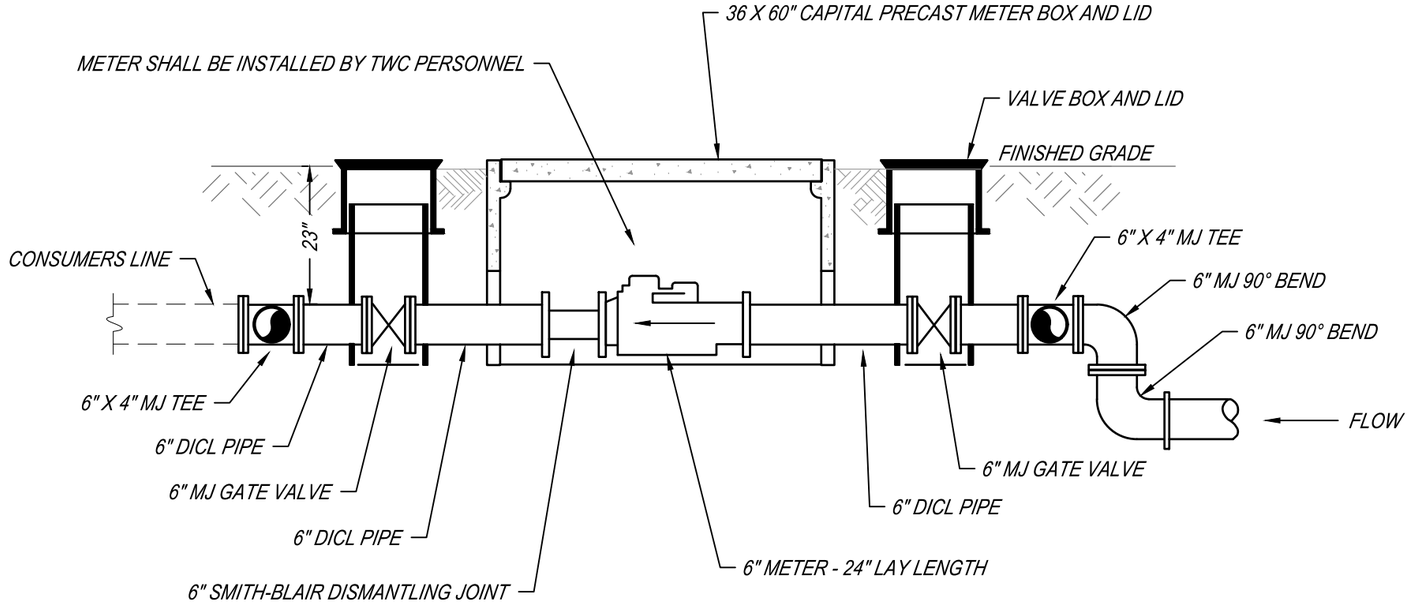
March 19, 2026

4 INCH SERVICE WITH BYPASS

SHEET NO.
SER-4B





NOTES:

1. USE TRAFFIC RATED BOXES FOR METERS INSTALLED WITHIN DRIVEWAYS OR SIDEWALKS.
2. METER SUPPLIED BY TWC.

TEXAS WATER COMPANY
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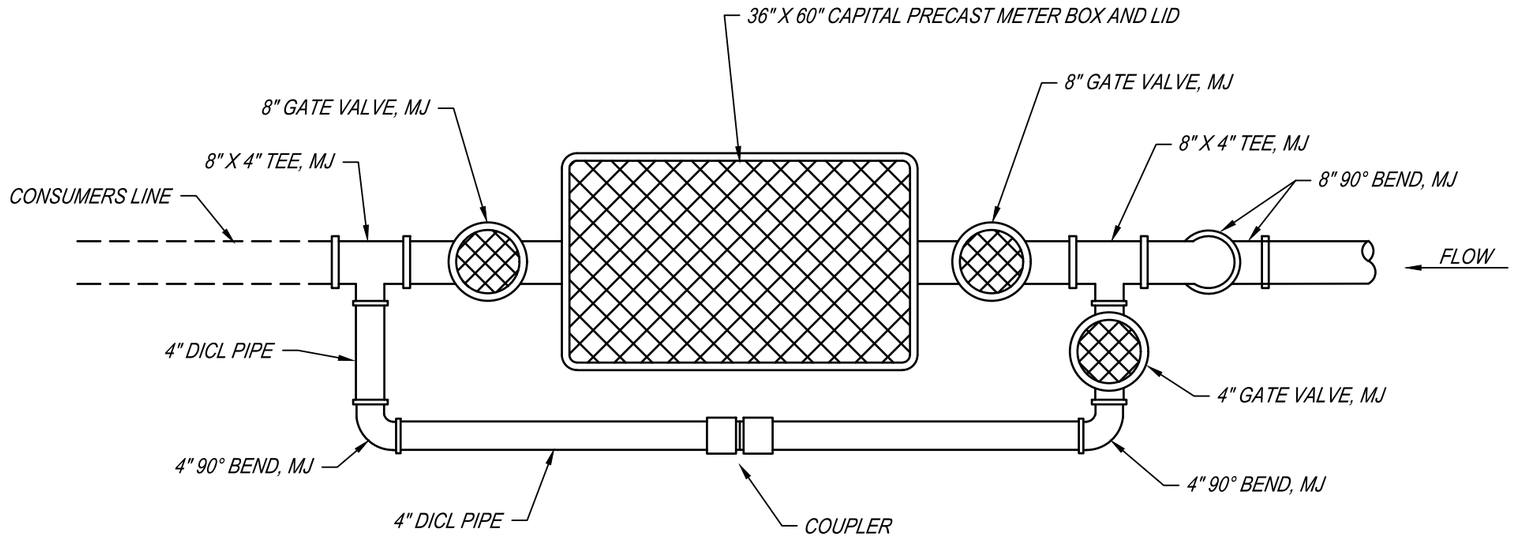
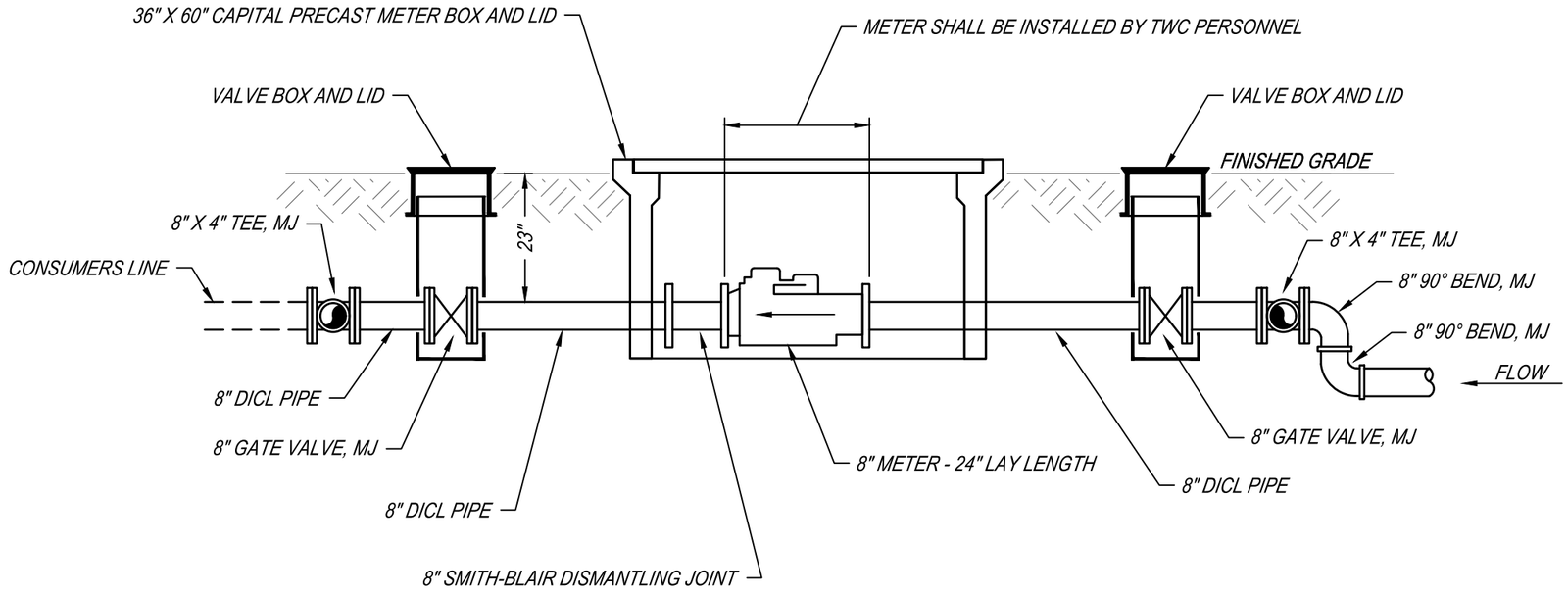
March 19, 2026

6 INCH SERVICE WITH BYPASS

SHEET NO.
SER-6B





NOTES:

1. USE TRAFFIC RATED BOXES FOR METERS INSTALLED WITHIN DRIVEWAYS OR SIDEWALKS.
2. METER SUPPLIED BY TWC.

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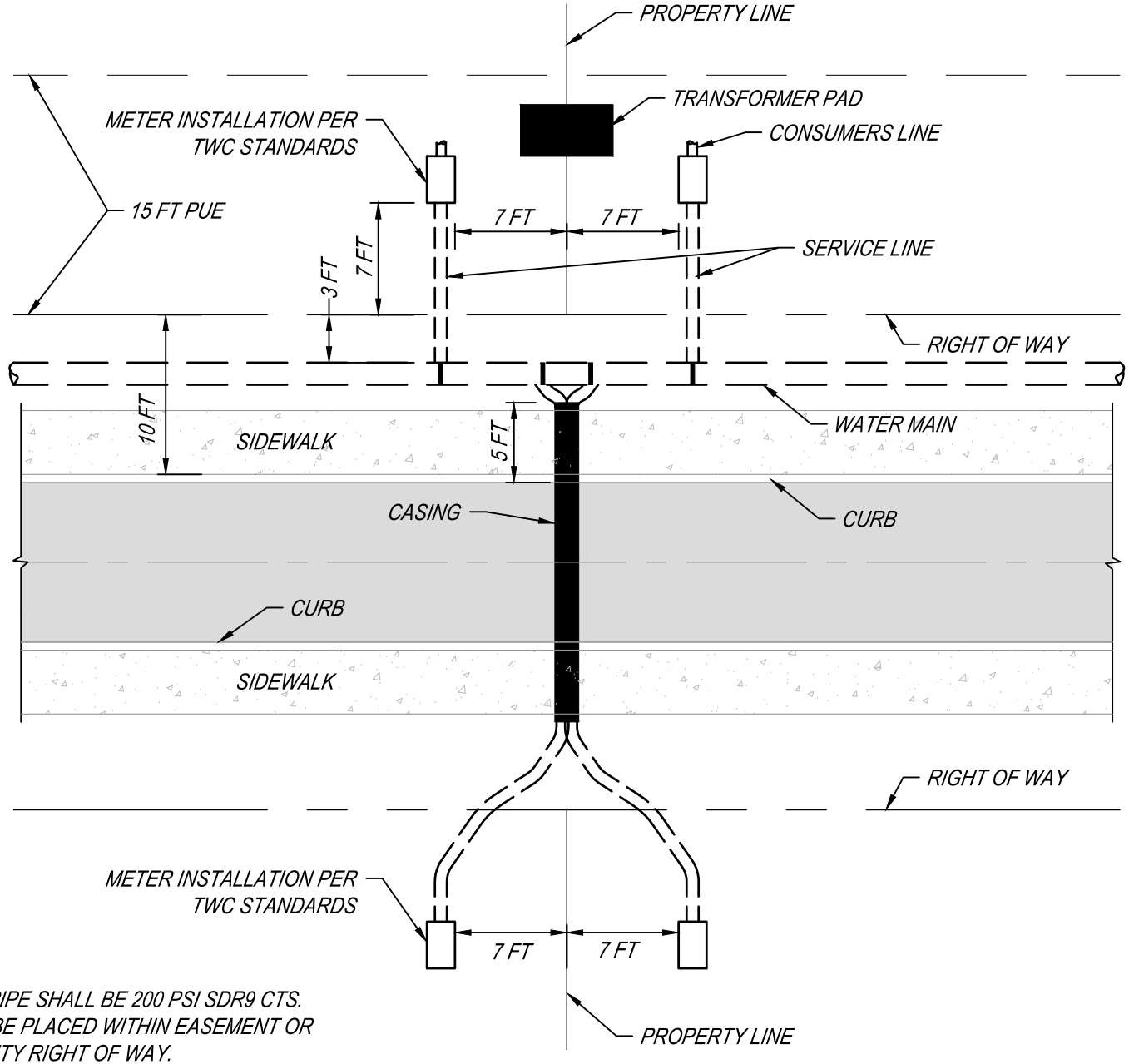
March 19, 2026

8 INCH SERVICE WITH BYPASS

SHEET NO.
SER-8B



NOTES

1) ALL HDPE SERVICE PIPE SHALL BE 200 PSI SDR9 CTS.
2) ALL METERS SHALL BE PLACED WITHIN EASEMENT OR EXISTING CITY/COUNTY RIGHT OF WAY.

TEXAS WATER COMPANY

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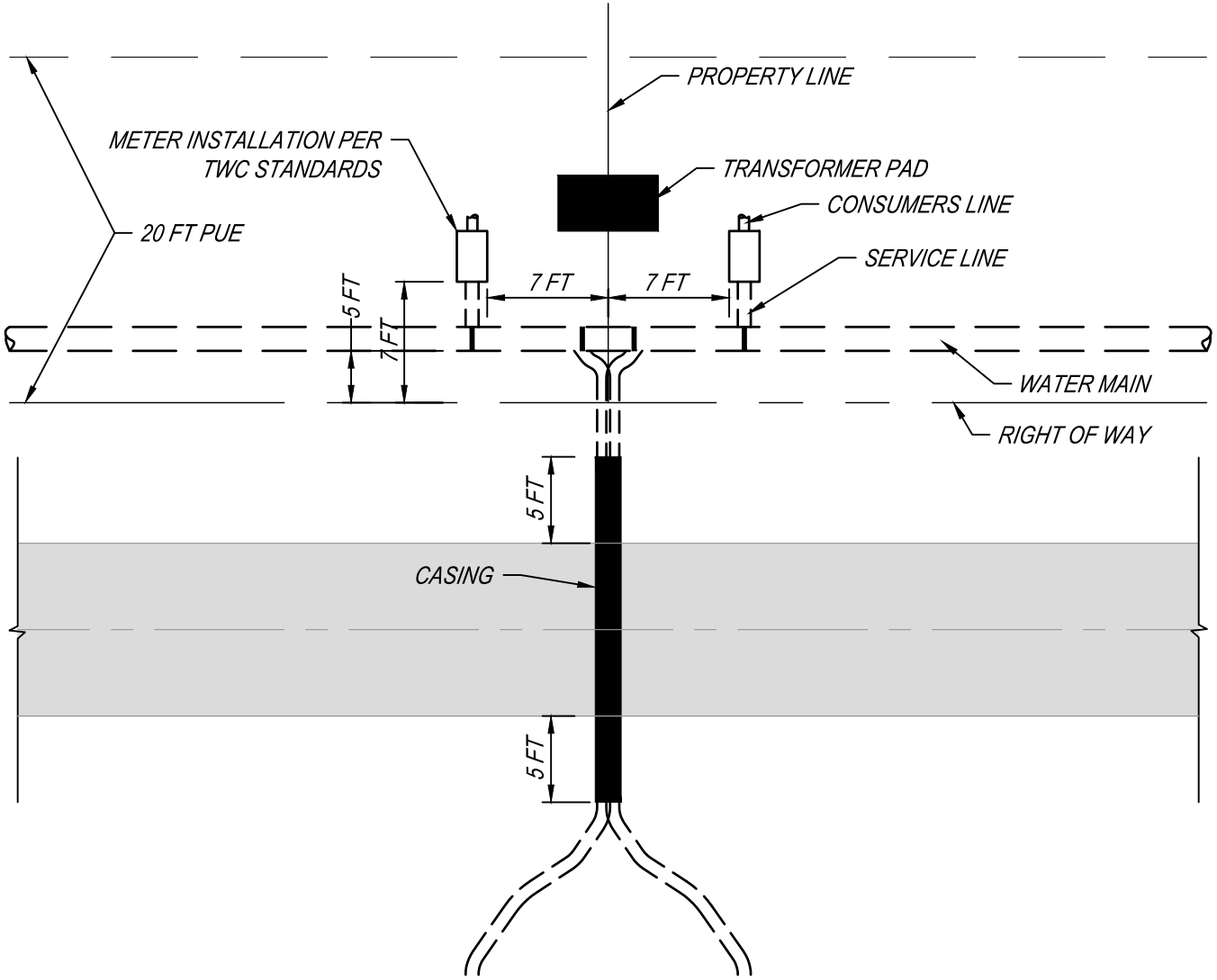
TYPICAL DUAL SERVICE INSTALLATION WITH WATER MAIN IN ROW

March 19, 2026

SHEET NO.

SER-DUAL1



NOTES

1) ALL HDPE SERVICE PIPE SHALL BE 200 PSI SDR9 CTS.
2) ALL METERS SHALL BE PLACED WITHIN EASEMENT OR EXISTING CITY/COUNTY RIGHT OF WAY.

TEXAS WATER COMPANY

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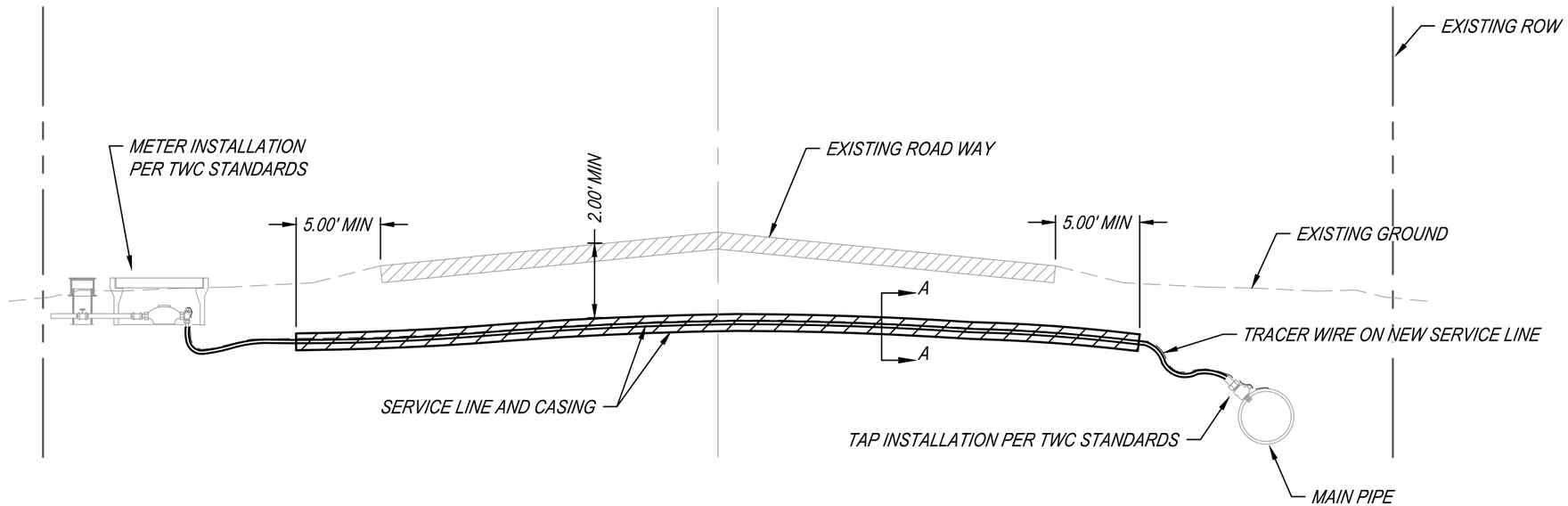
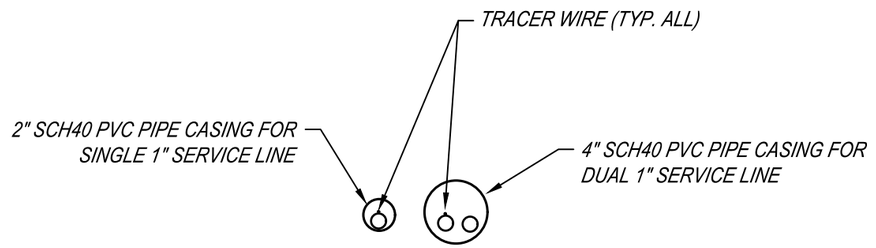
TYPICAL DUAL SERIVCE INSTALLATION WITH WATER MAIN IN EASEMENT

March 19, 2026

SHEET NO.

SER-DUAL2





SECTION A - A
NOT TO SCALE

NOTES

1) ALL METERS SHALL BE PLACED WITHIN EASEMENT OR EXISTING CITY/COUNTY RIGHT OF WAY.

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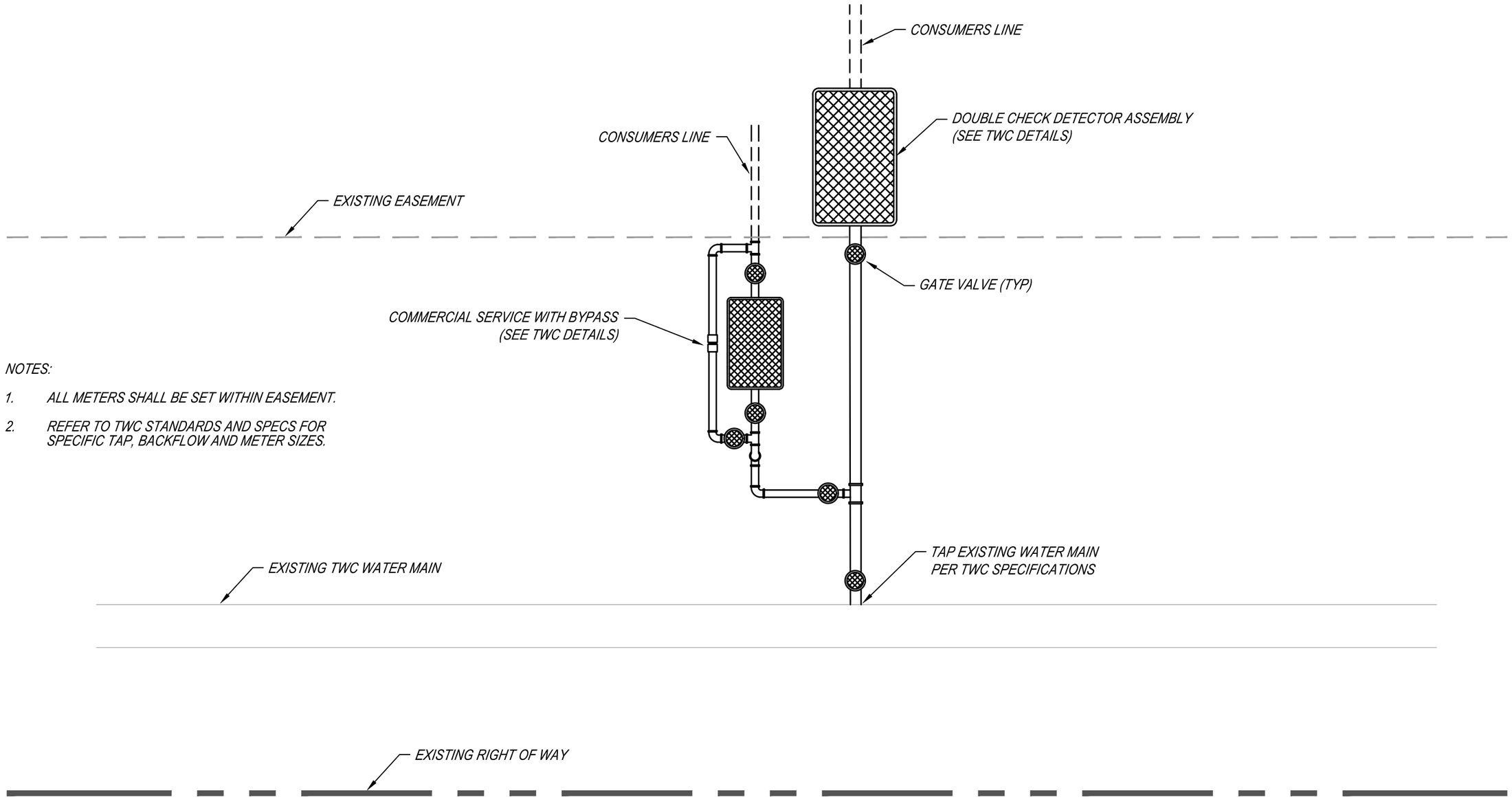
March 19, 2026

LONG SERVICE

SHEET NO.

SER-LT



NOTES:

1. ALL METERS SHALL BE SET WITHIN EASEMENT.
2. REFER TO TWC STANDARDS AND SPECS FOR SPECIFIC TAP, BACKFLOW AND METER SIZES.

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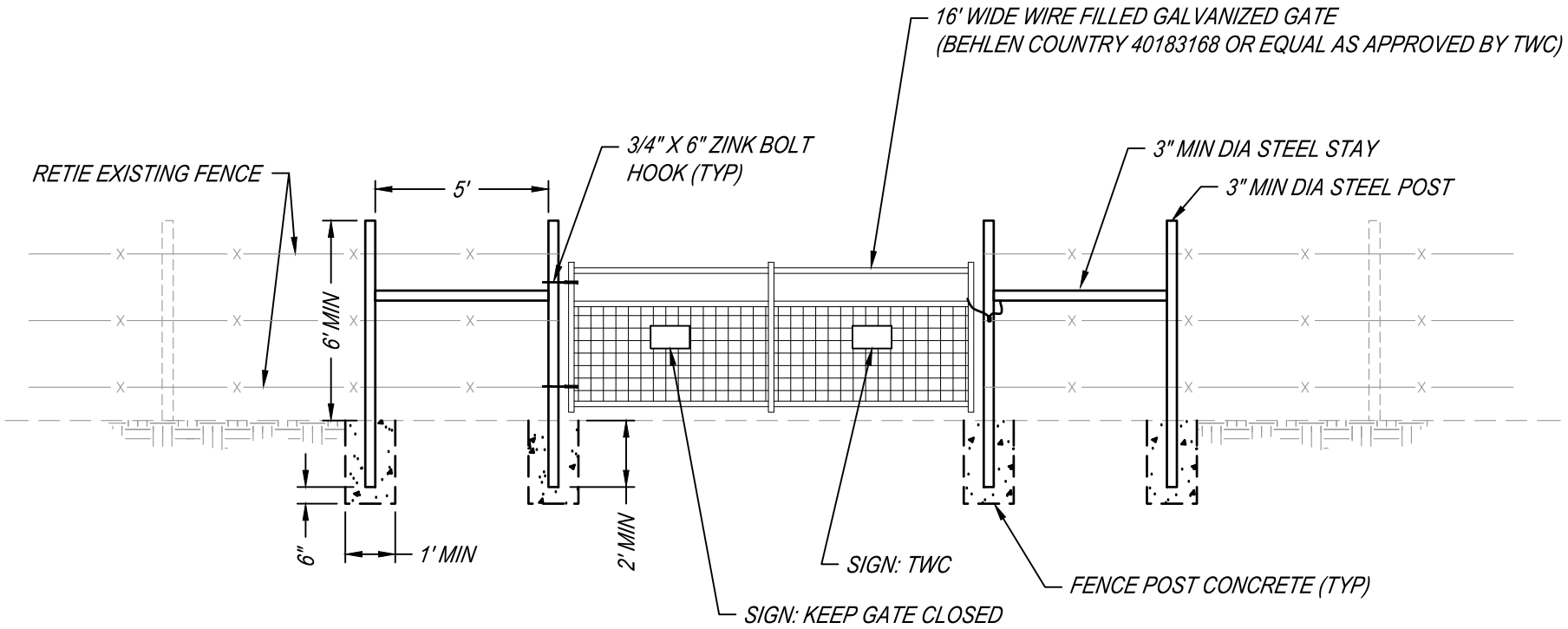
March 19, 2026

TYPICAL FIRE SERVICE AND COMMERCIAL SERVICE LAYOUT

SHEET NO.

SER-FCSL



NOTES:

1. LOCK TO BE FURNISHED BY TWC.
2. ALL STEEL POST SHALL BE PRIMED AND FINISH PAINTED WHITE.

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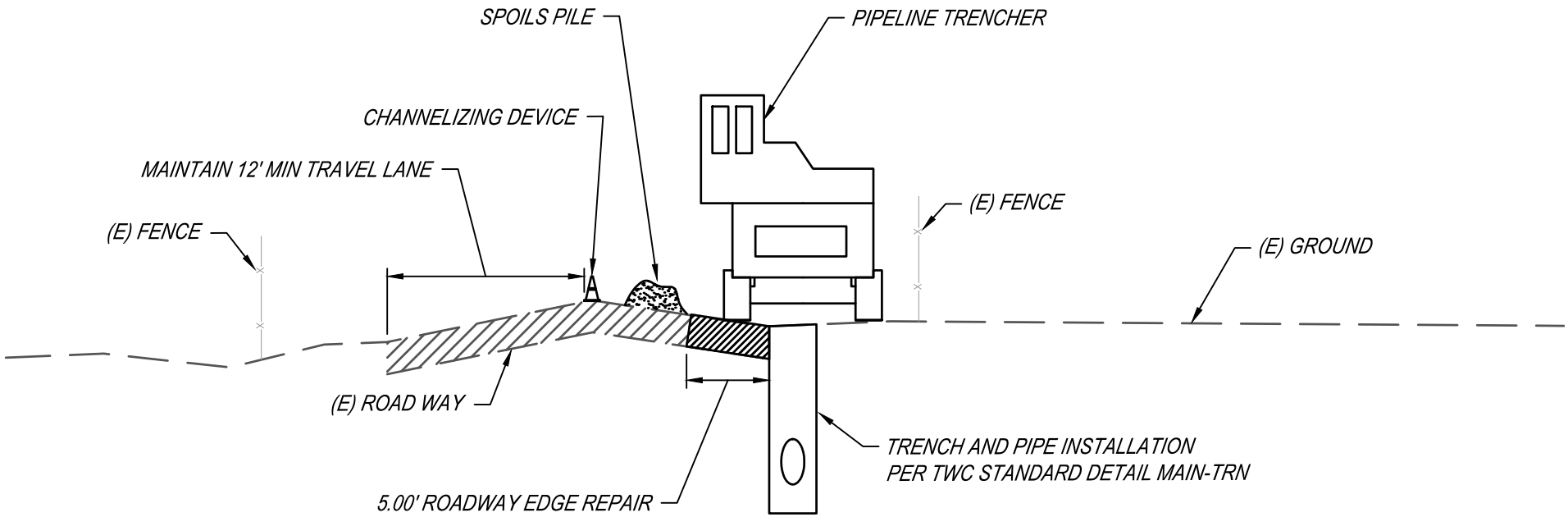
TYPICAL 16 FT WIDE GATE

March 19, 2026

SHEET NO.

GATE-16



NOTE:

1. ALL TRAFFIC CONTROL SHALL BE PER TXDOT STANDARDS

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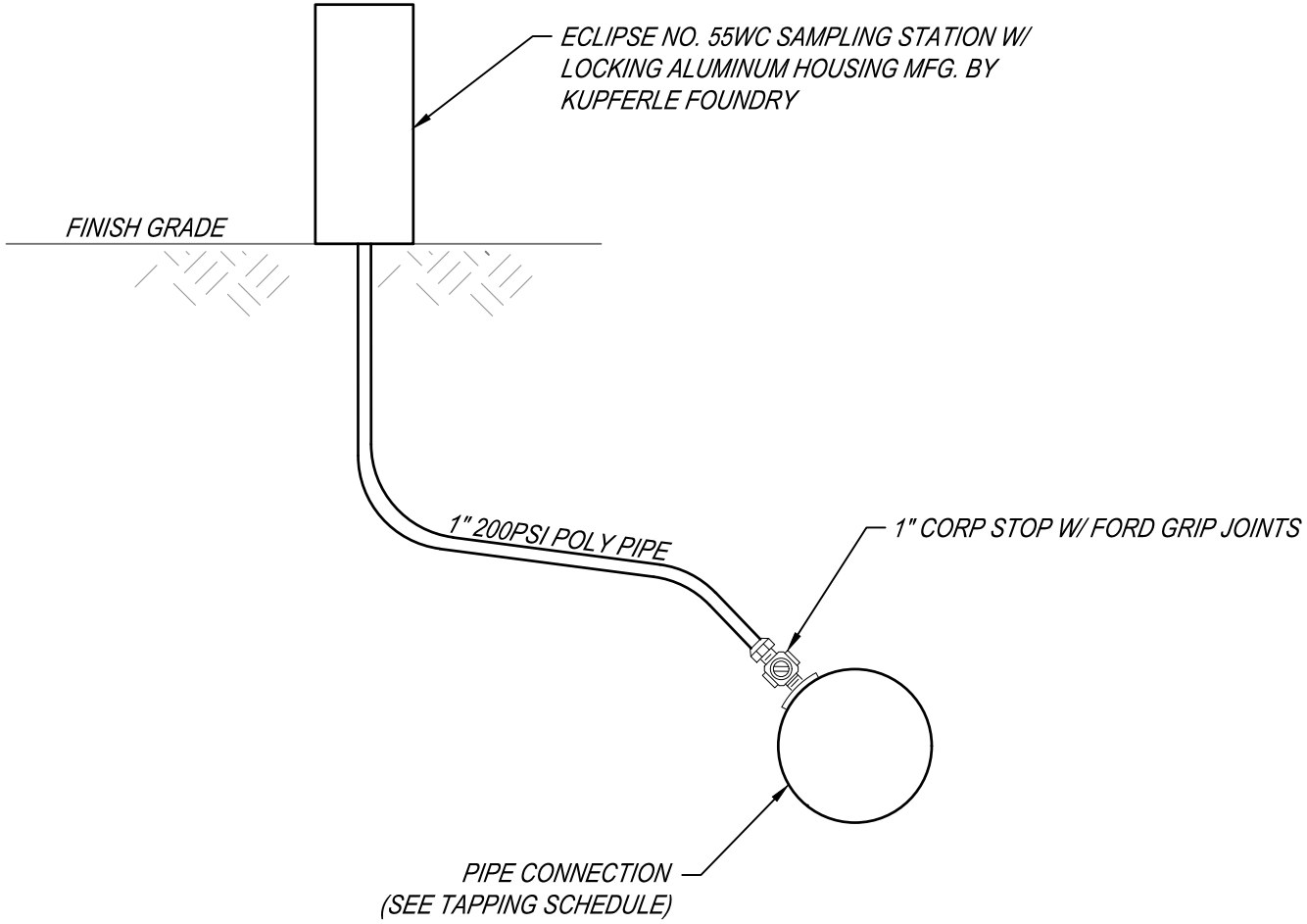
TRENCH AND PIPE INSTALLATION WITH ASPHALT EDGE REPAIR

March 19, 2026

SHEET NO.

EDGE-RPR



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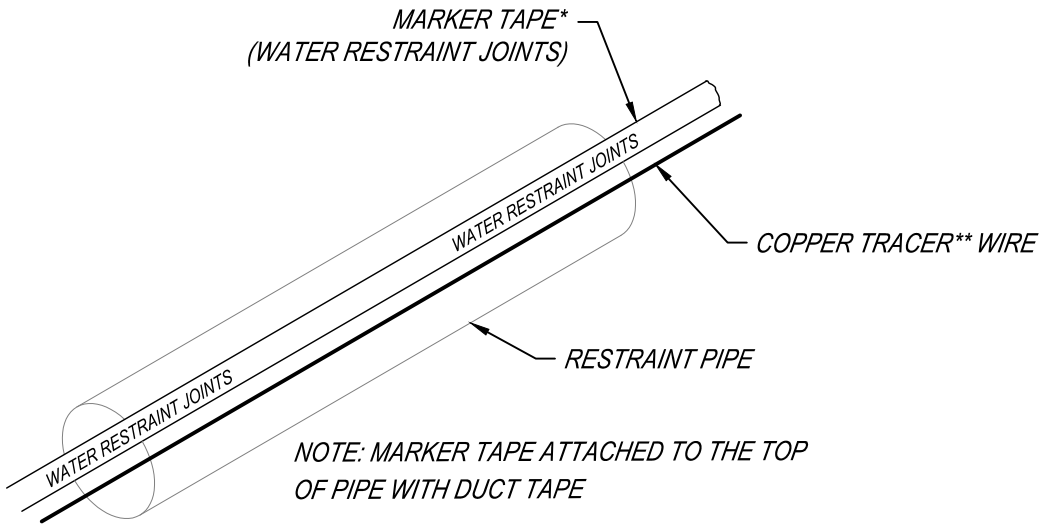
SAMPLING STATION ASSEMBLY INSTALLATION

March 19, 2026

SHEET NO.

MAIN-SS



NOTES:

* MARKER TAPE ATTACHED TO THE TOP OF PIPE WITH DUCT TAPE

**INSULATED 12 AWG SOLID DIRECT BURIAL RATED (30 MIL POLYETHYLENE JACKET MINIMUM) COPPER TRACER WIRE SHALL BE INSTALLED ABOVE AND ALONG ALL WATER LINES (NOT INCLUDING COPPER SERVICES). WIRE SHALL BE SECURELY FASTENED TO THE PIPELINE AND SHALL BE PLACED ALONG THE OUTSIDE OF VALVE BOX RISERS WITH AT LEAST TWO FEET OF SLACK COILED INSIDE THE VALVE BOX. WIRE SHALL TERMINATE IN AN APPROPRIATE LOCATION SUCH AS A VALVE BOX, BLOW OFF BOX, AIR VALVE BOX, OR IN A DEDICATED CHRISTY G-5 VALVE BOX. CONTINUITY TESTING ON THE TRACER WIRE SHALL BE PERFORMED AFTER BACKFILL AND COMPACTION AND PRIOR TO FINAL PAVING. THE LOCATION OF THE TRACER WIRE AND LEADS SHALL BE MARKED ON RECORD DRAWINGS WITH THE LEAD LOCATION CLEARLY MARKED IN THE FIELD.

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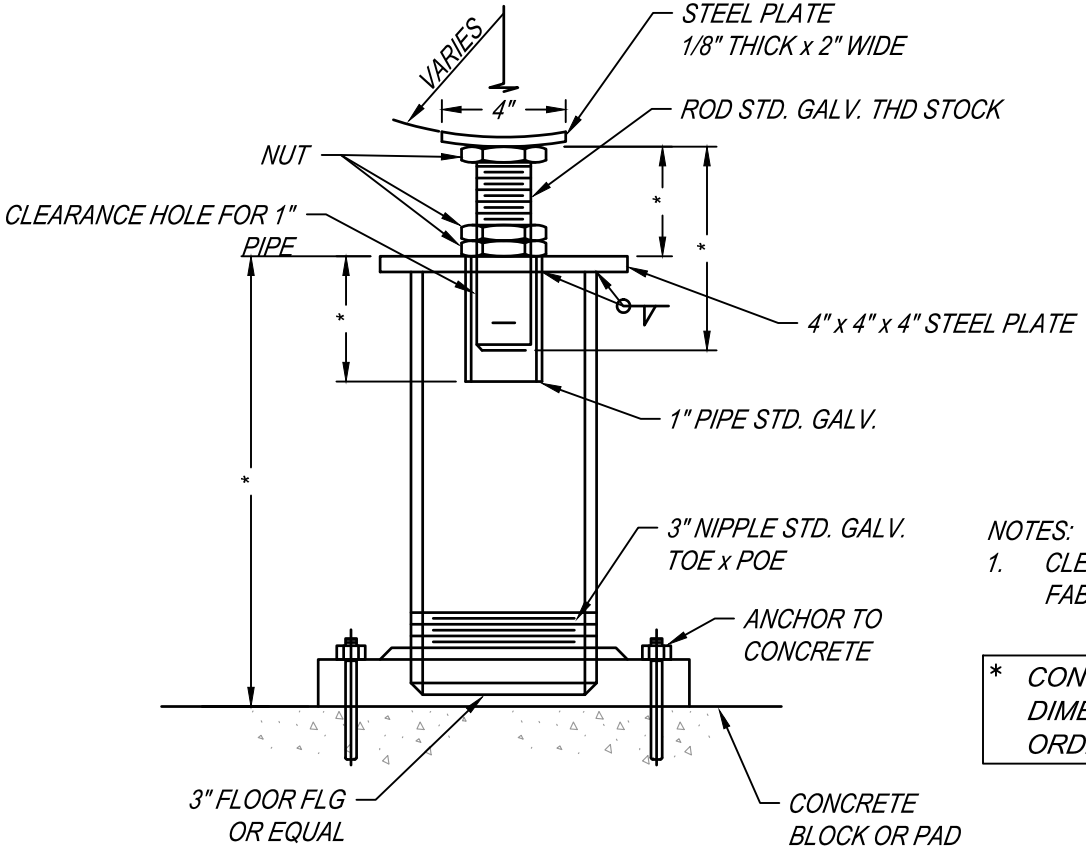
TRACER WIRE INSTALLATION DETAIL

March 19, 2026

SHEET NO.

MAIN-TW



NOTES:

1. CLEAN, PRIME & PAINT AFTER FABRICATION

* CONTRACTOR TO VERIFY DIMENSIONS PRIOR TO ORDERING MATERIALS

TEXAS WATER COMPANY

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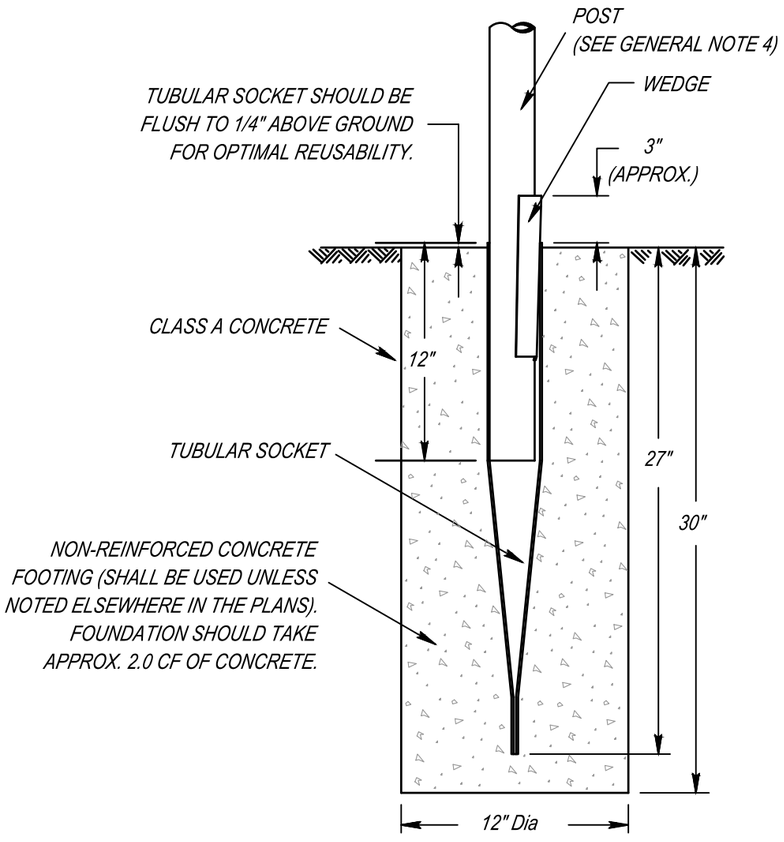
TYPICAL PIPE SUPPORT

March 19, 2026

SHEET NO.

PRV-PS



SM RD SGN ASSM TY TWT(X)WS(X)

GENERAL NOTES:

1. THE WEDGE ANCHOR SYSTEM AND THE UNIVERSAL ANCHOR SYSTEM WITH THIN WALL TUBING POST MAY BE USED TO SUPPORT UP TO 10 SQUARE FEET OF SIGN AREA.
2. THE TUBULAR SOCKET, WEDGE AND PREFABRICATED T-BRACKET SHALL BE PERMANENTLY MARKED TO INDICATE MANUFACTURER. METHOD, DESIGN, AND LOCATION OF MARKING ARE SUBJECT TO THE APPROVAL OF THE TXDOT TRAFFIC STANDARDS ENGINEER.
3. EXCEPT FOR POSTS (13 BWG TUBING), CLAMPS, NUTS AND BOLTS, ALL COMPONENTS SHALL BE PREQUALIFIED. A LIST OF PREQUALIFIED VENDORS MAY BE OBTAINED FROM THE MATERIAL PRODUCER LIST WEB PAGE.
   THE WEBSITE ADDRESS IS: HTTP://WWW.TXDOT.GOV/BUSINESS/PRODUCER LIST.HTM
4. MATERIAL USED AS POST WITH THIS SYSTEM SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:
   13 BWG TUBING (2.375" OUTSIDE DIAMETER) (TWT)
   0.095" NOMINAL WALL THICKNESS
   SEAMLESS OR ELECTRIC-RESISTANCE WELDED STEEL TUBING
   STEEL SHALL BE HSLAS GR 55 PER ASTM A1011 OR ASTM A1008
   OTHER STEELS MAY BE USED IF THEY MEET THE FOLLOWING:
   55,000 PSI MINIMUM YIELD STRENGTH
   70,000 PSI MINIMUM TENSILE STRENGTH
   18% MINIMUM ELONGATION IN 2"
   WALL THICKNESS (UNCOATED) SHALL BE WITHIN THE RANGE OF .083" TO .099"
   OUTSIDE DIAMETER (UNCOATED) SHALL BE WITHIN THE RANGE OF 2.369" TO 2.381"
   GALVANIZATION PER ASTM 123 OR ASTM A653 G210. FOR PRECOATED STEEL TUBING (ASTM A653), RECOAT TUBE OUTSIDE DIAMETER WELD SEAM BY METALLIZING WITH ZINC WIRE PER ASTM B833.
5. SIGN BLANKS SHALL BE THE SIZES AND SHAPES SHOWN ON THE PLANS.
6. ADDITIONAL SIGN CLAMP REQUIRED ON THE "T-BRACKET" POST FOR 24" HIGH SIGNS. PLACE CLAMP AT LEAST 3" ABOVE BOTTOM OF SIGN WHEN POSSIBLE.
7. SIGN SUPPORTS SHALL NOT BE SPLICED EXCEPT WHERE SHOWN. SIGN SUPPORT POSTS SHALL NOT BE SPLICED.
8. SEE THE TRAFFIC OPERATIONS DIVISION WEBSITE FOR DETAILED DRAWINGS OF SIGN CLAMPS AND WEDGE ANCHOR SYSTEM COMPONENTS.
   THE WEBSITE ADDRESS IS: HTTP://WWW.TXDOT.GOV/PUBLICATIONS/TRAFFIC.HTM

WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURE

1. DIG FOUNDATION HOLE. WHERE SOLID ROCK IS ENCOUNTERED AT GROUND LEVEL, THE FOUNDATION SHALL BE A MINIMUM DEPTH OF 18". WHEN SOLID ROCK IS ENCOUNTERED BELOW GROUND LEVEL, THE FOUNDATION SHALL EXTEND IN THE SOLID ROCK A MINIMUM DEPTH OF 18" OR PROVIDE A MINIMUM FOUNDATION DEPTH OF 30". IF SOLID ROCK IS ENCOUNTERED, THE SOCKET/STUB MAY BE REDUCED IN LENGTH AS REQUIRED TO A MINIMUM LENGTH OF 18". ANY MATERIAL REMOVED FROM THE SOCKET/STUB SHALL BE FROM THE BOTTOM AND THE CLEARANCE REQUIREMENTS GIVEN ON SMD(GEN) MUST BE FOLLOWED. THE INNER SURFACES OF THE SOCKET/STUB MUST REMAIN FREE OF CONCRETE OR OTHER DEBRIS.
2. THE ENGINEER MAY PERMIT BATCHES OF CONCRETE LESS THAN 2 CUBIC YARDS TO BE MIXED WITH A PORTABLE, MOTOR DRIVEN CONCRETE MIXER. FOR SMALL PLACEMENTS LESS THAN 0.5 CUBIC YARDS, HAND MIXING IN A SUITABLE CONTAINER MAY BE ALLOWED BY ENGINEER. PLACE CONCRETE INTO HOLE UNTIL IT IS APPROXIMATELY FLUSH WITH THE GROUND. CONCRETE SHALL BE CLASS A.
3. INSERT TUBULAR SOCKET INTO CONCRETE UNTIL TOP OF SOCKET IS APPROXIMATELY 1/4 " ABOVE THE CONCRETE FOOTING.
4. PLUMB THE SOCKET. ALLOW A MINIMUM 4 DAYS FOR CONCRETE TO SET, UNLESS OTHERWISE DIRECTED BY ENGINEER..
5. ATTACH THE SIGN TO THE SIGN POST.
6. INSERT THE SIGN POST INTO SOCKET AND ALIGN SIGN FACE WITH ROADWAY.
7. DRIVE THE WEDGE INTO THE SOCKET TO SECURE POST. THIS WILL LEAVE APPROXIMATELY 3 INCHES OF THE WEDGE EXPOSED.

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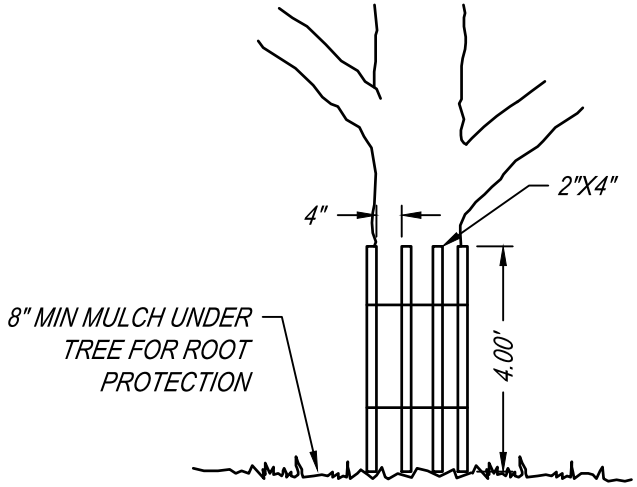
March 19, 2026

TYPICAL STREET SIGN INSTALLATION

PRELIMINARY PLANS
- - - NOT FOR CONSTRUCTION - - -

SHEET NO.
ST-SIGN



NOTES:

1. WRAP TREE TRUNK WITH 2"X4" STUDS AND ROPE OR BAND IN PLACE AS NEEDED TO PROTECT TREES IN WORK AREAS.

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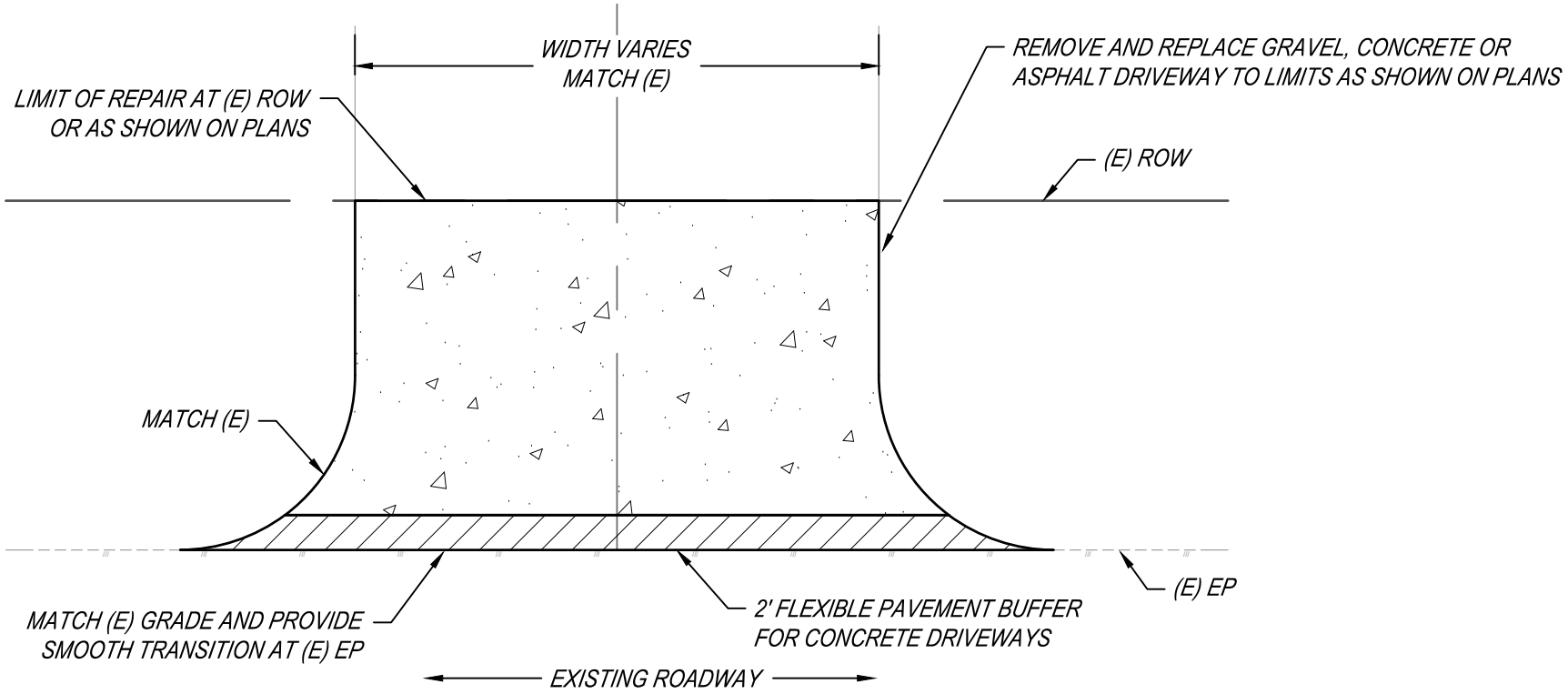
TYPICAL TREE PROTECTION DETAIL

March 19, 2026

SHEET NO.

TREE-PRO



NOTES:

1. CONTRACTOR SHALL MATCH (E) MATERIAL TYPE, DRIVEWAY SHAPE AND WIDTH.
2. DEPTH OF MATERIAL SHALL MATCH (E) OR BE A MINIMUM 4" FOR GRAVEL, 4" FOR CONCRETE AND 2" FOR ASPHALT DRIVEWAYS, WHICH EVER IS GREATER.
3. CONCRETE SHALL BE PER TXDOT ITEM 421.
4. ASPHALT SHALL BE PER TXDOT ITEM 340.
5. GRAVEL MATERIAL SHALL BE APPROVED BY THE ENGINEER.

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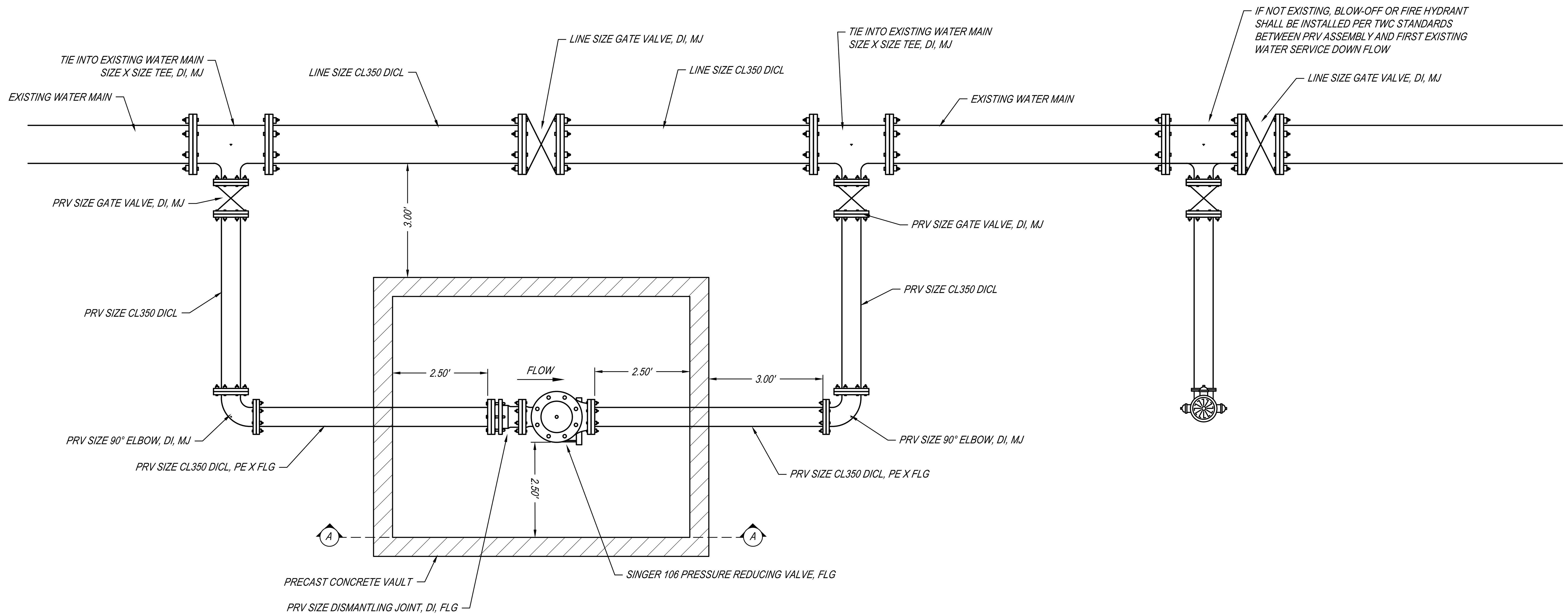
TYPICAL DRIVEWAY DETIAL

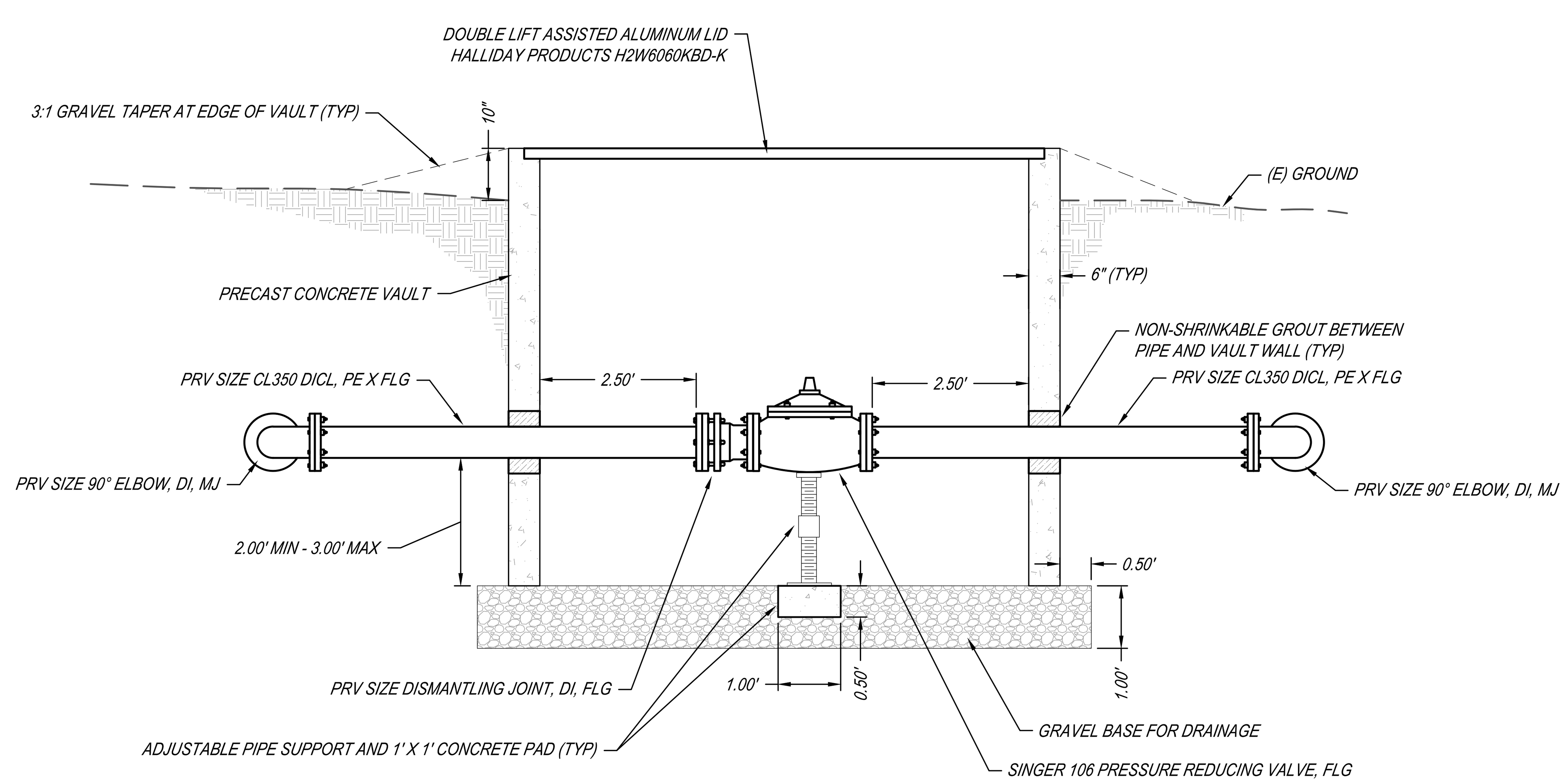
March 19, 2026

SHEET NO.

TYP-DWY

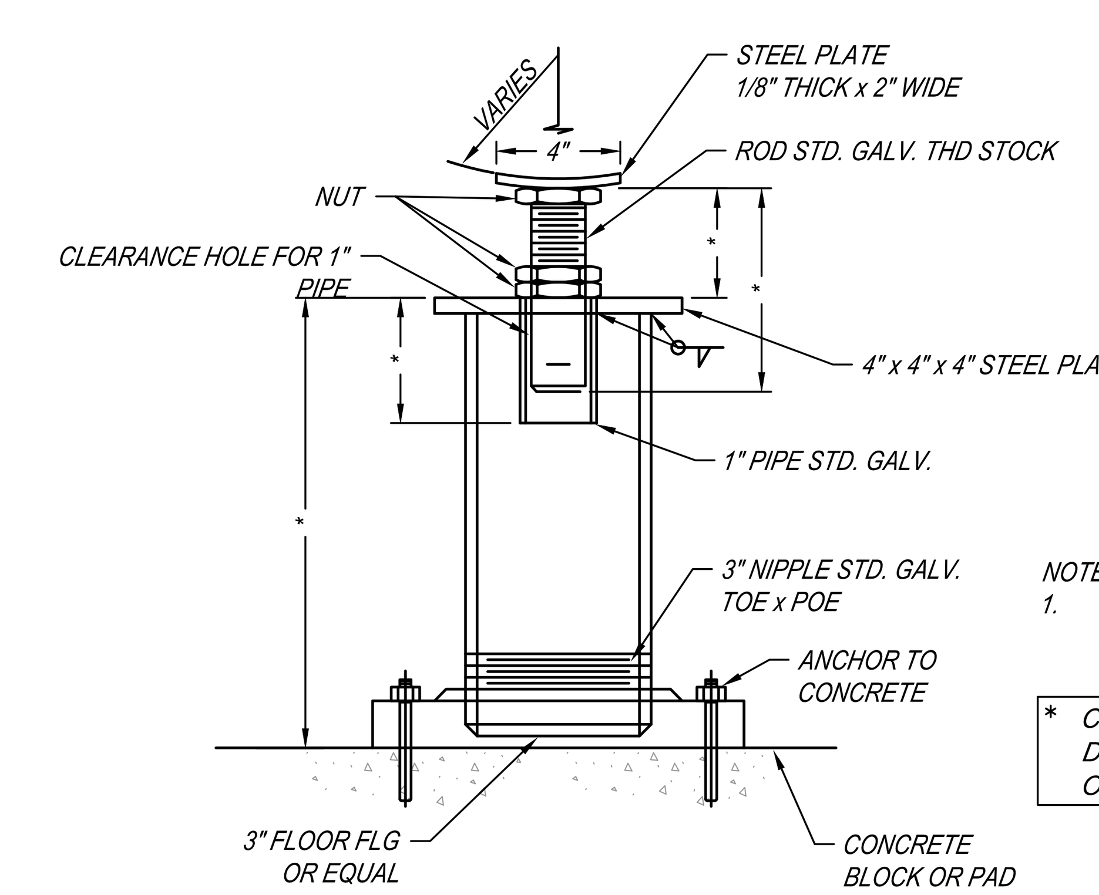


PLAN
SCALE: 1" = 2'



VAULT SECTION A - A
SCALE: 1" = 2'

NOTES:
1. ALL CONNECTIONS WITHIN VAULT SHALL BE FLG.
2. BUTYL ROPE SEAL OR EQUIVALENT AS APPROVED BY TWC SHALL BE INSTALLED BETWEEN ALL CONCRETE RISERS AND LID.
3. INTERIOR OF VAULT SHALL BE CLEAN OFF ALL DEBRIS BEFORE FINAL ACCEPTANCE.
4. PIPE POLYWRAP SHALL BE CUT BACK INSIDE VAULT AT PENETRATIONS.



NOTES:
1. CLEAN, PRIME & PAINT AFTER FABRICATION

* CONTRACTOR TO VERIFY DIMENSIONS PRIOR TO ORDERING MATERIALS

TYPICAL PIPE SUPPORT
NOT TO SCALE

N

SCALE AS SHOWN

TEXAS WATER COMPANY

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Canyon Lake, Texas 78133
(830) 312-4600

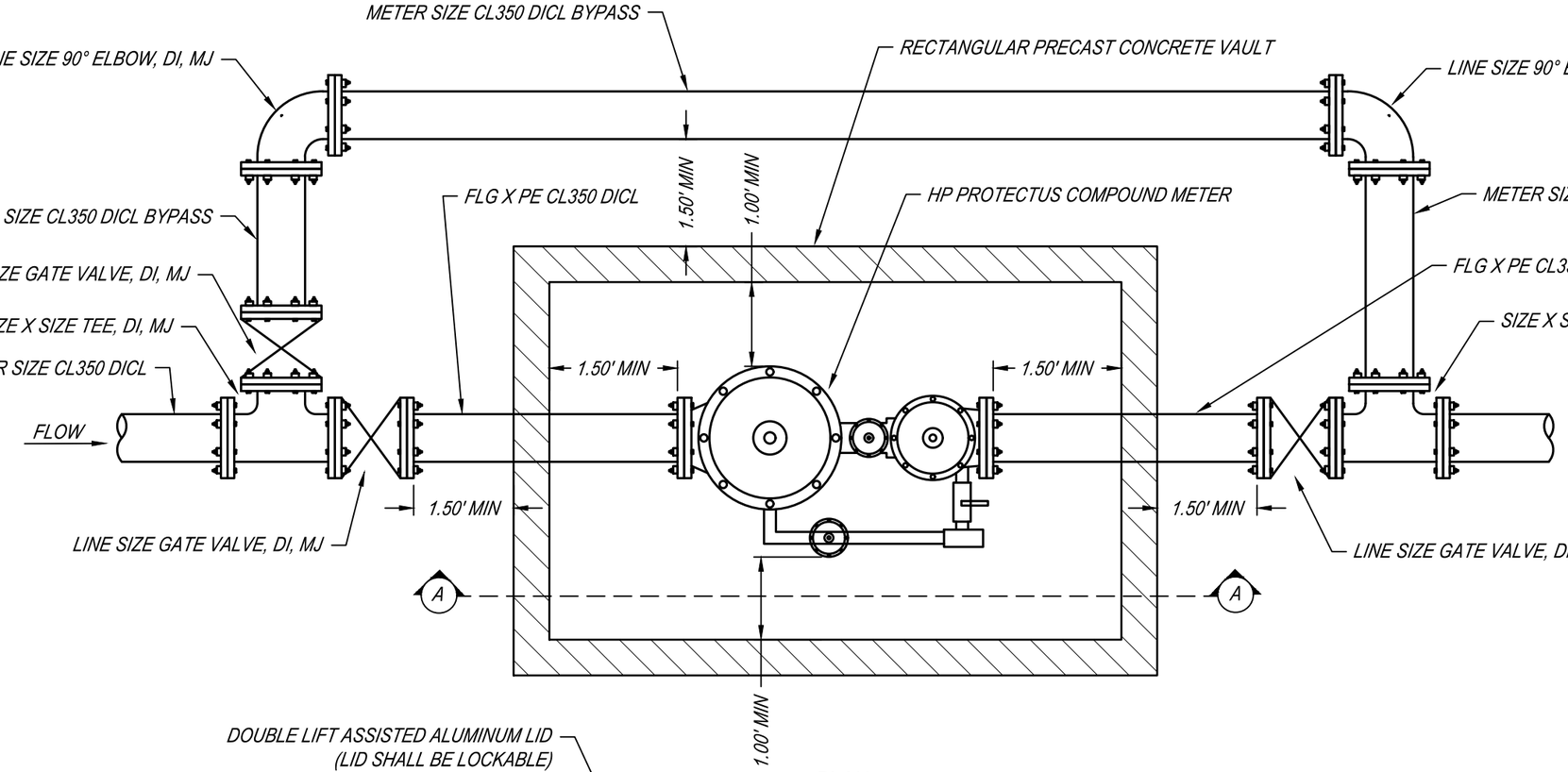
PRESSURE REDUCING VALVE DETAIL

REV	DATE	DESCRIPTION	BY

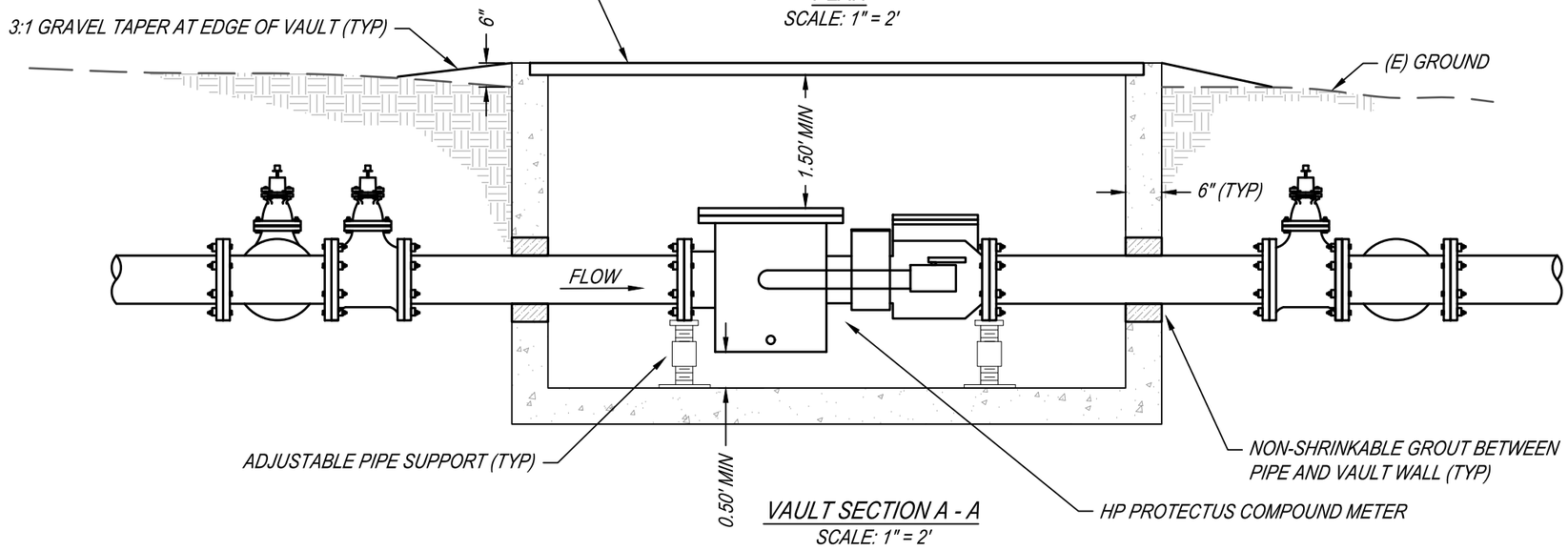
DRAFTED BY:	BGM
DESIGNED BY:	BGM
CHECKED BY:	TB

SHEET NO.

PRV DTL

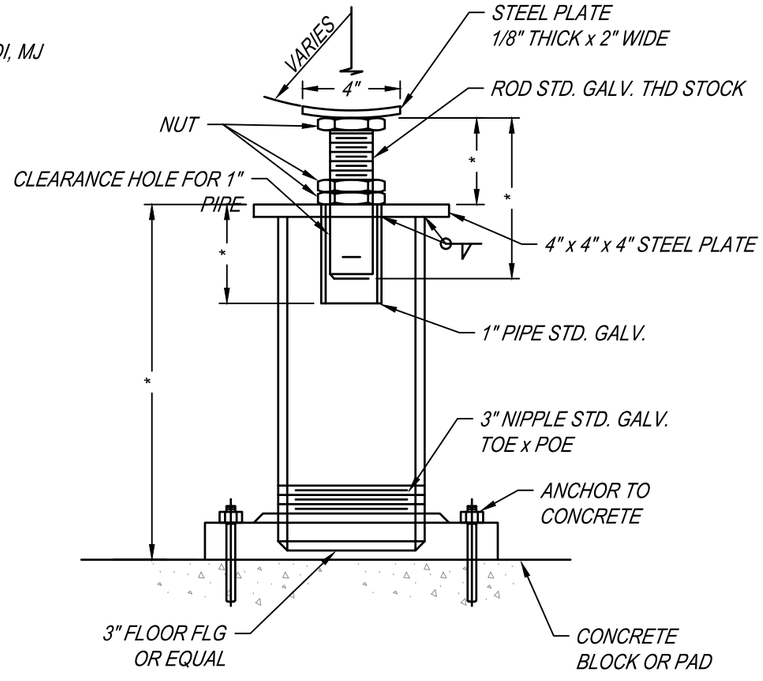


PLAN
SCALE: 1" = 2'



VAULT SECTION A - A
SCALE: 1" = 2'

NOTE:
1. ALL FITTINGS, GATE VALVES AND PIPE SHALL BE INSTALLED PER TWC STANDARDS.



NOTES:
1. CLEAN, PRIME & PAINT AFTER FABRICATION

* CONTRACTOR TO VERIFY DIMENSIONS PRIOR TO ORDERING MATERIALS

TYPICAL PIPE SUPPORT
NOT TO SCALE

TEXAS WATER COMPANY
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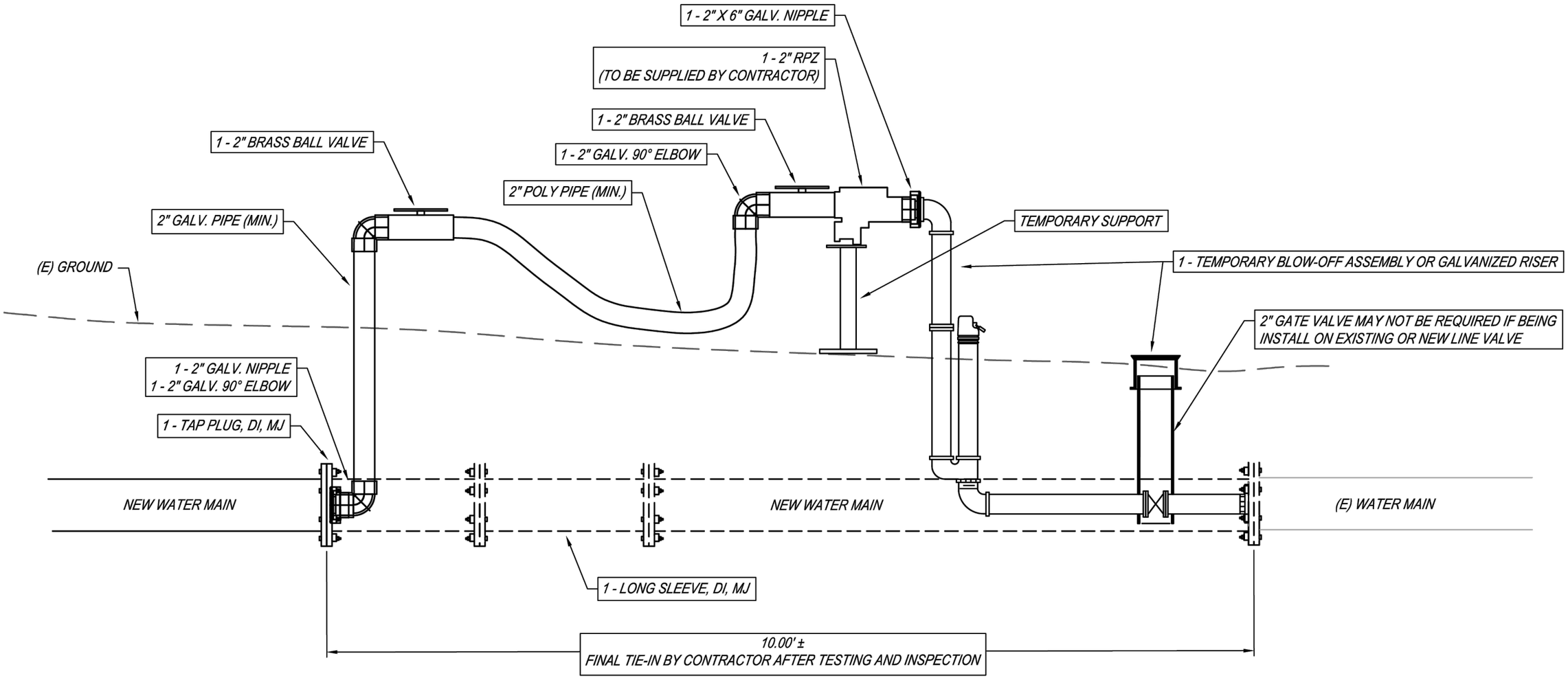
March 19, 2026

TYPICAL HP PROTECTUS COMPOUND METER INSTALLATION

SHEET NO.
SER-CM



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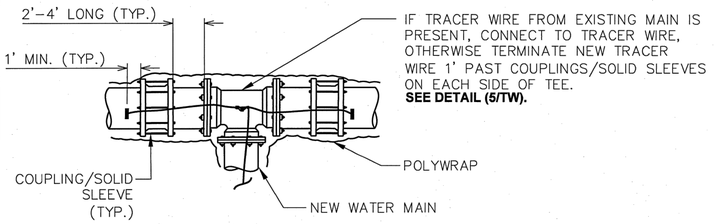
March 19, 2026

JUMPER / TIE-IN DETAIL

NOT TO SCALE

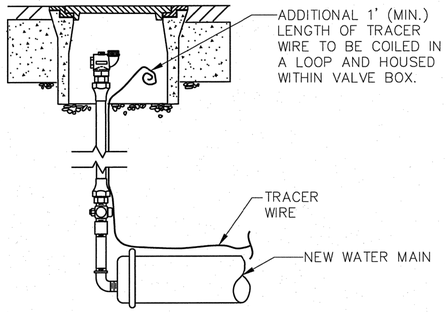
SHEET NO.

MAIN-JP



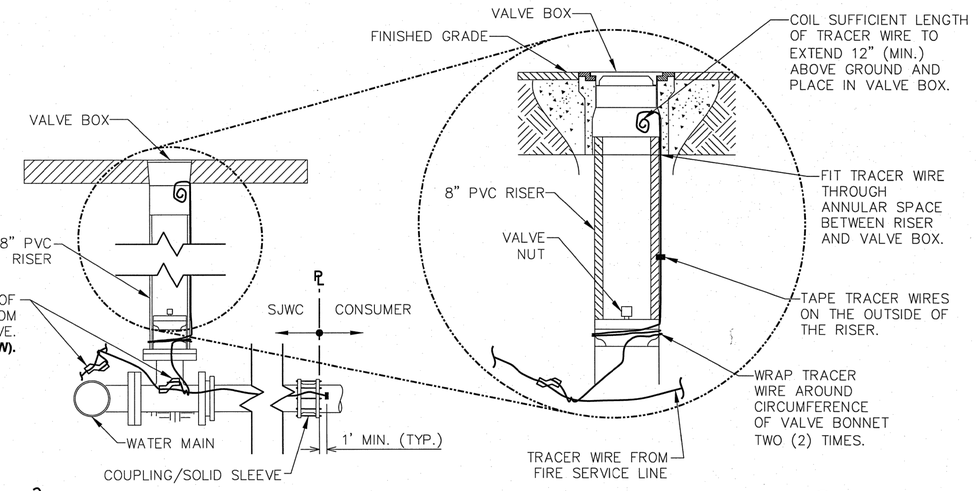
TRACER WIRE WITH CUT IN TEE ON EXISTING MAIN — 1/TW

NTS



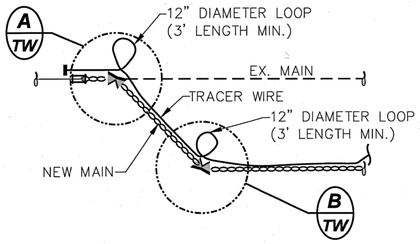
TRACER WIRE WITH BLOWOFF INSTALLATION — 4/TW

NTS



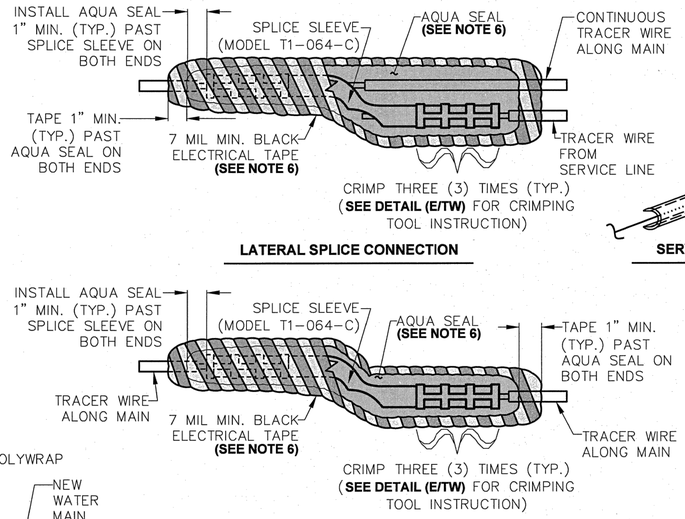
TRACER WIRE WITH FIRE SERVICE INSTALLATION — 6/TW

NTS

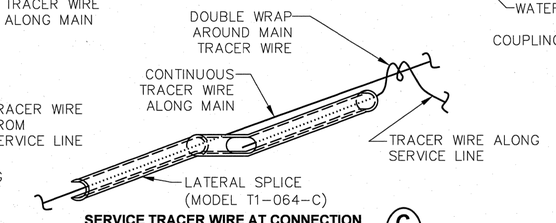


TRACER WIRE WITH MAIN INSTALLATION AT ELBOWS AND TIE-IN LOCATIONS — 2/TW

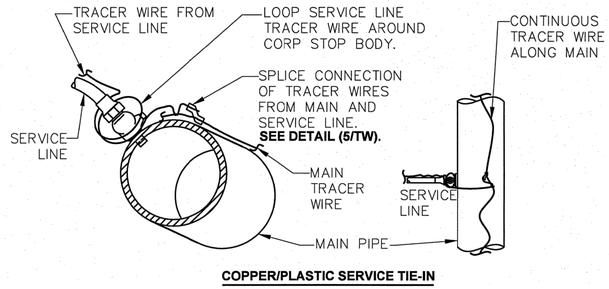
NTS



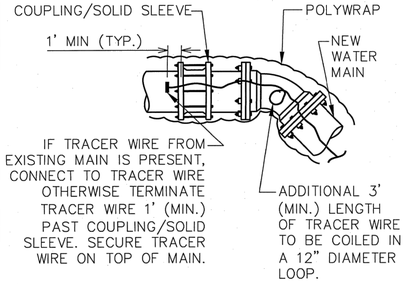
LATERAL SPLICE CONNECTION



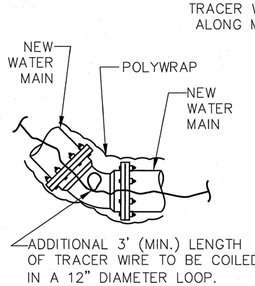
SERVICE TRACER WIRE AT CONNECTION — C/TW



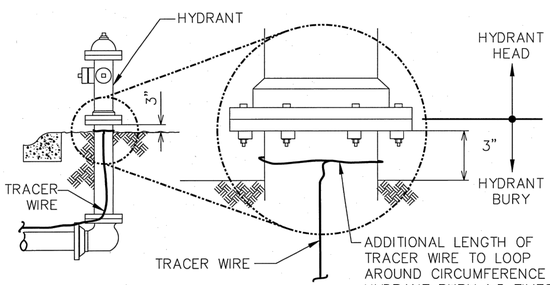
COPPER/PLASTIC SERVICE TIE-IN



TERMINAL END DETAIL — A/TW



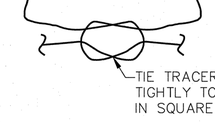
ELBOW / DEFLECTION DETAIL — B/TW



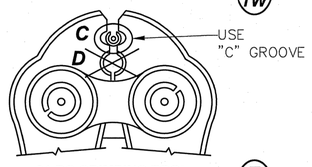
TRACER WIRE AT A HYDRANT — 3/TW

NTS

STRAIGHT SPLICE CONNECTION



END TO END CONNECTION — D/TW



31-DC CRIMPING TOOL — E/TW

TRACER SPLICE WIRE CONNECTION — 5/TW

NTS

SPLICE CONNECTION NOTES:

1. ALL CONNECTIONS ARE TO BE MADE WITH NICOTAP SPLICE SLEEVE T1-064-C MANUFACTURED BY NICOPRESS. THESE CONNECTIONS WILL BE INSTALLED USING NICOPRESS CRIMPING TOOL 31-DC IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. THE C-GROOVE SHALL BE USED. THE USE OF PLIERS OR TOOLS OTHER THAN SPECIFIED HEREIN IS UNACCEPTABLE. **SEE DETAIL (E/TW).**

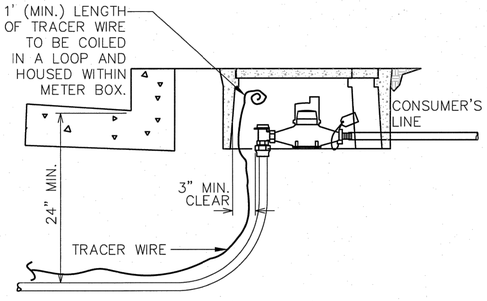
2. WHEN IN USE, VERIFY PRESS DIAMETER OF CRIMPS WITH NICOPRESS TOOL GAUGE ON A DAILY BASIS. ADJUST CRIMPING TOOL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

3. ALL PORTIONS OF WIRE WITHIN SPLICE SLEEVE MUST BE STRIPPED (APPROXIMATELY 1-¾"). AFTER COMPRESSION, THE SLEEVE AND THE WIRE INSULATION SHOULD BE SEPARATED BY APPROXIMATELY ⅛".

4. FOR ALL SERVICE CONNECTIONS, DOUBLE WRAP SERVICE TRACER WIRE AROUND MAIN TRACER WIRE THEN LEAD SERVICE TRACER WIRE ALONG SERVICE LINE. **SEE DETAIL (C/TW).**

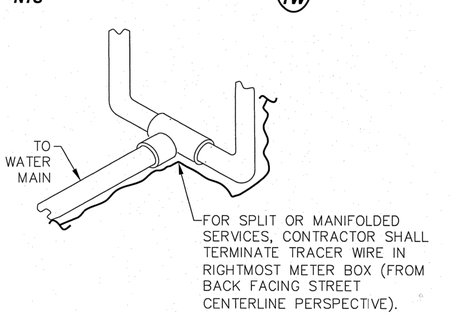
5. AT END OF TRACER WIRE SPOOL LENGTH, CONNECT TO NEW SPOOL WITH STRAIGHT SPLICE SLEEVE AND APPLY A SQUARE KNOT. **SEE DETAIL (D/TW).**

6. APPLY AQUA SEAL TO FULL LENGTH OF CONNECTOR PLUS AN ADDITIONAL 1" MIN. PAST THE CONNECTOR IN BOTH DIRECTIONS ALONG TRACER WIRE. AFTER APPLICATION OF AQUA SEAL, HALF LAP AND DOUBLE WRAP FULL LENGTH OF SEALANT PLUS AN ADDITIONAL 1" MIN. IN BOTH DIRECTIONS ALONG TRACER WIRE WITH 7 MIL MIN. BLACK PVC ELECTRICAL TAPE.



SERVICE TRACER WIRE AT WATER METER — 8/TW

NTS



SPLIT SERVICES — 9/TW

NTS

GENERAL NOTES:

1. ALL TRACER WIRES SHALL BE 12 AWG SOLID COPPER WIRE WITH 45 MIL HMW PE INSULATION (MIN.) RATED FOR DIRECT BURIAL AS MANUFACTURED BY AGAVE WIRE LTD.

2. TRACER WIRE SHALL BE INSTALLED ABOVE AND ALONG ALL WATER MAINS, SECURELY FASTENED TO TOP OF PIPELINE WITH TAPE.

3. TRACER WIRE SHALL TERMINATE IN LOCATIONS AS SHOWN AND AT METER BOXES, BLOWOFF BOXES, FIRE SERVICES, HYDRANTS, AND DEDICATED VALVE BOXES.

4. CONTRACTOR SHALL TEST TO CONFIRM CONTINUITY IN ALL TRACER WIRES. IF A SEGMENT OF TRACER WIRE IS FOUND TO BE DISCONTINUOUS, THE CONTRACTOR SHALL REPAIR OR REPLACE THE FAILED SEGMENT OF TRACER WIRE.

5. THE LOCATION OF THE TRACER WIRE AND LEADS SHALL BE MARKED ON THE RECORD DRAWINGS WITH THE LEAD LOCATION CLEARLY MARKED IN THE FIELD.

San Jose Water Company

TRACER WIRE INSTALLATION

REVISION	BY	DATE	CK
	J. GUEVARA	2/20/2015	TN 2/23/15

DISTRIBUTION SYSTEM / DATE 2/23/15
ENGINEERING / DATE 2/23/15
VICE PRESIDENT OF ENGINEERING / DATE 2/23/15

REF. NOS.

DWG. NO. MAIN-TW

SCALE AS SHOWN

SHEET 1 OF 1

Effective 2/23/15