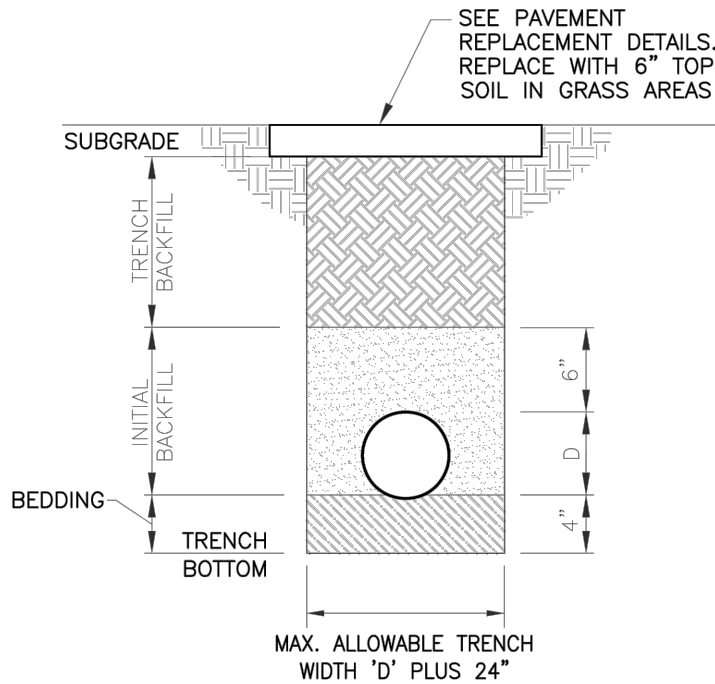


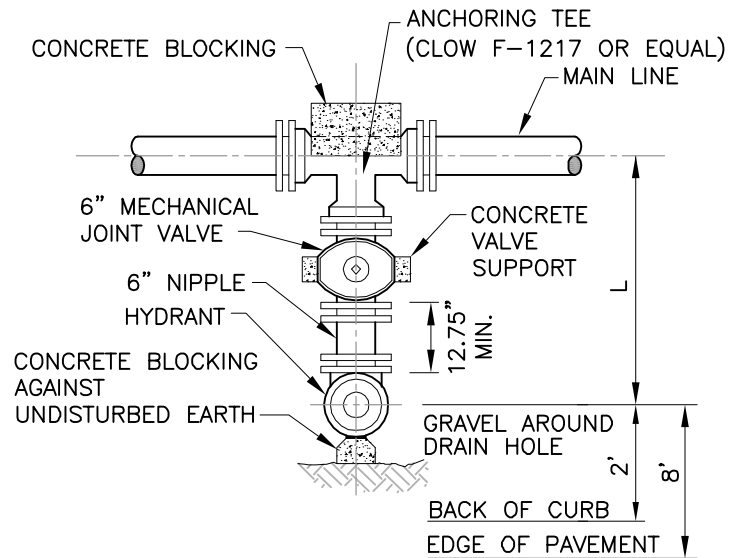
Detail Drawing Index

- 01 Water Line Embedment Detail
- 02 Hydrant Setting Type—A Detail
- 03 Hydrant Setting Type—B Detail
- 04a Concrete Thrust Blocking Detail
- 04b Concrete Thrust Blocking Detail
- 05 Tap Setting Detail
- 06 Casing Spacer & End Seal Detail
- 07 Horizontal Directional Drilling Detail
- 08a Pressure Reducing Station Detail
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- 09 Manual Air Release Detail
- 10 Rock Channel Protection Detail
- 11 Drainage Tile Repair Detail
- 12 Asphalt Roadway Pavement Replacement Detail
- 13 Asphalt Driveway Pavement Replacement Detail
- 14 Gravel Roadway And Driveway Replacement Detail
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- 24 Storm Crossing Casing Pipe Detail
- 25 Water Line Crossing Detail
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- 27 Temporary Water – Hydrant Meter



NOTES

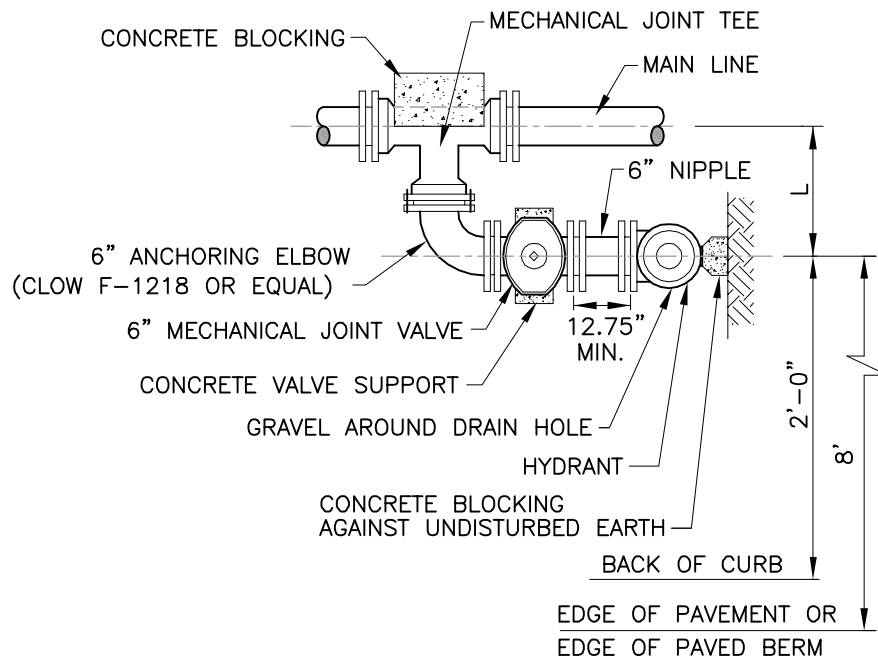
1. SUITABLE BEDDING AND INITIAL BACKFILL MATERIAL SHALL CONSIST OF NATURALLY OCCURRING SAND OR CLAY FREE FROM TRASH, ROOTS, DEBRIS, EXCESSIVE MOISTURE AND OBJECTS LARGER THAN $\frac{3}{4}$ ".
2. PIPE TRENCH WALL SHALL BE VERTICAL TO THE TOP OF THE INITIAL BACKFILL.
3. PROVIDE SELECT FILL No. 8 OR No. 57 STONE FOR BEDDING MATERIAL TO THE DEPTH REQUIRED BY THE WATER UTILITY WHEN UNSTABLE TRENCH BOTTOMS ARE ENCOUNTERED, AS DETERMINED BY THE WATER UTILITY.
4. MANUALLY COMPACT EMBEDMENT MATERIAL FILLING ALL VOIDS AROUND PIPE.
5. TRENCH BACKFILL TYPE SHALL BE PER GENERAL NOTES AND SPECIFICATIONS.



MAIN LINE	DIMENSION L (MINIMUM)
6"	35"
8"	36"
12"	39"
16"	42"

NOTE:

FIRE HYDRANTS SHALL BE SET A MINIMUM OF 6' FROM ALL DRIVEWAY OPENINGS.



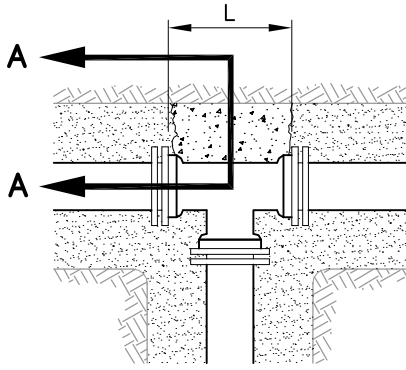
TYPE B: LONG SIDE BEND TO TEE.

TYPE B MODIFIED: SHORT SIDE BEND TO TEE.

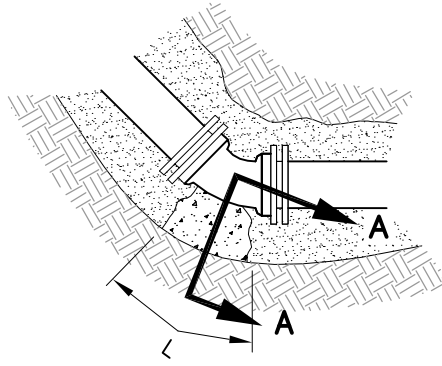
MAIN LINE	DIMENSION L	
	TYPE B	TYPE B MOD.
6"	24"	19"
8"	25"	20"
12"	28"	23"
16"	31"	26"

NOTE:

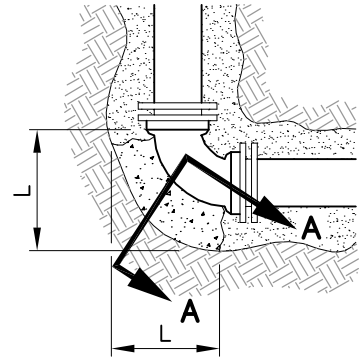
FIRE HYDRANTS SHALL BE SET A MINIMUM
OF 6' FROM ALL DRIVEWAY OPENINGS.



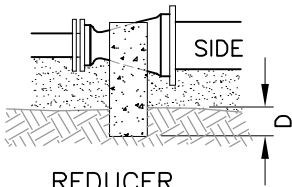
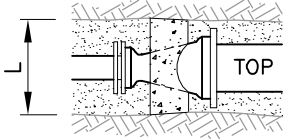
TEE



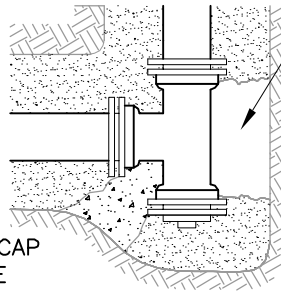
BEND <90°



HORIZONTAL BEND

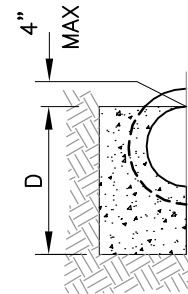


REDUCER

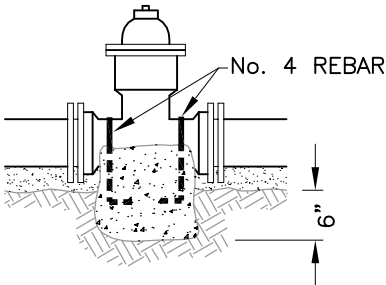


USE END CAP
TABLE SIZE
FOR RUN

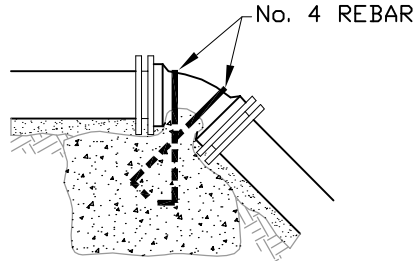
TEE W/ ONE PLUG END



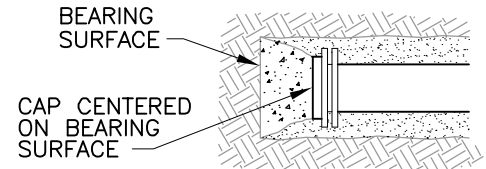
SECTION A-A



VALVE SUPPORT



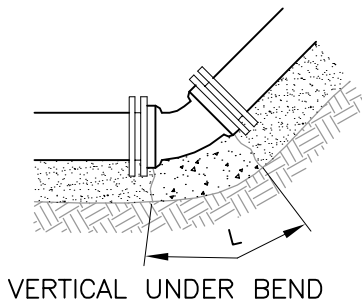
VERTICAL OVER BEND



CAP

NOTES

1. CONCRETE SHALL NOT LAP ONTO BOLTS.
2. EMBED REINFORCING 12" MIN. INTO CONCRETE HOOK ENDS.
3. ALL FITTINGS TO BE POLYETHELENE WRAPPED



VERTICAL UNDER BEND

	UNDISTURBED GROUND
	CONCRETE THRUST BLOCK
	SUITABLE BEDDING MATERIAL

END CAP BLOCKING						
SIZE	2"	4"	6"	8"	12"	16"
BLOCKING AREA	6"x6"	9"x9"	13"x13"	17"x17"	24"x24"	33"x33"

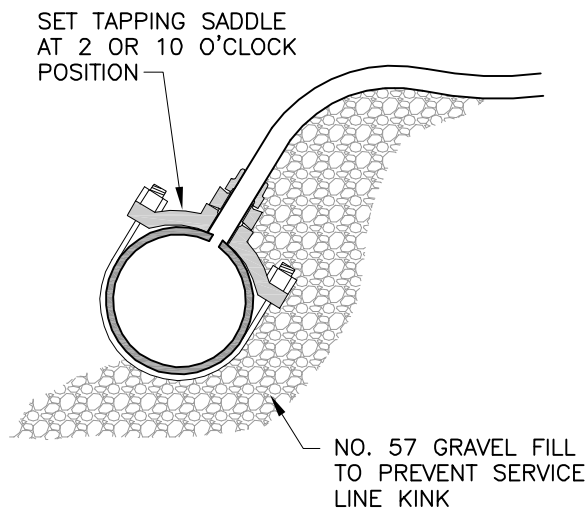
BLOCKING FOR TEES															
R U N	BRANCH														
	4"			6"			8"			12"			16"		
	L"	D"	Vc.f.	L"	D"	Vc.f.	L"	D"	Vc.f.	L"	D"	Vc.f.	L"	D"	Vc.f.
4"	11	8	0.8												
6"	11	8	0.8	18	12	1.9									
8"	10	9	0.7	18	12	1.9	23	16	3.5						
12"	8	12	0.8	18	12	1.9	23	16	3.5	38	22	8.7			
16"	6	16	0.8	14	16	2.0	20	18	3.5	38	23	8.7	49	30	13.6

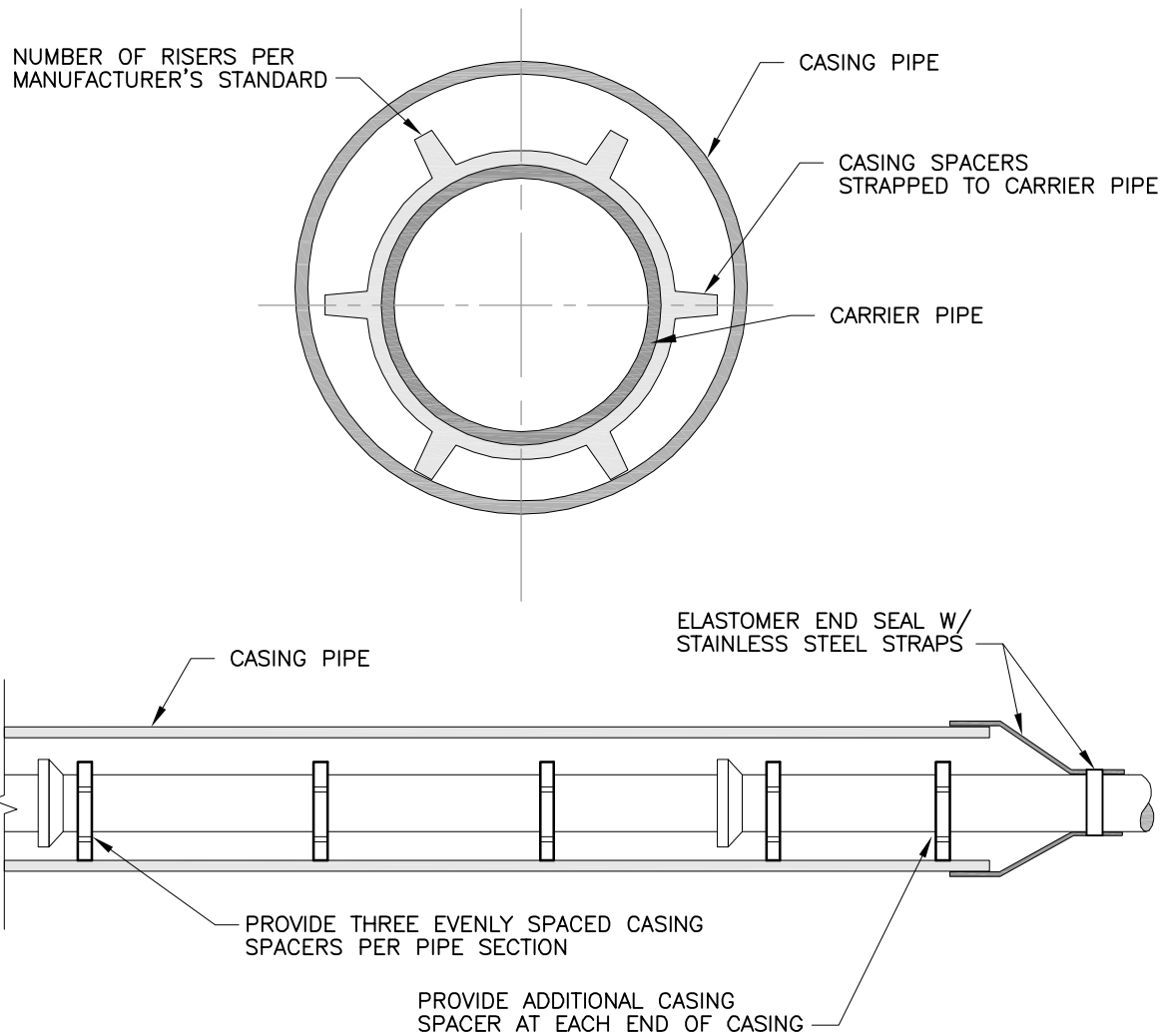
SIZE OF CONCRETE BLOCKING FOR VERTICAL OVERBEND		
PIPE SIZE	SIZE OF BLOCK	VOLUME Cu. Yd.
4"	1.5'x1.5'x1.5'	0.13
6"	2.5'x2.5'x2.5'	0.5
8"	3'x3'x3'	1
12"	3.5'x3.5'x3.5'	1.5
16"	4.5'x4.5'x4.5'	3.5

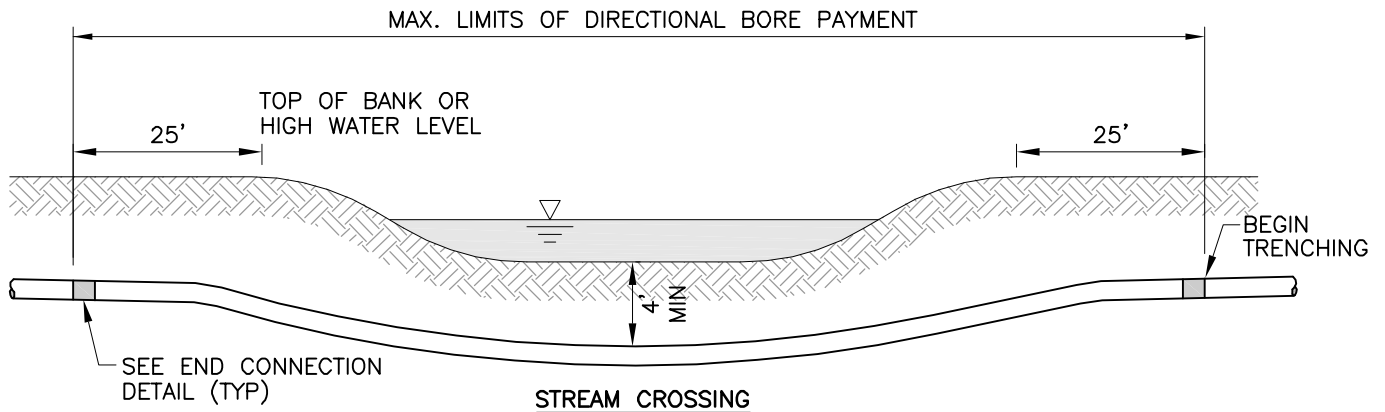
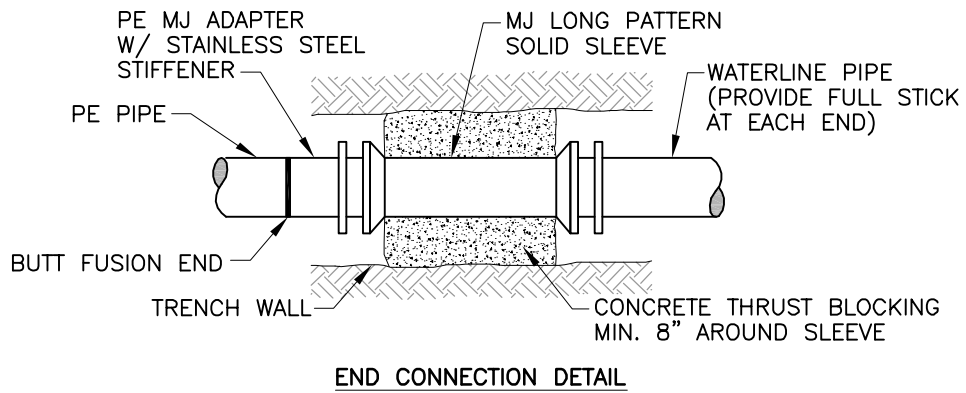
	BLOCKING FOR REDUCERS									
	4"		6"		8"		12"		16"	
	D"	L"	D"	L"	D"	L"	D"	L"	D"	L"
2"	12	6	12	12						
4"			12	12						
6"					12	12				
8"							24	18		
12"									24	24

BLOCKING FOR HORIZONTAL BENDS AND VERTICAL UNDERBENDS												
PIPE SIZE	DEGREE OF BEND											
	11.25°			22.5°			45°			90°		
	L"	D"	Vc.f.	L"	D"	Vc.f.	L"	D"	Vc.f.	L"	D"	Vc.f.
4"	5	4	0.2	9	5	0.4	14	5	0.6	14	5	0.6
6"	8	6	0.5	12	7	0.7	20	8	1.4		9	1.7
8"	9	8	0.7	16	9	1.4	24	12	2.7	25	11	4
12"	14	12	1.8	24	14	3.6	36	18	6.8	32	18	10.7
16"	18	16	3.4	32	18	6.7	36	32	13.4	41	26	25.6

VALVE SUPPORTS		
VALVE SIZE	WIDTH	Vc.f.
4"	16"	0.3
6"	17"	0.4
8"	20"	0.4
12"	24"	0.5
16"	30"	0.5









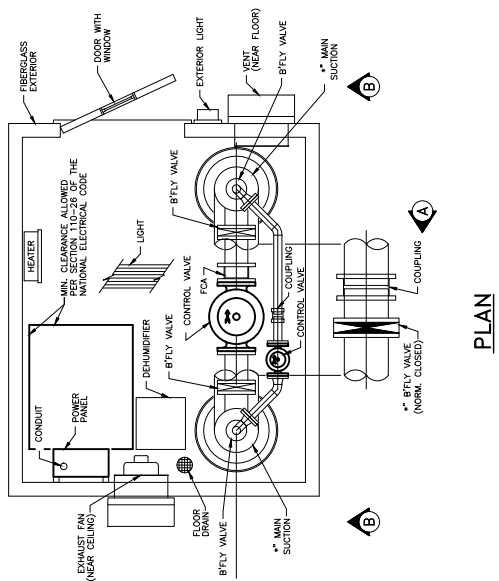
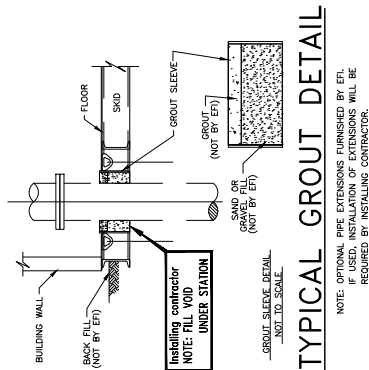
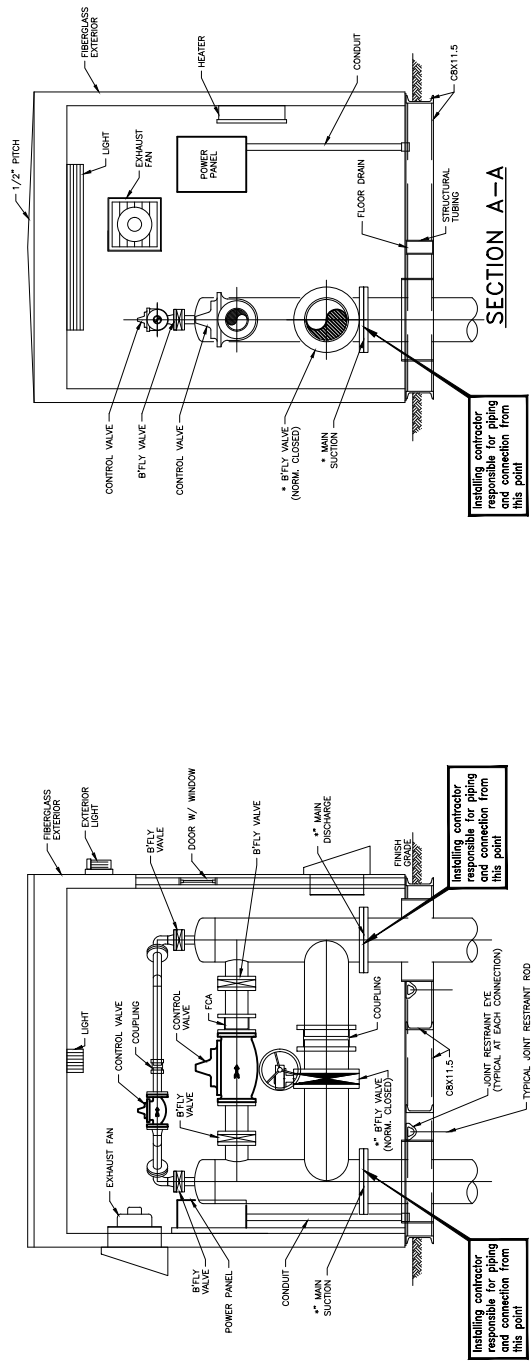
PRESSURE REDUCING STATION

REVISED
JULY 2022

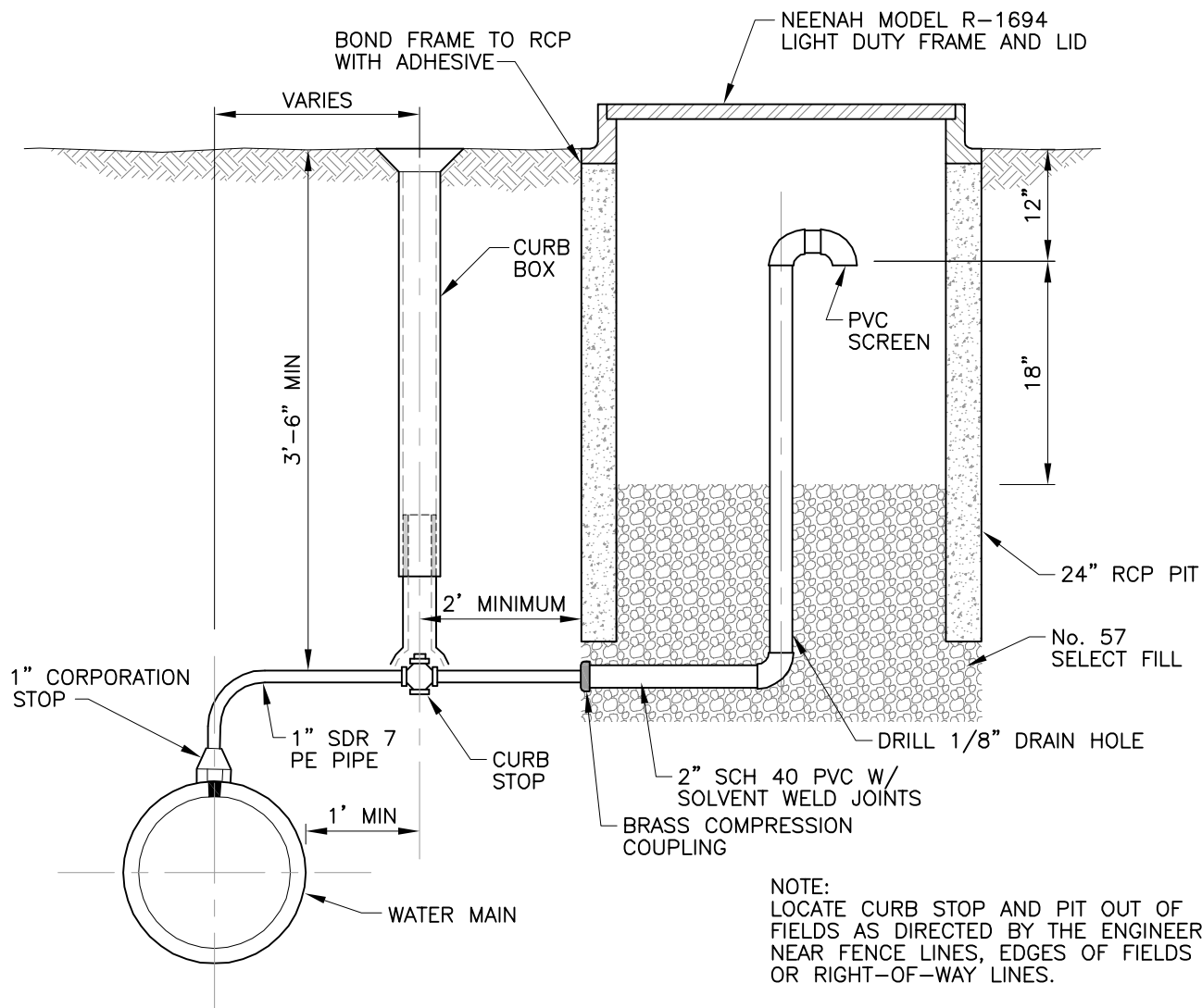
SCALE
NTS

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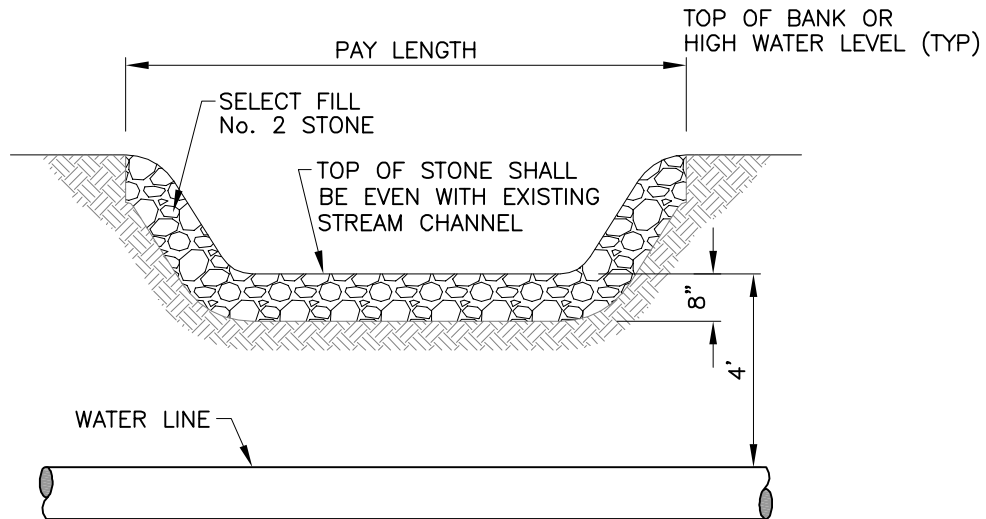


DIMENSIONS VARY DEPENDING ON PRV SIZE AND APPLICATION. COORDINATE WITH WWC FOR SIZES.
NOTE: FCA - FLANGED COUPLING ADAPTER



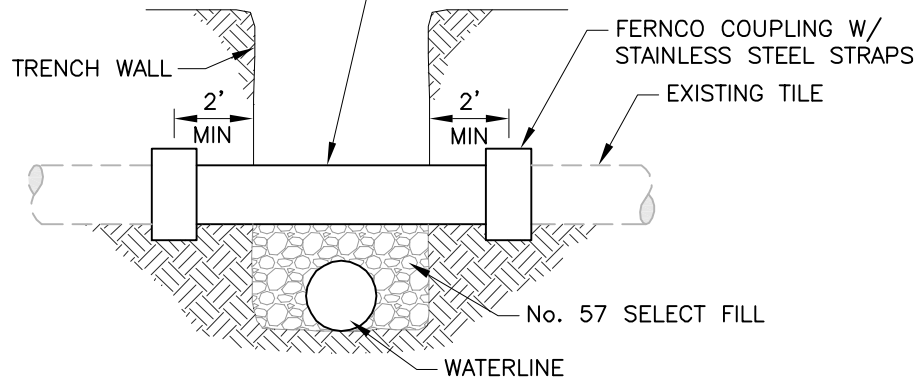
MANUAL AIR RELEASE

NTS



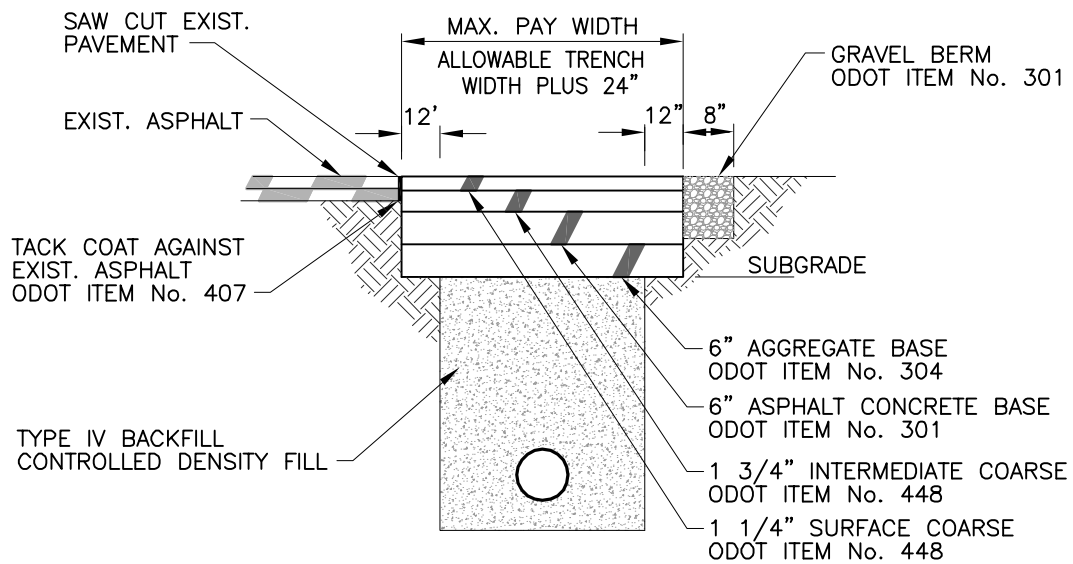
NOTE
PROVIDE WIDTH OF STONE PLACEMENT EQUAL TO
TRENCH WIDTH. TWO FEET MIN.

SDR 26 PVC NON-PERFORATED PIPE.
MATCH DIAMETER OF TILE. EXTEND 2'
BEYOND TRENCH WALL ON EACH SIDE
ON UNDISTURBED GROUND.



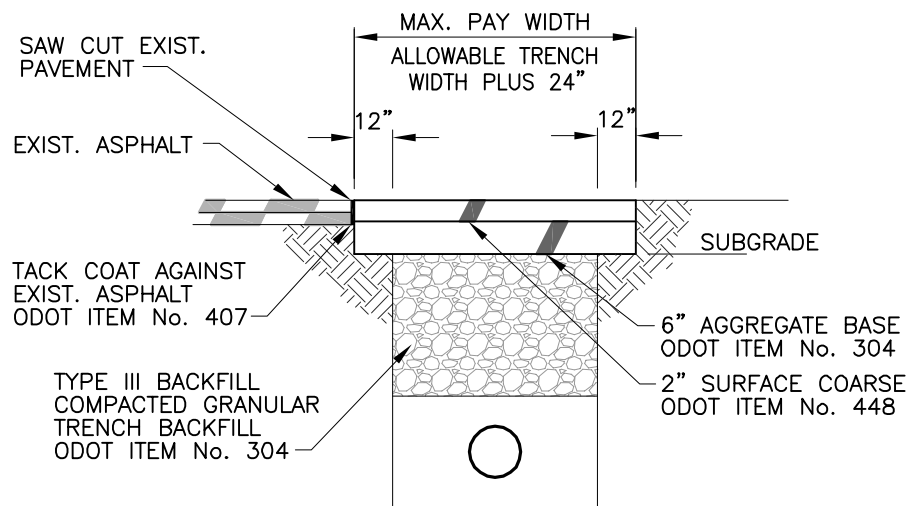
NOTE

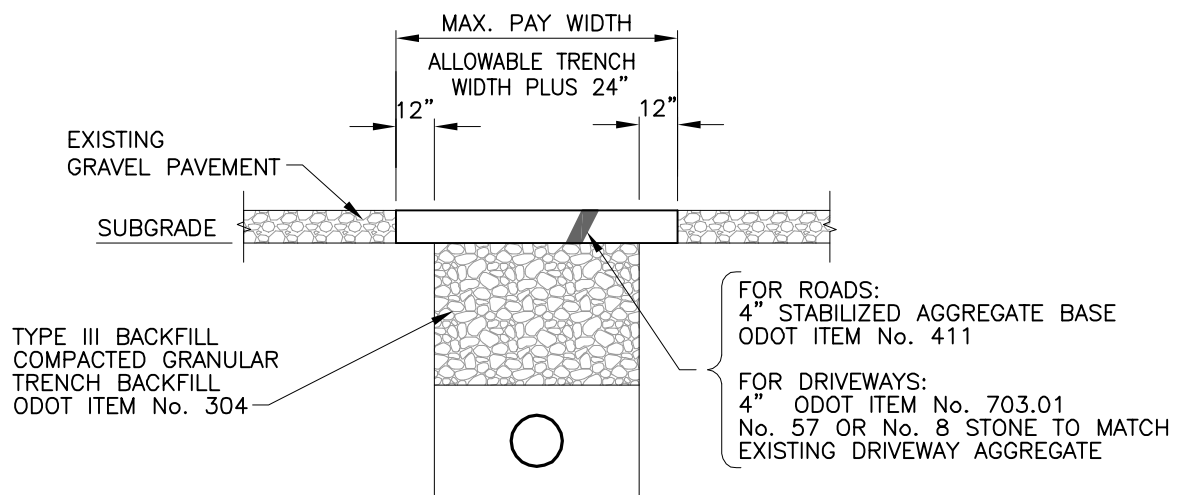
DO NOT BACKFILL UNTIL APPROVED BY ENGINEER.

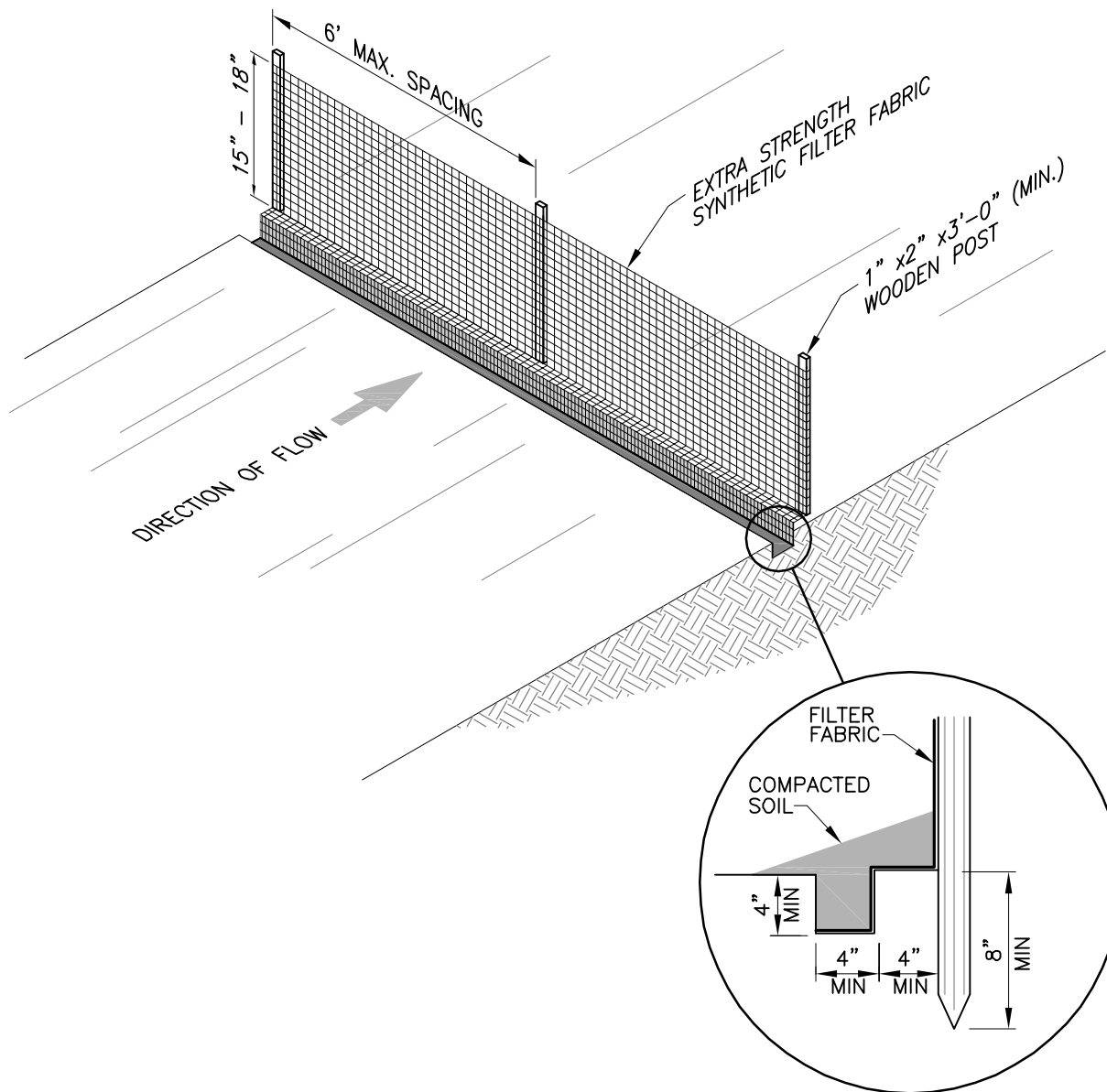


ASPHALT ROADWAY PAVEMENT REPLACEMENT

NTS







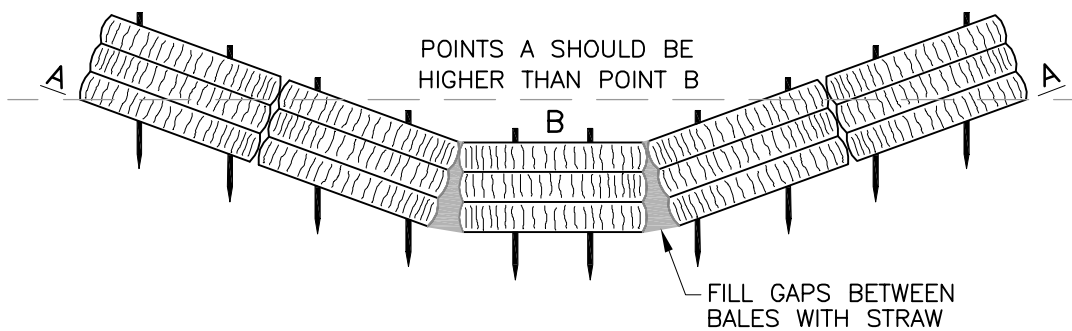
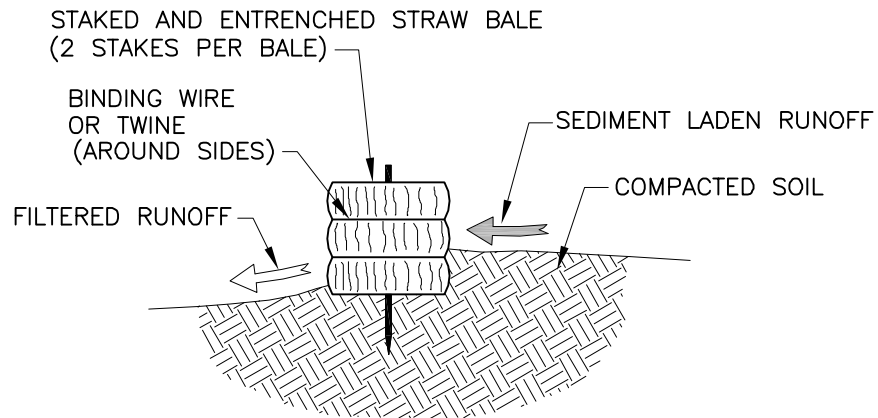
NOTES

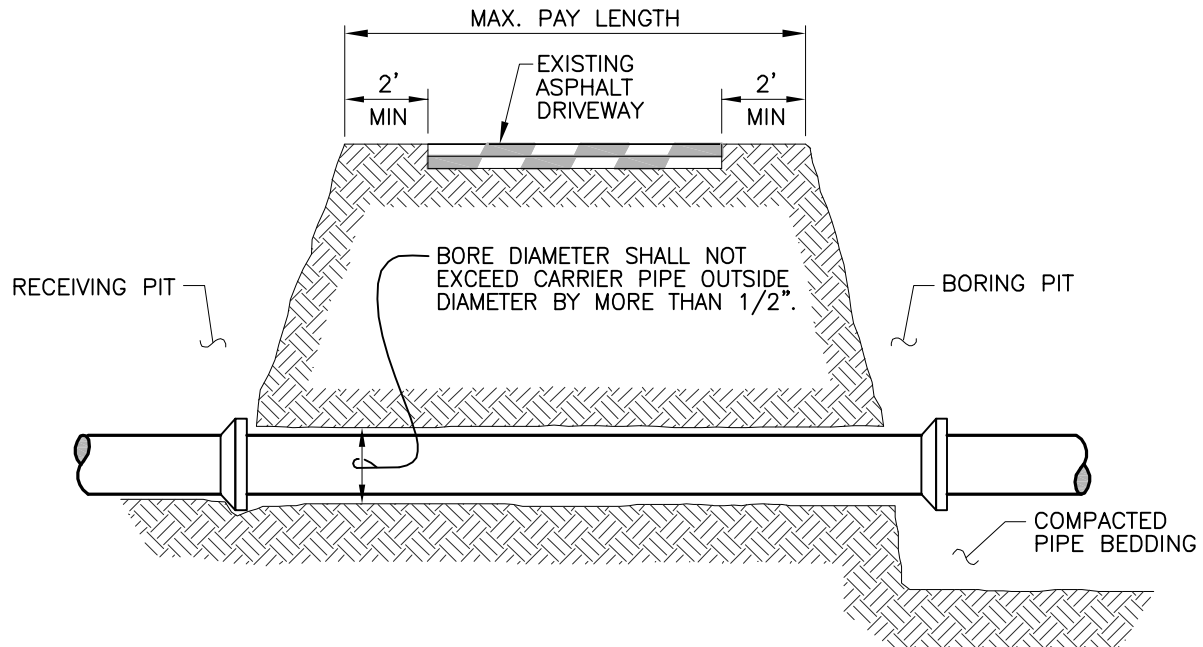
FILTER FABRIC SHALL BE FASTENED TO WOODEN POSTS USING 1/2" HEAVY DUTY STAPLES. FILTER FABRIC SHALL BE PLACED IN A CONTINUOUS ROLL TO MINIMIZE THE OCCURRENCE OF JOINTS. WHERE JOINTS CANNOT BE AVOIDED, FABRIC SHALL BE SPLICED TOGETHER AT SUPPORT POSTS, WITH A MINIMUM OF 6 INCH OVERLAP, AND SECURELY SEALED.

ALTERNATELY, A 14 GAUGE WIRE FENCE REINFORCEMENT HAVING A MINIMUM HEIGHT OF 18 INCHES AND A MAXIMUM MESH SPACING OF 6 INCHES MAY BE USED AS A FENCE SUPPORT. IF THE WIRE REINFORCEMENT IS USED, STANDARD STRENGTH SYNTHETIC FILTER FABRIC MAY BE USED AND WOODEN POSTS MAY BE SPACED AT 10 FOOT INTERVALS. THE WIRE REINFORCING SHALL BE BURIED A MINIMUM OF 4 INCHES AND SHALL BE FASTENED TO THE WOODEN POSTS USING 1" HEAVY DUTY STAPLES.

SILT FENCE

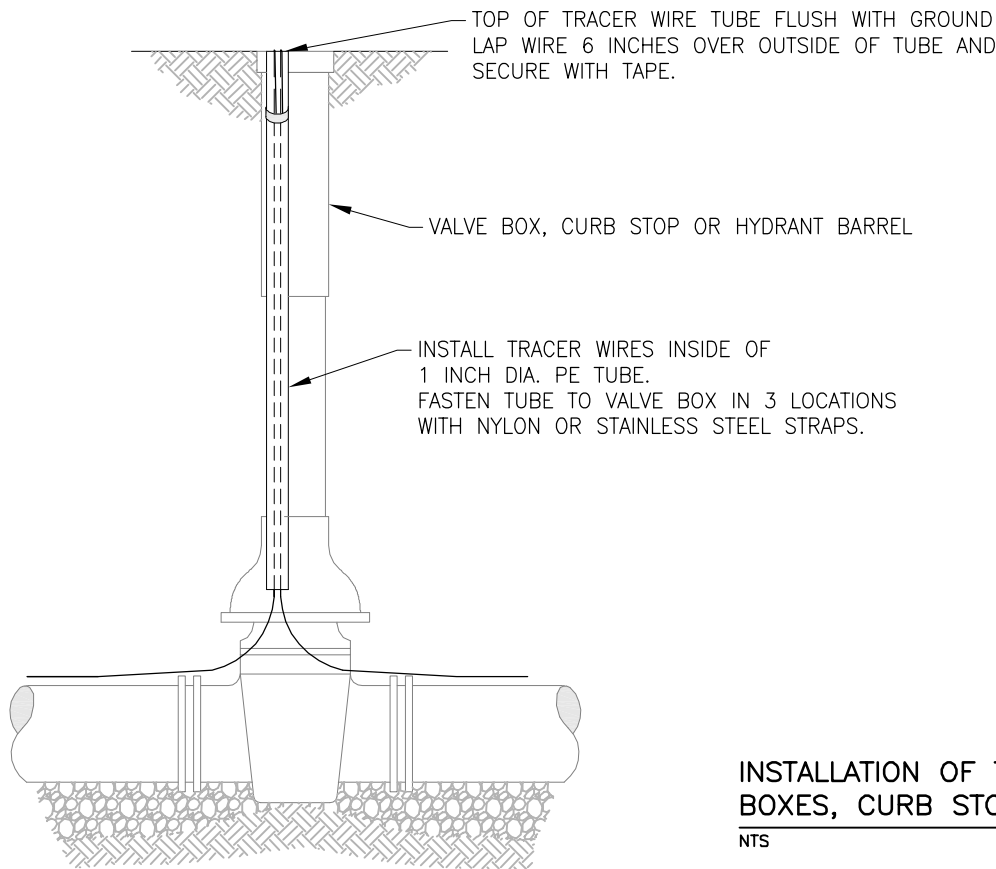
NTS





NOTES:

1. COMPLETE FREE BORE. REMOVE AUGER, AND INSERT CARRIER PIPE W/ SPIGOT END.
2. PROVIDE SINGLE PIECE OF CARRIER PIPE FOR ENTIRE SPAN OF FREE BORE WITH NO JOINTS.

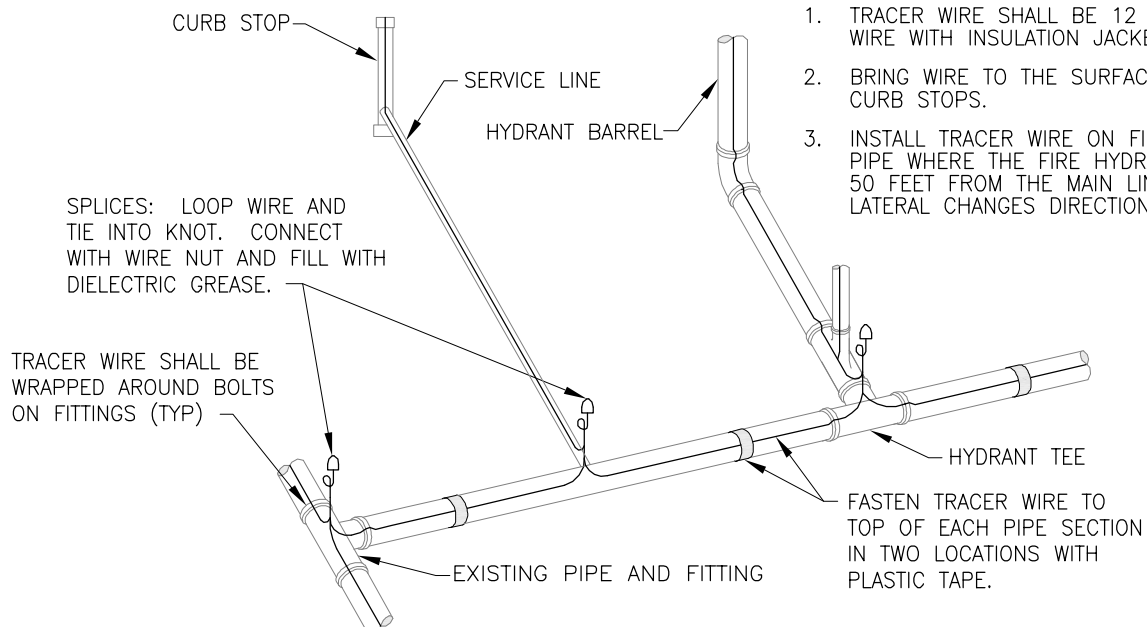


INSTALLATION OF TRACER WIRE AT VALVE BOXES, CURB STOPS & FIRE HYDRANTS

NTS

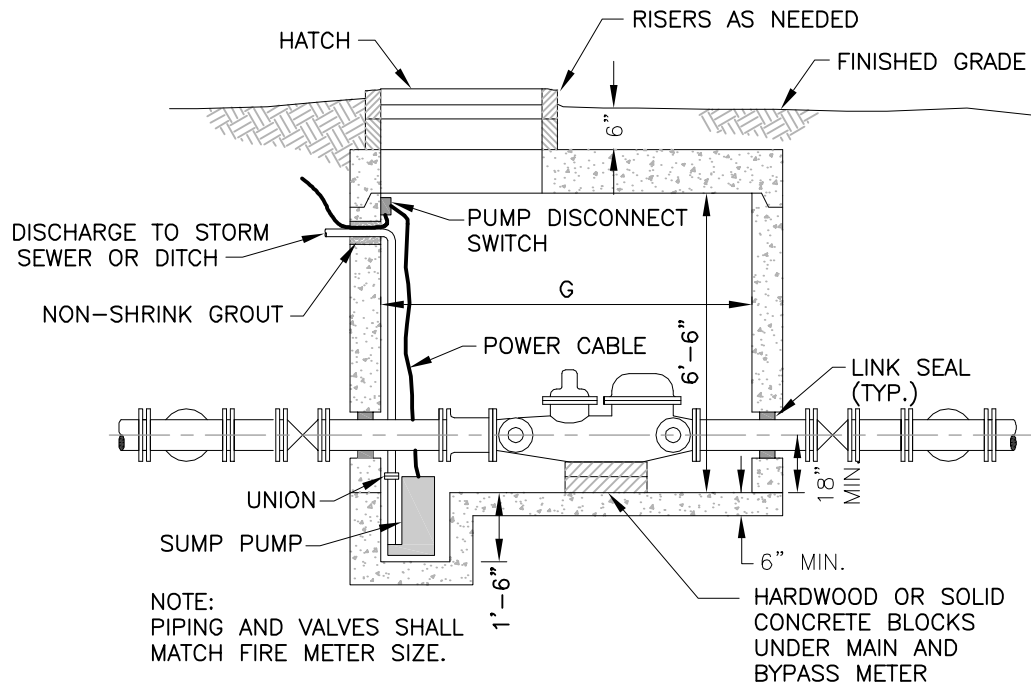
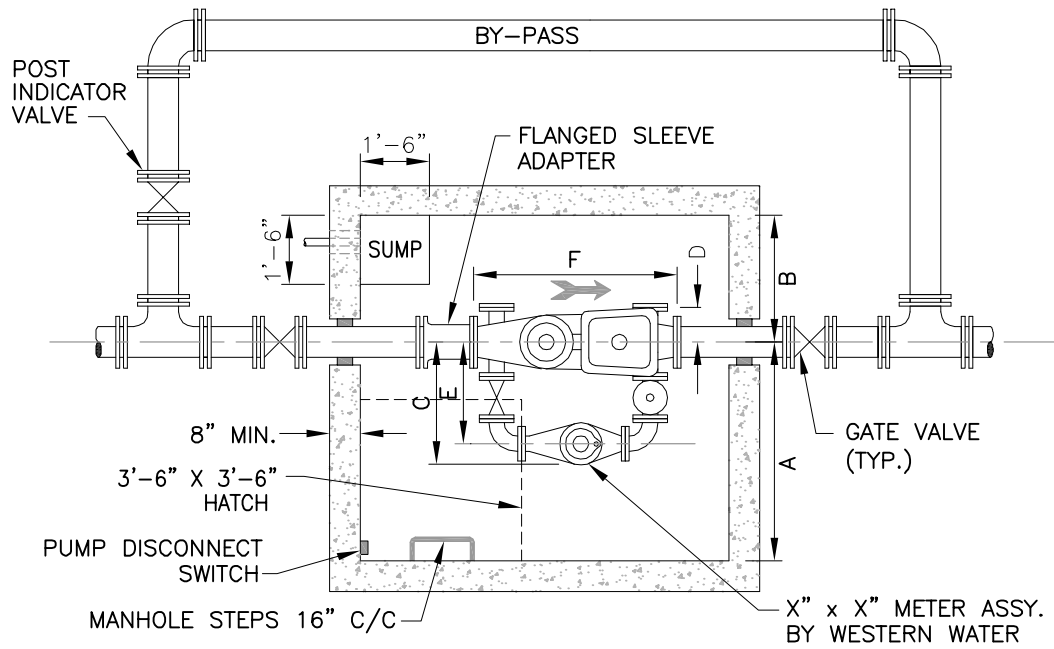
NOTES

1. TRACER WIRE SHALL BE 12 GAUGE SOLID COPPER WIRE WITH INSULATION JACKET.
2. BRING WIRE TO THE SURFACE AT ALL VALVES AND CURB STOPS.
3. INSTALL TRACER WIRE ON FIRE HYDRANT LATERAL PIPE WHERE THE FIRE HYDRANT IS MORE THAN 50 FEET FROM THE MAIN LINE, OR WHEN THE LATERAL CHANGES DIRECTION.



TRACER WIRE DETAIL

NTS

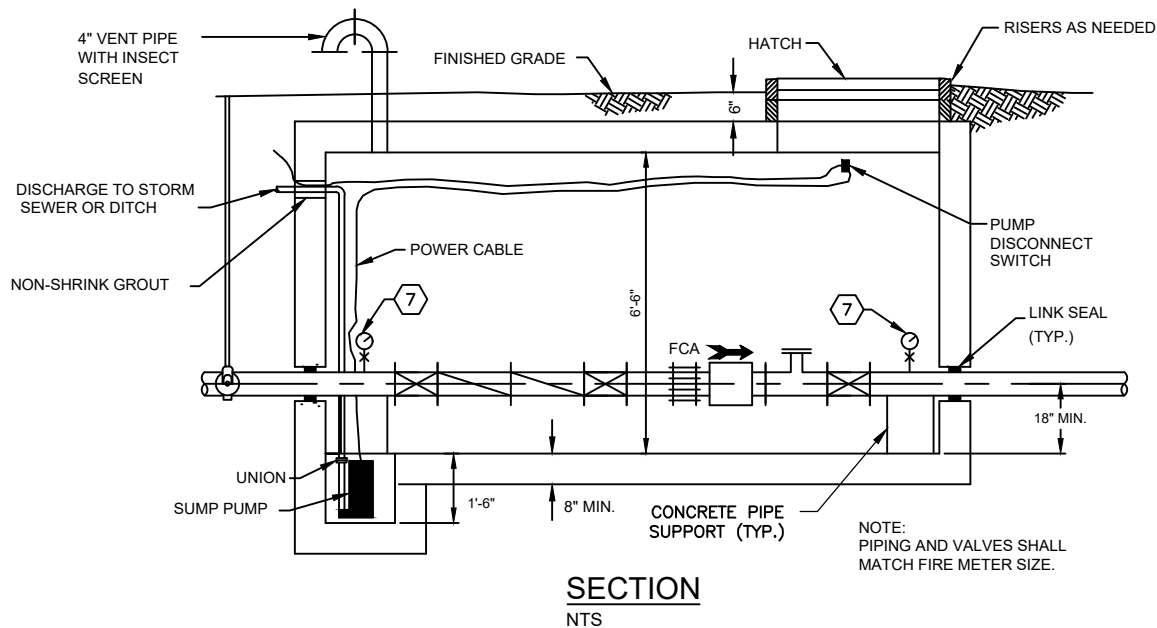
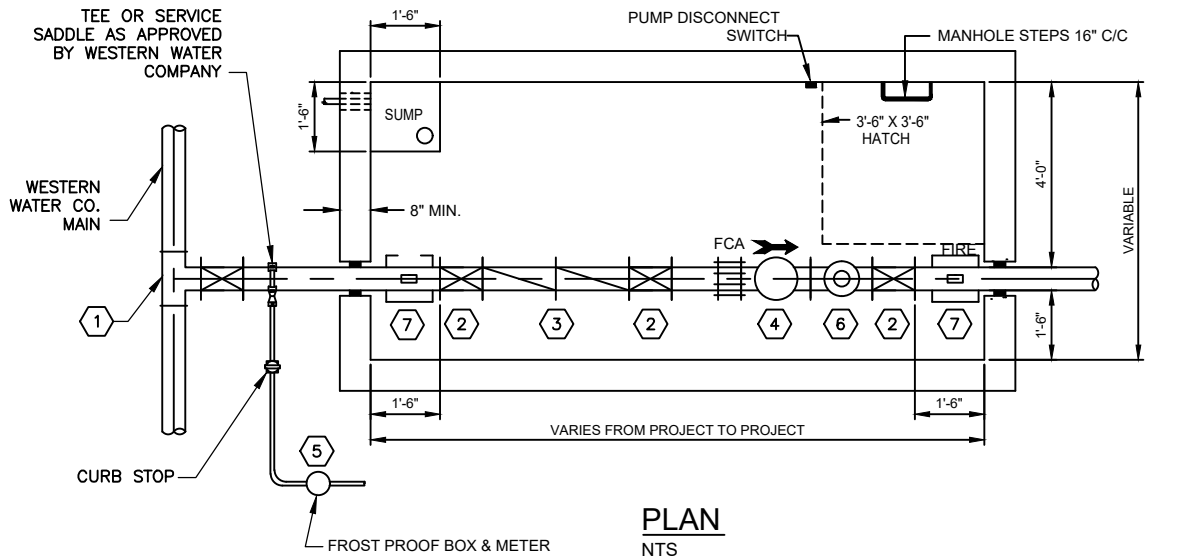


NOTE:
PIPING AND VALVES SHALL
MATCH FIRE METER SIZE.

NOTES:

1. PROVIDE ALL EQUIPMENT AND MATERIALS EXCEPT METER. WESTERN WATER WILL FURNISH METER AT WESTERN WATER'S OFFICE. CONTRACTOR SHALL TRANSPORT THE METER TO THE SITE AND INSTALL IT.
2. PROVIDE ZOLLER MODEL M53 SUMP PUMP WITH FLOAT SWITCH LEVEL CONTROL. POWER TO BE PROVIDED BY PROPERTY OWNER. ALTERNATIVELY, IF GRADING PERMITS, A GRAVITY DRAIN WITH SANITARY CHECK VALVE MAY BE PROVIDED.
3. HATCH SHALL BE BILCO TYPE 'J' WITH LOCKABLE HASP AND STAINLESS STEEL HARDWARE.
4. VAULT SHALL BE WATERTIGHT PRE-CAST OR CAST-IN-PLACE CONCRETE DESIGNED TO SUPPORT AN AASHTO H20 LIVE LOAD.
5. VALVE VAULT, PIPING AND ALL EQUIPMENT SHALL BECOME THE OWNERSHIP OF WESTERN WATER UPON ACCEPTANCE.
6. SUBMIT SHOP DRAWINGS TO WESTERN WATER FOR APPROVAL. INCLUDE ALL MATERIALS OF CONSTRUCTION AND PROVIDE STRUCTURAL DESIGN CERTIFICATION BY AN OHIO REGISTERED PROFESSIONAL ENGINEER.

METER SIZE						
SIZE	3"x 2"	4" x 2"	6"x3"	8"x4"	10"x6"	10"x12"x6"
A	46"	47"	51"	57"	66"	66"
B	30"	31"	32"	33"	38"	38"
C	20 ⁷ / ₈ "	21 ⁷ / ₈ "	26 ³ / ₄ "	32 ⁷ / ₈ "	42"	42"
D	6 ⁶ / ₈ "	7 ⁷ / ₈ "	8 ¹ / ₄ "	10 ³ / ₈ "	13 ¹ / ₂ "	13 ¹ / ₂ "
E	16 ³ / ₄ "	17 ³ / ₄ "	21 ⁵ / ₈ "	26 ¹ / ₂ "	33 ³ / ₄ "	33 ³ / ₄ "
F	33"	33"	45"	53"	68"	68"
G	77"	77"	89"	96"	112"	112"

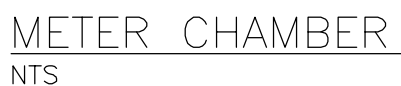


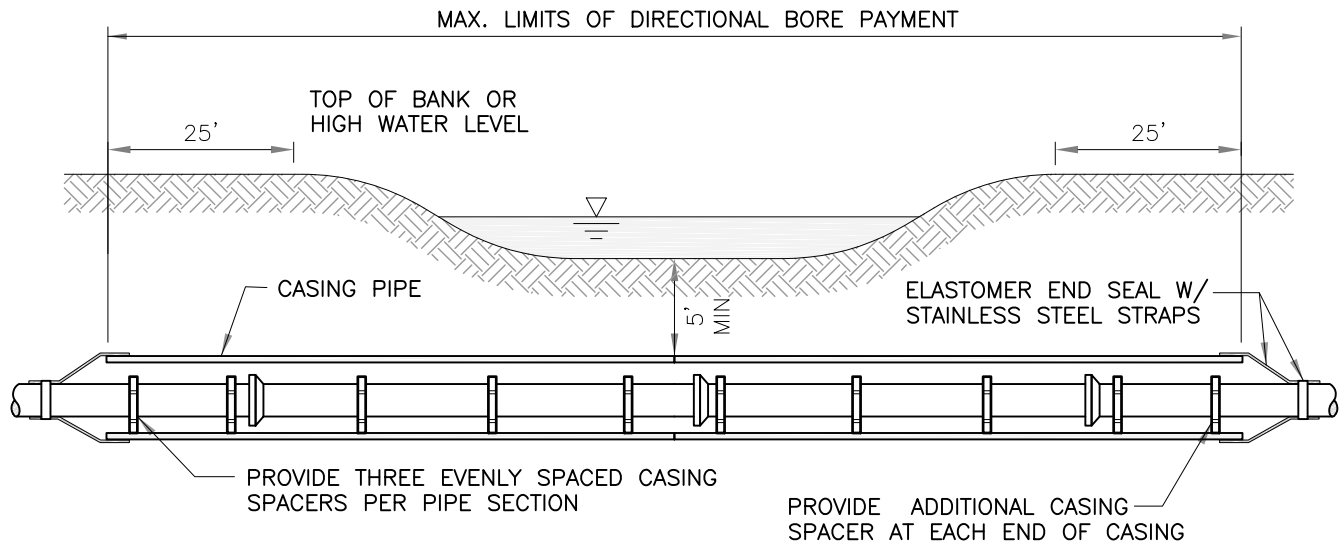
CODED NOTES:

- 1 TAPPING SLEEVE AND BURIED GATE VALVE WITH VALVE BOX AND LID.
- 2 HANDWHEEL GATE VALVE
- 3 DUAL BACKFLOW PREVENTER
- 4 NFPA APPROVED METER
- 5 DOMESTIC METER
- 6 FIRE DEPARTMENT CONNECTION, IF REQUIRED
- 7 PRESSURE GAUGE. ASHCROFT MODEL 1279 ASL, OR EQUAL.

NOTES:

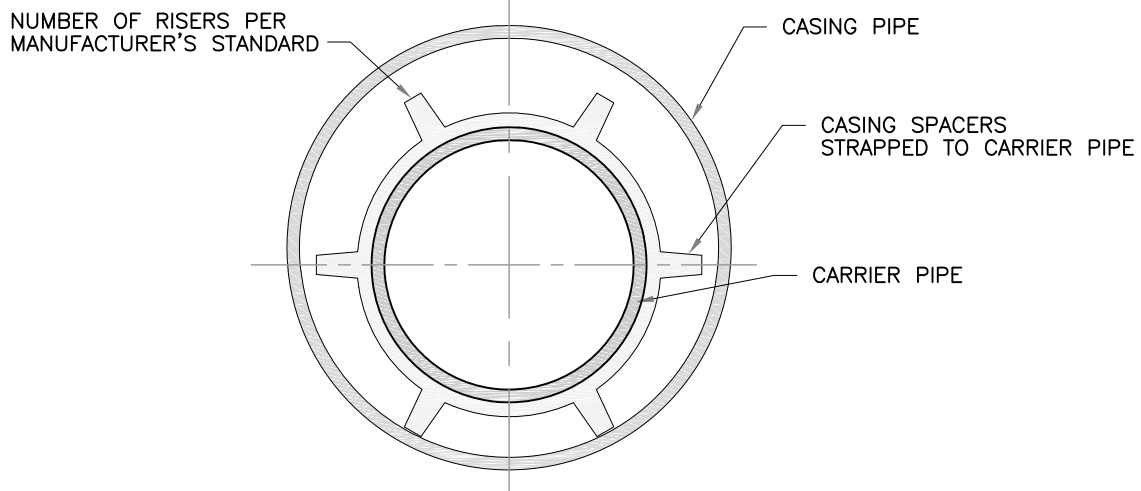
1. CUSTOMER IS RESPONSIBLE TO PROVIDE ALL LABOR, EQUIPMENT, AND MATERIALS (INCLUDING ALL METERS).
2. PROVIDE ZOLLER MODEL M53 SUMP PUMP WITH FLOAT SWITCH LEVEL CONTROL. POWER TO BE PROVIDED BY PROPERTY OWNER. ALTERNATIVELY, IF GRADING PERMITS, A GRAVITY DRAIN WITH SANITARY CHECK VALVE MAY BE PROVIDED.
3. HATCH SHALL BE BILCO TYPE 'J' WITH LOCKABLE HASP AND STAINLESS STEEL HARDWARE.
4. VAULT SHALL BE WATERTIGHT PRE-CAST OR CAST-IN-PLACE CONCRETE DESIGNED TO SUPPORT AN AASHTO H20 LIVE LOAD.
5. VALVE VAULT, PIPING AND ALL EQUIPMENT SHALL BECOME THE OWNERSHIP OF WESTERN WATER UPON ACCEPTANCE.
6. SUBMIT SHOP DRAWINGS TO WESTERN WATER FOR APPROVAL. INCLUDE ALL MATERIALS OF CONSTRUCTION AND PROVIDE STRUCTURAL DESIGN CERTIFICATION BY AN OHIO REGISTERED PROFESSIONAL ENGINEER.
7. ALL PIPE SHALL BE DUCTILE IRON, PRESSURE CLASS 250.





STREAM CROSSING

PROVIDE CASING PIPE FOR ALL STREAM CROSSINGS UNLESS OTHERWISE APPROVED BY WWC. CASING PIPE SHALL BE STEEL PIPE WITH 0.375-INCH WALL THICKNESS. INSIDE DIAMETER OF THE CASING PIPE SHALL NOT EXCEED 3 INCHES OF THE OUTSIDE DIAMETER OF THE CARRIER PIPE AND CASING SPACERS.





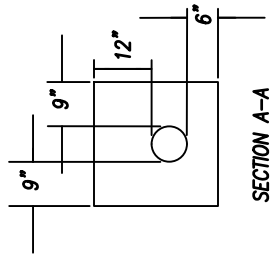
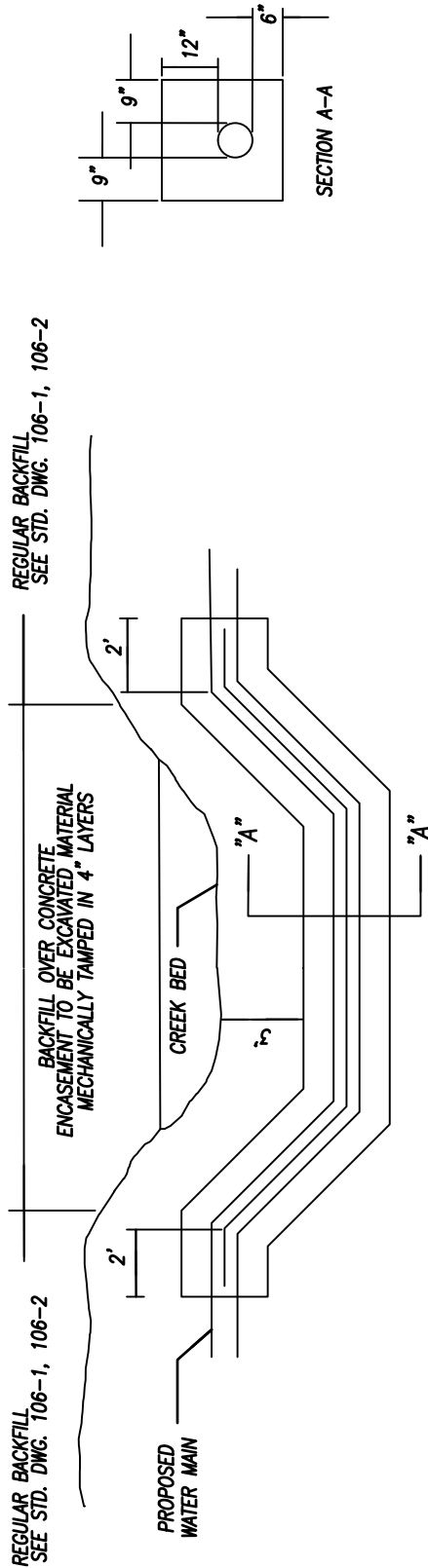
CREEK CROSSING/CONCRETE ENCASEMENT

REVISED
JULY 2022

SCALE
NTS

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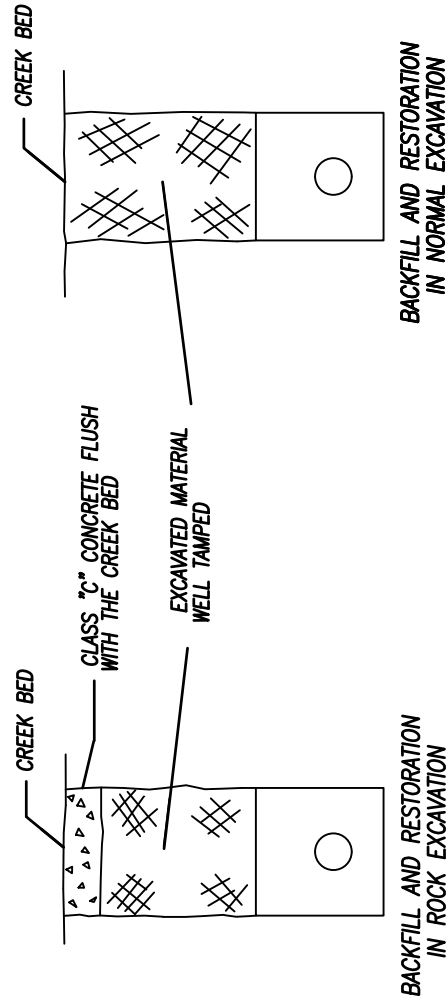
23



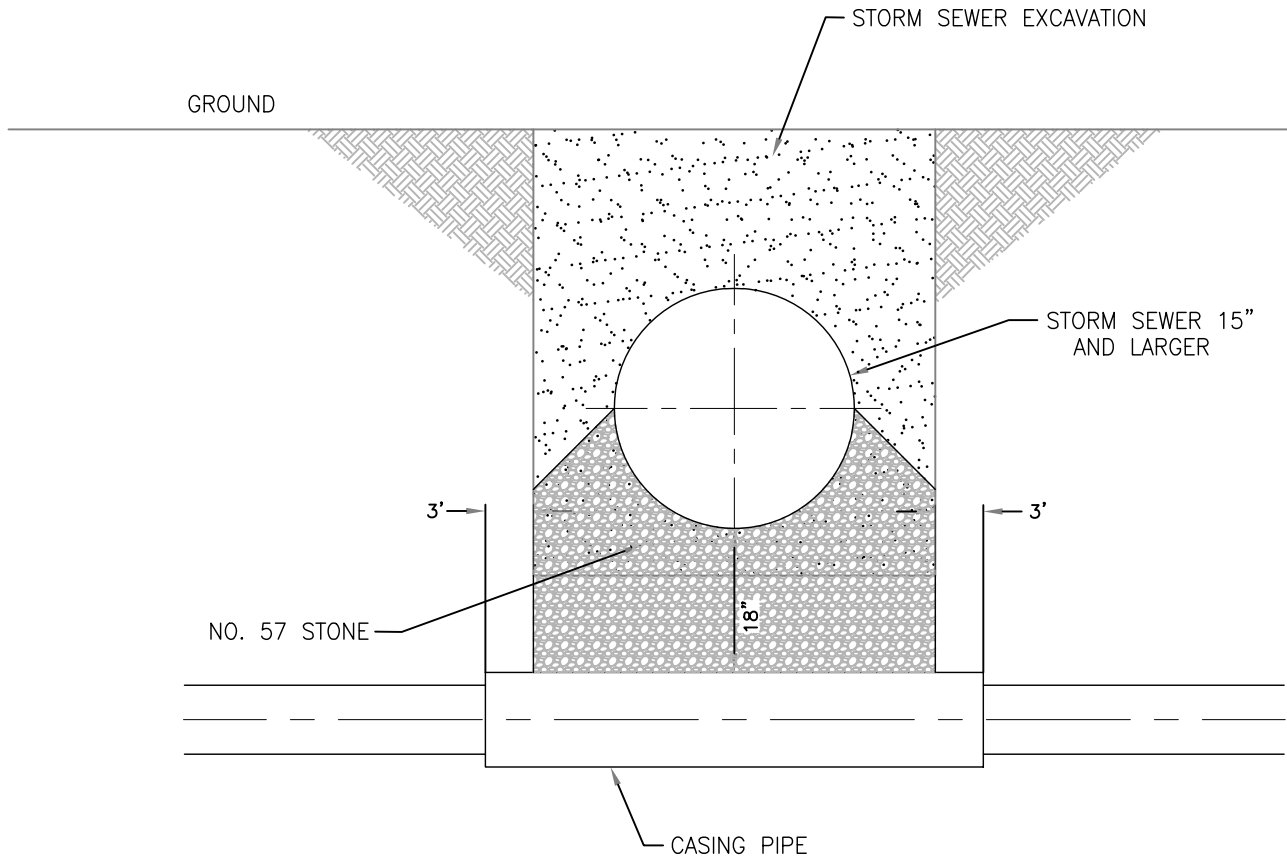
MATERIAL

CONCRETE CLASS "C" - ITEM 1110

INTERMEDIATE GRADE - ITEM 509



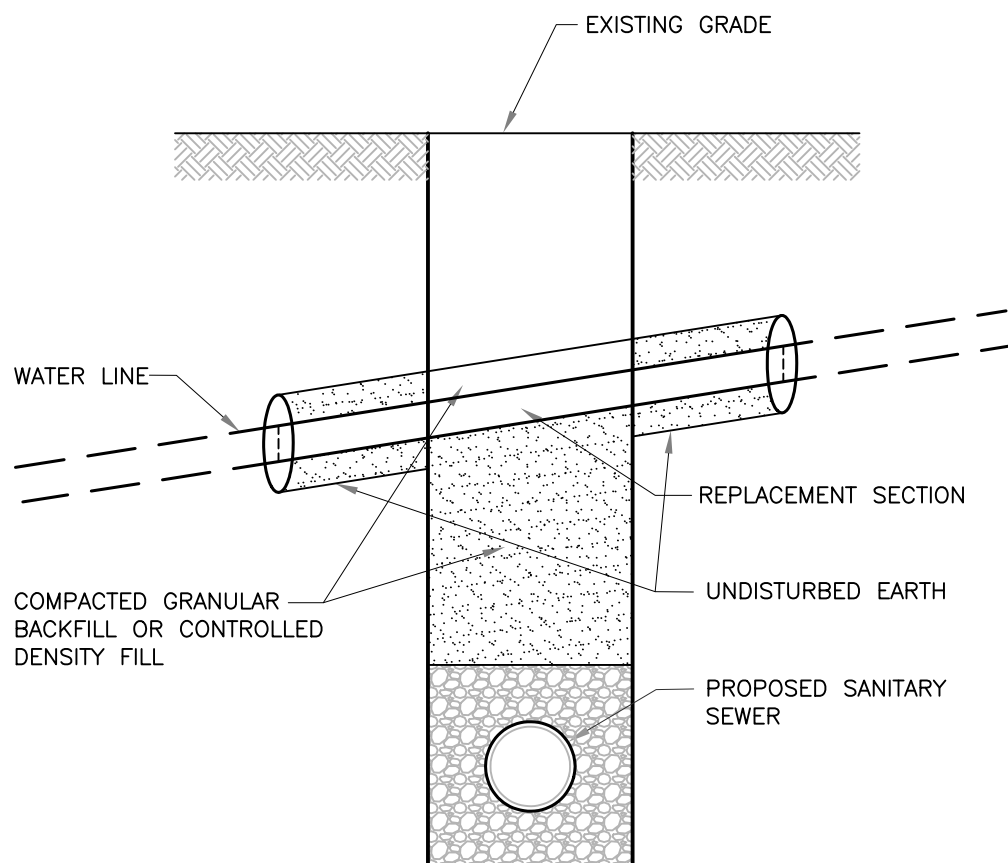
NOTE: 6" CONCRETE PAD TO EXTEND TO WIDTH OF CREEK BED ONLY



NOTES:

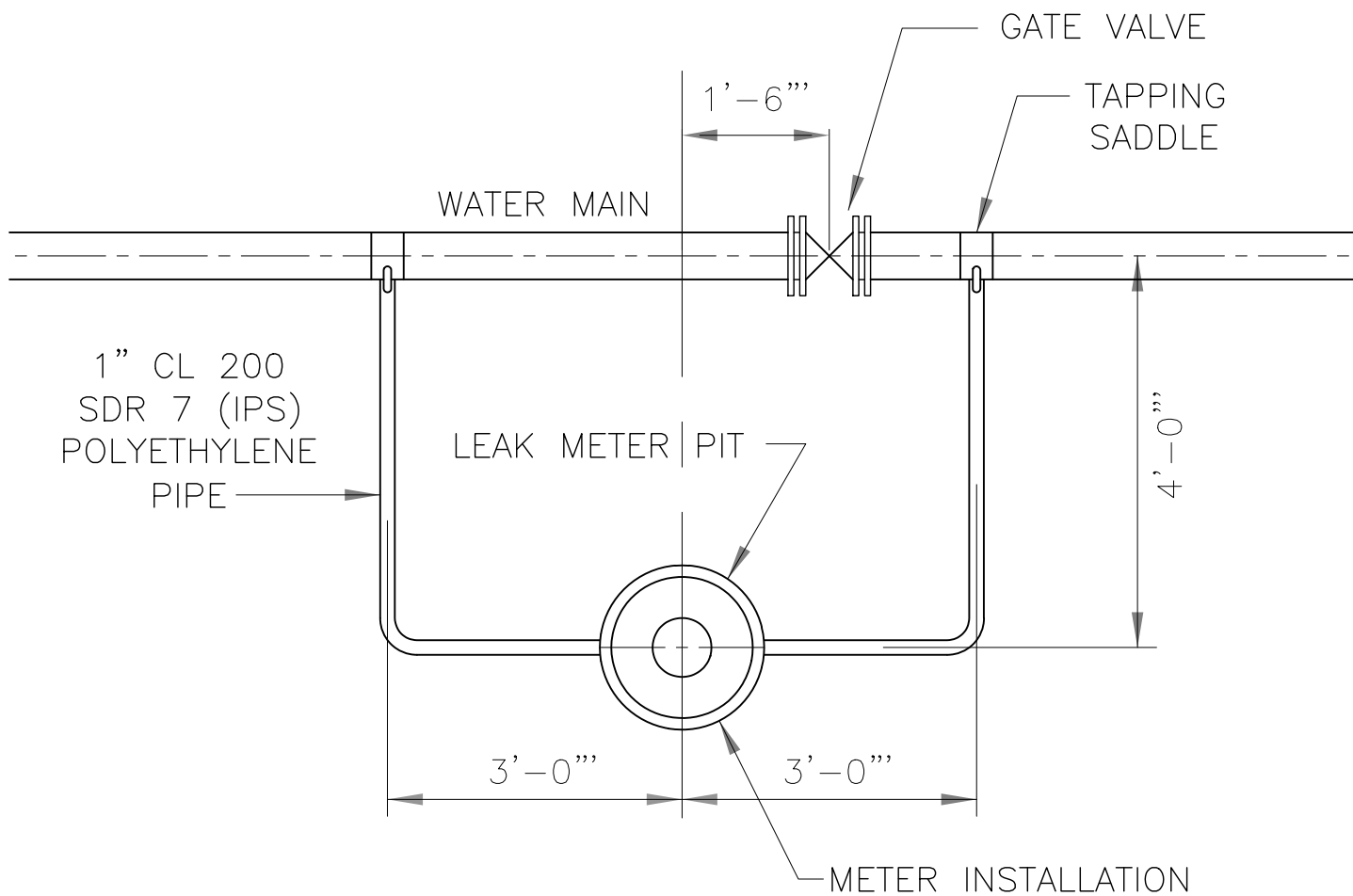
CASING PIPE SHALL BE SDR 26 OR GREATER
AND SHALL BE SIZED SO THAT PIPE CAN BE
EASILY REMOVED IF NECESSARY.

DO NOT INSTALL CASING SPACERS OR END
SEALS.

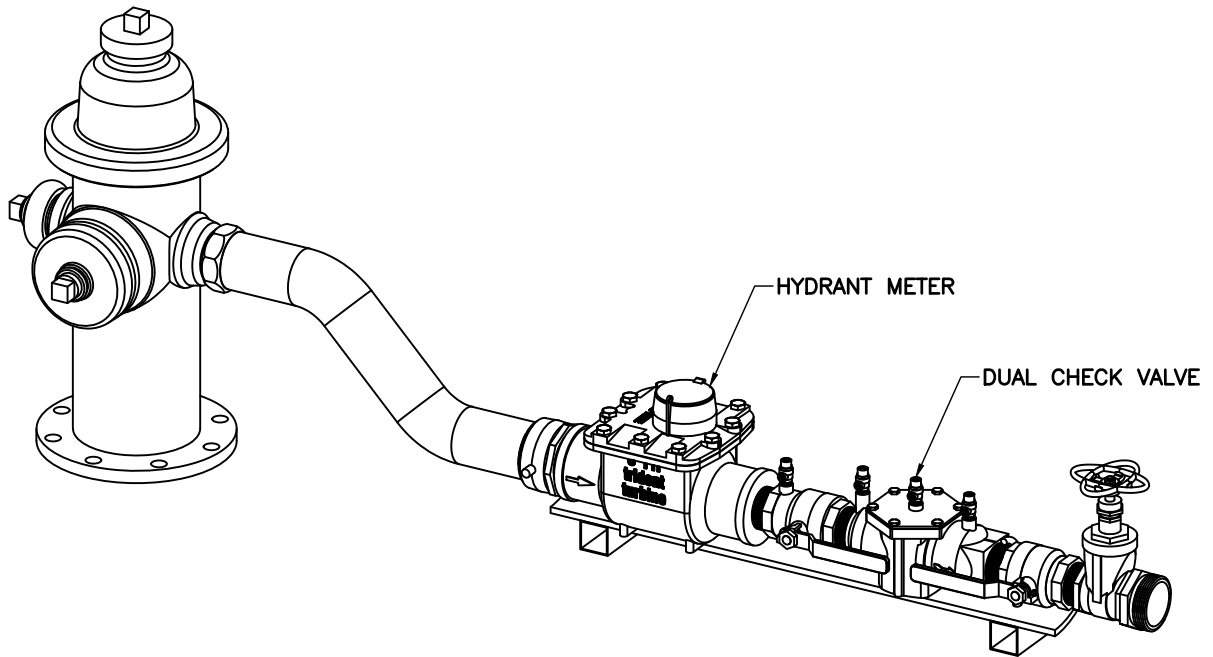


NOTE:

IF THE EXISTING WATER LINE IS DAMAGED OR REMOVED DURING CONSTRUCTION IT SHALL BE REPLACED ACROSS THE SEWER TRENCH SUCH THAT ALL JOINTS ARE ON UNDISTURBED GROUND.



P:\PR31160\cadd\WMC Details\26 - LEAK METER DETAIL.dwg 7/20/2022 12:52:14 PM Chris Bowers



CALL WESTERN WATER CO. FOR AVAILABILITY.
DEPOSIT IS REQUIRED.