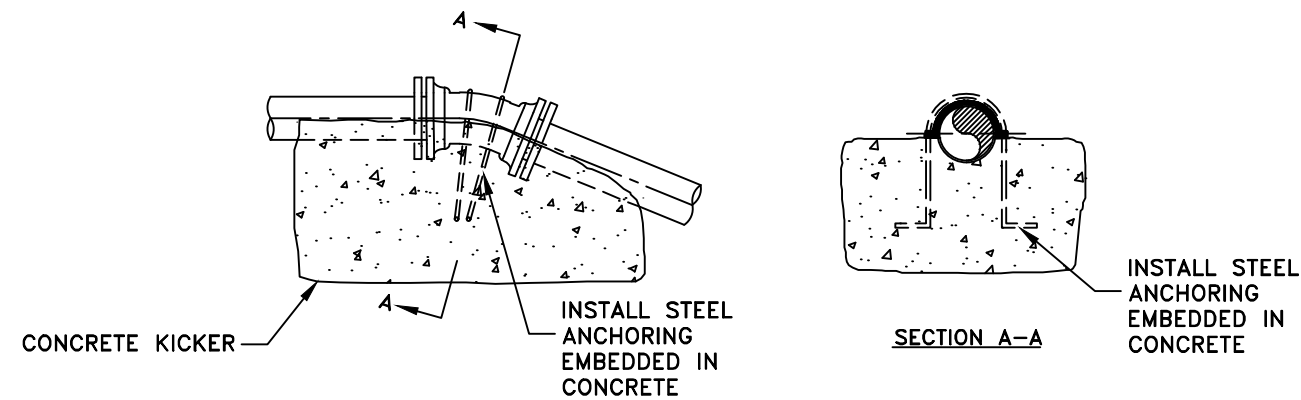
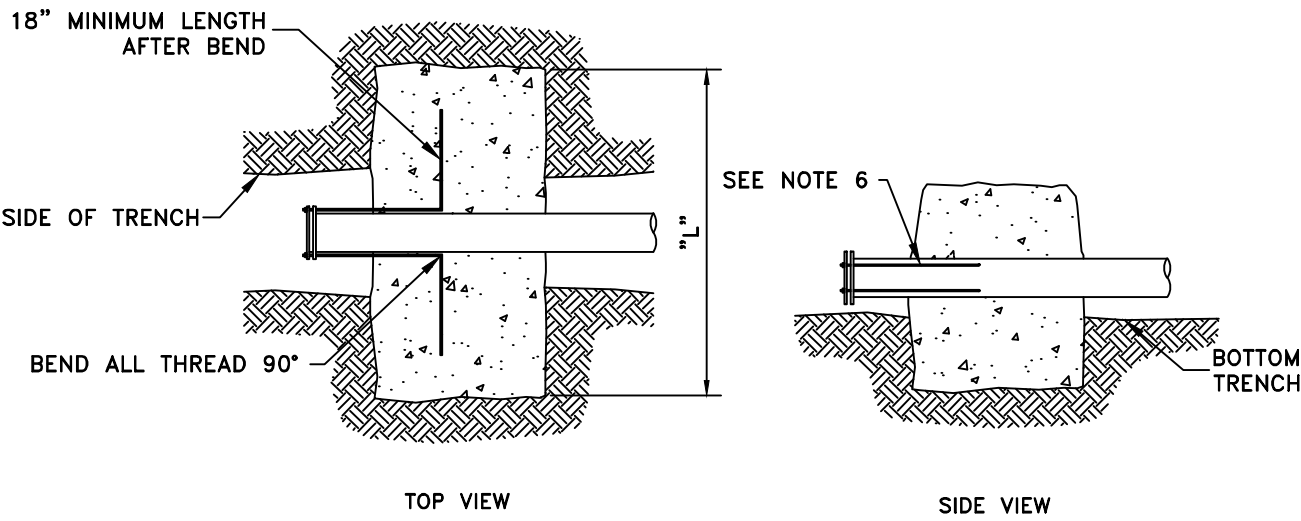
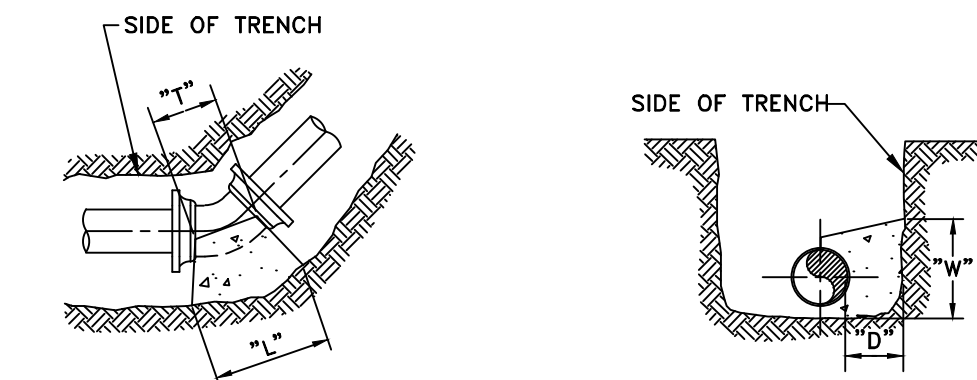




VERTICAL BEND PIPE ANCHOR DETAIL

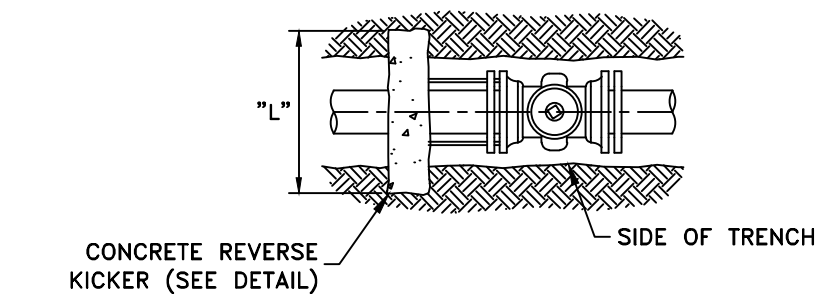
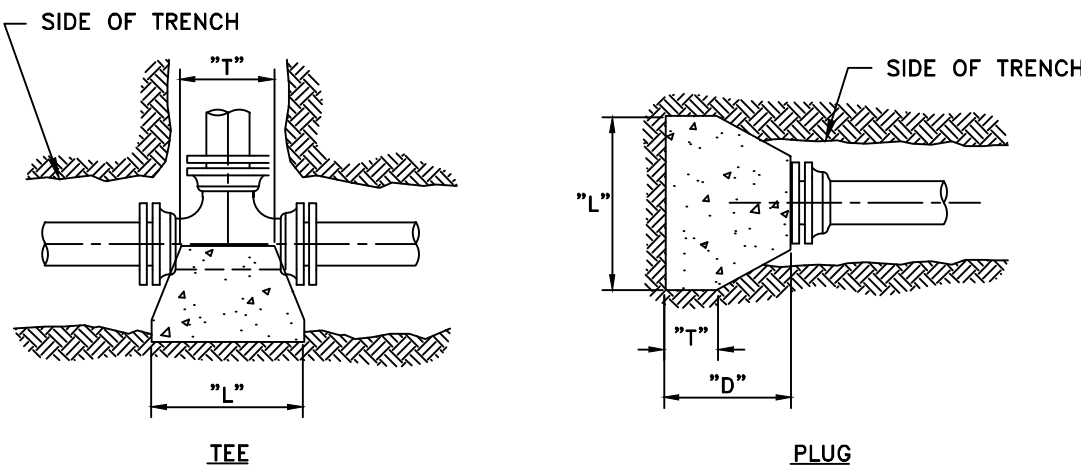


CONCRETE REVERSE KICKER (DEADMAN) DETAIL



TYPICAL ALL BENDS

TYPICAL SECTION



VALVES AT END OF LINE

- NOTES:
- 1.) ALL FITTINGS SHALL BE EPOXY COATED
 - 2.) ALL FITTINGS SHALL INCLUDE ROMAC RESTRAINT GLAND AND GRIP RINGS.
 - 3.) CONCRETE THRUST BLOCKS TO BE POURED AGAINST UNDISTURBED EARTH.
 - 4.) PLASTIC BARRIER SHALL BE PLACED BETWEEN ALL CONCRETE AND PIPE AND/OR FITTINGS.
 - 5.) ANCHOR BAR SHALL BE 5/8" MINIMUM DIAMETER.
 - 6.) RODDING FOR A CONCRETE REVERSE KICKER SHALL BE AS FOLLOWS: ≤4" USE 2 RODS, 6"-10" USE 4 RODS & ≥12" PER ENGINEER.
 - 7.) FITTINGS SHALL BE INSTALLED AS REQUIRED PER WCWD INSPECTOR.

90° BENDS													
SIZE	2	4	6	8	10	12	14	16	18	20	24	30	
"D"	6	8	8	10	12	14	22	22	24	24	30	30	
"L"	16	20	24	30	32	34	68	68	80	80	96	120	
"W"	8	10	12	18	22	24	34	34	40	40	48	60	
"T"	10	12	16	20	22	22	38	38	40	40	44	52	

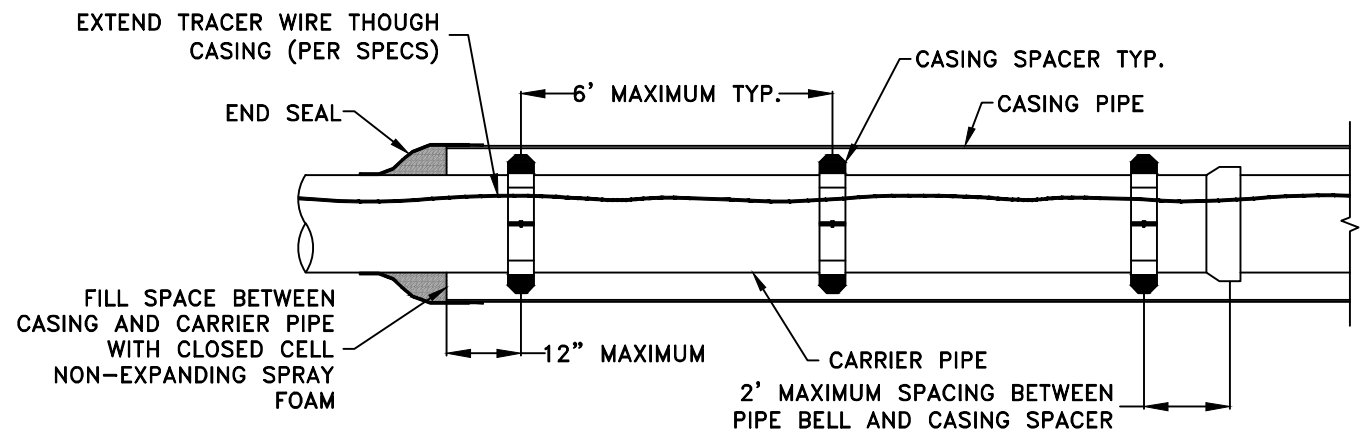
45° BENDS													
SIZE	2	4	6	8	10	12	14	16	18	20	24	30	
"D"	6	6	8	10	12	12	22	22	24	24	30	30	
"L"	14	18	18	22	24	24	51	51	60	60	72	90	
"W"	8	10	12	16	18	18	25	25	29	29	36	44	
"T"	10	12	16	18	18	18	38	38	40	40	44	52	

22 1/2" & 11 1/4" BENDS													
SIZE	2	4	6	8	10	12	14	16	18	20	24	30	
"D"	6	10	14	18	20	20	22	22	24	24	30	30	
"L"	20	24	28	28	28	28	36	36	42	42	54	66	
"W"	18	20	22	24	24	24	18	18	21	21	24	31	
"T"	12	14	16	18	18	18	38	38	40	40	44	52	

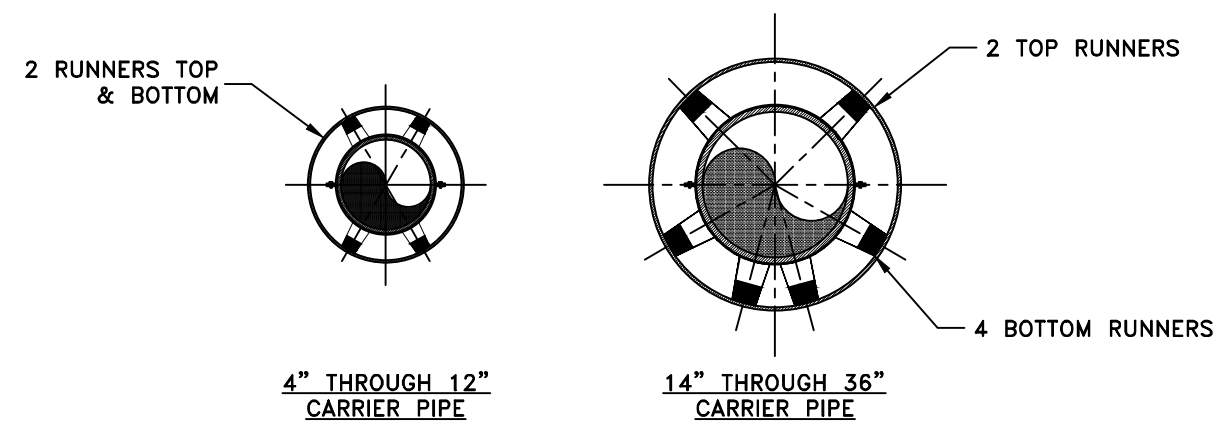
TEES, PLUGS & BLOWOFFS													
SIZE	2	4	6	8	10	12	14	16	18	20	24	30	
"D"	12	16	18	24	28	30	30	30	30	30	36		
"L"	12	16	18	24	28	30	60	60	72	72	84	102	
"W"	14	16	18	18	22	24	28	28	32	32	40	51	
"T"	10	10	12	12	12	12	38	38	40	40	44	52	

*ALL DIMENSIONS ARE IN INCHES

MINIMUM CONCRETE BLOCKING FOR PIPE & FITTINGS



CASING SIDE VIEW DETAIL



CASING END VIEW DETAIL

CARRIER TYPE AND CASING PIPE SIZES (MIN) IN INCHES													
CARRIER PIPE NOM. DIA. (D1)	6	8	10	12	15	18	21	24	30				
CASING PIPE NOM. DIA. (D2)	12	16	16	20	22	24	30	36	42				
WALL THICKNESS	0.375	0.375	0.375	0.375	0.375	0.500	0.500	0.500	0.625				

CASING SCHEDULE

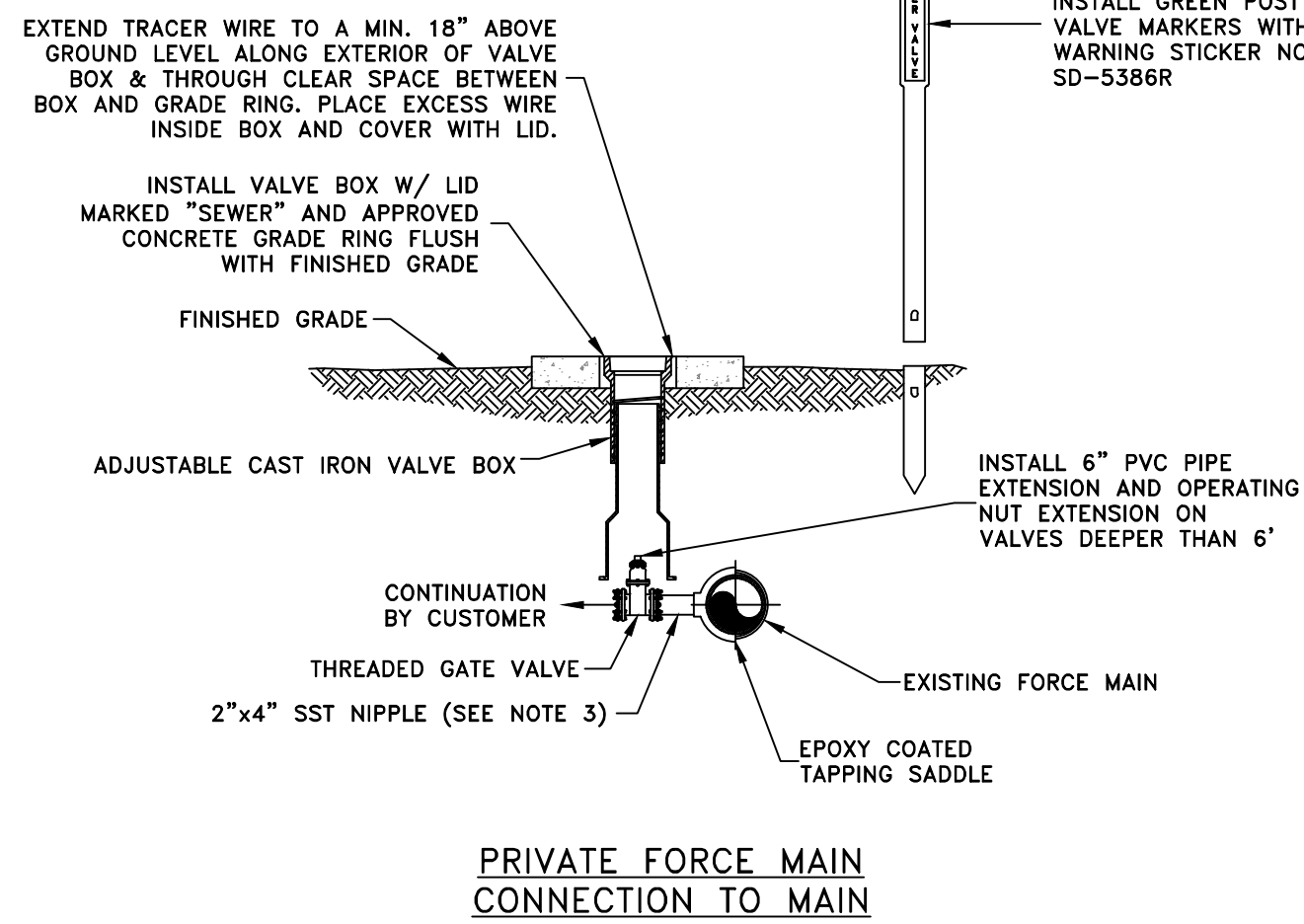
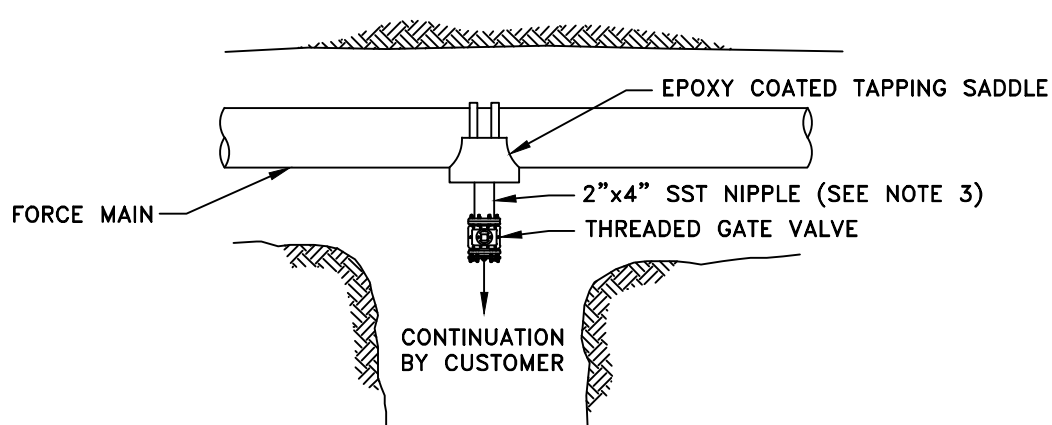
NOTES

1. MINIMUM COVER AT LOWEST POINT IN RIGHT OF WAY SHOULD BE 4' TO TOP OF CASING WITHIN KYTC AND COUNTY ROADWAY RIGHT-OF-WAY AND 5' TO TOP OF CASING WITHIN RAILROAD RIGHT-OF-WAY.
2. ALL CASINGS SHALL EXTEND THROUGH RIGHT OF WAY.
3. THE INSIDE DIAMETER OF THE CASING PIPE SHALL BE A MINIMUM OF 4 INCHES GREATER THAN THE OUTSIDE DIAMETER OF THE CARRIER PIPE BELL OR COUPLING.
4. FOR CASINGS OVER 50 FEET IN LENGTH, ALL CARRIER PIPE SHALL BE DUCTILE IRON PIPE AND HAVE MECHANICAL RESTRAINED JOINTS.
5. STAINLESS STEEL SPACERS SHALL BE USED FOR ALL DUCTILE IRON PIPE OR ANY PIPE 12" IN DIAMETER AND LARGER.
6. PIPE TO BE USED AS A CASING SHALL CONFORM TO ASTM A252 STANDARD SPECIFICATION FOR WELDED & SEAMLESS STEEL PIPE PILES WITH A MINIMUM YIELD STRENGTH OF 35,000 PSI

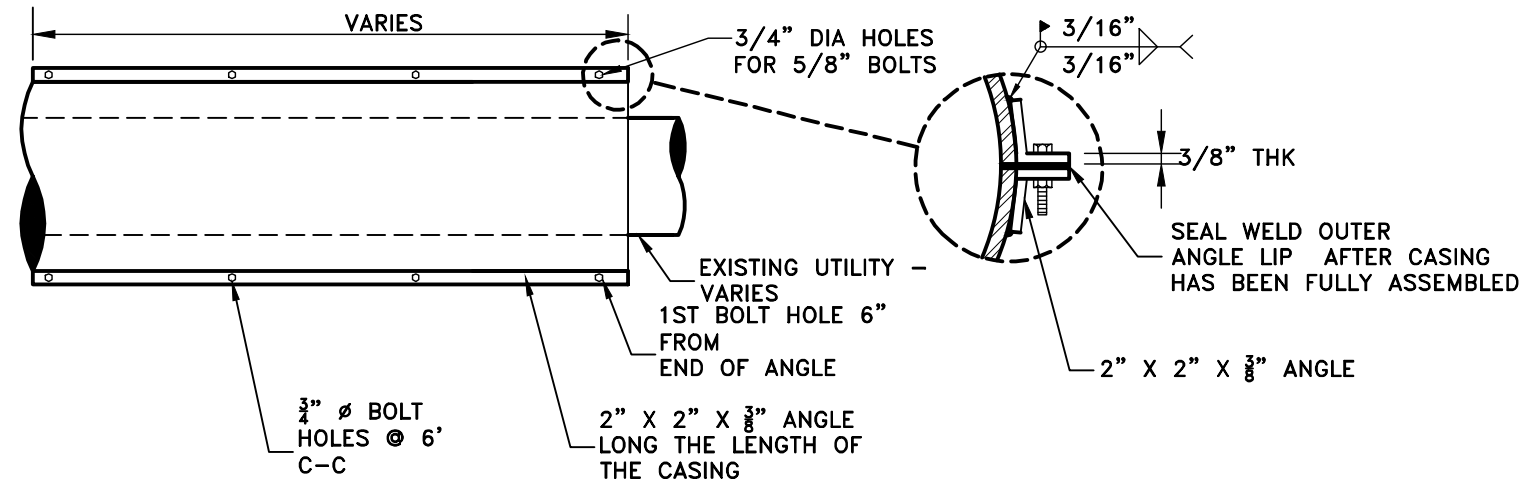
TYPICAL CASING DETAIL - SEWER

NOTES:

- 1.) VALVE INSTALLATIONS SHALL BE BEDDED AND BACKFILLED WITH CRUSHED STONE.
- 2.) PRIVATE FORCE MAIN PUMP SHALL BE DESIGNED TO OVERCOME PRESSURE NEEDED TO OPEN BACKFLOW PREVENTER.
- 3.) TAPPING SADDLE SIZE IS BASED ON THE DIAMETER OF THE PUBLIC FORCE MAIN, IF PRIVATE FORCE MAIN IS GREATER THAN 2" IN DIAMETER, CONSULT WITH WSB.



PRIVATE FORCE MAIN CONNECTION TO MAIN



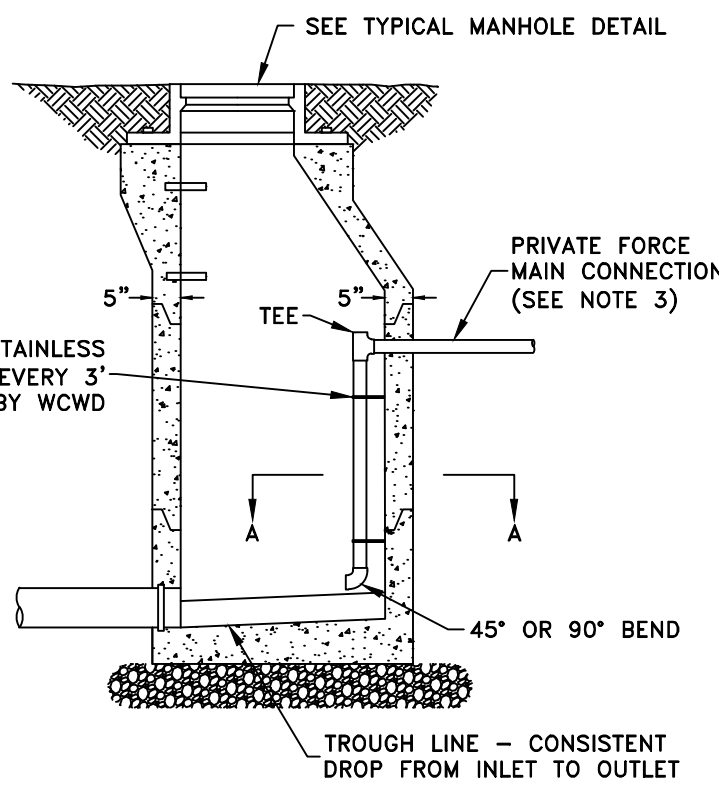
NOTES

1. SPLIT CASINGS ARE INTENDED FOR OPEN CUT INSTALLATIONS ONLY AND PRIMARILY FOR PROTECTING EXISTING UTILITIES.
2. SPLIT CASING WILL NOT BE ACCEPTABLE FOR BORE AND JACK INSTALLATIONS.
3. CASING SPACERS SHALL BE PROVIDED AS SPECIFIED FOR TYPICAL CASING INSTALLATIONS.
4. SIZING AND SPACER CONFIGURATION PER TYPICAL CASING DETAIL.

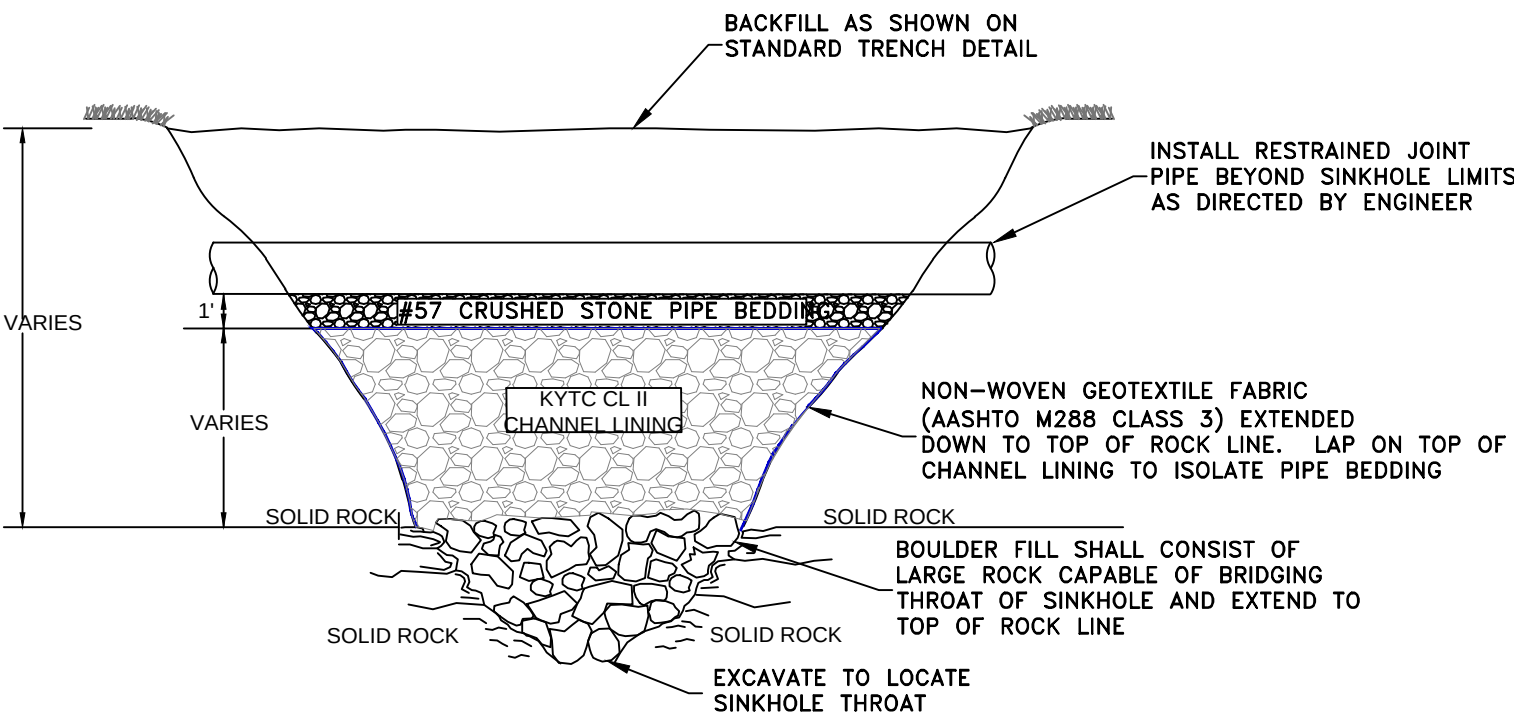
TYPICAL SPLIT CASING DETAIL

NOTES:

- 1.) WHILE INSTALLING NEW SEWER MAINS, THE PROPOSED SEWER SHALL REMAINED PLUGGED TO PREVENT INFILTRATION TO EXISTING SEWER UNTIL ACCEPTED BY WCWD.
- 2.) INTERNAL DROP CONNECTIONS ARE NOT ALLOWED ON FORCE MAIN DIAMETERS GREATER THAN 2". FOR LARGER FORCE MAIN CONNECTIONS, REFER TO EXTERNAL DROP MANHOLE DETAIL.
- 3.) IF THE MANHOLE BEING CORED IS DOWNSTREAM OF ANOTHER MANHOLE, TIE THE INTERNAL DROP INTO THE STRUCTURE OFFSET RADIALLY FROM THE INLET PIPE AND GROUT BOTTOM OF MANHOLE TO INTERCEPT FLOW.



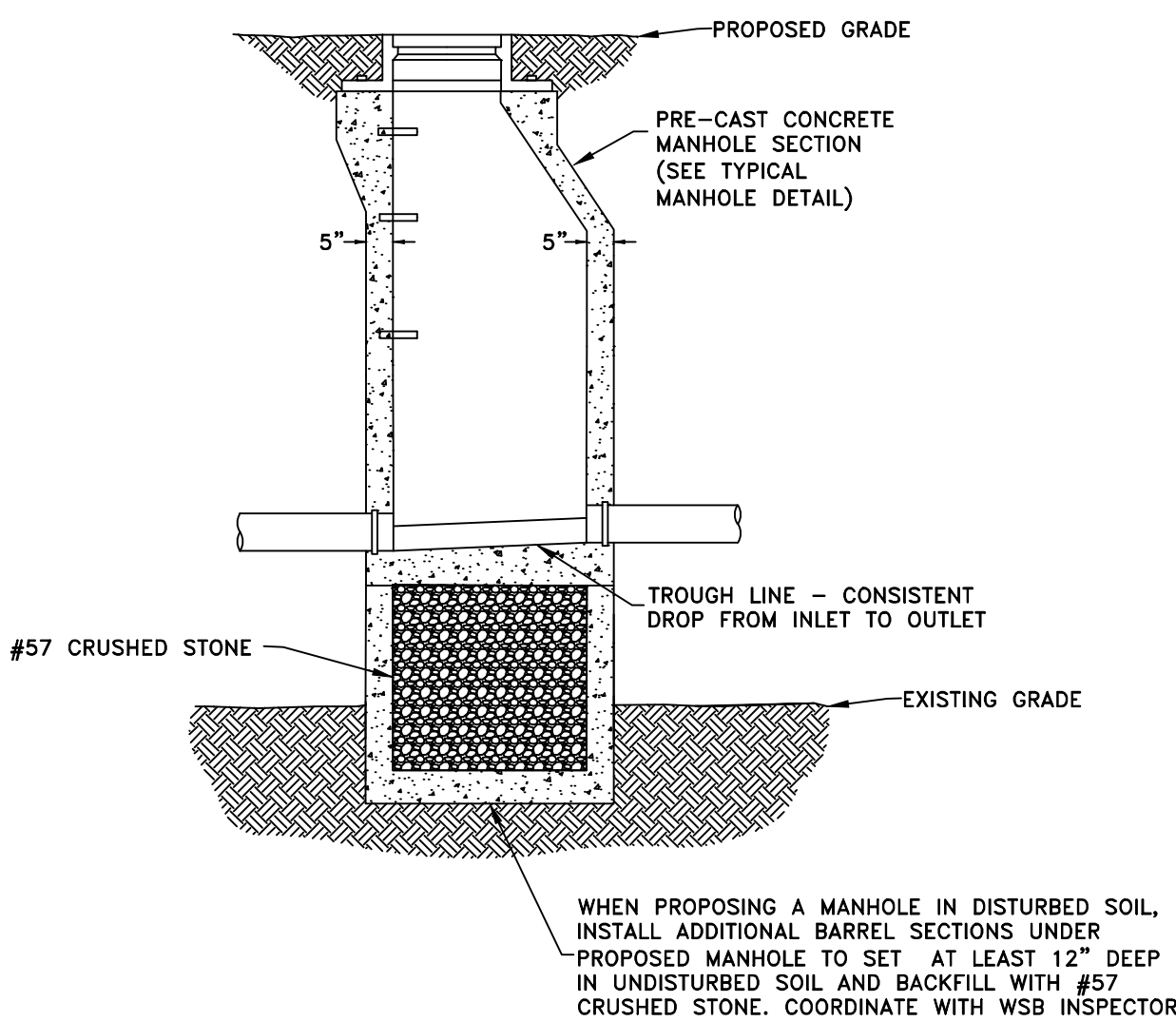
INTERNAL DROP MANHOLE (FOR USE WHERE SPECIFIED ON PLANS)



SINK HOLE REPAIR

NOTES:

- 1.) ALTERNATIVELY, DIG DOWN INTO EXISTING SOIL AND POUR CONCRETE UP TO 1' OF THE PROPOSED BOTTOM OF THE MANHOLE. USE #57 CRUSHED STONE TO ESTABLISH GRADE FOR STRUCTURE.



MANHOLE INSTALLED IN DISTURBED SOIL