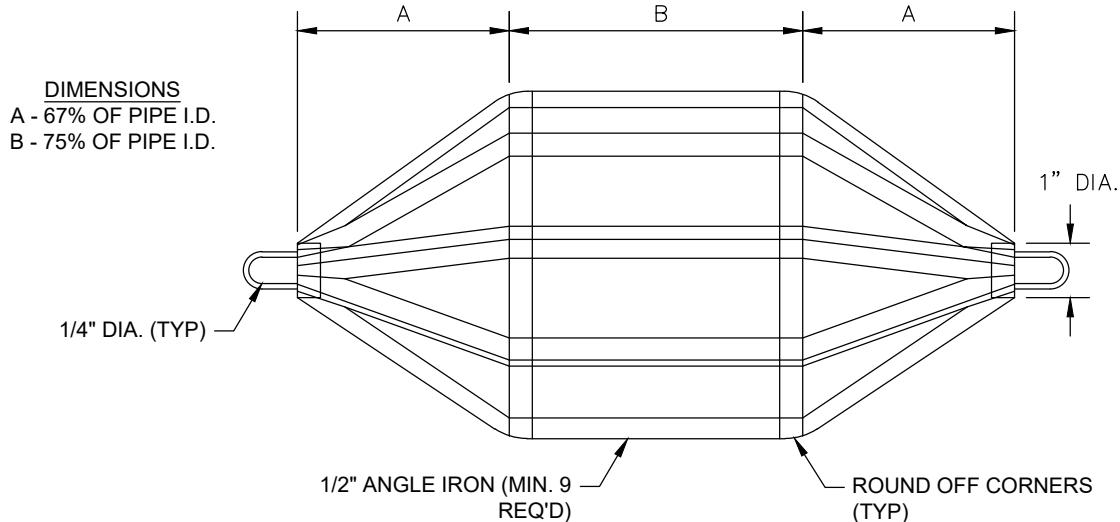


END VIEW



SIDE OR TOP VIEW

SIZE	A	B	MANDREL O.D.		RING O.D.	
			PVC (SDR-35)	PVC (SDR-26)	PVC (SDR-35)	PVC (SDR-26)
6"	4.0"	4.5"	5.62	5.50	4.91	4.79
8"	5.5"	6"	7.52	7.37	6.81	6.66
10"	7.0"	7.5"	9.41	9.21	8.70	8.50
12"	8.0"	9"	11.19	10.96	10.48	10.25
15"	10.0"	11"	13.70	13.42	12.99	12.71
18"	12.0"	13.5"	16.75	-	16.04	-
21"	14.0"	16"	19.74	-	19.03	-
24"	16.0"	18"	22.21	-	21.50	-
27"	18.0"	20"	25.03	-	24.32	-

*MINIMUM LENGTH

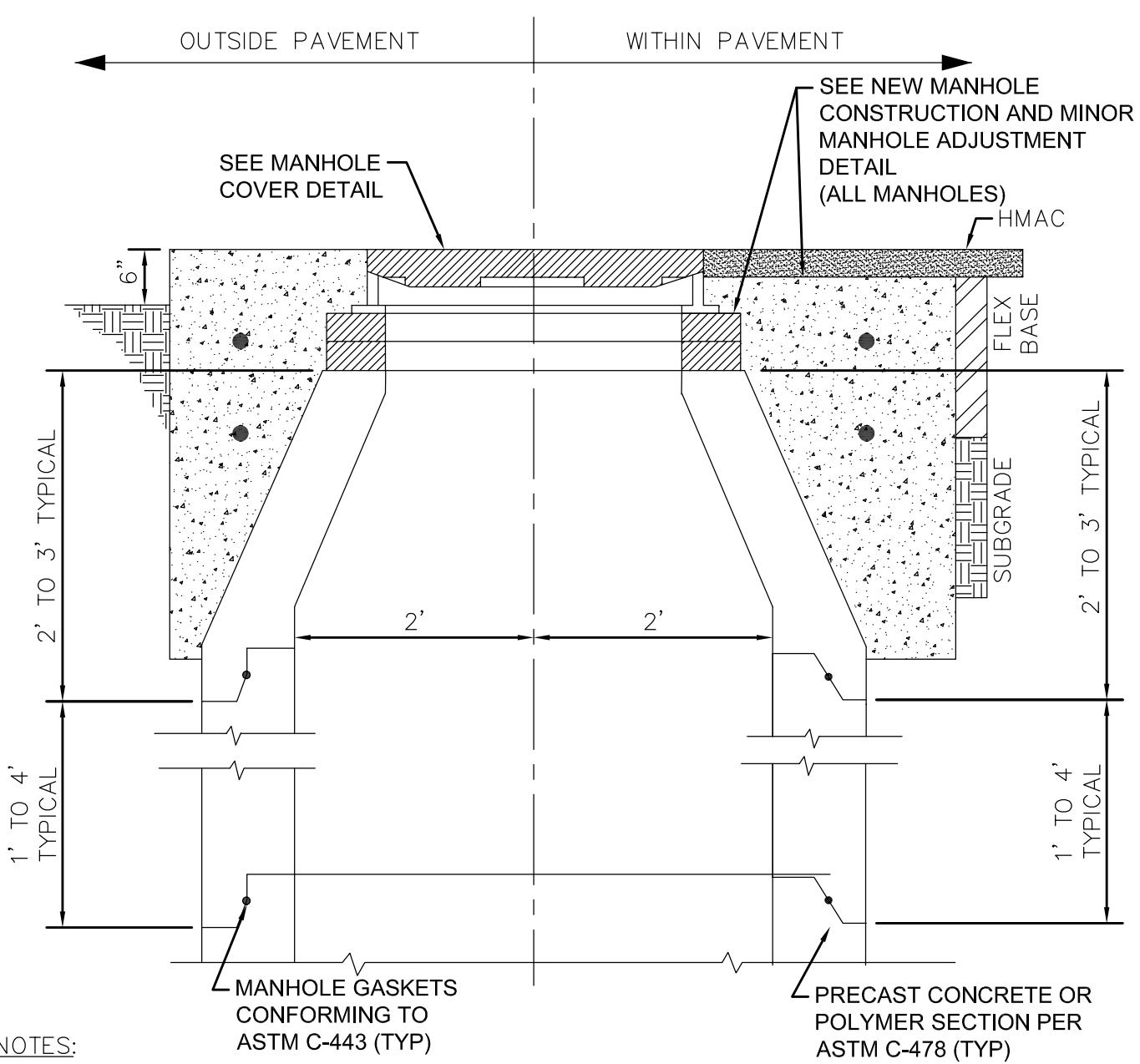
CHART

MANDREL REQUIREMENTS:

1. O.D. NOT LESS THAN 95% OF THE I.D. OF THE PIPE, AS SPECIFIED BY THE ASTM, AWWA, UNI-BELL OR ANSI.
2. ABLE TO WITHSTAND 200 PSI WITHOUT BEING DEFORMED.
3. ODD NUMBER OF RUNNERS OR LEGS.

*THIS INFORMATION IS PROVIDED AS A REFERENCE. ALL DEFLECTION TESTING SHALL BE DONE IN ACCORDANCE WITH TCEQ CHAPTER 217.



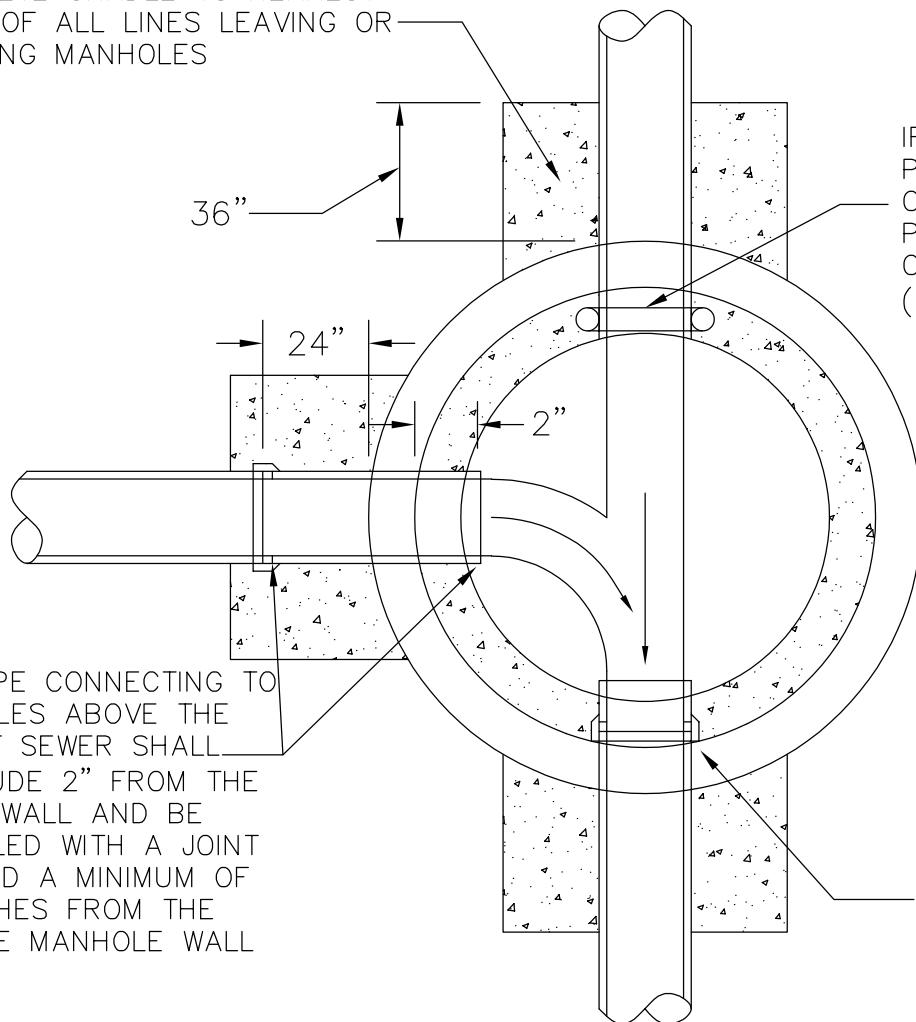


NOTES:

1. MANHOLE SECTIONS TEMPORARILY REMOVED FOR ROADWAY CONSTRUCTION MAY BE REUSED ONLY WITH THE WRITTEN APPROVAL OF THE INSPECTOR. GASKETS SHALL NOT BE REUSED.
2. ANY COMBINATION OF REMOVING THE CONCRETE RINGS, AND / OR THE MANHOLE CONE, AND/OR THE STRAIGHT RISER SECTION OF THE MANHOLE SHALL BE ACCEPTABLE TO TEMPORARILY LOWER THE MANHOLE GRADE FOR ROADWAY RECONSTRUCTION.
3. WHILE THE MANHOLE IS TEMPORARILY LOWERED, A SHEET OF STEEL SUITABLE TO SUPPORT ALL IMPOSED LOADS SHALL BE USED TO COVER THE OPENING. THE STEEL PLATE SHALL BE SET IN MORTAR TO PREVENT LEAKAGE.
4. SUBGRADE AND BASE MATERIALS SHALL BE COMPACTION TO 95% AND 100% DENSITIES, RESPECTIVELY, COMPACTION SHALL BE BY MECHANICAL TAMPING TO THE DENSITIES SPECIFIED.
5. MANHOLE SHALL BE SET SO RING AND COVER MATCH STREET SLOPE.



CONCRETE CRADLE TO NEAREST
POINT OF ALL LINES LEAVING OR
ENTERING MANHOLES



THE PIPE CONNECTING TO
MANHOLES ABOVE THE
LOWEST SEWER SHALL
PROTRUDE 2" FROM THE
INSIDE WALL AND BE
INSTALLED WITH A JOINT
LOCATED A MINIMUM OF
24 INCHES FROM THE
OUTSIDE MANHOLE WALL

IF PVC PIPE IS USED,
PROVIDE RUBBER GASKETS
ONE SIZE SMALLER THAN
PIPE AT EACH WALL
CROSSING OF MANHOLE
(ASTM C923)

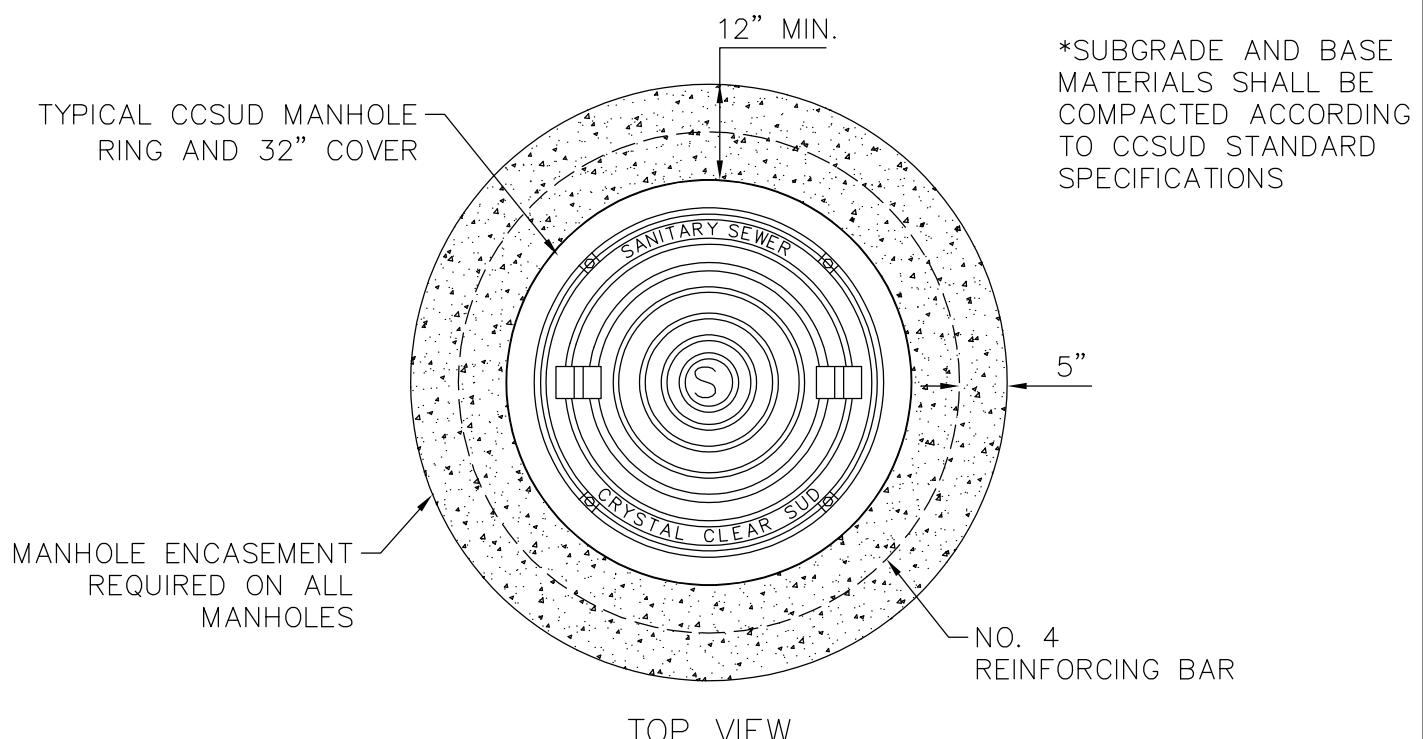
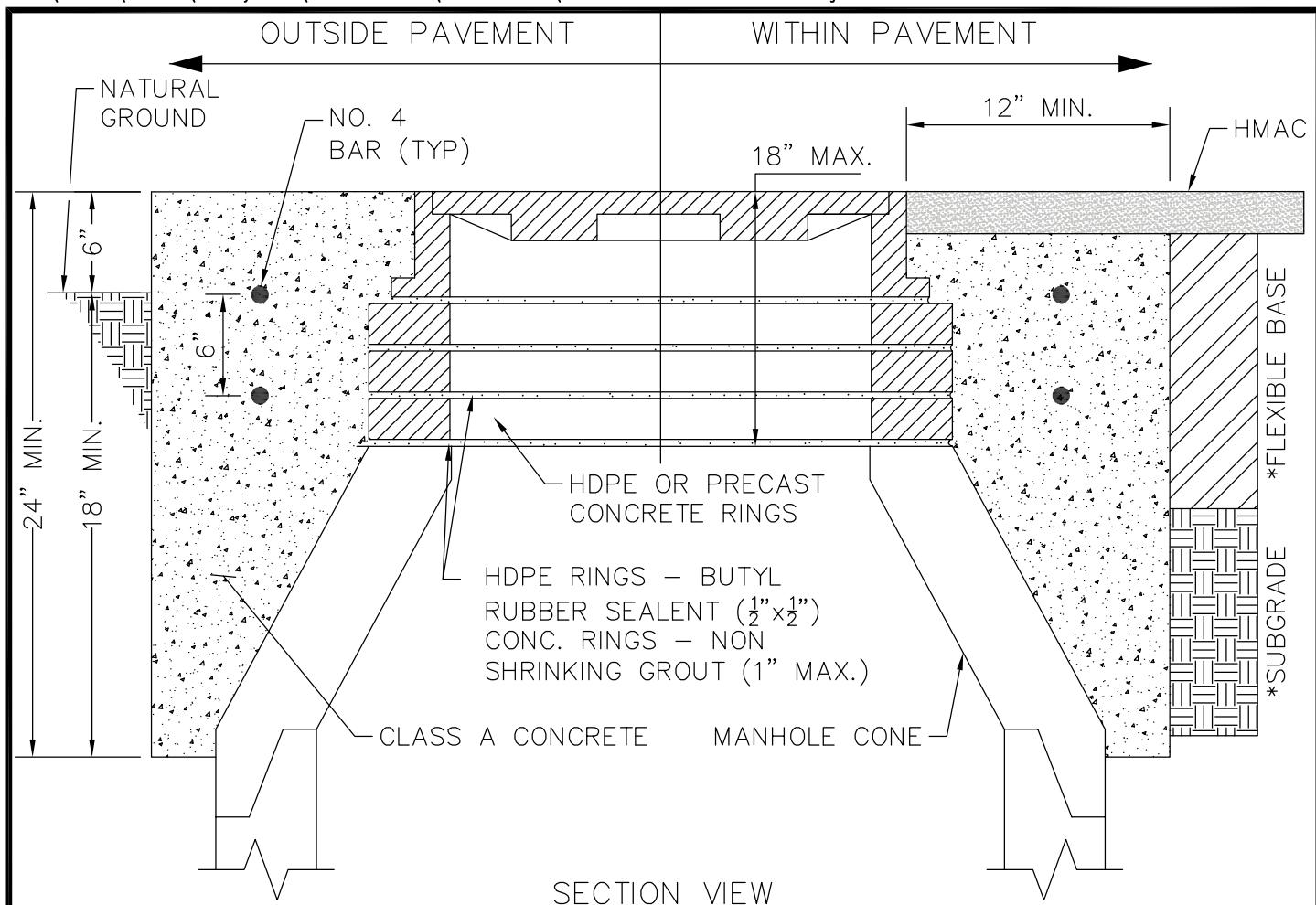
NO JOINTS FOR PIPE
WILL BE ALLOWED
WITHIN WALL SECTION

MANHOLE FLOOR PLAN

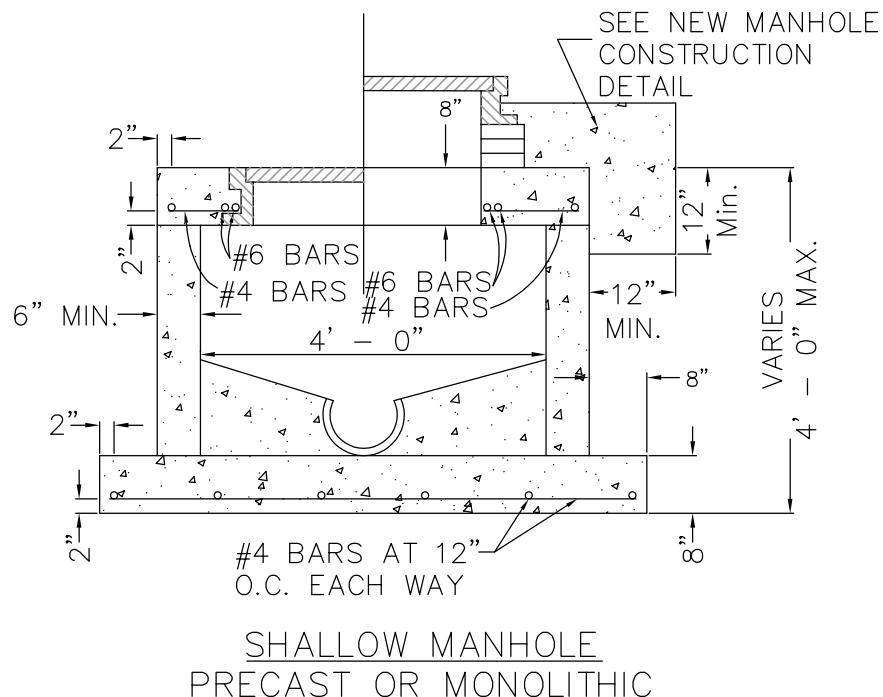
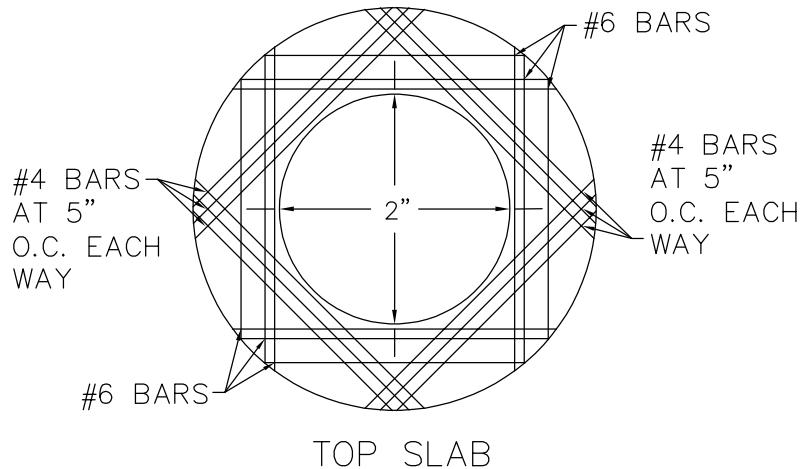
NOTES:

1. THE MINIMUM ANGLE OF FLOW FROM A CONNECTING SEWER TO THE DIRECTION OF FLOW IS 90 DEGREES.



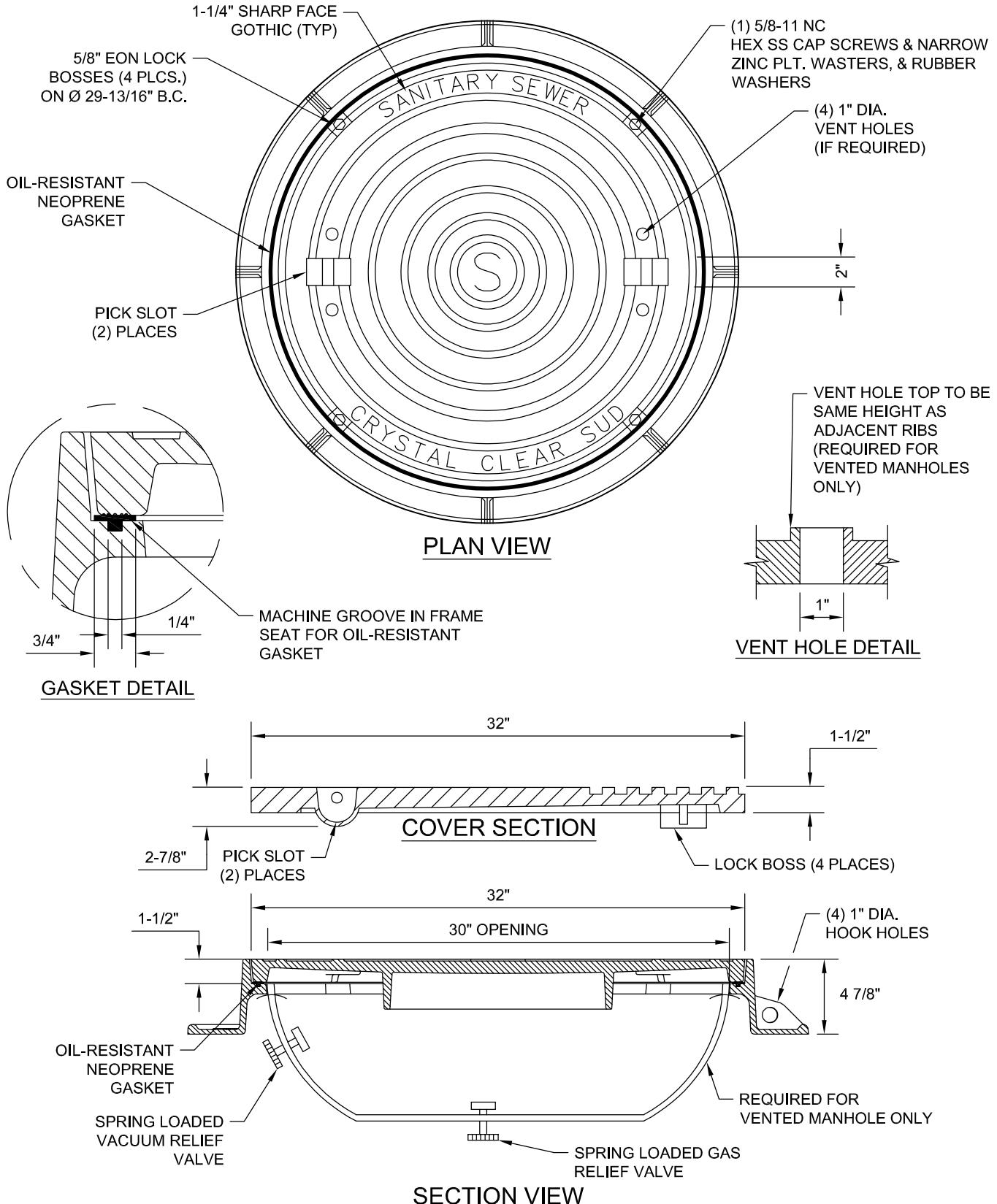


PROPERTY OF	NEW MANHOLE CONSTRUCTION AND MINOR MANHOLE ADJUSTMENT	M&S ENGINEERING POWER & UTILITY ENGINEERS TXENG FIRM #F-1394 TBPELS FIRM #10169800 www.MSENGR.com 830-228-5446	APPROVED	REVISION
CRYSTAL CLEAR Special Utility District Est. 1964			FEB 2022	OCT 2025
SHEET				
1 OF 1				



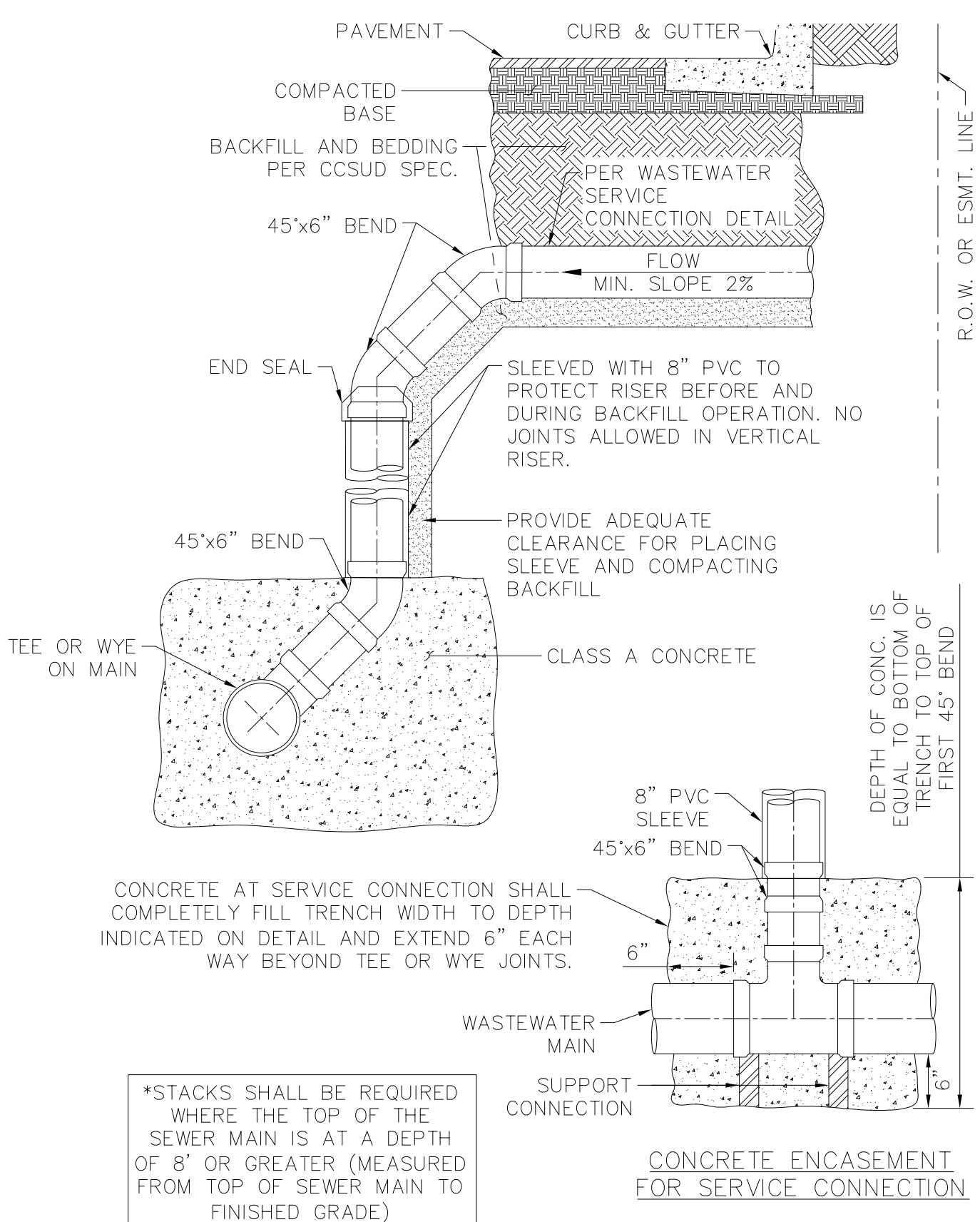
NOTE:

1. PVC PIPES AND FITTINGS SIX (6") TO FIFTEEN INCHES (15") IN DIAMETER SHALL CONFORM TO ASTM D3034
2. PVC PIPES AND FITTINGS EIGHTEEN INCHES (18") TO TWENTY-SEVEN INCHES (27") IN DIAMETER SHALL CONFORM TO ASTM F679.
3. THIS INFORMATION IS PROVIDED AS A REFERENCE. ALL DEFLECTION TESTING SHALL BE DONE IN ACCORDANCE WITH TCEQ CHAPTER 317.

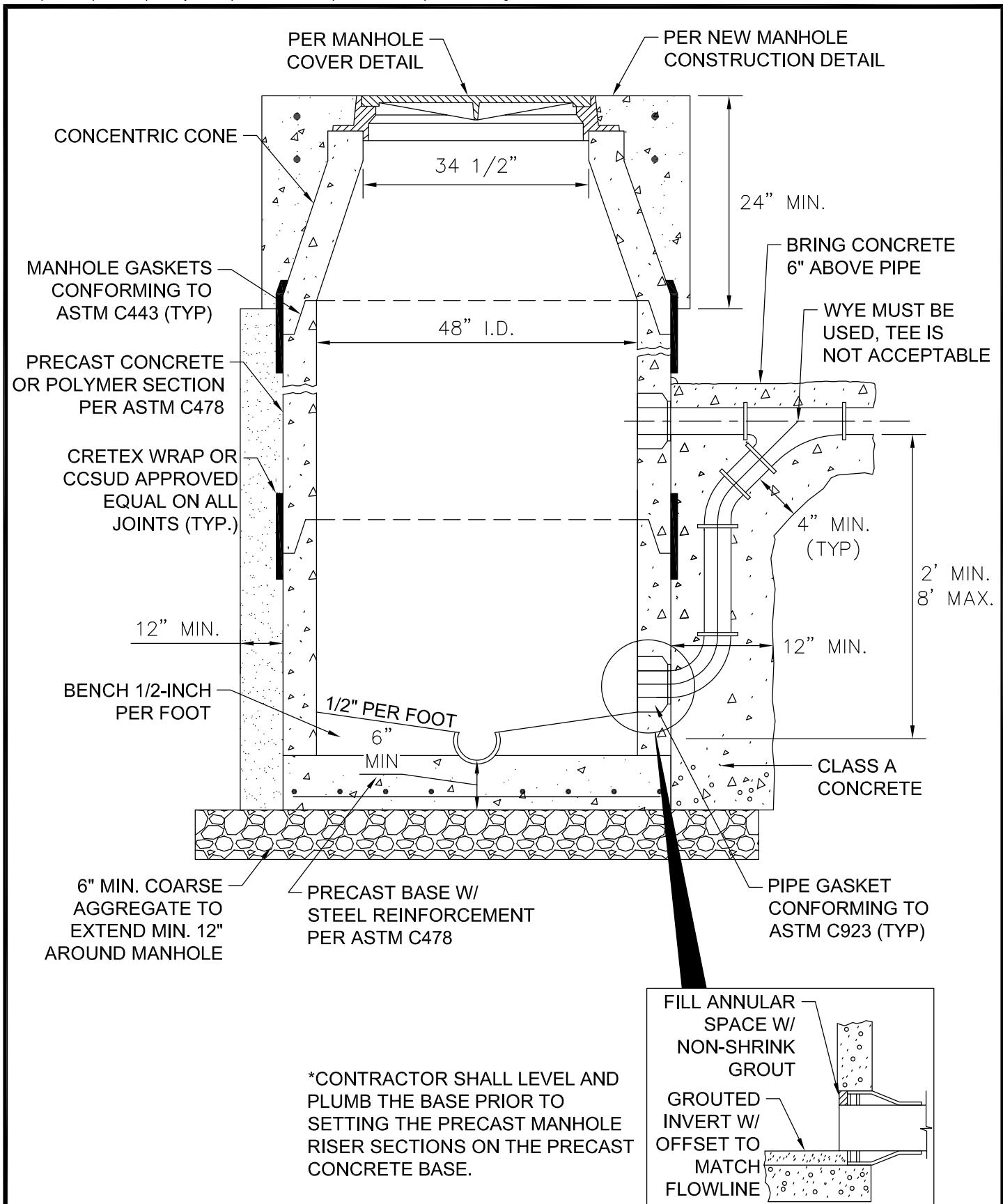


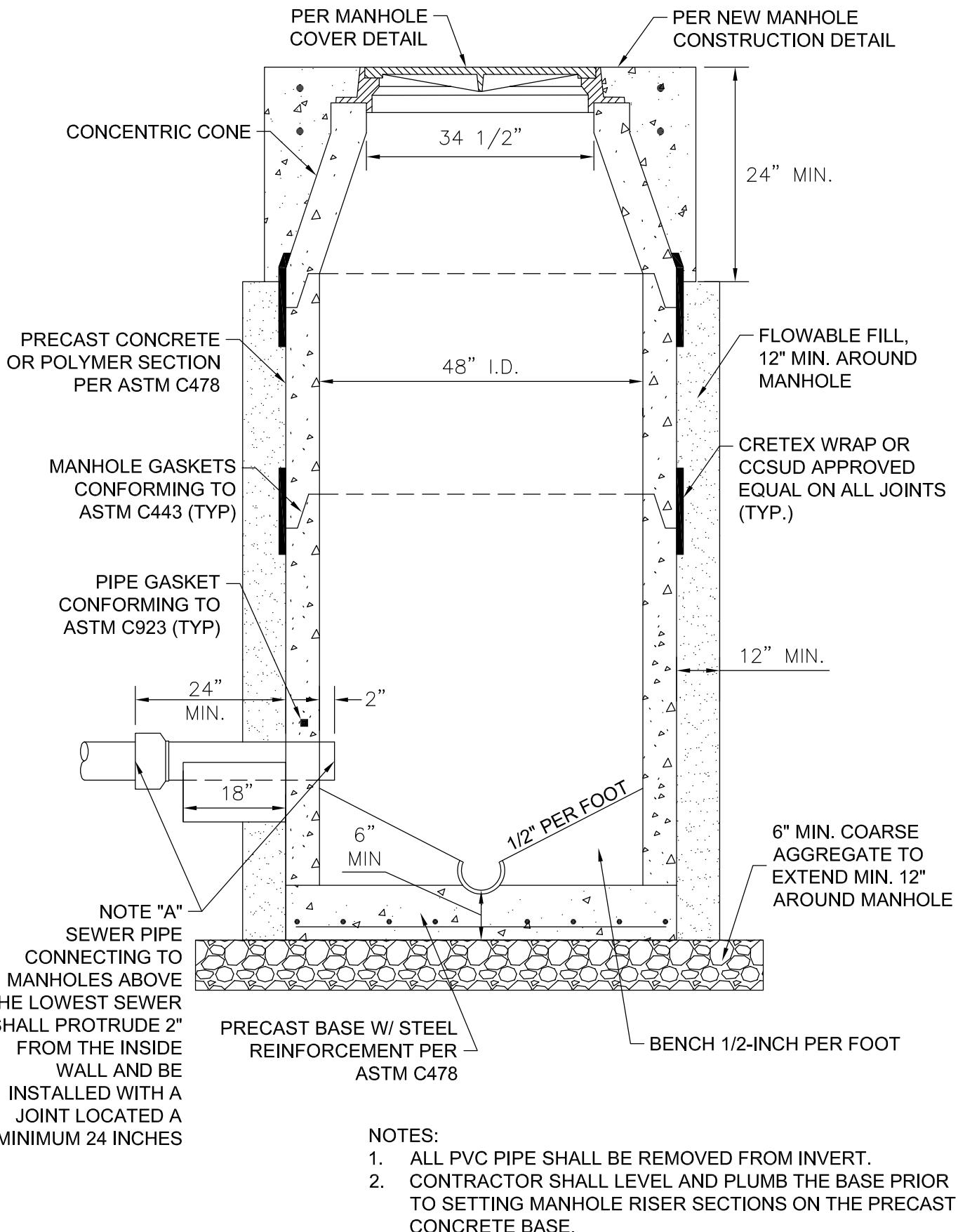
NOTES:

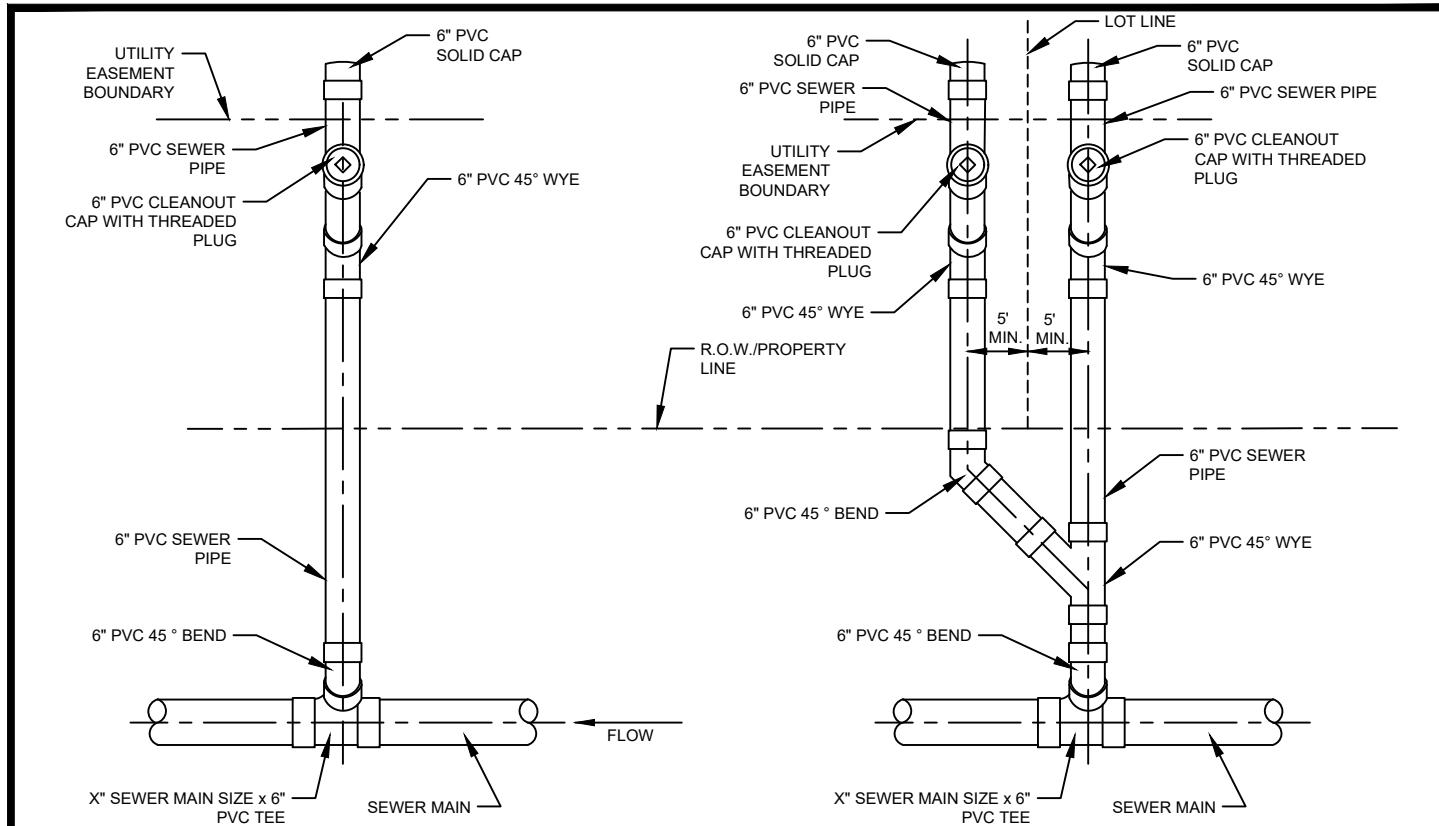
1. STANDARD MANHOLE RING AND COVER. ALL APPLICABLE DIMENSIONS SHALL CONFORM TO THE DIMENSIONS SHOWN HERE.
2. THE BEARING SURFACES AND GASKET GROOVE SHALL BE MACHINED GROUND.



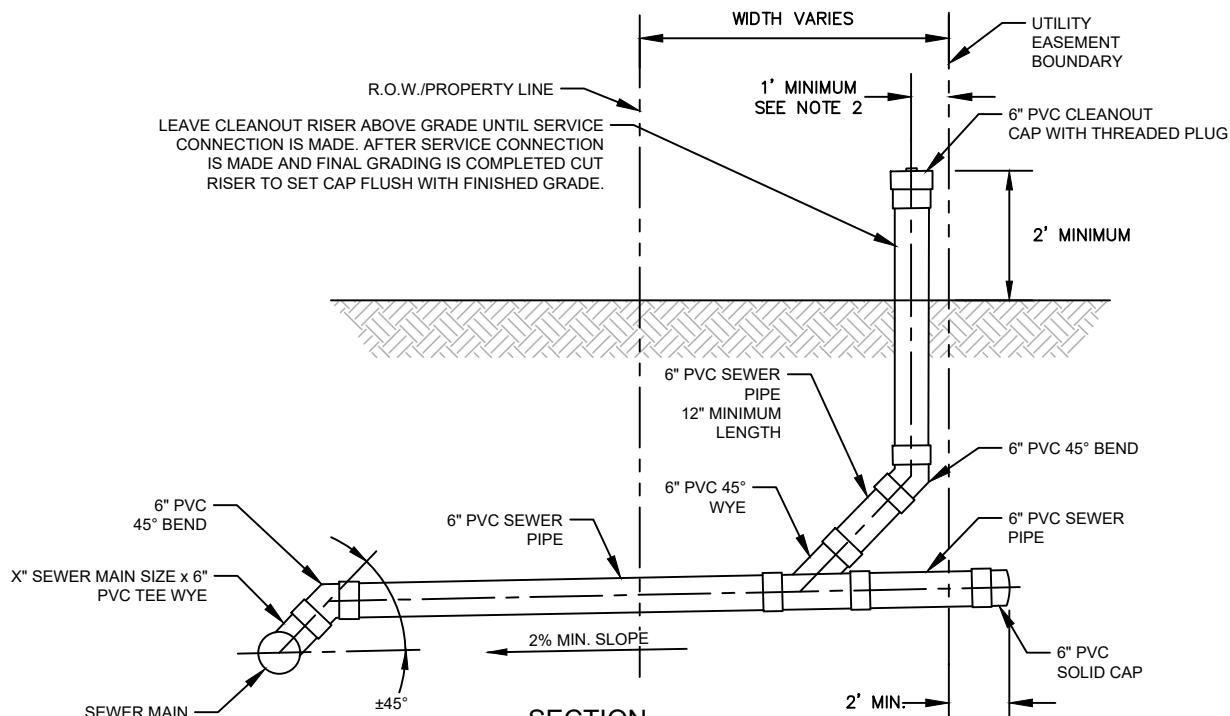
PROPERTY OF CRYSTAL CLEAR Special Utility District	WASTEWATER DEEP SERVICE CONNECTION DETAIL	 M&S ENGINEERING POWER & UTILITY ENGINEERS TXENG FIRM #F-1394 TBPELS FIRM #10169800 www.MSENGR.com 830-228-5446	APPROVED FEB 2022	REVISION OCT 2025
			SHEET 1 OF 1	







SINGLE SERVICE PLAN



DOUBLE SERVICE PLAN

NOTES:

1. FOR NEW DEVELOPMENTS, CLEANOUTS MAY NOT BE PLACED IN PAVED AREAS (I.E. SIDEWALKS, DRIVEWAYS, OR PARKING LOTS) AND MUST BE LOCATED A MINIMUM OF 6' FROM ALL PAVED AREAS.
2. SEWER CLEANOUTS SHALL BE HORIZONTALLY PLACED A MINIMUM OF 5' FROM LOT LINE AND MEET MINIMUM SPACING REQUIREMENTS FROM ALL WATER MAINS PER TAC §290.44.
3. SEWER LATERALS SHALL BE INSTALLED BENEATH OTHER UTILITIES (IF POSSIBLE) WITH A MINIMUM VERTICAL CLEARANCE OF 1' ABOVE AND BELOW THE SEWER LATERALS. WATER PIPES REQUIRE 2' OF VERTICAL SEPARATION.
4. WHEN MINIMUM SEPARATION REQUIREMENTS FOR LATERALS AND CLEANOUTS CANNOT BE MET, PROTECTION REQUIREMENTS SHALL BE PER TAC §217.53 AND TAC §290.44.