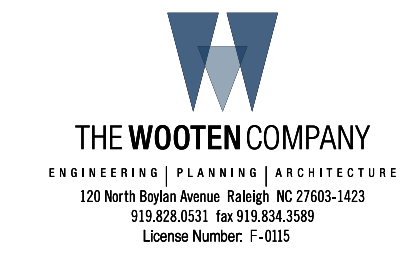


PROJECT TYPICAL SEWER DETAILS

PREPARED IN THE OFFICE OF:



PROJECT REFERENCE NO.

U-3109A

SHEET NO.

UC-3A

DESIGNED BY: JRG

DRAWN BY: TK

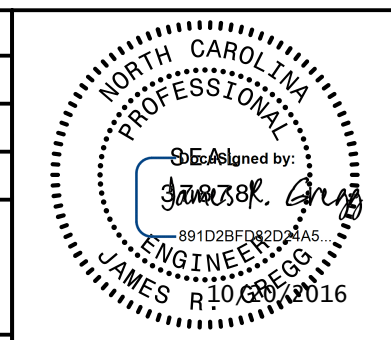
CHECKED BY: JRG

APPROVED BY: MDS

REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

UTILITIES ENGINEERING SEC.
PHONE: (919) 707-6690
FAX: (919) 250-4151



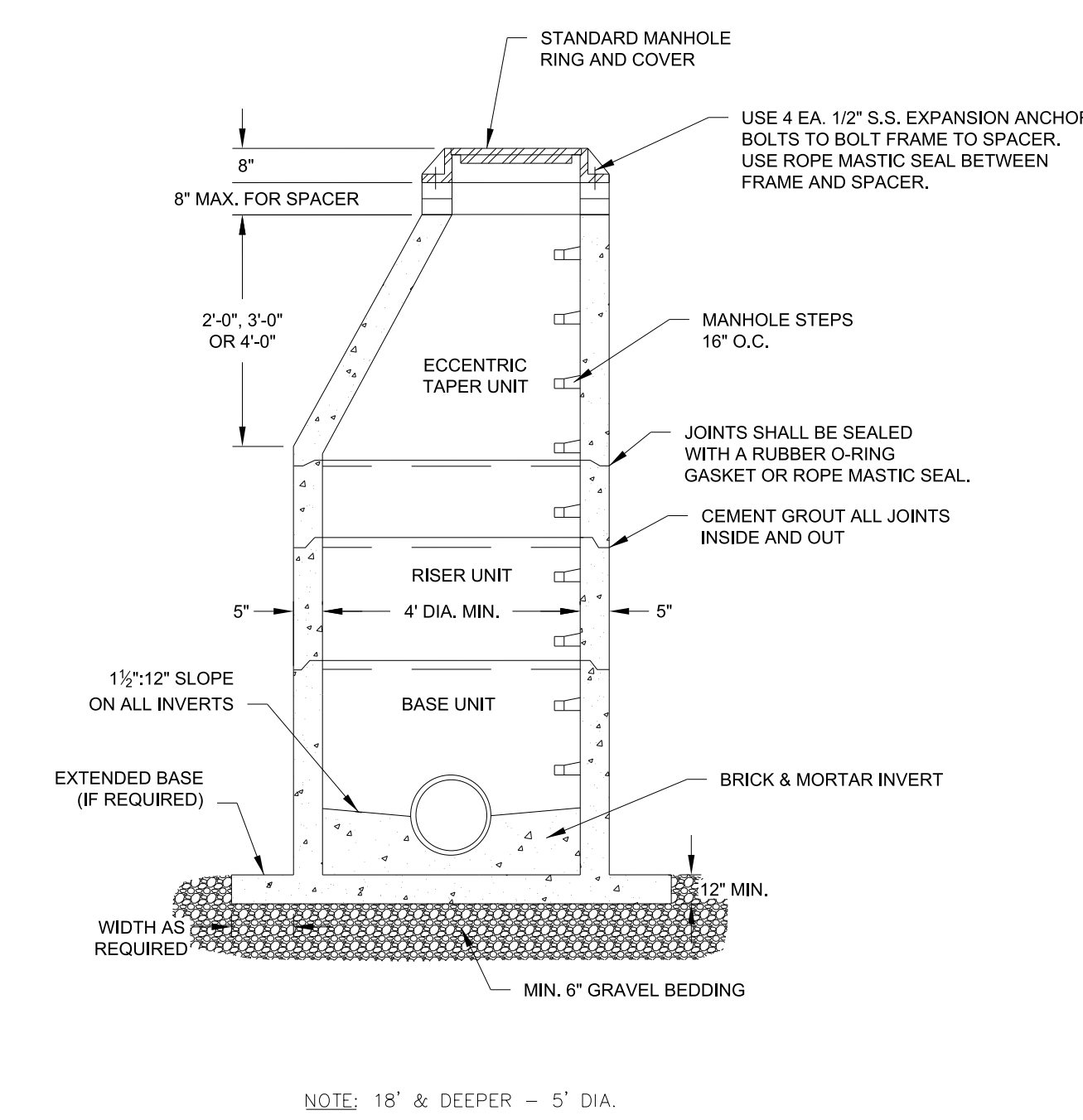
Document Not Considered Final Unless All Signatures Completed
UTILITY CONSTRUCTION PLANS ONLY

VERTICAL SCALE
5' 0 5' 10'

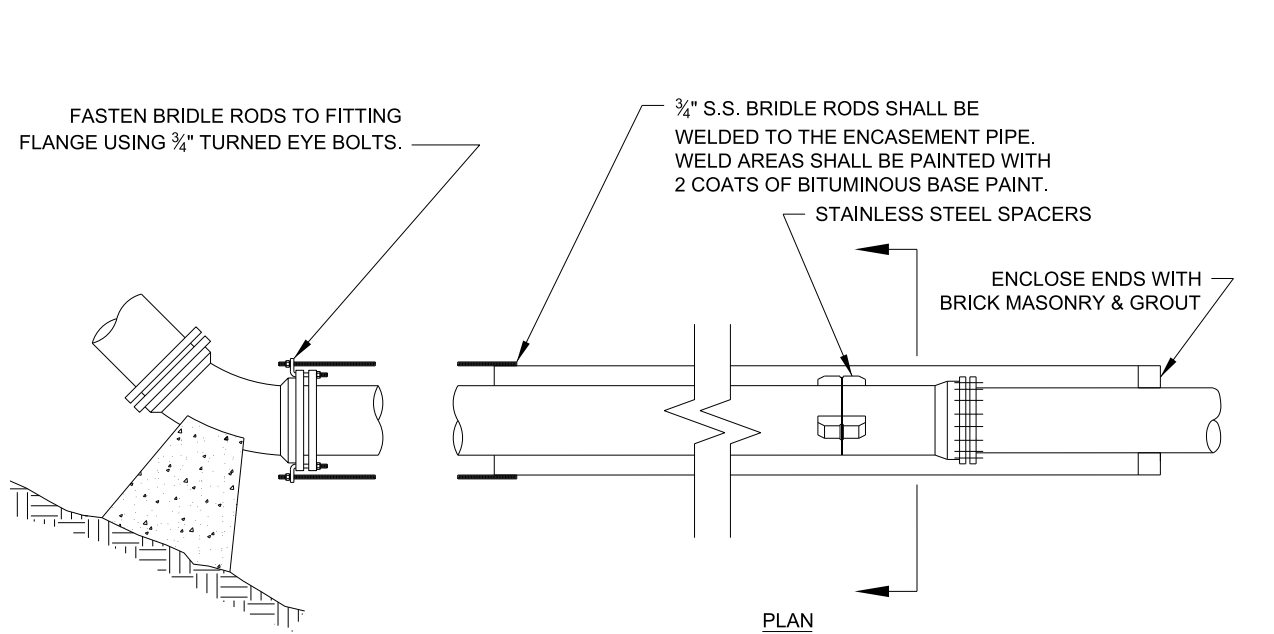
HORIZONTAL SCALE
25' 0 25' 50'

SEWER LINE CONSTRUCTION SHOWN ON THIS SHEET

UTILITY CONSTRUCTION

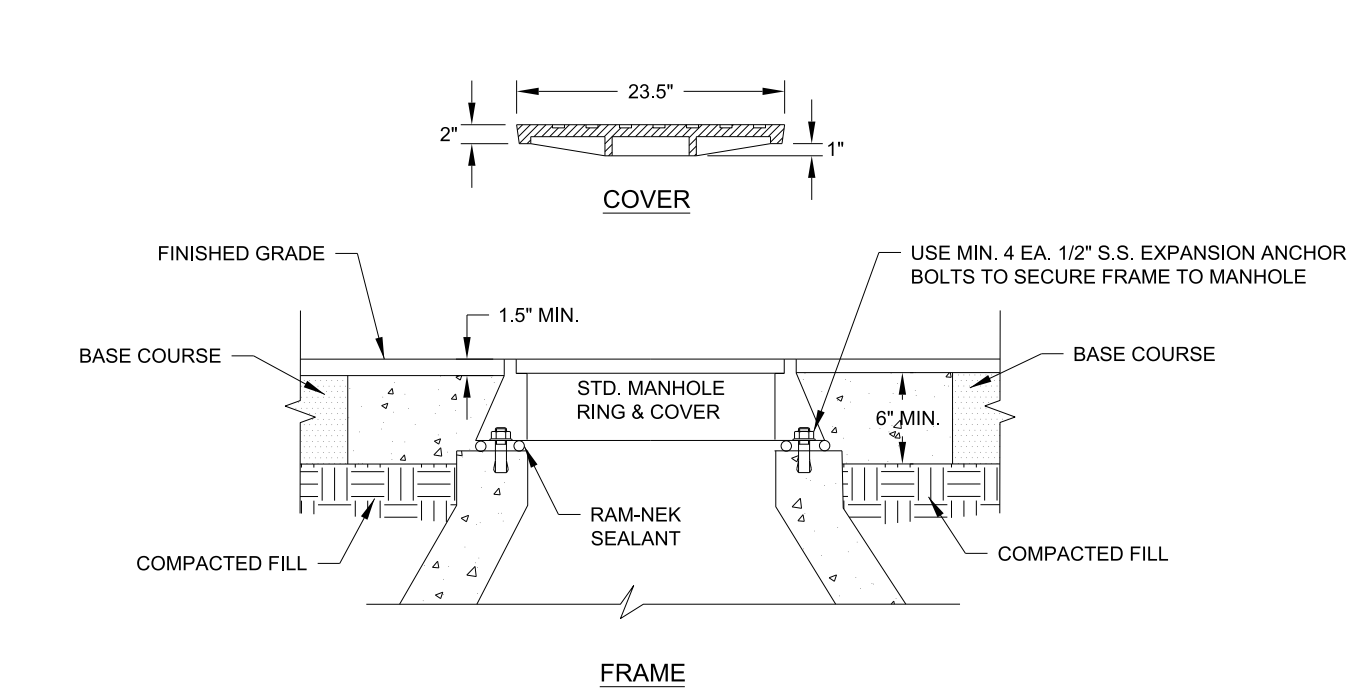
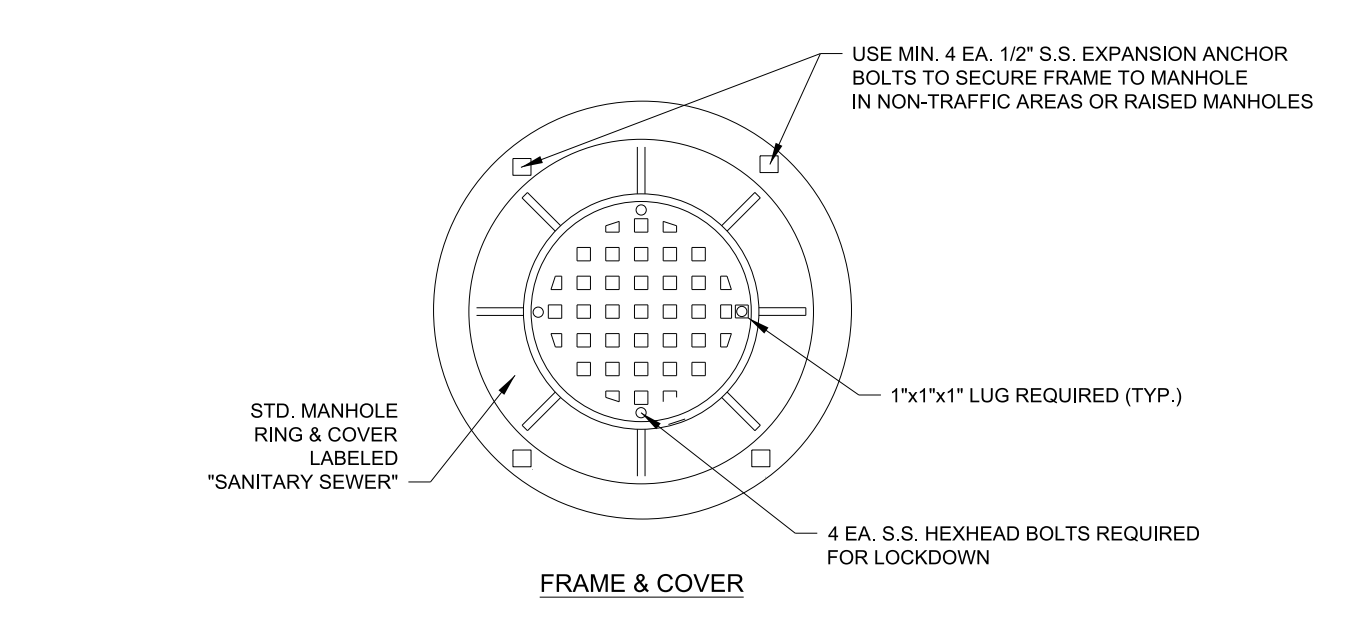


STANDARD PRECAST CONCRETE MANHOLE
NOT TO SCALE

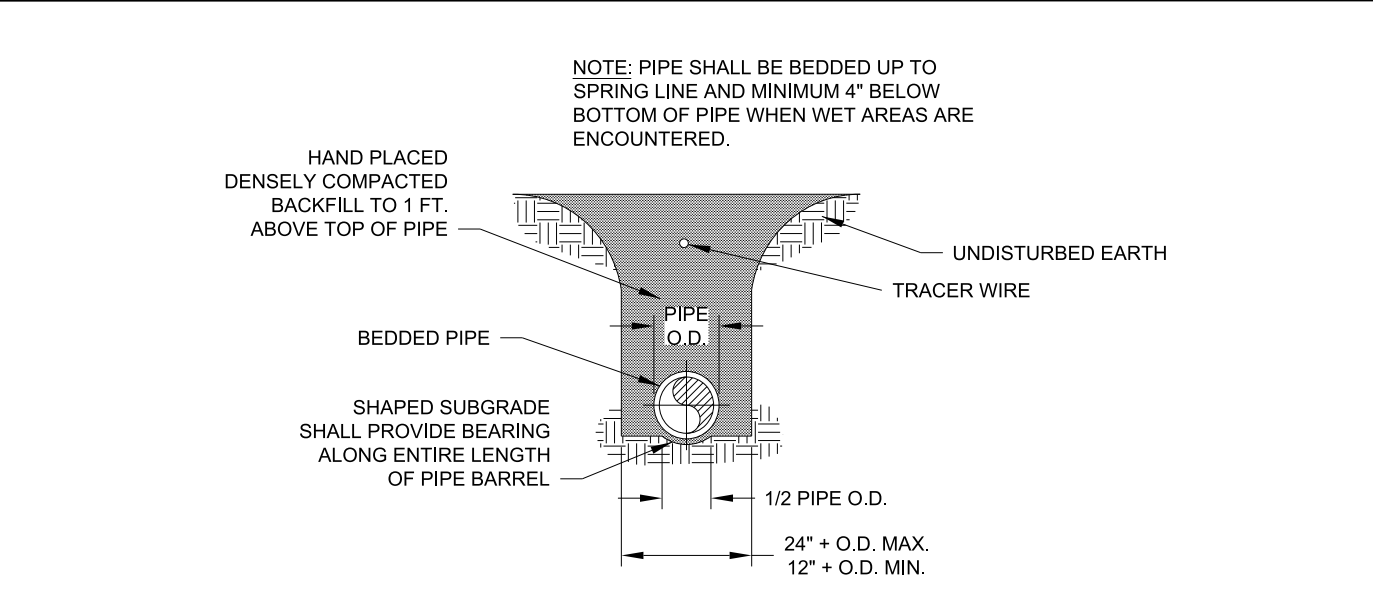


- NOTES:
1. STAINLESS STEEL SPACERS SHALL BE USED. NO TIMBER SKIDS ARE ALLOWED.
 2. TWO SPACERS PER JOINT SHALL BE USED FOR D.I.P. CARRIER PIPE.
 3. ENCASED BORES ALONG GRAVITY COLLECTION SYSTEMS SHALL NOT REQUIRE BRIDLE RODS.
 4. 2 EA. 3/4" S.S. BRIDLE RODS SHALL BE REQUIRED ON ALL LINES 8"Ø AND SMALLER. 4 EA. 3/4" S.S. BRIDLE RODS SHALL BE REQUIRED ON ALL LINES 10"Ø AND LARGER.
 5. CARRIER PIPE SHALL BE INSTALLED USING "FIELD LOK" GASKETS OR APPROVED EQUAL.

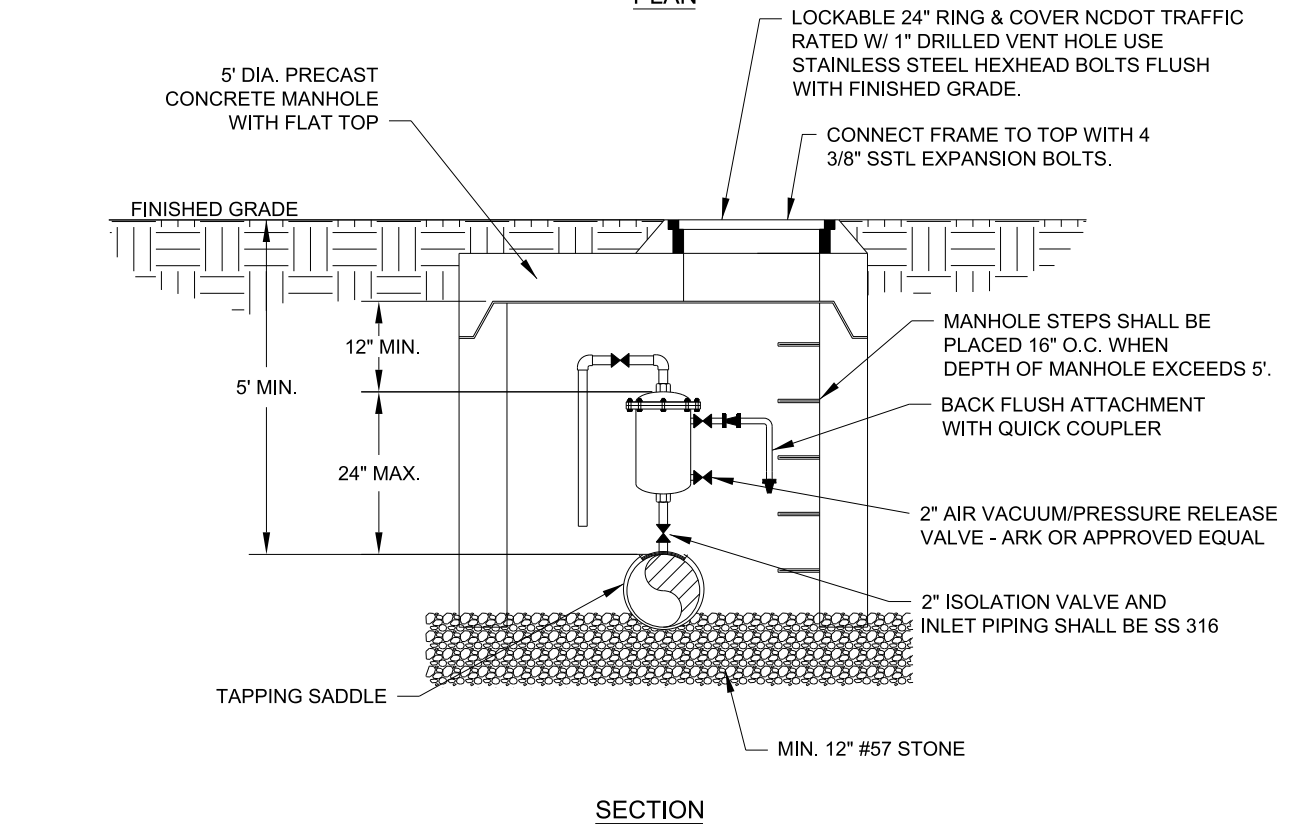
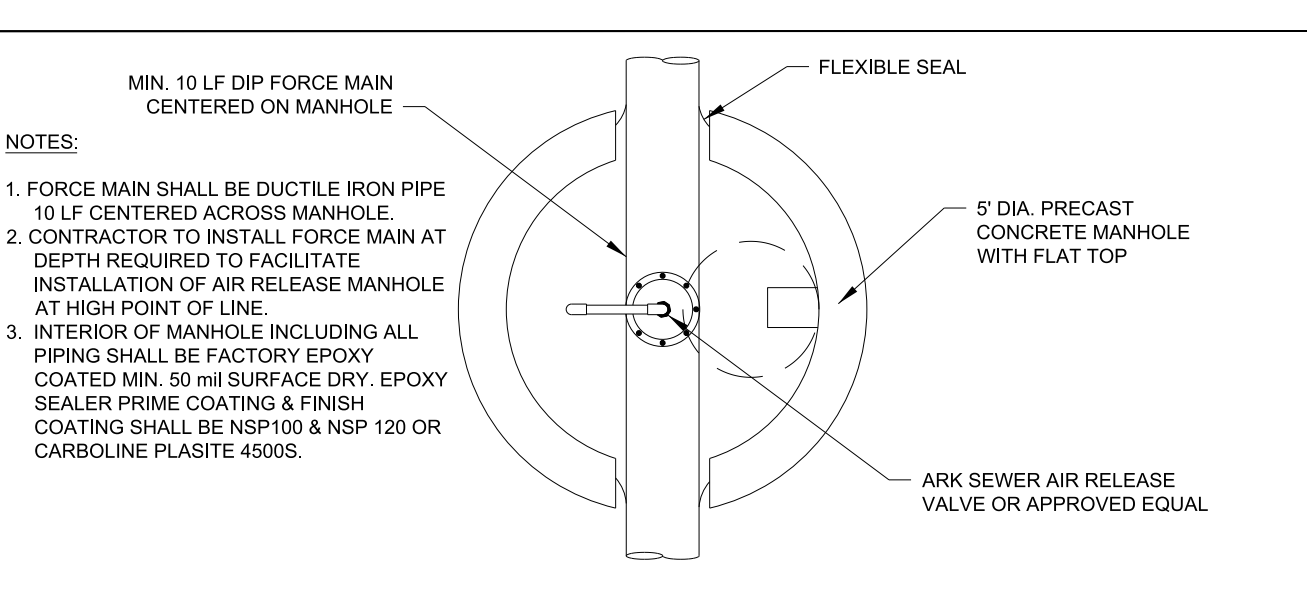
STANDARD BORE ENCASEMENT
NOT TO SCALE



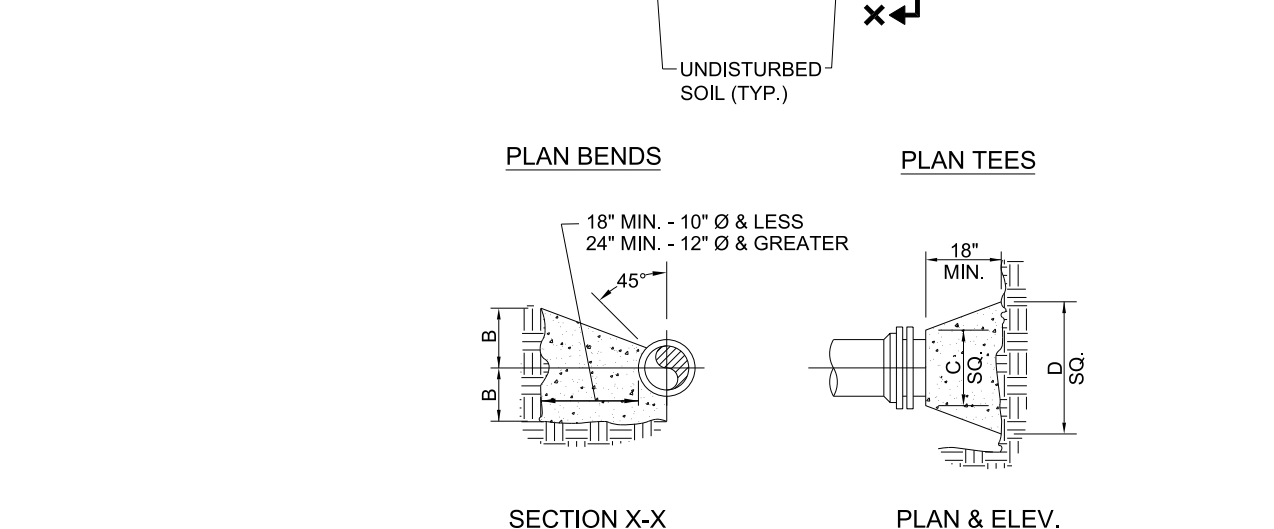
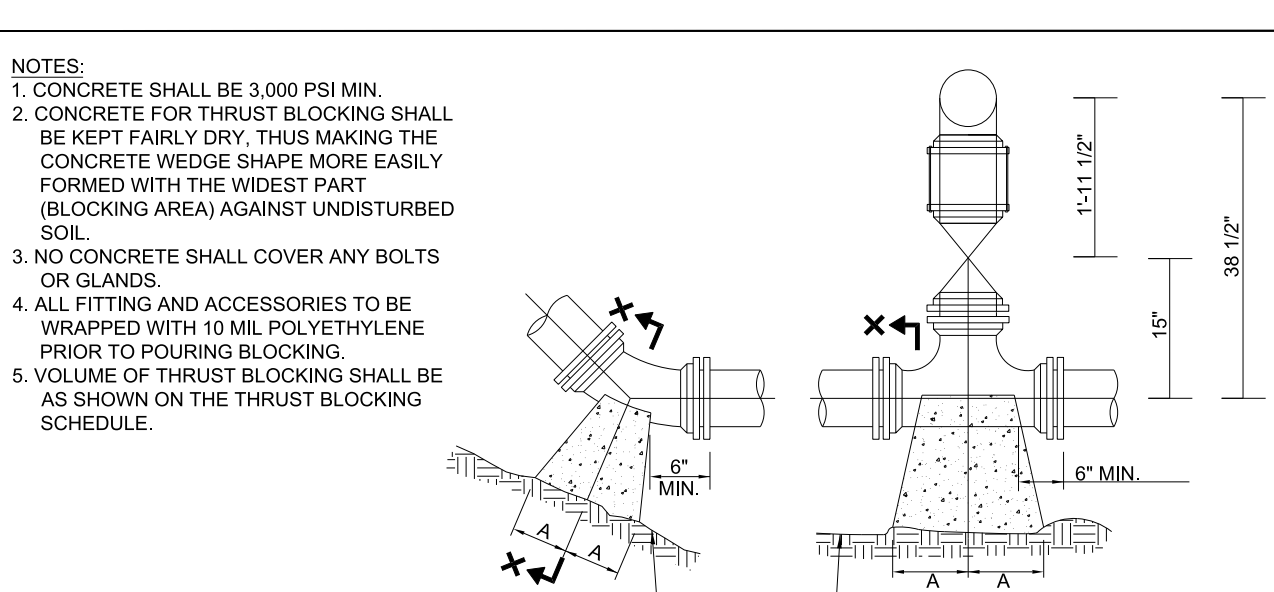
LOCKABLE MANHOLE FRAME & COVER
NOT TO SCALE



PIPE LAYING CONDITION
NOT TO SCALE

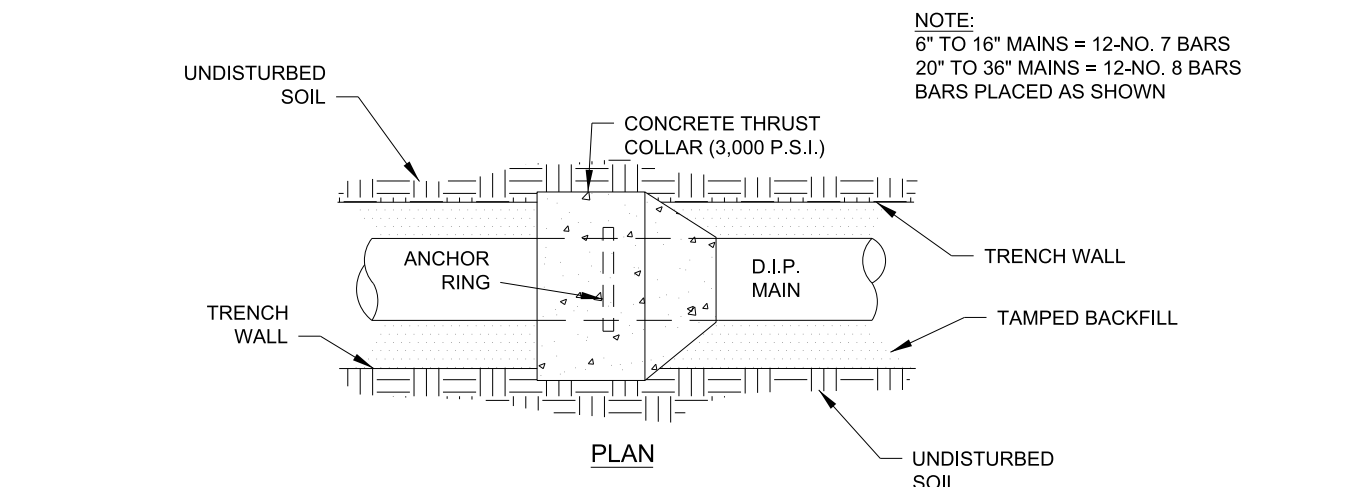
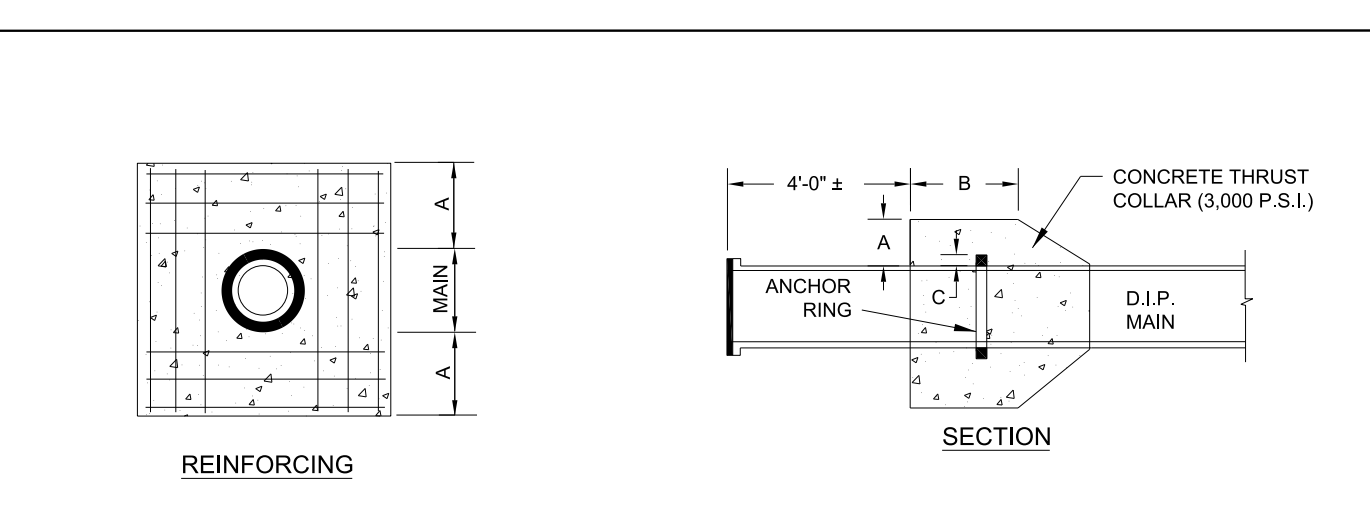


AIR VACUUM/RELEASE MANHOLE FOR FORCE MAIN
NOT TO SCALE



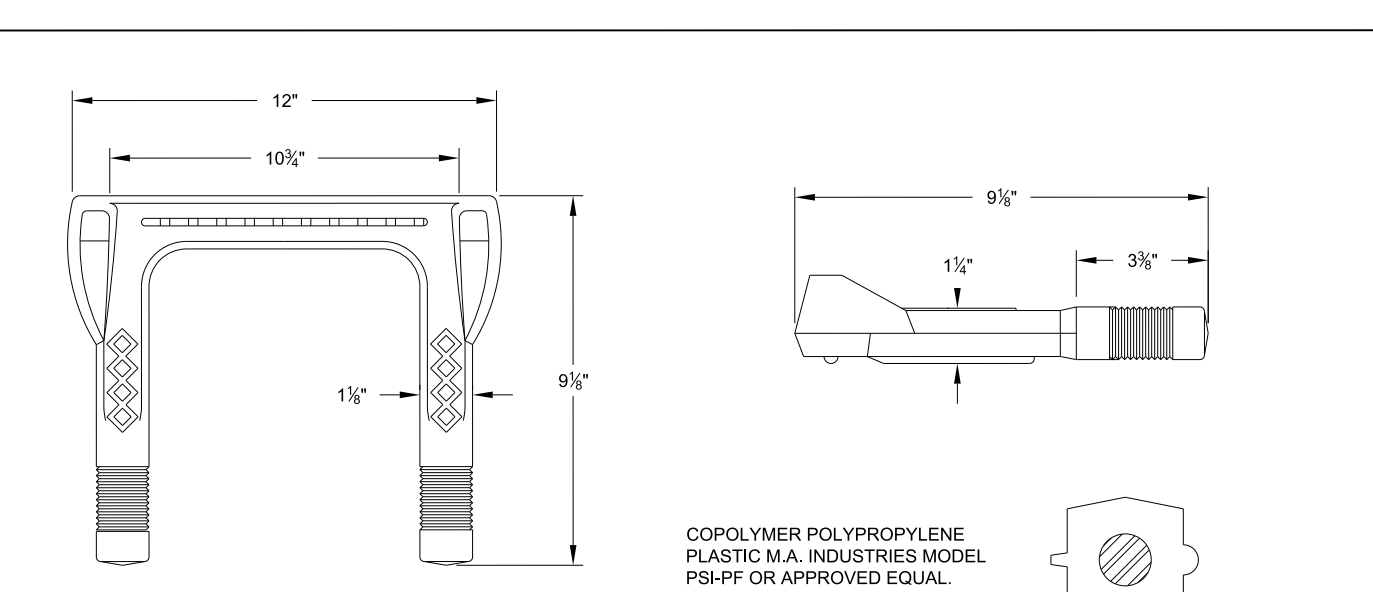
PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND				11 1/4° BEND				TEE			PLUG
	A	B	A	B	A	B	A	B	A	B	C	D				
4"	8"	12"	8"	8"	8"	8"	8"	8"	8"	8"	8"	8"	8"	8"	8"	
6"	10"	12"	8"	10"	8"	8"	8"	8"	8"	10"	10"	12"	18"			
8"	12"	12"	10"	10"	8"	8"	8"	8"	8"	10"	12"	12"	24"			
10"	14"	12"	10"	12"	8"	10"	8"	10"	11"	14"	14"	18"				
12"	16"	12"	12"	14"	8"	12"	8"	12"	14"	16"	16"	18"	30"			
14"	18"	12"	14"	16"	10"	14"	10"	14"	16"	18"	18"	18"	34"			
16"	20"	12"	16"	18"	12"	16"	12"	16"	18"	20"	20"	20"	38"			
20"	24"	12"	20"	24"	12"	12"	12"	12"	12"	18"	18"	24"	48"			
24"	28"	12"	24"	28"	12"	12"	12"	12"	12"	21"	21"	28"	56"			

THRUST BLOCK DETAIL
NOT TO SCALE

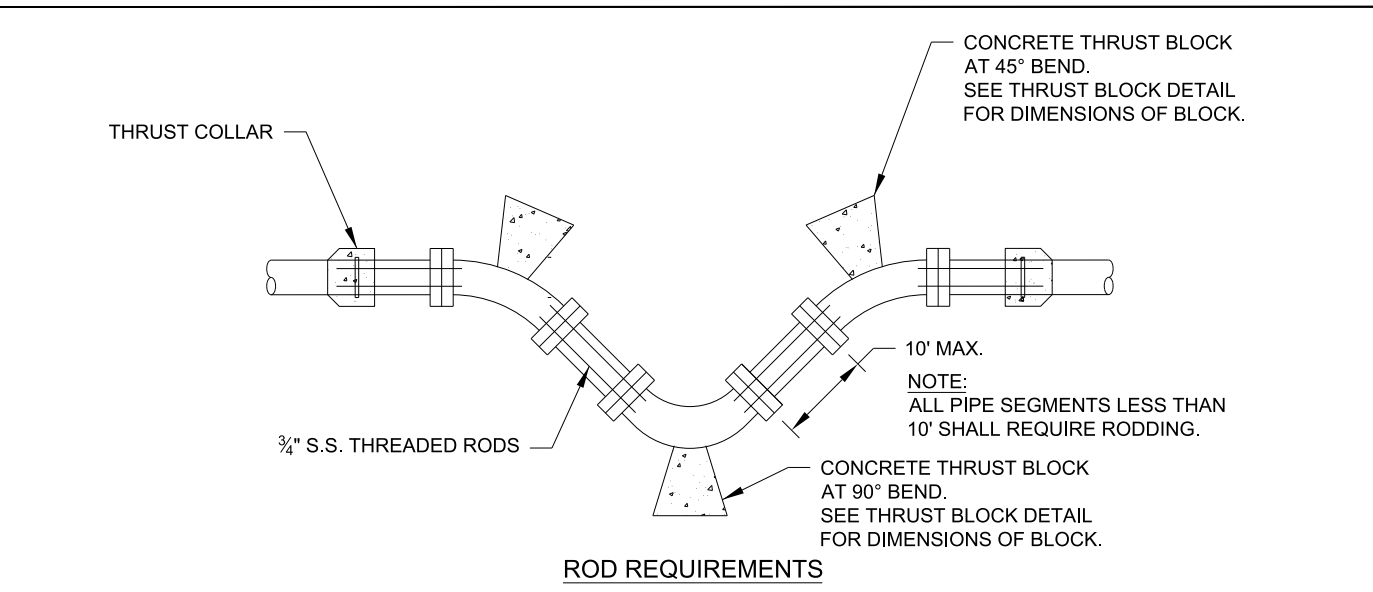


PIPE DIAMETER	CONCRETE THRUST COLLAR		ANCHOR COLLAR	RINGS REQUIRED
	A	B		
6" & 8" & 12"	1'-0"	1'-0"	2"	ONE
16"	1'-4"	1'-0"	2"	ONE
20"	1'-4"	1'-0"	3"	ONE
24"	1'-4"	1'-0"	3"	TWO
30"	1'-4"	1'-2"	4"	TWO
36"	1'-4"	1'-4"	4"	TWO

THRUST COLLAR INSTALLATION
NOT TO SCALE

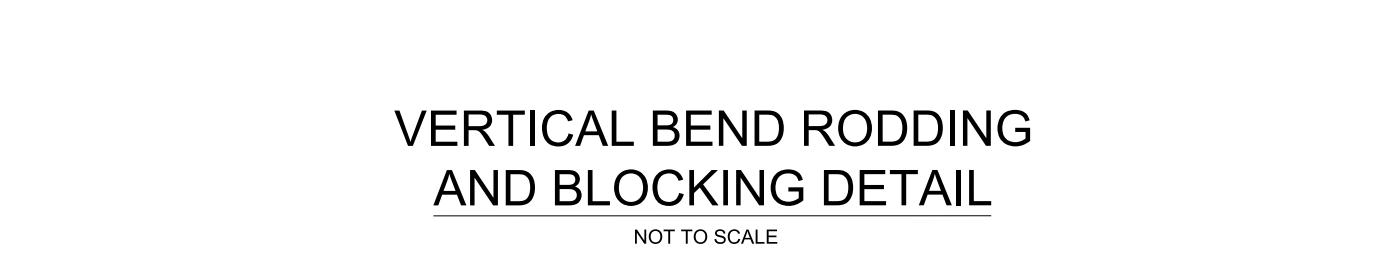


POLYPROPYLENE PLASTIC STEP
NOT TO SCALE

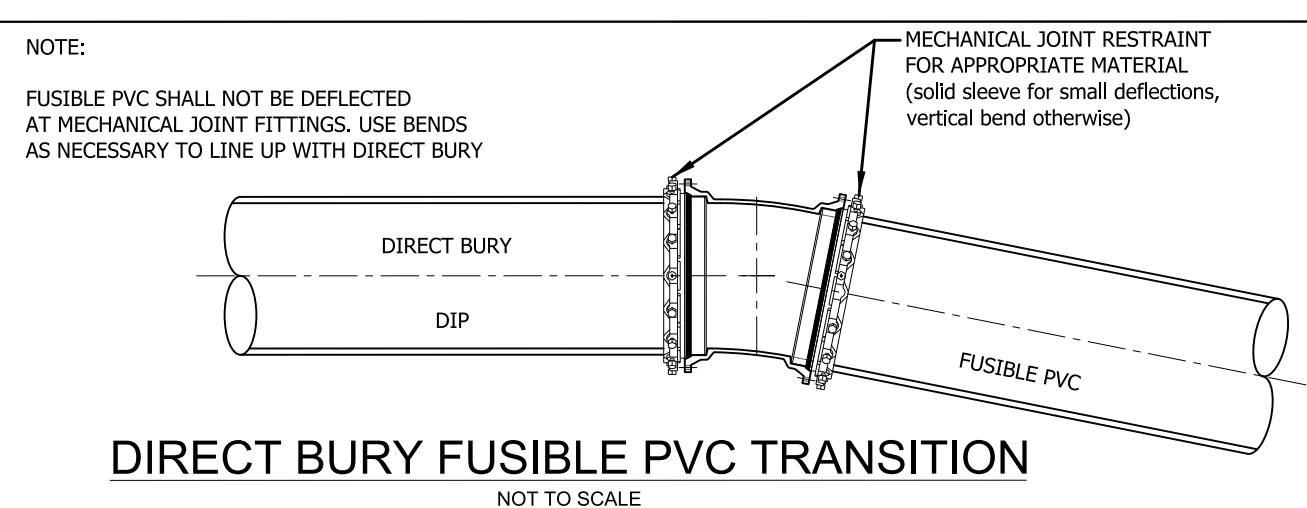


SIZE OF 45° BEND	STATIC THRUST IN POUNDS	NUMBER OF RODS REQUIRED
6"	4,328	2
8"	7,694	2
12"	17,312	4
16"	30,779	6
20"	48,091	8
24"	69,252	10

- GENERAL NOTES:
1. RODS AND NUTS SHALL BE OF TYPE 304 OR TYPE 316 STAINLESS STEEL.
 2. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT BENDS.



VERTICAL BEND RODDING AND BLOCKING DETAIL
NOT TO SCALE



DIRECT BURY FUSIBLE PVC TRANSITION
NOT TO SCALE