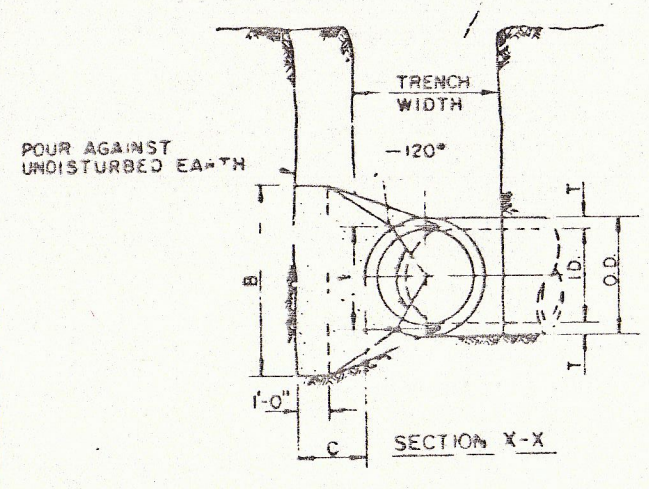


I.D. (IN.)	T (IN.)	C 11.25°		C 22.50°		E (FT.)
		FT.	CY.	FT.	CY.	
4.4	0.4	1.5	1.5	0.8	0.8	
10.12	0.5	1.5	1.3	1.2	1.2	
16.18	0.6	1.5	1.3	1.6	1.6	
20	0.7	1.5	1.3	1.8	1.8	
24	0.9	1.5	1.3	2.1	2.1	
30	1.1	1.5	1.3	2.6	2.6	
36	1.3	1.5	1.3	3.3	3.3	
42	1.5	1.8	1.6	4.0	4.0	
48	1.7	2.0	1.8	4.8	4.8	
54	1.9	2.3	2.1	5.7	5.7	
60	2.1	2.6	2.4	6.6	6.6	
66	2.4	3.0	2.8	7.7	7.7	
72	2.7	3.4	3.2	8.9	8.9	
78	3.0	3.9	3.6	10.2	10.2	
84	3.3	4.4	4.1	11.7	11.7	
90	3.6	5.0	4.6	13.4	13.4	
96	3.9	5.7	5.3	15.3	15.3	



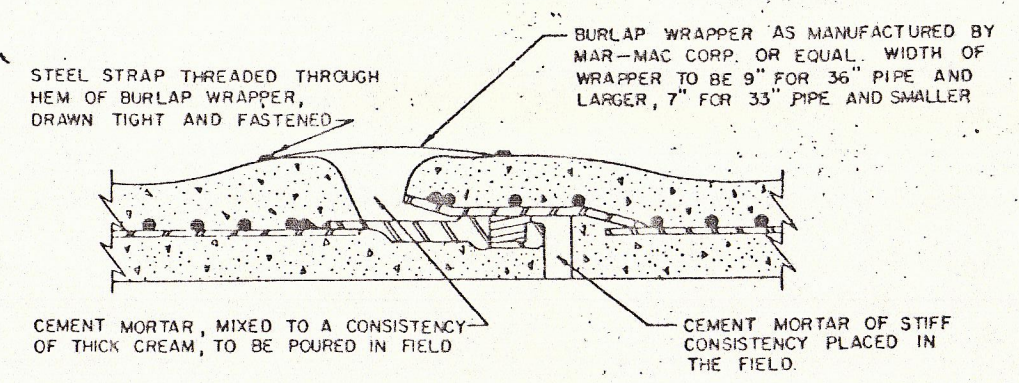
I.D. (IN.)	G (FT.)	A 11.25°		A 22.50°		I.D. (IN.)	G (FT.)	A 33°		A 45°		I.D. (IN.)	G (FT.)	A 56.25°		A 67.50°	
		FT.	CY.	FT.	CY.			FT.	CY.	FT.	CY.			FT.	CY.	FT.	CY.
4.4	0.4	1.0	1.0	1.0	1.0	10.12	1.1	1.0	1.0	1.0	1.0	10.12	1.1	1.0	1.0	1.0	1.0
10.12	0.6	2.2	1.5	1.3	1.3	16.18	1.1	1.0	1.0	1.0	1.0	16.18	1.1	1.0	1.0	1.0	1.0
16.18	0.9	3.0	2.0	1.5	1.5	20	1.1	1.0	1.0	1.0	1.0	20	1.1	1.0	1.0	1.0	1.0
20	1.1	3.6	2.4	1.8	1.8	24	1.1	1.0	1.0	1.0	1.0	24	1.1	1.0	1.0	1.0	1.0
24	1.3	4.2	2.8	2.1	2.1	30	1.1	1.0	1.0	1.0	1.0	30	1.1	1.0	1.0	1.0	1.0
30	1.5	4.8	3.2	2.4	2.4	36	1.1	1.0	1.0	1.0	1.0	36	1.1	1.0	1.0	1.0	1.0
36	1.7	5.4	3.6	2.7	2.7	42	1.1	1.0	1.0	1.0	1.0	42	1.1	1.0	1.0	1.0	1.0
42	1.9	6.0	4.0	3.0	3.0	48	1.1	1.0	1.0	1.0	1.0	48	1.1	1.0	1.0	1.0	1.0
48	2.1	6.6	4.4	3.3	3.3	54	1.1	1.0	1.0	1.0	1.0	54	1.1	1.0	1.0	1.0	1.0
54	2.3	7.2	4.8	3.6	3.6	60	1.1	1.0	1.0	1.0	1.0	60	1.1	1.0	1.0	1.0	1.0
60	2.5	7.8	5.2	3.9	3.9	66	1.1	1.0	1.0	1.0	1.0	66	1.1	1.0	1.0	1.0	1.0
66	2.7	8.4	5.6	4.2	4.2	72	1.1	1.0	1.0	1.0	1.0	72	1.1	1.0	1.0	1.0	1.0
72	2.9	9.0	6.0	4.5	4.5	78	1.1	1.0	1.0	1.0	1.0	78	1.1	1.0	1.0	1.0	1.0
78	3.1	9.6	6.4	4.8	4.8	84	1.1	1.0	1.0	1.0	1.0	84	1.1	1.0	1.0	1.0	1.0
84	3.3	10.2	6.8	5.1	5.1	90	1.1	1.0	1.0	1.0	1.0	90	1.1	1.0	1.0	1.0	1.0
90	3.5	10.8	7.2	5.4	5.4	96	1.1	1.0	1.0	1.0	1.0	96	1.1	1.0	1.0	1.0	1.0

HORIZONTAL BEND THRUST BLOCK

I.D. (IN.)	G (FT.)	A 30°		A 45°		I.D. (IN.)	G (FT.)	A 60°		A 75°		I.D. (IN.)	G (FT.)	A 90°		A 105°	
		FT.	CY.	FT.	CY.			FT.	CY.	FT.	CY.			FT.	CY.	FT.	CY.
4.4	0.4	2.6	1.5	0.2	0.2	10.12	1.1	1.0	1.0	1.0	1.0	10.12	1.1	1.0	1.0	1.0	1.0
10.12	0.6	3.2	1.8	0.3	0.3	16.18	1.1	1.0	1.0	1.0	1.0	16.18	1.1	1.0	1.0	1.0	1.0
16.18	0.9	3.8	2.1	0.4	0.4	20	1.1	1.0	1.0	1.0	1.0	20	1.1	1.0	1.0	1.0	1.0
20	1.1	4.4	2.4	0.5	0.5	24	1.1	1.0	1.0	1.0	1.0	24	1.1	1.0	1.0	1.0	1.0
24	1.3	5.0	2.7	0.6	0.6	30	1.1	1.0	1.0	1.0	1.0	30	1.1	1.0	1.0	1.0	1.0
30	1.5	5.6	3.0	0.7	0.7	36	1.1	1.0	1.0	1.0	1.0	36	1.1	1.0	1.0	1.0	1.0
36	1.7	6.2	3.3	0.8	0.8	42	1.1	1.0	1.0	1.0	1.0	42	1.1	1.0	1.0	1.0	1.0
42	1.9	6.8	3.6	0.9	0.9	48	1.1	1.0	1.0	1.0	1.0	48	1.1	1.0	1.0	1.0	1.0
48	2.1	7.4	3.9	1.0	1.0	54	1.1	1.0	1.0	1.0	1.0	54	1.1	1.0	1.0	1.0	1.0
54	2.3	8.0	4.2	1.1	1.1	60	1.1	1.0	1.0	1.0	1.0	60	1.1	1.0	1.0	1.0	1.0
60	2.5	8.6	4.5	1.2	1.2	66	1.1	1.0	1.0	1.0	1.0	66	1.1	1.0	1.0	1.0	1.0
66	2.7	9.2	4.8	1.3	1.3	72	1.1	1.0	1.0	1.0	1.0	72	1.1	1.0	1.0	1.0	1.0
72	2.9	9.8	5.1	1.4	1.4	78	1.1	1.0	1.0	1.0	1.0	78	1.1	1.0	1.0	1.0	1.0
78	3.1	10.4	5.4	1.5	1.5	84	1.1	1.0	1.0	1.0	1.0	84	1.1	1.0	1.0	1.0	1.0
84	3.3	11.0	5.7	1.6	1.6	90	1.1	1.0	1.0	1.0	1.0	90	1.1	1.0	1.0	1.0	1.0
90	3.5	11.6	6.0	1.7	1.7	96	1.1	1.0	1.0	1.0	1.0	96	1.1	1.0	1.0	1.0	1.0

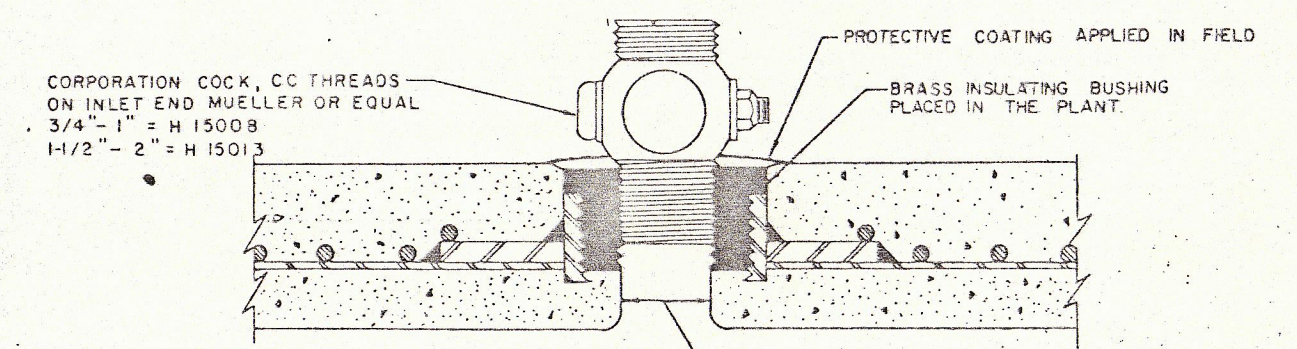
I.D. (IN.)	G (FT.)	A 87.50°		A 90°		I.D. (IN.)	G (FT.)	A 105°		A 120°		I.D. (IN.)	G (FT.)	A 135°		A 150°	
		FT.	CY.	FT.	CY.			FT.	CY.	FT.	CY.			FT.	CY.	FT.	CY.
4.4	0.4	5.6	3.0	2.0	0.3	10.12	1.1	1.0	1.0	1.0	1.0	10.12	1.1	1.0	1.0	1.0	1.0
10.12	0.6	6.2	3.3	2.1	0.4	16.18	1.1	1.0	1.0	1.0	1.0	16.18	1.1	1.0	1.0	1.0	1.0
16.18	0.9	6.8	3.6	2.4	0.5	20	1.1	1.0	1.0	1.0	1.0	20	1.1	1.0	1.0	1.0	1.0
20	1.1	7.4	3.9	2.7	0.6	24	1.1	1.0	1.0	1.0	1.0	24	1.1	1.0	1.0	1.0	1.0
24	1.3	8.0	4.2	3.0	0.7	30	1.1	1.0	1.0	1.0	1.0	30	1.1	1.0	1.0	1.0	1.0
30	1.5	8.6	4.5	3.3	0.8	36	1.1	1.0	1.0	1.0	1.0	36	1.1	1.0	1.0	1.0	1.0
36	1.7	9.2	4.8	3.6	0.9	42	1.1	1.0	1.0	1.0	1.0	42	1.1	1.0	1.0	1.0	1.0
42	1.9	9.8	5.1	3.9	1.0	48	1.1	1.0	1.0	1.0	1.0	48	1.1	1.0	1.0	1.0	1.0
48	2.1	10.4	5.4	4.2	1.1	54	1.1	1.0	1.0	1.0	1.0	54	1.1	1.0	1.0	1.0	1.0
54	2.3	11.0	5.7	4.5	1.2	60	1.1	1.0	1.0	1.0	1.0	60	1.1	1.0	1.0	1.0	1.0
60	2.5	11.6	6.0	4.8	1.3	66	1.1	1.0	1.0	1.0	1.0	66	1.1	1.0	1.0	1.0	1.0
66	2.7	12.2	6.3	5.1	1.4	72	1.1	1.0	1.0	1.0	1.0	72	1.1	1.0	1.0	1.0	1.0
72	2.9	12.8	6.6	5.4	1.5	78	1.1	1.0	1.0	1.0	1.0	78	1.1	1.0	1.0	1.0	1.0
78	3.1	13.4	6.9	5.7	1.6	84	1.1	1.0	1.0	1.0	1.0	84	1.1	1.0	1.0	1.0	1.0
84	3.3	14.0	7.2	6.0	1.7	90	1.1	1.0	1.0	1.0	1.0	90	1.1	1.0	1.0	1.0	1.0
90	3.5	14.6	7.5	6.3	1.8	96	1.1	1.0	1.0	1.0	1.0	96	1.1	1.0	1.0	1.0	1.0

NOTE: PROVIDE 1" MINIMUM THICKNESS CONCRETE OR CEMENT MORTAR COATING IN THE FIELD FOR THE PROTECTION OF ALL EXPOSED STEEL SUCH AS FLANGES, CAULKED JOINTS, THREADED OUTLETS, CLOSURES, ETC. THE CEMENT MORTAR USED SHALL CONSIST OF ONE PART PORTLAND CEMENT TO TWO AND ONE-HALF PARTS OF FINE, SHARP (PLASTER) SAND. WHERE SHOWN, COATING IS TO BE REINFORCED WITH WIRE MESH.



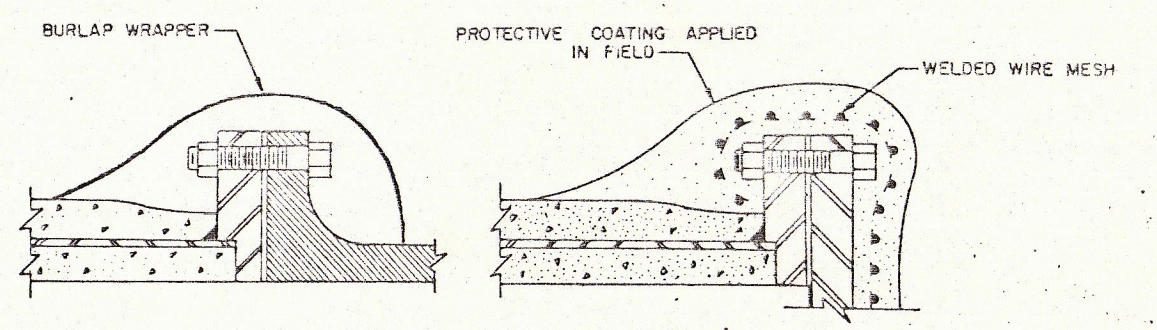
STANDARD RUBBER GASKET JOINT

NOTE: ALL CLOSURE SECTIONS SHALL BE FABRICATED WITH HANO HOLES TO ALLOW WIPING INSIDE OF JOINTS AFTER CLOSURE IS IN PLACE.



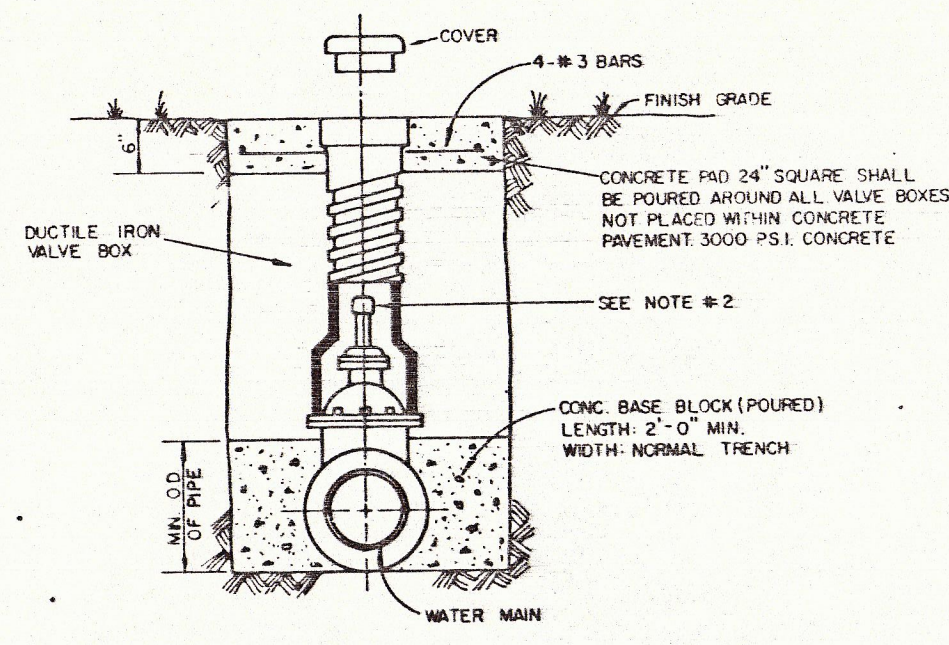
NOTE: IF CORPORATION COCK IS NOT PROVIDED IN FIELD, THEN STEEL PLUG SHALL BE COVERED WITH CEMENT MORTAR.

THREADED CONNECTION



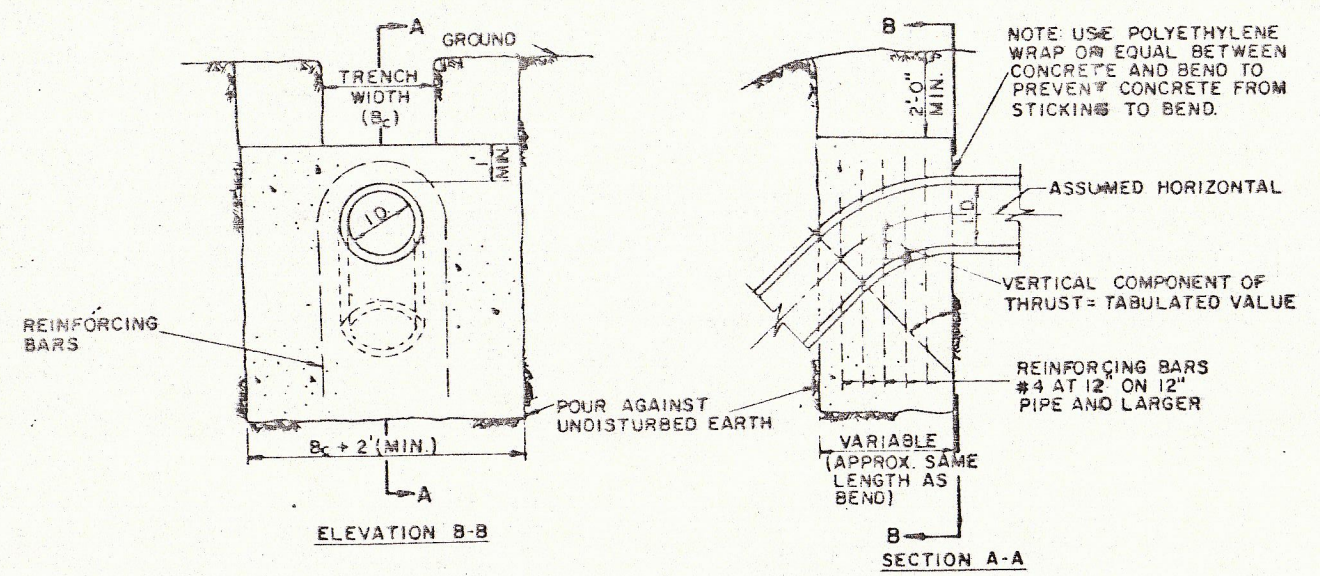
FLANGED CONNECTIONS

REINFORCED CONCRETE CYLINDER PIPE DETAILS



NOTE: 1. GATE VALVES SHALL BE IN ACCORDANCE WITH ANNA STANDARD C-509-80 OR LATEST THEREOF. ALL VALVES SHALL BE "MUELLER" OR APPROVED EQUAL.
2. A PERMANENTLY ATTACHED VALVE EXTENSION STEM SHALL BE REQUIRED FOR ANY VALVE THATS OPERATING NUT IS LOCATED IN EXCESS OF 4 FEET BELOW THE TOP OF VALVE BOX. THIS EXTENSION SHALL BE OF SUFFICIENT LENGTH TO INSURE THAT ITS TOP IS WITHIN 4" OF VALVE BOX LID. MANUFACTURED VALVE STACK DUCTILE IRON PIPE TO BE USED FOR EXTENSION GREATER THAN 4'-0" BELL END OF STACK TO BE FITTED OVER VALVE. VALVE AND VALVE STACK IS TO BE POLY WRAPPED.
3. VALVES SHALL BE OF DUCTILE IRON W/RUBBER ENCAPSULATED DISK BODY BOLTS SHALL BE STAINLESS STEEL OF SAME SIZE ON EACH VALVE.

TYPICAL VALVE SETTING AND BOX



I.D. (IN.)	T (IN.)	A 11.25°		A 22.50°		A 33°		A 45°		A 56.25°		A 67.50°		A 90°		I.D. (IN.)	T (IN.)
		FT.	CY.	FT.	CY.	FT.	CY.	FT.	CY.	FT.	CY.	FT.	CY.	FT.	CY.		
4.4	0.4	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
10.12	0.6	2.2	1.5	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
16.18	0.9	3.0	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
20	1.1	3.6	2.4	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
24	1.3	4.2	2.8	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
30	1.5	4.8	3.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
36	1.7	5.4	3.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
42	1.9	6.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
48	2.1	6.6	4.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
54	2.3	7.2	4.8	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
60	2.5	7.8	5.2	3.9	3.9	3.9	3.9										