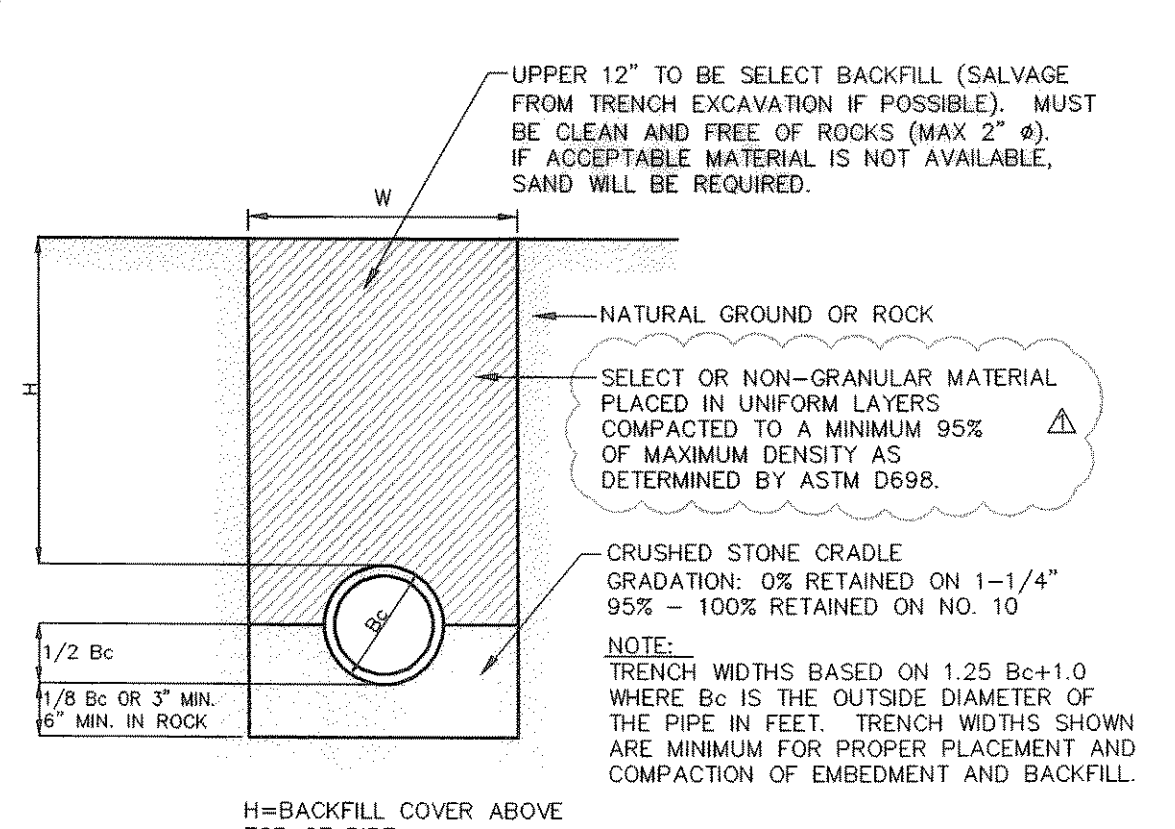
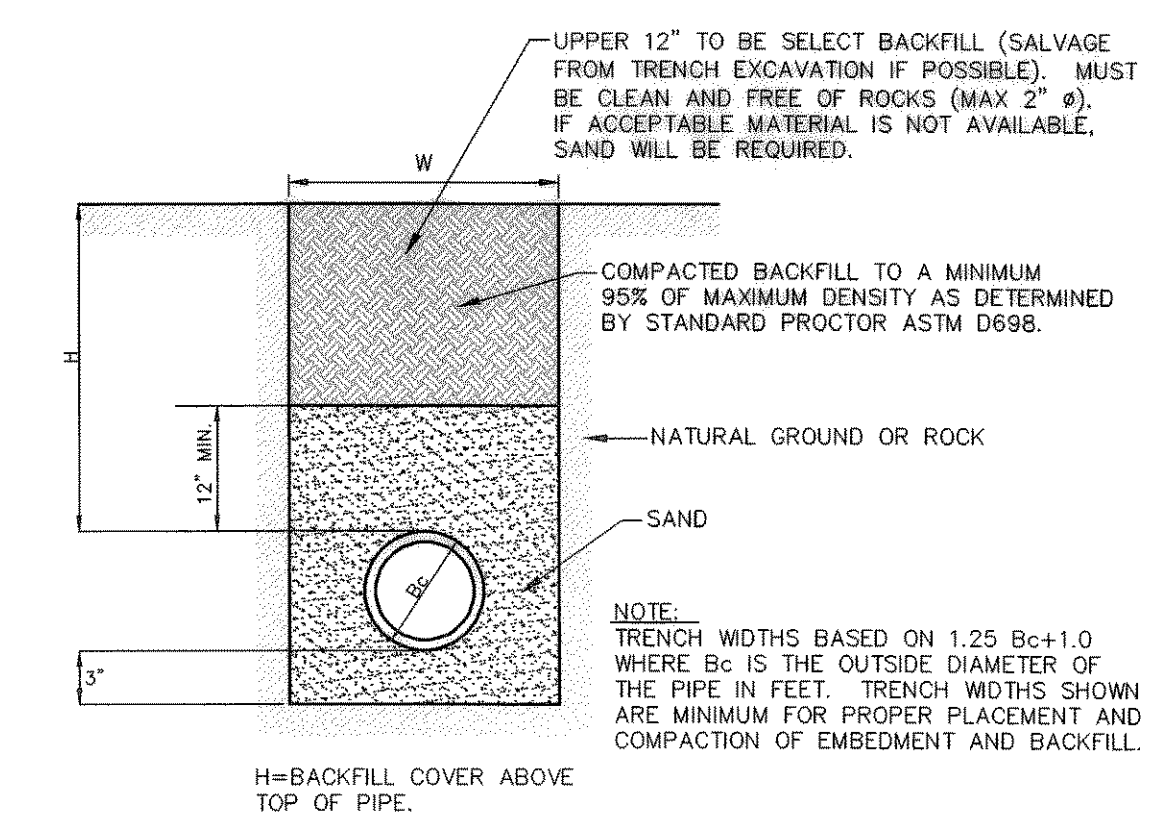


WILLIAMS 12/04/2003 - 11:30AM  
 S:\JOBS\1100-1199\1130-02-0571.DWG\1130-02.DWG  
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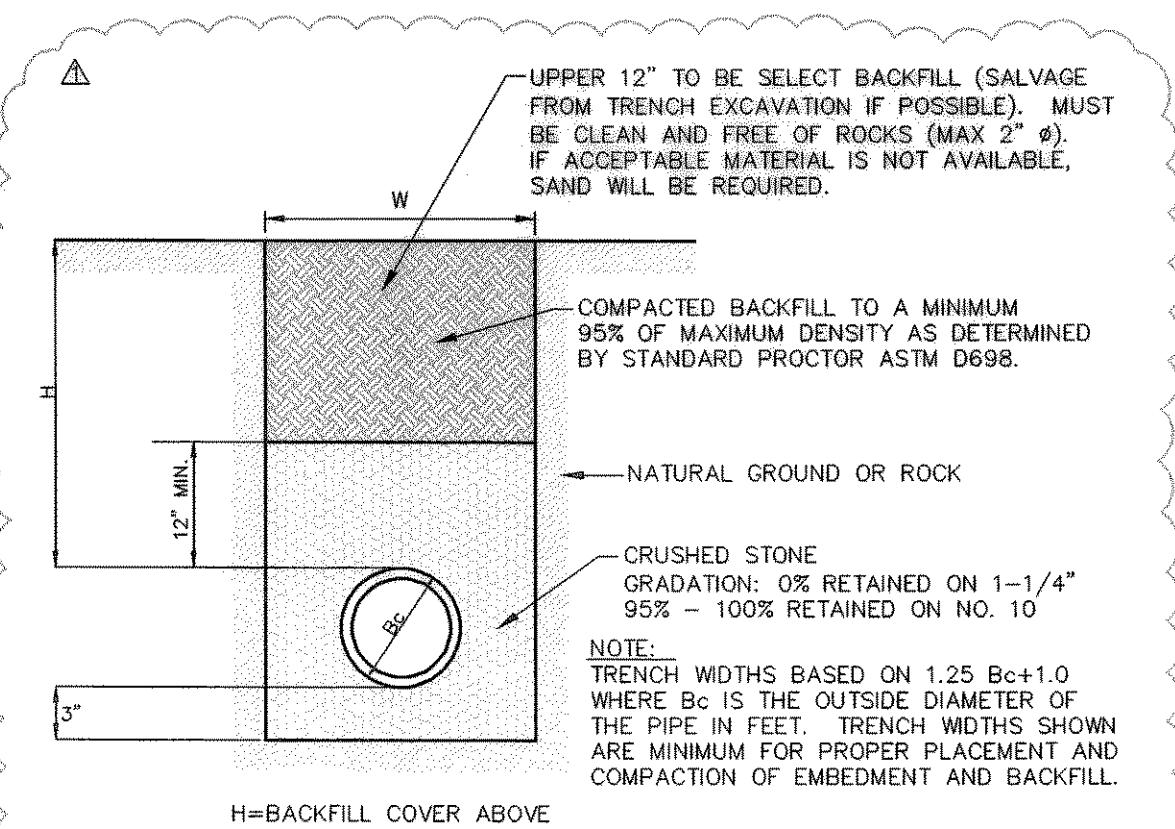


**CLASS "B"**



**CLASS "B-3"**

**NO SAND OR GRANULAR MATERIAL ALLOWED FOR USE IN BACKFILL ABOVE ROCK EMBEDMENT.**

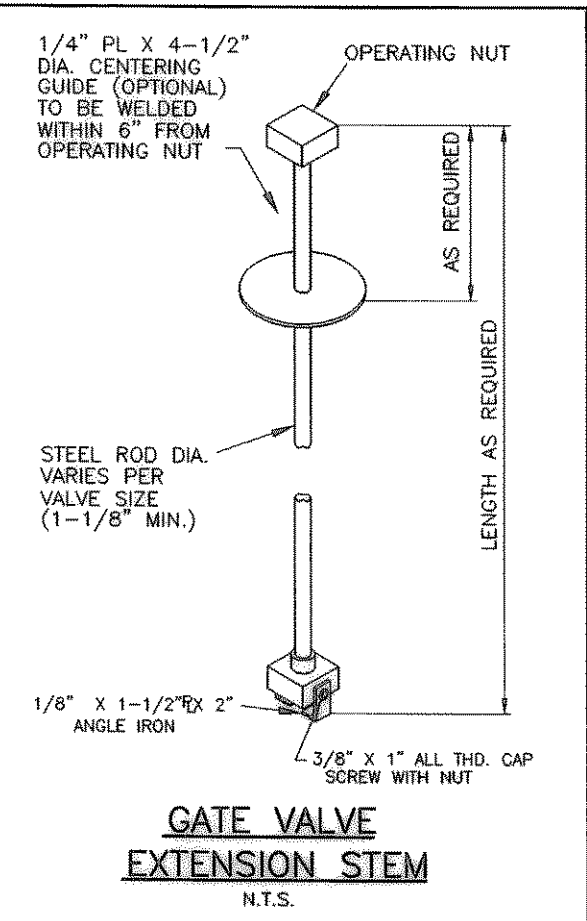


**PVC SEWER**

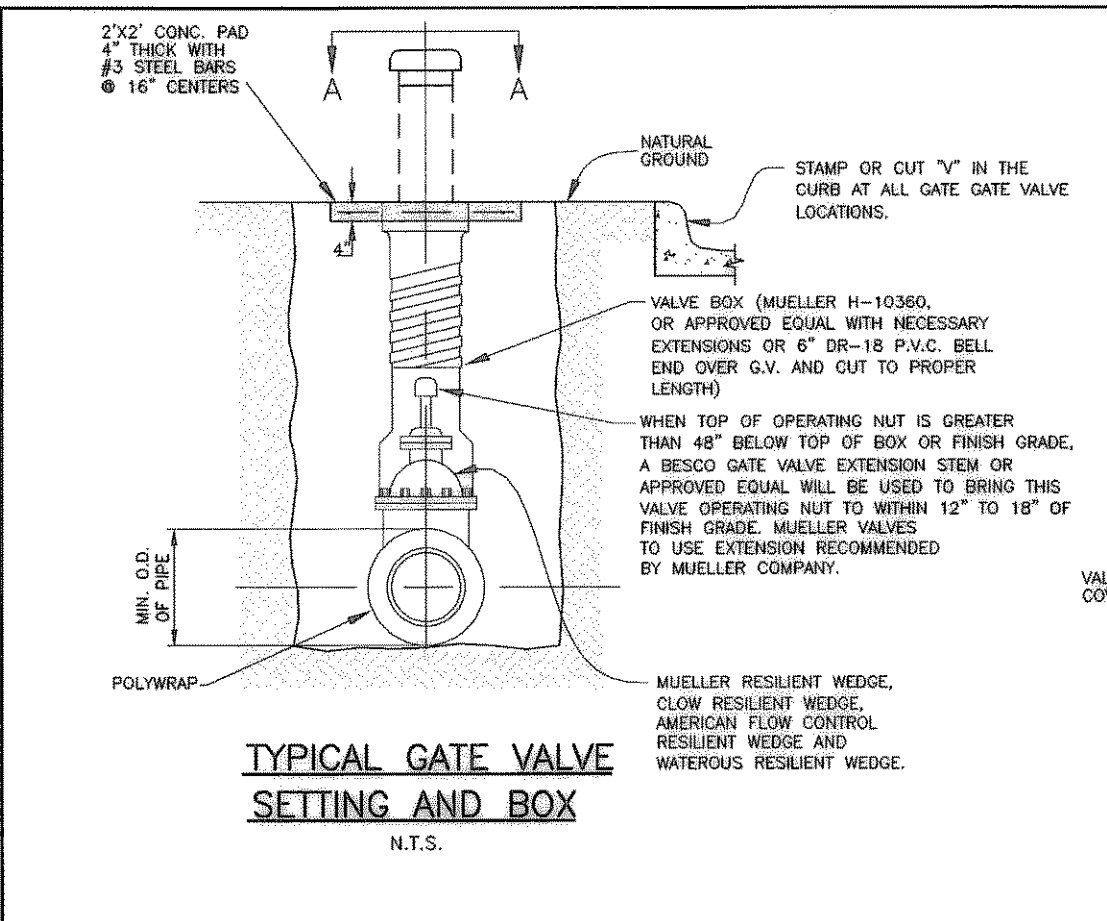
PIPE MATERIAL	EMBEDMENT
RCP	CLASS "B"
PVC WATER	CLASS "B-3"
PVC SEWER	ROCK
-	-

THE EMBEDMENT CONSISTS OF A CRADLE OF FINE CRUSHED STONE AND A CAP OF SELECT MATERIAL OR GRANULAR MATERIAL. BEDDING LAYER TO BE BROUGHT TO A POINT SLIGHTLY ABOVE GRADE WITH COMPACTED FINE CRUSHED STONE, STANDARD GRADATION. BELL HOLES SHALL BE FORMED, A TROUGH SCOOPED OUT TO GRADE AND THE PIPE LAID AND JOINTED AS SPECIFIED. THE STONE SHALL BE BROUGHT UP IN UNIFORM LAYERS ON EITHER SIDE TO THE POINT SHOWN ON THE EMBEDMENT DETAIL. THE EMBEDMENT BACKFILL SHALL CONSIST OF SELECT OR GRANULAR MATERIAL. THE MATERIAL SHALL BE PLACED ON TOP OF THE CRUSHED STONE IN UNIFORM LAYERS TO THE HEIGHT AS SHOWN ON THE DETAIL.

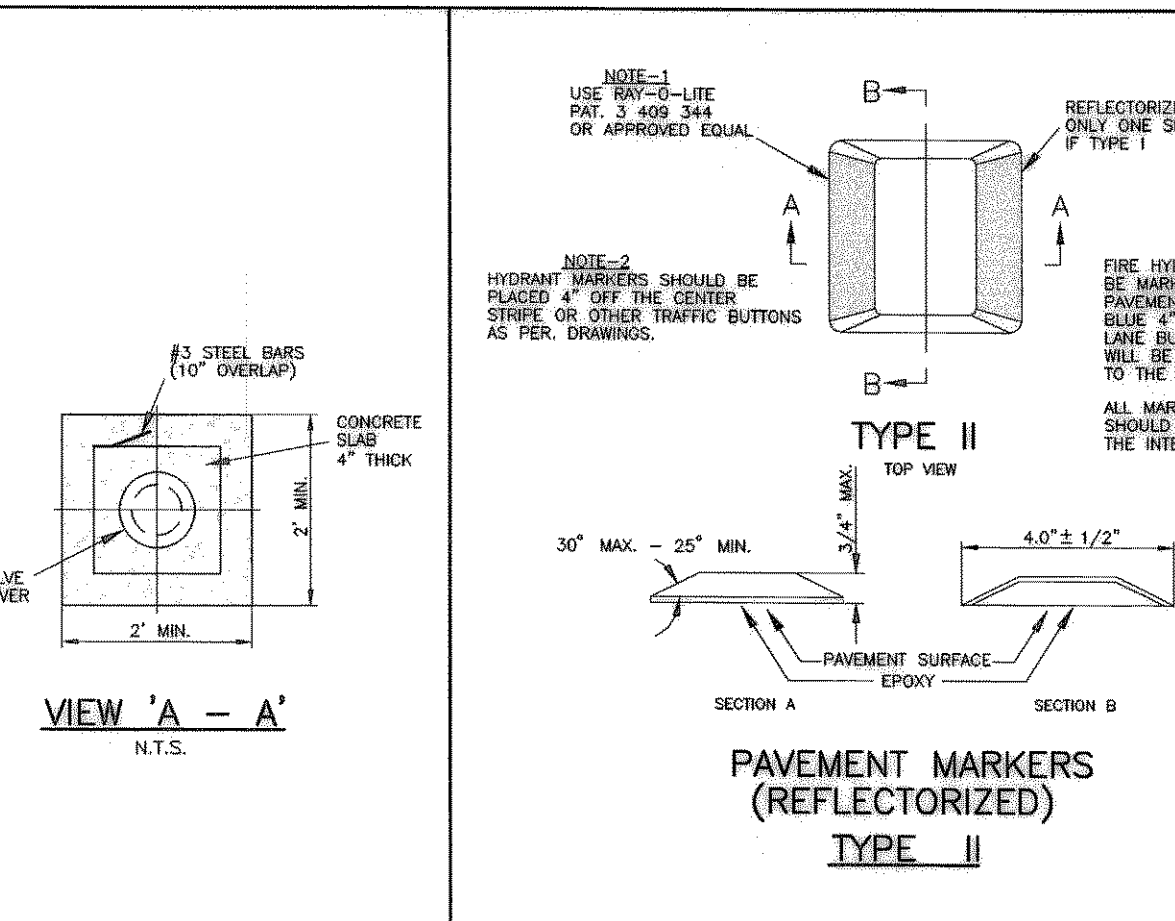
NOTE: TRACER TAPE SHALL BE PROVIDED ABOVE ALL PLASTIC PIPE.



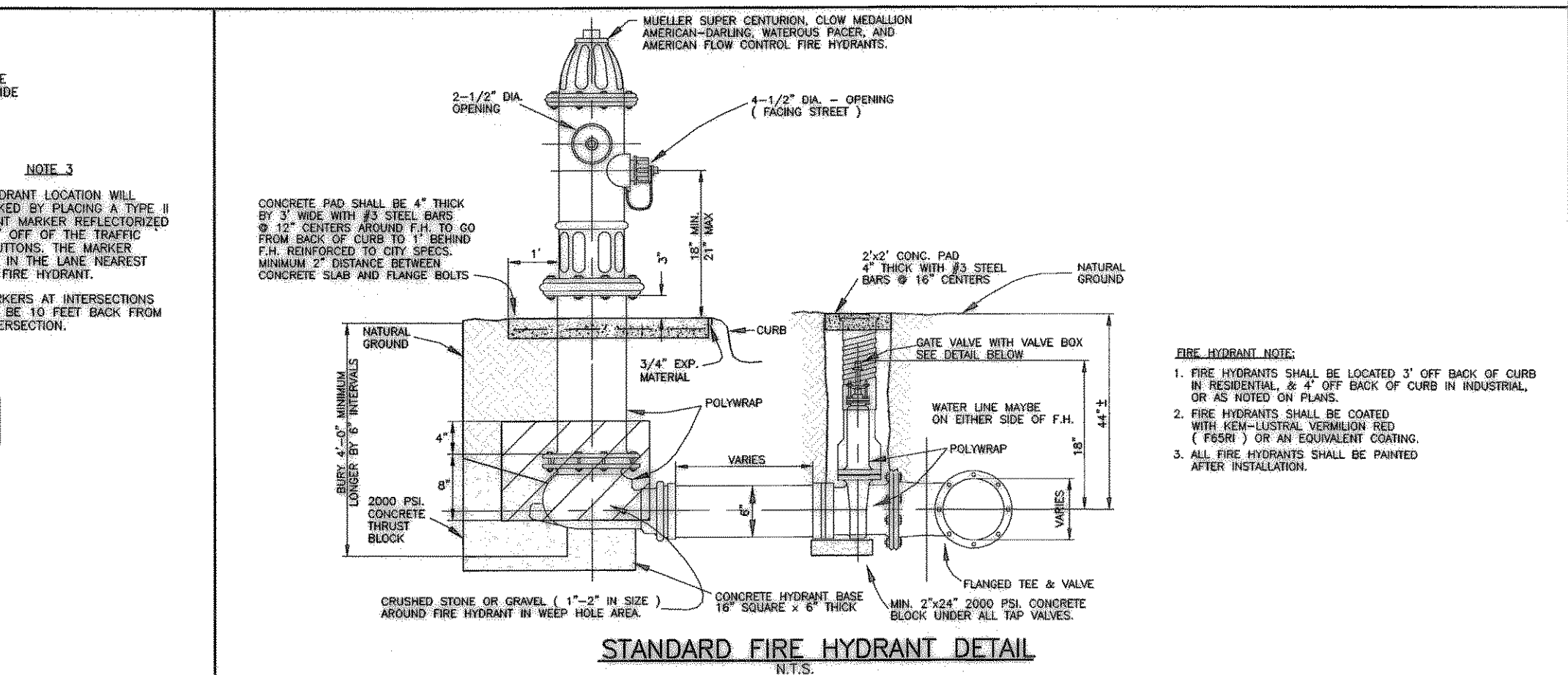
**GATE VALVE EXTENSION STEM**  
N.T.S.



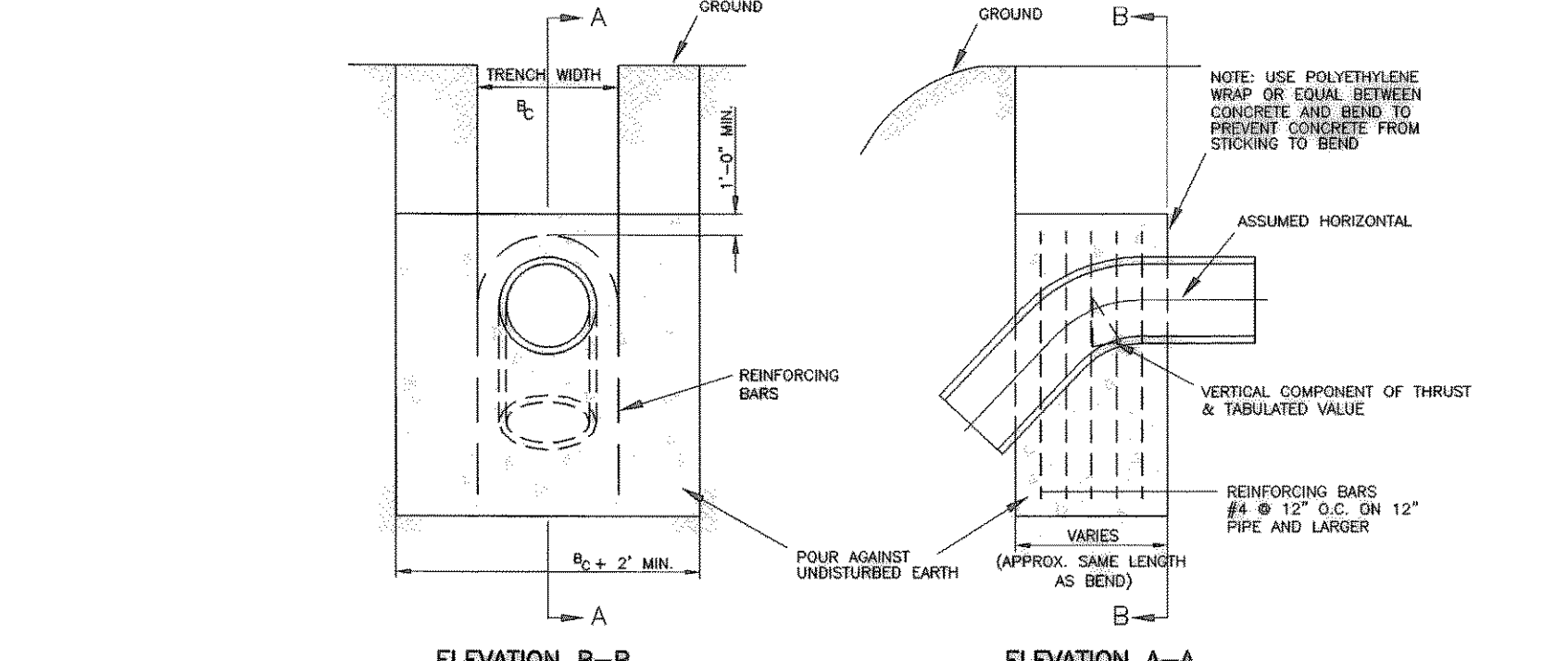
**TYPICAL GATE VALVE SETTING AND BOX**  
N.T.S.



**PAVEMENT MARKERS (REFLECTORIZED) TYPE II**  
N.T.S.



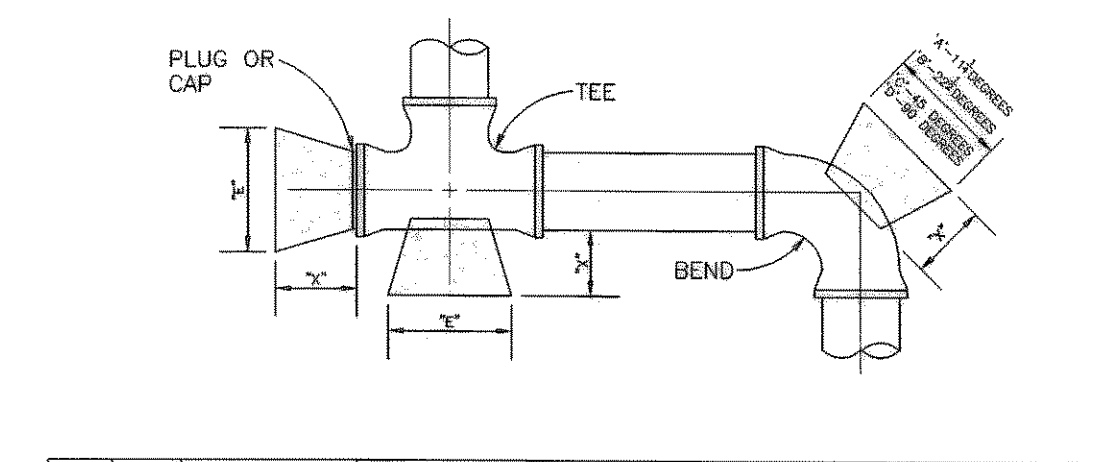
**STANDARD FIRE HYDRANT DETAIL**  
N.T.S.



I.D. (IN.)	11.25'		22.50'		30'		45'		67.50'		90'		I.D. (IN.)
	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	THRUST TONS	VOL. C.Y.	
4.68	1.0	0.5	2.0	1.0	2.5	1.3	3.6	1.8	4.6	2.3	5.0	2.5	4.6,8
10.12	2.2	1.1	4.3	2.2	5.7	2.8	8.0	4.0	10.5	5.2	11.3	5.7	10.12
16.18	5.0	2.5	9.7	4.9	12.7	6.4	18.0	9.0	23.5	11.8	25.5	12.7	16.18
20	6.1	3.1	12.0	6.0	15.7	7.9	22.2	11.1	29.2	14.5	31.4	15.7	20
24	8.2	4.4	17.3	8.7	22.6	11.3	32.0	16.0	41.8	20.9	45.2	22.6	24
30	10.5	5.2	20.3	10.1	26.5	13.3	37.5	18.8	49.0	24.5	53.1	26.5	30
36	14.9	7.5	29.2	14.6	38.2	19.1	54.0	27.0	70.5	35.3	78.4	38.2	36
42	20.3	10.1	39.8	19.9	52.0	26.0	73.5	36.7	96.0	48.0	104.0	52.0	42
48	26.5	13.2	51.9	26.0	67.9	33.9	96.0	48.0	126.0	62.7	136.0	67.9	48
54	33.5	16.8	65.7	32.9	85.9	42.9	122.0	60.7	159.0	79.4	172.0	85.9	54
60	41.4	20.7	81.2	40.6	106.0	53.0	150.0	75.0	196.0	98.0	212.0	106.0	60
66	50.1	25.0	98.2	49.1	128.0	64.2	182.0	90.7	237.0	119.0	257.0	128.0	66
72	59.6	29.8	117.0	58.4	153.0	76.3	216.0	108.0	282.0	141.0	305.0	153.0	72
78	69.9	35.0	137.0	68.6	179.0	90.0	254.0	127.0	331.0	168.0	358.0	179.0	78
84	81.1	40.5	159.0	79.5	208.0	104.0	294.0	147.0	384.0	192.0	416.0	208.0	84
90	93.1	46.5	183.0	91.3	239.0	119.0	337.0	169.0	441.0	221.0	477.0	239.0	90
96	106.0	53.0	208.0	104.0	272.0	136.0	384.0	192.0	502.0	251.0	543.0	272.0	96

**VERTICAL THRUST BLOCK NOTES:**  
 1. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 P.S.I. FOR 24" I.D. PIPE AND SMALLER AND 150 P.S.I. ON 30" I.D. AND LARGER.  
 2. VOLUMES OF VERTICAL BEND THRUST BLOCKS ARE NET VOLUMES OF CONCRETE TO BE FURNISHED. THE CORRESPONDING WEIGHT OF THE CONCRETE IS EQUAL TO OR GREATER THAN THE VERTICAL COMPONENT OF THRUST ON THE VERTICAL BEND.  
 3. WALL THICKNESS (T) ASSUMED HERE FOR ESTIMATING PURPOSES ONLY.  
 4. CONCRETE FOR BLOCKING SHALL BE 2000 P.S.I. CONCRETE.  
 5. DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD CONDITIONS WHERE AND AS DIRECTED BY THE ENGINEER. THE VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN HERE.

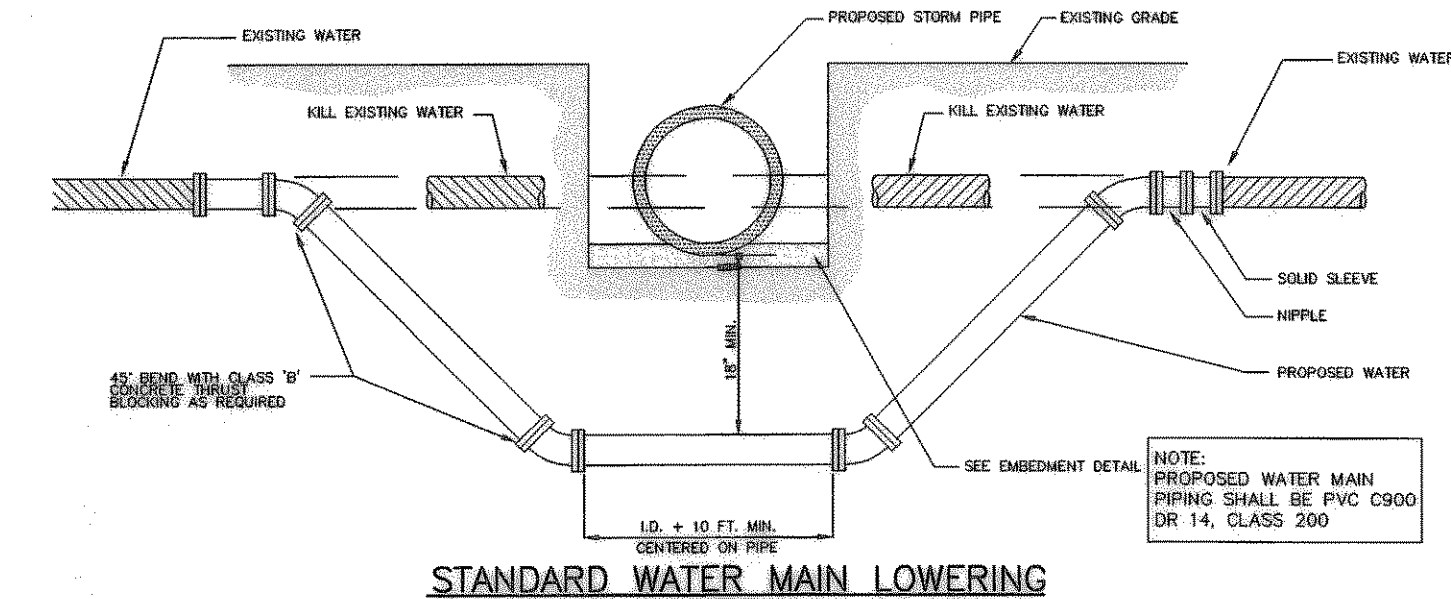
**DIMENSIONS OF CONCRETE FOR VERTICAL THRUST BLOCKS AT FITTINGS**



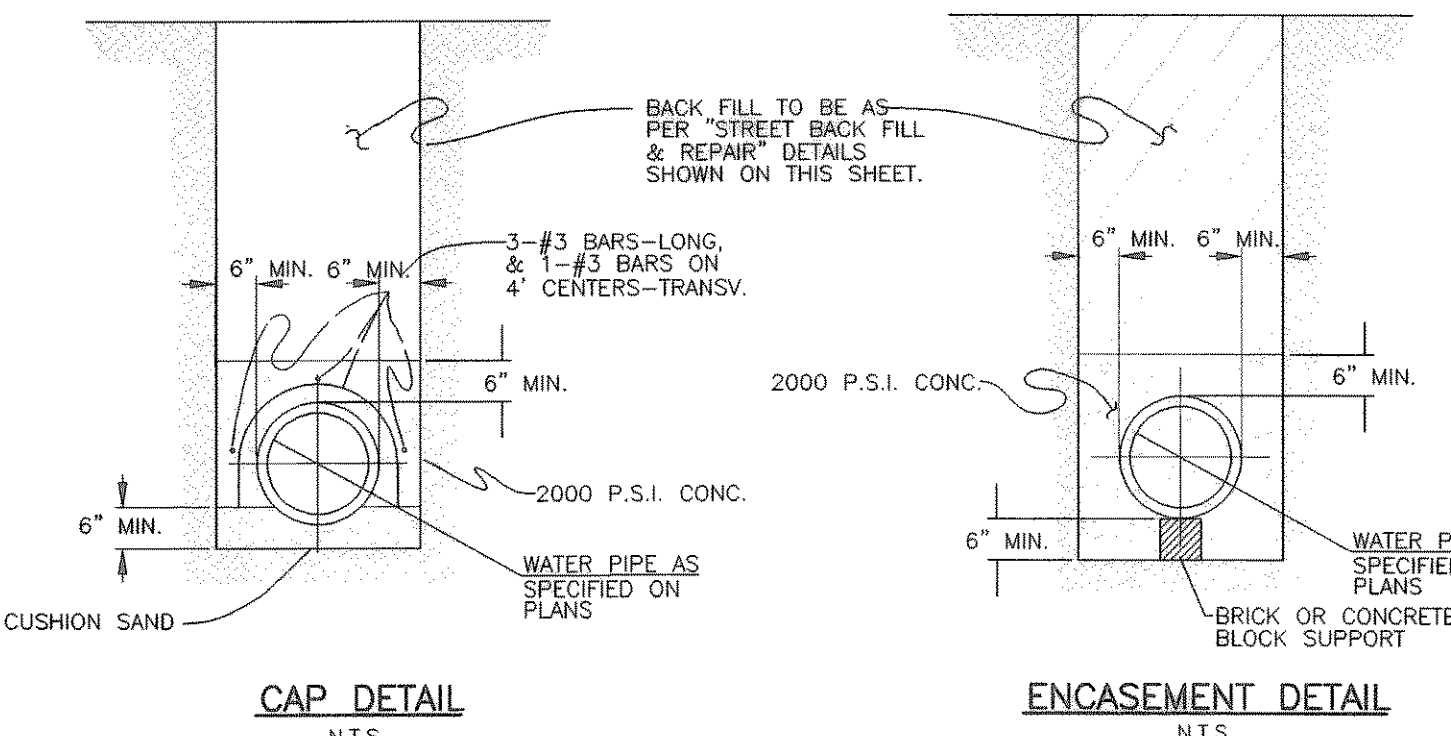
PIPE SIZE	X - MIN. DIA. FT.	11 1/2 DEGREES		22 1/2 DEGREES		45 DEGREES		90 DEGREES		TEE & PLUG	
		"A" MIN. AREA	"B" MIN. AREA	"C" MIN. AREA	"D" MIN. AREA	"E" MIN. AREA	"F" MIN. AREA				
4"	1.5	1.00	1.00	1.00	1.00	1.00	1.00	1.06	1.00	1.00	1.00
6"	1.5	1.00	1.00	1.00	1.00	1.14	1.30	1.55	2.40	1.30	1.70
8"	1.5	1.00	1.00	1.08	1.18	1.52	2.31	2.07	4.27	1.74	3.02
10"	1.5	1.00	1.00	1.35	1.84	1.90	3.61	2.58	6.66	2.17	4.71
12"	1.5	1.00	1.33	1.63	2.65	1.86	5.19	3.10	9.60	2.61	6.79
14"	1.5	1.03	1.81	1.90	3.60	2.66	7.07	3.61	13.06	3.04	9.246
16"	2.0	1.18	2.36	2.17	4.71	3.04	9.23	4.13	17.06	3.47	12.06
18"	2.0	1.33	2.99	2.44	5.96	3.42	11.69	4.65	21.99	3.91	15.27
20"	2.0	1.48	3.70	2.71	7.35	3.80	14.43	5.14	26.86	4.34	18.85
21"	2.0	1.55	4.07	2.85	8.11	3.99	15.91	5.42	29.39	4.56	20.78
24"	2.0	1.77	5.32	3.25	10.59	4.56	20.77	6.20	38.39	5.21	27.14
27"	2.5	1.99	6.73	3.66	13.40	5.13	26.29	6.97	48.58	5.86	34.35
30"	2.5	2.22	8.31	4.07	16.55	5.70	32.46	7.74	59.98	6.51	42.41
33"	2.5	2.44	10.06	4.47	20.02	6.27	39.28	8.52	72.57	7.16	51.31
36"	2.5	2.68	11.97	4.88	23.83	6.84	46.74	9.29	86.37	7.81	61.07
39"	3.0	2.88	14.05	5.29	27.97	7.41	54.86	10.07	101.36	8.47	71.68
42"	3.0	3.10	16.30	5.69	32.43	7.98	63.62	10.85	117.56	9.12	83.13

**HORIZONTAL THRUST BLOCK NOTES:**  
 1. USE FORD RETAINER GLANDS WITH ALL BENDS, UNIFLANGE SERIES 1400 FOR DUCTILE IRON PIPE AND SERIES 1500 FOR P.V.C. PIPE, OR AN APPROVED EQUAL.  
 2. ALL CALCULATIONS ARE BASED ON A WATER LINE PRESSURE OF 150 P.S.I. AND AN ALLOWABLE SOIL BEARING VALUE OF 2,500 POUNDS PER SQUARE FEET.  
 3. 2000 PSI CONCRETE SHALL BE USED FOR ALL BLOCKING.  
 4. THE MINIMUM VERTICAL DIMENSIONS OF ALL BLOCKING SHALL BE 1.5 TIMES THE PIPE DIAMETER WITH AT LEAST 0.75 TIMES THE PIPE DIAMETER EXTENDING BOTH ABOVE AND BELOW THE PIPE CENTERLINE. THIS DIMENSION DETERMINES THE "X" DIMENSION FOR 11 1/4" BENDS.  
 5. FOR 22-1/2", 45", 90", AND TEE AND PLUGS, THE VERTICAL DIMENSION SHALL BE EQUAL TO THE HORIZONTAL DIMENSION SHOWN TO PRODUCE THE REQUIRED MINIMUM AREA.  
 6. ALL MINIMUM AREAS ARE IN SQUARE FEET.

**DIMENSIONS OF CONCRETE FOR HORIZONTAL THRUST BLOCKING AT FITTINGS**



**STANDARD WATER MAIN LOWERING**  
N.T.S.



**CAP DETAIL**  
N.T.S.

**ENCASEMENT DETAIL**  
N.T.S.

# Rotec Meter and Valve Box Series

## DFW-18-AMRL-Lid

### "E" Series Lid

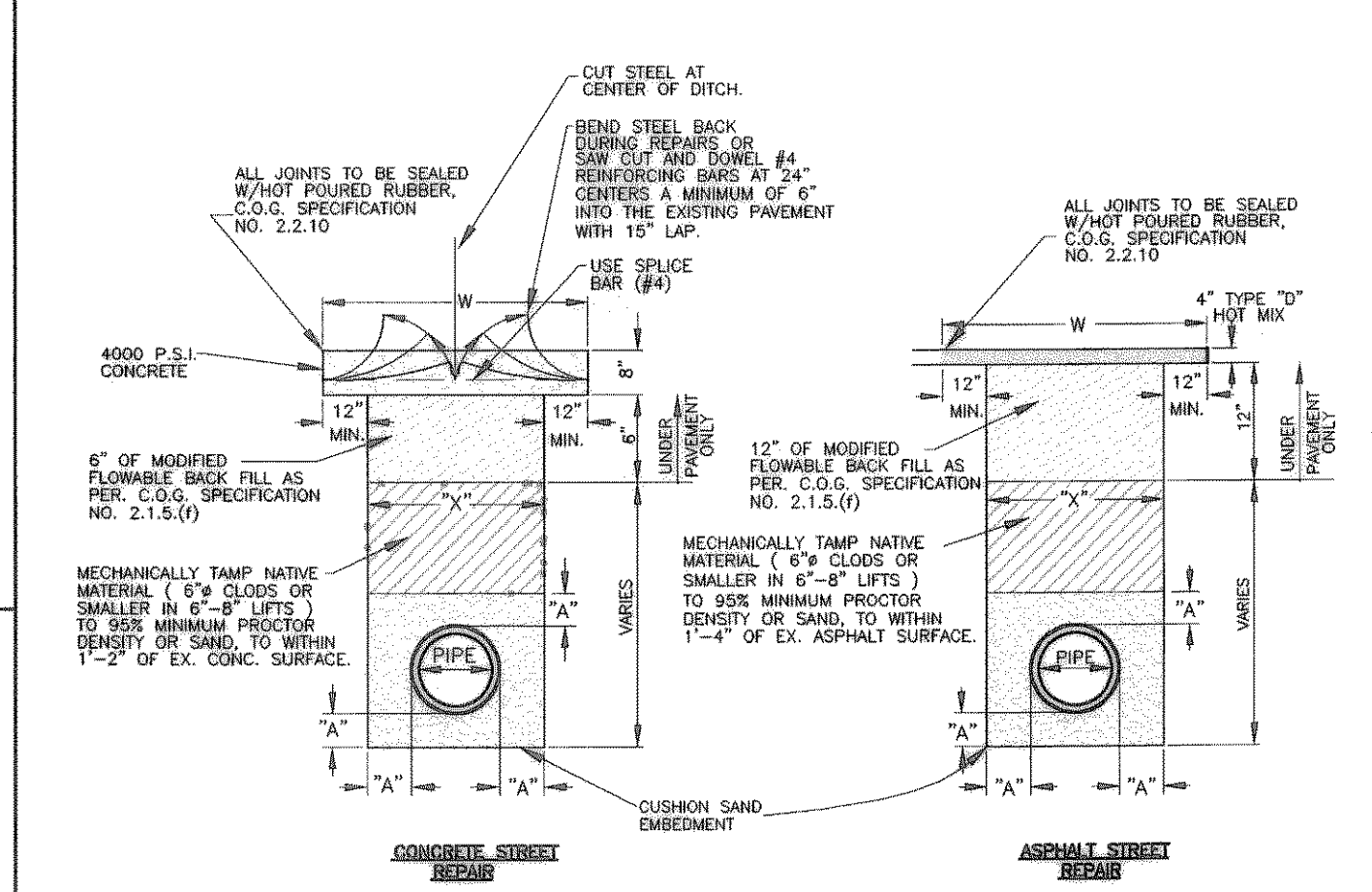
- Flush Mount Lid that fits a Cast Iron Ring
- AMR transponder slides into a milled holder under the Lid to provide security and strength
- Lid has ability to custom fit most Cast Iron Rings
- Slid resistant surface texture
- Spring loaded locking device
- Security bracket option available
- "Iron" slide mount available

Reader Mount  
Reader Mount Lock Nut  
Lock key

12 - 3/8"  
11 - 3/8"  
12 - 3/8"  
11 - 1/2"  
18"  
11 - 1/2"

MB-161  
Cast Iron Ring  
Made in USA  
Pat. Pending

**DFW PLASTICS, INC.** P.O. Box 640 - Bedford, Texas 76095 - USA - 817.439.3600 - Fax 817.439.3760



**STREET BACK FILL & REPAIR**  
N.T.S.

**TABLE OF DIMENSIONS FOR WIDTH OF TRENCH AND PAVEMENT REPLACEMENT**

NORMAL SIZE OF PIPE IN INCHES	O.D. OF PIPE BELL IN INCHES (PVC-DR18)	MINIMUM TRENCH WALL CLEARANCE "A" IN INCHES	WIDTH OF TRENCH ("X") IN INCHES		WIDTH OF P.V.M.T. REPLACEMENT * ("W") CONC. & ASPHALT **
			MAXIMUM **	MINIMUM **	
6	6.9	6	24	19	48
8	9.05	6	24	21	48
10	11.10	6	28	24	48
12	13.20	6	30	26	50
16+	VARIES	8	*	*	*

NOTE: \* REFER TO THE PLANS FOR SPECIFIED WIDTH OF REPLACEMENT.  
 \*\* RECOMMENDED WIDTHS - VARIES BASED ON DEPTH, AND SOIL MATERIAL.

**RECORD DRAWINGS:**  
 IT WAS THE INTENT THAT THE IMPROVEMENTS SHOWN BE CONSTRUCTED ACCORDING TO THESE PLANS AS APPROVED BY THE CITY. THE LINES AND GRADES WERE SET ON THE GROUND FOR CONSTRUCTION ACCORDING TO SAID PLANS. THE CITY INSPECTED THE CONSTRUCTION. THE ENGINEER DID NOT VERIFY LINES OR GRADES AFTER CONSTRUCTION. WE ARE NOT AWARE OF ANY CHANGES OR REVISIONS TO THESE PLANS DURING CONSTRUCTION OTHER THAN THOSE SHOWN.

RANDALL P. POGUE, P.E.  
TX LIC. NO. 84780

DATE: DECEMBER 4, 2003

NO.	DATE	REVISION / DESCRIPTION
4	8-19-03	COORDINATION
1	5-21-03	REVISED PER CITY COMMENTS

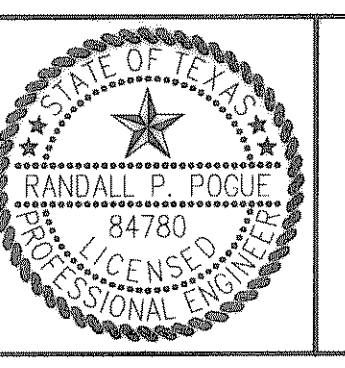
DESIGN	DRAWN	DATE	SCALE	NOTES
RPP	EMS	4-24-03	AS SHOWN	-

**PROJECT INFORMATION**  
 BANK OF AMERICA  
 SEC HORIZON ROAD (FM 3097) @ RIDGE ROAD (FM 740)  
 CITY OF ROCKWALL, TEXAS  
 LOT 5R, BLOCK A  
 HORIZON RIDGE ADDITION  
 E. TEAL SURVEY, ABSTRACT No. 207

**ARCHITECT**  
 THE SAMUEL GROUP  
 2906 MAPLE AVENUE, SUITE 202  
 DALLAS, TEXAS 75201  
 MR. ELLIOTT BAIRD  
 (214) 922-8012 PHONE  
 (214) 922-9689 FAX

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*R.P.P. 42403*



# POGUE

ENGINEERING & DEVELOPMENT COMPANY, INC.

2111 ELORADO PARKWAY  
SUITE 101  
MCKINNEY, TEXAS 75070

(214) 544-8880 PHONE  
(214) 544-8882 FAX  
randypogue@texasnet.net

## WATER & SANITARY SEWER DETAILS

BANK OF AMERICA  
1.0775 ACRES  
LOT 5R, BLOCK A, HORIZON RIDGE ADDITION  
CITY OF ROCKWALL, TEXAS

SHEET NO. C5.02