

REFER TO STD. DWG. No. 4040 FOR GENERAL NOTES.

L.D. (IN.)	11.25'		22.50'		30'		45'		67.50'		90'	
	THRUST (TONS)	VOL. (C.Y.)										
4.6,8	1.0	0.5	2.0	1.0	2.5	1.3	3.6	1.8	4.6	2.3	5.0	2.5
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
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
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
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
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
36	14.9	7.5	29.2	14.6	38.2	19.1	54.0	27.0	70.5	35.3	76.4	38.2
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
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
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
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
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
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
78	69.9	35.0	137.0	68.6	179.0	90.0	254.0	127.0	331.0	166.0	358.0	179.0
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
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
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

VERTICAL THRUST BLOCK AT PIPE BEND

STANDARD SPECIFICATION REFERENCE: 502.4

DATE: OCT. '04

STANDARD DRAWING NO.: 4030

GENERAL NOTES FOR ALL THRUST BLOCKS:

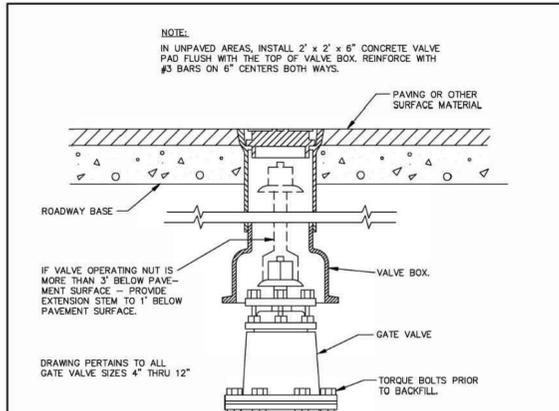
- CONCRETE FOR BLOCKING SHALL BE CLASS "B".
- ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 PSI FOR DUCTILE IRON, P.V.C., AND 150 PSI FOR CONCRETE PIPE.
- VOLUMES OF THRUST BLOCKS ARE NET VOLUMES OF CONCRETE TO BE FURNISHED. THE CORRESPONDING WEIGHT OF THE CONCRETE (CLASS "B") IS EQUAL TO OR GREATER THAN THE VERTICAL COMPONENT OF THE THRUST ON THE VERTICAL BEND.
- WALL THICKNESS (T) ASSUMED HERE FOR ESTIMATING PURPOSES ONLY.
- POUR CONCRETE FOR BLOCK AGAINST UNDISTURBED EARTH.
- 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.
- THE SOIL BEARING PRESSURES ARE BASED ON 1000 LBS./S.F. IN SOIL AND 2000 LBS./S.F. IN ROCK.
- USE POLYETHYLENE WRAP OR EQUAL BETWEEN CONCRETE AND BEND, TEE, OR PLUG TO PREVENT THE CONCRETE FROM STICKING TO IT.
- CONCRETE SHALL NOT EXTEND BEYOND JOINTS.

THRUST BLOCK GENERAL NOTES

STANDARD SPECIFICATION REFERENCE: 502.4

DATE: OCT. '04

STANDARD DRAWING NO.: 4040

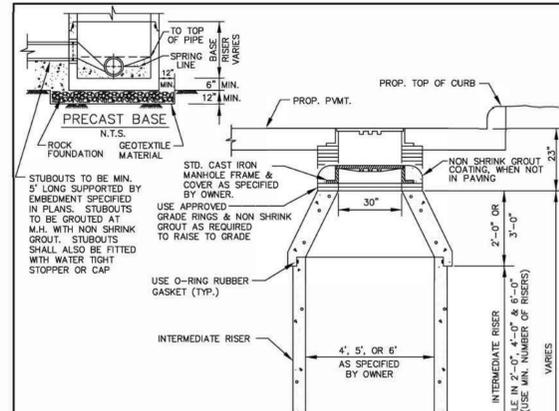


GATE VALVE 4" TO 12" BOX & EXTENSION STEM

STANDARD SPECIFICATION REFERENCE: 502.6.6*

DATE: OCT. '04

STANDARD DRAWING NO.: 4050

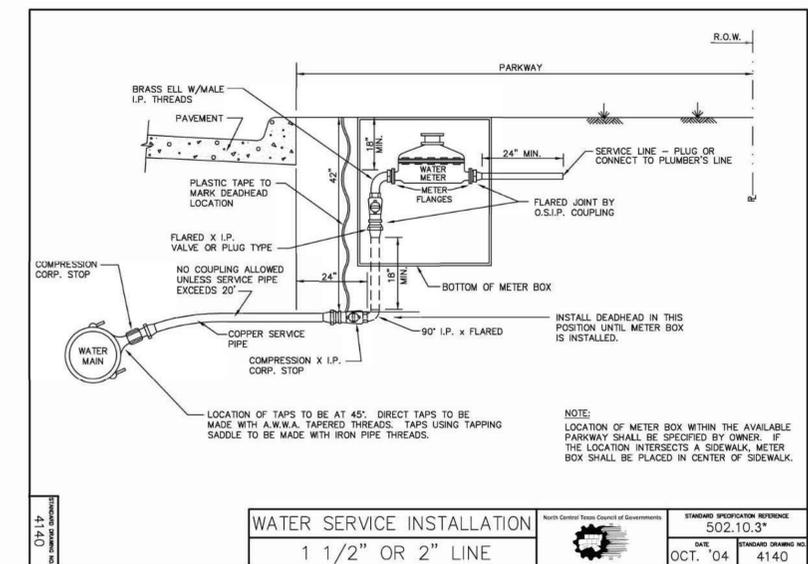


WASTEWATER MANHOLE PRECAST

STANDARD SPECIFICATION REFERENCE: 502.1.4.1.2*

DATE: OCT. '04

STANDARD DRAWING NO.: 5020



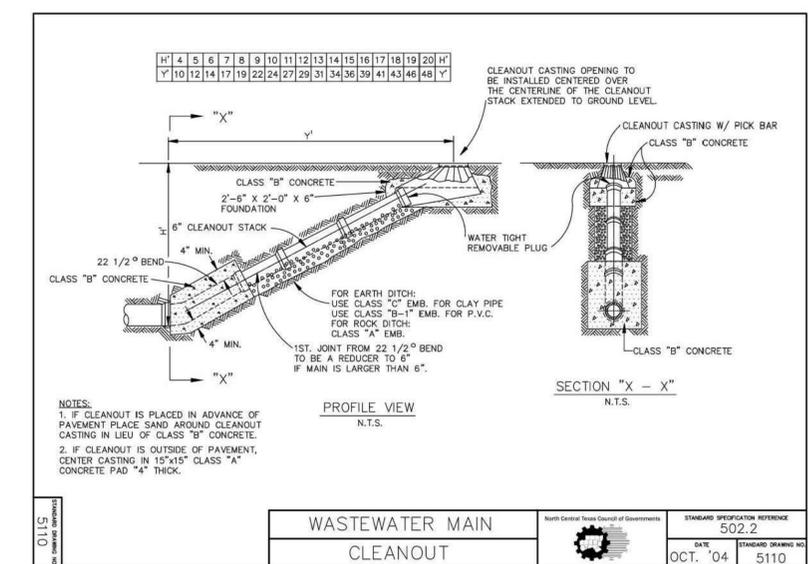
WATER SERVICE INSTALLATION

1 1/2" OR 2" LINE

STANDARD SPECIFICATION REFERENCE: 502.10.3*

DATE: OCT. '04

STANDARD DRAWING NO.: 4140

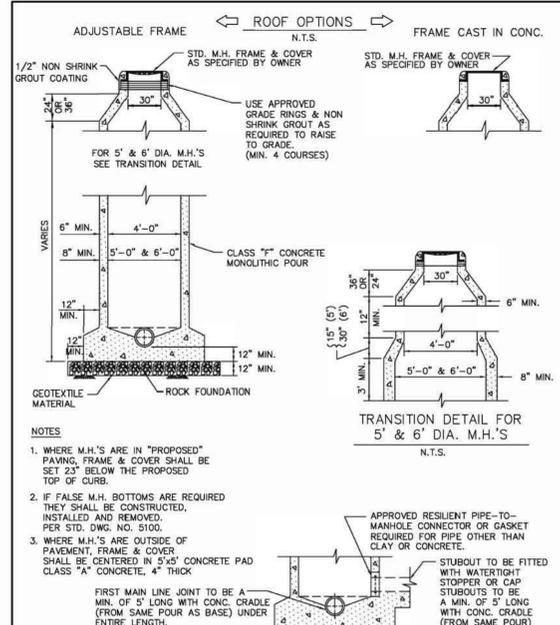


WASTEWATER MAIN CLEANOUT

STANDARD SPECIFICATION REFERENCE: 502.2

DATE: OCT. '04

STANDARD DRAWING NO.: 5110



WASTEWATER MANHOLE CAST-IN-PLACE

STANDARD SPECIFICATION REFERENCE: 502.1.4.1.1*

DATE: OCT. '04

STANDARD DRAWING NO.: 5030

REVISIONS

#	REVISION	DATE

DEVELOPER/OWNER:
ROBERT TATE
2828 W. 7TH
STREET/SUITE 100
FORT WORTH, TX 76107

UTILITY DETAILS

1.535 ACRES COMMERCIAL DEVELOPMENT OUT OF THE DAVIS ADDITION LOT 32R1, BLOCK 5 802 E. CRINER STREET CITY OF GRANDVIEW JOHNSON COUNTY, TEXAS

HANNA SURVEYING & ENGINEERING, L.L.C.

REGISTERED PROFESSIONAL ENGINEER

109945

AUGUST 14, 2024

ISSUE DATE: JUNE 14, 2024

PROJECT NO.: 23-788

SHEET NUMBER: C-6.1

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