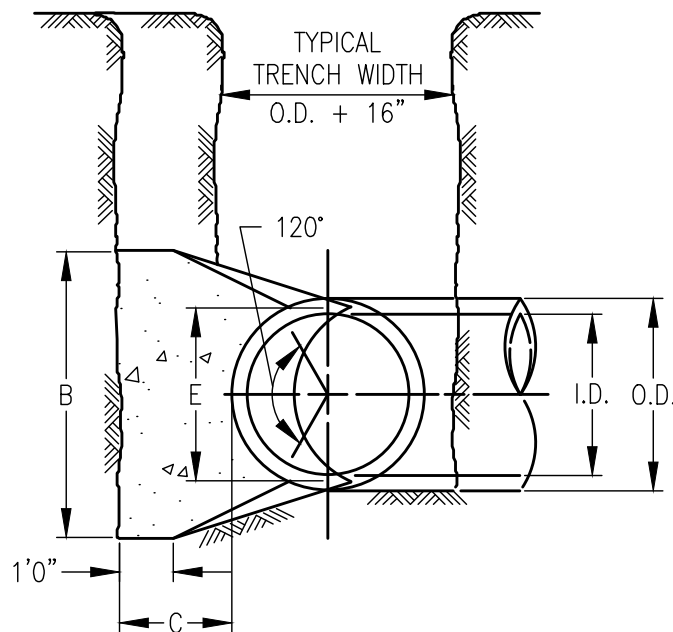


REFER TO
STD. DETAILS W-02
THROUGH W-04 FOR
TABLE OF DIMENSIONS
AND QUANTITIES AND
W-06 FOR GENERAL
NOTES



SEPTEMBER 2022



TOWN OF WESTLAKE
1500 SOLANA BOULEVARD
BLDG. 7, SUITE 7200
WESTLAKE, TEXAS 76262

HORIZONTAL
THRUST BLOCK
AT PIPE BEND
W-01

I.D. (IN.)	T (IN.)	$\Delta =$ 11.25* (FT.)	$\Delta \geq$ 22.50* (FT.)	E (FT.)
4,6,8	0.4	1.5	1.5	0.9
10,12	0.5	1.5	1.5	1.2
16,18	0.6	1.5	1.5	1.6
20	0.7	1.5	1.5	1.8
24	0.9	1.5	1.5	2.1
30	2.9	1.5	1.9	2.6
36	4.5	1.5	2.3	3.3
42	5.0	1.8	2.6	3.8
48	5.5	2.0	3.0	4.3
54	6.0	2.3	3.4	4.8
60	6.5	2.5	3.8	5.3
66	6.8	2.8	4.1	5.7
72	7.5	3.0	4.5	6.3
78	7.5	3.3	4.9	6.7
84	8.0	3.5	5.3	7.2
90	8.5	3.8	5.6	7.7
96	9.0	4.0	6.0	8.2

I.D. (IN.)	Δ = 11.25*								I.D. (IN.)	Δ = 22.50*							
	G (FT.)	THRUST (TONS)	EARTH			ROCK				G (FT.)	THRUST (TONS)	EARTH			ROCK		
			A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)				A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)
4,6,8	0.4	1.0	1.0	1.5	0.1	1.0	1.0	0.1	4,6,8	0.8	2.0	1.5	1.5	0.1	1.0	1.0	0.1
10,12	0.6	2.2	1.5	1.5	0.1	1.0	1.5	0.1	10,12	1.1	4.4	2.0	2.5	0.3	1.5	1.5	0.1
16,18	0.8	5.0	2.0	2.5	0.3	1.5	2.0	0.2	16,18	1.6	9.9	3.0	3.5	0.6	2.0	2.5	0.3
20	0.9	6.2	2.0	3.5	0.4	1.5	3.0	0.3	20	1.8	12.3	3.5	3.5	0.7	2.0	3.0	0.4
24	1.1	8.9	3.0	3.5	0.5	1.5	3.0	0.3	24	2.2	17.7	4.0	4.5	1.0	3.0	3.5	0.5
30	1.4	10.4	3.0	3.5	0.6	2.0	3.5	0.4	30	2.7	20.7	5.0	4.5	1.5	3.0	4.0	0.8
36	1.7	15.0	3.5	4.5	0.9	2.0	4.0	0.5	36	3.3	29.8	5.5	5.5	2.3	4.0	4.0	1.3
42	1.9	20.4	4.5	5.0	1.5	2.5	5.0	0.8	42	3.8	40.5	7.0	6.0	3.9	4.5	5.0	2.1
48	2.2	26.6	4.5	6.0	2.0	2.5	6.0	1.1	48	4.4	52.9	8.0	7.0	5.7	4.5	6.0	2.8
54	2.5	33.7	6.0	6.0	3.0	3.0	6.0	1.4	54	4.9	67.0	9.0	8.0	8.0	6.0	6.0	4.1
60	2.7	41.6	6.0	7.0	3.8	3.0	7.0	1.8	60	5.5	82.7	9.5	9.0	10.6	6.0	7.0	5.3
66	3.0	50.3	6.5	8.0	5.1	3.5	8.0	2.7	66	6.0	100.1	10.5	10.0	14.1	6.5	8.0	7.2
72	3.3	59.9	7.5	8.0	6.3	4.0	8.0	3.3	72	6.6	119.1	11.0	11.0	17.6	7.5	8.0	9.1
78	3.6	70.2	8.0	9.0	8.1	4.0	9.0	3.9	78	7.1	139.8	12.0	12.0	22.5	8.0	9.0	11.7
84	3.8	81.5	8.5	10.0	10.3	4.5	10.0	5.3	84	7.6	162.1	13.0	12.5	27.2	8.5	10.0	14.8
90	4.1	93.5	9.5	10.0	12.2	5.0	10.0	6.3	90	8.2	186.1	14.0	13.5	33.7	9.5	10.0	17.7
96	4.4	106.4	10.0	11.0	15.0	5.0	11.0	7.4	96	8.7	211.7	15.0	14.5	41.2	10.0	11.0	21.8

TABLES OF DIMENSIONS AND QUANTITIES

SEPTEMBER 2022



TOWN OF WESTLAKE
1500 SOLANA BOULEVARD
BLDG. 7, SUITE 7200
WESTLAKE, TEXAS 76262

HORIZONTAL
THRUST BLOCK
AT PIPE BEND
W-02

I.D. (IN.)	Δ = 30°								I.D. (IN.)	Δ = 45°							
	G (FT.)	THRUST (TONS)	EARTH			ROCK				G (FT.)	THRUST (TONS)	EARTH			ROCK		
			A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)				A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)
4,6,8	1.0	2.6	2.0	1.5	0.2	1.0	1.5	0.1	4,6,8	1.5	3.9	2.0	2.0	0.2	1.5	1.5	0.1
10,12	1.5	5.9	2.5	2.5	0.3	2.0	1.5	0.2	10,12	2.2	8.7	3.5	2.5	0.5	2.0	2.5	0.3
16,18	2.2	13.2	3.5	4.0	0.8	2.5	3.0	0.4	16,18	3.2	19.5	4.5	4.5	1.2	3.0	3.5	0.6
20	2.4	16.3	4.5	4.0	1.0	3.0	3.0	0.5	20	3.6	24.1	5.5	4.5	1.5	3.5	3.5	0.7
24	2.9	23.4	6.0	4.0	1.4	3.5	3.5	0.7	24	4.3	34.6	8.0	4.5	2.3	4.5	4.0	1.1
30	3.6	27.5	6.5	5.0	1.9	3.5	4.0	0.9	30	5.4	40.6	8.5	5.0	3.2	5.5	4.0	1.6
36	4.4	39.5	7.0	6.0	3.4	4.5	4.5	1.6	36	6.5	58.5	10.0	6.0	5.3	6.5	4.5	2.6
42	5.1	53.8	8.0	7.0	5.1	5.5	5.0	2.5	42	7.5	79.6	11.5	7.0	8.1	8.0	5.0	4.2
48	5.8	70.3	9.0	8.0	7.4	6.0	6.0	3.7	48	8.6	104.0	13.0	8.0	11.9	9.0	6.0	6.3
54	6.5	89.0	10.0	9.0	10.3	7.0	6.5	5.3	54	9.7	131.5	15.0	9.0	17.1	10.5	6.5	8.9
60	7.3	110.0	11.0	10.0	13.9	7.5	7.5	7.3	60	10.7	162.4	16.5	10.0	23.1	11.0	7.5	12.0
66	8.0	132.9	12.5	11.0	18.9	8.5	8.0	9.6	66	11.8	196.5	18.0	11.0	30.1	12.0	8.5	16.2
72	8.7	158.2	13.5	12.0	24.0	9.0	9.0	12.3	72	12.9	233.9	19.5	12.0	38.6	14.0	8.5	20.7
78	9.4	185.6	14.5	13.0	30.0	10.0	9.5	15.6	78	13.9	274.5	21.5	13.0	49.8	14.5	9.5	25.9
84	10.1	215.3	15.5	14.0	37.1	10.5	10.5	19.5	84	15.0	318.4	23.0	14.0	61.2	15.5	10.5	32.6
90	10.9	247.1	16.5	15.0	45.0	11.5	11.0	23.9	90	16.1	365.5	24.5	15.0	74.5	17.5	10.5	39.6
96	11.6	281.2	18.0	16.0	55.5	12.5	11.5	28.9	96	17.1	415.6	26.0	16.0	89.5	18.5	11.5	48.5

I.D. (IN.)	Δ = 67.50°								I.D. (IN.)	Δ = 90°							
	G (FT.)	THRUST (TONS)	EARTH			ROCK				G (FT.)	THRUST (TONS)	EARTH			ROCK		
			A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)				A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)
4,6,8	2.1	5.6	3.0	2.0	0.3	2.0	1.5	0.2	4,6,8	2.7	7.1	5.0	1.5	0.4	2.0	2.0	0.2
10,12	3.1	12.6	5.5	2.5	0.8	3.5	2.0	0.4	10,12	4.0	16.0	6.5	2.5	1.0	3.5	2.5	0.5
16,18	4.7	28.3	7.5	4.0	1.9	5.5	3.0	0.9	16,18	6.0	36.0	9.0	4.0	2.4	4.5	4.0	1.0
20	5.2	34.9	9.0	4.0	2.3	5.5	3.5	1.2	20	6.6	44.4	10.0	4.5	3.1	6.0	4.0	1.5
24	6.2	50.3	11.5	4.5	3.5	6.5	4.0	1.6	24	7.9	64.0	14.5	4.5	5.0	8.0	4.0	2.1
30	7.8	58.9	12.0	5.0	4.8	7.5	4.0	2.2	30	9.9	75.0	15.0	5.0	6.7	10.0	4.0	3.3
36	9.4	84.9	14.5	6.0	8.2	9.5	4.5	3.8	36	11.9	108.0	18.0	6.0	11.4	12.0	4.5	5.3
42	10.9	115.5	17.0	7.0	12.8	11.0	5.5	6.3	42	13.9	147.0	21.0	7.0	17.8	14.0	5.5	8.7
48	12.5	150.9	19.0	8.0	18.4	13.0	6.0	9.2	48	15.9	192.0	24.0	8.0	26.2	16.0	6.0	12.4
54	14.0	191.0	21.5	9.0	26.0	15.0	6.5	12.9	54	17.9	243.0	27.0	9.0	36.9	18.0	7.0	18.1
60	15.6	235.8	24.0	10.0	35.6	16.0	7.5	17.6	60	19.9	299.8	30.0	10.0	50.3	20.0	7.5	24.0
66	17.1	285.3	26.0	11.0	46.0	18.0	8.0	23.0	66	21.8	362.8	33.0	11.0	66.2	22.0	8.5	32.5
72	18.7	339.5	28.5	12.0	57.8	19.0	9.0	28.4	72	23.8	431.8	36.0	12.0	85.6	24.0	9.0	41.0
78	20.2	398.5	31.0	13.0	75.7	21.0	9.5	37.4	78	25.7	506.7	39.0	13.0	108.2	26.0	10.0	53.2
84	21.8	462.1	33.5	14.0	94.7	22.0	10.5	46.5	84	27.7	587.7	42.0	14.0	134.4	28.0	10.5	64.8
90	23.3	530.5	35.5	15.0	114.4	24.5	11.0	58.2	90	29.0	674.6	45.0	15.0	164.9	30.0	11.5	81.2
96	24.9	603.6	38.0	16.0	138.9	25.5	12.0	70.0	96	31.6	767.5	48.0	16.0	199.0	32.0	12.0	95.1

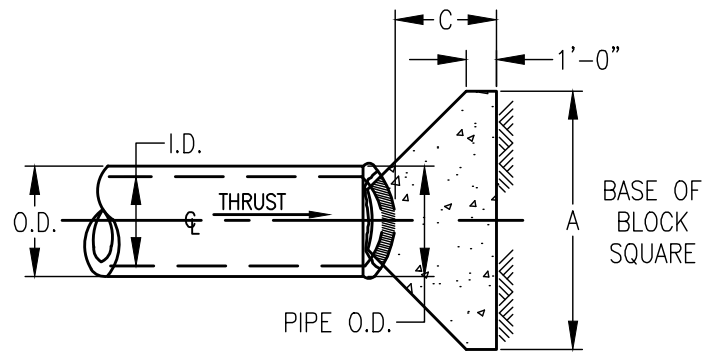
TABLES OF DIMENSIONS AND QUANTITIES

SEPTEMBER 2022



TOWN OF WESTLAKE
1500 SOLANA BOULEVARD
BLDG. 7, SUITE 7200
WESTLAKE, TEXAS 76262

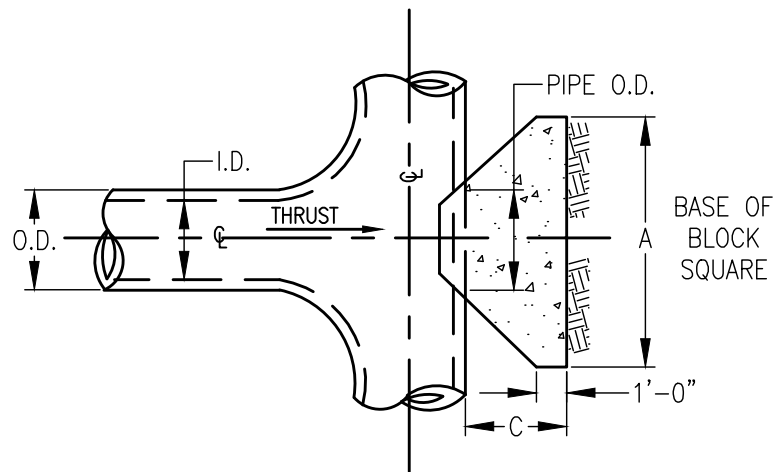
HORIZONTAL
THRUST BLOCK
AT PIPE BEND
W-03



PLAN OF PLUG THRUST BLOCK

N.T.S.

REFER TO
STD. DETAIL W-06
FOR GENERAL NOTES



PLAN OF TEE THRUST BLOCK

N.T.S.

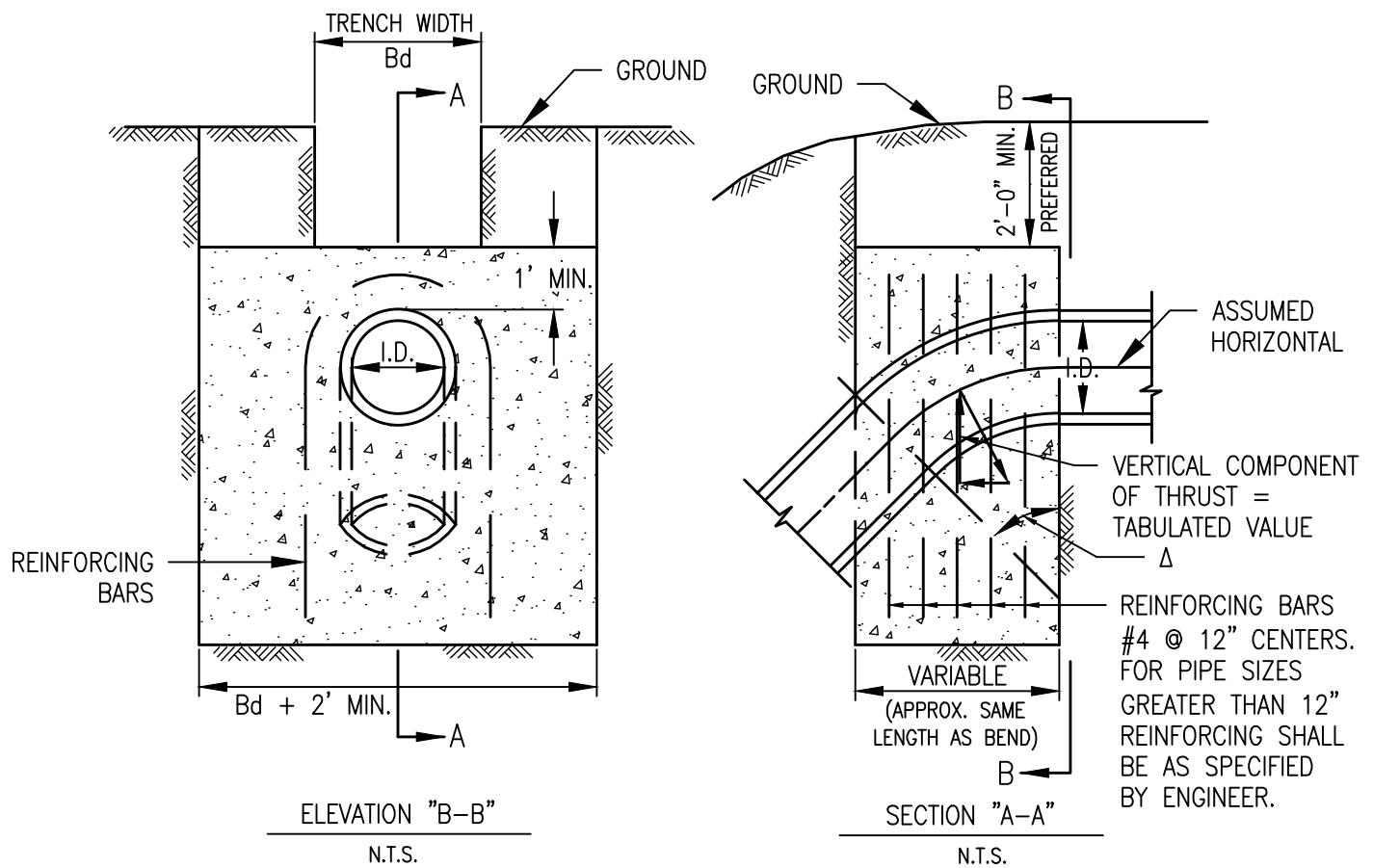
I.D. (IN.)	THRUST (TONS)	C (FT.)	EARTH		ROCK	
			A (FT.)	VOL. (C.Y.)	A (FT.)	VOL. (C.Y.)
4,6,8	5.1	1.5	2.5	0.3	2.0	0.2
10,12	11.3	1.5	3.5	0.6	2.5	0.3
16,18	25.5	2.0	5.5	1.6	4.0	0.9
20	31.5	2.0	6.0	1.9	4.0	0.9
24	45.2	2.5	7.0	3.1	5.0	1.7
30	53.0	3.0	7.5	4.1	5.5	2.4
36	76.3	4.0	9.0	7.3	6.5	4.2
42	104.0	4.5	10.5	11.0	7.5	6.2
48	136.0	5.0	12.0	15.6	8.5	8.7
54	172.0	5.5	13.5	21.4	9.5	11.9
60	212.0	6.0	15.0	28.4	10.5	15.7
66	257.0	6.5	16.5	36.8	11.5	20.5
72	305.0	7.5	17.5	47.2	12.5	27.2
78	358.0	8.0	19.0	58.9	13.5	33.7
84	416.0	8.5	20.5	72.3	14.5	41.2
90	477.0	9.0	22.0	87.7	15.5	49.7
96	543.0	9.5	23.5	104.8	16.5	61.0

SEPTEMBER 2022



TOWN OF WESTLAKE
1500 SOLANA BOULEVARD
BLDG. 7, SUITE 7200
WESTLAKE, TEXAS 76262

HORIZONTAL
THRUST BLOCK
W-04



REFER TO
STD. DETAIL W-06
FOR GENERAL NOTES

Δ →	11.25°		22.50°		30°		45°		67.50°		90°		← Δ
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.)	I.D. (IN.)
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	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	76.4	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	166.0	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

SEPTEMBER 2022



TOWN OF WESTLAKE
1500 SOLANA BOULEVARD
BLDG. 7, SUITE 7200
WESTLAKE, TEXAS 76262

VERTICAL
THRUST BLOCK
AT PIPE BEND
W-05

GENERAL NOTES FOR ALL THRUST BLOCKS:

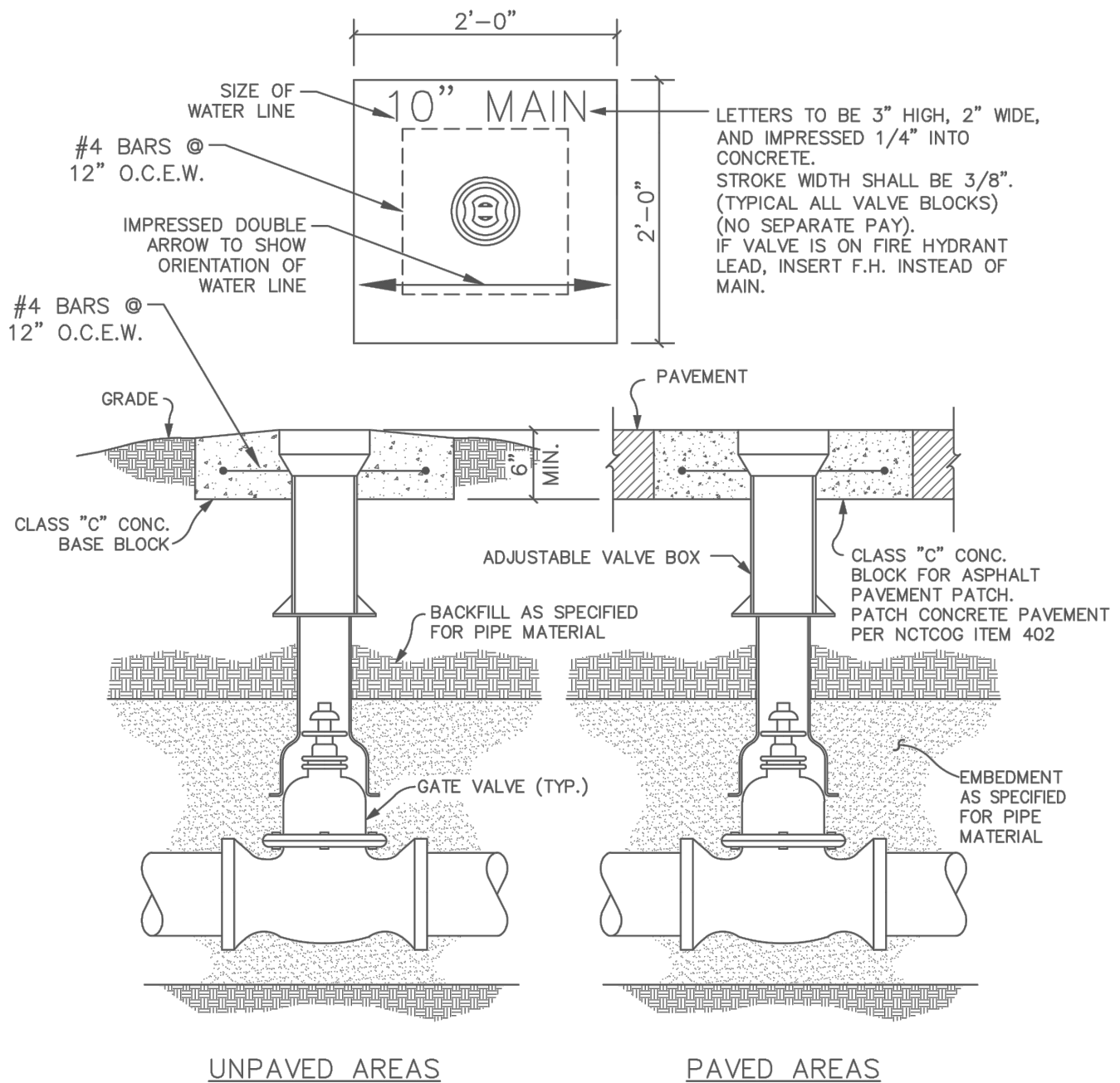
1. CONCRETE FOR BLOCKING SHALL BE CLASS "B".
2. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 PSI FOR DUCTILE IRON, P.V.C., AND 150 PSI FOR CONCRETE PIPE.
3. VOLUMES OF THRUST BLOCKS ARE NET VOLUMES OF CONCRETE TO BE FURNISHED. THE CORRESPONDING WEIGHT OF THE CONCRETE (CLASS "B") IS EQUAL TO OR GREATER THAN THE VERTICAL COMPONENT OF THE THRUST ON THE VERTICAL BEND.
4. WALL THICKNESS (T) ASSUMED HERE FOR ESTIMATING PURPOSES ONLY.
5. POUR CONCRETE FOR BLOCK AGAINST UNDISTURBED EARTH.
6. 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.
7. THE SOIL BEARING PRESSURES ARE BASED ON 1000 LBS./S.F. IN SOIL AND 2000 LBS./S.F. IN ROCK.
8. USE 8 MIL POLYETHYLENE WRAP OR EQUAL BETWEEN CONCRETE AND BEND, TEE, OR PLUG TO PREVENT THE CONCRETE FROM STICKING TO IT.
9. CONCRETE SHALL NOT EXTEND BEYOND JOINTS.

SEPTEMBER 2022



TOWN OF WESTLAKE
1500 SOLANA BOULEVARD
BLDG. 7, SUITE 7200
WESTLAKE, TEXAS 76262

THRUST BLOCK
GENERAL
NOTES
W-06



NOTES:

1. THE VALVE AND JOINT ASSEMBLIES SHALL BE WRAPPED IN POLYETHYLENE ACCORDING TO AWWA C105.
2. THE JOINT TYPE SHALL BE MECHANICAL JOINT UNLESS OTHERWISE SPECIFIED IN THE PLANS.
3. GATE VALVE SHALL BE RESILIENT SEAT TYPE WITH A NON RISING STEM AND A 2-INCH SQUARE OPERATOR. RESILIENT SEAT GATE VALVE SHALL CONFORM TO AWWA C509.
4. A PERMANENTLY ATTACHED VALVE EXTENSION STEM SHALL BE REQUIRED FOR ANY VALVE WITH AN OPERATING NUT LOCATED IN EXCESS OF 4 FEET BELOW THE TOP OF VALVE BOX. THIS EXTENSION SHALL BE SUFFICIENT LENGTH TO ENSURE THAT ITS TOP IS WITHIN 18" - 24" OF VALVE BOX LID.
5. 16" AND LARGER GATE VALVES REQUIRE CONCRETE BLOCK UNDER THE VALVE BODY.
6. ALL VALVE COVERS SHALL BE PAINTED BLUE.
7. A "V" SHALL BE SAW CUT IN THE CURB AT ALL VALVE LOCATIONS.

SEPTEMBER 2022

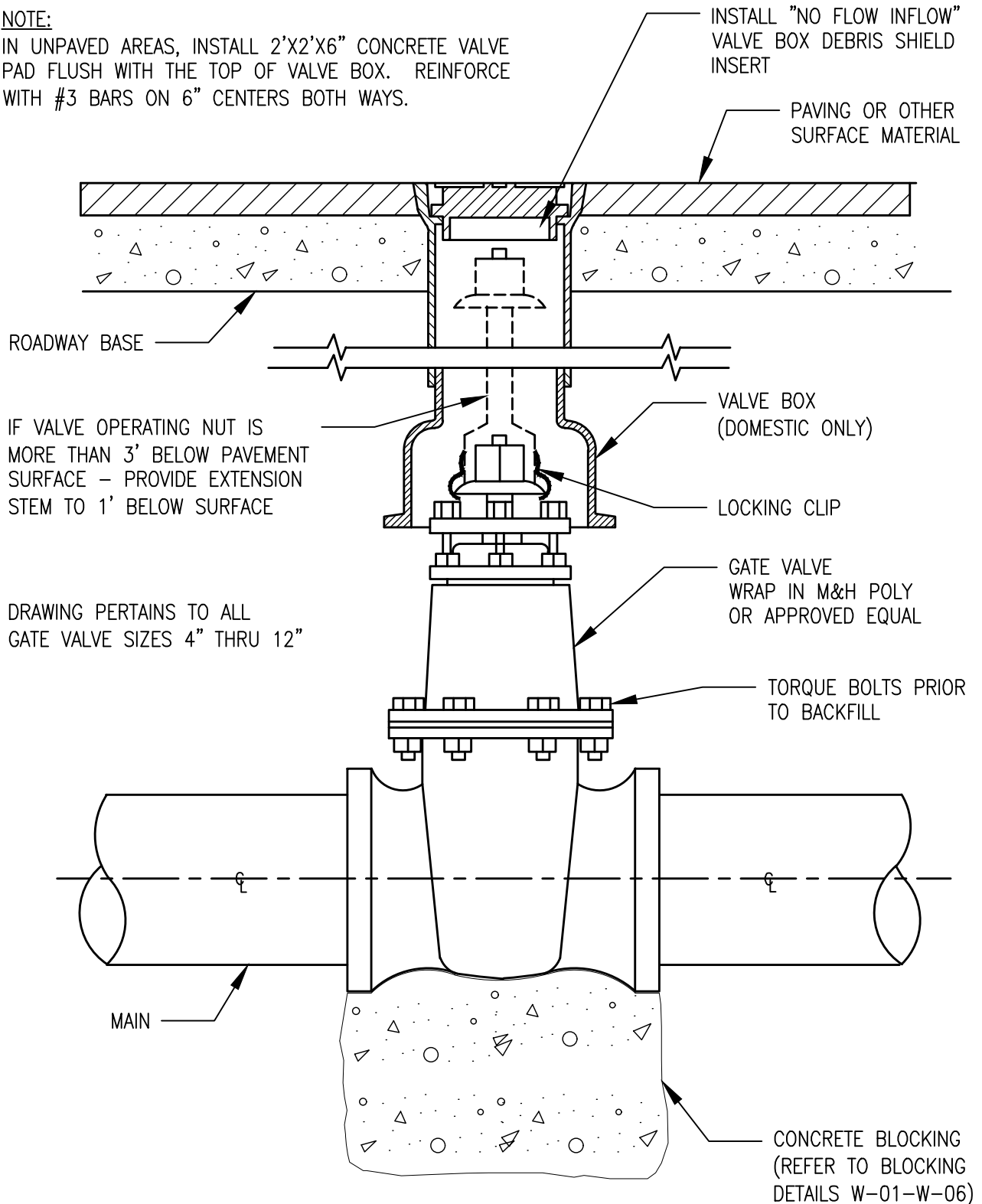


TOWN OF WESTLAKE
1500 SOLANA BOULEVARD
BLDG. 7, SUITE 7200
WESTLAKE, TEXAS 76262

GATE VALVE
INSTALLATION
W-07

NOTE:

IN UNPAVED AREAS, INSTALL 2'X2'X6" CONCRETE VALVE PAD FLUSH WITH THE TOP OF VALVE BOX. REINFORCE WITH #3 BARS ON 6" CENTERS BOTH WAYS.



**GATE VALVE BOX AND
EXTENSION STEM**

N.T.S.

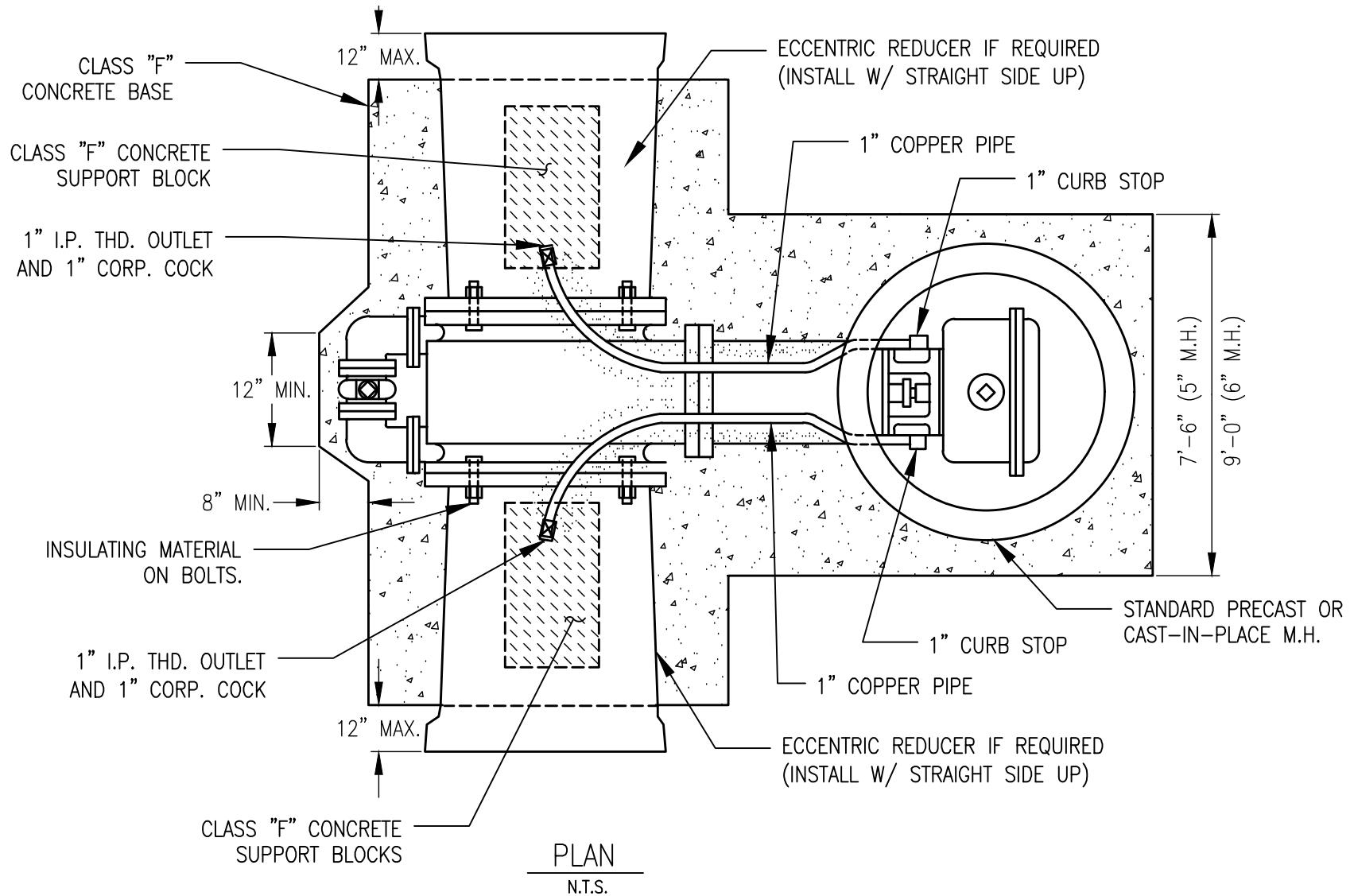
SEPTEMBER 2022



TOWN OF WESTLAKE
1500 SOLANA BOULEVARD
BLDG. 7, SUITE 7200
WESTLAKE, TEXAS 76262

GATE VALVE
4" TO 12"
W-08

HORIZONTAL GATE VALVE $\geq 16"$



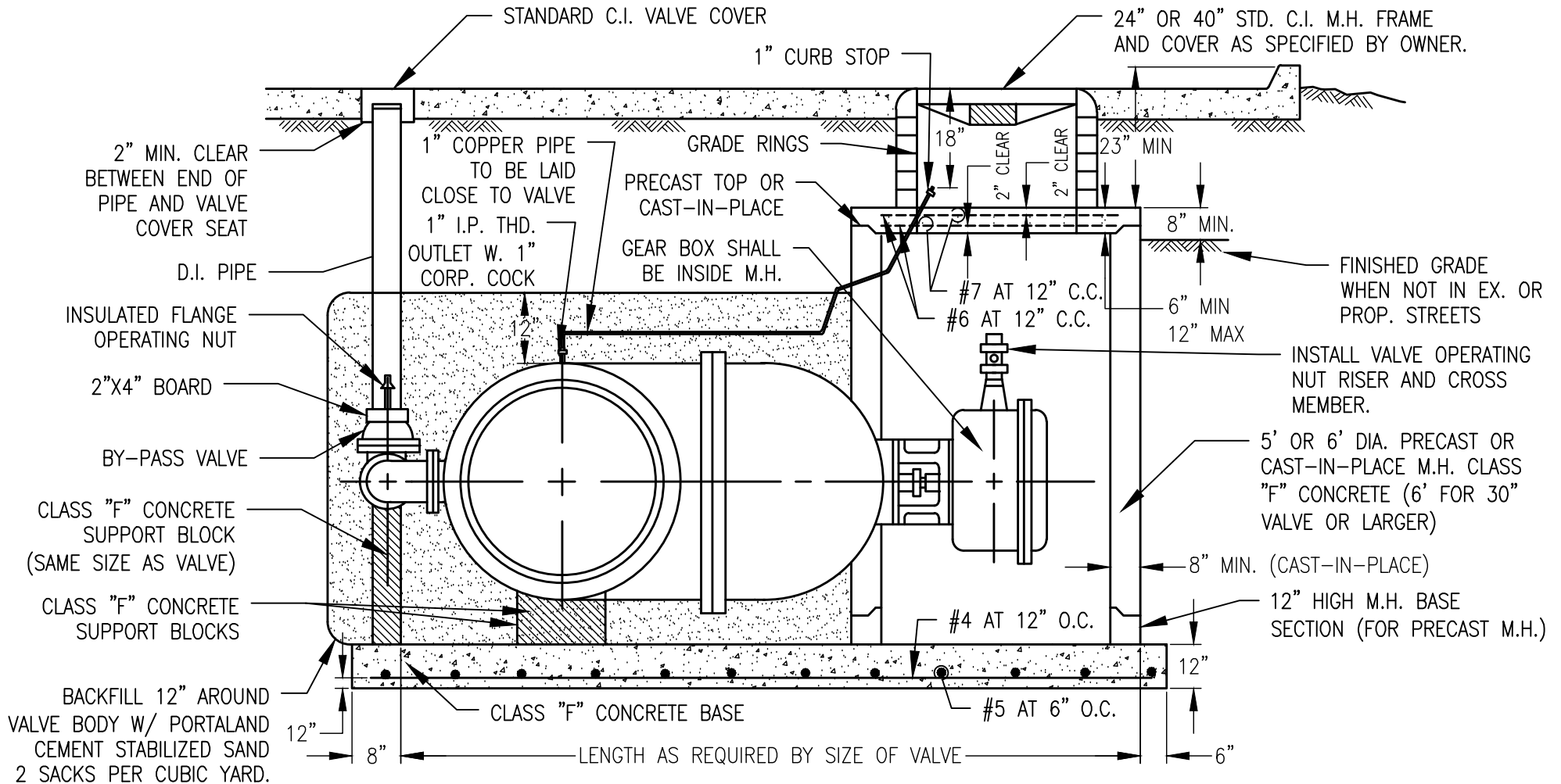
SEPTEMBER 2022



TOWN OF WESTLAKE
1500 SOLANA BOULEVARD
BLDG. 7, SUITE 7200
WESTLAKE, TEXAS 76262

HORIZONTAL
GATE VALVE
W-09

HORIZONTAL GATE VALVE $\geq 16"$



PROFILE

N.T.S.

SEPTEMBER 2022

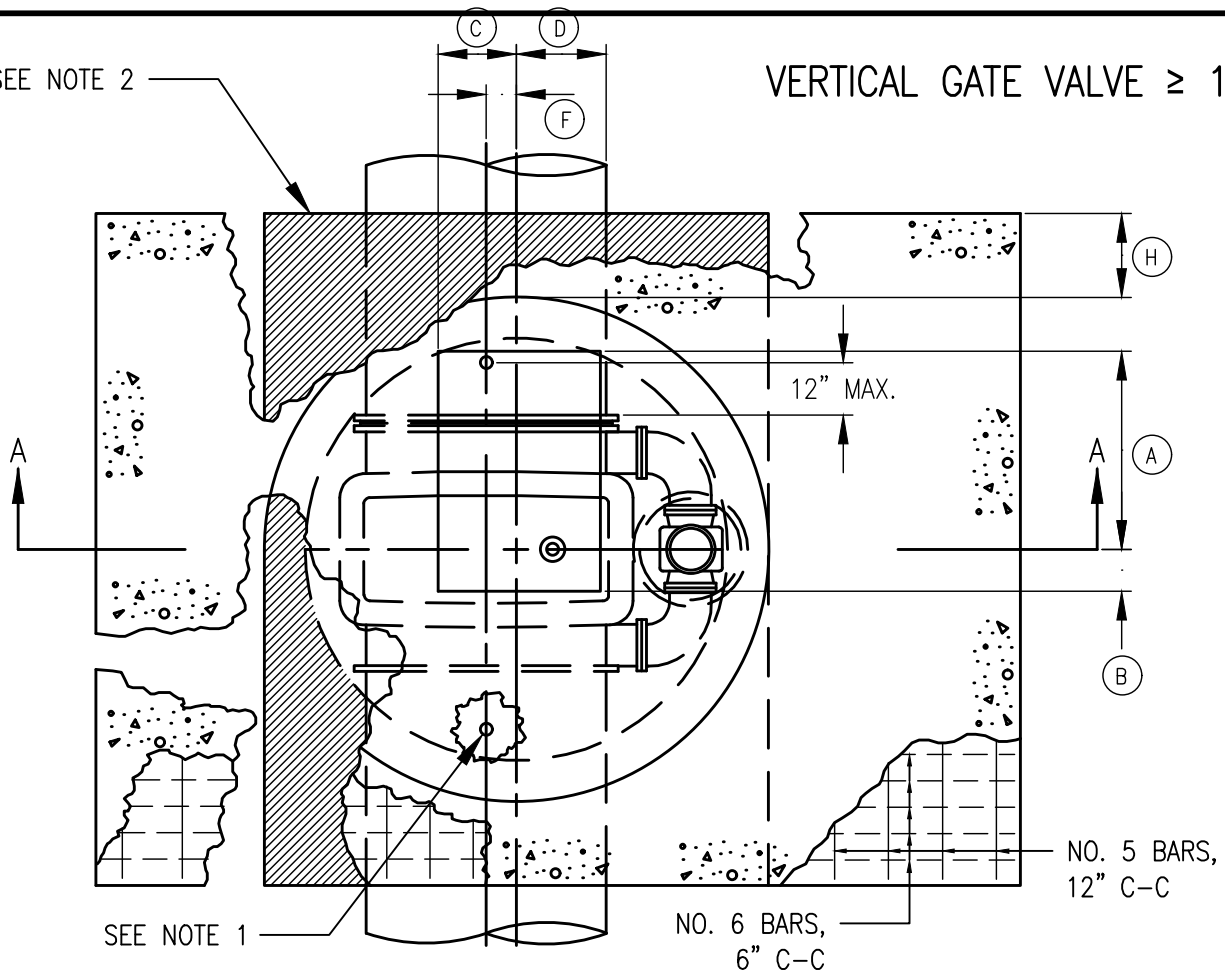


TOWN OF WESTLAKE
1500 SOLANA BOULEVARD
BLDG. 7, SUITE 7200
WESTLAKE, TEXAS 76262

HORIZONTAL
GATE VALVE
W-10

SEE NOTE 2

VERTICAL GATE VALVE $\geq 16"$



PLAN VIEW

(LESS MANHOLE FRAME & COVER INSTALLATION)
N.T.S.

GATE VALVE SIZE	DIMENSION TABLE											
	A	B	C	D	E	F	G	H	J	K	L	M
16"	20"	20"	12"	12"	44 1/2"	1"	48"	12"	10"	24"	12"	16"
18"	20"	20"	12"	12"	51 3/8"	2"	48"	12"	12"	24"	12"	18"
20"	22"	18"	12"	12"	56 5/8"	1"	54"	12"	12"	24"	16"	20"
24"	26"	14"	12"	12"	64 3/8"	1"	60"	18"	14"	30"	18"	24"
30"	28"	12"	12"	12"	80 5/8"	3"	66"	18"	18"	30"	20"	30"
36"	32"	8"	12"	12"	90 1/16"	4"	72"	18"	18"	36"	24"	36"
42"	34"	6"	15"	9"	107 3/4"	5"	78"	24"	20"	36"	30"	42"
48"	36"	4"	14"	10"	121 5/8"	4"	90"	24"	26"	42"	36"	48"
54"	36"	4"	9"	15"	142 1/2"	3"	102"	24"	32"	46"	40"	54"

NOTES:

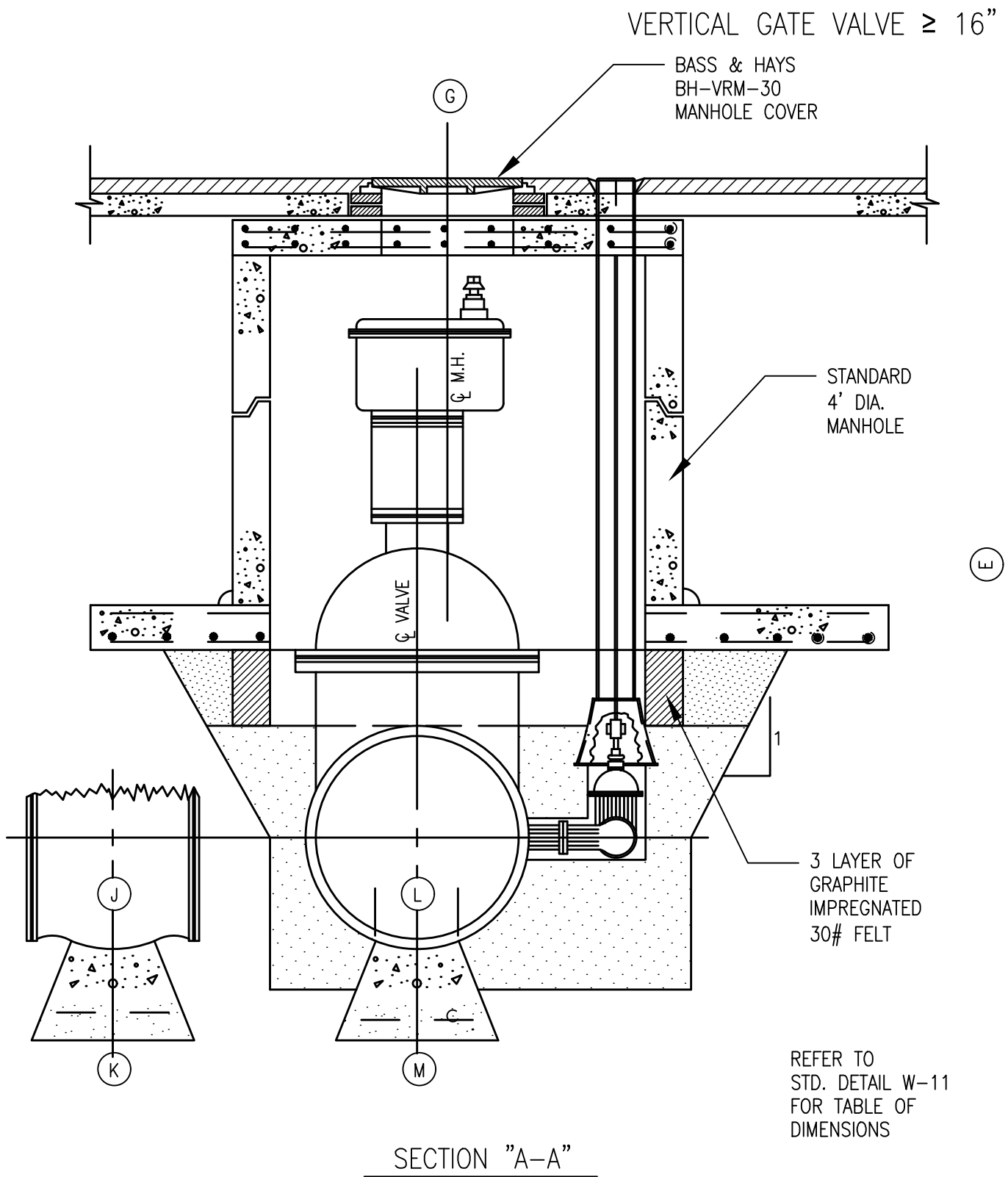
1. PROVIDE CORPORATION AND CURB STOPS A MAXIMUM OF 12" FROM EACH END OF GATE VALVE, AS SHOWN. CORPORATION AND CURB STOP SIZES SHALL BE 1" FOR 16", 20", AND 24" NOMINAL PIPE DIAMETERS; 2" FOR 30" AND LARGER DIAMETERS. 2" TAPS SHALL BE MADE AS A 2" FLANGED OUTLET WITH INSULATED ADAPTOR KIT. COPPER RISERS SHALL BE PROVIDED BETWEEN THE CORPORATION AND CURB STOPS. CURB STOPS SHALL BE INSTALLED AT AN ELEVATION 12" ABOVE THE TOP SURFACE OF VAULT BOTTOM SLAB.
2. POLYURETHANE CUSHION PAD.

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VERTICAL
GATE VALVE
W-11



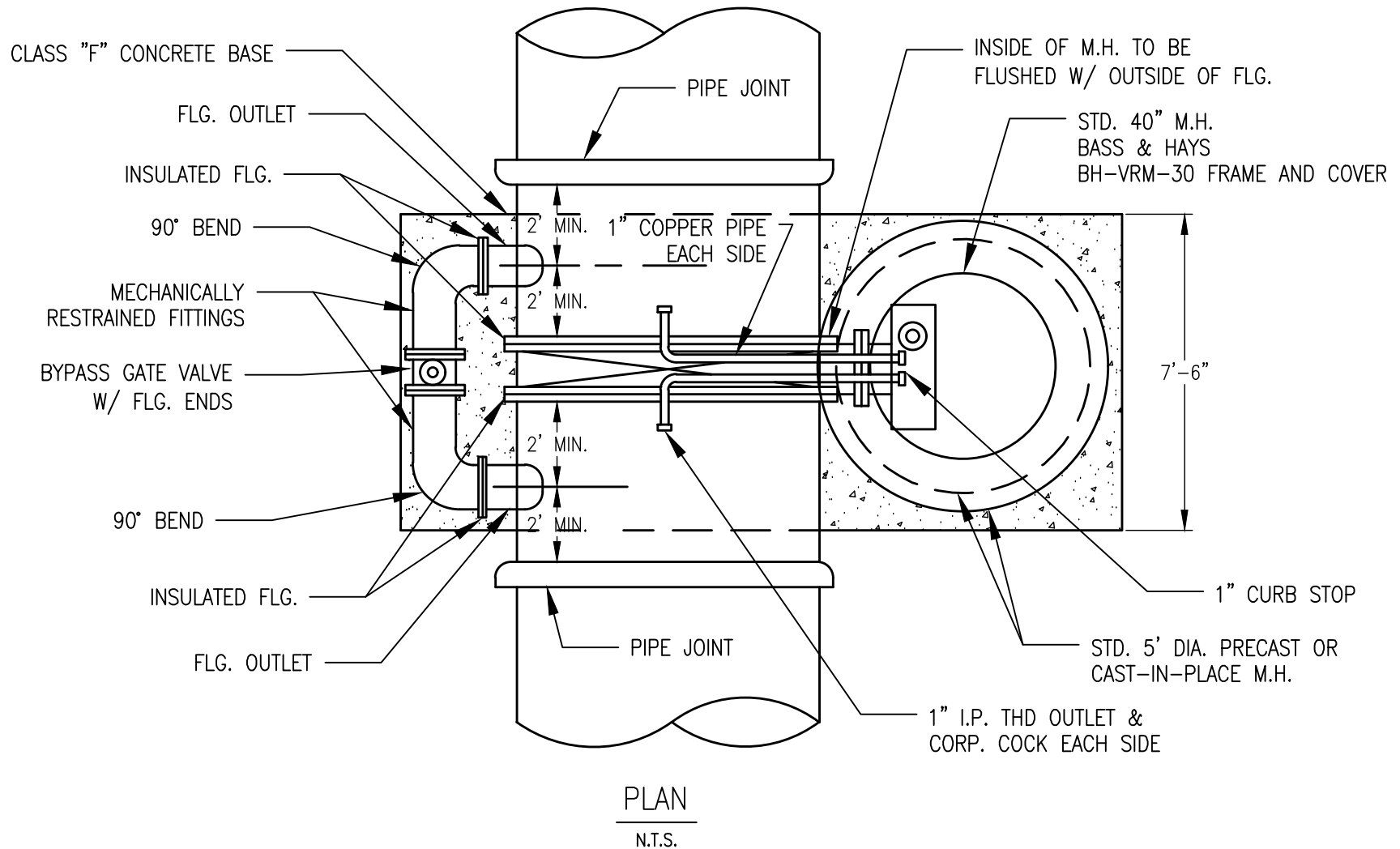
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TOWN OF WESTLAKE
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WESTLAKE, TEXAS 76262

VERTICAL
GATE VALVE
W-12

BUTTERFLY VALVE $\geq 48"$



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BUTTERFLY
VALVE
W-13

BUTTERFLY VALVE $\geq 48"$

BASS & HAYS
BH-VRM-30
FRAME & COVER

VALVE BOX ADJUSTABLE HEIGHT
MULLER H-10361
NECESSARY EXTENSIONS

STD. 4' DIA.
PRECAST MANHOLE

CONCRETE VAULT
FOUNDATION

#5 BARS @ 12"C-C

PROFILE
N.T.S.

SEPTEMBER 2022

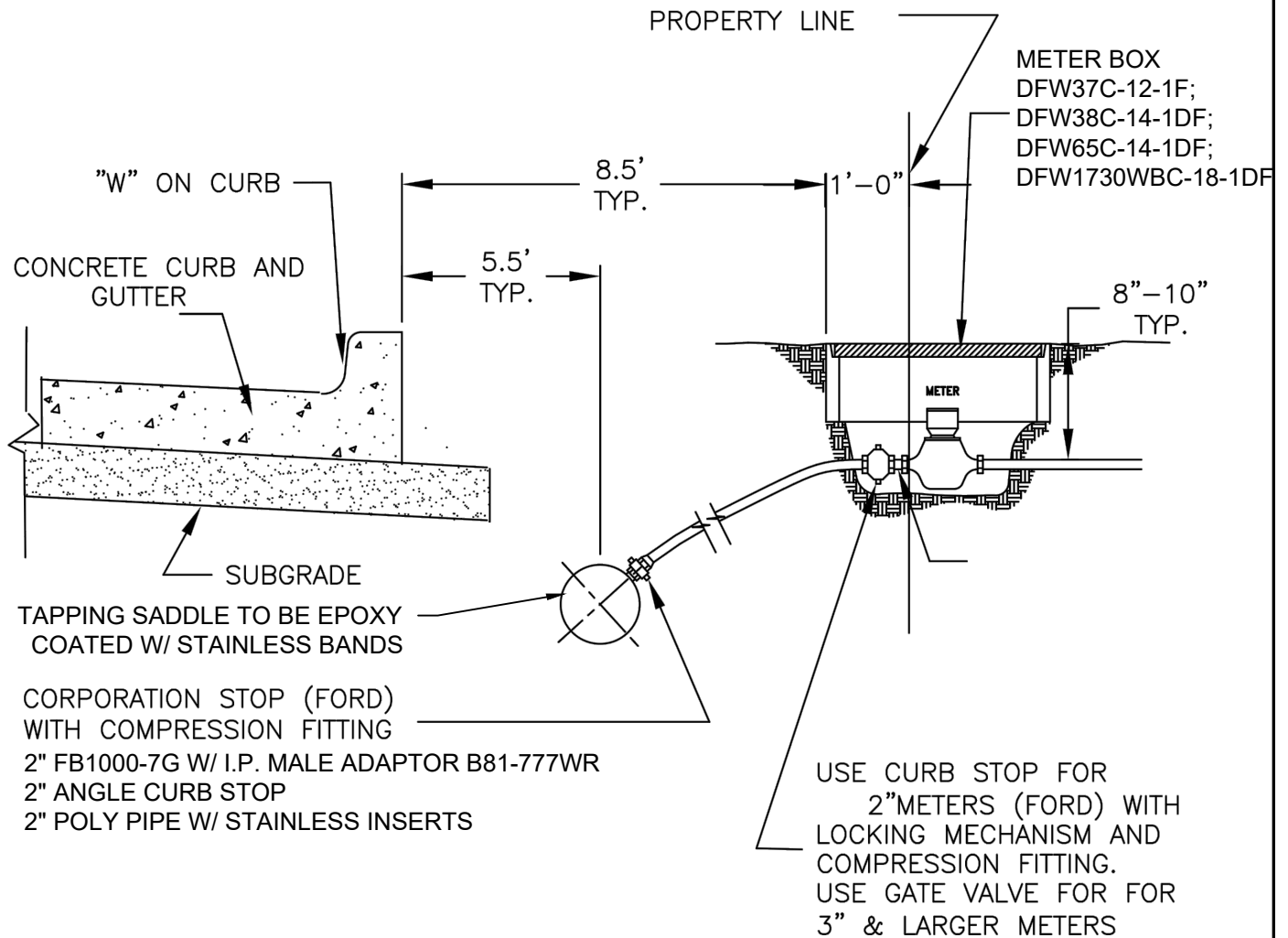


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1500 SOLANA BOULEVARD
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WESTLAKE, TEXAS 76262

BUTTERFLY
VALVE
W-14

NOTES:

1. METER BOXES ON PROPERTY LINE, CLOSE TO SIDEWALK, BUT NO IN SIDEWALK. NOT TO BE SET IN DRIVE APPROACH.
2. SERVICE TAPS LOCATIONS SHALL BE MARKED WITH A "W" ENGRAVED (GROUND) INTO THE CURB.



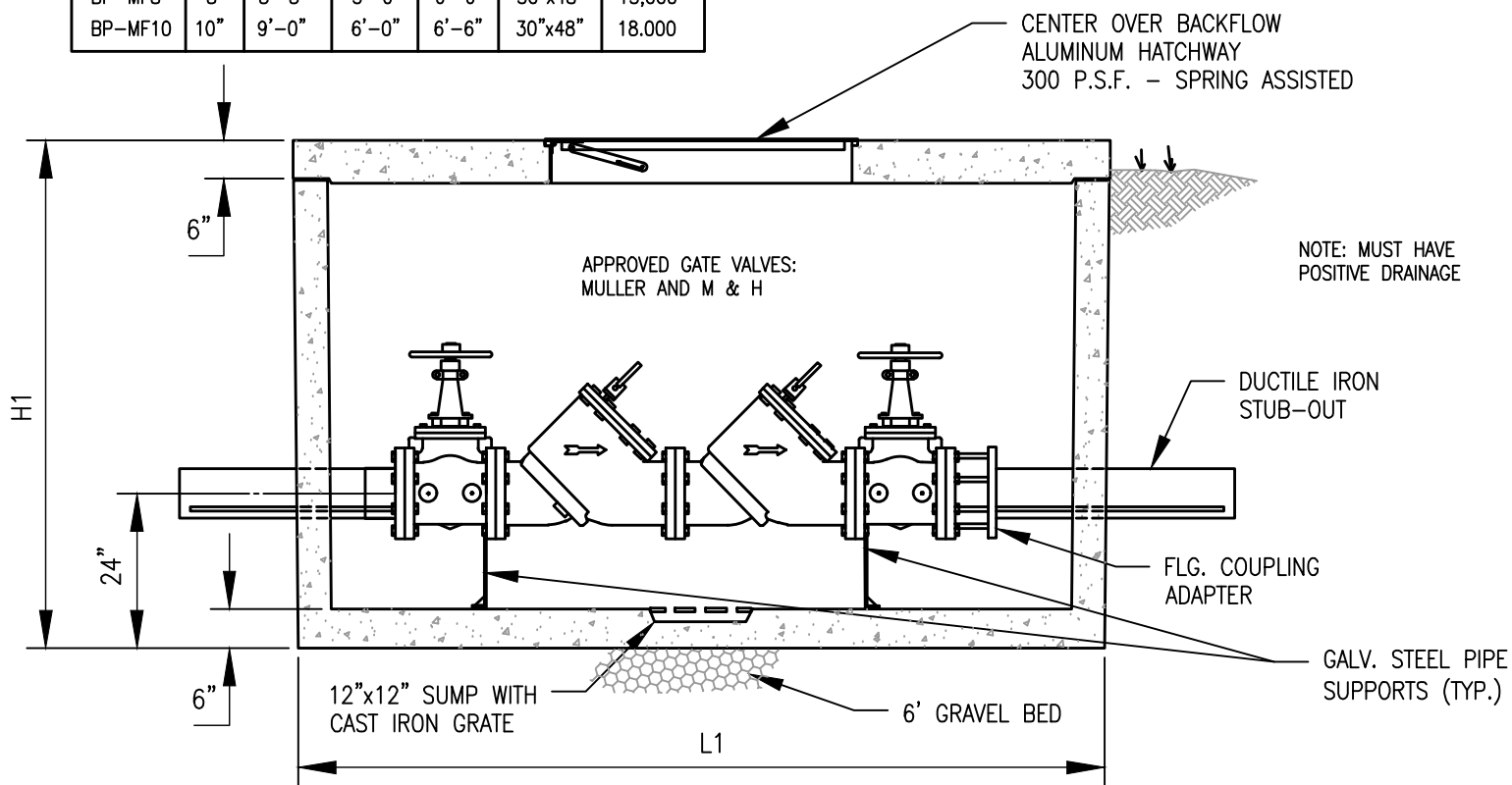
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TOWN OF WESTLAKE
1500 SOLANA BOULEVARD
BLDG. 7, SUITE 7200
WESTLAKE, TEXAS 76262

WATER
SERVICE
CONNECTION
W-15

MODEL	SIZE	L1	W1	H1	ALUM. HATCH	WEIGHT LBS
BP-MF3	3"	6'-0"	3'-6"	5'-0"	30"x36"	6,000
BP-MF4	4"	6'-0"	3'-6"	5'-0"	30"x36"	6,000
BP-MF6	6"	6'-0"	5'-0"	5'-0"	30"x48"	9,000
BP-MF8	8"	8'-8"	5'-0"	6'-6"	30"x48"	15,000
BP-MF10	10"	9'-0"	6'-0"	6'-6"	30"x48"	18,000



ELEVATION

N.T.S.

DOMESTIC DOUBLE-CHECK ASSEMBLY

SEPTEMBER 2022

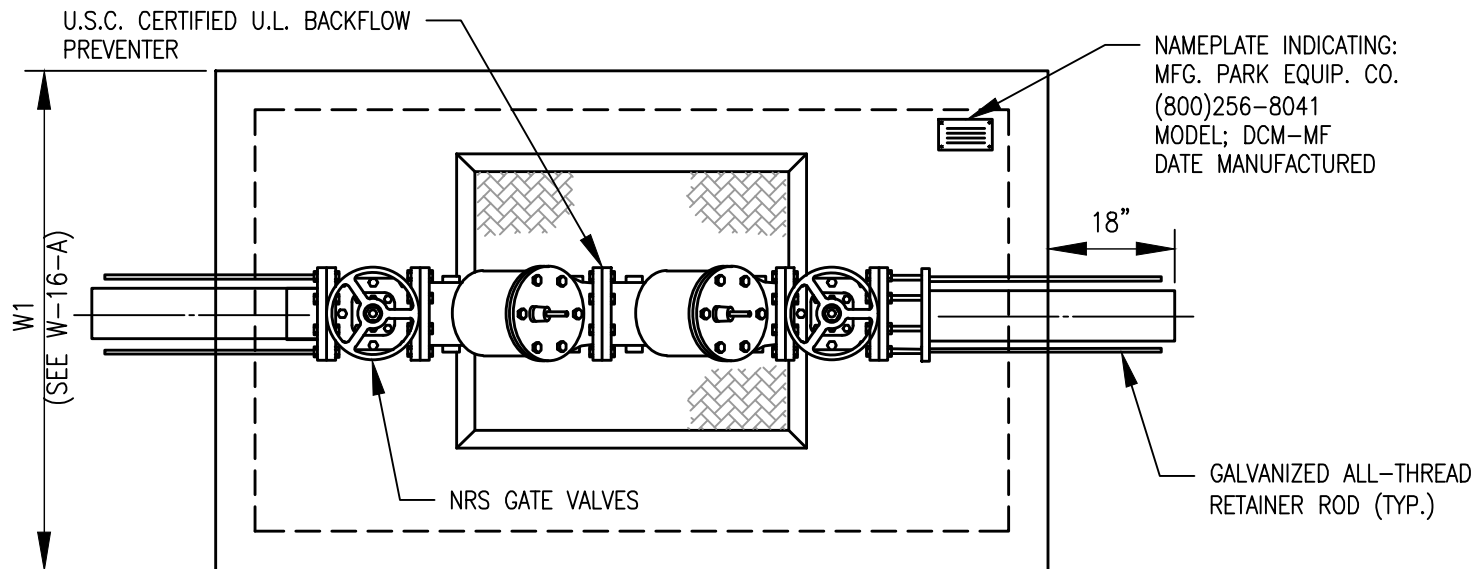


TOWN OF WESTLAKE
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WESTLAKE, TEXAS 76262

LARGE WATER
SERVICE
W-16-A

GENERAL NOTES:

1. ALL BACKFLOW PREVENTER VAULTS SHALL BE PRECAST AND DELIVERED AND DELIVERED WITH ALL INTERNAL PIPING AND PARTS COMPLETE.
2. ALL PIPE MUST BE DUCTILE IRON & ALL FITTINGS MUST BE FLANGED IN VAULT.
3. CONCRETE SHALL BE CLASS "F" WITH DESIGN STRENGTH OF 4200 PSI @ 28 DAYS (702.2.4.2). UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.
4. GRADE 60 REINFORCED, STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
5. 1/4" ALUMINUM DIAMOND PLATE COVER WITH EXTRUDED ALUMINUM FRAME. HATCH TO BE FURNISHED WITH STAINLESS STEEL SNAP LOCK & STAINLESS HINGES.
6. BACKFLOW ASSEMBLY SHALL BE FACTORY ASSEMBLED IN VAULT & HYDROSTATICALLY TESTED PRIOR TO DELIVERY.
7. MODEL NUMBERS ARE FOR PARK EQUIPMENT COMPANY, MODELS ARE DMCBP-MF (FIRE SERVICE) OR BP-M (DOMESTIC). UNITS BY OTHER MANUFACTURES MUST BE SUBMITTED TO BE APPROVED AS EQUALS.



PLAN VIEW

N.T.S.

DOMESTIC DOUBLE-CHECK ASSEMBLY

SEPTEMBER 2022

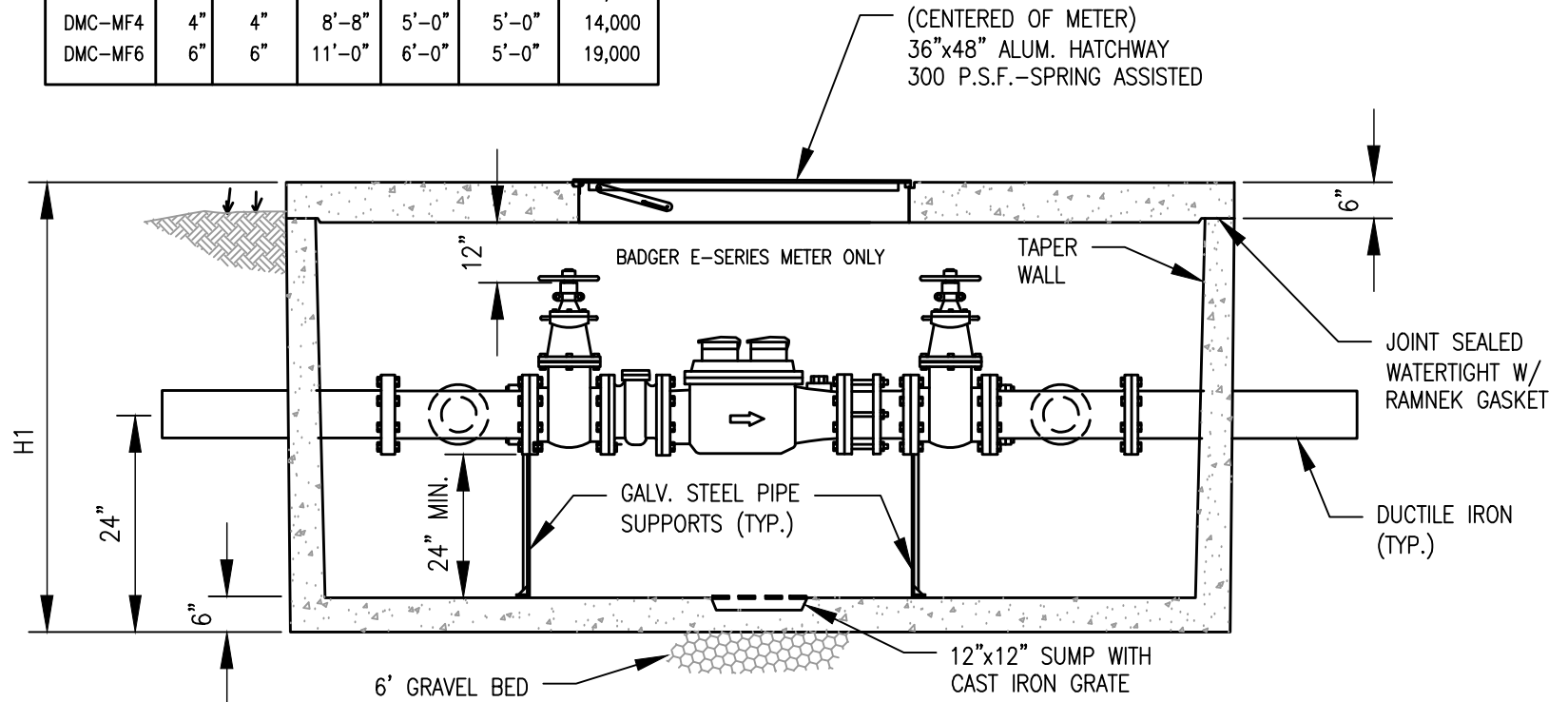


TOWN OF WESTLAKE
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LARGE WATER
SERVICE
W-16-B

MODEL	SIZE	BY PASS	L1	W1	H1	WEIGHT LBS
DMC-MF3	3"	3"	8'-8"	5'-0"	5'-0"	14,000
DMC-MF4	4"	4"	8'-8"	5'-0"	5'-0"	14,000
DMC-MF6	6"	6"	11'-0"	6'-0"	5'-0"	19,000

NOTE: MUST HAVE POSITIVE DRAINAGE
OR INSTALL A SUMP PUMP



ELEVATION

N.T.S.

3", 4" & 6" DOMESTIC METER

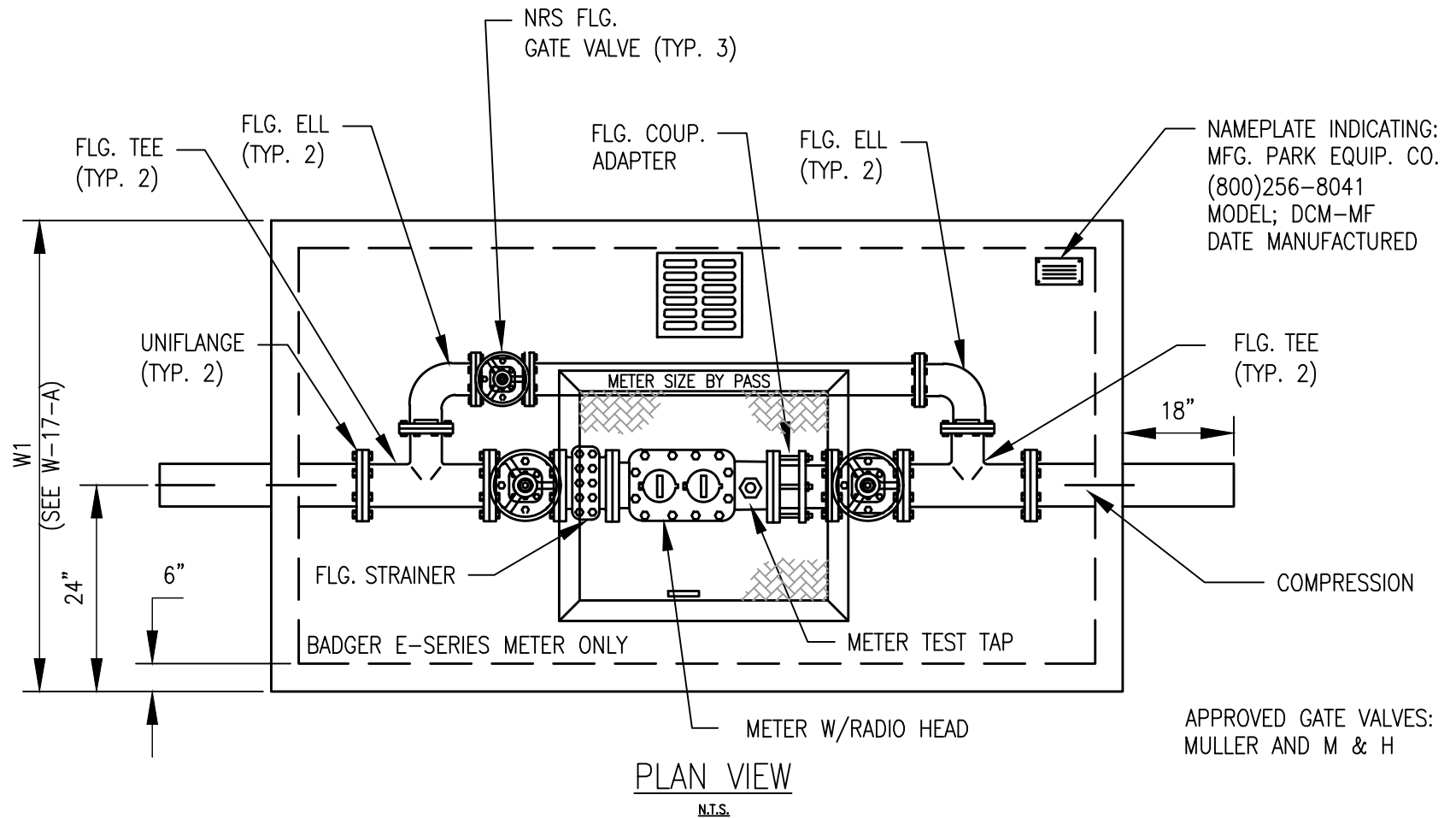
APPROVED GATE VALVES:
MULLER AND M & H

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1500 SOLANA BOULEVARD
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WESTLAKE, TEXAS 76262

LARGE WATER
SERVICE
W-17-A

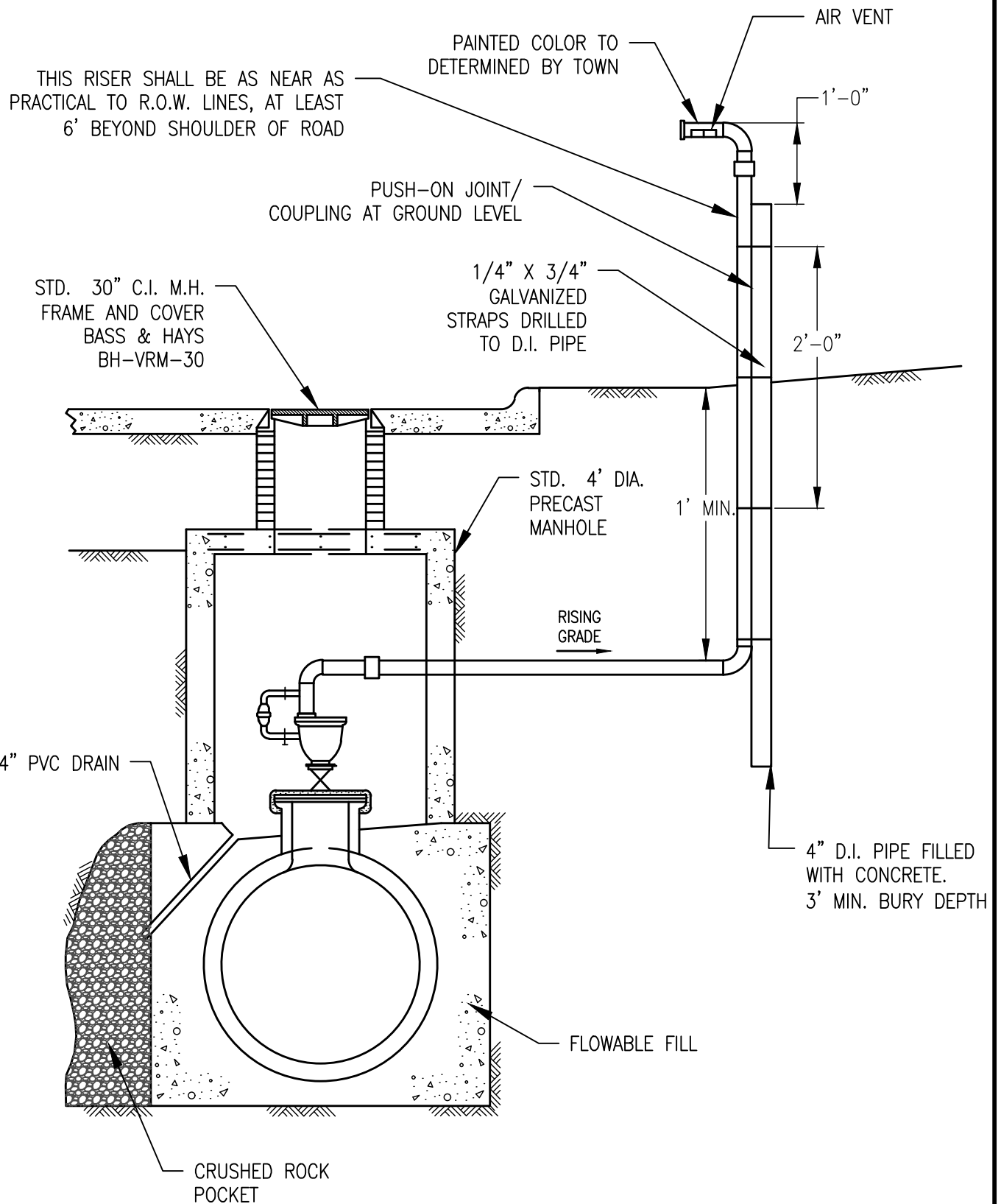


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TOWN OF WESTLAKE
1500 SOLANA BOULEVARD
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LARGE WATER
SERVICE
W-17-B



TYPE "2" AIR VALVE

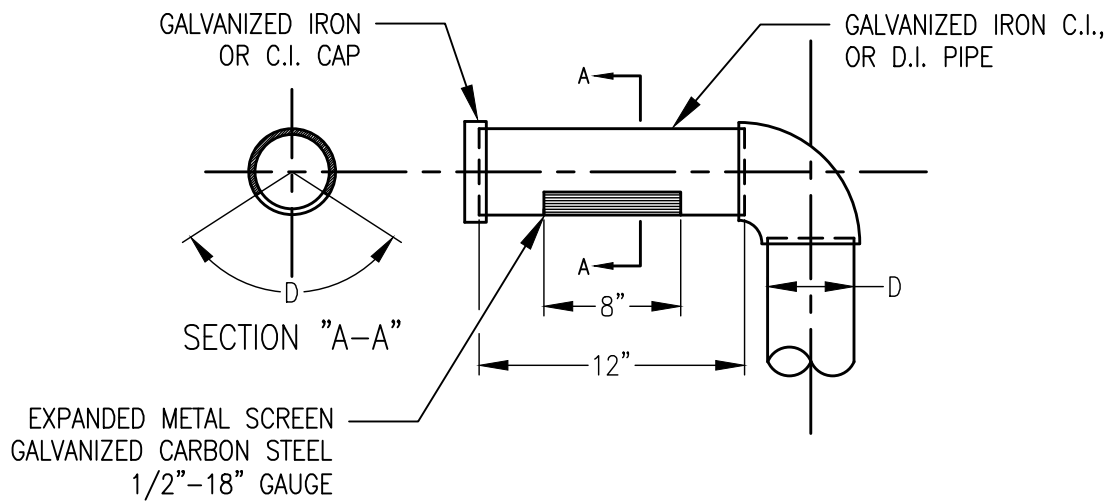
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1500 SOLANA BOULEVARD
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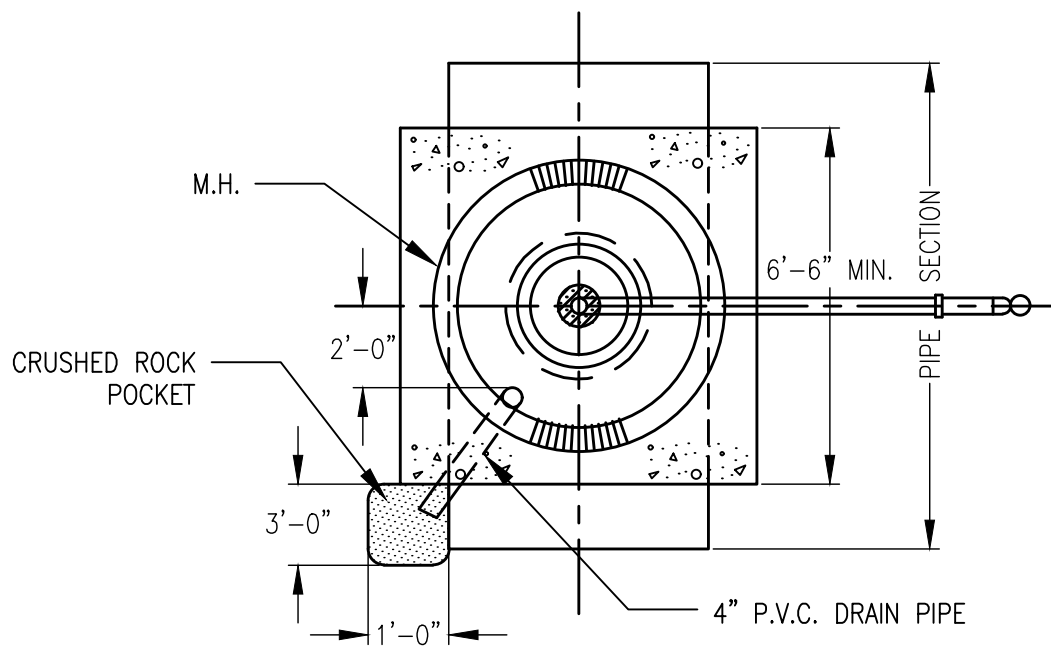
TYPE "2"
AIR VALVE
W-18



AIR VENT

N.T.S.

AIR VALVE	GATE VALVE	FLG. OUTLET	MIN. FITTING HEIGHT	VENT PIPE D	M.H. DIA.
2"	2"	8"	26"	2"	5'
3"	3"	18"	31"	3"	5'
4"	4"	18"	38"	4"	5'
6"	6"	18"	46"	6"	5'
8"	8"	18"	53"	8"	6'
10"	10"	20"	62"	10"	6'
12"	12"	24"	72"	12"	6'



PLAN VIEW

N.T.S.

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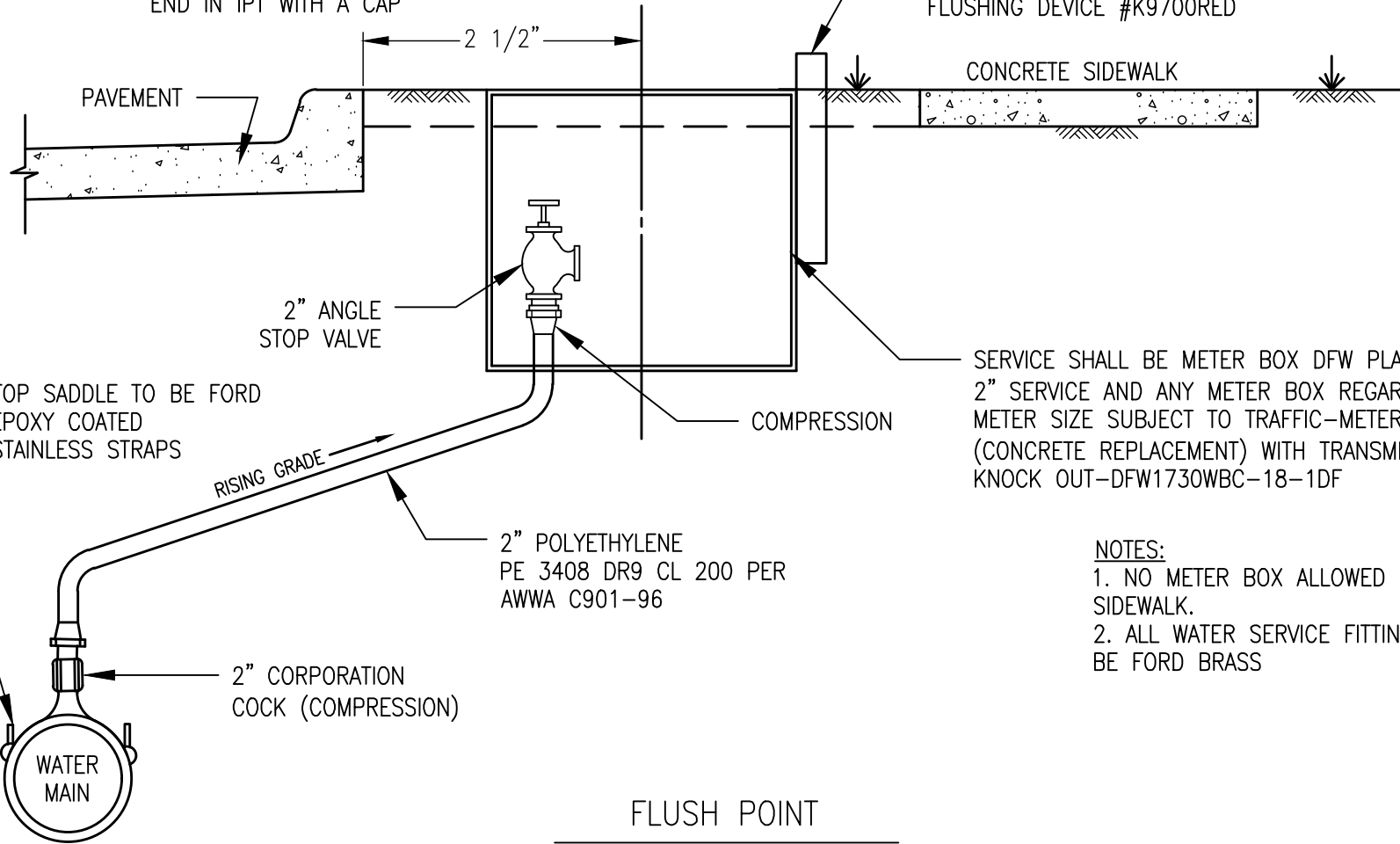


TOWN OF WESTLAKE
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AIR RELEASE
VALVE
TYPE "2"
W-19

INSTALL 2" PIPING OUTSIDE OF THE
BOX AND 1' ABOVE THE GROUND.
END IN IPT WITH A CAP

FURNISH A KUPFERLE ECLIPSE
FLUSHING DEVICE #K9700RED



SERVICE SHALL BE METER BOX DFW PLASTIC.
2" SERVICE AND ANY METER BOX REGARDLESS OF
METER SIZE SUBJECT TO TRAFFIC-METER BOX
(CONCRETE REPLACEMENT) WITH TRANSMITTER
KNOCK OUT-DFW1730WBC-18-1DF

NOTES:

1. NO METER BOX ALLOWED IN
SIDEWALK.
2. ALL WATER SERVICE FITTING SHALL
BE FORD BRASS

FLUSH POINT

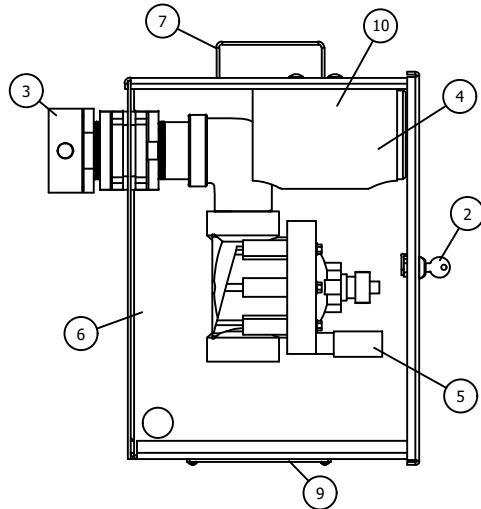
(SIZE DESIGNATED ON PLANS)
N.T.S.

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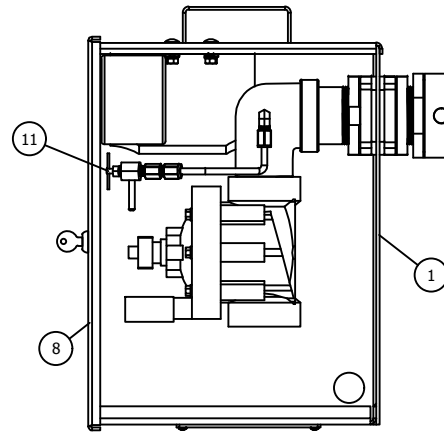


TOWN OF WESTLAKE
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FLUSH POINT
INSTALLATION
TYPE "1"
W-20



1 STANDARD FLUSHER
Scale: 1-1/2"=1'-0"

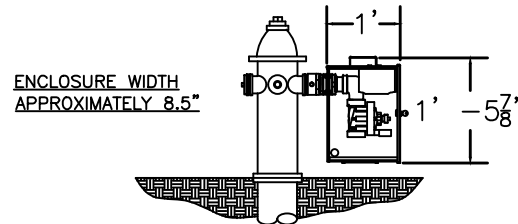


2 FLUSHER WITH SAMPLING
Scale: 1-1/2"=1'-0"

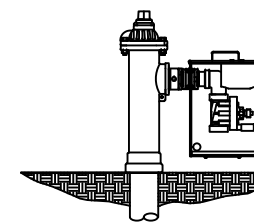
A 2-1/2" NST SWIVEL CONNECTION SHALL LEAD INTO A 2" AUTOMATIC FLUSHING VALVE. THE AUTOMATIC FLUSHING VALVE SHALL CONTROL THE FLOW OF WATER THROUGH THE HYDRANT AND ITS DIAPHRAGM WITH THE EXTENSION AND RETRACTION OF A DC LATCHING SOLENOID AND HAVE A 220 PSI RATING. EACH UNIT SHALL BE FURNISHED WITH A STAND-ALONE VALVE CONTROLLER. THE VALVE CONTROLLER WILL NOT REQUIRE A SECOND HAND-HELD DEVICE FOR PROGRAMMING. CONTROLLER MUST HAVE MINIMUM OF 12 POSSIBLE FLUSHING CYCLES PER DAY. CONTROLLER SHALL BE SUBMERSIBLE TO 12 FEET, OPERATE WITH A 9 VOLT BATTERY, AND HAVE RESIN-SEALED ELECTRICAL COMPONENTS. THE SOLENOID SHALL HAVE NO LOOSE PARTS WHEN REMOVED FROM THE VALVE. ALL COMPONENTS SHALL BE HOUSED IN A LOCKABLE POWDER COATED RED ALUMINUM ENCLOSURE, WITH 3/4" PERFORATIONS IN THE FLOOR TO DIFFUSE DISCHARGED WATER.

UNIT MODEL # SHALL BE 9700 AS MANUFACTURED BY KUPFERLE FOUNDRY COMPANY, ST. LOUIS MO, OR APPROVED EQUAL.

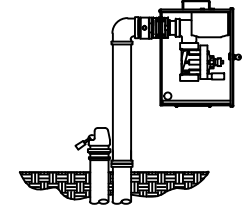
ITEM	ITEM / DESCRIPTION	NOTES
1	POWDER COATED ALUMINUM ENCLOSURE	
2	KEY & LOCK	
3	2-1/2" NST BRASS SWIVEL	
4	VALVE CONTROLLER	
5	DC LATCHING SOLENOID	
6	2" ICV VALVE	
7	HANDLE	
8	ACCESS DOOR	
9	REMOVABLE PLATE	
10	STANDARD CONTROLLER HOLDER	
11	SAMPLING VALVE	OPTIONAL
12	WATER DIFFUSER FLOOR	NOT SHOWN



A FIRE HYDRANT
Scale: 3/8"=1'-0"



B #2 POST HYDRANT
Scale: 3/8"=1'-0"



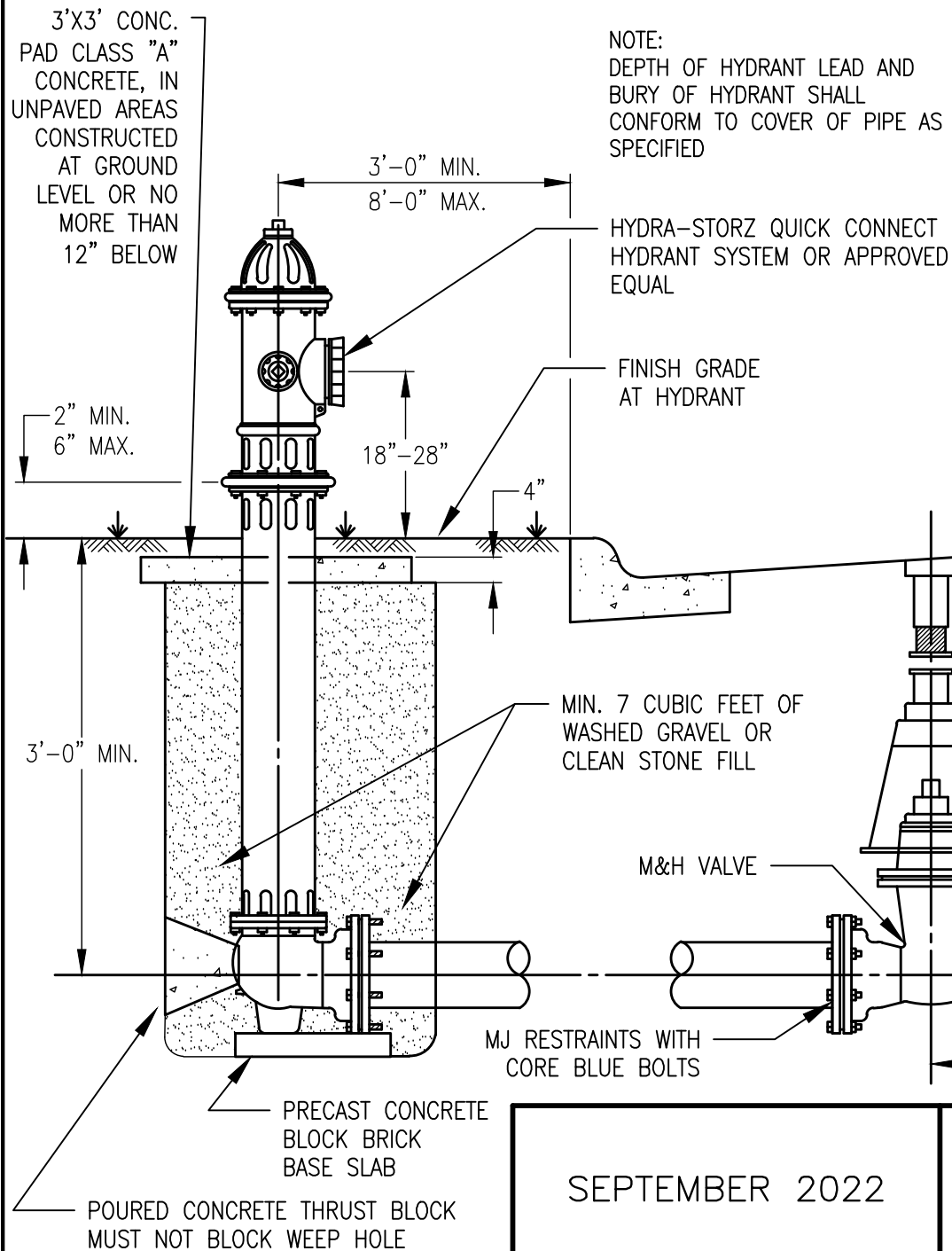
C #77 BLOW-OFF
Scale: 3/8"=1'-0"

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TOWN OF WESTLAKE
1500 SOLANA BOULEVARD
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AUTOMATIC
FLUSHING
DEVICE
W-21

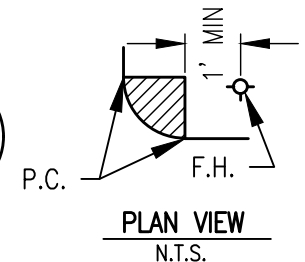


NOTES

1. FIRE HYDRANTS SHALL NOT BE INSTALLED IN EXISTING OR PROPOSED SIDEWALKS.
2. FIRE HYDRANT SHALL BE LOCATED OUTSIDE OF CURB RETURNS AND A MINIMUM OF 4' FROM DRIVEWAYS APPROACH RADIUS.
3. OUT-OF-SERVICE FIRE HYDRANTS SHALL BE COMPLETELY COVERED WITH BLACK PLASTIC.
4. FIRE HYDRANT BURY DEPTH SHALL BE NO MORE THAN 6'. OFFSETS, BENDS, AND FITTINGS SHALL BE USED AS NEEDED TO ACHIEVE BURY DEPTH OF 4' TO 6'.
5. FOR BURY DEPTHS BETWEEN 4' AND 6' GRADELOCK, DUCTILE IRON FITTINGS, OR EXTENSIONS SHALL BE USED FOR GRADE ADJUSTMENTS. NO MORE THAN ONE EXTENSION KIT SHALL BE USED.
6. GATE VALVE SHALL BE INSTALLED PER GATE VALVE DETAIL AND RESTRAINED TO NEAREST FITTING UNLESS OTHERWISE SHOWN ON THE PLANS.
7. FIRE HYDRANTS SHALL INDICATE MANUFACTURE DATE AND BE MANUFACTURED IN THE SAME YEAR AS INSTALLATION.
8. SERVICE LINES ON FIRE HYDRANT LEADS ARE PROHIBITED.
9. FIRE HYDRANTS SHALL BE SET ON CONCRETE SLAB PRIOR TO POURING TRUST BLOCK.

RESTRAINED JOINT
(BEFORE VALVE)

STANDARD M&H GATE
VALVE MJ x FLANGE



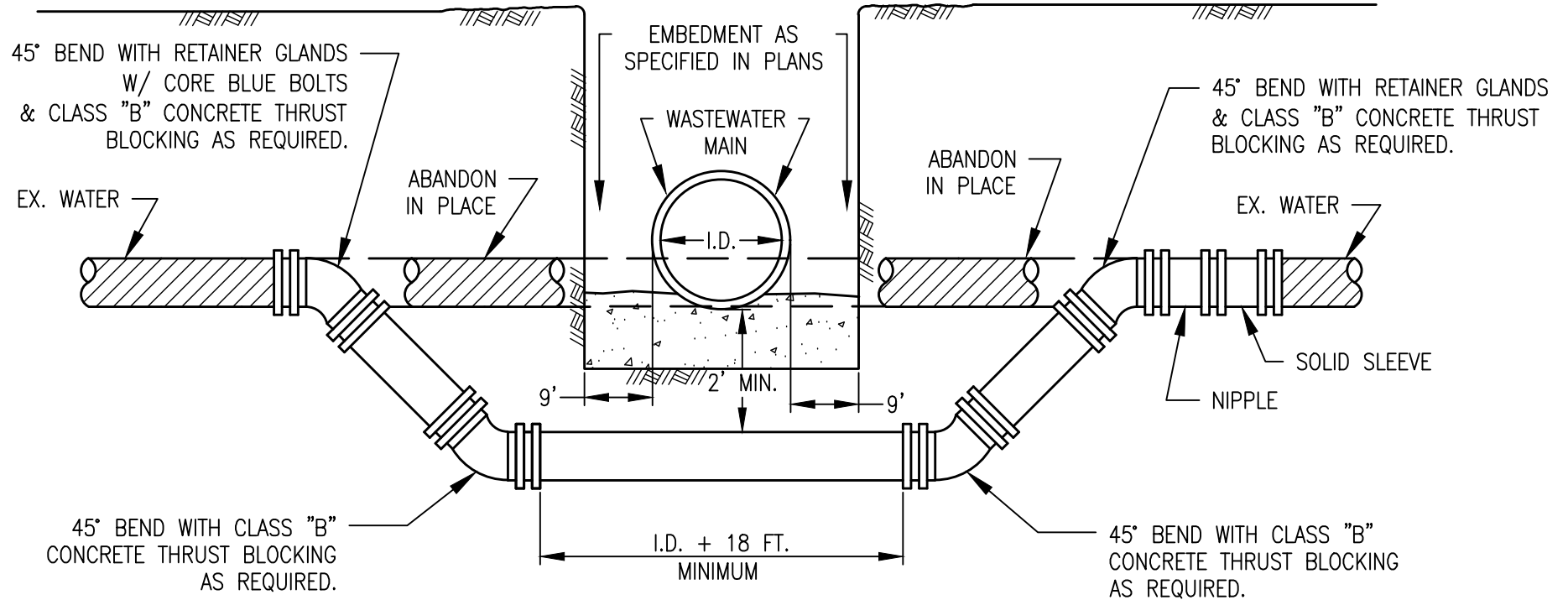
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FIRE HYDRANT
INSTALLATION
W-22

NOTE: WRAP ALL FITTINGS
IN POLY AND POLY TAPE



SEPTEMBER 2022



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WATER MAIN
LOWERING
W-23