

NO.	ITEM	MATERIAL	SIZE	FORD	MUELLER
1	METER SETTER	COPPER	1"	1" METER SETTER, FORD VBH 94-15 W-11-44AVH WITH VERTICAL INLET, MUELLER B-24104-2	
2	CORPORATION STOP	FOR COPPER SERVICE	1"	FB-1000-4-Q	B-25008
3	DIAMETER OF PIPE SHALL MATCH METER SIZE	COPPER	1"	FEDERAL SPEC. WW-1-799, TYPE K ASTM SPEC. B88, TYPE K A.W.M.A. SPEC. 75-CR, TYPE K	
4	METER (FURNISHED BY M.W.D.)				
5	METER BOX			FOGITE B 9 1/2 T, WITH 1-3/4" HOLE IN LID FOR TOUCHPAD	
6	PVC PLUG AT END OF TAIL PIECE			JR BROOKS 37 W/CAST TRAFFIC LID 1-3/4" HOLE	
7	COPPER X IP ADAPTOR		1"	C-8433-Q	H-14227

NOTES:

A. SPLICES - NOT ALLOWED UNLESS APPROVED BY THE DISTRICT. USE MUELLER 110 OR FORD QUICK JOINT.

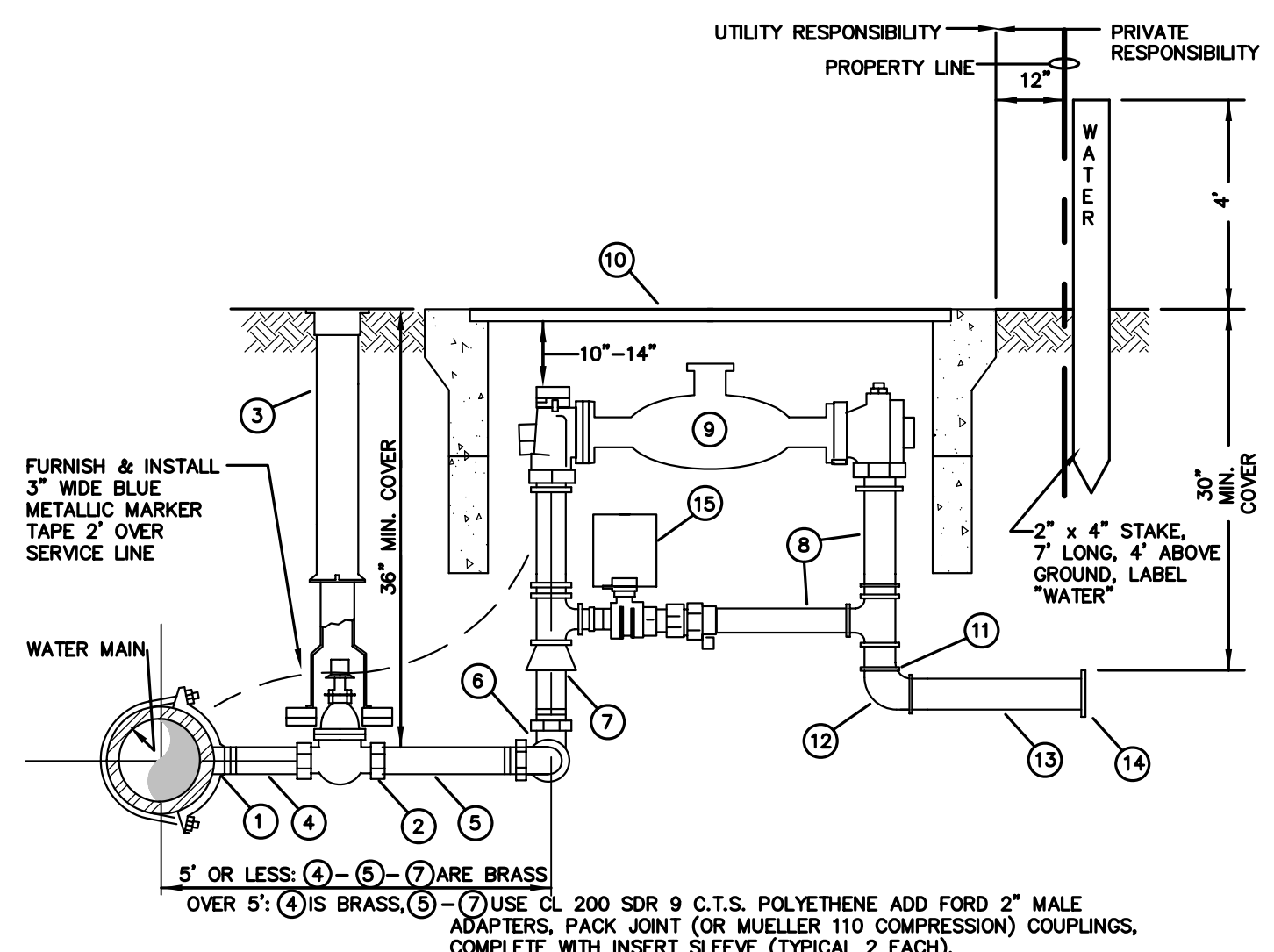
B. OWNERS ARE RESPONSIBLE FOR INSTALLING PRESSURE REDUCER ON THEIR SYSTEM TO PROTECT THEIR FACILITIES FROM HIGH PRESSURE.

C. SURFACE RESTORATION IN ACCORDANCE WITH JURISDICTIONAL AUTHORITY.

D. 4" OF BEDDING REQUIRED ON ALL COPPER. SAND ONLY.

### 1" WATER SERVICE INSTALLATION

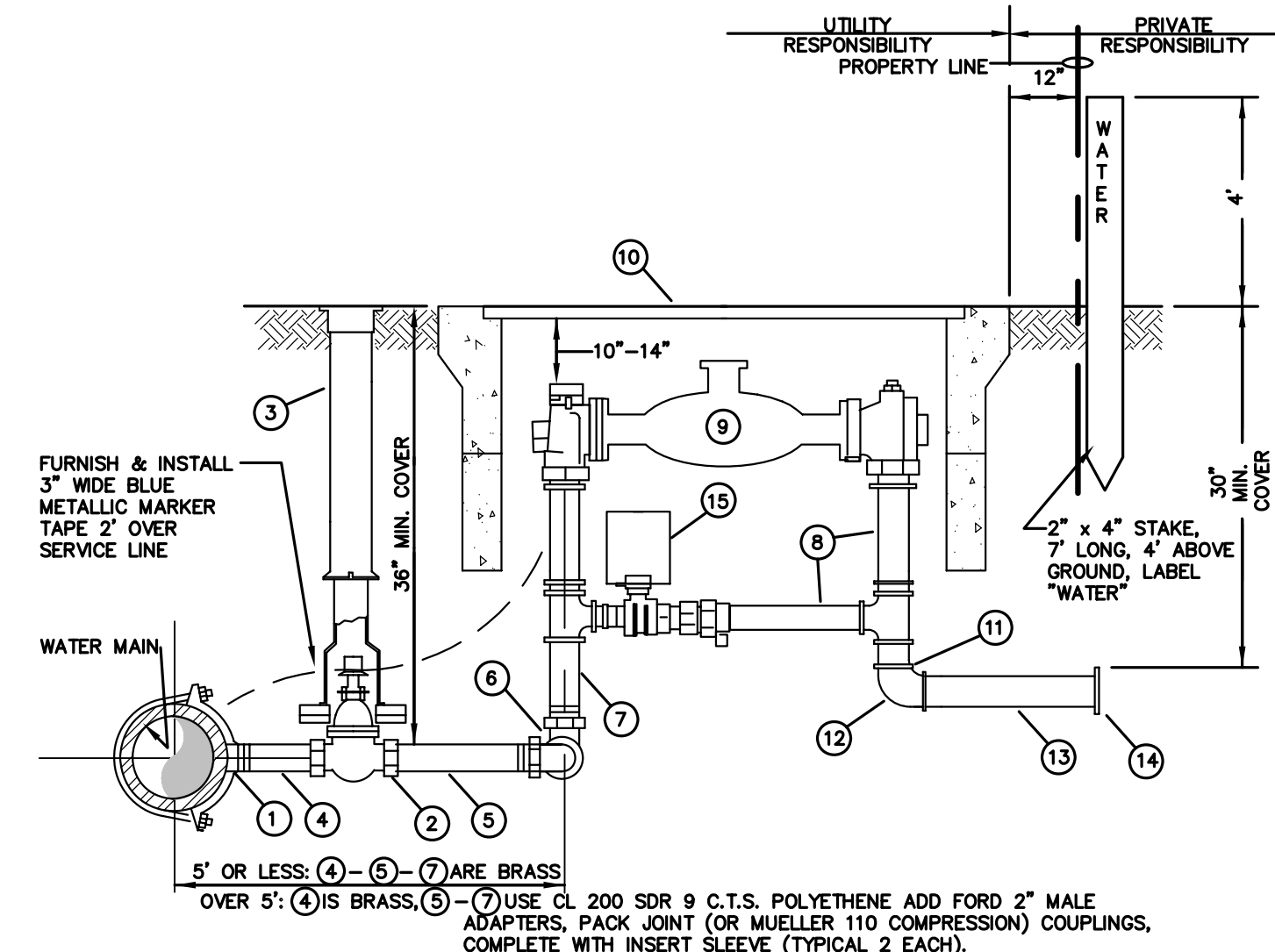
NOT TO SCALE W-D10



NO.	ITEM
1	ROMAC STYLE 2025 STAINLESS STEEL DOUBLE STRAP TYPE SADDLE
2	2" RESILIENT WEDGE GATE VALVE WITH 2" OPERATING NUT
3	STANDARD CAST-IRON VALVE BOX (RICH NO. 940)
4	BRASS NIPPLE (3" MIN., 6" MAX.)
5	NIPPLE (SEE NOTE ABOVE)
6	BRASS SWING JOINT
7	NIPPLE (SEE NOTE ABOVE) WITH 2" x 1 1/2" REDUCER (FORD C-84-67)
8	METER SETTER, 1 1/2" FORD VBH66-12B WITH METER SPACER (LENGTH DETERMINED BY DISTRICT PRIOR TO INSTALLATION)
9	METER (FURNISHED BY DISTRICT) 13 1/4" LONG
10	METER BOX, NO. 2 FOG TITE OR BROOKS NO. 65, WITH STEEL TRAFFIC COVER (FURNISH 2 BOXES)
11	1 1/2" BRASS NIPPLE
12	1 1/2" BRASS 90° EL
13	1 1/2" x 12" BRASS NIPPLE
14	1 1/2" CAP
15	6" PVC PIPE OVER BY-PASS VALVE.

### 1 1/2" METER SERVICE INSTALLATION

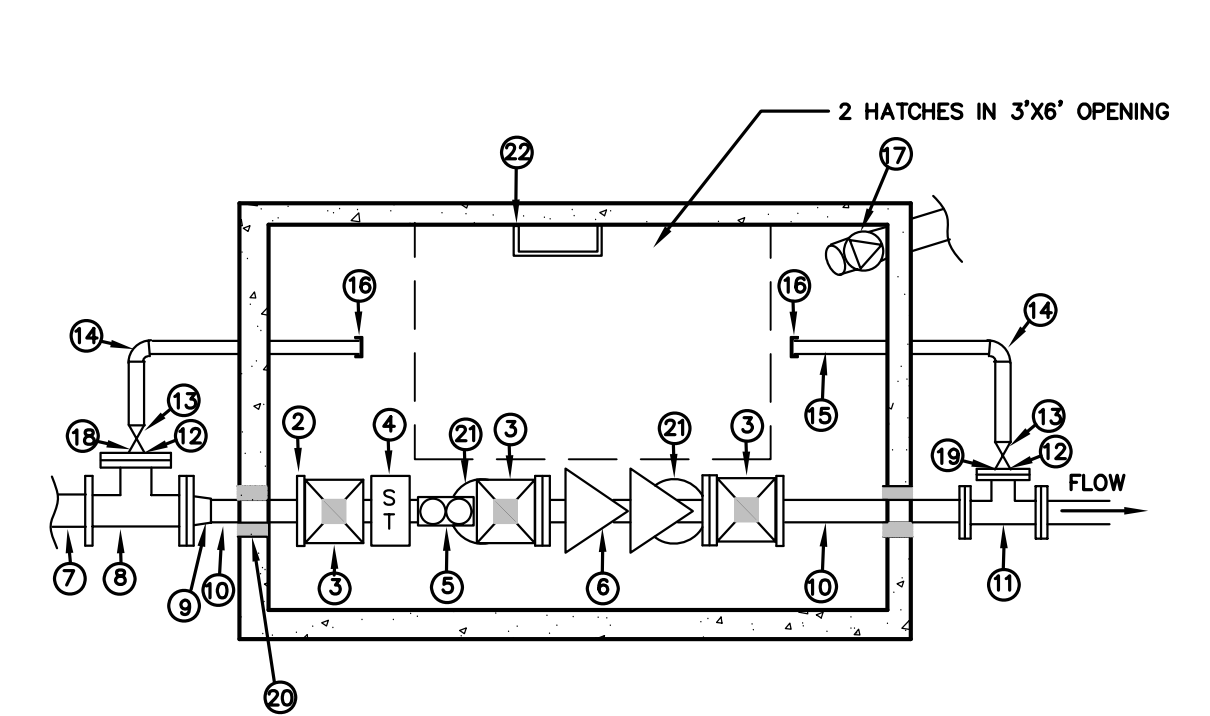
NOT TO SCALE W-D11



NO.	ITEM
1	ROMAC STYLE 2025 STAINLESS STEEL DOUBLE STRAP TYPE SADDLE
2	2" RESILIENT WEDGE GATE VALVE WITH 2" OPERATING NUT
3	STANDARD CAST-IRON VALVE BOX (RICH NO. 940)
4	BRASS NIPPLE (3" MIN., 6" MAX.)
5	NIPPLE (SEE NOTE ABOVE)
6	BRASS SWING JOINT
7	NIPPLE (SEE NOTE ABOVE)
8	METER SETTER, 2" FORD VBH66-12B WITH METER SPACER (LENGTH DETERMINED BY DISTRICT PRIOR TO INSTALLATION)
9	METER (FURNISHED BY DISTRICT) 17 1/4" LONG
10	METER BOX, NO. 2 FOG TITE OR BROOKS NO. 65, WITH STEEL TRAFFIC COVER (FURNISH 2 BOXES)
11	2" BRASS NIPPLE
12	2" BRASS 90° EL
13	2" x 12" BRASS NIPPLE
14	2" CAP
15	6" PVC PIPE OVER BY-PASS VALVE.

### 2" METER SERVICE INSTALLATION

NOT TO SCALE W-D12

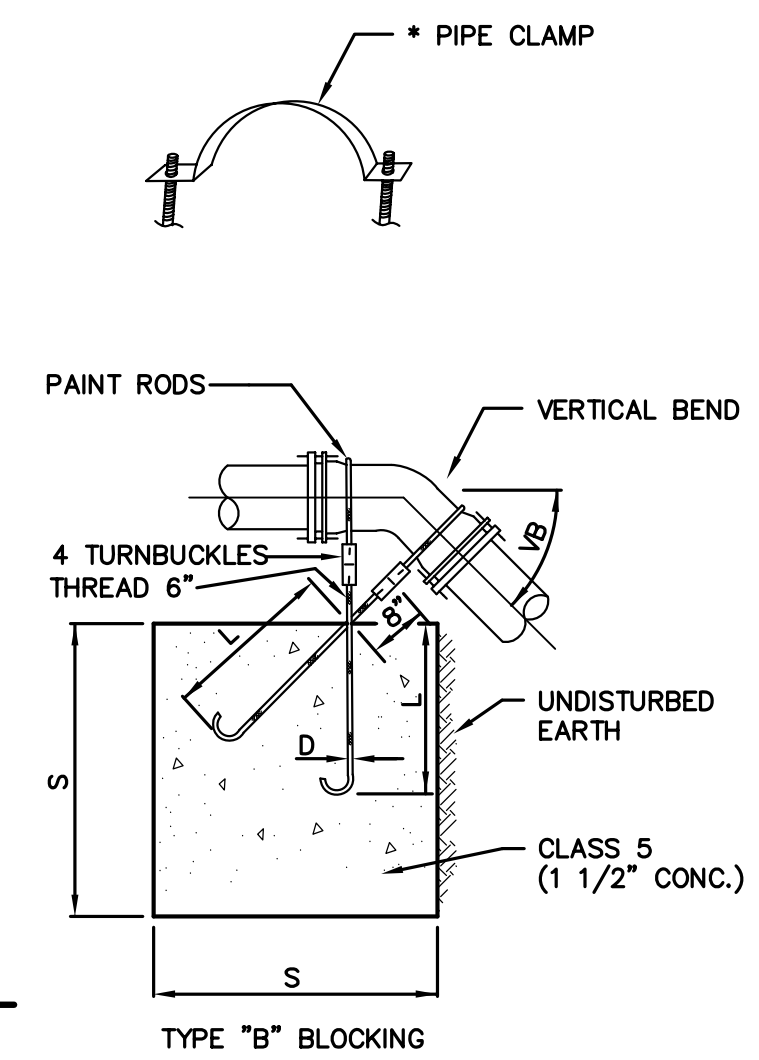
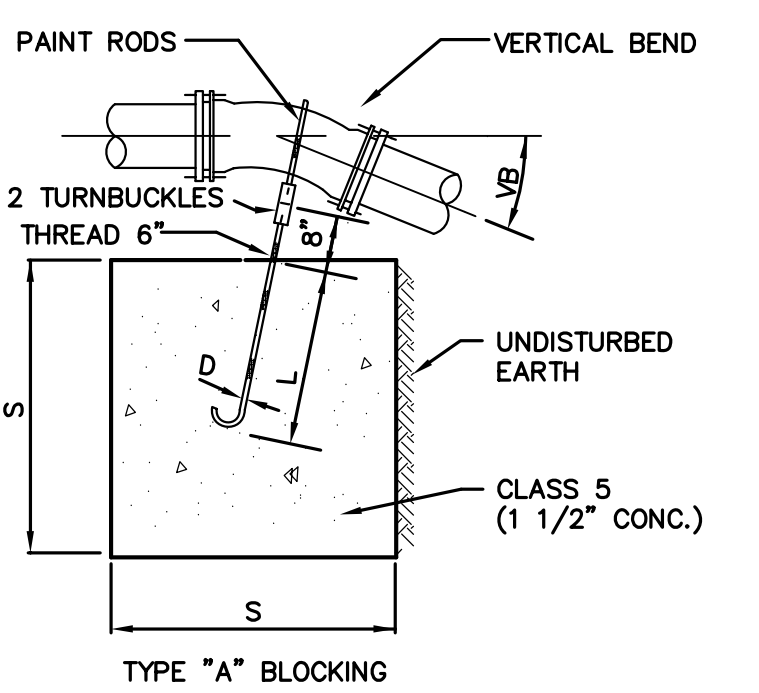


NO.	DESCRIPTION
1	UTILITY VAULT 4484-LA OR APPROVED EQUAL, 2 HATCHES LW PROD. OR EQUAL, H-20 LOADING
2	UNIFLANGE ADAPTER
3	3" RWGV
4	3" STRAINER
5	NEPTUNE 3" COMPOUND METER W/REMOTE PRO READ REGISTERS. INSTALL REMOTE READ PADS TO TOP OF VAULT AS DIRECTED
6	STATE HEALTH DEPT. APPROVED 3" DOUBLE CHECK VALVE ASSEMBLY
7	4" CLASS 52 DIP
8	4" TEE (MF X FL) W/MEGA LUGS
9	4" x 3" REDUCER (4" PE x 3" M.J) W/MEGA LUG
10	3" CLASS 52 DIP
11	3" TEE (MJ X FL) W/MEGA LUGS
12	2" BRASS CLOSE NIPPLE
13	2" RWGV W/STANDARD C. VALVE BOX AND COVER
14	2" BRASS ELBOW
15	2" THREADED BRASS PIPE
16	2" BRASS CAP
17	6" PVC DRAIN TO DAYLIGHT OR CB. MINIMUM SLOPE 1%. SCREENS AT BOTH ENDS W/BACKWATER VALVE IN VAULT
18	4" BLIND FLANGE TAPPED 2"
19	3" BLIND FLANGE TAPPED 2"
20	NON SHRINK WATER TIGHT GROUT, INLETS AND OUTLETS
21	PLACE PIPE SUPPORTS STANDON S-92 OR EQUAL UNDER ASSEMBLY IN TWO PLACES
22	GALV STEEL LADDER, LOCATE AS DIRECTED BY DISTRICT, SECURE TO VAULT

### 3" WATER SERVICE INSTALLATION

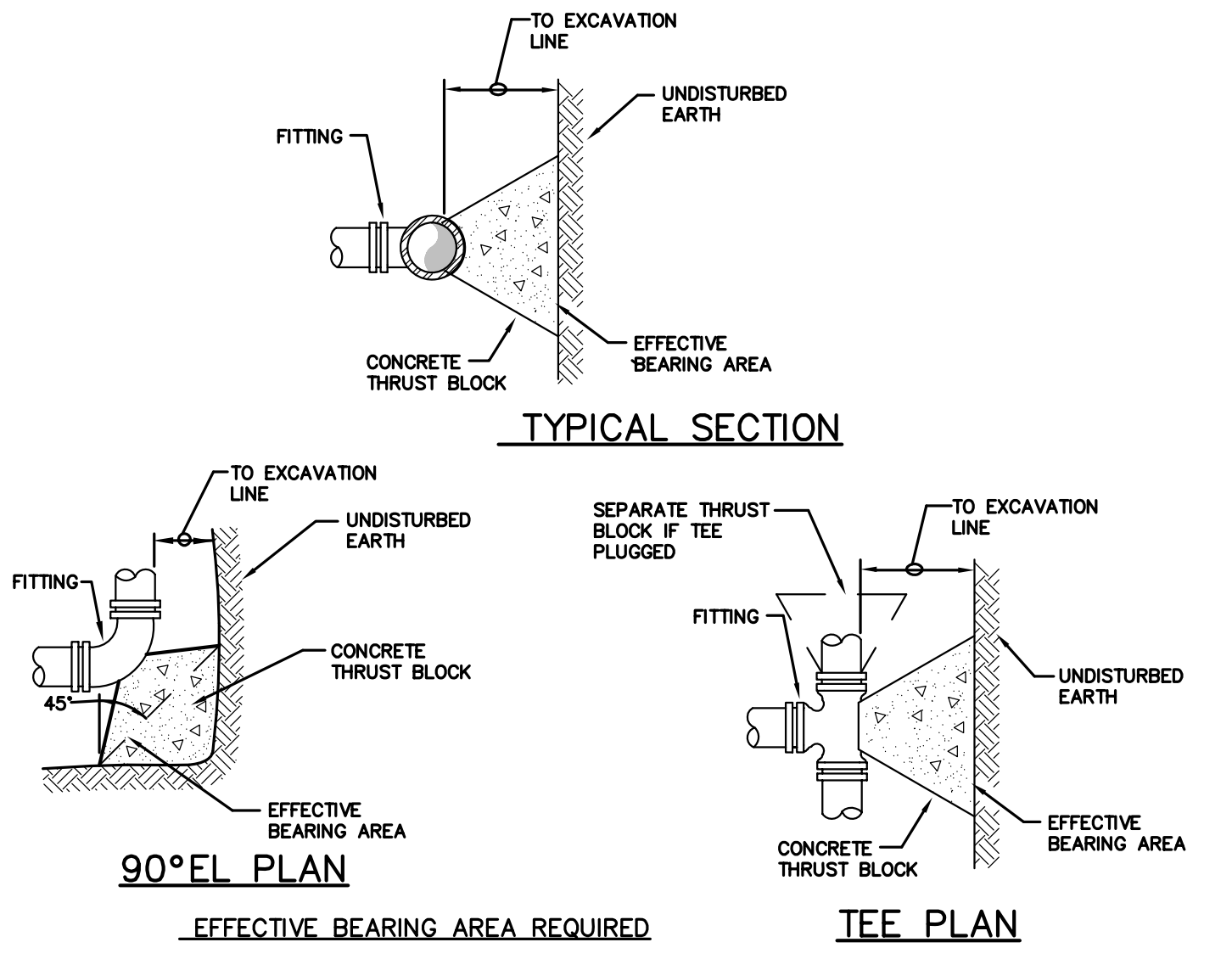
NOT TO SCALE W-D13

TYPE "A" BLOCKING					
FOR 11 1/4"-22 1/2"-30" VERTICAL BENDS					
PIPE SIZE NOMINAL DIAMETER - INCHES	TEST PRESSURE - PSI	VERTICAL BEND DEGREES	NO. OF CU. FT. OF CONC. BLOCKING	SIDE OF CUBE LIN. FT.	DIA. OF RODS (2) INCHES
4"	300	11 1/4	8	2	5/8"
		22 1/2	11	2.2	1.5
6"	300	30	17	2.6	2.0
		11 1/4	11	2.2	5/8"
8"	300	22 1/2	25	2.9	2.0
		30	41	3.5	2.5
12"	250	11 1/4	16	2.5	5/8"
		22 1/2	47	3.6	2.0
16"	225	30	70	4.1	3/4"
		11 1/4	32	3.2	5/8"
20"	200	22 1/2	88	4.5	7/8"
		30	132	5.1	3.0
24"	200	11 1/4	70	4.1	7/8"
		22 1/2	184	5.7	1 1/8"
30"	150	30	275	6.5	1 1/4"
		11 1/4	91	4.5	7/8"
36"	100	22 1/2	225	6.1	1 1/4"
		30	330	6.9	1 3/8"
42"	75	11 1/4	128	5.0	1"
		22 1/2	320	6.8	1 3/8"
48"	50	30	480	7.9	1 7/8"
					5.5



### VERTICAL ANCHOR BLOCK

NOT TO SCALE W-D14



PIPE SIZE	90° EL	45° EL	22 1/2° EL	TEE
8"	7 SQ. FT.	4 SQ. FT.	2 SQ. FT.	5 SQ. FT.
12"	16 SQ. FT.	9 SQ. FT.	4 SQ. FT.	11 SQ. FT.
16"	28 SQ. FT.	15 SQ. FT.	8 SQ. FT.	20 SQ. FT.

NOTES:

1. BLOCKING SHALL BE TO SOLID BEARING SURFACE.

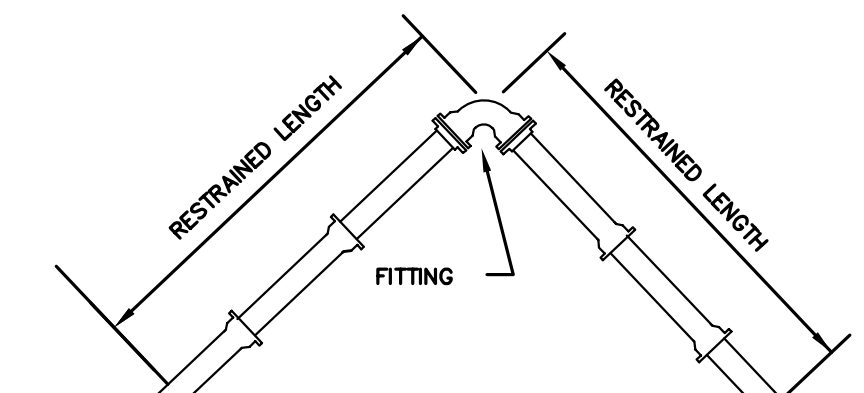
2. ALL FITTINGS SHALL BE COVERED WITH 4 MIL VISQUEEN BEFORE CONCRETE IS POURED.

3. CONCRETE BLOCKING SHALL BE 2000 PSI MINIMUM CONCRETE POURED IN PLACE. ALL BLOCKS ON TEES SHALL BE SEPARATED FOR DIRECTION OF THRUST.

4. THIS TABLE REPRESENTS THE "MINIMUM" CONSTRUCTION STANDARDS. THE DEVELOPER'S ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING THE APPROPRIATE SIZE OF ALL THRUST BLOCKS BASED ON EXISTING AND LOCAL CONDITIONS.

### THRUST BLOCKING

NOT TO SCALE W-D15



PIPE SIZE	RESTRAINED LENGTH IN FEET				
	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	TEE OR DEAD END CAP
4"	32	14	7	3	26
6"	44	19	9	5	32
8"	58	24	12	6	43
10"	70	29	14	7	54
12"	82	34	16	8	66
16"	106	44	21	11	88
18"	116	48	23	12	100

NOTES:

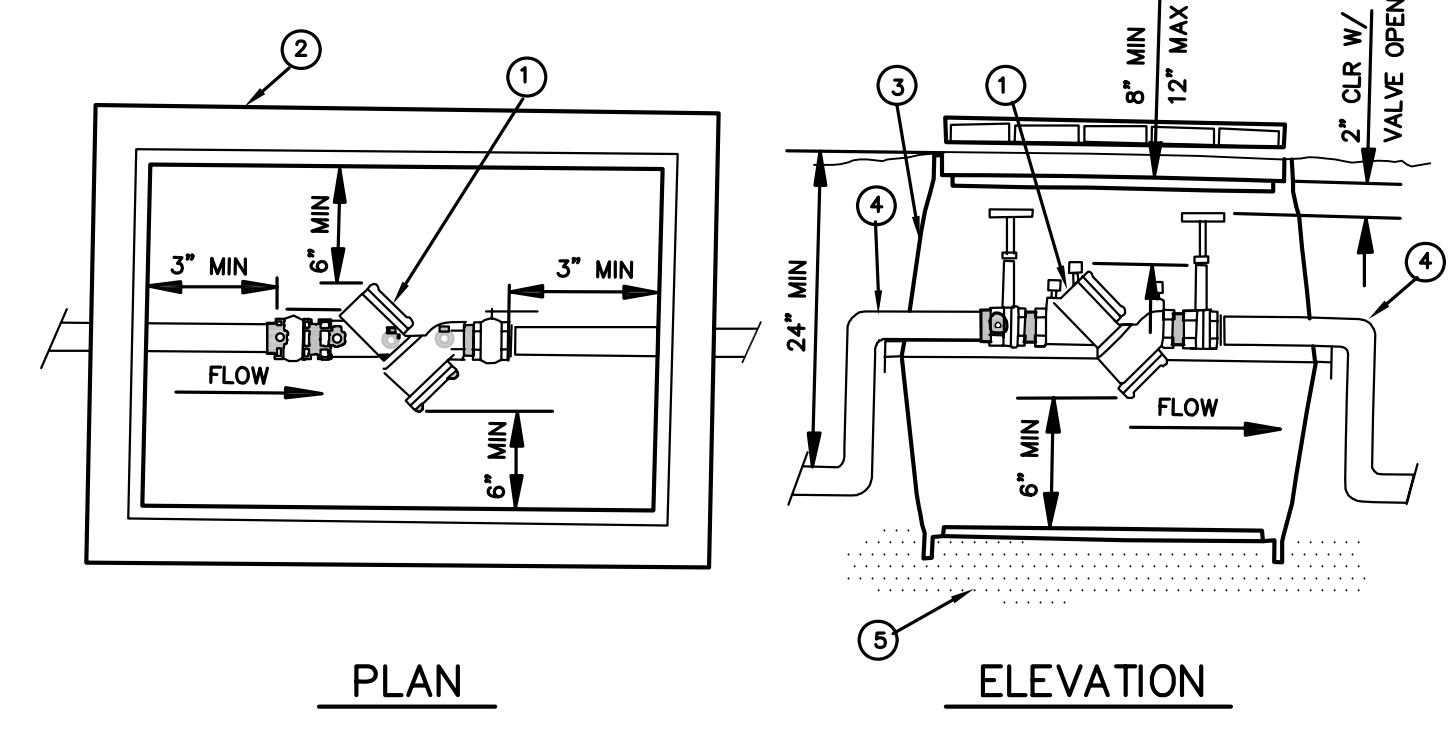
1. RESTRAINED LENGTHS SHOWN ARE MINIMUM AND FOR LINEAL FEET REQUIRED ON EACH SIDE OF FITTING INDICATED.

2. FOOTAGES ARE BASED ON 200 PSI PRESSURE AND 42 INCHES COVER. IF PRESSURE IS GREATER OR COVER IS LESS, THE RESTRAINED LENGTH SHALL BE INCREASED.

3. THIS TABLE REPRESENTS THE "MINIMUM" CONSTRUCTION STANDARDS. THE DEVELOPER'S ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING THE APPROPRIATE LENGTH OF ALL RESTRAINED JOINT BASED ON EXISTING AND LOCAL CONDITIONS.

### THRUST RESTRAINT FOR DUCTILE IRON PIPE

NOT TO SCALE W-D16



LEGEND:

1 STATE APPROVED DOUBLE CHECK VALVE ASSEMBLY

2 IN NON-TRAFFIC AREAS USE: PRECAST CONCRETE VAULT (UTILITY VAULT CO 233-LA, OR APPROVED EQUAL) OR PLASTIC VALVE BOX (UTILITY VAULT CO 1324-12L OR APPROVED EQUAL) IN TRAFFIC AREAS. A TRAFFIC LOADED BOX MUST BE USED AND LOCATION APPROVED BY THE DISTRICT PRIOR TO INSTALLATION.

3 A DAYLIGHT DRAIN SHALL BE PROVIDED THERE MUST BE A 4" MIN LAYER OF FREE DRAINING GRAVEL AT THE BOTTOM OF BOX.

4 ANGLES MAY BE IN OR OUT OF BOX SO LONG AS SUFFICIENT ROOM IS ALLOWED AT EACH END FOR VALVE OPERATOR AND DCVA REPAIR OR MAINTENANCE.

5 PROVIDE FREE DRAINING SOIL.

NOTES:

1. ALL TEST COCKS MUST HAVE BRASS PLUGS.

2. TEST COCKS MUST FACE UP OR SIDEWAYS WHICH EVER IS MORE ACCESSIBLE.

### DOUBLE CHECK VALVE ASSEMBLY FOR 2" & SMALLER SERVICE

NOT TO SCALE W-D17

Approved by: \_\_\_\_\_ Date \_\_\_\_\_

Mukilteo Water District

Mukilteo Water District Extension No. \_\_\_\_\_

Gray & Osborne No. \_\_\_\_\_



MUKILTEO WATER DISTRICT

7824 MUKILTEO SPEEDWAY MUKILTEO, WA. (425) 355 - 3355 98275

STANDARD WATER DETAILS SHEET 2 OF 3

DATE: 6/03 APP'D KEE SCALE: NONE DWN: G&O

C18B

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