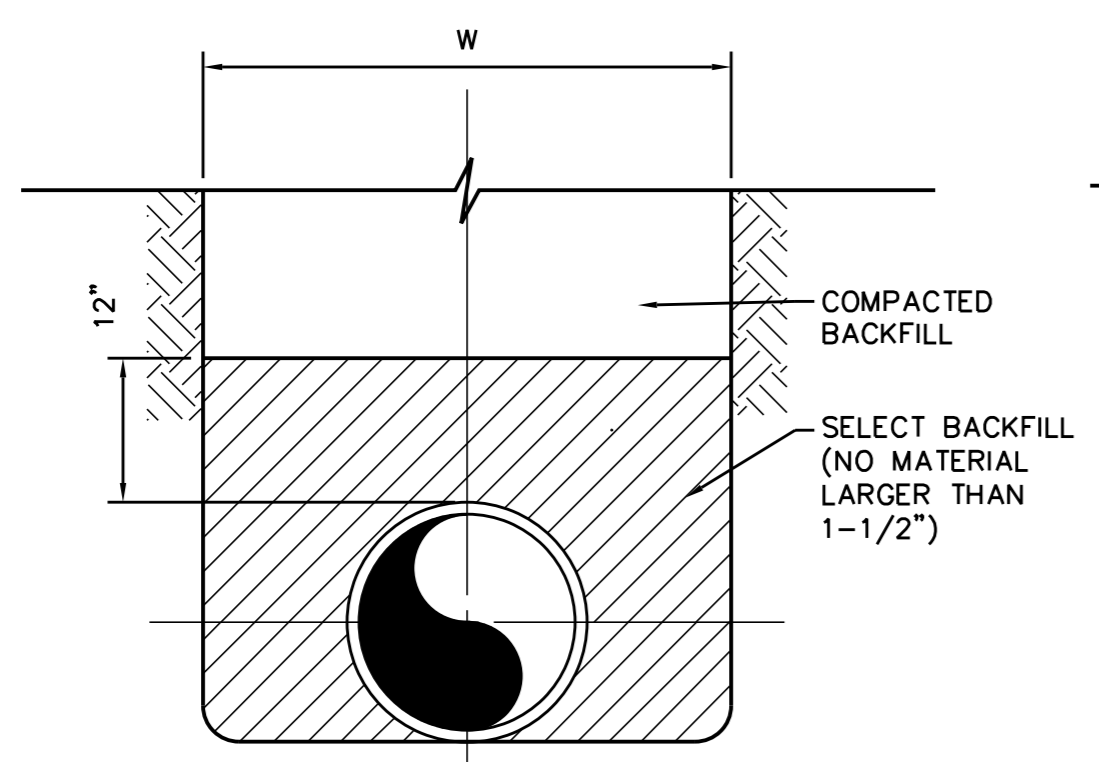
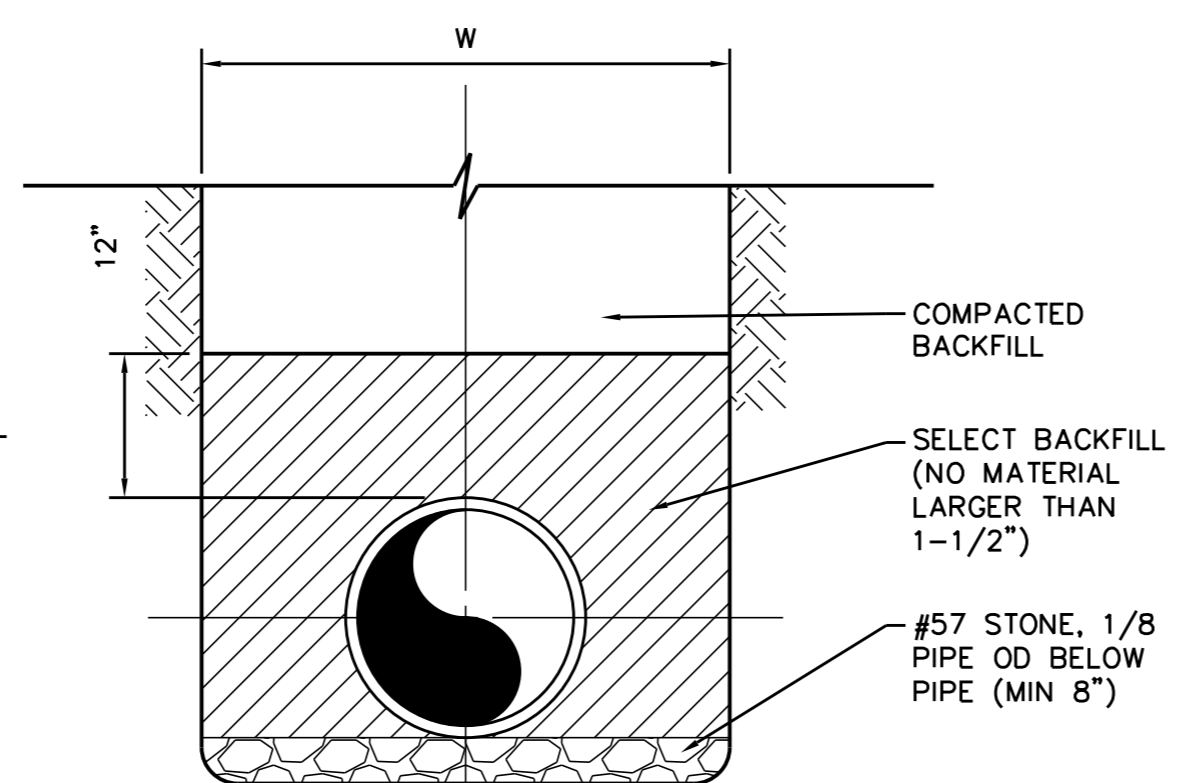


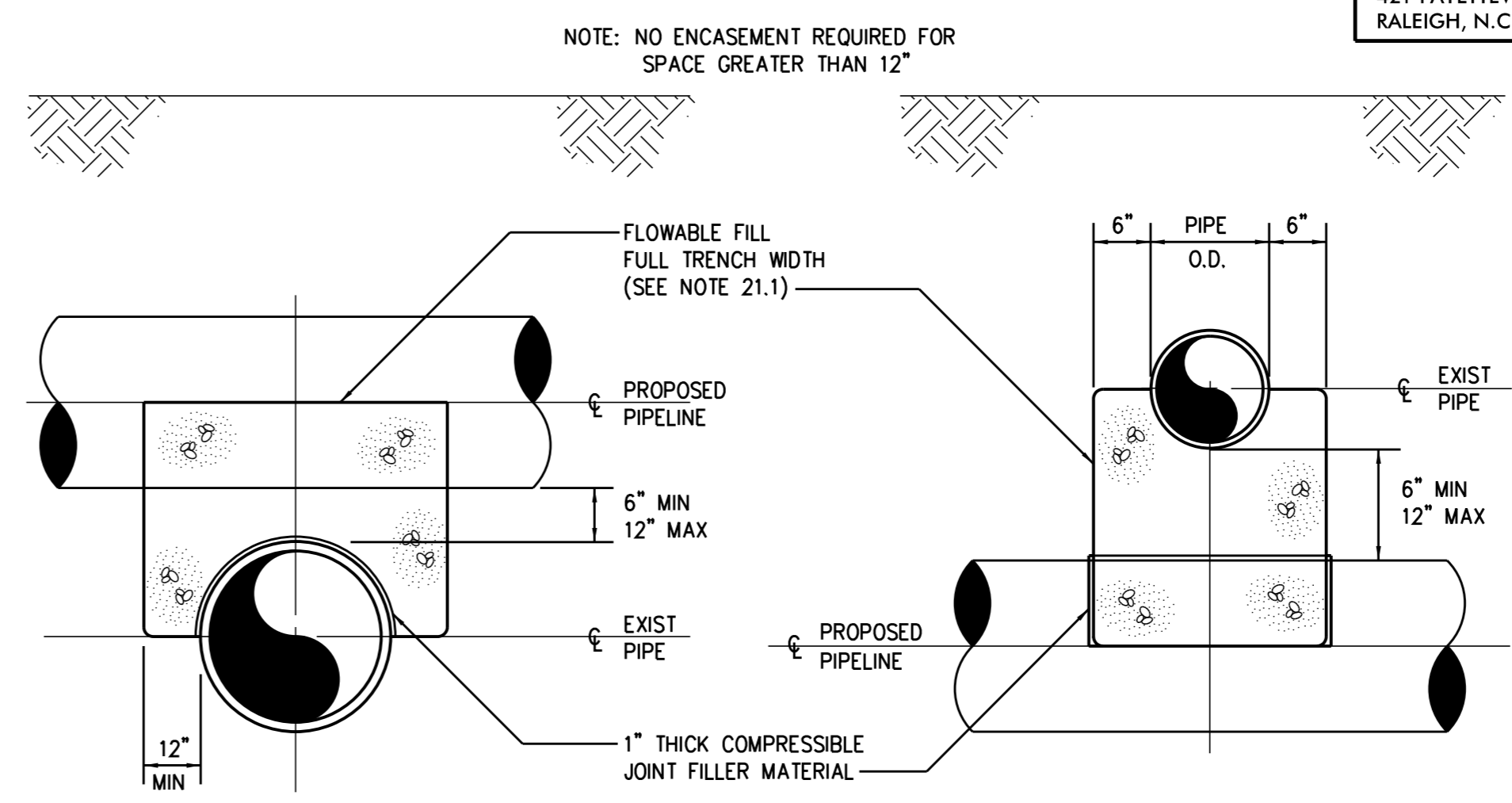
5/14/09



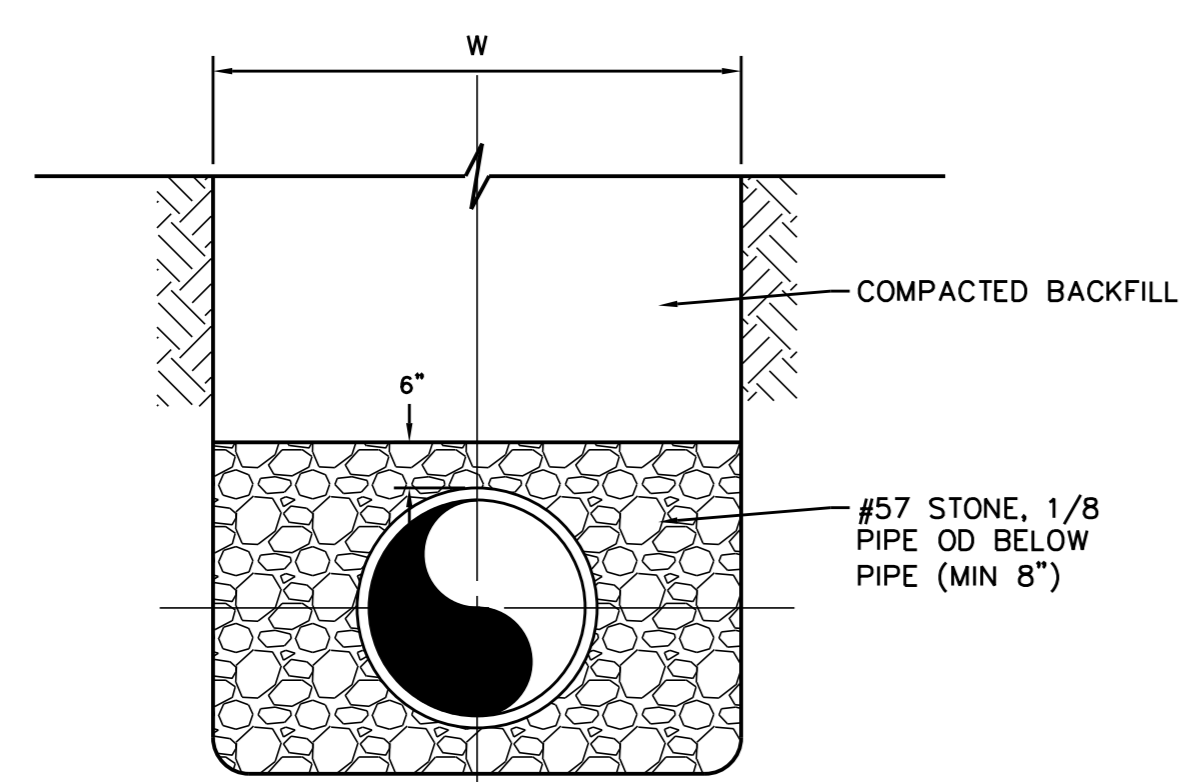
TYPE A - IN EARTH
0222100



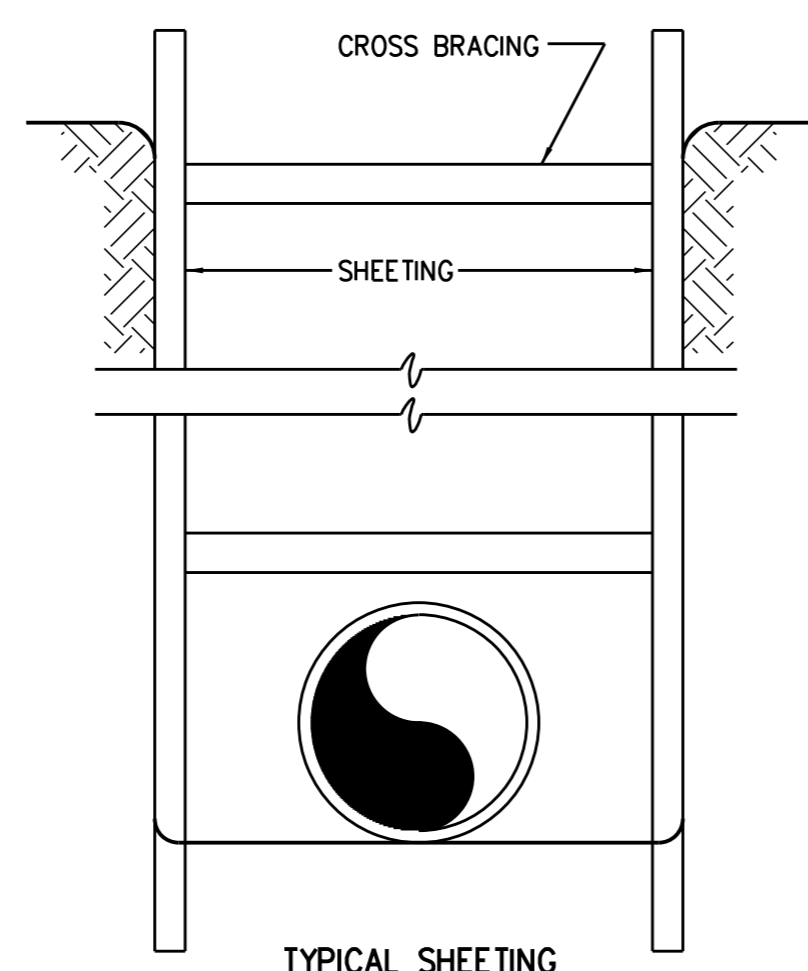
TYPE B
0222102



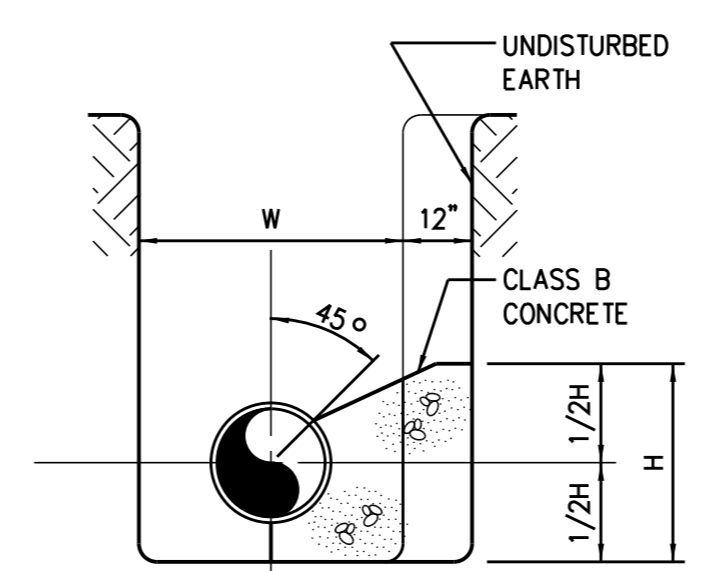
PROPOSED PIPELINE OVER EXIST PIPE
 PROPOSED PIPELINE UNDER EXIST PIPE
 0222118



TYPE E
0222101



TYPICAL SHEETING
0222121

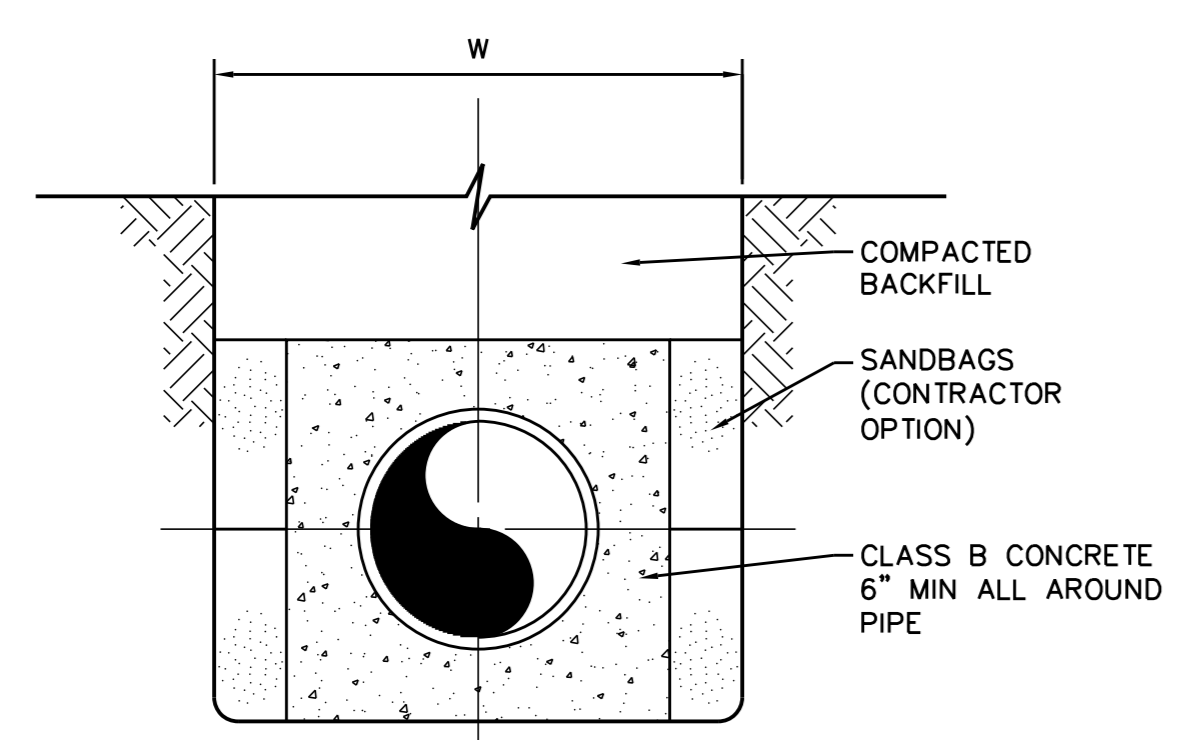


TYPICAL SECTION
TEE OR BEND

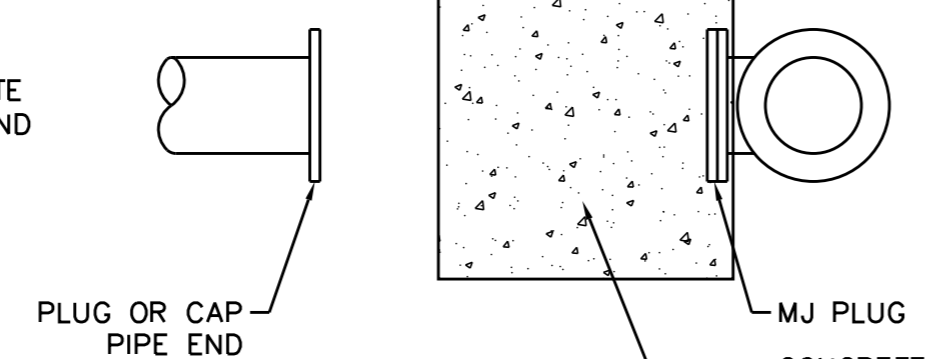
PIPE SIZE (IN)	CONCRETE THRUST BLOCK SCHEDULE*									DESIGN PRESSURE (PSI)
	90° TEE		45°		22 1/2°		11 1/4° & 5 5/8°			
	H	L	H	L	H	L	H	L	L	
6.0	2.6	5.3	1.9	3.9	1.4	2.8	1.0	2.0	3.50	
8.0	3.5	7.0	2.5	5.1	1.8	3.7	1.3	2.6	350	
10.0	4.2	8.5	3.1	6.3	2.2	4.5	1.6	3.2	350	
12.0	5.0	10.1	3.7	7.5	2.6	5.3	1.9	3.8	350	
14.0	5.8	11.7	4.3	8.6	3.1	6.2	2.2	4.4	350	
16.0	6.6	13.3	4.9	9.8	3.5	7.0	2.5	5.0	350	
18.0	7.4	14.9	5.5	11.0	3.9	7.9	2.8	5.6	350	
20.0	8.2	16.5	6.1	12.2	4.3	8.7	3.1	6.2	350	
24.0	9.9	19.8	7.2	14.5	5.2	10.4	3.7	7.4	350	
30.0	12.2	24.5	9.0	18.0	6.4	12.9	4.5	9.1	350	
36.0	14.6	29.3	10.8	21.6	7.7	15.4	5.4	10.9	350	
42.0	17.0	34.0	12.5	25.0	8.9	17.9	6.3	12.7	350	
48.0	19.4	38.8	14.3	28.6	10.2	20.4	7.2	14.5	350	
54.0	22.0	44.0	16.2	32.4	11.5	23.1	8.2	16.4	350	
60.0	23.5	47.1	17.3	34.7	12.4	24.8	8.8	17.6	350	
64.0	25.1	50.2	18.4	36.9	13.2	26.4	9.3	18.7	350	

* BASED ON AVERAGE SOIL PASSIVE BEARING STRENGTH OF 2000 PSF USING SF OF 1.5

0222114R

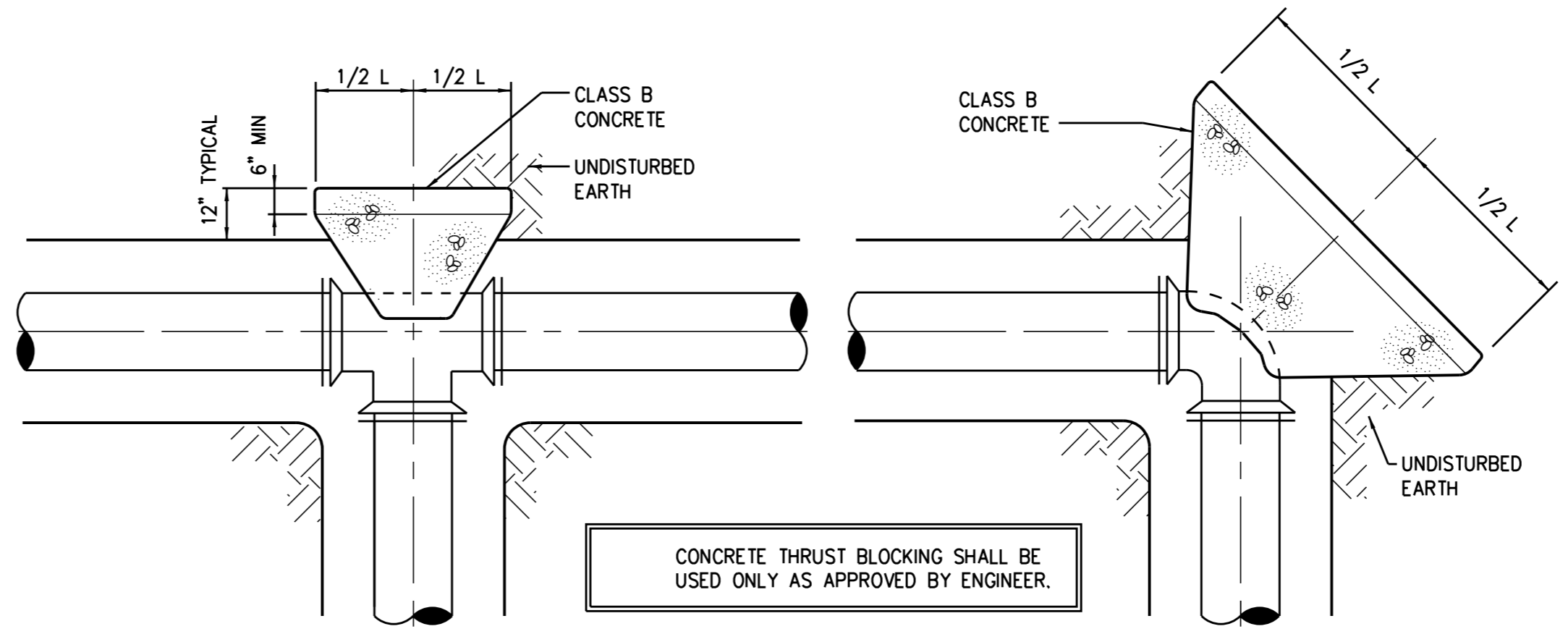


CONCRETE ENCASEMENT
0222104



- NOTES:
 1. CLOSE VALVES TO KILL LINE
 2. SEVER AND REMOVE PIPE SECTION
 3. BLIND FLANGE TO TEE OR EXISTING PIPING
 4. PLUG OR CAP ABANDONED PIPE END
 5. INSTALL THRUST BLOCK

CUT AND CAP EXISTING WATERLINE
0280003



PLAN - TEE
THRUST BLOCKS
PLAN - BEND

CONCRETE THRUST BLOCKING SHALL BE USED ONLY AS APPROVED BY ENGINEER.

0222108

TRENCH EXCAVATION LIMITS		
INTERNAL DIAMETER OF PIPE	W	S
	MAX	MAXIMUM PAVEMENT REPLACEMENT WIDTH
4'-6"	3'-9"	2'-0"
8'-10"	3'-9"	2'-2"
12"	3'-9"	O.D.+2'
14"-16"	4'-2"	O.D.+2'
18"	4'-4"	O.D.+2'
20", 21"	4'-8"	O.D.+2'
24"	4'-11"	O.D.+2'
27"	5'-9"	O.D.+2'
30"	6'-7"	O.D.+2'
36"	7'-4"	O.D.+2'
42"	8'-2"	O.D.+2'
48"	8'-9"	O.D.+2'
54"	9'-4"	O.D.+2'
60"	9'-10"	O.D.+2'
72"	11'-0"	O.D.+2'
78"	11'-8"	O.D.+2'
84"	12'-0"	O.D.+2'
90"	12'-6"	O.D.+2'
96"	13'-0"	O.D.+2'
108"	14'-0"	O.D.+2'
DEPTH OF CUT		
0-6'	S=W+4'	
>6-8'	S=W+8'	
>8-10'	S=W+12'	
>10-12'	S=W+16'	
>12-14'	S=W+20'	
>14-16'	S=W+24'	
>16-18'	S=W+28'	
>18'	S=W+32'	

W = TRENCH WIDTH AT BOTTOM OF PIPE. TRENCH SIDE SLOPES SHALL BE IN ACCORDANCE WITH OSHA REQUIREMENTS.

0222110

REVISIONS

8/9/2018