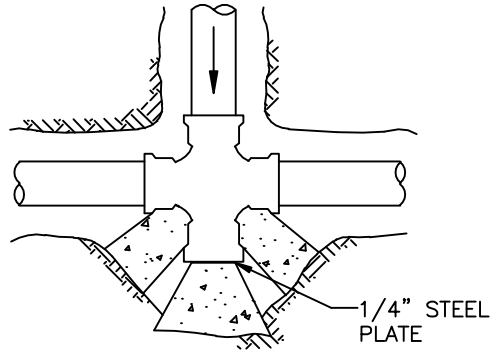
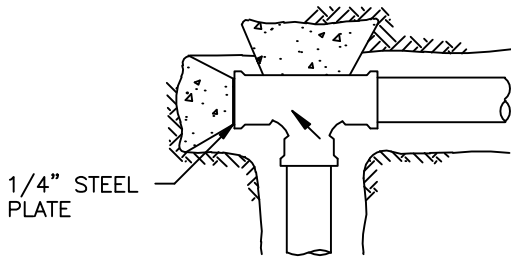


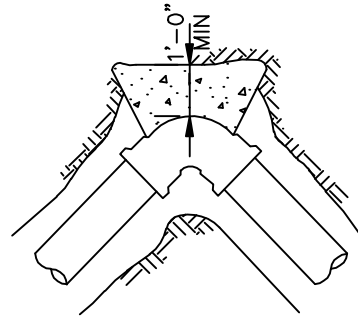
UNBALANCED CROSS



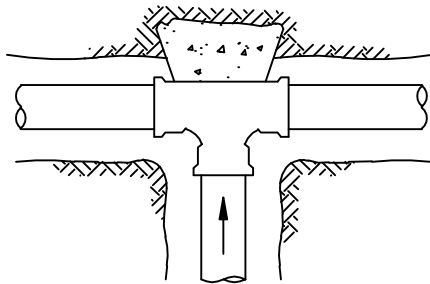
CROSS WITH PLUG



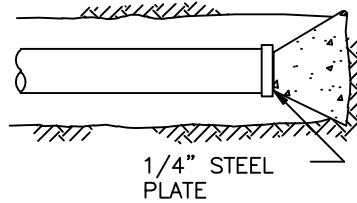
PLUGGED TEE



HORIZONTAL BEND



TEE



PIPE & CAP

THRUST BLOCK AREA IN SQUARE FEET (SEE STD DETAIL NO W-165)												
PIPE SIZE	FIRM SILT OR FIRM SILTY SAND				COMPACT SAND				COMPACT SAND & GRAVEL			
	90° BEND	TEE	45° BEND CAP OR PLUG	11 1/4' & 22 1/2' BEND	90° BEND	TEE	45° BEND CAP OR PLUG	11 1/4' & 22 1/2' BEND	90° BEND	TEE	45° BEND CAP OR PLUG	11 1/4' & 22 1/2' BEND
4"	7.0	4.2	4.2	1.7	2.9	2.1	2.1	1.0	2.2	1.6	1.6	1.0
6"	13.3	9.4	9.4	3.8	6.7	4.7	4.7	1.9	5.0	3.5	3.5	1.4
8"	23.3	16.7	16.7	6.7	11.7	8.4	8.4	3.4	8.8	6.3	6.3	2.5
12"	53.0	37.5	37.5	15.0	26.5	18.8	18.8	7.5	20.0	14.0	14.0	5.6

AREAS CALCULATED ON 300 PSI TEST PRESSURE AND 3'-0" MIN COVER OVER WATERMAIN

IF ECOLOGY BLOCKS MAY BE USED IN LIEU OF POURED-IN-PLACE BLOCKING FOR FITTINGS IN SHADED PORTION OF TABLE RESTRAINED JOINTS MUST BE USED.

FOR NOTES SEE STD DETAIL NO W-165



APPROVED BY	L. OLIVE
DATE	07/31/2008
REF STAD SPEC	

DEPARTMENT OF PUBLIC WORKS
STANDARD PLANS
 THRUST BLOCK

STANDARD DETAIL NUMBER
W-160