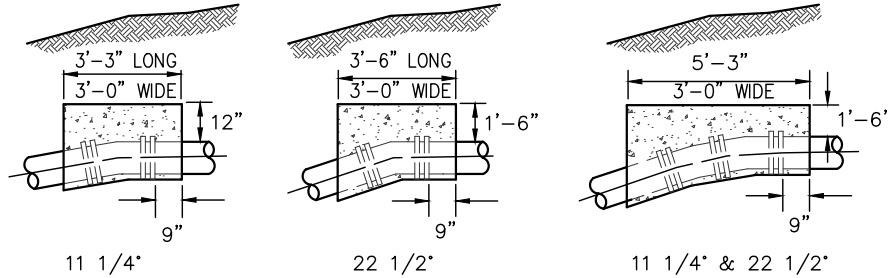
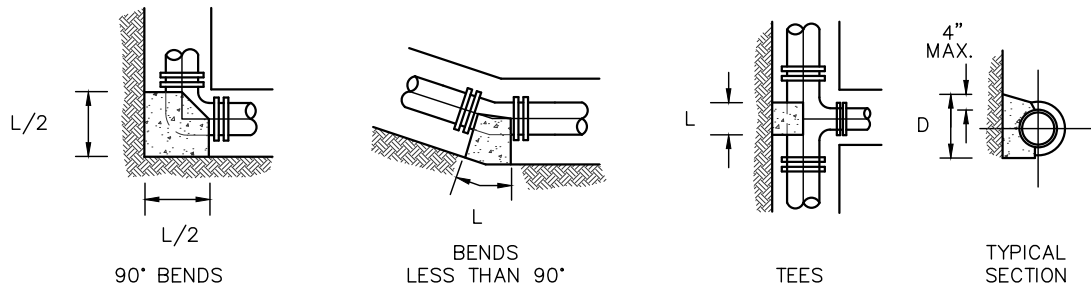


**DETAIL - END OF WATER LINE**



**CONCRETE BLOCKING FOR VERTICAL BENDS**



**CONCRETE BLOCKING FOR HORIZONTAL BENDS**

BENDS								
SIZE OF PIPE	DEGREE OF BEND							
	11 1/4°		22 1/2°		45°		90°	
	L	D	L	D	L	D	L	D
3", 4", 6"	8"	6"	10"	6"	20"	6"	36"	6"
8"	9"	8"	14"	8"	24"	9"	50"	8"
12"	14"	12"	22"	12"	30"	16"	60"	15"
16"	18"	16"	24"	18"	33"	36"	70"	22"

TEES								
RUN	BRANCH							
	3", 4", 6"		8"		12"		16"	
	L	D	L	D	L	D	L	D
3", 4", 6"	16"	6"	18"	12"				
8"	14"	8"	18"	12"				
12"	9"	12"	18"	12"	24"	18"		
16"	8"	16"	14"	16"	28"	16"	30"	26"

**NOTES**

**A.** CARE SHALL BE TAKEN TO KEEP CONCRETE AWAY FROM MECHANICAL JOINTS BY PLACING VISQUEEN OR OTHER APPROVED MATERIAL OVER PIPE BEFORE PLACING OF CONCRETE. BOLTS SHALL NOT BE ENCASED IN CONCRETE.

**B.** CONCRETE FOR BLOCKING VALVES AND FITTINGS SHALL CONFORM TO ODOT 499 CLASS QC-1.

**C.** CONTRACTOR SHALL USE THE THRUST BLOCKS AS SHOWN ONLY IF PREAPPROVED FOR SPECIAL CONDITION BY THE CITY PRIOR TO BEGINNING CONSTRUCTION AND IT IS DISCOURAGED.