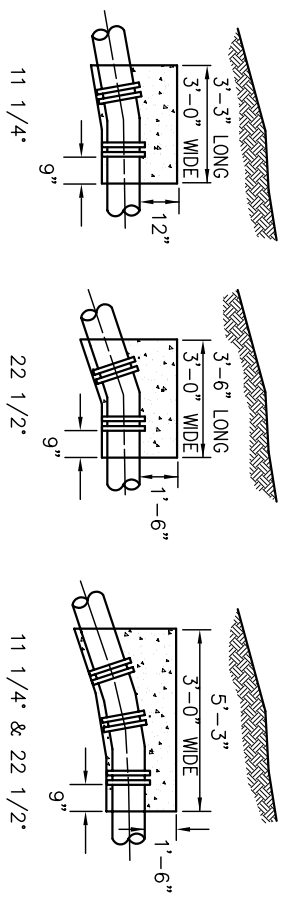


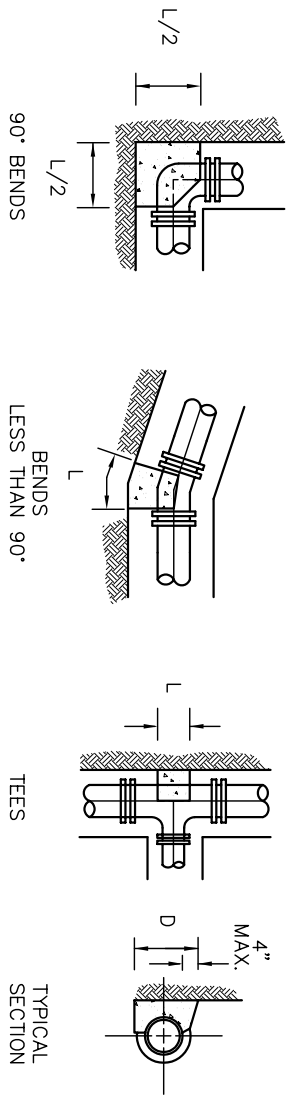
**DETAIL - END OF WATER LINE**

THRUST BLOCKING AREA (LxD) REQUIRED						
SIZE OF PIPE	11 1/4°	22 1/2°	45°	90°	TEE OR PLUG	TEE OR PLUG
4"	1	1	1	1.3	1	1
6"	1	1	1.6	3	2.1	2.1
8"	1	1.5	2.9	5	4	4
10"	1.2	2.3	5	8	6	6
12"	1.7	3	7	12	9	9
16"	3	6	12	21	15	15



**CONCRETE BLOCKING FOR VERTICAL BENDS**  
ONLY WITH PRIOR APPROVAL FROM VILLAGE

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



**CONCRETE BLOCKING FOR HORIZONTAL BENDS**  
ONLY WITH PRIOR APPROVAL FROM VILLAGE

RUN	TEES					
	BRANCH					
	3", 4", 6"	22 1/2°	45°	90°	90°	90°
3", 4", 6"	16"	6"				
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.
- B.** CONCRETE FOR BLOCKING VALVES AND FITTINGS SHALL CONFORM TO SECTION ODOT 499 CLASS C.
- C.** CONTRACTOR SHALL USE THE THRUST BLOCKS AS SHOWN ONLY IF PREAPPROVED FOR SPECIAL CONDITION BY THE VILLAGE PRIOR TO BEGINNING CONSTRUCTION.

**CONCRETE BLOCKING FOR WATER MAINS**