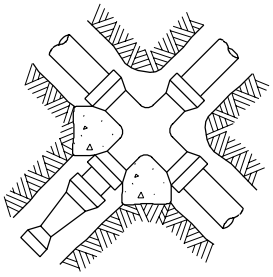
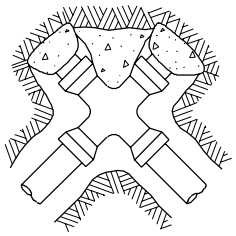
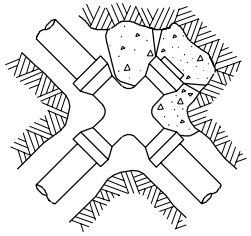


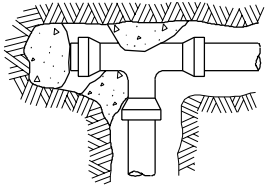
UNBALANCED CROSS
(Use column A)



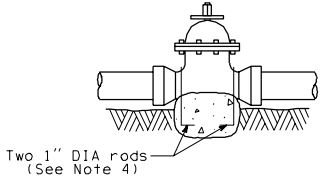
PLUGGED CROSS
(Use column B)



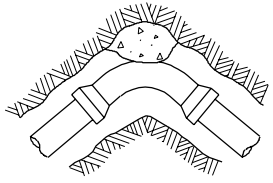
PLUGGED CROSS
(Use column A)



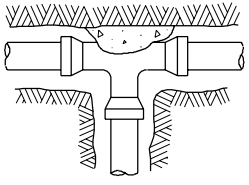
PLUGGED TEE
(Use column B)



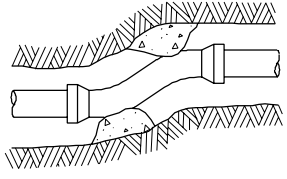
VALVE
(Use column A)



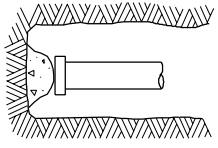
BEND



TEE



OFFSET
(Use columns B - E)



DEAD END

NOTES:

1. Contractor to provide blocking adequate to withstand full test pressure.
2. Divide thrust by safe bearing load to determine required area (in square feet) of concrete to distribute load.
3. Areas to be adjusted for other pressure conditions.
4. Provide two 1" minimum diameter rods on valves up through 10" diameter. Valves larger than 10" require special tie rod design.

Size	Test Pressure PSI	Thrust at Fittings in Pounds				
		A	B	C	D	E
		Tee and Dead Ends	90° Bend	45° Bend	22.5° Bend	11.25° Bend
4"	250	3,140	4,440	2,405	1,225	615
6"	250	7,070	9,995	5,410	2,760	1,385
8"	250	12,565	17,770	9,620	4,905	2,465
10"	250	19,635	27,770	15,030	7,660	3,850
12"	250	28,275	39,985	21,640	11,030	5,545
14"	250	38,485	54,425	29,455	15,015	7,545
16"	250	50,265	71,085	38,470	19,615	9,855

Soil Type	Safe Bearing Load PSF
Muck, peat, etc.	0
Soft clay	1,000
Sand	2,000
Sand and gravel	3,000
Sand and gravel cemented with clay	4,000
Hard shale	10,000

CONCRETE THRUST BLOCK