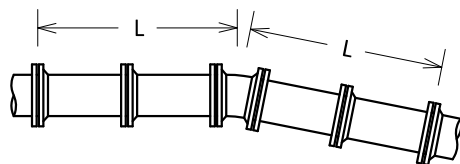
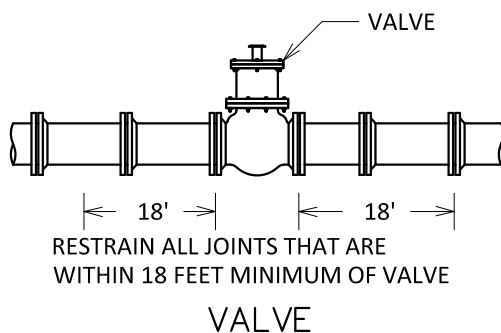


MINIMUM RESTRAINED LENGTH FOR WATER MAIN PIPE ADJACENT TO FITTINGS (IN FEET) (BASED ON INTERNAL PRESSURE OF 250 PSI) (SEE NOTE 1)								
PIPE SIZE (INCHES)	MINIMUM LENGTH *	90°	45°	22-1/2°	11-1/4°	REDUCER	TEE	CAP PLUG
4" - 6"	L	23	10	5	3	44	44	85
	LHS	74	35	17	9	---	---	---
	LLS	23	9	5	3	---	---	---
8"	L	30	13	6	3	47	70	111
	LHS	96	46	23	11	---	---	---
	LLS	30	12	6	3	---	---	---
12"	L	43	18	9	5	84	117	159
	LHS	138	66	32	16	---	---	---
	LLS	43	16	8	4	---	---	---

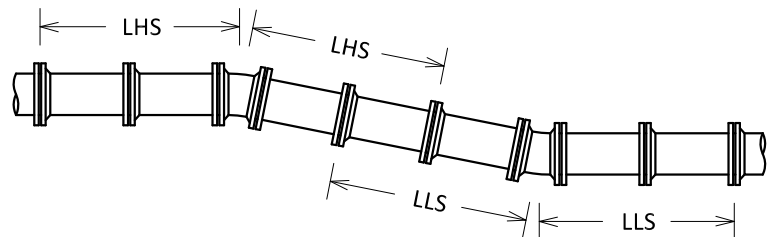
* L = HORIZONTAL LENGTH
LHS = VERTICAL HIGH SIDE LENGTH
LLS = VERTICAL LOW SIDE LENGTH



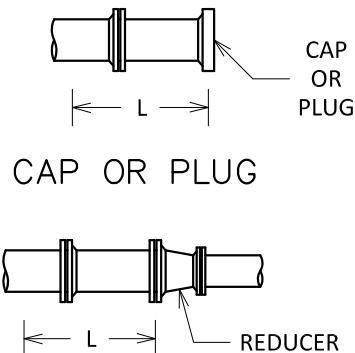
HORIZONTAL BEND



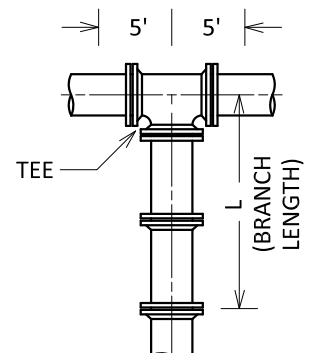
VALVE



VERTICAL BEND



REDUCER



TEE

NOTES:

1. SPECIAL DESIGN IS REQUIRED FOR FITTINGS ON HOLLY WATER MAIN PIPE LARGER THAN 12 INCHES AND FOR REDUCERS HAVING MORE THAN ONE PIPE SIZE DIFFERENCE.
2. CONCRETE THRUST BLOCK IS TO BE USED IN ADDITION TO MECHANICAL RESTRAINT DEVICES, SEE DETAILS S900-9 AND S900-10.
3. ALL POLYETHYLENE WRAPPED DUCTILE IRON HOLLY WATER MAIN PIPE AND FITTING JOINTS WITHIN L-LHS-LLS DIMENSIONS MUST BE RESTRAINED USING APPROVED MECHANICAL RESTRAINT DEVICE.
4. ASSUMPTION: SP SOILS, 5 FEET COVER, AND TYPE 4 LAYING CONDITION.

CITY OF ROCHESTER		
WATER MAIN PIPE RESTRAINT HOLLY SYSTEM		
ISSUED	5-8-08	NON-STANDARD DWG.NO.S900-8
REVISED	9-1-09	