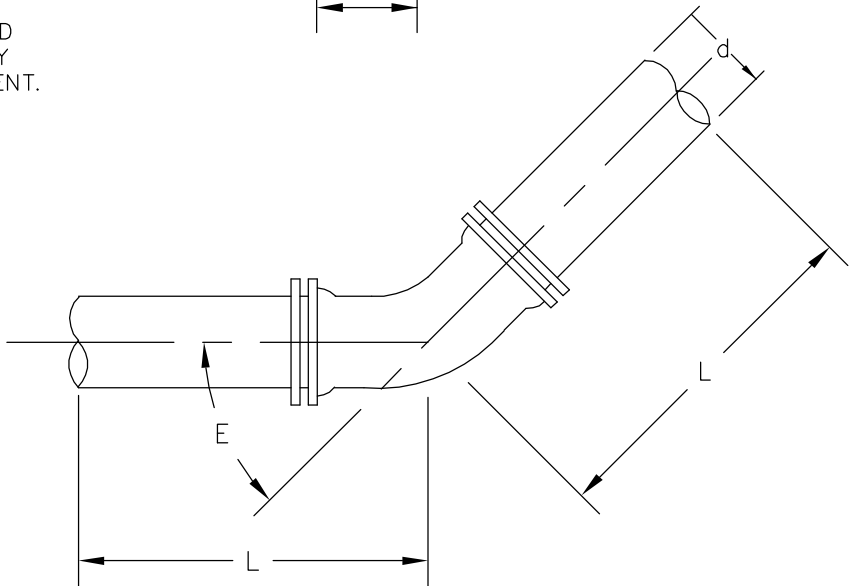
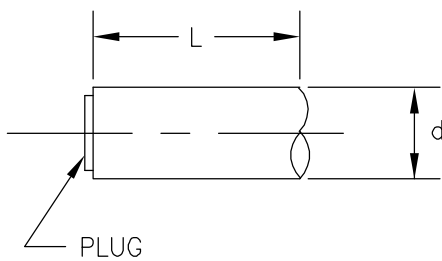
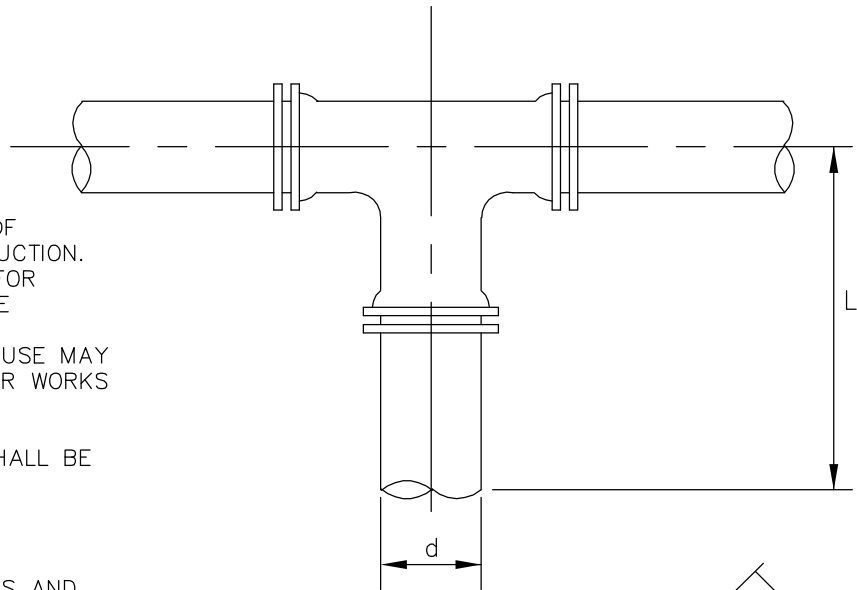


GENERAL NOTES:

1. CONCRETE BLOCKING IS NOT ACCEPTABLE AS A MEANS OF RESTRAINT ON NEW CONSTRUCTION. DETAILS SHOWN HERE ARE FOR REFERENCE ONLY FOR THOSE UNUSUAL OR EXCEPTIONAL CIRCUMSTANCES WHERE ITS USE MAY BE APPROVED BY THE WATER WORKS SUPERINTENDENT.
2. CONCRETE FOR BLOCKING SHALL BE ODOT 499, CLASS "C".
3. THE RODS ON VALVES AND HYDRANTS MAY BE USED IN EXCEPTIONAL CIRCUMSTANCES AND WHEN SPECIFICALLY APPROVED BY THE WATER WORKS SUPERINTENDENT.



L = REQUIRED LENGTH OF RESTRAINED JOINTS
 d = NORMAL PIPE SIZE
 E = ANGLE OF BEND

d	4"	6"	8"	10"	12"
11-1/4°	*	*	*	*	*
22-1/2°	*	1.5	2.0	2.5	3.0
45°	5	5	7	9	13
90° TEE PLUG	8	18	24	32	44

*RESTRAINED JOINT REQUIRED AT FITTING ONLY

RESTRAINT JOINTS
 NOT TO SCALE



VILLAGE OF INDIAN HILL
 DEPARTMENT OF WATER WORKS

APPROVED J.P. [Signature]
 DATE November 2011

STANDARD
 RESTRAINT DETAILS

DRAWING NO.

WW-126