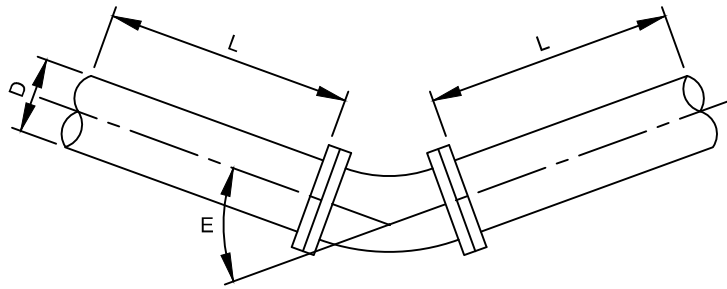
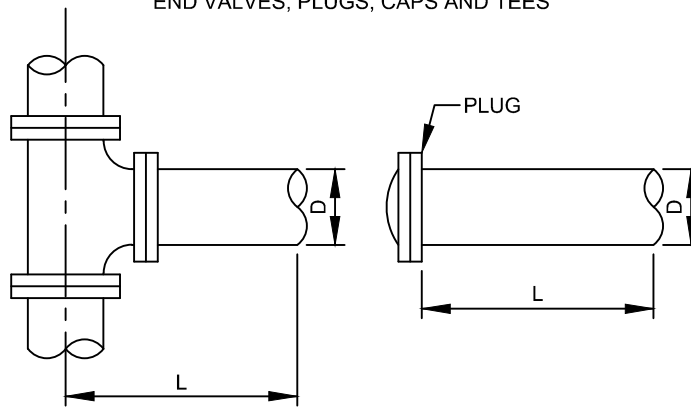


**WATER MAIN
REQUIRED RESTRAINED JOINTS FOR BENDS**



**WATER MAIN
REQUIRED RESTRAINED JOINTS FOR DEAD
END VALVES, PLUGS, CAPS AND TEES**



D - DIAMETER OF PIPE

E - DEGREE OF DEFLECTION	4"	6"	8"	10"	12"	16"	20"	24"
	11 1/4°	*	*	*	*	5	5	6
	22 1/2°	*	2	3	5	6	8	10
	45°	4	8	12	14	20	30	36
	90°	12	26	38	48	66	98	125

LENGTH OF RESTRAINED JOINTS IN FEET

* NO RESTRAINT REQUIRED

D - DIAMETER OF PIPE

	4"	6"	8"	10"	12"	16"	20"	24"
L	12	26	38	48	66	96	125	145

LENGTH OF RESTRAINED JOINTS IN FEET



ENGINEERING DIVISION
44 W. HEBBLE AVENUE FAIRBORN, OHIO 45324
PH: (937) 754-3055 FX: (937) 879-7395

WATERLINE RESTRAINED JOINTS

NOTE 1: DRAWING VALID ONLY WHEN USED AS SHOWN AND IN CONJUNCTION WITH OTHER FAIRBORN ENGINEERING SPECIFICATIONS AND/OR DETAILS. THIS DRAWING REPRESENTS MINIMUM STANDARDS. ANY MODIFICATIONS TO THIS DETAIL SHALL FIRST BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.

NOTE 2: CALL THE FOLLOWING AGENCIES AT LEAST 48 HOURS IN ADVANCE OF ANY EXCAVATION:
O.U.P.S. AT 8-1-1 AND O.A.G.P.U.P.S. AT (800) 925-0988

REV NO	REV DATE	REV DESCRIPTION	REV NO	REV DATE	REV DESCRIPTION

DWG NO: **WT-4.1**

ISSUE DATE: **03/14/2017**

ENG'R: **MAJ**

APPROVED: **DPO**

SCALE: **NONE**

FILE: