

### Joint Restraint for Bends

°E' \ °D'	4'	6'	8'	10'	12'	16'	20'	24'	30'	36'	42'	48'	
11 1/4°	3'	5'	6'	8'	9'	12'	15'	18'	23'	27'	32'	36'	
22 1/2°	7'	10'	13'	16'	19'	25'	31'	37'	46'	55'	64'	72'	°L'
45°	14'	20'	27'	33'	39'	51'	64'	76'	95'	114'	133'	150'	
90°	34'	49'	64'	79'	94'	124'	154'	184'	230'	276'	320'	362'	

Table for L (in feet) Required Length of Restrained Joints

"D" - Diameter of Pipe

"E" - Degree of Deflection

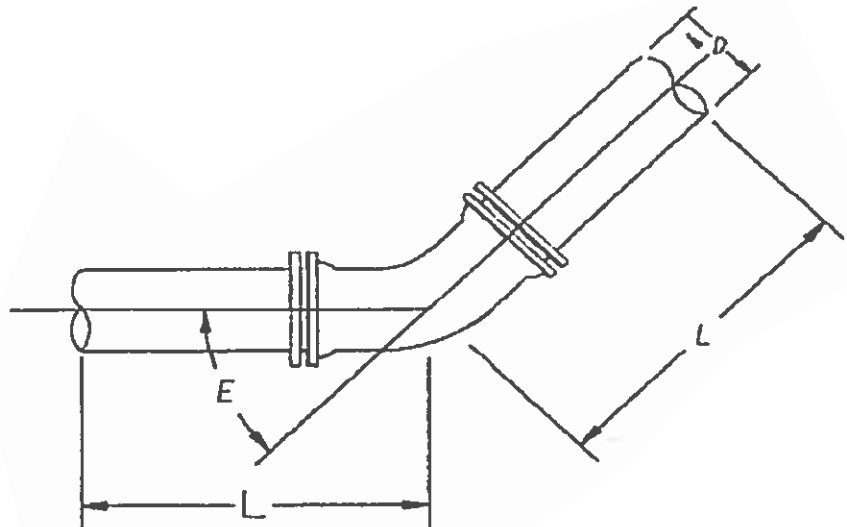
Pressure = 150 psi

Safety Factor = 1.33

Soil Designation = Clay 1

Depth of Cover = 4.5'

Laying Conditions = Type 4 Bedding



Date: 3/02/2018

Standard Construction Drawing



Restrained Joints for Bends  
Ductile Iron Pipe

Drawing No.  
**WTR-20**