

CITY OF WINTER PARK

WATER & WASTEWATER UTILITY DEPARTMENT

REFERENCE THE "WATER & WASTEWATER UTILITY STANDARDS, SPECIFICATIONS & DETAILS MANUAL"

DATE: January 2, 2008

RESTRAINED PIPE TABLE - WATER MAIN

SCALE: N.T.S

* MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)									
TYPE	PIPE SIZE								
	4"	6"	8"	10"	12"	14"	16"	18"	20"
90° BEND	27	37	49	59	69	79	89	97	107
45° BEND	12	16	21	25	29	33	37	41	45
22-1/2° BEND	6	8	10	12	14	16	18	20	22
11-1/4° BEND	3	4	5	6	7	8	9	10	11
PLUG OR BRANCH OF TEE	34	49	54	78	92	106	120	134	148

* TO BE COMPLETED BY THE ENGINEER.

NOTES:

1. FITTINGS SHALL BE RESTRAINED JOINTS UNLESS OTHERWISE INDICATED.
2. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN SHOWN IN THE TABLE.
3. WHERE TWO OR MORE FITTINGS ARE TOGETHER, USE FITTINGS WHICH YIELD GREATEST LENGTH OF RESTRAINED PIPE.
4. IN-LINE VALVES AND THROUGH RUN OF TEES OUTSIDE LIMITS OF THE RESTRAINED JOINTS FROM OTHER FITTINGS SHOULD BE RESTRAINED UNLESS OTHERWISE INDICATED.
5. LENGTHS SHOWN IN THE TABLE HAVE BEEN CALCULATED IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" AS PUBLISHED BY DIPRA, WITH THE FOLLOWING ASSUMPTIONS:

WORK PRESSURE: 150 PSI
 SOIL DESIGNATION: COHESIVE GRANULAR
 LAYING CONDITIONS: TYPE 5

6. FOR PIPE ENCASED IN POLYETHYLENE, INCREASE THE GIVEN VALUE BY A FACTOR OF 1.5.
7. USE TWO 45 DEGREE BENDS FOR A 90 DEGREE BEND WHERE POSSIBLE. INCREASE THE GIVEN VALUE BY A FACTOR OF 1.5.