

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR P.V.C. PIPE

MAIN PIPE SIZE	HORIZ. BENDS			*TEES					REDUCERS			PLUGS
	90°	45°	22.5°	SIZE					SIZE			
				LENGTH		LENGTH			LENGTH		LENGTH	
36	106	44	21	X36 163	X30 102	X24 39	X20 1	X16 1	X30 78	X24 141	X20 175	257
30	93	39	19	X30 132	X24 68	X20 22	X16 1	X12 1	X24 78	X20 121	X16 156	222
24	79	33	16	X24 99	X20 53	X16 3	X12 1	X10 1	X20 56	X16 101	X12 137	185
20	68	29	14	X20 75	X16 26	X12 1	X10 1	X8 1	X16 56	X12 100	X10 117	159
16	57	24	12	X16 51	X12 1	X10 1	X8 1		X12 56	X10 78	X8 96	131
12	45	19	9	X12 25	X10 1	X8 1	X6 1		X10 30	X8 54	X6 74	102
10	39	16	8	X10 11	X8 1	X6 1			X8 29	X6 53	X4 71	87
8	33	14	7	X8 1	X6 1	X4 1			X6 31	X4 52		72
6	25	11	5	X6 1	X4 1				X4 29			55
4	18	8	4	X4 1								39

NOTES:

- 1.) RESTRAIN TO NEXT FULL JOINT BEYOND GIVEN LENGTH.
- 2.) RESTRAIN 11.25° BENDS 50% OF LENGTH FOR 22.5° BENDS.
- 3.) ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE.
- 4.) PIPE ADJACENT TO IN-LINE VALVES 10" AND SMALLER SHALL BE RESTRAINED FOR 20' ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION. ALL PIPE ADJACENT TO IN-LINE VALVES 12" AND LARGER SHALL BE RESTRAINED FOR A DISTANCE 1/4 OF REQ'D PLUG (DEAD END) LENGTH ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION.
- 5.) PIPE SIZES ARE GIVEN IN INCHES.
- 6.) PIPE LENGTHS ARE GIVEN IN FEET.
- 7.) LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 150 PSI.
- 8.) RESTRAINED LENGTHS FOR TEES REPRESENTS LENGTH ON BRANCH. RESTRAINED LENGTHS FOR REDUCERS REPRESENTS LENGTH ON LARGE END OF REDUCER.
- 9.) RESTRAINED LENGTHS ARE TO BE USED FOR POTABLE WATER.
- 10.) THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON THE USE OF LIGHTLY COMPACTED CLEAN SAND WITH AT LEAST A 95% COARSE PARTICLE CONTENT. ACTUAL SOIL CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY. SAFETY FACTOR OF 1.5:1 TO BE CALCULATED WITH A "SM" SOIL TYPE AND TRENCH TYPE "3".

*MAIN TO BE RESTRAINED 20' ON EACH SIDE OF BRANCH

CITY OF P.C.B. UTILITIES DEPARTMENT		RESTRAINED LENGTHS FOR P.V.C. POTABLE & REUSE WATER	M-15
REV.	DATE		
1	MAR '12 DATE OF APPROVAL	