

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			
48	86	36	17	X48 117	X42 77	X36 36	X30 1	X24 1	X42 50	X36 93	X30 129	214
42	78	33	16	X42 100	X36 58	X30 14	X24 1	X20 1	X36 50	X30 93	X24 128	193
36	71	30	14	X36 81	X30 37	X24 1	X20 1	X16 1	X30 52	X24 94	X20 117	171
30	62	26	13	X30 61	X24 14	X20 1	X16 1	X12 1	X24 52	X20 81	X16 104	148
24	53	22	11	X24 40	X20 6	X16 1	X12 1	X10 1	X20 37	X16 68	X12 91	124
20	46	19	9	X20 25	X16 1	X12 1	X10 1	X8 1	X16 38	X12 67	X10 78	106
16	38	16	8	X16 9	X12 1	X10 1	X8 1		X12 38	X10 52	X8 64	88
12	30	13	6	X12 1	X10 1	X8 1	X6 1		X10 20	X8 36	X6 50	68
10	26	11	6	X10 1	X8 1	X6 1			X8 20	X6 36	X4 47	58
8	22	9	5	X8 1	X6 34	X4 1			X6 21	X4 35		48
6	17	7	4	X6 1	X4 1				X4 19			37
4	12	5	3	X4 1								26

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 100 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 SEWER AND RECLAIM 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. SEWER	M-17
REV.	DATE _____ DATE OF APPROVAL	
1	MAR '12		