

PIPE SIZE	HORIZONTAL DEFLECTIONS				VERTICAL DEFLECTIONS		DEAD ENDS/ VALVES Lr (FT.)	REDUCERS (SEE NOTES)			TEES			
	90° BENDS Lr (FT.)	45° BENDS Lr (FT.)	22.5° BENDS Lr (FT.)	11.25° BENDS Lr (FT.)	45° BENDS (SEE NOTE 2)			SIZE	L(A) (FT.)	L(B) (FT.)	RUN SIZE	BRANCH SIZE	Lm (FT.)	Lbr (FT.)
					Lhs (FT.)	Lls (FT.)								
4"	27	11	5	3	31	8	60	6 x 4	64	43	4"	4"	10	11
6"	37	15	7	4	43	11	84	8 x 6	60	46	6"	6" 4" OR LESS	10	34
8"	48	20	10	5	57	15	110	8 x 4	153	79			10	FITTING ONLY
10"	57	24	11	6	68	17	131	10 x 8	55	44	8"	8" 6" 4" OR LESS	10	59
								10 x 6	133	81			10	17
12"	57	24	11	6	68	19	131	12 x 10	46	38	10"	10" 8" 6" OR LESS	10	80
16"	58	24	12	6	55	19	106	12 x 8	104	69			10	45
20"	70	29	14	7	67	23	129	16 x 12	61	45	12"	12" 10" 8" 6" OR LESS	10	79
								16 x 10	103	63			10	49
24"	81	33	16	8	78	27	150	20 x 16	58	45	16"	16" 12" 10" 8" OR LESS	10	15
								20 X 12	139	81			10	FITTING ONLY
								24 x 20	55	45			10	73
								24 x 16	128	82			10	38
20"											20"	20" 16" 12" 10" OR LESS	10	95
													10	63
													10	24
24"											24"	24" 20" 16" 12" 10" OR LESS	10	116
													10	87
													10	53
													10	10
											10"	10" OR LESS	10	FITTING ONLY

NOTES:

- LENGTHS SHOWN IN THIS TABLE ARE TO BE INTERPRETED AS FOLLOWS:
Lhs = RESTRAINED LENGTH FROM HIGH SIDE FITTING OF A VERTICAL DEFLECTION
Lls = RESTRAINED LENGTH FROM LOW SIDE FITTING OF A VERTICAL DEFLECTION
Lr = RESTRAINED LENGTH ON BOTH SIDES FROM FITTING
Lm = MINIMUM LENGTH TO FIRST JOINT OF RUN ON BOTH SIDES
Lbr = RESTRAINED LENGTH REQUIRED ON BRANCH FROM FITTING
L(A) = LENGTH OF PIPE ON SMALL SIDE FREE OF FITTING
L(B) = RESTRAINED LENGTH ON LARGE SIDE OF REDUCER
- A SAFETY FACTOR = 2.5 IS USED FOR VERTICAL DEFLECTIONS TO COMPENSATE FOR SATURATED SOIL CONDITIONS.
A SAFETY FACTOR = 2.0 IS USED FOR ALL OTHER CASES.
- L(A) AND L(B) ABOVE ARE TWO OPTIONS FOR PROVIDING THRUST RESTRAINT FOR THE REDUCER. EITHER L(A) LENGTH OF PIPE FREE OF FITTINGS (BENDS, TEES, REDUCERS, VALVES) ON THE SMALL SIDE OF THE REDUCER OR L(B) RESTRAINED LENGTH ON THE LARGE SIDE OF THE REDUCER WILL PROVIDE THE REQUIRED RESTRAINT. NO RESTRAINT IS REQUIRED ON THE SMALL SIDE OF A REDUCER.
- ALL DEAD END LINES OR VALVES, PERMANENT OR TEMPORARY, SHALL BE RESTRAINED PER THE ABOVE RESTRAINT

TABLE.

RESTRAINT TABLE

NOT TO SCALE

	LEE COUNTY UTILITIES ENGINEERING <small>1500 MONROE STREET FORT MYERS, FLORIDA 33901</small>	
	RESTRAINED LENGTH SCHEDULE	
<small>REVISION:</small> 6/17/24	<small>DETAIL NO:</small> G-10.dwg	