



**LENGTH OF RESTRAINED PIPE**  
 BASED ON 150 PSI INTERNAL PRESSURE

PIPE SIZE	4"			6"			8"			12"			16"			20"			24"		
	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G
TEE OR VALVE	3/4"	6.0'	M.S.	3/4"	13.0'	M.S.	3/4"	22.0'	M.S.	3/4"	40'	M.S.	3/4"	60'	H.S.	1"	80'	H.S.	-	155'	-
PLUG OR 90° BEND	3/4"	6.0'	M.S.	3/4"	13.0'	M.S.	3/4"	22.0'	M.S.	3/4"	40'	M.S.	3/4"	60'	H.S.	1"	80'	H.S.	-	155'	-
45° BEND	3/4"	2.0'	M.S.	3/4"	4.0'	M.S.	3/4"	6.0'	M.S.	3/4"	11.0'	M.S.	1"	18'	M.S.	3/4"	24'	H.S.	-	45'	-
22 1/2° BEND	3/4"	1.0'	M.S.	3/4"	1.0'	M.S.	3/4"	2.0'	M.S.	3/4"	3.0'	M.S.	3/4"	5.0'	M.S.	3/4"	6.0'	M.S.	-	12'	-
11 1/4° BEND	3/4"	0.0'	M.S.	3/4"	0.0'	M.S.	3/4"	1.0'	M.S.	3/4"	1.0'	M.S.	3/4"	1.0'	M.S.	3/4"	2.0'	M.S.	-	3.0'	-

D = DIAMETER      M.S. = MILD STEEL ROD A.S.T.M. STANDARD DESIGNATION A-36  
 L = LENGTH        H.S. = HIGH STRENGTH ROD A.S.T.M. STANDARD DESIGNATION 193, GRADE B-7  
 G = GRADE

1. LENGTH MEASURED EACH DIRECTION FROM THE CENTER OF THE VALVE OR BEND.
2. ALL RODS AND CLAMPS MUST BE COATED WITH TWO COATS OF COAL TAR EPOXY PAINT - 18 MIL. MIN.
3. NUTS SHALL BE A.S.T.M. STANDARD DESIGNATION A-307, GRADE A OR B, HEXAGON HEAVY SERIES.
4. RODS MAY BE CONNECTED TO FITTINGS BY MEANS OF TIE BOLTS SUCH AS THE SUPER STAR TIE BOLTS AS MANUFACTURED BY STAR NATIONAL PRODUCTS OR EQUAL.
5. SEE CLAMP DETAIL FOR INFORMATION ON CLAMPS AND WASHERS.

REVISED 10-08-03 | CADD DRAWING BY GTS CONSULTANTS, INC.

DATE: JAN. 1991  
 DRAWN: G.G.&J.T.R.  
 SCALE: NONE

**LAKWOOD TOWNSHIP  
 MUNICIPAL UTILITIES AUTHORITY**

**RESTRAINED PIPE  
 STANDARDS**