



MINIMUM LENGTH (IN FEET) OF RESTRAINED PIPE REQUIRED

PIPE SIZE (DIAMETER IN INCHES)	BENDS										OTHER FITTINGS						
	90°		45°		22 1/2°		11 1/4°		VERTICAL BENDS		DEAD END		CROSS OR VALVE		TEE BRANCH		
	100psi	150psi	100psi	150psi	100psi	150psi	100psi	150psi	100psi	150psi	100psi	150psi	100psi	150psi	100psi	150psi	
4"	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	20'	40'	40'	20'	20'	40'	40'
6"	20'	40'	20'	20'	20'	20'	20'	20'	20'	20'		40'	60'	20'	20'	40'	40'
8"	20'	40'	20'	20'	20'	20'	20'	20'	20'	40'	40'	40'	80'	20'	20'	40'	40'
12"	40'	40'	20'	20'	20'	20'	20'	20'	20'	40'	60'	60'	100'	20'	20'	40'	40'
14"	40'	60'	20'	20'	20'	20'	20'	20'	20'	40'	60'	80'	120'	20'	20'	40'	40'
16"	40'	60'	20'	20'	20'	20'	20'	20'	20'	40'	60'	80'	120'	20'	20'	40'	60'
20"	40'	60'	20'	40'	20'	20'	20'	20'	20'	60'	80'	100'	160'	20'	20'	40'	80'
24"	60'	80'	20'	40'	20'	20'	20'	20'	20'	60'	80'	120'	180'	20'	20'	40'	100'
30"	60'	80'	40'	40'	20'	20'	20'	20'	20'	80'	100'	140'	200'	20'	20'	60'	140'

NOTES:

1. THE ABOVE THRUST RESTRAINT TABLE SHALL BE USED FOR THE FOLLOWING TRENCH CONDITIONS:  
 MINIMUM 50% SOIL RETAINED ON A NUMBER 200 SIEVE  
 MINIMUM 95% COMPACTION, AASHTO T-180  
 MINIMUM 3' OF COVER
2. THE ABOVE TABLE SPECIFIES THE LENGTH OF RESTRAINED PIPE SECTIONS REQUIRED, IN EACH DIRECTION OF PIPE ON EXTENDED CENTERLINE OF FITTING (SEE DETAIL Z)
3. WHERE CONDITIONS VARY FROM THE ABOVE TABLE, A FLORIDA REGISTERED PROFESSIONAL ENGINEER MUST DETERMINE THE REQUIRED LENGTH OF OF RESTRAINED PIPE.
4. ALL FITTINGS, VALVES AND RESTRAINED PIPE SHALL BE RESTRAINED WITH TOHO APPROVED MATERIALS