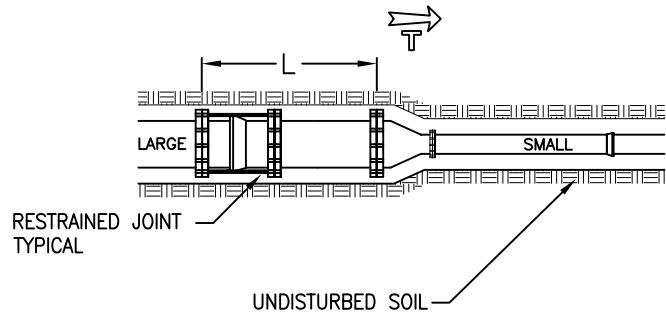


STRAIGHT REDUCER PVC PIPE (LARGE SIDE)					
SML. SIZE	6"	8"	10"	12"	16"
6"		20'	35'	49'	73'
8"			19'	36'	63'
10"				20'	52'
12"					37'



STRAIGHT REDUCER RESTRAINT LENGTH

NOTE:

1. RESTRAINED LENGTH IS BASED ON 5' FT MINIMUM NOMINAL PIPE LENGTH. IF DISTANCES ON NOMINAL PIPE IS LESS THAN 5' FT, CONTRACTOR SHALL USE DEAD END RESTRAINED LENGTH. IF NOMINAL PIPE LENGTH EQUALS 20FT, BRANCH RESTRAINED LENGTH IS A MINIMUM OF ONE FOOT. IF BRANCH PIPE IS LARGER THAN NOMINAL PIPE SIZE, CONTRACTOR SHALL REFER TO STRAIGHT REDUCER RESTRAINT LENGTH. FOR TAPPING SLEEVES CONTRACTOR SHALL USE VALVE AND DEAD END RESTRAINT LENGTHS ON BRANCH PIPE.

2. THE NOTED REQUIREMENTS WERE CALCULATED IN ACCORDANCE WITH THRUST RESTRAINT CALCULATOR V6.1 BY EBAA IRON (<http://rcp.ebaa.com/calculator.php>) WITH THE FOLLOWING ASSUMPTIONS:

SOIL CONDITIONS: CL, GRANULAR FILL

LAYERING CONDITIONS: 5

MINIMUM COVER: 5' FT SAFETY FACTOR: 1.5

IF FIELD CONDITIONS DIFFER FROM THE ABOVE EXAMPLE, CONTRACTOR SHALL NOTIFY PCWR. FOR PIPE LARGER THAN INCLUDED IN THE ABOVE TABLES, ENGINEER OF RECORD SHALL SUBMIT CALCULATIONS FOR EACH JOINT REQUIRING RESTRAINT.

3. RESTRAINED JOINTS AND THRUST BLOCKING IS REQUIRED AT ALL BENDS, DEADENDS, VALVES, PIPE REDUCERS, TEES, CROSSES AND OFF SETS.

MATERIAL SPECIFICATIONS

ALL PIPING SPECIFICATIONS SHALL COMPLY WITH THE FOLLOWING

<u>PIPE</u>	<u>MATERIAL</u>	<u>JOINT</u>	<u>BEDDING</u>
<u>WATER MAIN:</u>			
PVC	AWWA C-900, DR18 CL 150	AWWA C-900	AWWA C605
DIP	ANSI/AWWA C151/A21.51, CL 52	ANSI/AWWA C111/A21.11	AWWA C600
TRACE WIRE FOR NONMETALLIC PIPE REQUIRED			



PORTAGE COUNTY WATER RESOURCES

RESTRAINED JOINT

04-01-2023

APPROVED DATE

WM-11