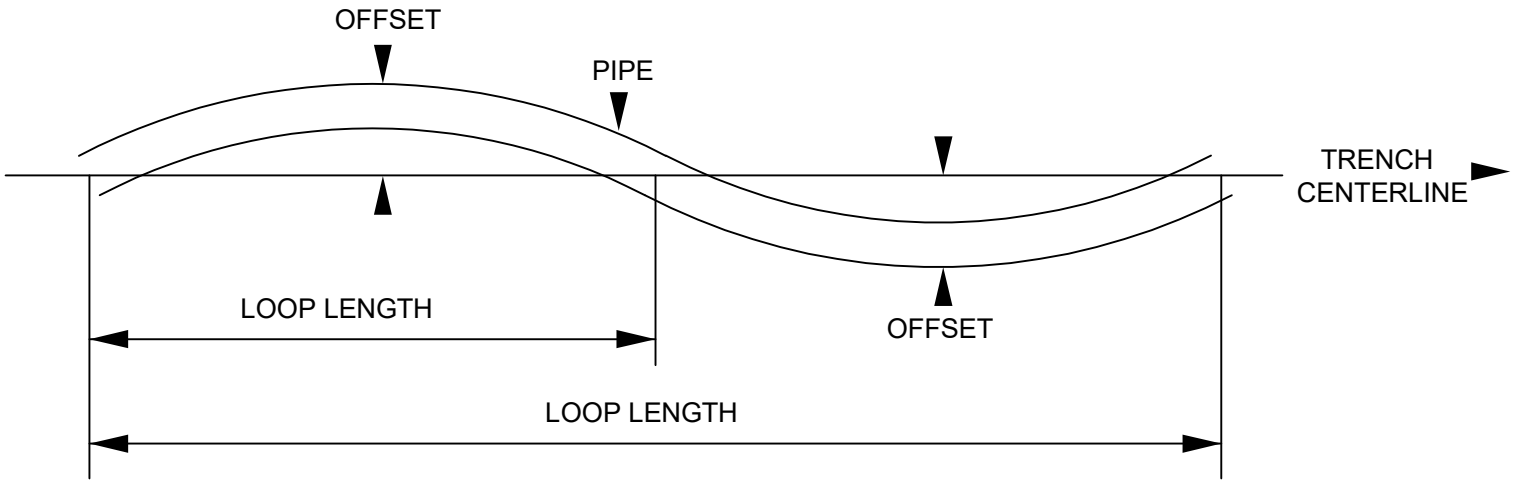

COMPENSATION FOR EXPANSION AND CONTRACTION IN UNDERGROUND APPLICATIONS IS NORMALLY ACHIEVED BY "SNAKING" THE PIPE IN THE TRENCH. SOLVENT CEMENTED JOINTS MUST BE USED.

THE FOLLOWING TABLE SHOWS RECOMMENDED OFFSETS AND LOOP LENGTHS FOR PIPING UP TO 3" NOMINAL.

LOOP LENGTH IN FEET	MAX. TEMP. VARIATION °F BETWEEN INSTALLATION AND FINAL OPERATION									
	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
	LOOP OFFSET IN INCHES									
20	3.5	3.5	4.5	5.0	6.0	6.5	7.0	7.0	8.0	8.0
50	7.0	9.0	11.0	13.0	14.0	15.5	17.0	18.0	19.0	20.0
100	13.0	18.0	22.0	26.0	29.0	31.5	35.0	37.0	40.0	42.0

NOTE: THIS IS NOT A COMPLETE ENGINEERING REFERENCE ADDRESSING ALL ASPECTS OF DESIGN AND INSTALLATION OF THERMAL EXPANSION IN PIPING SYSTEMS. THE AMERICAN SOCIETY OF PLUMBING ENGINEERS (WWW.ASPE.ORG) DATA BOOK, VOL. 4, 2008, CHAPTER 11 IS AN EXCELLENT RESOURCE FOR ENGINEERS FOR DESIGNING FOR THERMAL EXPANSION.

3/7/17

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UNDERGROUND PIPE EXPANSION PROVISIONS

CHARLOTTE PIPE AND FOUNDRY COMPANY