

MINIMUM PIPE WELDING LENGTHS

INSTALLATIONS FOR CLASS 150 UP TO CLASS 200				
PIPE DIA	0 - 22.5°	22.5° - 45°	45° - 67.5°	67.5° - 90°
4"	15'	40'	85'	140'
6"	20'	60'	100'	200'
8"	20'	80'	165'	265'
12"	25'	90'	190'	305'
14"	30'	105'	215'	350'
16"	30'	115'	245'	395'
18"	35'	130'	270'	435'
20"	40'	140'	295'	480'
24"	45'	165'	345'	560'
30"	55'	200'	415'	670'
36"	60'	230'	480'	775'

General Notes:

1. Welded pipe lengths to be used only upon approval by the City.
2. Welded lengths indicated are to be provided on each side of bend.
3. All joints within the lengths indicated shall be full weld, double pass.
4. Dead end" thrust is equivalent to a 60° bend.
5. For service laterals , including fire hydrants, fire services, blow-offs, weld all mainline joints (double pass) 10' minimum each side of tee outlet.

The following assumptions apply:

1. length of welded pipe is for each side of bend using the following equation:

$$L = 1.5PA (1 - \cos \Delta / [u(We+Ww+Wp)])$$

Where:

P = maximum test pressure (psi)

A = Cross-sectional area of the pipe (sq. in.)

Δ = Angle of Bend (degrees)

u = Coeff. Of friction between pipe & soil (assumed 0.3)

We = Weight of the prism of soil over the pipe (lb.ft.) of pipe length (wt of soil assumed to be 110 lb./cu.ft.)

Wp = Weight of the pipe (lb./ft.)

Ww = Weight of the contained water (lb./ft.)

2. 3' minimum pipe cover for pipe diameters > 12"
- 4' minimum pipe cover for pipe diameters>
3. Factor of safety = 1.5 times maximum test pressure
4. Maximum angle (Δ) used for each range shown



APPROVED BY:		24079 08/15/06	
JOHN P. SULLIVAN CITY ENGINEER		RCE	DATE
RECOMMENDED:		57875 08/14/06	
ASST. UTIL. DIRECTOR/ENG.		RCE	DATE
REV	DESCRIPTION	BY	APP'D DATE

CITY OF ONTARIO

MINIMUM PIPE
WELDING LENGTHS

STANDARD
DRAWING
NUMBER

4003