PRESSURE LOSS WORKSHEET FOR WATERMAIN EXTENSIONS

COMMUNITY: Milton WI
PROJECT : Clasen Quality Chocolate
PROJECT #: 2220680
COMMENTS:

Flow Test at Existing Hydrant

LOCATION:

Static Pressure	52	psi
Observed Flow	990	gpm
Flow Pressure	33	psi
Elev. @ Exist. Hyd.	886	ft
Desired total flow	500	gpm

Residual pressure at desired flow at test hydrant: 46.6 psi

Friction Losses

DETERMINE HEADLOSS IN WATERMAIN BETWEEN TEST LOCATION AND CRITICAL HYDRANT
(most distant from test location, and/or largest elevation change from test location)
using the Hazen-Williams equation
L = pipe length in feet
Q = flow in GPM
C = coefficient of friction
D = diameter of pipe in inches

$$Hf = \frac{10.44\ (L) * Q^{(1.85)}}{C^{(1.85)} \times D^{(4.8655)}}$$

Enter piping in order from the main

Ductile Iron							
PVC C900	x	x					
HDPE DR11							
Other 1							
Other 2							
Pipe size	12	12	0	0	0	0	0
GPM	500	500	0	0	0	0	0
Length of Pipe	1,220	295	0	0	0	0	0
Fitting equivalent length	122	30	0	0	0	0	0
Hydrant elevation	889	888	0	0	0	0	0
Total length	1,342	325	0	0	0	0	0
Pipe ID	11.73	11.73	0.00	0.00	0.00	0.00	0.00
C Factor	140	140	0	0	0	0	0
Friction Loss (ft)	0.93	0.22	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Friction Loss (psig)	0.40	0.10	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Elevation difference (ft)	3	2	(886)	(886)	(886)	(886)	(886)
Elevation difference (psig)	1	1	(385)	(385)	(385)	(385)	(385)
Pressure available at hydrant (psig)	44.93	45.27	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

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