



. . . Fire Protection by Computer Design

FREEDOM FIRE PROTECTION INC.
209 QUAKER RIDGE ROAD
CASCO, MAINE 04015
207-627-4109

Job Name : 208 HICKS STREET
Building : 208 HICKS STREET
Location : PORTLAND, MAINE 04103
System : #1 AREA #1
Contract :
Data File : 208 HICKS STREET HC.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - 208 HICKS STREET Date - 5/16/13
Location - PORTLAND, MAINE 04103
Building - 208 HICKS STREET System No. - #1 AREA #1
Contractor - FREEDOM FIRE PROTECTION Contract No. -
Calculated By - MIKE NOBLIT Drawing No. - FP-2
Construction: (X) Combustible () Non-Combustible Ceiling Height 8'-0"
OCCUPANCY - APARTMENTS

S Type of Calculation: (X)NFPA 13 Residential (X)NFPA 13R ()NFPA 13D
Y Number of Sprinklers Flowing: ()1 (X)2 ()4 ()
S ()Other
T ()Specific Ruling Made by Date
E
M Listed Flow at Start Point - 14 Gpm System Type
Listed Pres. at Start Point - 10.1 Psi (X) Wet () Dry
D MAXIMUM LISTED SPACING 14' x 14' () Deluge () PreAction
E Domestic Flow Added - 0 Gpm Sprinkler or Nozzle
S Additional Flow Added - 0 Gpm Make TYCO Model LFII
I Elevation at Highest Outlet - 24'-2"Feet Size 1/2" K-Factor 4.4
G Note: Temperature Rating 155
N

Calculation Gpm Required 28.209 Psi Required 64.327 At Test
Summary C-Factor Used: Overhead 150 Underground 150

W Water Flow Test: Pump Data: Tank or Reservoir:
A Date of Test - 5/2/13 Rated Cap. Cap.
T Time of Test - @ Psi Elev.
E Static (Psi) - 72 Elev.
R Residual (Psi) - 70 Other Well
Flow (Gpm) - 1255 Proof Flow Gpm
S Elevation -

P Location:
P
L Source of Information: PORTLAND WATER DISTRICT
Y

Water Supply Curve (C)

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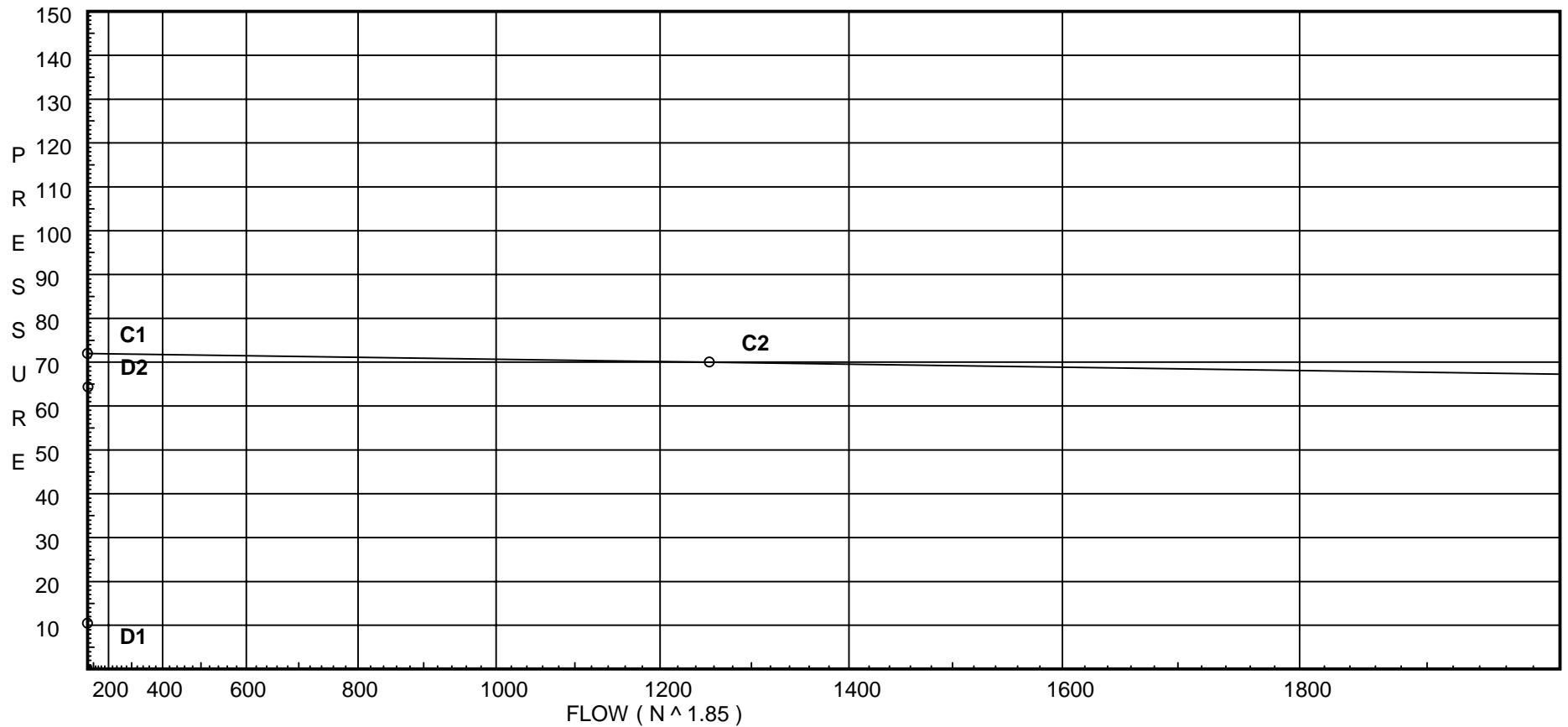
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City Water Supply:

C1 - Static Pressure : 72
C2 - Residual Pressure: 70
C2 - Residual Flow : 1255

Demand:

D1 - Elevation : 10.466
D2 - System Flow : 28.2092
D2 - System Pressure : 64.327
Hose (Adj City) : _____
Hose (Demand) : _____
D3 - System Demand : 28.2092
Safety Margin : 7.671



Fittings Used Summary

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Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24
E	90' Standard Elbow	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
F	45' Elbow	1	1	1	1	2	2	3	3	3	4	5	7	9	11	13	17	19	21	24	28
T	90' Flow Thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
Zaa	Ames 2000B	Fitting generates a Fixed Loss Based on Flow																			

Pressure / Flow Summary - STANDARD

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Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
102	24.166	4.4	10.1	na	13.98	0.05	0.001	10.1
101	24.166	4.4	10.45	na	14.23	0.05	0.001	10.1
11	24.166		11.01	na				
10	16.33		16.64	na				
9	16.33		19.05	na				
8	16.33		20.7	na				
7	6.166		26.9	na				
6	6.166		28.91	na				
5	6.166		29.74	na				
4	6.166		32.08	na				
3	6.166		34.13	na				
2	0.0		41.92	na				
1	0.0		62.95	na				
0	0.0		64.32	na				
TEST	0.0		64.33	na				

The maximum velocity is 13.59 and it occurs in the pipe between nodes 2 and 1

Final Calculations - One-Line

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Ref Pt.	Press Total	K Fact.	Flow Added	Flow Total	Vel	Pipe Diam.	Pipe Length	Fit Sum.	Fit Length	Tot Len	C Fac	Pf perUL	Tot Pf	Elev Press	Fixed Loss	Next Press	Next Ref
102	10.100	4.40	13.98	13.98	4.71	1.101	0.500	1T	9.563	10.063	150	0.0351	0.353	0.0	0.0	10.453	101
101	10.453	4.40	14.23	28.21	9.51	1.101	0.500	1E	3.825	4.325	150	0.1286	0.556	0.0	0.0	11.009	11
11	11.009		0.0	28.21	9.51	1.101	7.830	1T	9.563	17.393	150	0.1286	2.236	3.394	0.0	16.639	10
10	16.639		0.0	28.21	9.51	1.101	9.166	1T	9.563	18.729	150	0.1285	2.407	0.0	0.0	19.046	9
9	19.046		0.0	28.21	9.51	1.101	3.330	1T	9.563	12.893	150	0.1286	1.658	0.0	0.0	20.704	8
8	20.704		0.0	28.21	9.51	1.101	10.166	1E	3.825	13.991	150	0.1286	1.799	4.402	0.0	26.905	7
7	26.905		0.0	28.21	10.47	1.049	3.166	1T	5.0	8.166	120	0.2458	2.007	0.0	0.0	28.912	6
6	28.912		0.0	28.21	6.05	1.38	9.830	1E	3.0	12.830	120	0.0647	0.830	0.0	0.0	29.742	5
5	29.742		0.0	28.21	6.05	1.38	33.166	1E	3.0	36.166	120	0.0647	2.339	0.0	0.0	32.081	4
4	32.081		0.0	28.21	6.05	1.38	28.660	1E	3.0	31.660	120	0.0647	2.047	0.0	0.0	34.128	3
3	34.128		0.0	28.21	6.05	1.38	6.166	1E1Zaa	3.0	9.166	120	0.0647	0.593	2.670	4.530	41.921	2
2	41.921		0.0	28.21	13.59	0.921	45.000	1T6#	4.009	49.009	150	0.3067	15.029	0.0	6.000	62.950	1
1	62.950		0.0	28.21	3.00	1.959	22.000	2T1#	20.482	42.482	140	0.0088	0.375	0.0	1.000	64.325	0
0	64.325		0.0	28.21	0.17	8.27	250.000	1F	14.234	264.234	140	0.0	0.002	0.0	0.0	64.327	TEST
TEST	64.327	3.52	0.0	28.21													