



. . . Fire Protection by Computer Design

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

Job Name : McVEIGH RESIDENCE
Building : 38 COLUMBIA ROAD
Location : PORTLAND, MAINE 04103
System : #1 AREA #2
Contract :
Data File : McVEIGH RESIDENCE HC2.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - McVEIGH RESIDENCE Date - 7/29/14
Location - PORTLAND, MAINE 04103
Building - 38 COLUMBIA ROAD System No. - #1 AREA #2
Contractor - FREEDOM FIRE PROTECTION Contract No. -
Calculated By - MIKE NOBLIT Drawing No. - FP-2
Construction: (X) Combustible () Non-Combustible Ceiling Height VARIES
OCCUPANCY - HOUSE

S Type of Calculation: (X)NFPA 13 Residential ()NFPA 13R (X)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 - 16 Gpm System Type
Listed Pres. at Start Point - 7 Psi (X) Wet () Dry
D MAXIMUM LISTED SPACING 16' x 16' () 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 - 36.25Feet Size 1/2" K-Factor 4.9
G Note: Temperature Rating 155
N

Calculation Gpm Required 26.497 Psi Required 41.078 At Test
Summary C-Factor Used: Overhead 150 Underground

W Water Flow Test: Pump Data: Tank or Reservoir:
A Date of Test - Rated Cap. 45 Cap.
T Time of Test - @ Psi 45 Elev.
E Static (Psi) - Elev. 0
R Residual (Psi) - Other Well
Flow (Gpm) - Proof Flow Gpm
S Elevation -

P Location:
P
L Source of Information:
Y

Water Supply Curve (C)

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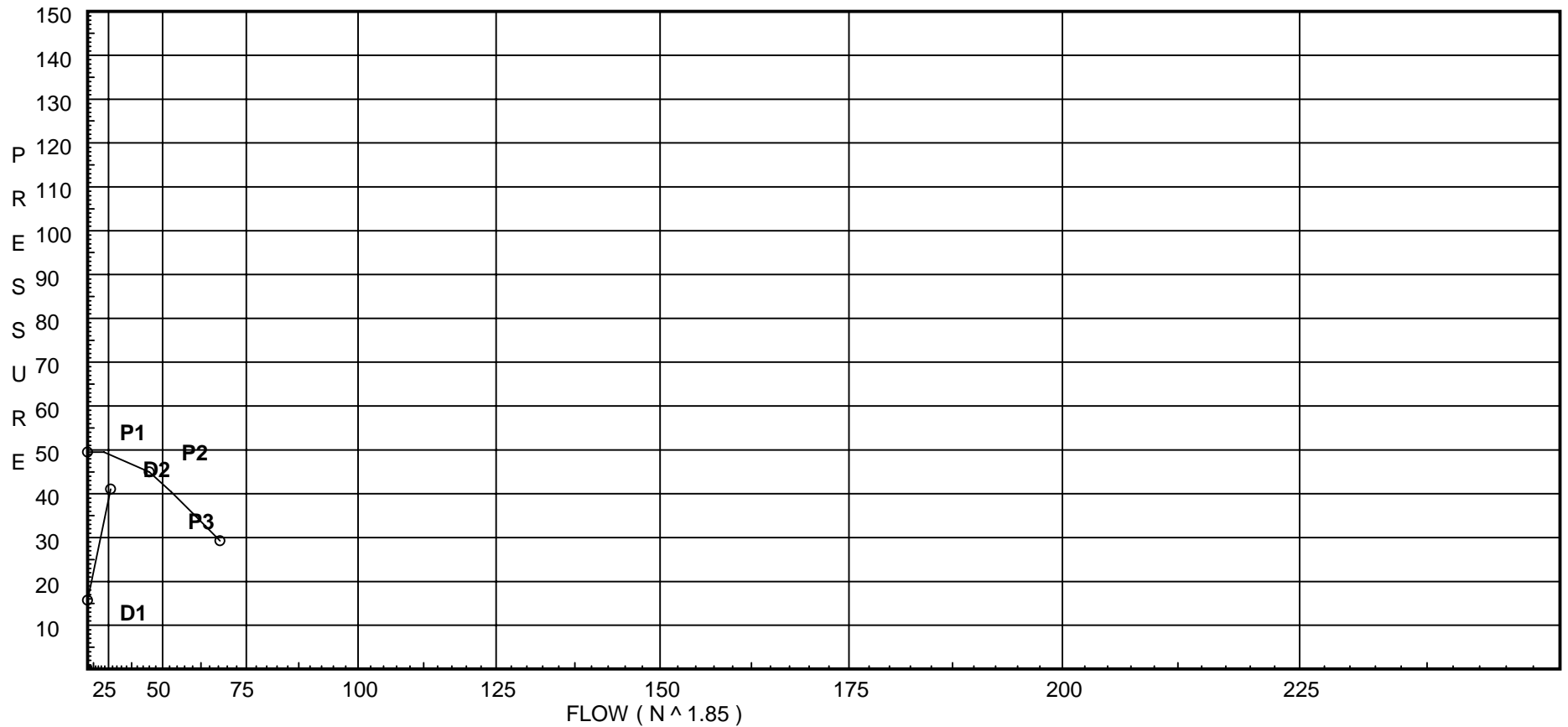
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Pump Data:

P1 - Pump Churn Pressure : 49.5
P2 - Pump Rated Pressure : 45
P2 - Pump Rated Flow : 45
P3 - Pump Pressure @ Max Flow : 29.25
P3 - Pump Max Flow : 68

Demand:

D1 - Elevation : 15.700
D2 - System Flow : 26.4968
D2 - System Pressure : 41.078
Hose (Adj City) : _____
Hose (Demand) : _____
D3 - System Demand : 26.4968
Safety Margin : 7.744



Fittings Used Summary

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Fitting Legend

Abbrev.	Name	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	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
S	Generic Swing Check Vlv	4	5	5	7	9	11	14	16	19	22	27	32	45	55	65	76	87	98	109	130
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

Pressure / Flow Summary - STANDARD

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Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
202	36.25	4.9	7.0	na	12.96	0.05	130	7.0
201	36.25	4.9	7.63	na	13.53	0.05	130	7.0
25	36.25		11.53	na				
24	28.75		17.52	na				
23	28.75		19.27	na				
22	5.75		31.86	na				
21	5.75		35.8	na				
20	5.75		36.59	na				
3	5.75		37.37	na				
2	5.75		37.8	na				
1	0.0		41.02	na				
TEST	0.0		41.08	na				

The maximum velocity is 9.84 and it occurs in the pipe between nodes 201 and 25

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
202	7.000	4.90	12.96	12.96	4.81	1.049	10.750		0.0	10.750	120	0.0583	0.627	0.0	0.0	7.627	201
201	7.627	4.90	13.54	26.5	9.84	1.049	15.830	1E	2.0	17.830	120	0.2190	3.905	0.0	0.0	11.532	25
25	11.532		0.0	26.5	9.84	1.049	7.500	1T	5.0	12.500	120	0.2190	2.737	3.248	0.0	17.517	24
24	17.517		0.0	26.5	9.84	1.049	3.000	1T	5.0	8.000	120	0.2190	1.752	0.0	0.0	19.269	23
23	19.269		0.0	26.5	8.93	1.101	23.000		0.0	23.000	150	0.1145	2.633	9.961	0.0	31.863	22
22	31.863		0.0	26.5	9.84	1.049	12.000	3E	6.0	18.000	120	0.2190	3.942	0.0	0.0	35.805	21
21	35.805		0.0	26.5	5.68	1.38	7.583	1T	6.0	13.583	120	0.0576	0.782	0.0	0.0	36.587	20
20	36.587		0.0	26.5	5.68	1.38	7.660	1T	6.0	13.660	120	0.0576	0.787	0.0	0.0	37.374	3
3	37.374		0.0	26.5	5.68	1.38	4.330	1E	3.0	7.330	120	0.0576	0.422	0.0	0.0	37.796	2
2	37.796		0.0	26.5	5.68	1.38	5.750	1S	7.0	12.750	120	0.0576	0.734	2.490	0.0	41.020	1
1	41.020		0.0	26.5	5.68	1.38	1.000		0.0	1.000	120	0.0580	0.058	0.0	0.0	41.078	TEST
TEST	41.078	4.13	0.0	26.50													