

. . . Fire Protection by Computer Design

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

Job Name : ROMA RESIDENCE
Building : 40 PAMELA ROAD
Location : PORTLAND, MAINE 04103
System : #1 AREA #1
Contract :
Data File : ROMA RESIDENCE HC.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - ROMA RESIDENCE Date - 3/4/16
Location - PORTLAND, MAINE 04103
Building - 40 PAMELA ROAD System No. - #1 AREA #1
Contractor - FREEDOM FIRE PROTECTION Contract No. -
Calculated By - MICHAEL NOBLIT Drawing No. - FP-2
Construction: (X) Combustible () Non-Combustible Ceiling Height 7'-10"
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 - 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 - 20 Gpm Sprinkler or Nozzle
S Additional Flow Added - 0 Gpm Make TYCO Model LFII
I Elevation at Highest Outlet - 16.583Feet Size 1/2" K-Factor 4.4
G Note: Temperature Rating 155
N

Calculation Gpm Required 49.212 Psi Required 55.597 At Test
Summary C-Factor Used: Overhead 150 Underground 150

W Water Flow Test: Pump Data: Tank or Reservoir:
A Date of Test - 1/20/2016 Rated Cap. Cap.
T Time of Test - @ Psi Elev.
E Static (Psi) - 60 Elev.
R Residual (Psi) - 0 Other Well
Flow (Gpm) - 1742 Proof Flow Gpm
S Elevation -

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

Water Supply Curve (C)

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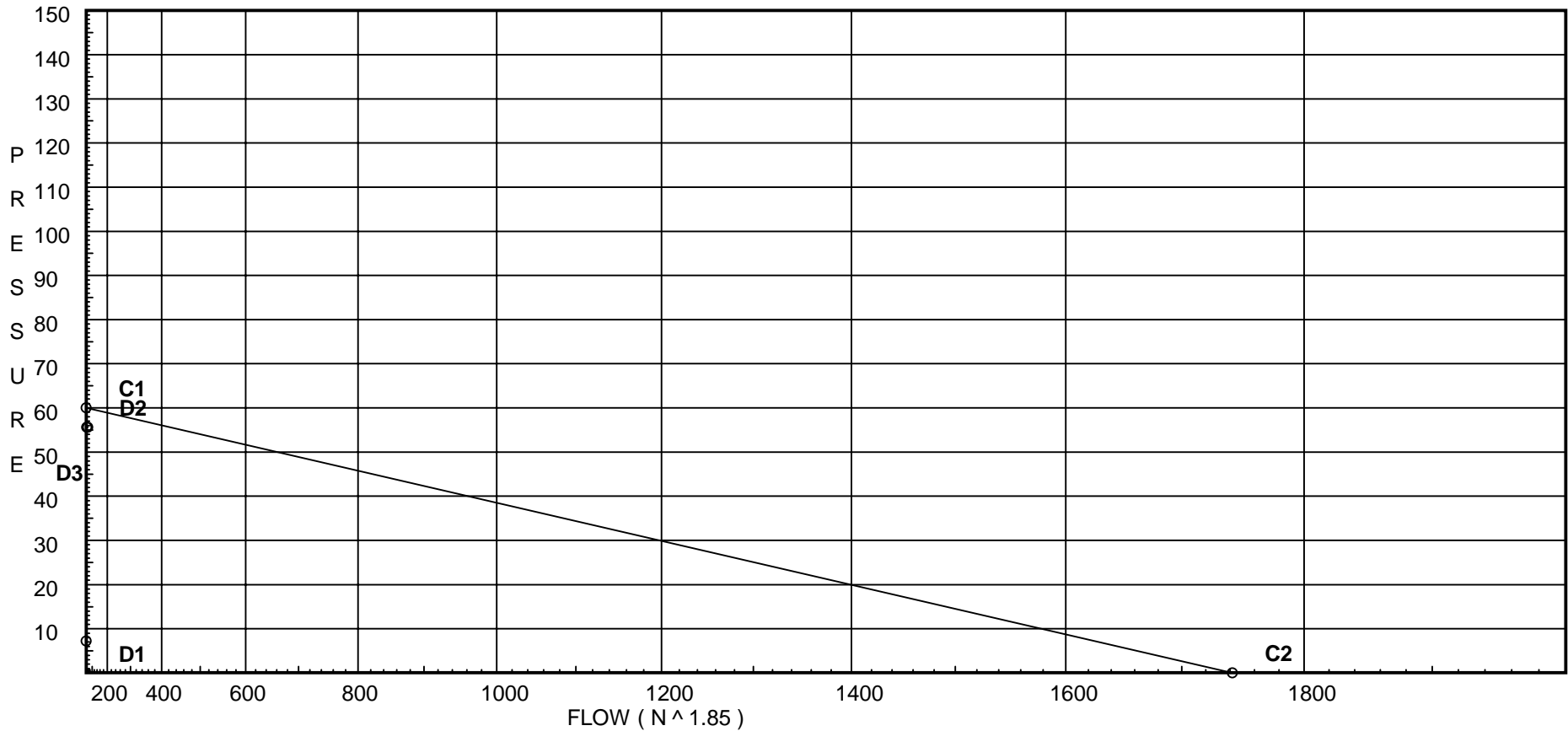
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City Water Supply:

C1 - Static Pressure : 60
C2 - Residual Pressure: 0
C2 - Residual Flow : 1742

Demand:

D1 - Elevation : 7.182
D2 - System Flow : 29.212
D2 - System Pressure : 55.597
Hose (Adj City) : _____
Hose (Demand) : 20
D3 - System Demand : 49.212
Safety Margin : 4.322



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
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.
101	16.583	4.4	11.98	na	15.23	0.05	0.001	10.1
7	16.583		12.16	na				
102	16.583	4.4	10.1	na	13.98	0.05	0.001	10.1
6	16.583		10.45	na				
5	6.166		15.67	na				
4	6.166		17.49	na				
3	6.166		19.15	na				
2	6.166		25.53	na				
1	0.0		35.65	na				
0	0.0		47.94	na				
TEST	0.0		55.6	na	20.0			

The maximum velocity is 12.05 and it occurs in the pipe between nodes 0 and TEST

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
101	11.979	4.40	15.23	15.23	5.13	1.101	0.500	1E	3.825	4.325	150	0.0412	0.178	0.0	0.0	12.157	7
7	12.157		0.0	15.23	5.13	1.101	10.416	1T	9.563	19.979	150	0.0410	0.820	4.512	0.0	17.489	4
4	17.489	3.64	0.0	15.23													
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	6
6	10.453		0.0	13.98	4.71	1.101	10.416	1T	9.563	19.979	150	0.0351	0.701	4.512	0.0	15.666	5
5	15.666		0.0	13.98	5.19	1.049	27.166		0.0	27.166	120	0.0671	1.823	0.0	0.0	17.489	4
4	17.489		15.23	29.21	10.84	1.049	1.330	1T	5.0	6.330	120	0.2622	1.660	0.0	0.0	19.149	3
3	19.149		0.0	29.21	10.84	1.049	22.330	1E	2.0	24.330	120	0.2623	6.381	0.0	0.0	25.530	2
2	25.530		0.0	29.21	10.84	1.049	6.166	1E1T1Zaa	7.0	13.166	120	0.2623	3.454	2.670	4.000	35.654	1
1	35.654		0.0	29.21	6.76	1.329	60.000	9#	0.0	60.000	150	0.0548	3.290	0.0	9.000	47.944	0
0	47.944		0.0	29.21	12.05	0.995	30.000		0.0	30.000	140	0.2551	7.653	0.0	0.0	55.597	TEST
TEST	55.597	6.60	20.00	49.21													