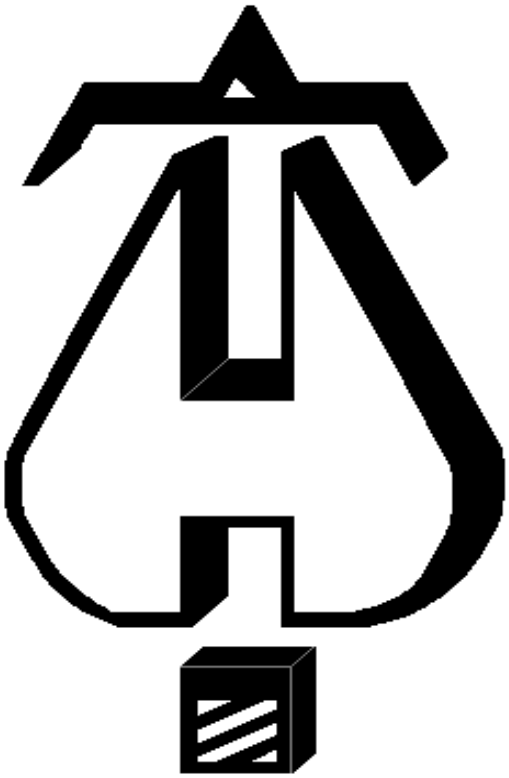


. . . Fire Protection by Computer Design

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 #1
Contract :
Data File : McVEIGH RESIDENCE HC1.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - McVEIGH RESIDENCE Date - 7/29/14
Location - PORTLAND, MAINE 04103
Building - 38 COLUMBIA ROAD 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 - HOUSE

SYSTEM DESIGN

Type of Calculation: (X)NFPA 13 Residential ( )NFPA 13R (X)NFPA 13D
Number of Sprinklers Flowing: ( )1 (X)2 ( )4 ( )
( )Other
( )Specific Ruling Made by Date

Listed Flow at Start Point - 14 Gpm System Type
Listed Pres. at Start Point - 10.1 Psi (X) Wet ( ) Dry
MAXIMUM LISTED SPACING 14' x 14' ( ) Deluge ( ) PreAction
Domestic Flow Added - 0 Gpm Sprinkler or Nozzle
Additional Flow Added - 0 Gpm Make TYCO Model LFII
Elevation at Highest Outlet - 24.583Feet Size 1/2" K-Factor 4.4
Note: Temperature Rating 155

Calculation Summary: Gpm Required 28.121 Psi Required 29.458 At Test
C-Factor Used: Overhead 150 Underground

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

Location:

Source of Information:

Water Supply Curve (C)

FREEDOM FIRE PROTECTION INC.
McVEIGH RESIDENCE

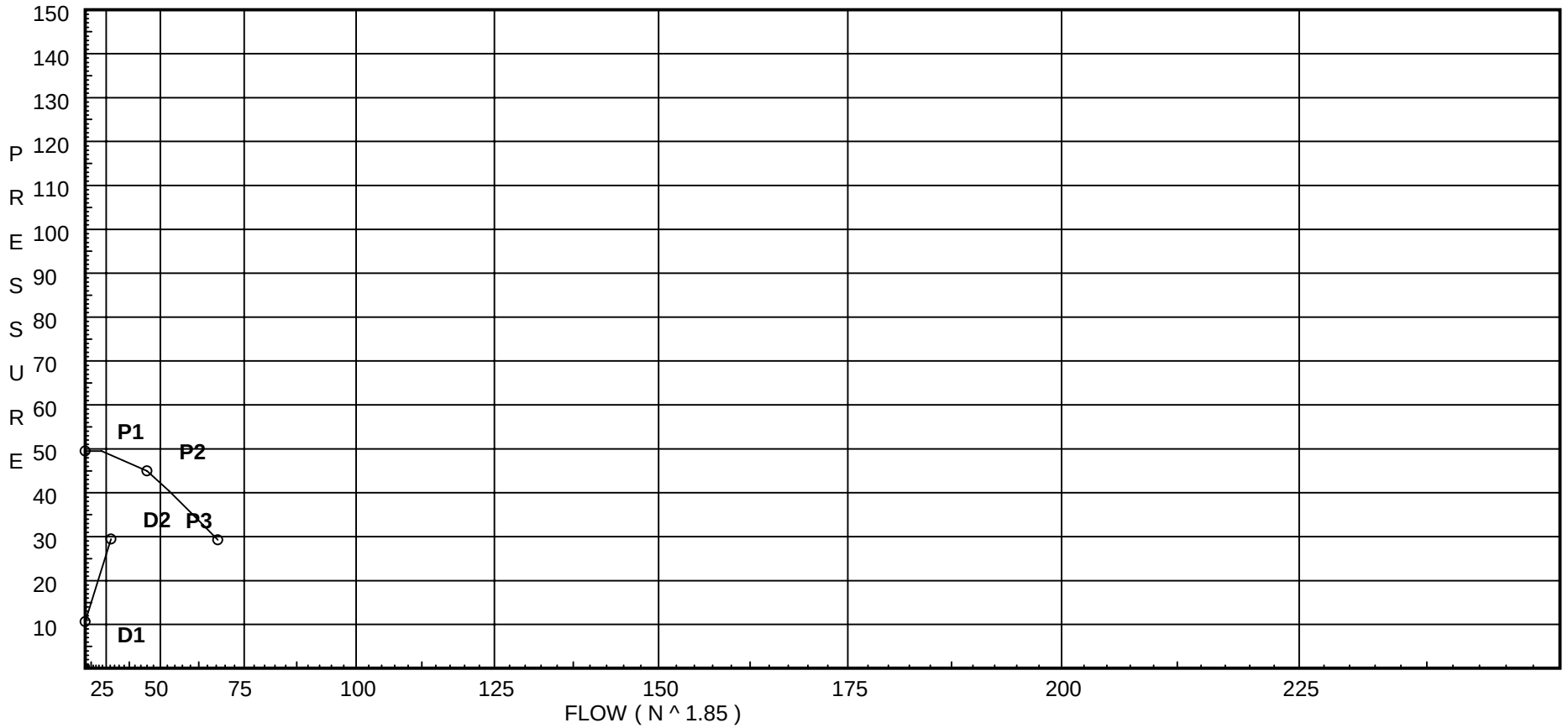
Date 7/29/14

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	:	10.647
D2 - System Flow	:	28.121
D2 - System Pressure	:	29.458
Hose (Adj City)	:	_____
Hose (Demand)	:	_____
D3 - System Demand	:	28.121
Safety Margin	:	19.096



Fittings Used Summary

FREEDOM FIRE PROTECTION INC.
McVEIGH RESIDENCE

Date 7/29/14

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
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

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
101	24.583	4.4	10.1	na	13.98	0.05	0.001	10.1
15	24.583		10.25	na				
14	16.75		14.05	na				
13	16.75		14.63	na				
12	16.75		15.09	na				
102	24.583	4.4	10.32	na	14.14	0.05	0.001	10.1
11	24.583		10.48	na				
10	16.75		14.27	na				
9	16.75		14.72	na				
8	16.75		15.43	na				
7	16.75		16.0	na				
6	16.75		16.91	na				
5	16.75		17.61	na				
4	5.75		25.0	na				
3	5.75		25.61	na				
2	5.75		26.08	na				
1	0.0		29.39	na				
TEST	0.0		29.46	na				

The maximum velocity is 9.48 and it occurs in the pipe between nodes 7 and 6

Final Calculations - One-Line

FREEDOM FIRE PROTECTION INC.
McVEIGH RESIDENCE

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	10.100	4.40	13.98	13.98	4.71	1.101	0.500	1E	3.825	4.325	150	0.0351	0.152	0.0	0.0	10.252	15
15	10.252		0.0	13.98	4.71	1.101	7.830	1E	3.825	11.655	150	0.0351	0.409	3.392	0.0	14.053	14
14	14.053		0.0	13.98	4.71	1.101	3.166	1E1T	13.388	16.554	150	0.0351	0.581	0.0	0.0	14.634	13
13	14.634		0.0	13.98	4.71	1.101	3.500	1T	9.563	13.063	150	0.0351	0.459	0.0	0.0	15.093	12
12	15.093		0.0	13.98	4.71	1.101	16.416	1T	9.563	25.979	150	0.0351	0.911	0.0	0.0	16.004	7
7	16.004	3.49	0.0	13.98													
102	10.324	4.40	14.14	14.14	4.77	1.101	0.500	1E	3.825	4.325	150	0.0358	0.155	0.0	0.0	10.479	11
11	10.479		0.0	14.14	4.77	1.101	7.830	1E	4.064	11.894	155	0.0337	0.401	3.392	0.0	14.272	10
10	14.272		0.0	14.14	4.77	1.101	3.000	1T	10.161	13.161	155	0.0337	0.444	0.0	0.0	14.716	9
9	14.716		0.0	14.14	4.77	1.101	10.250	1T	9.563	19.813	150	0.0358	0.710	0.0	0.0	15.426	8
8	15.426		0.0	14.14	4.77	1.101	16.166		0.0	16.166	150	0.0358	0.578	0.0	0.0	16.004	7
7	16.004		13.98	28.12	9.48	1.101	3.250	1E	3.825	7.075	150	0.1279	0.905	0.0	0.0	16.909	6
6	16.909		0.0	28.12	9.48	1.101	1.660	1E	3.825	5.485	150	0.1278	0.701	0.0	0.0	17.610	5
5	17.610		0.0	28.12	9.48	1.101	11.000	1T	9.563	20.563	150	0.1278	2.628	4.764	0.0	25.002	4
4	25.002		0.0	28.12	6.03	1.38	3.500	1T	6.0	9.500	120	0.0643	0.611	0.0	0.0	25.613	3
3	25.613		0.0	28.12	6.03	1.38	4.330	1E	3.0	7.330	120	0.0643	0.471	0.0	0.0	26.084	2
2	26.084		0.0	28.12	6.03	1.38	5.750	1S	7.0	12.750	120	0.0643	0.820	2.490	0.0	29.394	1
1	29.394		0.0	28.12	6.03	1.38	1.000		0.0	1.000	120	0.0640	0.064	0.0	0.0	29.458	TEST
TEST	29.458	5.18	0.0	28.12													