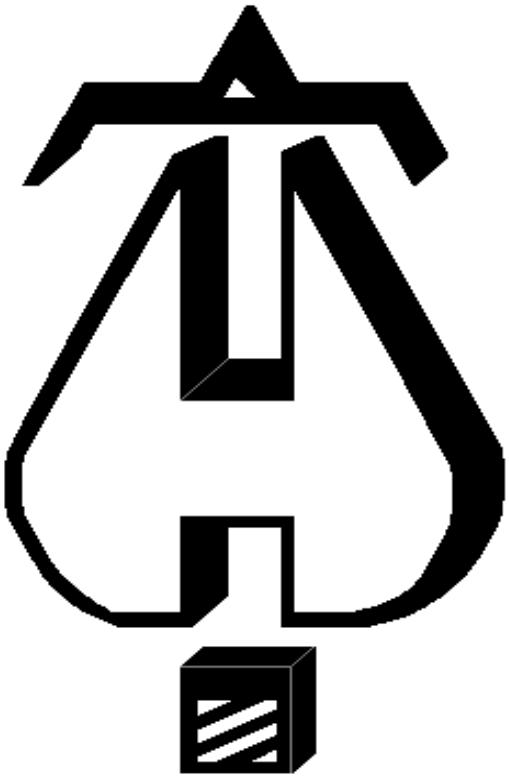


. . . Fire Protection by Computer Design

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

Job Name : ERIC DAWSON RESIDENCE
Building : 45 TIDE MILL ROAD
Location : PORTLAND, MAINE 04102
System : #1 AREA #1
Contract :
Data File : ERIC DAWSON RESIDENCE HC.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - ERIC DAWSON RESIDENCE Date - 12/6/12
Location - PORTLAND, MAINE 04102
Building - 45 TIDE MILL 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 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 - 26'-3"Feet Size 1/2" K-Factor 4.4
Note: Temperature Rating 155

Calculation Summary — Gpm Required 28.172 Psi Required 41.749 At Test
C-Factor Used: Overhead 150 Underground

WATER SUPPLY

Water Flow Test:
Date of Test -
Time of Test -
Static (Psi) -
Residual (Psi) -
Flow (Gpm) -
Elevation -

Pump Data:
Rated Cap. 45
@ Psi 45
Elev.
Other

Tank or Reservoir:
Cap.
Elev.
Well
Proof Flow Gpm

PLAY

Location:

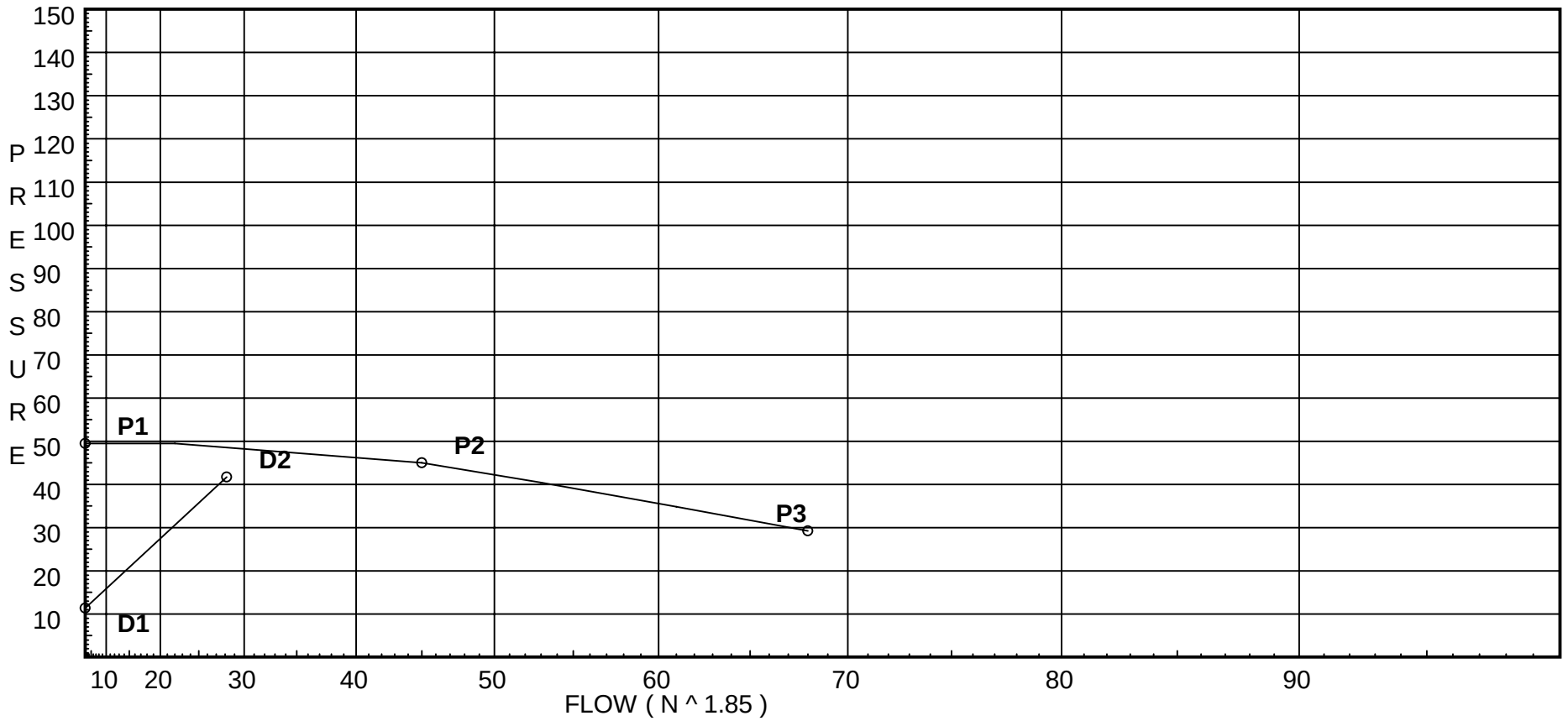
Source of Information:

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	:	11.369
D2 - System Flow	:	28.1718
D2 - System Pressure	:	41.749
Hose (Adj City)	:	
Hose (Demand)	:	
D3 - System Demand	:	28.1718
Safety Margin	:	6.796



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

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
101	26.25	4.4	10.1	na	13.98	0.05	0.001	10.1
14	26.25		10.45	na				
13	18.166		14.37	na				
12	18.166		14.74	na				
102	26.25	4.4	10.4	na	14.19	0.05	0.001	10.1
11	26.25		10.76	na				
10	18.166		14.69	na				
9	18.166		15.13	na				
8	18.166		15.96	na				
7	18.166		18.88	na				
6	18.166		22.52	na				
5	18.166		23.81	na				
4	6.5		32.31	na				
3	6.5		33.99	na				
2	6.5		35.87	na				
1	0.0		41.5	na				
TEST	0.0		41.75	na				

The maximum velocity is 10.46 and it occurs in the pipe between nodes 4 and 3

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
101	13.98	1.101	1T	9.563	0.500	10.100		K Factor = 4.40
to		150		0.0	9.562	0.0		
14	13.98	0.0351		0.0	10.062	0.353		Vel = 4.71
14	0.0	1.101	1E	3.825	8.083	10.453		
to		150		0.0	3.825	3.501		
13	13.98	0.0351		0.0	11.908	0.418		Vel = 4.71
13	0.0	1.101	1T	9.563	1.000	14.372		
to		150		0.0	9.562	0.0		
12	13.98	0.0351		0.0	10.562	0.371		Vel = 4.71
12	0.0	1.101	1T	9.563	21.330	14.743		
to		150	1E	3.825	13.387	0.0		
8	13.98	0.0351		0.0	34.717	1.218		Vel = 4.71
	0.0							
	13.98					15.961		K Factor = 3.50
102	14.19	1.101	1T	9.563	0.500	10.398		K Factor = 4.40
to		150		0.0	9.562	0.0		
11	14.19	0.0361		0.0	10.062	0.363		Vel = 4.78
11	0.0	1.101	1E	3.825	8.083	10.761		
to		150		0.0	3.825	3.501		
10	14.19	0.0361		0.0	11.908	0.430		Vel = 4.78
10	0.0	1.101	1T	9.563	2.660	14.692		
to		150		0.0	9.562	0.0		
9	14.19	0.0360		0.0	12.222	0.440		Vel = 4.78
9	0.0	1.101		0.0	23.000	15.132		
to		150		0.0	0.0	0.0		
8	14.19	0.0360		0.0	23.000	0.829		Vel = 4.78
8	13.98	1.101	1T	9.563	13.166	15.961		
to		150		0.0	9.562	0.0		
7	28.17	0.1283		0.0	22.728	2.915		Vel = 9.49
7	0.0	1.101	1T	9.563	18.830	18.876		
to		150		0.0	9.562	0.0		
6	28.17	0.1282		0.0	28.392	3.641		Vel = 9.49
6	0.0	1.101	1T	9.563	0.500	22.517		
to		150		0.0	9.562	0.0		
5	28.17	0.1282		0.0	10.062	1.290		Vel = 9.49
5	0.0	1.101	1T	6.328	11.500	23.807		
to		120		0.0	6.328	5.053		
4	28.17	0.1937		0.0	17.828	3.454		Vel = 9.49
4	0.0	1.049	1T	5.0	1.830	32.314		
to		120		0.0	5.000	0.0		
3	28.17	0.2454		0.0	6.830	1.676		Vel = 10.46
3	0.0	1.049	1E	2.0	5.660	33.990		
to		120		0.0	2.000	0.0		
2	28.17	0.2452		0.0	7.660	1.878		Vel = 10.46

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
2	0.0	1.049	1S	5.0	6.500	35.868		
to		120		0.0	5.000	2.815		
1	28.17	0.2453		0.0	11.500	2.821		Vel = 10.46
1	0.0	1.049		0.0	1.000	41.504		
to		120		0.0	0.0	0.0		
TEST	28.17	0.2450		0.0	1.000	0.245		Vel = 10.46
	0.0							
	28.17					41.749		K Factor = 4.36