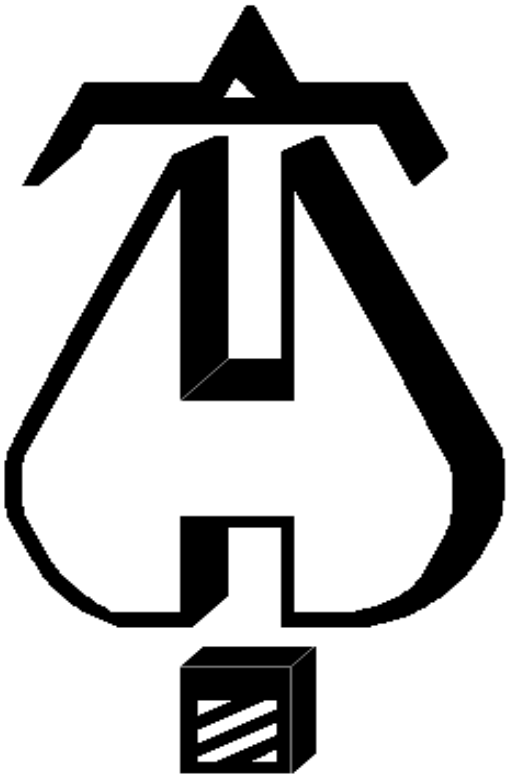


. . . Fire Protection by Computer Design

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

Job Name : BETHANY HOUSE PARISH HC2
Building : 10 ALTON STREET
Location : PORTLAND, MAINE 04103
System : #1 AREA #2
Contract :
Data File : BETHANY HOUSE PARISH HC2.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - BETHANY HOUSE PARISH OFFICE Date - 6/14/12
Location - PORTLAND, MAINE 04103
Building - 10 ALTON STREET System No. - #1 AREA #2
Contractor - FREEDOM FIRE PROTECTION Contract No. -
Calculated By - MICHAEL NOBLIT Drawing No. - FP-1
Construction: (X) Combustible ( ) Non-Combustible Ceiling Height 8'-6"
OCCUPANCY - HOUSE

SYSTEM DESIGN

Type of Calculation: ( )NFPA 13 Residential ( )NFPA 13R ( )NFPA 13D
Number of Sprinklers Flowing: ( )1 ( )2 ( )4 (X)3
(X)Other MAINE LIFE SAFETY
( )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 - 16'-0"Feet Size 1/2" K-Factor 4.4
Note: Temperature Rating 155

Calculation Summary — Gpm Required 43.195 Psi Required 46.110 At Test
C-Factor Used: Overhead 120 Underground

WATER SUPPLY

Water Flow Test:	Pump Data:	Tank or Reservoir:
Date of Test -	Rated Cap. 50	Cap.
Time of Test -	@ Psi 50	Elev.
Static (Psi) -	Elev.	
Residual (Psi) -	Other	Well
Flow (Gpm) -		Proof Flow Gpm
Elevation -		

Location:

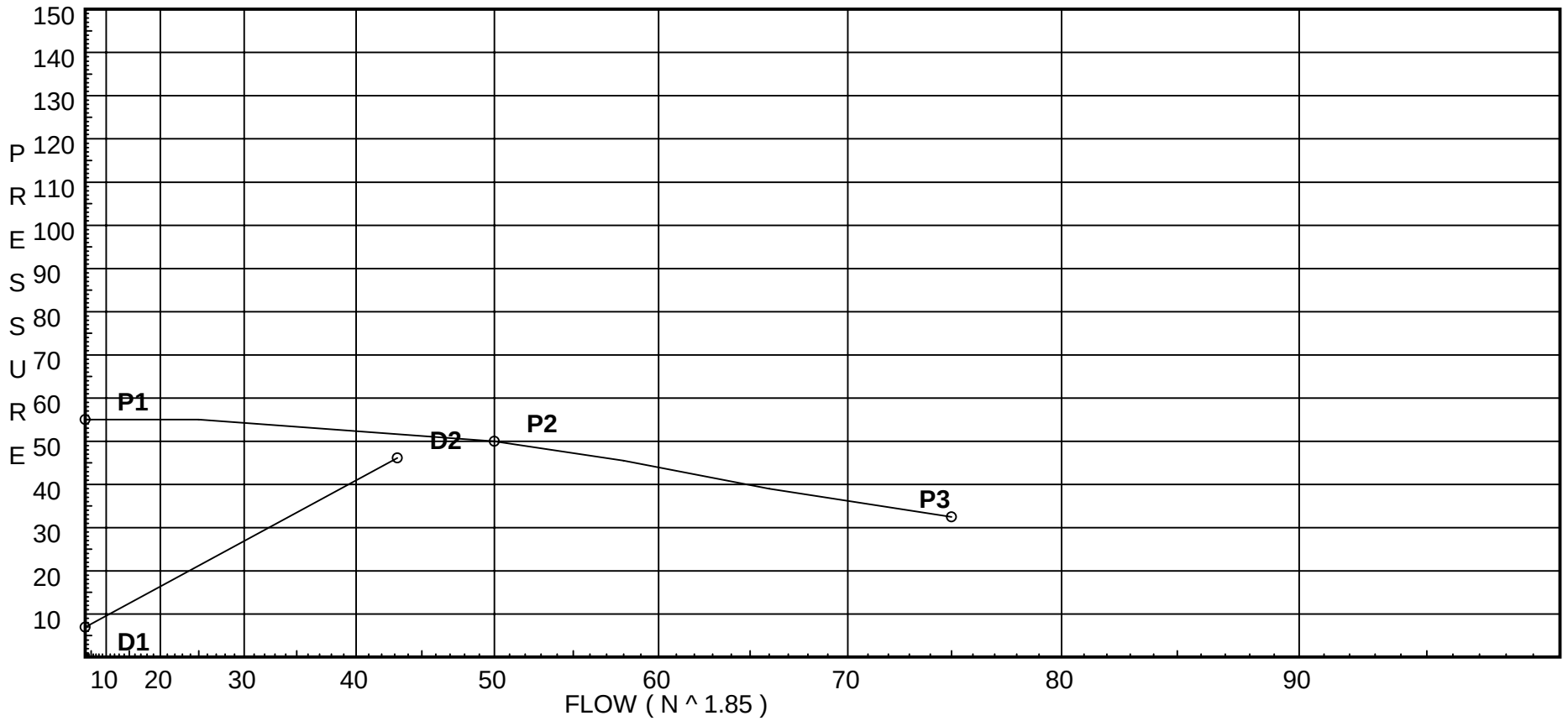
Source of Information:

Pump Data:

P1 - Pump Churn Pressure	:	55
P2 - Pump Rated Pressure	:	50
P2 - Pump Rated Flow	:	50
P3 - Pump Pressure @ Max Flow	:	32.5
P3 - Pump Max Flow	:	75

Demand:

D1 - Elevation	:	6.930
D2 - System Flow	:	43.1951
D2 - System Pressure	:	46.110
Hose (Adj City)	:	_____
Hose (Demand)	:	_____
D3 - System Demand	:	43.1951
Safety Margin	:	5.527



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
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.
201	16.0	4.4	10.84	na	14.49	0.05	0.001	10.1
202	16.0	4.4	11.2	na	14.72	0.05	0.001	10.1
203	16.0	4.4	10.1	na	13.98	0.05	0.001	10.1
24	16.0		11.24	na				
23	16.0		16.96	na				
22	16.0		21.73	na				
21	16.0		28.54	na				
20	16.0		32.49	na				
4	6.66		38.31	na				
3	6.66		39.35	na				
2	6.66		40.86	na				
1	0.0		45.54	na				
TEST	0.0		46.11	na				

The maximum velocity is 16.04 and it occurs in the pipe between nodes 24 and 23

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
201	14.49	1.049	1T	5.0	0.500	10.841		K Factor = 4.40
to		120		0.0	5.000	0.0		
24	14.49	0.0716		0.0	5.500	0.394		Vel = 5.38
	0.0							
	14.49					11.235		K Factor = 4.32
202	14.72	1.049		0.0	0.500	11.198		K Factor = 4.40
to		120		0.0	0.0	0.0		
24	14.72	0.0740		0.0	0.500	0.037		Vel = 5.46
	0.0							
	14.72					11.235		K Factor = 4.39
203	13.98	1.049	3E	6.0	10.916	10.100		K Factor = 4.40
to		120		0.0	6.000	0.0		
24	13.98	0.0671		0.0	16.916	1.135		Vel = 5.19
24	29.22	1.049	1E	2.0	8.583	11.235		
to		120		0.0	2.000	0.0		
23	43.2	0.5409		0.0	10.583	5.724		Vel = 16.04
23	0.0	1.049	2F	2.0	6.830	16.959		
to		120		0.0	2.000	0.0		
22	43.2	0.5408		0.0	8.830	4.775		Vel = 16.04
22	0.0	1.049		0.0	12.583	21.734		
to		120		0.0	0.0	0.0		
21	43.2	0.5408		0.0	12.583	6.805		Vel = 16.04
21	0.0	1.38	2E	6.0	21.750	28.539		
to		120		0.0	6.000	0.0		
20	43.2	0.1422		0.0	27.750	3.947		Vel = 9.27
20	0.0	1.38	1E	3.0	9.500	32.486		
to		120		0.0	3.000	4.045		
4	43.2	0.1422		0.0	12.500	1.777		Vel = 9.27
4	0.0	1.38	1T	6.0	1.330	38.308		
to		120		0.0	6.000	0.0		
3	43.2	0.1423		0.0	7.330	1.043		Vel = 9.27
3	0.0	1.38	1E	3.0	7.583	39.351		
to		120		0.0	3.000	0.0		
2	43.2	0.1422		0.0	10.583	1.505		Vel = 9.27
2	0.0	1.38	1S	7.0	5.660	40.856		
to		120		0.0	7.000	2.884		
1	43.2	0.1423		0.0	12.660	1.801		Vel = 9.27
1	0.0	1.38	1E	3.0	1.000	45.541		
to		120		0.0	3.000	0.0		
TEST	43.2	0.1422		0.0	4.000	0.569		Vel = 9.27
	0.0							
	43.20					46.110		K Factor = 6.36

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*******	Notes	******