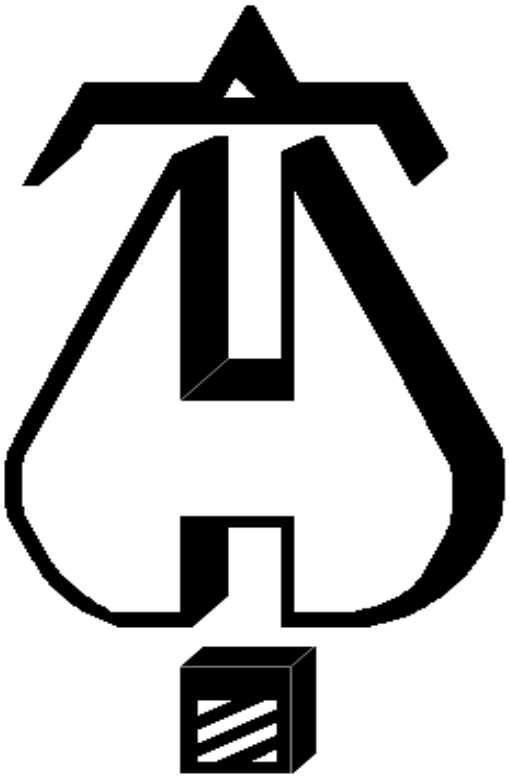


. . . Fire Protection by Computer Design

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

Job Name	:	RESIDENCE HOUSING STANDPIPE
Building	:	133 YORK STREET
Location	:	PORTLAND, MAINE 04101
System	:	STANDPIPE
Contract	:	
Data File	:	RESIDENCE HOUSING HC3.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - RESIDENCE HOUSING STANDPIPE Date - 9/5/14
Location - PORTLAND, MAINE 04101
Building - 133 YORK STREET System No. - STANDPIPE
Contractor - Contract No. -
Calculated By - MIKE NOBLIT Drawing No. - FP-2
Occupancy - HOUSING

SYSTEM DESIGN

(X)NFPA 14 Number of Standpipes (X)1 ( )2 ( )3 ( )4 ( )
( )Other
( )Specific Ruling Made by Date

Flow at Top Most Outlet	- 250	Gpm	System Type	
Pres. at Top Most Outlet	- 100	Psi	(X) Wet	( ) Dry
Flow For Ea. Additional Standpipe	-	Gpm		
Total Additional Flow	-	Gpm		
Elevation at Highest Outlet	- 37.916	Feet		
Hose Valve Connection	( )1 1/2"	(X)2 1/2"		
Class Service (X)I	( )II	( )III		
Note:				

Calculation Summary: Gpm Required 505.072; Psi Required 131.384 At Test; C-Factor Used: Overhead 120; Underground

WATER SUPPLY

Water Flow Test:		Pump Data:		Tank or Reservoir:	
Date of Test	-			Cap.	
Time of Test	-	Rated Cap.	1000	Elev.	
Static (Psi)	-	@ Psi	125		
Residual (Psi)	-	Elev.			Well
Flow (Gpm)	-			Proof Flow Gpm	
Elevation	-				

Location:

Source of Information: FIRE TRUCK PUMP

Water Supply Curve (C)

FREEDOM FIRE PROTECTION INC.
RESIDENCE HOUSING STANDPIPE

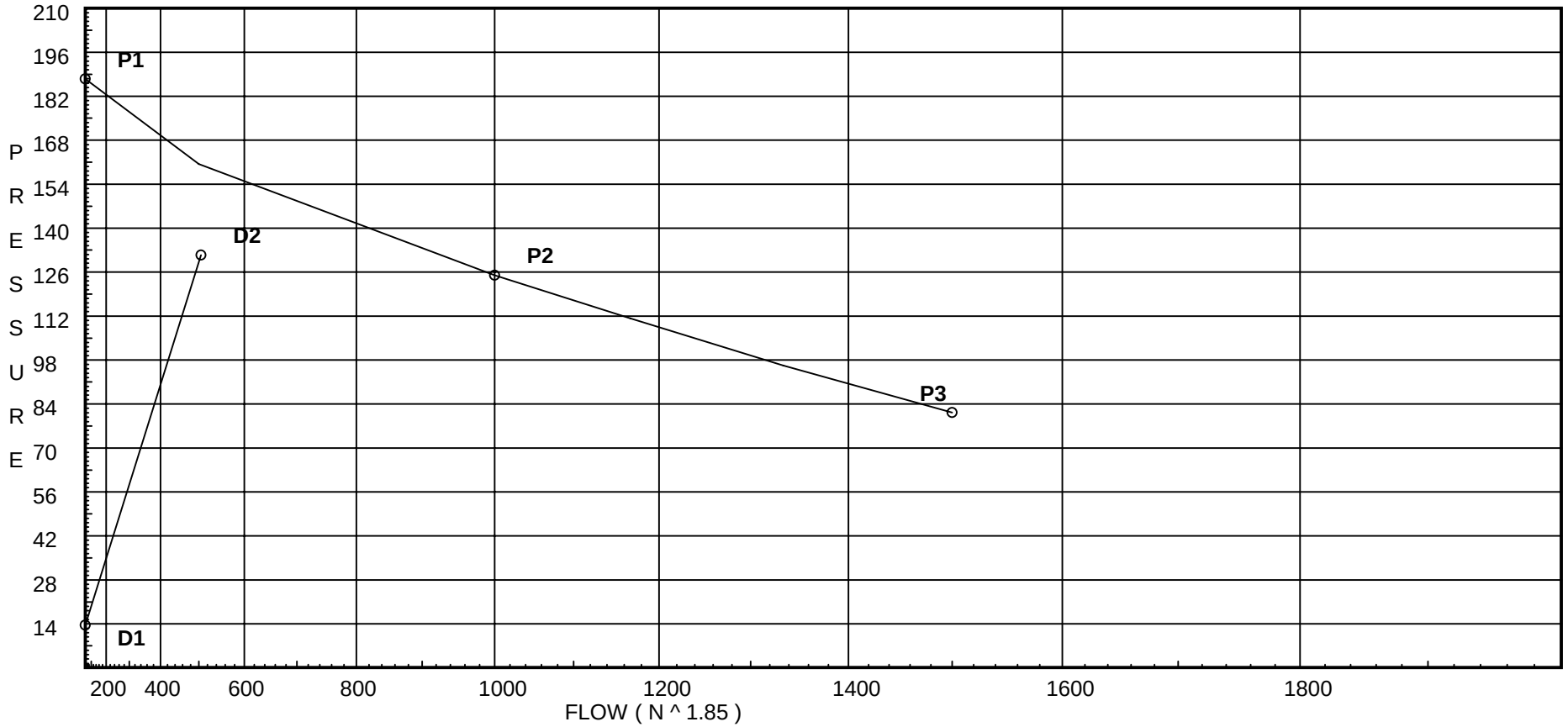
Date 9/5/14

Pump Data:

P1 - Pump Churn Pressure	:	187.5
P2 - Pump Rated Pressure	:	125
P2 - Pump Rated Flow	:	1000
P3 - Pump Pressure @ Max Flow	:	81.25
P3 - Pump Max Flow	:	1500

Demand:

D1 - Elevation	:	13.606
D2 - System Flow	:	505.072
D2 - System Pressure	:	131.384
Hose (Adj City)	:	_____
Hose (Demand)	:	_____
D3 - System Demand	:	505.072
Safety Margin	:	28.780



Fittings Used Summary

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
G	Generic Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
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.
HV2	23.166	25	104.1	na	255.07	0.001	0.001	100.0
HV1	31.416	25	100.0	na	250.0	0.001	0.001	100.0
44	31.416		100.32	na				
43	23.166		104.43	na				
42	6.166		114.2	na				
41	6.166		119.36	na				
PUMP	0.0		131.38	na				

The maximum velocity is 17.09 and it occurs in the pipe between nodes HV2 and 43

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
HV2	104.099	25.00	255.07	255.07	17.09	2.469	0.500	1G	1.0	1.500	120	0.2233	0.335	0.0	0.0	104.434	43
43	104.434	24.96	0.0	255.07													
HV1	100.000	25.00	250.00	250.0	16.75	2.469	0.500	1G	1.0	1.500	120	0.2153	0.323	0.0	0.0	100.323	44
44	100.323		0.0	250.0	5.63	4.26	9.250	1T	26.334	35.584	120	0.0151	0.538	3.573	0.0	104.434	43
43	104.434		255.07	505.07	11.37	4.26	17.000	1T	26.334	43.334	120	0.0555	2.407	7.363	0.0	114.204	42
42	114.204		0.0	505.07	11.37	4.26	24.330	3E1S	68.469	92.799	120	0.0555	5.154	0.0	0.0	119.358	41
41	119.358		0.0	505.07	11.37	4.26	150.000	1E1F	18.434	168.434	120	0.0555	9.356	2.670	0.0	131.384	PUMP
PUMP	131.384	44.06	0.0	505.07													