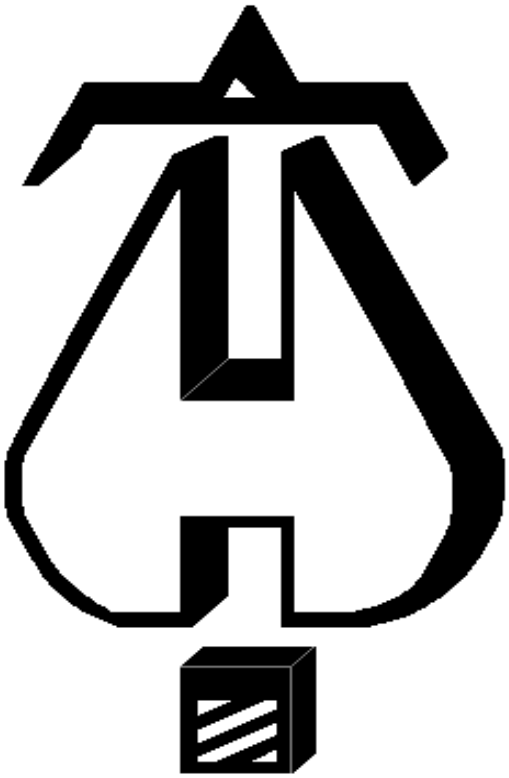


. . . Fire Protection by Computer Design

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

Job Name : 106 PARK STREET HC2
Building : 106 PARK STREET
Location : PORTLAND, MAINE 04104
System : #1 AREA#2
Contract :
Data File : 106 Park Street HC BASEMENT.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - 106 PARK STREET Date - 11/19/12
Location - PORTLAND, MAINE 04104
Building - 106 PARK STREET System No. - #1 AREA#2
Contractor - Contract No. -
Calculated By - MIKE NOBLIT Drawing No. -
Construction: (X) Combustible ( ) Non-Combustible Ceiling Height 7'-6"
OCCUPANCY - BASEMENT

SYSTEM DESIGN

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

Listed Flow at Start Point - 13 Gpm System Type
Listed Pres. at Start Point - 7 Psi (X) Wet ( ) Dry
MAXIMUM LISTED SPACING 16' x 16' ( ) Deluge ( ) PreAction
Domestic Flow Added - Gpm Sprinkler or Nozzle
Additional Flow Added - Gpm Make TYCO Model LFII
Elevation at Highest Outlet - 6'-6"Feet Size 1/2" K-Factor 4.9
Note: Temperature Rating 155

Calculation Summary — Gpm Required 63.210 Psi Required 43.991 At Test
C-Factor Used: Overhead 120 Underground

WATER SUPPLY

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

Pump Data:
Rated Cap. 80
@ Psi 58
Elev.
Other

Tank or Reservoir:
Cap.
Elev.

Well
Proof Flow Gpm

PLAY

Location:

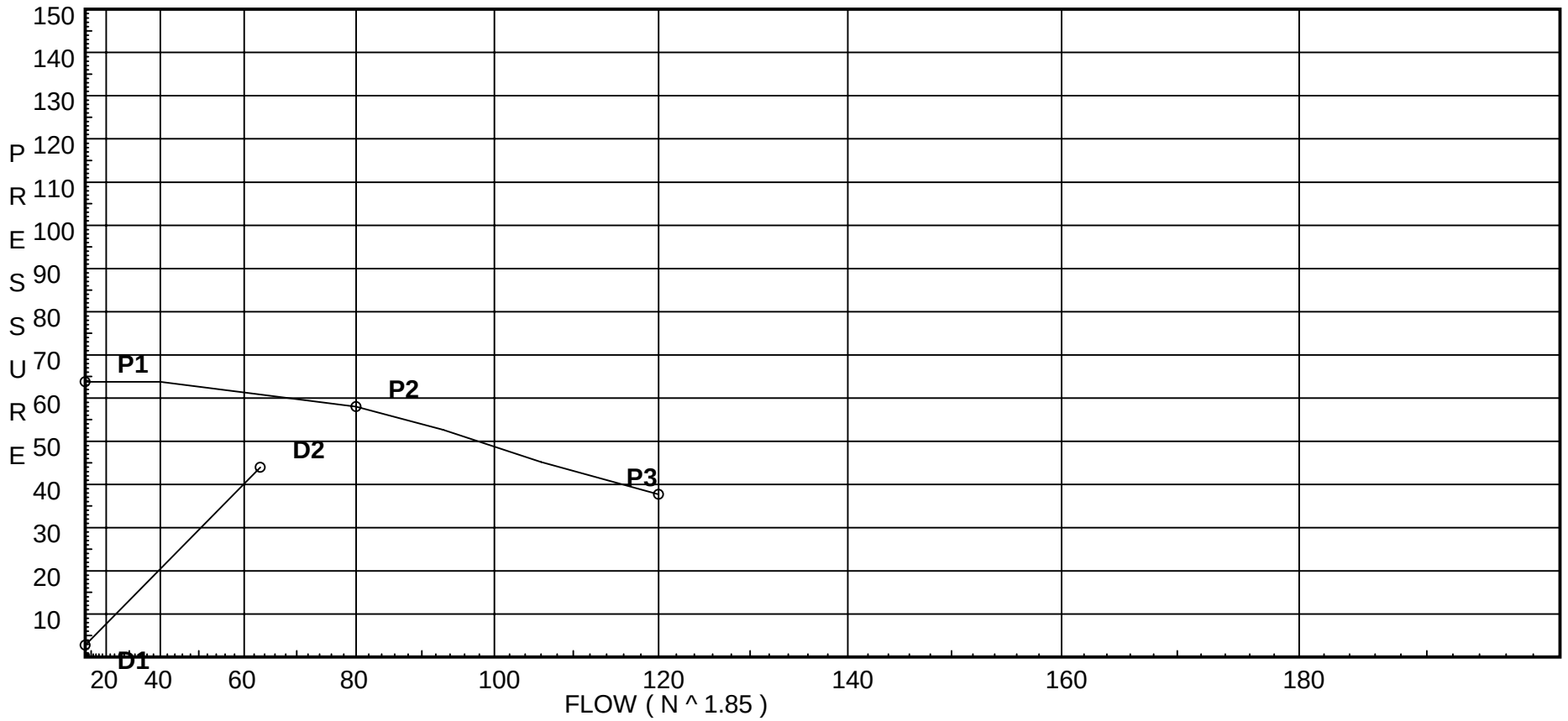
Source of Information:

Pump Data:

P1 - Pump Churn Pressure	:	63.8
P2 - Pump Rated Pressure	:	58
P2 - Pump Rated Flow	:	80
P3 - Pump Pressure @ Max Flow	:	37.7
P3 - Pump Max Flow	:	120

Demand:

D1 - Elevation	:	2.815
D2 - System Flow	:	63.2096
D2 - System Pressure	:	43.991
Hose (Adj City)	:	
Hose (Demand)	:	
D3 - System Demand	:	63.2096
Safety Margin	:	16.839



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.
202	6.5	5.6	7.81	na	15.65	0.05	130	7.0
201	6.5	5.6	9.02	na	16.82	0.05	130	7.0
204	6.5	5.6	7.0	na	14.82	0.05	130	7.0
203	6.5	5.6	8.09	na	15.93	0.05	130	7.0
23	6.5		14.82	na				
22	6.5		17.41	na				
21	6.5		31.81	na				
20	6.5		38.93	na				
2	6.5		40.5	na				
1	0.0		43.97	na				
TEST	0.0		43.99	na				

The maximum velocity is 23.47 and it occurs in the pipe between nodes 22 and 21

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
202	15.65	1.049		0.0	14.600	7.809		K Factor = 5.60
to		120		0.0	0.0	0.0		
201	15.65	0.0827		0.0	14.600	1.207		Vel = 5.81
201	16.81	1.049	1T	5.0	21.330	9.016		K Factor = 5.60
to		120		0.0	5.000	0.0		
22	32.46	0.3189		0.0	26.330	8.396		Vel = 12.05
	0.0							
	32.46					17.412		K Factor = 7.78
204	14.82	1.049		0.0	14.600	7.000		K Factor = 5.60
to		120		0.0	0.0	0.0		
203	14.82	0.0747		0.0	14.600	1.091		Vel = 5.50
203	15.92	1.049	1E	2.0	21.330	8.091		K Factor = 5.60
to		120		0.0	2.000	0.0		
23	30.74	0.2883		0.0	23.330	6.726		Vel = 11.41
23	0.0	1.049		0.0	9.000	14.817		
to		120		0.0	0.0	0.0		
22	30.74	0.2883		0.0	9.000	2.595		Vel = 11.41
22	32.47	1.049	1T	5.0	8.166	17.412		
to		120		0.0	5.000	0.0		
21	63.21	1.0937		0.0	13.166	14.400		Vel = 23.47
21	0.0	1.38	1T	6.0	18.750	31.812		
to		120		0.0	6.000	0.0		
20	63.21	0.2877		0.0	24.750	7.120		Vel = 13.56
20	0.0	1.38	1E	3.0	2.450	38.932		
to		120		0.0	3.000	0.0		
2	63.21	0.2877		0.0	5.450	1.568		Vel = 13.56
2	0.0	2.157	1S	13.537	6.500	40.500		
to		120		0.0	13.537	2.815		
1	63.21	0.0327		0.0	20.037	0.655		Vel = 5.55
1	0.0	2.157		0.0	1.000	43.970		
to		150		0.0	0.0	0.0		
TEST	63.21	0.0210		0.0	1.000	0.021		Vel = 5.55
	0.0							
	63.21					43.991		K Factor = 9.53