



. . . Fire Protection by Computer Design

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

Job Name : SKYLARK RANCH
Building : 87 SKYLARK ROAD
Location : PORTLAND, MAINE 04103
System : #1 AREA #1
Contract :
Data File : SKYLARK RANCH HC.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - SKYLARK RANCH Date - 2/26/13
Location - PORTLAND, MAINE 04103
Building - 87 SKYLARK 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

S Type of Calculation: (X)NFPA 13 Residential ()NFPA 13R (X)NFPA 13D
Y Number of Sprinklers Flowing: ()1 (X)2 ()4 ()
S ()Other
T ()Specific Ruling Made by Date
E
M Listed Flow at Start Point - 14 Gpm System Type
Listed Pres. at Start Point - 10.1 Psi (X) Wet () Dry
D MAXIMUM LISTED SPACING 14' x 14' () Deluge () PreAction
E Domestic Flow Added - 0 Gpm Sprinkler or Nozzle
S Additional Flow Added - 0 Gpm Make TYCO Model LFII
I Elevation at Highest Outlet - 20'-6"Feet Size 1/2" K-Factor 4.4
G Note: Temperature Rating 155
N

Calculation Gpm Required 28.082 Psi Required 60.315 At Test
Summary C-Factor Used: Overhead 150 Underground 140

W Water Flow Test: Pump Data: Tank or Reservoir:
A Date of Test - 10/3/12 Rated Cap. Cap.
T Time of Test - @ Psi Elev.
E Static (Psi) - 74 Elev.
R Residual (Psi) - 0 Other Well
Flow (Gpm) - 1162 Proof Flow Gpm
S Elevation -

P Location:
P
L Source of Information: PORTLAND WATER DISTRICT
Y

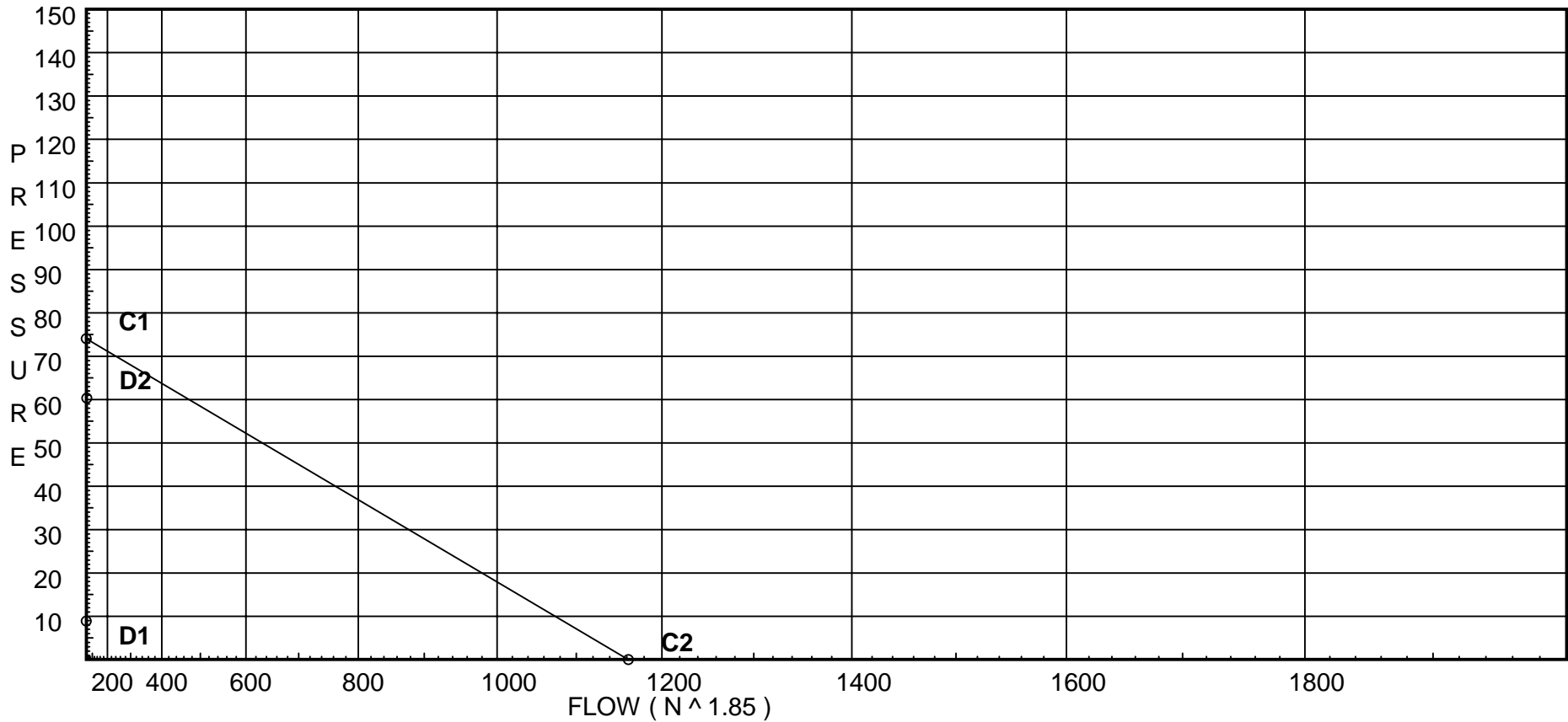
Water Supply Curve (C)

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City Water Supply:
C1 - Static Pressure : 74
C2 - Residual Pressure: 0
C2 - Residual Flow : 1162

Demand:
D1 - Elevation : 8.879
D2 - System Flow : 28.082
D2 - System Pressure : 60.315
Hose (Adj City) : _____
Hose (Demand) : _____
D3 - System Demand : 28.082
Safety Margin : 13.609



Fittings Used Summary

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Fitting Legend

Abbrev.	Name	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	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
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
Zaa	Ames 2000B	Fitting generates a Fixed Loss Based on Flow																			

Pressure / Flow Summary - STANDARD

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Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
101	20.5	4.4	10.27	na	14.1	0.05	0.001	10.1
102	20.5	4.4	10.1	na	13.98	0.05	0.001	10.1
6	20.5		10.42	na				
5	11.5		17.73	na				
4	11.5		21.71	na				
3	11.5		24.47	na				
2	5.0		28.76	na				
1	5.0		33.9	na				
TEST	0.0		60.32	na				

The maximum velocity is 13.52 and it occurs in the pipe between nodes 1 and TEST

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 to 6	14.10 14.1	1.101 150 0.0356	1E 3.825 0.0 0.0	0.500 3.825 4.325	10.267 0.0 0.154		K Factor = 4.40 Vel = 4.75
	0.0 14.10					10.421	K Factor = 4.37
102 to 6	13.98 13.98	1.101 150 0.0351	2E 7.65 0.0 0.0	1.500 7.650 9.150	10.100 0.0 0.321		K Factor = 4.40 Vel = 4.71
6 to 5	14.10 28.08	1.049 120 0.2438	1T 5.0 0.0 0.0	9.000 5.000 14.000	10.421 3.898 3.413		Vel = 10.42
5 to 4	0.0 28.08	1.049 120 0.2438	1E 2.0 0.0 0.0	14.330 2.000 16.330	17.732 0.0 3.982		Vel = 10.42
4 to 3	0.0 28.08	1.38 120 0.0641	1E 3.0 0.0 0.0	39.916 3.000 42.916	21.714 0.0 2.752		Vel = 6.02
3 to 2	0.0 28.08	1.38 120 0.0641	1E 3.0 0.0 0.0	20.083 3.000 23.083	24.466 2.815 1.480		Vel = 6.02
2 to 1	0.0 28.08	1.38 120 0.0642	1E 3.0 1Zaa 0.0 0.0	6.500 3.000 9.500	28.761 4.533 0.610		* Fixed loss = 4.533 Vel = 6.02
1 to TEST	0.0 28.08	0.921 150 0.3041	0.0 0.0 0.0	60.000 0.0 60.000	33.904 8.166 18.245		* Fixed loss = 6 Vel = 13.52
	0.0 28.08					60.315	K Factor = 3.62