

**. . . Fire Protection by Computer Design**

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

Job Name : SKYLARK COMMONS  
Building : 89 SKYLARK ROAD  
Location : PORTLAND, MAINE 04103  
System : #1 AREA #1  
Contract :  
Data File : SKYLARK COMMONS HC.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - SKYLARK COMMONS LOT #13 Date - 11/26/13  
Location - PORTLAND, MAINE 04103  
Building - 89 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 - 25 Gpm Sprinkler or Nozzle  
S Additional Flow Added - 0 Gpm Make TYCO Model LFII  
I Elevation at Highest Outlet - 24.0 Feet Size 1/2" K-Factor 4.4  
G Note: Temperature Rating 155  
N

Calculation Gpm Required 53.487 Psi Required 68.043 At Test  
Summary C-Factor Used: Overhead 150 Underground 150

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

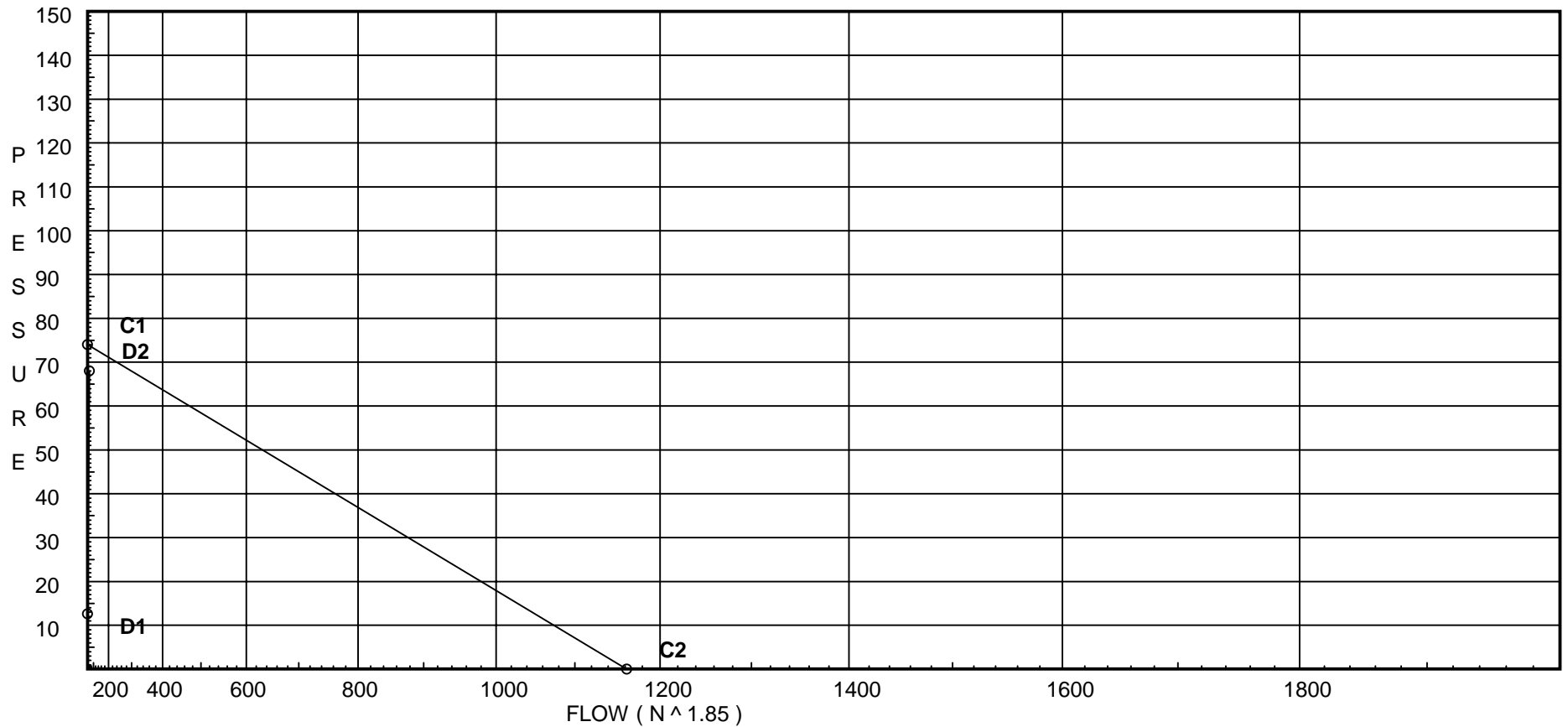
# Water Supply Curve (C)

FREEDOM FIRE PROTECTION INC.  
SKYLARK COMMONS

Page 2  
Date 11/26/13

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

Demand:  
D1 - Elevation : 12.560  
D2 - System Flow : 53.4871  
D2 - System Pressure : 68.043  
Hose ( Adj City ) : \_\_\_\_\_  
Hose ( Demand ) : \_\_\_\_\_  
D3 - System Demand : 53.4871  
Safety Margin : 5.709



# Fittings Used Summary

FREEDOM FIRE PROTECTION INC.  
SKYLARK COMMONS

Page 3  
Date 11/26/13

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

FREEDOM FIRE PROTECTION INC.  
SKYLARK COMMONS

Page 4  
Date 11/26/13

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
101	24.0	4.4	10.87	na	14.5	0.05	0.001	10.1
11	24.0		11.03	na				
10	16.1		14.89	na				
102	24.0	4.4	10.1	na	13.98	0.05	0.001	10.1
9	24.0		10.45	na				
8	16.166		14.26	na				
7	16.166		14.96	na				
6	16.166		15.24	na				
5	16.166		17.22	na				
4	16.166		19.63	na				
3	16.166		22.2	na				
2	6.166		28.17	na				
1	6.166		35.47	na				
TEST	-5.0		68.04	na	25.0			

The maximum velocity is 13.72 and it occurs in the pipe between nodes 1 and TEST

Final Calculations - One-Line

FREEDOM FIRE PROTECTION INC.  
SKYLARK COMMONS

Page 5  
Date 11/26/13

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
101	10.866	4.40	14.50	14.5	4.89	1.101	0.500	1E	3.825	4.325	150	0.0375	0.162	0.0	0.0	11.028	11
11	11.028		0.0	14.5	4.89	1.101	7.830	1E	3.825	11.655	150	0.0376	0.438	3.421	0.0	14.887	10
10	14.887		0.0	14.5	4.89	1.101	0.660	1T	9.563	10.223	150	0.0376	0.384	-0.029	0.0	15.242	6
6	15.242	3.71	0.0	14.50													
102	10.100	4.40	13.98	13.98	4.71	1.101	0.500	1T	9.563	10.063	150	0.0351	0.353	0.0	0.0	10.453	9
9	10.453		0.0	13.98	4.71	1.101	7.830	1E	3.825	11.655	150	0.0351	0.409	3.393	0.0	14.255	8
8	14.255		0.0	13.98	4.71	1.101	6.660	1E1T	13.388	20.048	150	0.0351	0.704	0.0	0.0	14.959	7
7	14.959		0.0	13.98	4.71	1.101	8.083		0.0	8.083	150	0.0350	0.283	0.0	0.0	15.242	6
6	15.242		14.51	28.49	9.60	1.101	5.583	1T	9.563	15.146	150	0.1309	1.983	0.0	0.0	17.225	5
5	17.225		0.0	28.49	9.60	1.101	14.583	1E	3.825	18.408	150	0.1309	2.409	0.0	0.0	19.634	4
4	19.634		0.0	28.49	9.60	1.101	10.000	1T	9.563	19.563	150	0.1309	2.561	0.0	0.0	22.195	3
3	22.195		0.0	28.49	10.58	1.049	4.583	1E	2.0	6.583	120	0.2503	1.648	4.331	0.0	28.174	2
2	28.174		0.0	28.49	10.58	1.049	6.166	1E1T1Zaa	7.0	13.166	120	0.2504	3.297	0.0	4.000	35.471	1
1	35.471		0.0	28.49	13.72	0.921	60.000	9#	0.0	60.000	150	0.3123	18.736	4.836	9.000	68.043	TEST
TEST	68.043	6.96	25.00	53.49													