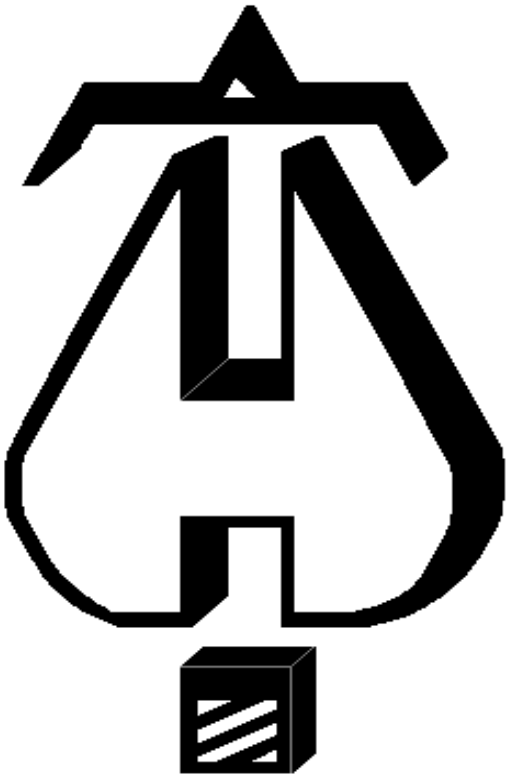


. . . Fire Protection by Computer Design

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

Job Name	:	BRACKETT HOUSE HC1
Building	:	325 BRACKETT STREET
Location	:	PORTLAND, MAINE 04101
System	:	#1 AREA #1
Contract	:	
Data File	:	BRACKETT HOUSE HC1.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - BRACKETT HOUSE Date - 11/18/13
Location - PORTLAND, MAINE 04101
Building - 325 BRACKETT STREET System No. - #1 AREA #1
Contractor - FREEDOM FIRE PROTECTION Contract No. -
Calculated By - MIKE NOBLIT Drawing No. - FP-2
Construction: (X) Combustible ( ) Non-Combustible Ceiling Height 8'-7"
OCCUPANCY - APARTMENTS

SYSTEM DESIGN

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

Listed Flow at Start Point - 16 Gpm System Type
Listed Pres. at Start Point - 13.2 Psi (X) Wet ( ) Dry
MAXIMUM LISTED SPACING 16' x 16' ( ) Deluge ( ) PreAction
Domestic Flow Added - 0 Gpm Sprinkler or Nozzle
Additional Flow Added - 0 Gpm Make TYCO Model LFII
Elevation at Highest Outlet - 15.416Feet Size 1/2" K-Factor 4.4
Note: Temperature Rating 155

Calculation Summary: Gpm Required 32.916 Psi Required 36.100 At Test
C-Factor Used: Overhead 120 Underground 150

Water Flow Test:		Pump Data:		Tank or Reservoir:	
Date of Test	12/13/2002	Rated Cap.		Cap.	
Time of Test		@ Psi		Elev.	
Static (Psi)	54	Elev.			
Residual (Psi)	51	Other		Well	
Flow (Gpm)	949			Proof Flow Gpm	
Elevation					

Location:

Source of Information: PORTLAND WATER DISTRICT

Water Supply Curve (C)

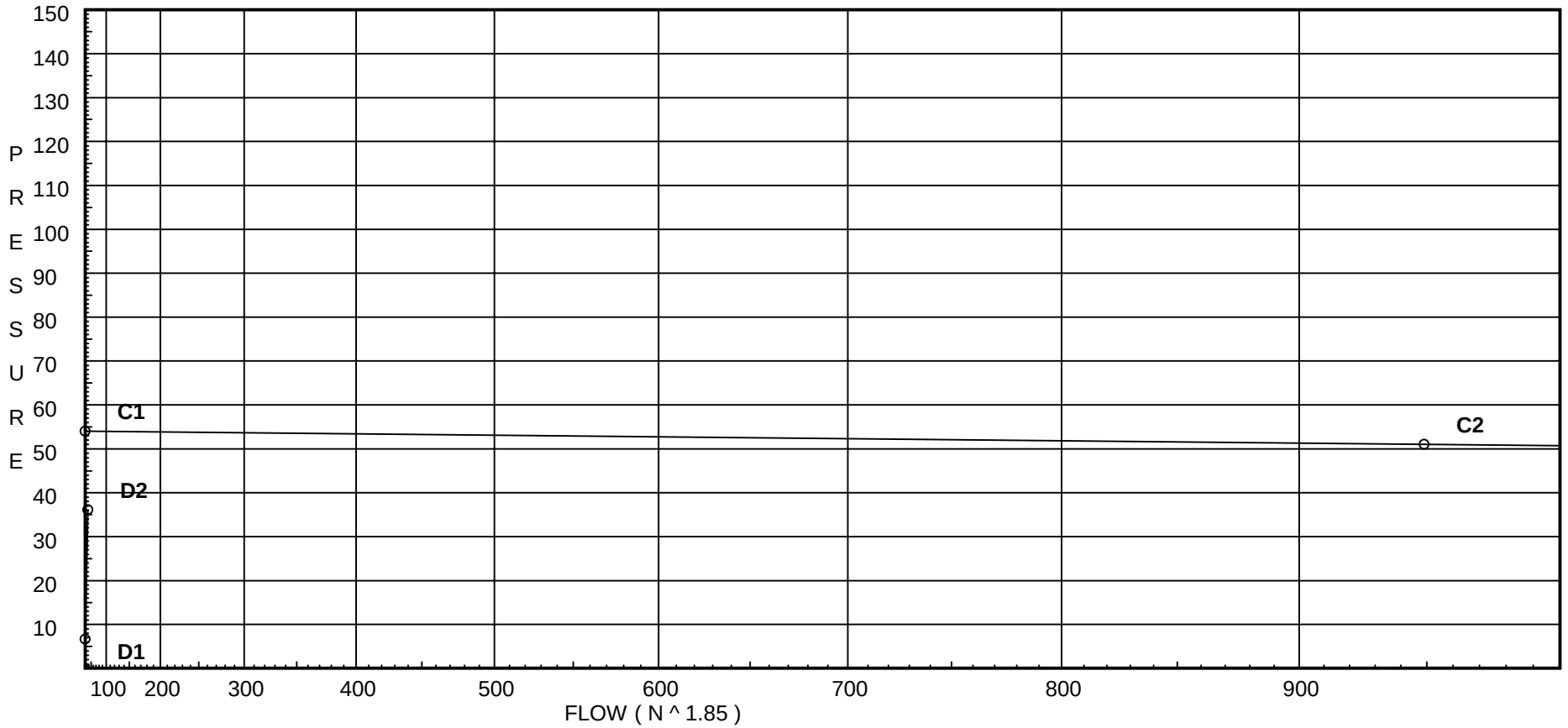
FREEDOM FIRE PROTECTION INC.
BRACKETT HOUSE HC1

Date 11/18/13

City Water Supply:
- C1 - Static Pressure : 54
- C2 - Residual Pressure: 51
- C2 - Residual Flow : 949

Demand:

D1 - Elevation	:	6.677
D2 - System Flow	:	32.9156
D2 - System Pressure	:	36.100
Hose (Adj City)	:	_____
Hose (Demand)	:	_____
D3 - System Demand	:	32.9156
Safety Margin	:	17.894



Fittings Used Summary

FREEDOM FIRE PROTECTION INC.
BRACKETT HOUSE HC1

Date 11/18/13

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
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

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
102	15.416	4.4	13.2	na	15.99	0.05	0.001	13.2
101	15.416	4.4	14.8	na	16.93	0.05	0.001	13.2
11	15.416		15.84	na				
10	15.416		18.35	na				
9	15.416		21.48	na				
8	5.83		26.35	na				
7	5.83		26.74	na				
6	5.83		26.9	na				
5	5.83		27.1	na				
4	5.83		27.27	na				
3	0.0		35.15	na				
2	0.0		36.09	na				
1	0.0		36.1	na				
0	0.0		36.1	na				
TEST	0.0		36.1	na				

The maximum velocity is 12.22 and it occurs in the pipe between nodes 101 and 11

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
102	13.200	4.40	15.99	15.99	5.94	1.049	11.660	1E1T	7.0	18.660	120	0.0860	1.604	0.0	0.0	14.804	101
101	14.804	4.40	16.93	32.92	12.22	1.049	1.166	1E	2.0	3.166	120	0.3272	1.036	0.0	0.0	15.840	11
11	15.840		0.0	32.92	12.22	1.049	5.660	1E	2.0	7.660	120	0.3272	2.506	0.0	0.0	18.346	10
10	18.346		0.0	32.92	12.22	1.049	4.583	1T	5.0	9.583	120	0.3270	3.134	0.0	0.0	21.480	9
9	21.480		0.0	32.92	5.19	1.61	9.583	1T	8.0	17.583	120	0.0406	0.714	4.152	0.0	26.346	8
8	26.346		0.0	32.92	2.89	2.157	34.330	1E	6.153	40.483	120	0.0098	0.395	0.0	0.0	26.741	7
7	26.741		0.0	32.92	2.89	2.157	4.000	1T	12.307	16.307	120	0.0098	0.160	0.0	0.0	26.901	6
6	26.901		0.0	32.92	2.89	2.157	8.416	1T	12.307	20.723	120	0.0097	0.202	0.0	0.0	27.103	5
5	27.103		0.0	32.92	2.89	2.157	4.750	1T	12.307	17.057	120	0.0098	0.167	0.0	0.0	27.270	4
4	27.270		0.0	32.92	3.15	2.067	5.830	1E1Zaa	5.0	10.830	120	0.0120	0.130	2.525	5.222	35.147	3
3	35.147		0.0	32.92	4.92	1.653	35.000	1T	5.088	40.088	150	0.0236	0.947	0.0	0.0	36.094	2
2	36.094		0.0	32.92	0.35	6.16	50.000	1T	43.037	93.037	140	0.0	0.004	0.0	0.0	36.098	1
1	36.098		0.0	32.92	0.09	12.34	150.000		0.0	150.000	140	0.0	0.001	0.0	0.0	36.099	0
0	36.099		0.0	32.92	0.35	6.16	25.000		0.0	25.000	140	0.0	0.001	0.0	0.0	36.100	TEST
TEST	36.100	5.48	0.0	32.92													