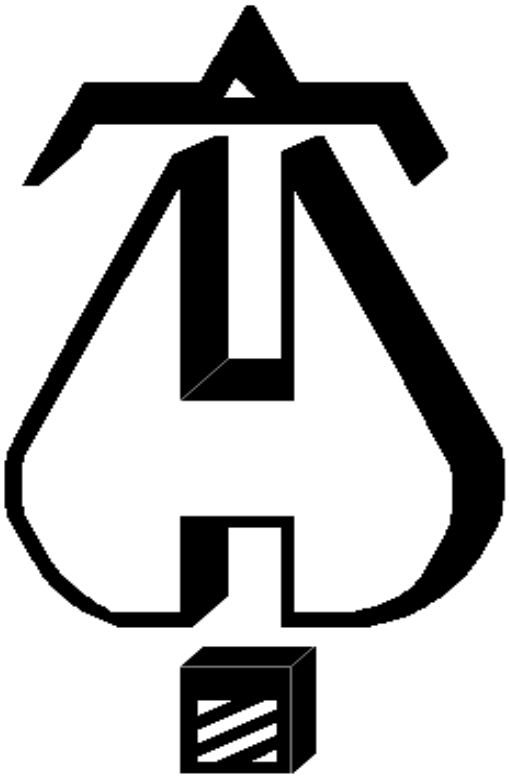


. . . Fire Protection by Computer Design

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

Job Name : BRACKETT HOUSE HC2
Building : 325 BRACKETT STREET
Location : PORTLAND, MAINE 04101
System : #1 AREA #2
Contract :
Data File : BRACKETT HOUSE HC2.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - BRACKETT HOUSE Date - 11/18/13
Location - PORTLAND, MAINE 04101
Building - 325 BRACKETT STREET System No. - #1 AREA #2
Contractor - FREEDOM FIRE PROTECTION Contract No. -
Calculated By - MIKE NOBLIT Drawing No. - FP-2
Construction: (X) Combustible ( ) Non-Combustible Ceiling Height 8'-0"
OCCUPANCY - APARTMENTS

SYSTEM DESIGN

Type of Calculation: (X)NFPA 13 Residential (X)NFPA 13R ( )NFPA 13D
Number of Sprinklers Flowing: ( )1 ( )2 ( )4 (X)3
( )Other
( )Specific Ruling Made by Date

Listed Flow at Start Point - 14 Gpm System Type
Listed Pres. at Start Point - 10.1 Psi (X) Wet ( ) Dry
MAXIMUM LISTED SPACING 14' x 14' ( ) Deluge ( ) PreAction
Domestic Flow Added - 0 Gpm Sprinkler or Nozzle
Additional Flow Added - 0 Gpm Make TYCO Model LFII
Elevation at Highest Outlet - 24.416Feet Size 1/2" K-Factor 4.4
Note: Temperature Rating 155

Calculation Summary: Gpm Required 45.388 Psi Required 39.584 At Test
C-Factor Used: Overhead 120 Underground 150

SUPPLY

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

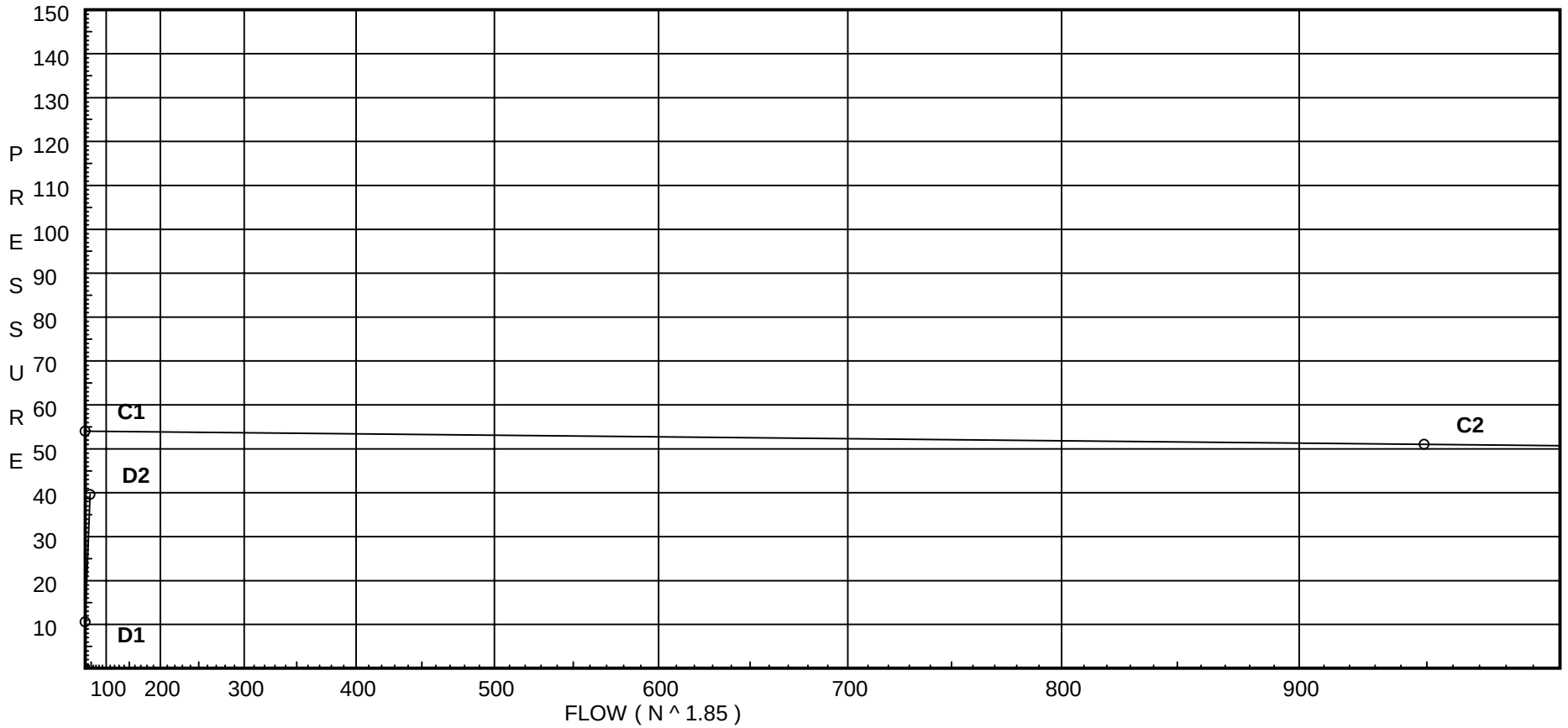
Water Supply Curve (C)

FREEDOM FIRE PROTECTION INC.
BRACKETT HOUSE HC2

Date 11/18/13

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

Demand:
- D1 - Elevation : 10.575
- D2 - System Flow : 45.3881
- D2 - System Pressure : 39.584
- Hose (Adj City) : _____
- Hose (Demand) : _____
- D3 - System Demand : 45.3881
- Safety Margin : 14.405



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
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.
201	24.416	4.4	12.73	na	15.7	0.05	0.001	10.1
203	24.416	4.4	10.1	na	13.98	0.05	0.001	10.1
24	24.416		11.1	na				
23	24.416		12.18	na				
202	24.416	4.4	12.75	na	15.71	0.05	0.001	10.1
22	24.416		13.72	na				
21	24.416		14.37	na				
20	15.416		20.61	na				
9	15.416		22.41	na				
8	5.83		27.85	na				
7	5.83		28.57	na				
6	5.83		28.86	na				
5	5.83		29.22	na				
4	5.83		29.53	na				
3	0.0		37.86	na				
2	0.0		39.57	na				
1	0.0		39.58	na				
0	0.0		39.58	na				
TEST	0.0		39.58	na				

The maximum velocity is 9.74 and it occurs in the pipe between nodes 22 and 21

Final Calculations - One-Line

FREEDOM FIRE PROTECTION INC.
BRACKETT HOUSE HC2

Date 11/18/13

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
201	12.726	4.40	15.70	15.7	5.83	1.049	2.000	2T	10.0	12.000	120	0.0831	0.997	0.0	0.0	13.723	22
22	13.723	4.24	0.0	15.70													
203	10.100	4.40	13.98	13.98	5.19	1.049	5.916	1T2E	9.0	14.916	120	0.0671	1.001	0.0	0.0	11.101	24
24	11.101		0.0	13.98	5.19	1.049	7.000	2E1T	9.0	16.000	120	0.0671	1.074	0.0	0.0	12.175	23
23	12.175		0.0	13.98	5.19	1.049	3.500	1T	5.0	8.500	120	0.0672	0.571	0.0	0.0	12.746	202
202	12.746	4.40	15.71	29.69	6.37	1.38	7.750	2E	6.0	13.750	120	0.0711	0.977	0.0	0.0	13.723	22
22	13.723		15.70	45.39	9.74	1.38	1.166	1E	3.0	4.166	120	0.1560	0.650	0.0	0.0	14.373	21
21	14.373		0.0	45.39	9.74	1.38	9.000	1T	6.0	15.000	120	0.1559	2.338	3.898	0.0	20.609	20
20	20.609		0.0	45.39	7.15	1.61	8.416	2E1T	16.0	24.416	120	0.0736	1.796	0.0	0.0	22.405	9
9	22.405		0.0	45.39	7.15	1.61	9.583	1T	8.0	17.583	120	0.0736	1.294	4.152	0.0	27.851	8
8	27.851		0.0	45.39	3.99	2.157	34.330	1E	6.153	40.483	120	0.0177	0.716	0.0	0.0	28.567	7
7	28.567		0.0	45.39	3.99	2.157	4.000	1T	12.307	16.307	120	0.0177	0.289	0.0	0.0	28.856	6
6	28.856		0.0	45.39	3.99	2.157	8.416	1T	12.307	20.723	120	0.0177	0.367	0.0	0.0	29.223	5
5	29.223		0.0	45.39	3.99	2.157	4.750	1T	12.307	17.057	120	0.0177	0.302	0.0	0.0	29.525	4
4	29.525		0.0	45.39	4.34	2.067	5.830	1E1Zaa	5.0	10.830	120	0.0218	0.236	2.525	5.571	37.857	3
3	37.857		0.0	45.39	6.79	1.653	35.000	1T	5.088	40.088	150	0.0428	1.717	0.0	0.0	39.574	2
2	39.574		0.0	45.39	0.49	6.16	50.000	1T	43.037	93.037	140	0.0001	0.007	0.0	0.0	39.581	1
1	39.581		0.0	45.39	0.12	12.34	150.000		0.0	150.000	140	0.0	0.001	0.0	0.0	39.582	0
0	39.582		0.0	45.39	0.49	6.16	25.000		0.0	25.000	140	0.0001	0.002	0.0	0.0	39.584	TEST
TEST	39.584	7.21	0.0	45.39													