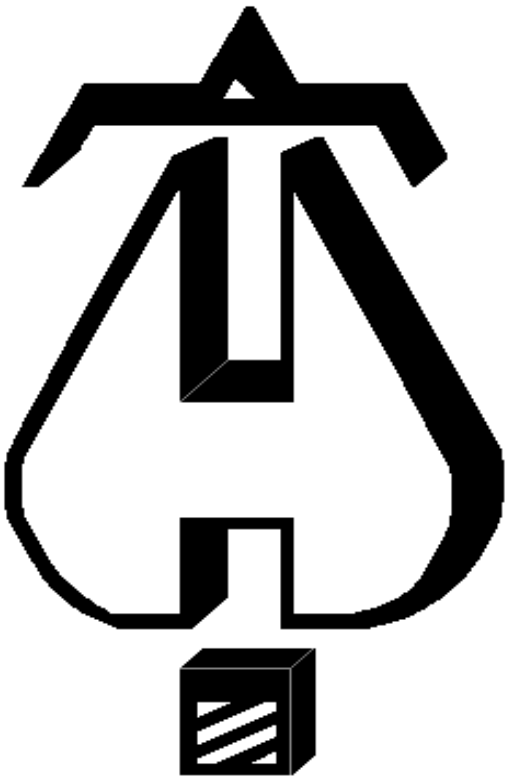


. . . Fire Protection by Computer Design

EASTERN FIRE PROTECTION
170 KITTYHAWK AVE.
P.O. BOX 1390
AUBURN, MAINE 04210
207-784-1507

Job Name	:	33 ATLANTIC AVE.
Drawing	:	WOOD CONSTRUCTION
Location	:	PORTLAND, MAINE
Remote Area	:	WET
Contract	:	5088
Data File	:	33 ATLANTIC AVENUE REMOTE.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - 33 ATLANTIC AVE. Date - 10-28-13
Location - PORTLAND, MAINE
Building - WOOD CONSTRUCTION System No. - WET
Contractor - EASTERN FIRE PROTECTION Contract No. - 5088
Calculated By - ROBERT PETERS Drawing No. - 1 OF 1
Construction: (X) Combustible ( ) Non-Combustible Ceiling Height VARIES
OCCUPANCY - RESIDENTIAL

SYSTEM DESIGN

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

Listed Flow at Start Point - 23 Gpm System Type
Listed Pres. at Start Point - 27.3 Psi (X) Wet ( ) Dry
MAXIMUM LISTED SPACING 18 x 18 ( ) Deluge ( ) PreAction
Domestic Flow Added - Gpm Sprinkler or Nozzle
Additional Flow Added - Gpm Make TYCO Model LF II
Elevation at Highest Outlet - 125.83Feet Size 1/2" K-Factor 4.4
Note: Temperature Rating 155

Calculation Summary: Gpm Required 45.455 Psi Required 50.504 At Test
C-Factor Used: Overhead 150 Underground 150

Water Flow Test:	Pump Data:	Tank or Reservoir:
Date of Test -	Rated Cap. 40	Cap. 525
Time of Test -	@ Psi 52.39	Elev.
Static (Psi) -	Elev. 94'	
Residual (Psi) -	Other	Well
Flow (Gpm) -		Proof Flow Gpm
Elevation -		

SUPPLY

Location: BASEMENT

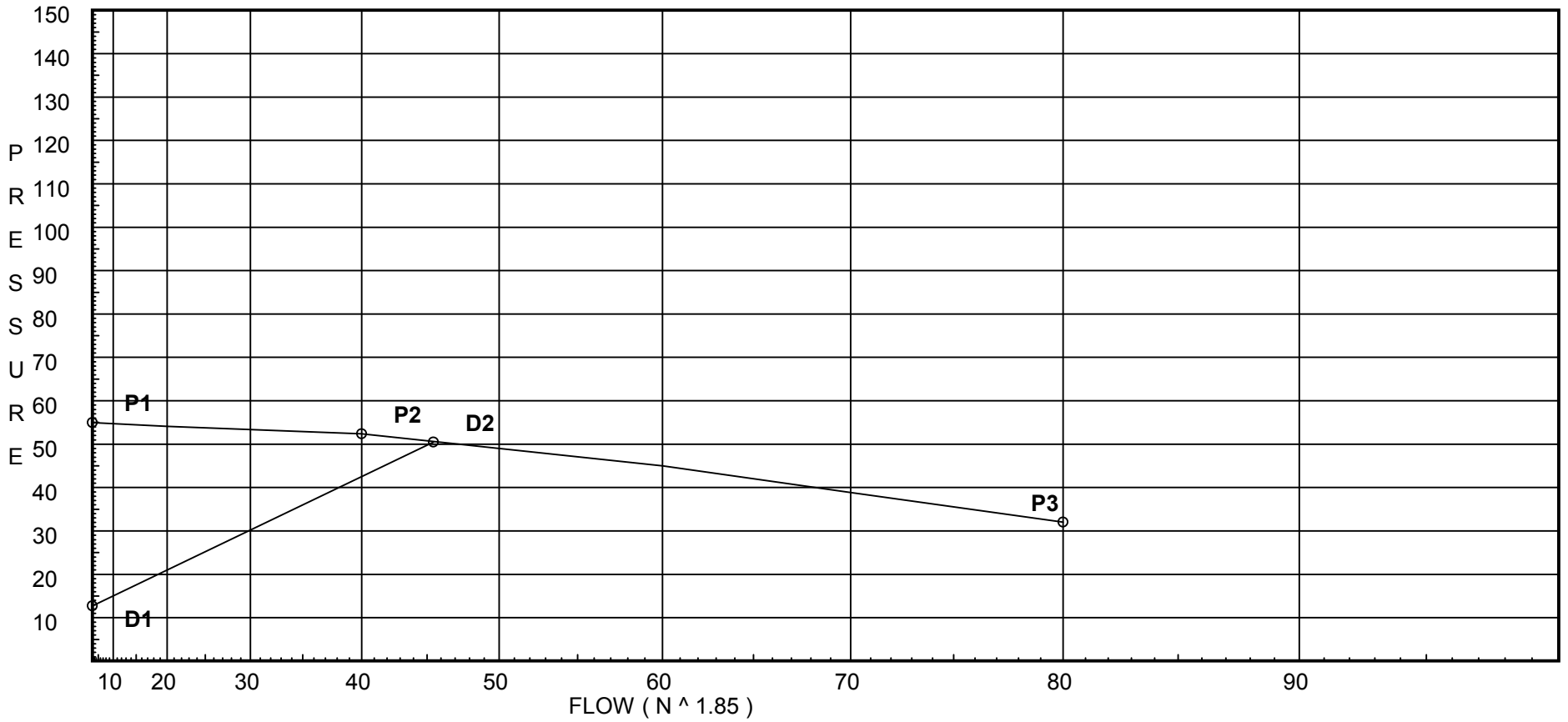
Source of Information: PUMP MANUFACTURER DATA SHEET

Pump Data:

P1 - Pump Churn Pressure	: 54.99
P2 - Pump Rated Pressure	: 52.39
P2 - Pump Rated Flow	: 40
P3 - Pump Pressure @ Max Flow	: 32.04
P3 - Pump Max Flow	: 80

Demand:

D1 - Elevation	: 12.703
D2 - System Flow	: 45.455
D2 - System Pressure	: 50.504
Hose (Demand)	:
D3 - System Demand	: 45.455
Safety Margin	: 0.128



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	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
Fsp	Flow Switch Potter VSR	Fitting generates a Fixed Loss Based on Flow																			
S	NFPA 13 Swing Check	0	0	5	7	9	11	14	16	19	22	27	32	45	55	65					
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121

Units Summary

Diameter Units	Inches
Length Units	Feet
Flow Units	US Gallons per Minute
Pressure Units	Pounds per Square Inch

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

SUPPLY ANALYSIS

Node at Source	Static Pressure	Residual Pressure	Flow	Available Pressure	Total Demand	Required Pressure
PUMP	See Information on Pump Curve			50.632	45.45	50.504

NODE ANALYSIS

Node Tag	Elevation	Node Type	Pressure at Node	Discharge at Node	Notes
LIN	0.0	5.6	10.68	18.3	
1	123.33	4.4	27.3	22.99	
A	118.083		30.71		
2	125.833	4.4	26.07	22.46	
H	118.083		30.4		
I	118.083		30.6		
J	118.083		30.94		
C	118.083		31.82		
D	109.042		36.19		
E	98.75		42.4		
L	98.75		43.18		
G	98.75		43.88		
TOR	94.0		46.32		
PUMP	94.0		50.5		

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv.	Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	******* Notes ******
LIN	0	5.60	18.30	1	2E	4.0	1.833	120	10.679	
to					T	5.0	9.000		0.0	
DRP1	0		18.3	1.049		0.0	10.833	0.1104	1.196	Vel = 6.79
			0.0							
DRP1			18.30						11.875	K Factor = 5.31
1	123.330	4.40	22.99	1	E	3.825	9.083	150	27.300	
to						0.0	3.825		2.272	
A	118.083		22.99	1.101		0.0	12.908	0.0881	1.137	Vel = 7.75
A	118.083		0.0	1.5	T	11.656	4.333	150	30.709	
to						0.0	11.656		0.0	
J	118.083		22.99	1.598		0.0	15.989	0.0143	0.229	Vel = 3.68
			0.0							
J			22.99						30.938	K Factor = 4.13
2	125.833	4.40	22.46	1	E	3.825	7.750	150	26.068	
to						0.0	3.825		3.357	
H	118.083		22.46	1.101		0.0	11.575	0.0843	0.976	Vel = 7.57
H	118.083		0.0	1.5	T	11.656	2.917	150	30.401	
to						0.0	11.656		0.0	
I	118.083		22.46	1.598		0.0	14.573	0.0137	0.200	Vel = 3.59
I	118.083		0.0	1.5	T	11.656	12.875	150	30.601	
to						0.0	11.656		0.0	
J	118.083		22.46	1.598		0.0	24.531	0.0137	0.337	Vel = 3.59
J	118.083		22.99	1.5	2E	11.656	5.708	150	30.938	
to						0.0	11.656		0.0	
C	118.083		45.45	1.598		0.0	17.364	0.0507	0.880	Vel = 7.27
C	118.083		0.0	1.5		0.0	9.042	150	31.818	
to						0.0	0.0		3.916	
D	109.042		45.45	1.598		0.0	9.042	0.0505	0.457	Vel = 7.27
D	109.042		0.0	1.5	2E	11.656	11.292	150	36.191	
to					T	11.656	23.312		4.457	
E	98.750		45.45	1.598		0.0	34.604	0.0507	1.753	Vel = 7.27
E	98.750		0.0	1.5		0.0	10.583	120	42.401	
to						0.0	0.0		0.0	
L	98.750		45.45	1.61		0.0	10.583	0.0738	0.781	Vel = 7.16
L	98.750		0.0	1.5	T	8.0	1.458	120	43.182	
to						0.0	8.000		0.0	
G	98.750		45.45	1.61		0.0	9.458	0.0737	0.697	Vel = 7.16
G	98.750		0.0	1.5	E	4.95	1.542	120	43.879	
to						0.0	4.950		2.057	
TOR	94		45.45	1.682		0.0	6.492	0.0598	0.388	Vel = 6.56
TOR	94		0.0	1.5	S	9.0	7.000	120	46.324	
to					Fsp	0.0	9.000		3.000	* * Fixed Loss = 3
PUMP	94		45.45	1.61		0.0	16.000	0.0738	1.180	Vel = 7.16
			0.0							
PUMP			45.45						50.504	K Factor = 6.40

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv.	Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	*******	Notes	******