



... Fire Protection by Computer Design

DEAN AND ALLYN, INC.
116 LEWISTON ROAD
GRAY MAINE 04039
207 657 5646

Job Name : 133 SPRING STREET ATTIC
Building : 133 SPRING ST.
Location : 133 SPRING STREET PORTLAND MAINE
System : ONE
Contract : C141186
Data File : 133SPRINGresareas.WXF

Hydraulic Design Information Sheet

Name - 133 SPRING STREET Date - 3-3-14
 Location - 133 SPRING STREET PORTLAND MAINE
 Building - 133 SPRING ST. System No. - ONE
 Contractor - DEAN AND ALLYN, INC. Contract No. - C141186
 Calculated By - H. KING Drawing No. - 1 OF 1
 Construction: (X) Combustible () Non-Combustible Ceiling Height - VARIES
 Occupancy - RESTAURANT AND APARTMENTS

S (X) NFPA 13 (X) Lt. Haz. Ord.Haz.Gp. () 1 () 2 () 3 () Ex.Haz.
 Y () NFPA 231 () NFPA 231C () Figure Curve

S Other

T Specific Ruling Made By Date

E

M	Area of Sprinkler Operation - 3 HEADS	System Type	Sprinkler/Nozzle
	Density - .10	(X) Wet	Make RELIABLE
D	Area Per Sprinkler - 130	() Dry	Model FIFR
E	Elevation at Highest Outlet - 30	() Deluge	Size 1/2"
S	Hose Allowance - Inside -	() Preaction	K-Factor 5.6
I	Rack Sprinkler Allowance -	() Other	Temp.Rat.200
G	Hose Allowance - Outside -		

N

Note CUSHION 12.4 PSI

Calculation Flow Required - 45.4 Press Required - 43.6 at
 Summary C-Factor Used: 120 Overhead 140 Underground

W	Water Flow Test:	Pump Data:	Tank or Reservoir:
A	Date of Test - 6-3-13	Rated Cap.-	Cap. -
T	Time of Test -	@ Press -	Elev.-
E	Static Press - 56	Elev. -	
R	Residual Press - 52		Well
	Flow - 1061		Proof Flow
S	Elevation - 0		

U

P Location - SPRING STREET

P

L Source of Information - PWD

Y

C	Commodity	Class	Location
O	Storage Ht.	Area	Aisle W.
M	Storage Method: Solid Piled	% Palletized	% Rack
M	() Single Row	() Conven. Pallet	() Auto. Storage
S	() Double Row	() Slave Pallet	() Solid Shelf
R	() Mult. Row	() Open Shelf	() Non

T

A Flue Spacing Clearance:Storage to Ceiling
 O Longitudinal Transverse
 C

R

K Horizontal Barriers Provided:

A

G

E

Final Calculations - Standard

DEAN AND ALLYN, INC.
133 SPRING STREET ATTIC

Page 2
Date 3-3-14

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/UL	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
20 to 70	15.33 15.33	1.049 120 0.0796	2E 1T	4.0 5.0 0.0	13.000 9.000 22.000	7.499 0.0 1.751			K Factor = 5.60	
	0.0 15.33						9.250		K Factor = 5.04	
21 to 22	14.82 14.82	1.049 120 0.0747		0.0 0.0 0.0	6.000 0.0 6.000	7.000 0.0 0.448			K Factor = 5.60	
22 to 70	15.28 30.1	1.049 120 0.2772	1T	5.0 0.0 0.0	1.500 5.000 6.500	7.448 0.0 1.802			K Factor = 5.60	
70 to 71	15.33 45.43	1.049 120 0.5938	1E	2.0 0.0 0.0	17.200 2.000 19.200	9.250 0.0 11.401				Vel = 16.86
71 to 73	0.0 45.43	1.38 120 0.1562		0.0 0.0 0.0	10.500 0.0 10.500	20.651 4.331 1.640				Vel = 9.74
73 to 74	0.0 45.43	1.38 120 0.1562	1T	6.0 0.0 0.0	12.000 6.000 18.000	26.622 5.197 2.811				Vel = 9.74
74 to 57	0.0 45.43	3.26 120 0.0022		0.0 0.0 0.0	2.300 0.0 2.300	34.630 0.0 0.005				Vel = 1.75
57 to 58	0.0 45.43	3.26 120 0.0024		0.0 0.0 0.0	3.800 0.0 3.800	34.635 0.0 0.009				Vel = 1.75
58 to 59	0.0 45.43	3.26 120 0.0025		0.0 0.0 0.0	3.600 0.0 3.600	34.644 0.0 0.009				Vel = 1.75
59 to 60	0.0 45.43	3.26 120 0.0024	1E 1T	9.408 20.159 0.0	6.200 29.567 35.767	34.653 0.0 0.085				Vel = 1.75
60 to 16	0.0 45.43	3.26 120 0.0024	1E	9.408 0.0 0.0	6.700 9.408 16.108	34.738 3.465 0.038				Vel = 1.75
	0.0 45.43						38.241		K Factor = 7.35	
61 to 16	-45.43 -45.43	3.26 120 -0.0024	1E	9.408 0.0 0.0	6.800 9.408 16.208	34.815 3.465 -0.039				Vel = 1.75
	0.0 -45.43						38.241		K Factor = -7.35	

Final Calculations - Standard

DEAN AND ALLYN, INC.
133 SPRING STREET ATTIC

Page 3
Date 3-3-14

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/UL	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
61	45.43	3.26	1E	9.408	7.300	34.815			
to		120		0.0	9.408	0.0			
18	45.43	0.0023		0.0	16.708	0.039	Vel =	1.75	
18	0.0	3.26	2E	11.408	10.000	34.854			
to		120		0.0	18.815	0.0			
TR	45.43	0.0024		0.0	28.815	0.069	Vel =	1.75	
TR	0.0	3.26	1E	9.408	6.000	34.923			
to		120	1Z	9.408	18.815	8.465	* Fixed loss =	5.000	
FF	45.43	0.0023		0.0	24.815	0.058	Vel =	1.75	
FF	0.0	4.1	1G	2.186	100.000	43.446			
to		120	1T	21.855	34.968	0.0			
CTY	45.43	0.0008	1E	10.928	134.968	0.105	Vel =	1.10	
	0.0								
	45.43					43.551	K Factor =	6.88	

Fittings Used Summary

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133 SPRING STREET ATTIC

Page 4
Date 3-3-14

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
G	Generic Gate Valve	0	0	1	1	1	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
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
Z	Generic Flow Switch	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61

Pressure / Flow Summary - STANDARD

DEAN AND ALLYN, INC.
133 SPRING STREET ATTIC

Page 5
Date 3-3-14

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
20	30.0	5.6	7.5	na	15.33	.10	130	7.0
21	30.0	5.6	7.0	na	14.82	.10	130	7.0
22	30.0	5.6	7.45	na	15.28	.10	130	7.0
70	30.0		9.25	na				
71	30.0		20.65	na				
73	20.0		26.62	na				
74	8.0		34.63	na				
57	8.0		34.64	na				
58	8.0		34.64	na				
59	8.0		34.65	na				
60	8.0		34.74	na				
61	8.0		34.81	na				
18	8.0		34.85	na				
TR	8.0		34.92	na				
FF	0.0		43.45	na				
CTY	0.0		43.55	na				

The maximum velocity is 16.86 and it occurs in the pipe between nodes 70 and 71

Water Supply Curve (C)

DEAN AND ALLYN, INC.
133 SPRING STREET ATTIC

Page 6
Date 3-3-14

City Water Supply:
C1 - Static Pressure : 56
C2 - Residual Pressure: 52
C2 - Residual Flow : 1061

