



... Fire Protection by Computer Design

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

Job Name : ADAMS SCHOOL BUILDING A FIRST FLOOR
Building : BUILDING A FIRST FLOOR CENTER
Location : VESPER STREET PORTLAND MAINE
System : ONE
Contract : C121102
Data File : ADAMS SCHOOL BUILDING A FIRST FLOOR CENTER.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - ADAMS SCHOOL REDEVELOPMENT PROJECT Date - 11-1-12
 Location - VESPER STREET PORTLAND MAINE
 Building - BUILDING A FIRST FLOOR CENTER System No. - ONE
 Contractor - DEAN AND ALLYN, INC. Contract No. - C121102
 Calculated By - HARRY KING Drawing No. - 1 OF 2
 Construction: (X) Combustible () Non-Combustible Ceiling Height 8'
 OCCUPANCY - HOUSING

S Type of Calculation: ()NFPA 13 Residential (X)NFPA 13R ()NFPA 13D
 Y Number of Sprinklers Flowing: ()1 ()2 (X)4 ()

S ()Other

T ()Specific Ruling

Made by

Date

E

M	Listed Flow at Start Point	- 17	Gpm		System Type
	Listed Pres. at Start Point	- 12	Psi	(X) Wet	() Dry
D	MAXIMUM LISTED SPACING	18	x 18	() Deluge	() PreAction
E	Domestic Flow Added	-	Gpm	Sprinkler or Nozzle	
S	Additional Flow Added	-	Gpm	Make VIKING	Model FREEDOM
I	Elevation at Highest Outlet	- 12	Feet	Size 1/2"	K-Factor 4.9
G	Note:CUSHION:	7.12	PSI	Temperature Rating 155	

N

Calculation	Gpm Required 54.0	Psi Required 36.8	At Test
Summary	C-Factor Used:	Overhead 120	Underground 120

W	Water Flow Test:	Pump Data:	Tank or Reservoir:
A	Date of Test - 6-2-2005	Rated Cap.	Cap.
T	Time of Test -	@ Psi	Elev.
E	Static (Psi) - 44	Elev.	
R	Residual (Psi) - 37	Other	Well
	Flow (Gpm) - 503		Proof Flow Gpm
S	Elevation - 0		

P Location: MUNJOY AT MOODY STREETS

P

L Source of Information: PORTLAND WATER DEPT

Y

Final Calculations - Standard

DEAN AND ALLYN, INC.
ADAMS SCHOOL BUILDING A FIRST FLOOR

Page 2
Date 11-1-12

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/UL	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
1A to 1	12.96	1.049 120	1T 5.0 0.0	1.000 5.000	7.000 10.828			K Factor = 4.90	
	12.96	0.0583	0.0	6.000	0.350			Vel = 4.81	
	0.0								
	12.96				18.178			K Factor = 3.04	
06 to 20	16.97	1.049 120	1E 2.0 2T 7.0	22.000 12.000	12.000 0.0			K Factor = 4.90	
	16.97	0.0961	0.0	34.000	3.266			Vel = 6.30	
	0.0								
	16.97				15.266			K Factor = 4.34	
07 to 20	18.10	1.049 120	1T 5.0 0.0	10.000 5.000	13.644 0.0			K Factor = 4.90	
	18.1	0.1081	0.0	15.000	1.622			Vel = 6.72	
	0.0								
	18.10				15.266			K Factor = 4.63	
08 to 21	18.90	1.049 120	1T 5.0 0.0	4.000 5.000	14.871 0.0			K Factor = 4.90	
	18.9	0.1172	0.0	9.000	1.055			Vel = 7.02	
	0.0								
	18.90				15.926			K Factor = 4.74	
20 to 22	35.07	1.38 120	1T 6.0 0.0	4.000 6.000	15.266 0.0				
	35.07	0.0968	0.0	10.000	0.968			Vel = 7.52	
	0.0								
	35.07				16.234			K Factor = 8.70	
21 to 22	18.90	1.38 120	0.0 0.0	10.000 0.0	15.926 0.0				
	18.9	0.0308	0.0	10.000	0.308			Vel = 4.05	
22 to 15	35.07	1.38 120	1T 6.0 0.0	11.000 6.000	16.234 0.0				
	53.97	0.2147	0.0	17.000	3.650			Vel = 11.58	
15 to TR	0.0	1.38 120	1E 3.0 0.0	8.500 3.000	19.884 2.166				
	53.97	0.2148	0.0	11.500	2.470			Vel = 11.58	
TR to FF	0.0	1.38 120	1S 7.0 1Z 3.0	7.000 10.000	24.520 8.032			* Fixed loss = 5.000	
	53.97	0.2147	0.0	17.000	3.650			Vel = 11.58	
FF to CTY	0.0	4.1 120	3E 13.928 0.0	500.000 32.783	36.202 0.0				
	53.97	0.0011	0.0	532.783	0.569			Vel = 1.31	
	0.0								

Final Calculations - Standard

DEAN AND ALLYN, INC.
ADAMS SCHOOL BUILDING A FIRST FLOOR

Page 3
Date 11-1-12

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/UL	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
	53.97				36.771			K Factor =	8.90

Fittings Used Summary

DEAN AND ALLYN, INC.
ADAMS SCHOOL BUILDING A FIRST FLOOR

Page 4
Date 11-1-12

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
S	Generic Swing Check Vlv	4	5	5	7	9	11	14	16	19	22	27	32	45	55	65	76	87	98	109	130
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.
 ADAMS SCHOOL BUILDING A FIRST FLOOR

Page 5
 Date 11-1-12

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
1A	25.0	4.9	7.0	na	12.96	.05	256	7.0
06	12.0	4.9	12.0	na	16.97	.05	324	12.0
07	12.0	4.9	13.64	na	18.1	.05	324	12.0
08	12.0	4.9	14.87	na	18.9	.05	324	12.0
20	12.0		15.27	na				
21	12.0		15.93	na				
22	12.0		16.23	na				
15	12.0		19.88	na				
TR	7.0		24.52	na				
FF	0.0		36.2	na				
CTY	0.0		36.77	na				

The maximum velocity is 11.58 and it occurs in the pipe between nodes 22 and 15

Water Supply Curve (C)

DEAN AND ALLYN, INC.
 ADAMS SCHOOL BUILDING A FIRST FLOOR

Page 6
 Date 11-1-12

City Water Supply:
 C1 - Static Pressure : 44
 C2 - Residual Pressure: 37
 C2 - Residual Flow : 503

