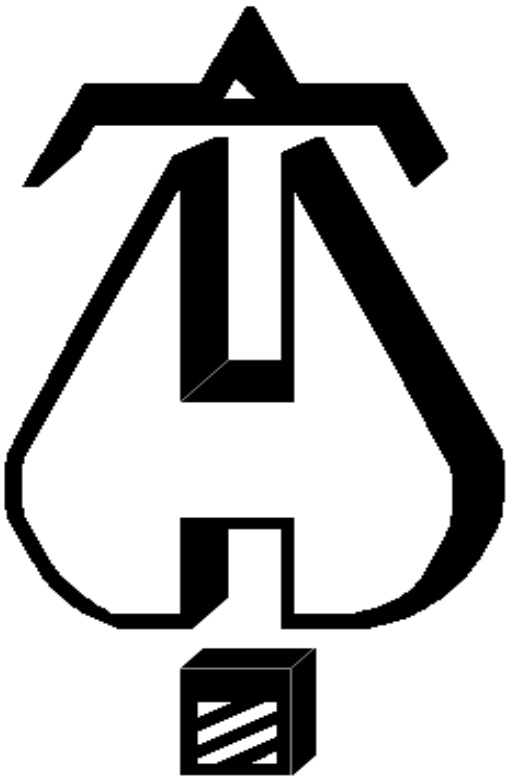

. . . Fire Protection by Computer Design

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

Job Name : PAMELA HAWKES 90 MORNING STREET THIRD FLOOR
Building :
Location : 90 MORNING STREET PORTLAND MAINE
System : ONE
Contract : 161333
Data File : MORNING STREET THIRD FLOOR.WXF

Hydraulic Design Information Sheet

Name - PAMELA HAWKES Date - 3-28-16
Location - 90 MORNING STREET PORTLAND MAINE
Building - System No. - ONE
Contractor - DEAN AND ALLYN, INC. Contract No. - 161333
Calculated By - H. KING Drawing No. - 1 OF 1
Construction: (X) Combustible ( ) Non-Combustible Ceiling Height - 9'
Occupancy - APARTMENT BUILDING

SYSTEM DESIGN

( ) NFPA 13 ( ) Lt. Haz. Ord.Haz.Gp. ( ) 1 ( ) 2 ( ) 3 ( ) Ex.Haz.
( ) NFPA 231 ( ) NFPA 231C ( ) Figure Curve
Other NFPA 13R
Specific Ruling Made By Date

Area of Sprinkler Operation - 2 HEADS	System Type	Sprinkler/Nozzle
Density - .05	(X) Wet	Make RELIABLE
Area Per Sprinkler - 324	( ) Dry	Model FIRES44
Elevation at Highest Outlet - 40	( ) Deluge	Size 7/16"
Hose Allowance - Inside -	( ) Preaction	K-Factor 4.4
Rack Sprinkler Allowance -	( ) Other	Temp.Rat.155
Hose Allowance - Outside -		

Note CUSHION 8.0 PSI

Calculation Summary: Flow Required - 38.4 Press Required - 56.0; C-Factor Used: 120 Overhead 140 Underground

WATER SUPPLY

Water Flow Test:	Pump Data:	Tank or Reservoir:
Date of Test - 4-12-2014		Cap. -
Time of Test -	Rated Cap.-	Elev.-
Static Press - 64	@ Press -	
Residual Press - 56	Elev. -	Well
Flow - 1984		Proof Flow
Elevation - 0		

Location - MORNING STREET

Source of Information - PORTLAND WATER DIST.

COMMODITY STORAGE

Commodity Class Location
Storage Ht. Area Aisle W.
Storage Method: Solid Piled % Palletized % Rack

( ) Single Row	( ) Conven. Pallet	( ) Auto. Storage	( ) Encap.
( ) Double Row	( ) Slave Pallet	( ) Solid Shelf	( ) Non
( ) Mult. Row		( ) Open Shelf	

Flue Spacing Clearance:Storage to Ceiling
Longitudinal Transverse

Horizontal Barriers Provided:

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
31	19.03	1.049	2E	4.0	10.000	18.700		K Factor = 4.40
to		120.0		0.0	4.000	0.0		
40	19.03	0.1186		0.0	14.000	1.661		Vel = 7.06
	0.0							
	19.03					20.361		K Factor = 4.22
32	19.34	1.049	E	2.0	1.500	19.322		K Factor = 4.40
to		120.0	T	5.0	7.000	0.0		
40	19.34	0.1222		0.0	8.500	1.039		Vel = 7.18
40	19.03	1.049	2E	4.0	14.200	20.361		
to		120.0	T	5.0	9.000	0.0		
41	38.37	0.4344		0.0	23.200	10.077		Vel = 14.24
41	0.0	1.38	T	6.0	6.300	30.438		
to		120.0		0.0	6.000	0.0		
42	38.37	0.1142		0.0	12.300	1.405		Vel = 8.23
42	0.0	2.157	E	6.153	30.000	31.843		
to		120.0		0.0	6.153	13.859		
43	38.37	0.0130		0.0	36.153	0.469		Vel = 3.37
43	0.0	2.157	T	12.307	6.000	46.171		
to		120.0		0.0	12.307	0.0		
22	38.37	0.0130		0.0	18.307	0.238		Vel = 3.37
22	0.0	2.157	T	12.307	3.500	46.409		
to		120.0		0.0	12.307	0.0		
21	38.37	0.0130		0.0	15.807	0.205		Vel = 3.37
21	0.0	2.157	T	12.307	3.000	46.614		
to		120.0		0.0	12.307	0.0		
23	38.37	0.0129		0.0	15.307	0.198		Vel = 3.37
23	0.0	2.157	E	6.153	24.000	46.812		
to		120.0		0.0	6.153	0.0		
TR	38.37	0.0130		0.0	30.153	0.392		Vel = 3.37
TR	0.0	2.157	S	13.537	8.000	47.204		
to		120.0		0.0	13.537	8.465		* * Fixed Loss = 5
FF	38.37	0.0130		0.0	21.537	0.279		Vel = 3.37
FF	0.0	4.1	T	21.855	30.000	55.948		
to		120.0	G	2.186	24.041	0.0		
CTY	38.37	0.0006		0.0	54.041	0.031		Vel = 0.93
	0.0							
	38.37					55.979		K Factor = 5.13

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
31	40.0	4.4	18.7	na	19.03	0.05	324	18.7
32	40.0	4.4	19.32	na	19.34	0.05	324	18.7
40	40.0		20.36	na				
41	40.0		30.44	na				
42	40.0		31.84	na				
43	8.0		46.17	na				
22	8.0		46.41	na				
21	8.0		46.61	na				
23	8.0		46.81	na				
TR	8.0		47.2	na				
FF	0.0		55.95	na				
CTY	0.0		55.98	na				

The maximum velocity is 14.24 and it occurs in the pipe between nodes 40 and 41

Water Supply Curve C

DEAN AND ALLYN, INC.
PAMELA HAWKES 90 MORNING STREET THIRD FLOOR

Date 3-28-16

City Water Supply:
- C1 - Static Pressure : 64
- C2 - Residual Pressure: 56
- C2 - Residual Flow : 1984

Demand:
- D1 - Elevation : 17.324
- D2 - System Flow : 38.368
- D2 - System Pressure : 55.979
- Hose (Demand) : _____
- D3 - System Demand : 38.368
- Safety Margin : 8.016