

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK CITY OF PORTLAND

Please Read Application And Notes, If Any, Attached

BUILDING PERMITS SECTION

PERMIT

PERMIT ISSUED
 Permit Number: 180539
 JUN - 1 2010
 CITY OF PORTLAND

This is to certify that MARDIGAN STEPHEN E / H Tech F

has permission to Install a water based fire suppression system

AT 865 FOREST AVE

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of buildings and structures, and of the application on file with this department.

Apply to Public Works for street line and grade if nature of work requires such information.

Notification of inspection must be given and written permission procured before this building or part thereof is lath or other work is done-in. 2 HOUSING NOTICE IS REQUIRED.

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

OTHER REQUIRED APPROVALS

Fire Dept. CAPT. R. [Signature]

Health Dept. _____

Appeal Board _____

Other _____

Department Name

Director - Building & Inspection Services

PENALTY FOR REMOVING THIS CARD

~~_____~~



State of Maine
Department of Public Safety
Fire Sprinkler System Permit



9086

865 Forest Avenue

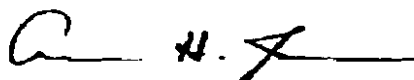
Located at: 865 Forest Avenue
 In the Town of: Portland
 Occupancy/Use: Restaurant
 Type of System: NFPA 13

Permission is hereby given to:

High Tech Fire Protection Co., Inc.
 PO Box 156
 Minot, ME 042580156
 Contractor License # 102

according to plans submittal filed with the Licensing and Inspections Unit and are now approved.
 This application form/plans are filed under log # 2101177, and no departure from application form/plans shall be made without prior approval in writing. This permit is issued under the provisions of Title 32, Chapter 20, Section 12004-I. Nothing herein shall excuse the holder of this permit for failure to comply with local ordinances, zoning laws, or other pertinent legal restrictions. Each permit issued shall be displayed/available at the site of construction.

This permit was issued on 5/14/2010 for a fee paid of \$215.00
 This permit will expire at midnight on Wednesday, November 10, 2010



Anne H. Jordan
 Commissioner

Fire Department Connection Location/Type per Local Fire Department

Within 30 days of the completion of a new fire sprinkler system or an addition to an existing fire sprinkler system, a fire sprinkler system contractor shall provide to the Licensing and Inspections Unit a copy of this permit signed and dated by the certified responsible managing supervisor representing that the fire sprinkler system has been installed according to specifications of the approved plan to the best of the supervisor's knowledge, information, and belief. This requirement is part of the sprinkler law, and neglect of this duty is grounds to not renew the contractor's license to do work in the State of Maine. All sprinkler licenses expire June 30th every year.

Job completed, tested and verified on date of _____

RMS for this job: Poulin Edward M.

RMS Signature: _____

City of Portland, Maine - Building or Use Permit Application

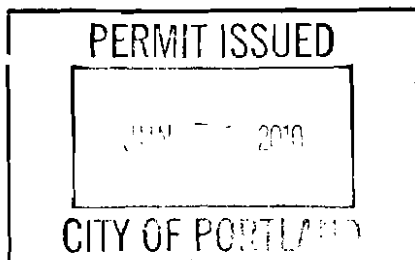
389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No: 10-0539	Issue Date:	CBL: 137 C011001
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Location of Construction: 865 FOREST AVE	Owner Name: MARDIGAN STEPHEN E	Owner Address: 460 BAXTER BLVD	Phone:
Business Name:	Contractor Name: High Tech Fire Protection	Contractor Address: P.O. Box 156 Minot	Phone: 2079982551
Lessee/Buyer's Name	Phone:	Permit Type: Fire Suppression System	Zone: B-2

Past Use: Commercial - Restaurant	Proposed Use: Commercial - Restaurant - Install a water based fire suppression system	Permit Fee: \$370.00	Cost of Work: \$35,000.00	CEO District: 4
Proposed Project Description: Install a water based fire suppression system		FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied *See Conditions	INSPECTION: Use Group: Sprinkler IBC/NFPA	
		Signature: (KL)	Signature: [Signature]	
		PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)		
		Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied		
		Signature: _____ Date: _____		

Permit Taken By: Idobson	Date Applied For: 05/18/2010	Zoning Approval		
1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules. 2. Building permits do not include plumbing, septic or electrical work. 3. Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..		Special Zone or Reviews <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan Major <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: 5/19/10	Zoning Appeal <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date:	Historic Preservation <input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date:



CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHONE

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the City of Portland Inspection Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months, if the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue with construction.**

 X **Final inspection required at completion of work performed by the fire department. A sprinkler acceptance report is due at that time.**

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OR CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.



CITY OF PORTLAND, MAINE
Department of Building Inspections

Original Receipt

_____ 5-17 20 10 _____

Received from Gerard C Boswe Jr.

Location of Work 865 T. Hill

Cost of Construction \$ _____ Building Fee: _____

Permit Fee \$ _____ Site Fee: _____

Certificate of Occupancy Fee: _____

Total: 370

Building (11) _____ Plumbing (15) _____ Electrical (12) _____ Site Plan (12) _____

Other Fice -

CBL: 137-C-11

Check #: CC Total Collected \$ 370

**No work is to be started until permit issued.
Please keep original receipt for your records.**

Taken by: S. J. J.

WHITE - Applicant's Copy
YELLOW - Office Copy
PINK - Permit Copy



Water-Based Fire Suppression System Permit

If you or the property owner owes real estate or property taxes or user charges on any property within the city, payment arrangements must be made before permits of any kind are accepted.

Installation address: 865 Forest Avenue CBL: 137-C-11

Exact location: (within structure) Entire Structure

Type of occupancy(s) (NFPA & ICC): Restaurant - Commercial

Building owner: Steve Mardigan

Managing Supervisor (RMS): Edward Poulin License No: 515

Supervisor phone: (207) 998-2551 E-mail: EPoulin@fairpoint.net

Installing contractor: High Tech Fire Protection License No: 102

Contractor phone: (207) 998-2551 E-mail: htfp@fairpoint.net

The suppression work to be done will be: New: Renovation: Addition to existing system:

This is an amendment to an existing permit: Yes: NO: Permit no: _____

NFPA Standard this system is designed to: NFPA 13 Edition: 2007 ed.

*Non-NFPA systems are not approved for use within the City of Portland.

Download a new copy of this document from www.portlandmaine.gov/fire for every submittal. Attach all working documents and complete approved submittals as may be required by the State Fire Marshal's Office on electronic PDF's in addition to full sized plans.

Contractor shall verify location and type of all FDCs shall be approved in writing by the Fire Prevention Bureau.

COST OF WORK: \$35,000
PERMIT FEE: \$370
(\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)

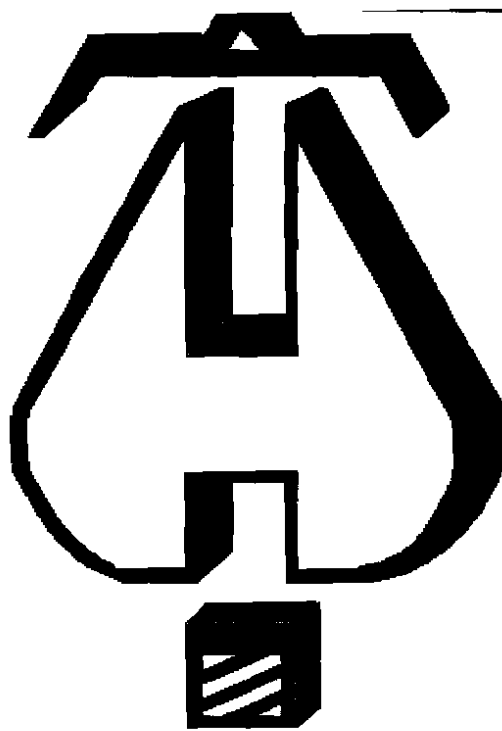
Submit all information to the Building Inspections Department, 389 Congress Street, Room 315, Portland, Maine 04101.

Prior to acceptance of any fire protection system, a complete commissioning and acceptance test must be coordinated with all fire system contractors and the Fire Department, and proper documentation of such test(s) provided.

All installation(s) must comply with NFPA and the Fire Department Technical Standard(s).

Applicant signature: [Signature] Date: 5/6/2010

**Please call and I will give Credit Card information to pay permit fee as well as give the State Fire Marshals Permit Number. Thanks.*



... Fire Protection by Computer Design

HIGH TECH FIRE PROTECTION
84 HACKETT MILLS ROAD
POLAND, ME 04274
998-2551

Job Name : Basement Calc.
Building : 865 Forest Ave.
Location : Open Basement Area
System : NFPA 13
Contract : NA
Data File : Basement Calc.wxf

Hydraulic Design Information Sheet

Name - Basement Calc.

Date - 5/5/2010

Location - Open Basement Area

Building - 865 Forest Ave.

Contractor - High Tech Fire Protection

Calculated By - Jeremy Foss

Construction: (X) Combustible () Non-Combustible

Occupancy - Misc. Storage

System No. - NFPA 13

Contract No. - NA

Drawing No. - FP-1.1

Ceiling Height - 8'-0"

S (X) NFPA 13 () Lt. Haz. Ord.Haz.Gp. () 1 (X) 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 - 900 System Type Sprinkler/Nozzle

Density - .2 (X) Wet Make Victaulic

D Area Per Sprinkler - 130 () Dry Model V2704

E Elevation at Highest Outlet - 9 () 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 - 250

N

Note

Calculation Flow Required - 512 Press Required - 67
Summary C-Factor Used: 120 Overhead 140 Underground

W Water Flow Test: Pump Data: Tank or Reservoir:

A Date of Test - 4/23/2007 Cap. -

T Time of Test - Rated Cap.- Elev.-

E Static Press - 80 @ Press -

R Residual Press - 79 Elev. - Well

Flow - 2068 Proof Flow

S Elevation - 16

U

P Location - Test Hydrant located 525' from site.

P

L Source of Information - Dennis Welch of the Portland Water District

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 () Encap.
S	R () Double Row	() Slave Pallet	() Solid Shelf () Non
T	A () Mult. Row		() Open Shelf
O	C		

R K Flue Spacing Clearance:Storage to Ceiling
A Longitudinal Transverse

G

E Horizontal Barriers Provided:

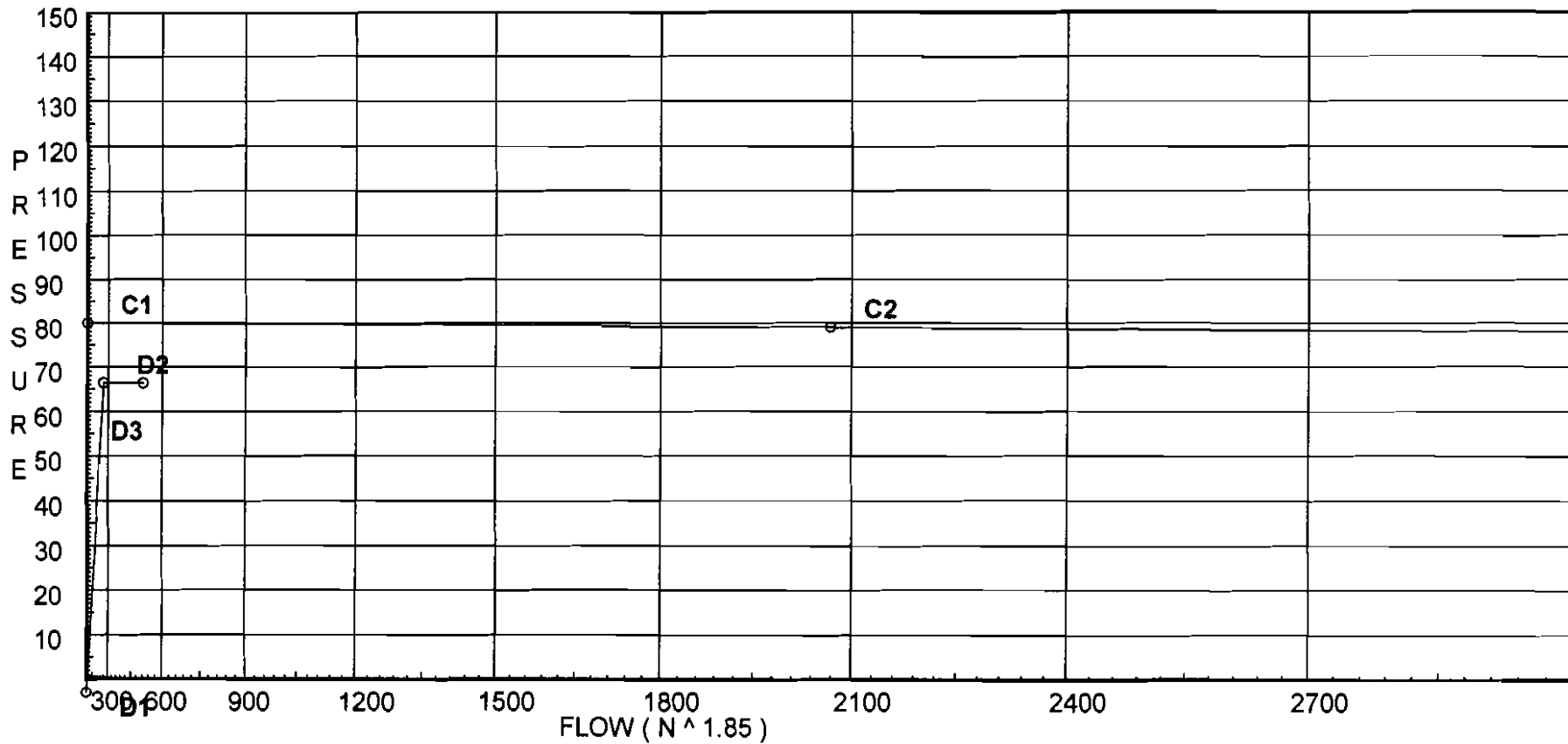
Water Supply Curve (C)

HIGH TECH FIRE PROTECTION
Basement Calc.

Page 2
Date 5/5/1

City Water Supply:
C1 - Static Pressure : 80
C2 - Residual Pressure: 79
C2 - Residual Flow : 2068

Demand:
D1 - Elevation : -3.03
D2 - System Flow : 261.5
D2 - System Pressure : 66.3
Hose (Adj City) :
Hose (Demand) : 250
D3 - System Demand : 511.5
Safety Margin : 13.5



Fittings Used Summary

HIGH TECH FIRE PROTECTION
Basement Calc.

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Date 5/5/1

Fitting Legend

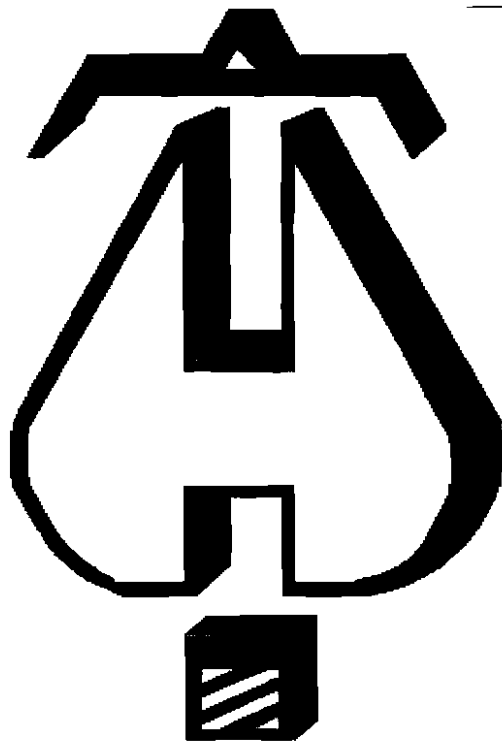
Abbrev. Name	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4	5	6	8	10	12	14	16	18	20
24																			
B Generic Butterfly Valve	0	0	0	0	0	0	7	10	0	12	9	10	12	19	21	0	0	0	0
E 90' Standard Elbow	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50
61																			
G Generic Gate Valve	0	0	1	1	1	1	1	1	1	2	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	10
121																			
V 90' Ell Firelock #001	0	0	0	0	0	3.5	4.3	5	0	6.8	8.5	10	13	0	0	0	0	0	0
X 90'Tee-BranchFirelock002	0	0	0	0	0	8.5	10.8	13	0	16	21	25	33	0	0	0	0	0	0
Z Generic Flow Switch	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50
61																			
Zib Wilkins 350A	Fitting generates a Fixed Loss Based on Flow																		

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
201	9.0	5.6	26.55	na	28.86	0.2	130	7.0
202	9.0	5.6	27.36	na	29.29	0.2	130	7.0
203	9.0	5.6	30.32	na	30.83	0.2	130	7.0
A1	9.0		53.98	na				
204	9.0	5.6	21.56	na	26.0	0.2	130	7.0
205	9.0	5.6	24.09	na	27.49	0.2	130	7.0
206	9.0	5.6	33.73	na	32.52	0.2	130	7.0
A3	9.0		54.43	na				
207	9.0	5.6	21.81	na	26.15	0.2	130	7.0
208	9.0	5.6	24.38	na	27.65	0.2	130	7.0
209	9.0	5.6	34.12	na	32.71	0.2	130	7.0
A5	9.0		55.04	na				
A2	8.5		57.72	na				
A4	8.5		57.95	na				
A6	8.5		58.6	na				
A7	8.5		60.48	na				
TOR1	8.5		62.41	na				
BOR1	2.5		67.97	na				
BASE	2.5		71.76	na				
H1	0.0		73.14	na				
H2	16.0		66.22	na				
TEST	16.0		66.38	na	250.0			

The maximum velocity is 19.97 and it occurs in the pipe between nodes 208 and 209

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftn'g's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
201	28.86	1.38		12.000	26.550			K Factor = 5.60	
to		120		0.0	0.0				
202	28.86	0.0674		12.000	0.809			Vel = 6.19	
202	29.29	1.38		12.000	27.359			K Factor = 5.60	
to		120		0.0	0.0				
203	58.15	0.2465		12.000	2.958			Vel = 12.47	
203	30.83	1.38	1T	6.0	37.700	30.317		K Factor = 5.60	
to		120		0.0	6.000	0.0			
A1	88.98	0.5416		0.0	43.700	23.666		Vel = 19.09	
A1	0.0	1.38	1T	6.0	0.500	53.983			
to		120		0.0	6.000	0.217			
A2	88.98	0.5415		0.0	6.500	3.520		Vel = 19.09	
	0.0								
	88.98					57.720		K Factor = 11.71	
*P									
204	26.00	1.049		12.000	21.556			K Factor = 5.60	
to		120		0.0	0.0	0.0			
205	26.0	0.2114		12.000	2.537			Vel = 9.65	
205	27.49	1.049		12.000	24.093			K Factor = 5.60	
to		120		0.0	0.0	0.0			
206	53.49	0.8031		12.000	9.637			Vel = 19.86	
206	32.52	1.38	1E	3.0	37.700	33.730		K Factor = 5.60	
to		120		0.0	3.000	0.0			
A3	86.01	0.5086		0.0	40.700	20.700		Vel = 18.45	
A3	0.0	1.38	1T	6.0	0.500	54.430			
to		120		0.0	6.000	0.217			
A4	86.01	0.5085		0.0	6.500	3.305		Vel = 18.45	
	0.0								
	86.01					57.952		K Factor = 11.30	
*P									
207	26.15	1.049		12.000	21.812			K Factor = 5.60	
to		120		0.0	0.0	0.0			
208	26.15	0.2138		12.000	2.565			Vel = 9.71	
208	27.65	1.049		12.000	24.377			K Factor = 5.60	
to		120		0.0	0.0	0.0			
209	53.8	0.8118		12.000	9.742			Vel = 19.97	
209	32.71	1.38	1E	3.0	37.700	34.119		K Factor = 5.60	
to		120		0.0	3.000	0.0			
A5	86.51	0.5141		0.0	40.700	20.924		Vel = 18.56	
A5	0.0	1.38	1T	6.0	0.500	55.043			
to		120		0.0	6.000	0.217			
A6	86.51	0.5140		0.0	6.500	3.341		Vel = 18.56	

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes *****
	0.0 86.51					58.601		K Factor = 11.30
*P								
A2 to A4	88.98	2.635 120	0.0	10.000	57.720	0.0		
A4 to A6	88.98	0.0232 120	0.0	10.000	57.952	0.232		Vel = 5.24
A6 to A7	86.01	2.635 120	0.0	8.000	57.952	0.0		
A7 to TOR1	174.99	0.0811 120	0.0	8.000	60.480	0.649		Vel = 10.30
TOR1 to BOR1	86.51	3.26 120	1X 17.471	13.600	58.601	0.0		
BOR1 to BASE	261.5	0.0605 120	0.0	31.071	1.879	1.879		Vel = 10.05
BASE to H1	0.0	3.26 120	2V 13.44	18.500	60.480	0.0		
H1 to H2	261.5	0.0605 120	0.0	31.940	1.932	1.932		Vel = 10.05
H2 to TEST	0.0	3.26 120	1B 13.44	6.000	62.412	2.599		
TEST to H1	261.5	0.0605 120	1T 20.159	43.007	2.599	2.599		Vel = 10.05
H1 to H2	0.0	4.26 120	1E 13.167	3.000	67.974	3.517		* Fixed loss = 3.517
H2 to TEST	261.5	0.0165 120	1Zib 0.0	13.167	3.517	0.266		Vel = 5.89
TEST to H1	0.0	6.16 140	1E 20.084	80.000	71.757	1.083		
H1 to H2	261.5	0.0020 140	1G 4.304	67.425	1.083	0.302		Vel = 2.82
H2 to TEST	0.0	6.16 140	1E 20.084	10.000	66.222	0.0		
TEST to H1	261.5	0.0020 140	1G 4.304	67.425	0.0	0.158		Vel = 2.82
	250.00							Qa = 250.00
	511.50					66.380		K Factor = 62.78



... Fire Protection by Computer Design

HIGH TECH FIRE PROTECTION
84 HACKETT MILLS ROAD
POLAND, ME 04274
998-2551

Job Name : Attic Upright Calc.
Building : 865 Forest Ave.
Location : Standard Truss Attic Space
System : NFPA 13
Contract : NA
Data File : Attic Upright Calc.wxf

Hydraulic Design Information Sheet

Name - Attic Upright Calc

Date - 5/5/2010

Location - Standard Truss Attic Space

Building - 865 Forest Ave.

System No. - NFPA 13

Contractor - High Tech Fire Protection

Contract No. - NA

Calculated By - Jeremy Foss

Drawing No. - FP-1.1

Construction: (X) Combustible () Non-Combustible

Ceiling Height - Varies

Occupancy - Attic Space

S (X) NFPA 13 () Lt. Haz. Ord.Haz.Gp. (X) 1 () 2 () 3 () Ex.Haz.

Y () NFPA 231 () NFPA 231C () Figure Curve

S Other

T Specific Ruling

Made By

Date

	Area of Sprinkler Operation - 2535	System Type	Sprinkler/Nozzle
M	Density - .15	() Wet	Make Victaulic
D	Area Per Sprinkler - 130	(X) Dry	Model V2704
E	Elevation at Highest Outlet - 27	() 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 - 250		

N Note

Calculation Summary	Flow Required - 876	Press Required - 47	C-Factor Used: 100	Overhead	140	Underground

W	Water Flow Test:	Pump Data:	Tank or Reservoir:
A	Date of Test - 4/23/2007		Cap. -
T	Time of Test -	Rated Cap.-	Elev.-
E	Static Press - 80	@ Press -	
R	Residual Press - 79	Elev. -	Well
S	Flow - 2068		Proof Flow
U	Elevation - 16		

P Location - Test Hydrant located 525' from site.

L Source of Information - Dennis Welch of the Portland Water District

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

R	K	Flue Spacing	Clearance:Storage to Ceiling
A		Longitudinal	Transverse

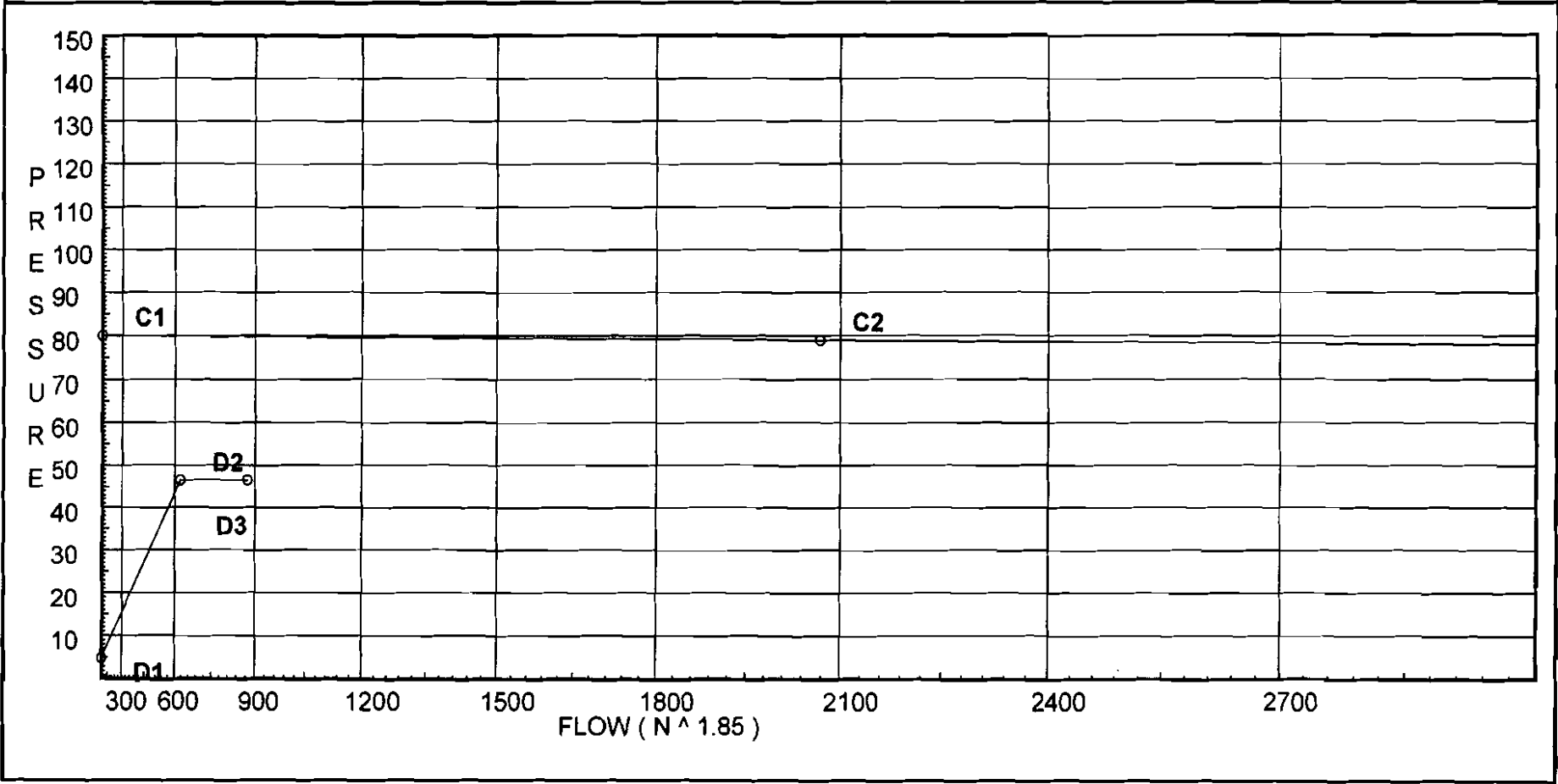
E Horizontal Barriers Provided:

Water Supply Curve (C)

HIGH TECH FIRE PROTECTION
Attic Upright Calc.

City Water Supply:
 C1 - Static Pressure : 80
 C2 - Residual Pressure: 79
 C2 - Residual Flow : 2068

Demand:
 D1 - Elevation : 4.764
 D2 - System Flow : 625.656
 D2 - System Pressure : 46.495
 Hose (Adj City) :
 Hose (Demand) : 250
 D3 - System Demand : 875.656
 Safety Margin : 33.301



Fittings Used Summary

HIGH TECH FIRE PROTECTION
Attic Upright Calc.

Page 3
Date 5/5/20

Fitting Legend
Abbrev. Name
24

		½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	
D	Dry Viking F1							3	3		5		49								
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																					
V	90' Ell Firelock #001	0	0	0	0	0	3.5	4.3	5	0	6.8	8.5	10	13	0	0	0	0	0	0	
X	90'Tee-BranchFirelock002	0	0	0	0	0	8.5	10.8	13	0	16	21	25	33	0	0	0	0	0	0	

HIGH TECH FIRE PROTECTION
Attic Upright Calc.

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
804	23.0	5.6	17.83	na	23.65	0.15	130	7.0
803	23.0	5.6	18.13	na	23.84	0.15	130	7.0
802	23.0	5.6	19.22	na	24.55	0.15	130	7.0
801	23.0	5.6	21.57	na	26.01	0.15	130	7.0
D1	23.0		24.0	na				
808	25.0	5.6	16.83	na	22.98	0.15	130	7.0
807	25.0	5.6	17.12	na	23.17	0.15	130	7.0
806	25.0	5.6	18.15	na	23.86	0.15	130	7.0
805	25.0	5.6	20.37	na	25.28	0.15	130	7.0
D3	25.0		22.68	na				
813	27.0	5.6	12.13	na	19.5	0.15	130	7.0
812	27.0	5.6	12.33	na	19.67	0.15	130	7.0
811	27.0	5.6	13.1	na	20.27	0.15	130	7.0
810	27.0	5.6	14.74	na	21.5	0.15	130	7.0
809	27.0	5.6	17.66	na	23.53	0.15	130	7.0
D5	27.0		20.4	na				
818	27.0	5.6	12.23	na	19.58	0.15	130	7.0
817	27.0	5.6	12.44	na	19.75	0.15	130	7.0
816	27.0	5.6	13.2	na	20.35	0.15	130	7.0
815	27.0	5.6	14.86	na	21.59	0.15	130	7.0
814	27.0	5.6	17.8	na	23.63	0.15	130	7.0
D7	27.0		20.56	na				
823	25.0	5.6	13.24	na	20.38	0.15	130	7.0
822	25.0	5.6	13.47	na	20.55	0.15	130	7.0
821	25.0	5.6	14.29	na	21.17	0.15	130	7.0
820	25.0	5.6	16.08	na	22.46	0.15	130	7.0
819	25.0	5.6	19.24	na	24.56	0.15	130	7.0
D9	25.0		22.21	na				
828	23.0	5.6	14.43	na	21.27	0.15	130	7.0
827	23.0	5.6	14.67	na	21.45	0.15	130	7.0
826	23.0	5.6	15.57	na	22.09	0.15	130	7.0
825	23.0	5.6	17.5	na	23.43	0.15	130	7.0
824	23.0	5.6	20.92	na	25.61	0.15	130	7.0
D11	23.0		24.13	na				
D2	20.0		28.79	na				
D4	20.0		28.81	na				
D6	20.0		28.91	na				
D8	20.0		29.11	na				
D10	20.0		29.47	na				
D12	20.0		30.03	na				
X1	20.0		35.98	na				
TOR2	9.0		42.02	na				
BOR2	2.5		48.52	na				
BASE	2.5		49.98	na				
H1	0.0		52.58	na				
H2	16.0		45.7	na				
TEST	16.0		46.5	na	250.0			

The maximum velocity is 16.44 and it occurs in the pipe between nodes 824 and D11

HIGH TECH FIRE PROTECTION
Attic Upright Calc.

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
804 to 803	23.65	1.682 100	0.0	12.000	17.830 0.0		K Factor = 5.60 Vel = 3.41
803 to 802	23.84	1.682 100	0.0	12.000	18.129 0.0		K Factor = 5.60 Vel = 6.86
802 to 801	24.55	1.682 100	0.0	12.000	19.216 0.0		K Factor = 5.60 Vel = 10.40
801 to D1	26.00	1.682 100	1E 3.533	3.500	21.566 0.0		K Factor = 5.60 Vel = 14.16
D1 to D2	98.04	0.3464	0.0	7.033	2.436		Vel = 14.16
D1 to D2	0.0	1.682 100	1T 7.065	3.000	24.002 0.0		Vel = 14.16
	98.04	0.3464	0.0	10.066	3.487		Vel = 14.16
	0.0						
	98.04				28.788		K Factor = 18.27
*P							
808 to 807	22.98	1.682 100	0.0	12.000	16.832 0.0		K Factor = 5.60 Vel = 3.32
807 to 806	23.16	1.682 100	0.0	12.000	17.116 0.0		K Factor = 5.60 Vel = 6.66
806 to 805	46.14	0.0859	0.0	12.000	1.031		Vel = 6.66
806 to 805	23.86	1.682 100	0.0	12.000	18.147 0.0		K Factor = 5.60 Vel = 10.11
805 to D3	70.0	0.1857	0.0	12.000	2.228		Vel = 10.11
805 to D3	25.28	1.682 100	1E 3.533	3.500	20.375 0.0		K Factor = 5.60 Vel = 13.76
D3 to D4	95.28	0.3285	0.0	7.033	2.310		Vel = 13.76
D3 to D4	0.0	1.682 100	1T 7.065	5.000	22.685 0.0		Vel = 13.76
D4	95.28	0.3284	0.0	12.066	3.963		Vel = 13.76
	0.0						
	95.28				28.814		K Factor = 17.75
*P							
813 to 812	19.50	1.682 100	0.0	12.000	12.125 0.0		K Factor = 5.60 Vel = 2.82
812 to 811	19.5	0.0175	0.0	12.000	0.210		Vel = 2.82
812 to 811	19.67	1.682 100	0.0	12.000	12.335 0.0		K Factor = 5.60 Vel = 5.66
811	39.17	0.0634	0.0	12.000	0.761		Vel = 5.66

HIGH TECH FIRE PROTECTION
Attic Upright Calc.

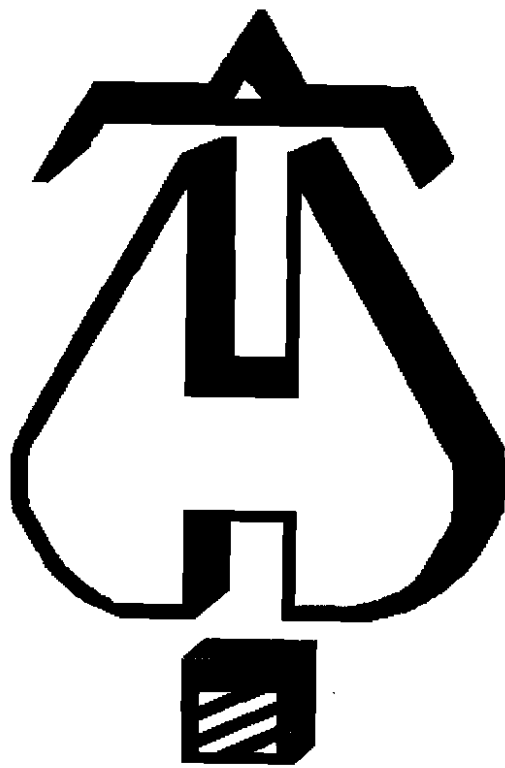
Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
811 to 810	20.26 59.43	1.682 100 0.1372	0.0 0.0 0.0	12.000 0.0 12.000	13.096 0.0 1.646		K Factor = 5.60 Vel = 8.58
810 to 809	21.50 80.93	1.682 100 0.2429	0.0 0.0 0.0	12.000 0.0 12.000	14.742 0.0 2.915		K Factor = 5.60 Vel = 11.69
809 to D5	23.54 104.47	1.682 100 0.3894	1E 3.533 0.0 0.0	3.500 3.533 7.033	17.657 0.0 2.739		K Factor = 5.60 Vel = 15.08
D5 to D6	0.0 104.47	1.682 100 0.3894	1T 7.065 0.0 0.0	7.000 7.066 14.066	20.396 3.032 5.478		Vel = 15.08
	0.0 104.47				28.906		K Factor = 19.43
*P							
818 to 817	19.58 19.58	1.682 100 0.0176	0.0 0.0 0.0	12.000 0.0 12.000	12.226 0.0 0.211		K Factor = 5.60 Vel = 2.83
817 to 816	19.75 39.33	1.682 100 0.0639	0.0 0.0 0.0	12.000 0.0 12.000	12.437 0.0 0.767		K Factor = 5.60 Vel = 5.68
816 to 815	20.35 59.68	1.682 100 0.1383	0.0 0.0 0.0	12.000 0.0 12.000	13.204 0.0 1.659		K Factor = 5.60 Vel = 8.62
815 to 814	21.59 81.27	1.682 100 0.2448	0.0 0.0 0.0	12.000 0.0 12.000	14.863 0.0 2.937		K Factor = 5.60 Vel = 11.73
814 to D7	23.62 104.89	1.682 100 0.3924	1E 3.533 0.0 0.0	3.500 3.533 7.033	17.800 0.0 2.760		K Factor = 5.60 Vel = 15.15
D7 to D8	0.0 104.89	1.682 100 0.3924	1T 7.065 0.0 0.0	7.000 7.066 14.066	20.560 3.032 5.519		Vel = 15.15
	0.0 104.89				29.111		K Factor = 19.44
*P							
823 to 822	20.38 20.38	1.682 100 0.0189	0.0 0.0 0.0	12.000 0.0 12.000	13.241 0.0 0.227		K Factor = 5.60 Vel = 2.94
822 to 821	20.55 40.93	1.682 100 0.0688	0.0 0.0 0.0	12.000 0.0 12.000	13.468 0.0 0.826		K Factor = 5.60 Vel = 5.91

HIGH TECH FIRE PROTECTION
Attic Upright Calc.

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
821 to 820	21.17 62.1	1.682 100 0.1488	0.0 0.0 0.0	12.000 0.0 12.000	14.294 0.0 1.786		K Factor = 5.60		
820 to 819	22.46 84.56	1.682 100 0.2633	0.0 0.0 0.0	12.000 0.0 12.000	16.080 0.0 3.160		K Factor = 5.60		
819 to D9	24.56 109.12	1.682 100 0.4223	1E 0.0 0.0	3.533 3.533 7.033	3.500 0.0 2.970		K Factor = 5.60		
D9 to D10	0.0 109.12	1.682 100 0.4221	1T 0.0 0.0	7.065 7.066 12.066	5.000 2.166 5.093			Vel = 15.76	
	0.0 109.12					29.469		K Factor = 20.10	
*P									
828 to 827	21.27 21.27	1.682 100 0.0205	0.0 0.0 0.0	12.000 0.0 12.000	14.427 0.0 0.246		K Factor = 5.60		
827 to 826	21.45 42.72	1.682 100 0.0745	0.0 0.0 0.0	12.000 0.0 12.000	14.673 0.0 0.894		K Factor = 5.60		
826 to 825	22.10 64.82	1.682 100 0.1610	0.0 0.0 0.0	12.000 0.0 12.000	15.567 0.0 1.932		K Factor = 5.60		
825 to 824	23.42 88.24	1.682 100 0.2850	0.0 0.0 0.0	12.000 0.0 12.000	17.499 0.0 3.420		K Factor = 5.60		
824 to D11	25.62 113.86	1.682 100 0.4567	1E 0.0 0.0	3.533 3.533 7.033	3.500 0.0 3.212		K Factor = 5.60		
D11 to D12	0.0 113.86	1.682 100 0.4568	1T 0.0 0.0	7.065 7.066 10.066	3.000 1.299 4.598			Vel = 16.44	
	0.0 113.86					30.028		K Factor = 20.78	
*P									
D2 to D4	98.04 98.04	4.26 100 0.0037	0.0 0.0 0.0	7.000 0.0 7.000	28.788 0.0 0.026			Vel = 2.21	
D4 to D6	95.28 193.32	4.26 100 0.0131	0.0 0.0 0.0	7.000 0.0 7.000	28.814 0.0 0.092			Vel = 4.35	

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
D6	104.47	4.26		7.000	28.906				
to		100		0.0	0.0				
D8	297.79	0.0293		7.000	0.205		Vel =	6.70	
D8	104.89	4.26		7.000	29.111				
to		100		0.0	0.0				
D10	402.68	0.0511		7.000	0.358		Vel =	9.06	
D10	109.12	4.26		7.000	29.469				
to		100		0.0	0.0				
D12	511.8	0.0799		7.000	0.559		Vel =	11.52	
D12	113.86	4.26	2V 12.78	23.700	30.028				
to		100	1X 15.036	27.815	0.0				
X1	625.66	0.1156		51.515	5.957		Vel =	14.08	
X1	0.0	4.26		11.000	35.985				
to		100		0.0	4.764				
TOR2	625.66	0.1156		11.000	1.272		Vel =	14.08	
TOR2	0.0	4.26	1G 1.879	6.500	42.021				
to		100	1D 4.699	25.372	2.815				
BOR2	625.66	0.1157	1T 18.795	31.872	3.686		Vel =	14.08	
BOR2	0.0	4.26	1E 13.167	4.500	48.522				
to		120	0.0	13.167	0.0				
BASE	625.66	0.0825		17.667	1.458		Vel =	14.08	
BASE	0.0	6.16	1E 20.084	80.000	49.980				
to		140	1G 4.304	67.425	1.083				
H1	625.66	0.0103	1T 43.037	147.425	1.519		Vel =	6.74	
H1	0.0	16.41		525.000	52.582				
to		140		0.0	-6.930				
H2	625.66	0.0001		525.000	0.046		Vel =	0.95	
H2	0.0	6.16	1E 20.084	10.000	45.698				
to		140	1G 4.304	67.425	0.0				
TEST	625.66	0.0103	1T 43.037	77.425	0.797		Vel =	6.74	
	250.00						Qa =	250.00	
	875.66				46.495		K Factor =	128.42	

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
	0.0 140.25				46.348		K Factor = 20.60
*P							
411 to 412	26.00 26.0	1.682 100 0.0297	0.0	11.500 0.0	23.613 0.0		K Factor @ node EQ01 Vel = 3.75
412 to 413	26.19 52.19	1.682 100 0.1079	0.0	6.100 0.0	23.955 0.0		K Factor @ node EQ01 Vel = 7.54
413 to 414	26.54 78.73	1.682 100 0.2308	0.0	12.100 0.0	24.613 0.0		K Factor @ node EQ01 Vel = 11.37
414 to 415	28.01 106.74	1.682 100 0.4053	0.0	12.000 0.0	27.406 0.0		K Factor @ node EQ01 Vel = 15.41
415 to B4	30.40 137.14	1.682 100 0.6443	1E	3.533 0.0	4.900 3.533	32.270 0.0	K Factor @ node EQ01 Vel = 19.80
B4 to B5	0.0 137.14	1.682 100 0.6444	1T	7.065 0.0	4.000 7.066	37.703 1.732	Vel = 19.80
	0.0 137.14				46.566		K Factor = 20.10
*P							
416 to 417	26.16 26.16	1.682 100 0.0301	0.0	11.500 0.0	23.898 0.0		K Factor @ node EQ01 Vel = 3.78
417 to 418	26.34 52.5	1.682 100 0.1090	0.0	6.100 0.0	24.244 0.0		K Factor @ node EQ01 Vel = 7.58
418 to 419	26.71 79.21	1.682 100 0.2334	0.0	12.100 0.0	24.909 0.0		K Factor @ node EQ01 Vel = 11.44
419 to 420	28.17 107.38	1.682 100 0.4098	0.0	12.000 0.0	27.733 0.0		K Factor @ node EQ01 Vel = 15.50
420 to B6	30.58 137.96	1.682 100 0.6515	1E	3.533 0.0	4.900 3.533	32.651 0.0	K Factor @ node EQ01 Vel = 19.92
B6 to B7	0.0 137.96	1.682 100 0.6515	1T	7.065 0.0	4.000 7.066	38.145 1.732	Vel = 19.92

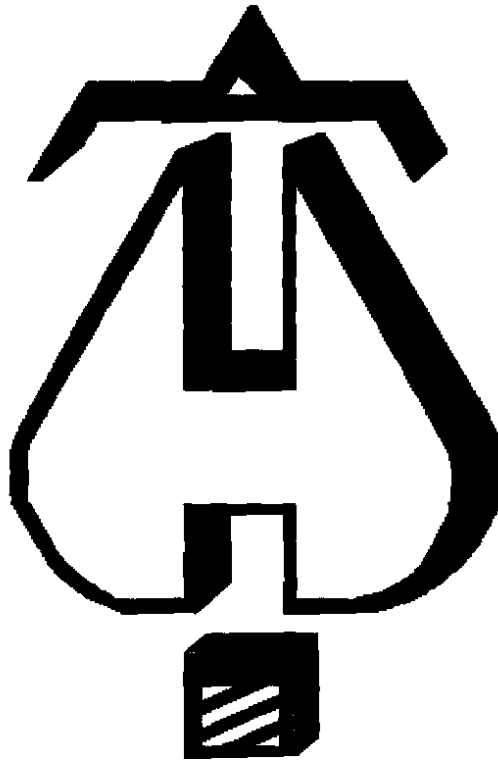


... Fire Protection by Computer Design

HIGH TECH FIRE PROTECTION
84 HACKETT MILLS ROAD
POLAND, ME 04274
998-2551

Job Name : Seating Area Calc.
Building : 865 Forest Ave.
Location : Main Floor Ceiling Area
System : NFPA 13
Contract : NA
Data File : Seating Area Calc.wxf

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
	0.0 137.96					47.086		K Factor = 20.11	
*P									
421 to 422	33.01	1.682 100	0.0	12.100	38.069	0.0		K Factor @ node EQ01	
422 to 423	33.01	0.0463	0.0	12.100	0.560	0.0		Vel = 4.77	
422 to 423	33.26	1.682 100	0.0	12.000	38.629	0.0		K Factor @ node EQ01	
423 to 423	66.27	0.1677	0.0	12.000	2.013	0.0		Vel = 9.57	
423 to B8	34.11	1.682 100	1E	3.533	4.900	40.642		K Factor @ node EQ01	
B8 to B8	100.38	0.3618	0.0	8.433	3.051	0.0		Vel = 14.49	
B8 to B9	0.0	1.682 100	1T	7.065	2.000	43.693			
B9 to B9	100.38	0.3617	0.0	9.066	3.279	0.866		Vel = 14.49	
	0.0 100.38					47.838		K Factor = 14.51	
*P									
424 to 425	34.43	1.682 100	0.0	12.100	41.400	0.0		K Factor @ node EQ01	
425 to 425	34.43	0.0499	0.0	12.100	0.604	0.0		Vel = 4.97	
425 to 426	34.67	1.682 100	0.0	12.000	42.004	0.0		K Factor @ node EQ01	
426 to 426	69.1	0.1813	0.0	12.000	2.176	0.0		Vel = 9.98	
426 to B10	35.57	1.682 100	1T	7.065	4.900	44.180		K Factor @ node EQ01	
B10 to B10	104.67	0.3909	0.0	11.966	4.677	0.0		Vel = 15.11	
	0.0 104.67					48.857		K Factor = 14.97	
*P									
B1 to B3	147.83	4.26 100	0.0	7.900	46.285	0.0			
B3 to B3	147.83	0.0080	0.0	7.900	0.063	0.0		Vel = 3.33	
B3 to B5	140.25	4.26 100	0.0	7.900	46.348	0.0			
B5 to B5	288.08	0.0276	0.0	7.900	0.218	0.0		Vel = 6.48	
B5 to B7	137.14	4.26 100	0.0	9.200	46.566	0.0			
B7 to B7	425.22	0.0565	0.0	9.200	0.520	0.0		Vel = 9.57	
B7 to B9	137.95	4.26 100	0.0	7.900	47.086	0.0			
B9 to B9	563.17	0.0952	0.0	7.900	0.752	0.0		Vel = 12.68	



... Fire Protection by Computer Design

HIGH TECH FIRE PROTECTION
84 HACKETT MILLS ROAD
POLAND, ME 04274
998-2551

Job Name : Attic Head Calc.
Building : 865 Forest Ave.
Location : Scissor Truss Attic Space
System : NFPA 13
Contract : NA
Data File : Attic Head Calc.wxf

Hydraulic Design Information Sheet

Name - Attic Head Calc Date - 5/5/2010
 Location - Scissor Truss Attic Space
 Building - 865 Forest Ave. System No. - NFPA 13
 Contractor - High Tech Fire Protection Contract No. - NA
 Calculated By - Jeremy Foss Drawing No. - FP-1.1
 Construction: (X) Combustible () Non-Combustible Ceiling Height - Varies
 Occupancy - Attic Space

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 - 1832 System Type Sprinkler/Nozzle
 Density - .1 () Wet Make Tyco
 D Area Per Sprinkler - 380 (X) Dry Model BB2
 E Elevation at Highest Outlet - 28 () Deluge Size 1/2"
 S Hose Allowance - Inside - () Preaction K-Factor 5.6
 I Rack Sprinkler Allowance - () Other Temp.Rat.212
 G Hose Allowance - Outside - 100

N Note

Calculation Flow Required - 369 Press Required - 73
 Summary C-Factor Used: 100 Overhead 140 Underground

W Water Flow Test: Pump Data: Tank or Reservoir:
 A Date of Test - 4/23/2007 Cap. -
 T Time of Test - Rated Cap. - Elev.-
 E Static Press - 80 @ Press -
 R Residual Press - 79 Elev. - Well
 Flow - 2068 Proof Flow
 S Elevation - 16

U Location - Test Hydrant located 525' from site.

P Source of Information - Dennis Welch of the Portland Water District
 L
 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 () Encap.
 S R () Double Row () Slave Pallet () Solid Shelf () Non
 T A () Mult. Row () Open Shelf

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

G Horizontal Barriers Provided:
 E

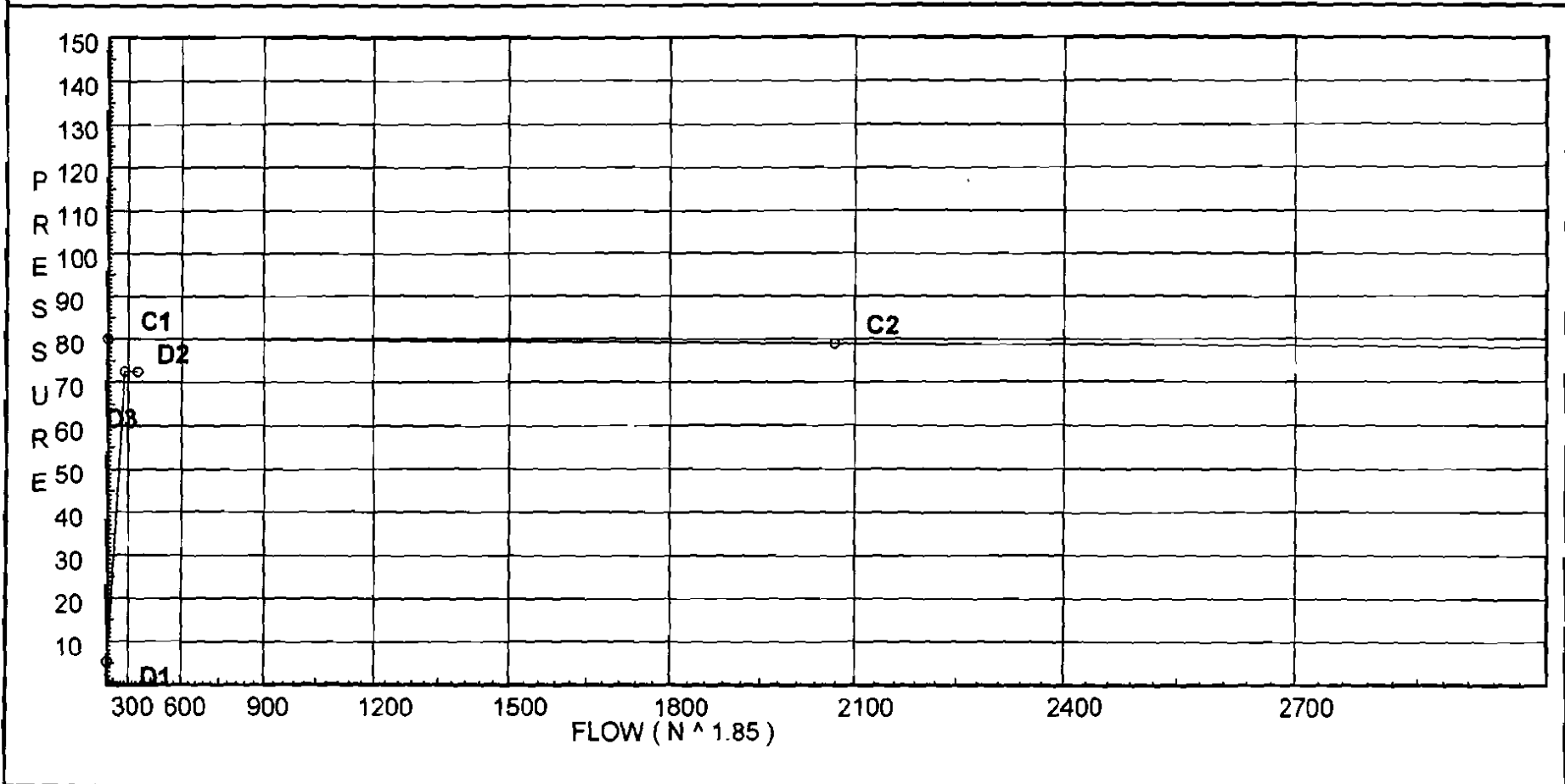
Water Supply Curve (C)

HIGH TECH FIRE PROTECTION
Attic Head Calc.

Page 2
Date 5/5/2010

City Water Supply:
C1 - Static Pressure : 80
C2 - Residual Pressure: 79
C2 - Residual Flow : 2068

Demand:
D1 - Elevation : 5.197
D2 - System Flow : 268.659
D2 - System Pressure : 72.378
Hose (Adj City) :
Hose (Demand) : 100
D3 - System Demand : 368.659
Safety Margin : 7.58



Fittings Used Summary

HIGH TECH FIRE PROTECTION
Attic Head Calc.

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Date 5/5/2010

Fitting Legend
Abbrev. Name
24

		½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	
D	Dry Viking F1								3	3	5		49								
E	90' Standard Elbow	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	
G	Generic Gate Valve	0	0	1	1	1	1	1	1	1	2	2	3	4	5	6	7	8	10	11	
T	90' Flow Thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	
V	90' Ell Firelock #001	0	0	0	0	0	3.5	4.3	5	0	6.8	8.5	10	13	0	0	0	0	0	0	0
X	90'Tee-BranchFirelock002	0	0	0	0	0	8.5	10.8	13	0	16	21	25	33	0	0	0	0	0	0	0

HIGH TECH FIRE PROTECTION
Attic Head Calc.

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
601	28.0	5.6	46.05	na	38.0	0.1	380	46.0
602	28.0	5.6	46.09	na	38.02	0.1	380	46.0
603	28.0	5.6	46.23	na	38.08	0.1	380	46.0
604	28.0	5.6	46.54	na	38.2	0.1	380	46.0
605	28.0	5.6	47.07	na	38.42	0.1	380	46.0
606	28.0	5.6	47.87	na	38.74	0.1	380	46.0
607	28.0	5.6	48.99	na	39.2	0.1	380	46.0
C1	28.0		58.74	na				
C2	20.0		67.17	na				
X1	20.0		68.81	na				
TOR2	9.0		73.84	na				
BOR2	2.5		77.43	na				
BASE	2.5		77.73	na				
H1	0.0		79.13	na				
H2	16.0		72.21	na				
TEST	16.0		72.38	na	100.0			

The maximum velocity is 15.81 and it occurs in the pipe between nodes 607 and C1

HIGH TECH FIRE PROTECTION
Attic Head Calc.

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
601	38.00	2.635		6.000	46.046			K Factor = 5.60	
to		100	0.0	0.0	0.0				
602	38.0	0.0067	0.0	6.000	0.040			Vel = 2.24	
602	38.02	2.635	0.0	6.000	46.086			K Factor = 5.60	
to		100	0.0	0.0	0.0				
603	76.02	0.0243	0.0	6.000	0.146			Vel = 4.47	
603	38.07	2.635	0.0	6.000	46.232			K Factor = 5.60	
to		100	0.0	0.0	0.0				
604	114.09	0.0515	0.0	6.000	0.309			Vel = 6.71	
604	38.21	2.635	0.0	6.000	46.541			K Factor = 5.60	
to		100	0.0	0.0	0.0				
605	152.3	0.0878	0.0	6.000	0.527			Vel = 8.96	
605	38.42	2.635	0.0	6.000	47.068			K Factor = 5.60	
to		100	0.0	0.0	0.0				
606	190.72	0.1333	0.0	6.000	0.800			Vel = 11.22	
606	38.74	2.635	0.0	6.000	47.868			K Factor = 5.60	
to		100	0.0	0.0	0.0				
607	229.46	0.1877	0.0	6.000	1.126			Vel = 13.50	
607	39.20	2.635	1V 4.213	34.600	48.994			K Factor = 5.60	
to		100	0.0	4.213	0.0				
C1	268.66	0.2512	0.0	38.813	9.748			Vel = 15.81	
C1	0.0	2.635	1T 11.758	8.000	58.742				
to		100	0.0	11.757	3.465				
C2	268.66	0.2512	0.0	19.757	4.962			Vel = 15.81	
C2	0.0	4.26	2V 12.78	39.900	67.169				
to		100	1X 15.036	27.815	0.0				
X1	268.66	0.0242	0.0	67.715	1.639			Vel = 6.05	
X1	0.0	4.26	0.0	11.000	68.808				
to		100	0.0	0.0	4.764				
TOR2	268.66	0.0243	0.0	11.000	0.267			Vel = 6.05	
TOR2	0.0	4.26	1G 1.879	6.500	73.839				
to		100	1D 4.699	25.372	2.815				
BOR2	268.66	0.0242	1T 18.795	31.872	0.771			Vel = 6.05	
BOR2	0.0	4.26	1E 13.167	4.500	77.425				
to		120	0.0	13.167	0.0				
BASE	268.66	0.0173	0.0	17.667	0.306			Vel = 6.05	
BASE	0.0	6.16	1E 20.084	80.000	77.731				
to		140	1G 4.304	67.425	1.083				
H1	268.66	0.0022	1T 43.037	147.425	0.317			Vel = 2.89	
H1	0.0	16.41	0.0	525.000	79.131				
to		140	0.0	0.0	-6.930				
H2	268.66	0.0	0.0	525.000	0.010			Vel = 0.41	

▲ HIGH TECH FIRE PROTECTION
Attic Head Calc.

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
H2 to TEST	0.0 268.66	6.16 140 0.0022	1E 20.084 1G 4.304 1T 43.037	10.000 67.425 77.425	72.211 0.0 0.167		Vel = 2.89
	100.00 368.66				72.378		Qa = 100.00 K Factor = 43.33

HIGH TECH FIRE PROTECTION

PO BOX 156 • MINOT, ME 04258-0156
 PHONE: (207)998-2551 • FAX: (207)998-4187



Letter of Transmittal

To: Building Inspections Department
 380 Congress Street – Room 315
 Portland ME 04101

Date: 5/6/2010	Job No.
Attention:	
Re: Preiiminary Design for 865 Forest Avenue	

137 C 011

We are sending you:

- Owners Manuals
 Preliminary Plan
 Asbuilt Plans
 Permit Check
 Product Data
 Drawings on CD
 Permit Application
 Hydraulic Calculations

Copies	Date	No.	Description
1	5/6/2010		Preliminary Plan for 865 Forest Avenue
1	5/6/2010		Preliminary Plan in PDF Format on CD for 865 Forest Avenue
1	5/6/2010		Permit Application Form for 865 Forest Avenue
1	5/6/2010		Hydraulic Calculations for 865 Forest Avenue

These are Transmitted as checked below:

- For Approval
 For your use
 Return _____ corrected copy
 As requested
 For review and comment

Comments:

If you have any questions or concerns about the design please give me a call anytime.

RECEIVED

Signed : Jeremy Foss

MAY 10 2010

Dept. of Building Inspections

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