

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



# CITY OF PORTLAND

# BUILDING PERMIT

This is to certify that  
**FREEDOM FIRE PROTECTION**  
**209 QUAKER RIDGE RD**  
**CASCO, ME 04015**

For installation at  
**191 PINE ST**  
**MAIN BUILDING**

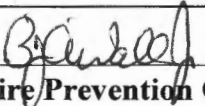
Job ID: **2012-09-4970-FAFS**

CBL: **063- E-007-001**

has permission to **install NFPA 13R supervised sprinkler system**  
provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statues of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.

A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

  
Fire Prevention Officer

58

Code Enforcement Officer / Plan Reviewer

THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY  
PENALTY FOR REMOVING THIS CARD

## BUILDING PERMIT INSPECTION PROCEDURES

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

or email: [buildinginspections@portlandmaine.gov](mailto: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 Inspections 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.**

### **Final Fire**

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



# PORTLAND MAINE

*Strengthening a Remarkable City, Building a Community for Life* • [www.portlandmaine.gov](http://www.portlandmaine.gov)

Director of Planning and Urban Development  
Jeff Levine

Job ID: 2012-09-4970-FAFS  
install NFPA 13R supervised sprinkler  
system

For installation at:  
191 PINE ST  
MAIN BUILDING

CBL: 063- E-007-001

## Conditions of Approval:

### Fire

Installation shall be in accordance with the City of Portland Fire Department Regulations and NFPA 13R.

**A copy of the State Sprinkler permit with RMS date and signature shall be provided prior to scheduling of the final inspection.**

**The requirement for individual floor control valve assemblies has been removed for this job and is not precedence setting.**

Sprinkler supervision shall be provided in accordance with NFPA 101, *Life Safety Code*, and NFPA 72, *National Fire Alarm and Signaling Code*.

Sprinkler protection shall be maintained. Where the system is to be shut down for maintenance or repair, the system shall be checked at the end of each day to insure the system has been placed back in service.

Fire department connection shall be two 2 1/2" and shall indicate auto sprinkler.

System acceptance and commissioning must be coordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.

A Knox Box is required.

**City of Portland, Maine - Building or Use Permit Application**

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

Job No: 2012-09-4970-FAFS	Date Applied: 9/17/2012	CBL: 063- E-007-001	
Location of Construction: 191 PINE ST	Owner Name: VICKERY PINE LLC	Owner Address: 255 WESTERN PROMENADE PORTLAND, ME 04101	Phone:
Business Name:	Contractor Name: Freedom Fire Protection, Inc.	Contractor Address: 209 QUAKER RIDGE RD CASCO MAINE 04015	Phone: 671-8639
Lessee/Buyer's Name:	Phone:	Permit Type: FIRE SUPPRESSION	Zone: R-4
Past Use: Seven residential dwelling units	Proposed Use: Same: Seven residential dwelling units - to install fire suppression system in MAIN Bldg	Cost of Work: \$5,000.00	CEO District:
		Fire Dept: 10/22/12 <input checked="" type="checkbox"/> Approved w/ conditions <input type="checkbox"/> Denied <input type="checkbox"/> N/A	Inspection: Use Group: Type:
		Signature: <i>Bjorn [Signature]</i> (58)	Signature:
Proposed Project Description: Fire Sprinkler System		Pedestrian Activities District (P.A.D.)	

Permit Taken By: Lannie	<b>Zoning Approval</b>
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<p>1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.</p> <p>2. Building Permits do not include plumbing, septic or electrical work.</p> <p>3. Building permits are void if work is not started within six (6) months of the date of issuance. False informatin may invalidate a building permit and stop all work.</p>	<p><b>Special Zone or Reviews</b></p> <p><input type="checkbox"/> Shoreland</p> <p><input type="checkbox"/> Wetlands</p> <p><input type="checkbox"/> Flood Zone</p> <p><input type="checkbox"/> Subdivision</p> <p><input type="checkbox"/> Site Plan</p> <p>___ Maj ___ Min ___ MM</p> <p>Date: <i>9/17/12</i></p> <p><b>CERTIFICATION</b></p>	<p><b>Zoning Appeal</b></p> <p><input type="checkbox"/> Variance</p> <p><input type="checkbox"/> Miscellaneous</p> <p><input type="checkbox"/> Conditional Use</p> <p><input type="checkbox"/> Interpretation</p> <p><input type="checkbox"/> Approved</p> <p><input type="checkbox"/> Denied</p> <p>Date:</p>	<p><b>Historic Preservation</b></p> <p><i>- within -</i></p> <p><input type="checkbox"/> Not in Dist or Landmark</p> <p><input type="checkbox"/> Does not Require Review</p> <p><input type="checkbox"/> Requires Review</p> <p><input type="checkbox"/> Approved</p> <p><input type="checkbox"/> Approved w/Conditions</p> <p><input type="checkbox"/> Denied</p> <p><i>Any exterior work requires a separate review and approval</i></p>
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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

## Benjamin Wallace - Re: 191 Pine street

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**From:** Benjamin Wallace  
**To:** David Lloyd  
**Date:** 10/22/2012 4:24 PM  
**Subject:** Re: 191 Pine street  
**CC:** Chris Pirone; Jason Vickery  
**Attachments:** Benjamin Wallace.vcf

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Hi David,

The Fire Department has approved your request to maintain the historically valuable dwelling unit doors and relieve the requirement for individual floor control valve assemblies for the sprinkler system. This does not apply to the thin panel door at the top of the basement stair and the other doors into the common areas have to be smoke tight, self-closing and positive latching.

A supervised fire alarm system is required.

Thanks,

Lt. Benjamin Wallace Jr.  
Fire Prevention Officer  
Portland Fire Department  
380 Congress Street  
Portland, Maine 04101  
(207)874-8400  
wallaceb@portlandmaine.gov

>>> David Lloyd <lloyd@archetypepa.com> 10/22/2012 9:19 AM >>>

Ben

As requested on 191 Pine street we are submitting a letter from the Maine historic Preservation Commission in regards to preserving the corridor doors and limiting the sprinkler piping in the corridors. Thank you for your time and expertise in reviewing this matter for us.

Regards

David

**David Lloyd**

Archetype, P.A.  
48 Union Wharf  
Portland, ME 04101  
Tele: (207) 772-6022  
Fax: (207) 772-4056  
Cell: (207) 831-8627  
[lloyd@archetypepa.com](mailto:lloyd@archetypepa.com)  
<http://www.archetype-architects.com>



# Water-Based Fire Suppression System Permit

R-4 to Historic

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: 191 Pine Street CBL: 63-E-7

Exact location: (within structure) Basement, 1st, 2nd, 3rd, and 4th Floors

Type of occupancy(s) (NFPA & ICC): NFPA 13R Residential 7 res. DU.

Building owner: Jason Vickery Nickery Inc LLC 255 Western Prom - 04102

Managing Supervisor (RMS): Timothy Vess License No: 348

Supervisor phone: 207-627-4109 E-mail: wwales@maine.rr.com

Installing contractor: Freedom Fire Protection, Inc. License No: 295

Contractor phone: 207-671-8639 E-mail: wwales@maine.rr.com

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: 13R Edition: 2010

\*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](http://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.

<b>COST OF WORK:</b> <u>\$24,678.00</u>
<b>PERMIT FEE:</b> <u>\$270.00</u>
(\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)
<b>RECEIVED</b>
<b>SEP 17 2012</b>
Dept. of Building Inspections City of Portland Maine

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: Mark Radyszewski Date: September 14, 2012



PAUL R. LEPAGE  
GOVERNOR

MAINE HISTORIC PRESERVATION COMMISSION  
55 CAPITOL STREET  
65 STATE HOUSE STATION  
AUGUSTA, MAINE  
04333

EARLE G. SHETTLEWORTH, JR.  
DIRECTOR

October 19, 2012

D. Jason Vickery  
Vickery Pine LLC  
255 Western Promenade  
Portland, ME 04102

RE: Fire doors and sprinkler system installation at the Edmund Phinney House, 191 Pine St., Portland

Dear Mr. Vickery:

This letter is in response to your email correspondence with Mike Johnson of my staff regarding the Portland Fire Department's permit review. It is our understanding that the Portland Fire Department is willing to consider alternatives to replacement of the historic unit entry doors and the installation of a sprinkler riser within the grand stair hall if the Commission determines these aspects of the project would adversely affect the historic and/or architectural integrity of the Edmund Phinney House on Pine Street.

The Commission has concluded that replacement of original historic panel doors at the unit entries with fire rated doors would compromise the historic integrity of the Phinney House by removing important character defining features. While replacement fire rated doors can approximate the appearance of original historic panel doors, they would not approach the detailing or level of craftsmanship that is inherent to the Phinney House doors and would not be compatible with the architecture found elsewhere in the house.

Additionally, the main stair hall is one of the most significant interior spaces in the Phinney House and is characterized by detailed crown moldings, trim, baseboards and the curved handrail and balustrade. While the stair hall on these floors is already proposed to be altered by relocating the rear wall closer to the stairs, this will be done in a manner that preserves the finished high-style architectural character of the space by re-attaching the crown molding and baseboard trim to the new wall. Furthermore, the proposed sprinkler system was designed, in part, to minimize alteration of the stair hall by limiting the visibility of mechanical equipment. Based on the information that has been provided to us, it is our understanding that the floor control assembly requested by the City of Portland's Fire Department would necessitate exposed risers and control valves within the stair hall on the second and third floors. We feel that the installation of such mechanical equipment into the space is incongruous with the finely detailed finishes encountered in the stair hall and the other primary interior spaces of the Phinney House.

As is indicated above, we would consider the replacement of original interior doors and the installation of exposed risers and control valves in the stair hall to

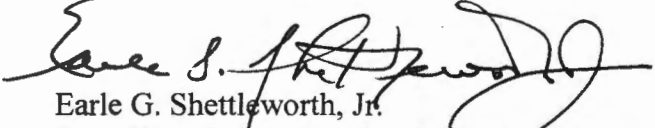
MAINE HISTORIC PRESERVATION COMMISSION

55 Capitol Street  
State House Station 65  
Augusta, Maine 04333



constitute an adverse effect on the Phinney House. Our office feels that alternatives that would enable an acceptable level of safety should be considered in this case. Please contact Mr. Johnson of this office if we can be of further assistance in this matter.

Sincerely,

  
Earle G. Shettleworth, Jr.  
State Historic Preservation Officer



## **Freedom Fire Protection, Inc.**

*30 Years of Fire Protection Experience*

209 Quaker Ridge Road

Casco, Maine 04015

Phone (207) 627-4109 Fax (207) 627-7340

September 17, 2012

Portland City Hall  
Third Floor Room #315  
Portland, Maine 04101

Attention: Captain Chris Pirone

Ref: 191 Pine Street  
Portland, Maine

Subject: Fire Sprinkler Plan Review

Enclosed please find for your review and comment the following sprinkler information.

- Fire Suppression System Permit
- Permit Fee check
- Freedom Fire Protections drawings FP1, FP2, FP3, FP4
- Electronic Disc PDF sprinkler plans.
- Hydraulic Calculations.

Please get in touch with me to discuss any questions or if you need additional information.

Regards,

Mark Radziszewski

(O) 207-627-4109

(F) 207-627-7340

(C) 207-318-9992

E-mail [markrad@maine.rr.com](mailto:markrad@maine.rr.com)



... Fire Protection by Computer Design

FREEDOM FIRE PROTECTION INC.  
209 QUAKER RIDGE ROAD  
CASCO, MAINE 04015  
207-627-4109

Job Name : 191 PINE STREET PORTLAND HC 1  
Building : 191 PINE STREET  
Location : PORTLAND, MAINE 04104  
System : #1 AREA#1  
Contract :  
Data File : 191 PINE STREET PORTLAND HC1.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - 191 PINE STREET PORTLAND Date - 9/14/12  
 Location - PORTLAND, MAINE 04104  
 Building - 191 PINE STREET System No. - #1 AREA#1  
 Contractor - Contract No. -  
 Calculated By - MIKE NOBLIT Drawing No. - FP-4  
 Construction: (X) Combustible ( ) Non-Combustible Ceiling Height VARIES  
 OCCUPANCY - APARTMENT

S Type of Calculation: (X)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 - 13 Gpm System Type  
 Listed Pres. at Start Point - 7 Psi (X) Wet ( ) Dry  
 D MAXIMUM LISTED SPACING 16' x 16' ( ) Deluge ( ) PreAction  
 E Domestic Flow Added - Gpm Sprinkler or Nozzle  
 S Additional Flow Added - Gpm Make TYCO Model LFII  
 I Elevation at Highest Outlet - 50'-0"Feet Size 1/2" K-Factor 4.9  
 G Note: Temperature Rating 155  
 N

Calculation Gpm Required 53.561 Psi Required 39.741 At Test  
 Summary C-Factor Used: Overhead 120 Underground 140

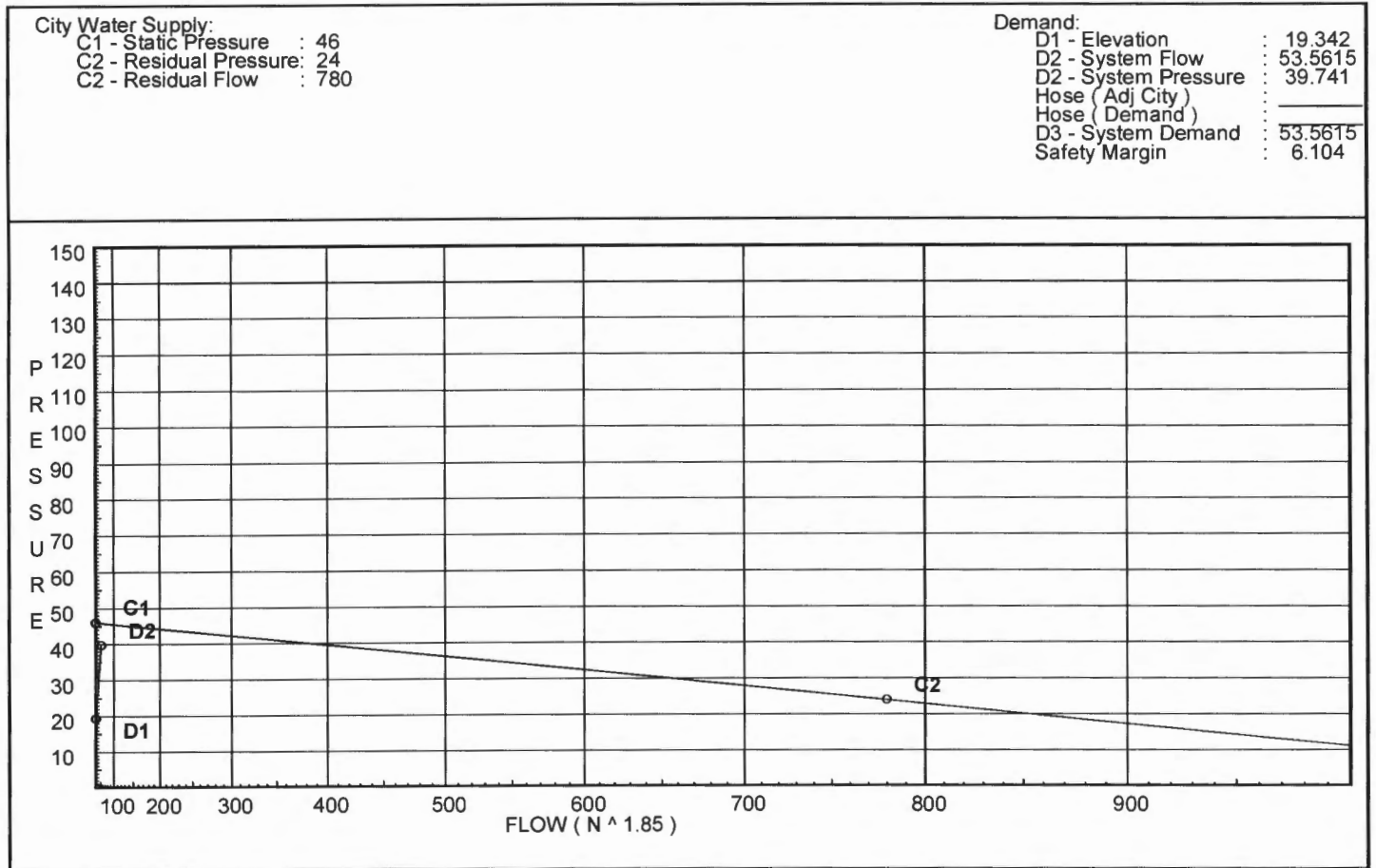
W Water Flow Test: Pump Data: Tank or Reservoir:  
 A Date of Test - 7/31/2012 Rated Cap. Cap.  
 T Time of Test - @ Psi Elev.  
 E Static (Psi) - 46 Elev.  
 R Residual (Psi) - 24 Other Well  
 Flow (Gpm) - 780 Proof Flow Gpm  
 S Elevation -

P Location:  
 P  
 L Source of Information: PORTLAND WATER DISTRICT  
 Y

Water Supply Curve (C)

FREEDOM FIRE PROTECTION INC.  
191 PINE STREET PORTLAND HC 1

Page 2  
Date 9/14/12



Fittings Used Summary

FREEDOM FIRE PROTECTION INC.  
191 PINE STREET PORTLAND HC 1

Page 3  
Date 9/14/12

Fitting Legend		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	
Abbrev.	Name																					
E	90' Standard Elbow	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61	
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	

Pressure / Flow Summary - STANDARD

FREEDOM FIRE PROTECTION INC.  
191 PINE STREET PORTLAND HC 1

Page 4  
Date 9/14/12

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
102	44.66	4.9	7.0	na	12.96	0.05	256	7.0
101	44.66	4.9	7.59	na	13.5	0.05	256	7.0
104	44.66	4.9	7.26	na	13.21	0.05	256	7.0
103	44.66	4.9	8.04	na	13.89	0.05	256	7.0
9	44.66		8.36	na				
8	50.0		7.63	na				
7	50.0		8.09	na				
6	50.0		9.59	na				
5	4.5		30.63	na				
4	4.5		31.86	na				
3	4.5		31.96	na				
2	4.5		32.26	na				
1	0.0		38.39	na				
0	0.0		39.73	na				
TEST	0.0		39.74	na				

The maximum velocity is 8.44 and it occurs in the pipe between nodes 9 and 8

Final Calculations - Hazen-Williams

FREEDOM FIRE PROTECTION INC.  
191 PINE STREET PORTLAND HC 1

Page 5  
Date 9/14/12

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
102	12.96	1.049	1E 2.0	8.083	7.000		K Factor = 4.90
to		120	0.0	2.000	0.0		
101	12.96	0.0583	0.0	10.083	0.588		Vel = 4.81
101	13.50	1.38	1T 6.0	7.500	7.588		K Factor = 4.90
to		120	0.0	6.000	0.0		
9	26.46	0.0575	0.0	13.500	0.776		Vel = 5.68
	0.0						
	26.46				8.364		K Factor = 9.15
104	13.21	1.049	0.0	12.830	7.264		K Factor = 4.90
to		120	0.0	0.0	0.0		
103	13.21	0.0604	0.0	12.830	0.775		Vel = 4.90
103	13.89	1.38	0.0	5.416	8.039		K Factor = 4.90
to		120	0.0	0.0	0.0		
9	27.1	0.0600	0.0	5.416	0.325		Vel = 5.81
9	26.46	1.61	1E 4.0	11.830	8.364		
to		120	0.0	4.000	-2.313		
8	53.56	0.0999	0.0	15.830	1.582		Vel = 8.44
8	0.0	1.61	1E 4.0	0.583	7.633		
to		120	0.0	4.000	0.0		
7	53.56	0.1002	0.0	4.583	0.459		Vel = 8.44
7	0.0	1.61	1E 4.0	11.000	8.092		
to		120	0.0	4.000	0.0		
6	53.56	0.0999	0.0	15.000	1.499		Vel = 8.44
6	0.0	2.003	1T 12.965	45.500	9.591		
to		150	0.0	12.965	19.706		
5	53.56	0.0228	0.0	58.465	1.335		Vel = 5.45
5	0.0	2.157	1E 6.153	32.458	30.632		
to		120	1T 12.307	18.460	0.0		
4	53.56	0.0240	0.0	50.918	1.224		Vel = 4.70
4	0.0	2.157	0.0	4.330	31.856		
to		120	0.0	0.0	0.0		
3	53.56	0.0242	0.0	4.330	0.105		Vel = 4.70
3	0.0	2.157	1E 6.153	6.330	31.961		
to		120	0.0	6.153	0.0		
2	53.56	0.0240	0.0	12.483	0.300		Vel = 4.70
2	0.0	2.157	0.0	7.500	32.261		
to		120	0.0	0.0	5.949		* Fixed loss = 4
1	53.56	0.0240	0.0	7.500	0.180		Vel = 4.70
1	0.0	2.009	3E 17.368	35.000	38.390		
to		140	0.0	17.368	0.0		
0	53.56	0.0256	0.0	52.368	1.339		Vel = 5.42
0	0.0	8.27	1T 55.354	400.000	39.729		
to		140	0.0	55.354	0.0		
TEST	53.56	0.0	0.0	455.354	0.012		Vel = 0.32

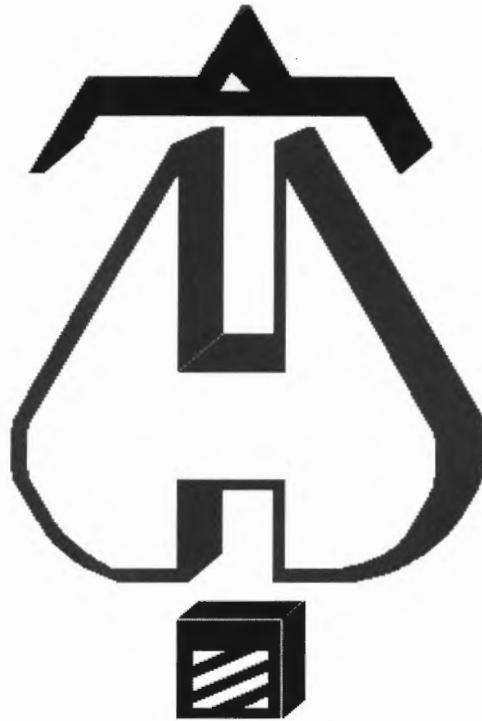
Final Calculations - Standard

FREEDOM FIRE PROTECTION INC.  
 191 PINE STREET PORTLAND HC 1

Page 6  
 Date 9/14/12

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 53.56				39.741			K Factor =	8.50





... Fire Protection by Computer Design

FREEDOM FIRE PROTECTION INC.  
209 QUAKER RIDGE ROAD  
CASCO, MAINE 04015  
207-627-4109

Job Name : 191 PINE STREET PORTLAND HC2  
Building : 191 PINE STREET  
Location : PORTLAND, MAINE 04104  
System : #1 AREA #2  
Contract :  
Data File : 191 PINE STREET PORTLAND HC2.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - 191 PINE STREET PORTLAND Date - 9/14/12  
Location - PORTLAND, MAINE 04104  
Building - 191 PINE STREET System No. - #1 AREA #2  
Contractor - Contract No. -  
Calculated By - MIKE NOBLIT Drawing No. - FP-4  
Construction: (X) Combustible ( ) Non-Combustible Ceiling Height VARIES  
OCCUPANCY - APARTMENT

S Type of Calculation: (X)NFPA 13 Residential (X)NFPA 13R ( )NFPA 13D  
Y Number of Sprinklers Flowing: ( )1 (X)2 ( )4 ( )  
S ( )Other  
T ( )Specific Ruling Made by Date  
E  
M Listed Flow at Start Point - 14 Gpm System Type  
Listed Pres. at Start Point - 10.1 Psi (X) Wet ( ) Dry  
D MAXIMUM LISTED SPACING 14' x 14' ( ) Deluge ( ) PreAction  
E Domestic Flow Added - Gpm Sprinkler or Nozzle  
S Additional Flow Added - Gpm Make TYCO Model LFII  
I Elevation at Highest Outlet - 52'-0"Feet Size 1/2" K-Factor 4.4  
G Note: Temperature Rating 155  
N

Calculation Gpm Required 28.556 Psi Required 38.935 At Test  
Summary C-Factor Used: Overhead 120 Underground 140

W Water Flow Test: Pump Data: Tank or Reservoir:  
A Date of Test - 8/31/12 Rated Cap. Cap.  
T Time of Test - @ Psi Elev.  
E Static (Psi) - 46 Elev.  
R Residual (Psi) - 24 Other Well  
Flow (Gpm) - 780 Proof Flow Gpm  
S Elevation -  
P Location:  
P  
L Source of Information: PORTLAND WATER DISTRICT  
Y

Pressure / Flow Summary - STANDARD

FREEDOM FIRE PROTECTION INC.  
191 PINE STREET PORTLAND HC2

Page 4  
Date 9/14/12

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
202	50.0	4.4	10.1	na	13.98	0.05	0.001	10.1
21	50.0		10.77	na				
201	50.0	4.4	10.97	na	14.57	0.05	0.001	10.1
20	50.0		11.15	na				
6	50.0		11.88	na				
5	4.5		32.0	na				
4	4.5		32.38	na				
3	4.5		32.41	na				
2	4.5		32.51	na				
1	0.0		38.51	na				
0	0.0		38.93	na				
TEST	0.0		38.94	na				

The maximum velocity is 5.19 and it occurs in the pipe between nodes 202 and 21

Final Calculations - Hazen-Williams

FREEDOM FIRE PROTECTION INC.  
191 PINE STREET PORTLAND HC2

Page 5  
Date 9/14/12

Hyd. Ref. Point	Qa  Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
202	13.98	1.049	1E 2.0	3.000	10.100		K Factor = 4.40
to		120	1T 5.0	7.000	0.0		
21	13.98	0.0671	0.0	10.000	0.671		Vel = 5.19
21	0.0	1.38	1T 6.0	5.166	10.771		
to		120	0.0	6.000	0.0		
201	13.98	0.0176	0.0	11.166	0.197		Vel = 3.00
201	14.58	1.61	1E 4.0	1.830	10.968		K Factor = 4.40
to		120	0.0	4.000	0.0		
20	28.56	0.0312	0.0	5.830	0.182		Vel = 4.50
20	0.0	1.61	1T 8.0	15.250	11.150		
to		120	0.0	8.000	0.0		
6	28.56	0.0312	0.0	23.250	0.726		Vel = 4.50
6	0.0	2.003	1T 12.965	45.500	11.876		
to		150	0.0	12.965	19.706		
5	28.56	0.0071	0.0	58.465	0.417		Vel = 2.91
5	0.0	2.157	1E 6.153	32.458	31.999		
to		120	1T 12.307	18.460	0.0		
4	28.56	0.0075	0.0	50.918	0.383		Vel = 2.51
4	0.0	2.157	0.0	4.330	32.382		
to		120	0.0	0.0	0.0		
3	28.56	0.0074	0.0	4.330	0.032		Vel = 2.51
3	0.0	2.157	1E 6.153	6.330	32.414		
to		120	0.0	6.153	0.0		
2	28.56	0.0075	0.0	12.483	0.094		Vel = 2.51
2	0.0	2.157	0.0	7.500	32.508		
to		120	0.0	0.0	5.949		* Fixed loss = 4
1	28.56	0.0075	0.0	7.500	0.056		Vel = 2.51
1	0.0	2.009	3E 17.368	35.000	38.513		
to		140	0.0	17.368	0.0		
0	28.56	0.0080	0.0	52.368	0.419		Vel = 2.89
0	0.0	8.27	1T 55.354	400.000	38.932		
to		140	0.0	55.354	0.0		
TEST	28.56	0.0	0.0	455.354	0.003		Vel = 0.17
	0.0						
	28.56				38.935		K Factor = 4.58



... Fire Protection by Computer Design

FREEDOM FIRE PROTECTION INC.  
209 QUAKER RIDGE ROAD  
CASCO, MAINE 04015  
207-627-4109

Job Name : 191 PINE STREET PORTLAND TOWNHOUSE HC  
Building : 191 PINE STREET  
Location : PORTLAND, MAINE 04104  
System : #1 AREA#3  
Contract :  
Data File : 191 PINE STREET PORTLAND HC3.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - 191 PINE STREET PORTLAND Date - 9/14/12  
 Location - PORTLAND, MAINE 04104  
 Building - 191 PINE STREET System No. - #1 AREA#3  
 Contractor - Contract No. -  
 Calculated By - MIKE NOBLIT Drawing No. - FP-3  
 Construction: (X) Combustible ( ) Non-Combustible Ceiling Height VARIES  
 OCCUPANCY - TOWNHOUSE

S Type of Calculation: (X)NFPA 13 Residential (X)NFPA 13R ( )NFPA 13D  
 Y Number of Sprinklers Flowing: ( )1 ( )2 ( )4 (X)3  
 S ( )Other  
 T ( )Specific Ruling Made by Date

E  
 M Listed Flow at Start Point - 16 Gpm System Type  
 Listed Pres. at Start Point - 13.2 Psi (X) Wet ( ) Dry  
 D MAXIMUM LISTED SPACING 16' x 16' ( ) Deluge ( ) PreAction  
 E Domestic Flow Added - Gpm Sprinkler or Nozzle  
 S Additional Flow Added - Gpm Make TYCO Model LFII  
 I Elevation at Highest Outlet - 38'-0"Feet Size 1/2" K-Factor 4.4  
 G Note: Temperature Rating 155  
 N

Calculation Gpm Required 48.363 Psi Required 40.502 At Test  
 Summary C-Factor Used: Overhead 120 Underground 140

W Water Flow Test: Pump Data: Tank or Reservoir:  
 A Date of Test - 8/31/12 Rated Cap. Cap.  
 T Time of Test - @ Psi Elev.  
 E Static (Psi) - 46 Elev.  
 R Residual (Psi) - 24 Other Well  
 Flow (Gpm) - 780 Proof Flow Gpm  
 S Elevation -

P Location:  
 P  
 L Source of Information: PORTLAND WATER DISTRICT  
 Y

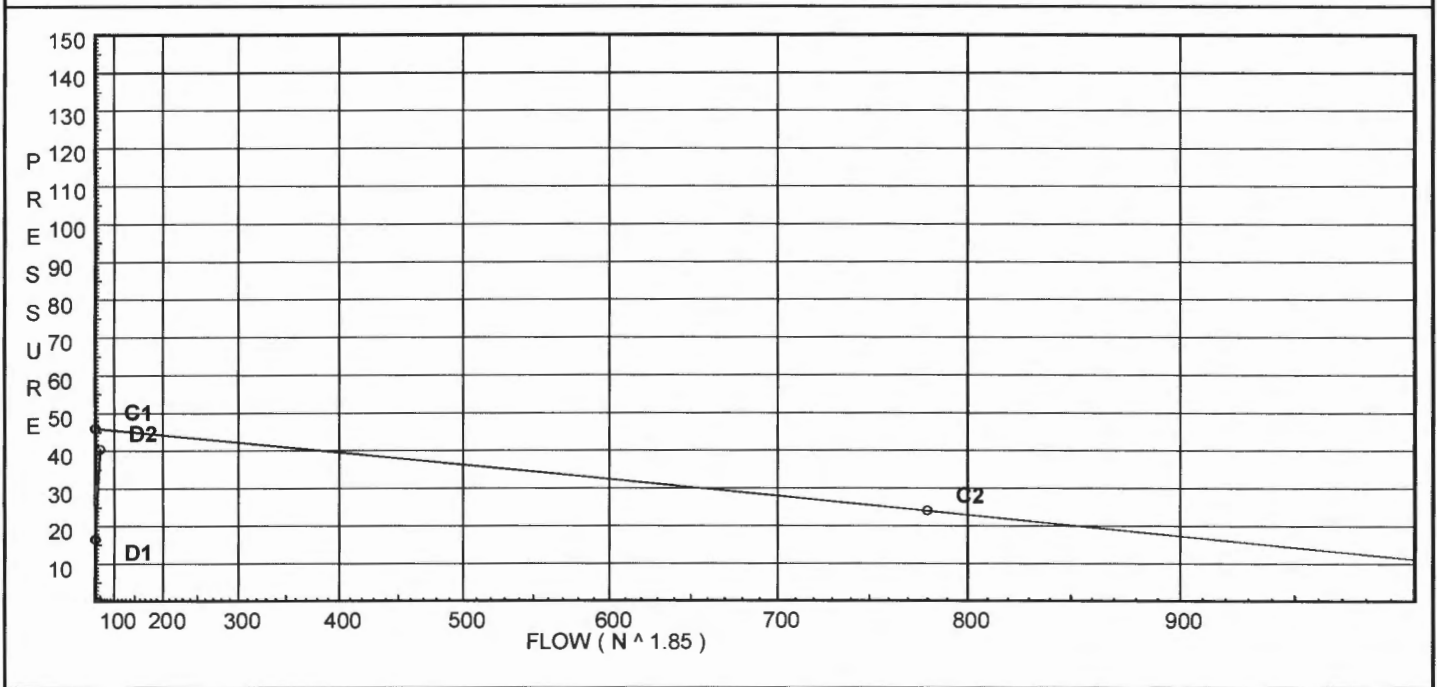
Water Supply Curve (C)

FREEDOM FIRE PROTECTION INC.  
191 PINE STREET PORTLAND TOWNHOUSE HC

Page 2  
Date 9/14/12

City Water Supply:  
C1 - Static Pressure : 46  
C2 - Residual Pressure: 24  
C2 - Residual Flow : 780

Demand:  
D1 - Elevation : 16.458  
D2 - System Flow : 48.3631  
D2 - System Pressure : 40.502  
Hose ( Adj City ) : \_\_\_\_\_  
Hose ( Demand ) : \_\_\_\_\_  
D3 - System Demand : 48.3631  
Safety Margin : 5.370



Fittings Used Summary

FREEDOM FIRE PROTECTION INC.  
191 PINE STREET PORTLAND TOWNHOUSE HC

Page 3  
Date 9/14/12

Fitting Legend		½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24	
Abbrev.	Name																					
E	90° Standard Elbow	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61	
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	



Pressure / Flow Summary - STANDARD

FREEDOM FIRE PROTECTION INC.  
 191 PINE STREET PORTLAND TOWNHOUSE HC

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 Date 9/14/12

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
301	38.0	4.4	13.59	na	16.22	0.05	0.001	13.2
302	38.0	4.4	13.2	na	15.99	0.05	0.001	13.2
303	38.0	4.4	13.49	na	16.16	0.05	0.001	13.2
36	38.0		14.22	na				
35	38.0		14.69	na				
34	38.0		15.71	na				
33	28.0		20.48	na				
32	28.0		20.78	na				
31	17.0		25.76	na				
30	4.5		31.55	na				
5	4.5		31.94	na				
4	4.5		32.95	na				
3	4.5		33.04	na				
2	4.5		33.28	na				
1	0.0		39.38	na				
0	0.0		40.49	na				
TEST	0.0		40.5	na				

The maximum velocity is 7.62 and it occurs in the pipe between nodes 35 and 34

Final Calculations - Hazen-Williams

FREEDOM FIRE PROTECTION INC.  
191 PINE STREET PORTLAND TOWNHOUSE HC

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Date 9/14/12

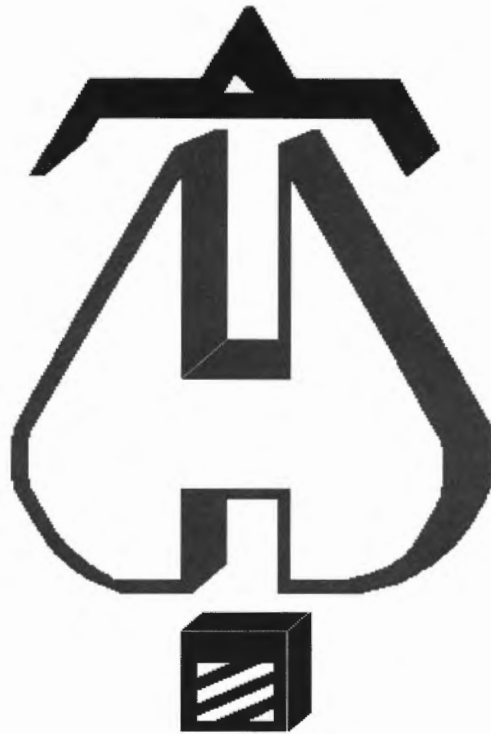
Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
301 to 35	16.22	1.049 120	1E 2.0 1T 5.0	5.500 7.000	13.587 0.0		K Factor = 4.40		
	16.22	0.0883	0.0	12.500	1.104		Vel = 6.02		
	0.0 16.22				14.691		K Factor = 4.23		
302 to 36	15.99	1.049 120	1E 2.0 1T 5.0	4.830 7.000	13.200 0.0		K Factor = 4.40		
	15.99	0.0860	0.0	11.830	1.017		Vel = 5.94		
	0.0 15.99				14.217		K Factor = 4.24		
303 to 36	16.16	1.049 120	2E 4.0 0.0	4.330 4.000	13.487 0.0		K Factor = 4.40		
	16.16	0.0876	0.0	8.330	0.730		Vel = 6.00		
36 to 35	15.98	1.38 120	0.0 0.0	5.750 0.0	14.217 0.0				
	32.14	0.0824	0.0	5.750	0.474		Vel = 6.89		
35 to 34	16.22	1.61 120	2E 8.0 0.0	4.330 8.000	14.691 0.0				
	48.36	0.0827	0.0	12.330	1.020		Vel = 7.62		
34 to 33	0.0	2.157 120	1T 12.307 0.0	9.500 12.307	15.711 4.331				
	48.36	0.0199	0.0	21.807	0.434		Vel = 4.25		
33 to 32	0.0	2.157 120	1E 6.153 0.0	9.083 6.153	20.476 0.0				
	48.36	0.0200	0.0	15.236	0.304		Vel = 4.25		
32 to 31	0.0	2.157 120	0.0 0.0	11.000 0.0	20.780 4.764				
	48.36	0.0199	0.0	11.000	0.219		Vel = 4.25		
31 to 30	0.0	2.157 120	1E 6.153 0.0	12.500 6.153	25.763 5.414				
	48.36	0.0199	0.0	18.653	0.371		Vel = 4.25		
30 to 5	0.0	2.157 120	0.0 0.0	19.500 0.0	31.548 0.0				
	48.36	0.0199	0.0	19.500	0.388		Vel = 4.25		
5 to 4	0.0	2.157 120	1E 6.153 1T 12.307	32.458 18.460	31.936 0.0				
	48.36	0.0199	0.0	50.918	1.014		Vel = 4.25		
4 to 3	0.0	2.157 120	0.0 0.0	4.330 0.0	32.950 0.0				
	48.36	0.0199	0.0	4.330	0.086		Vel = 4.25		
3 to 2	0.0	2.157 120	1E 6.153 0.0	6.330 6.153	33.036 0.0				
	48.36	0.0199	0.0	12.483	0.249		Vel = 4.25		

Final Calculations - Standard

FREEDOM FIRE PROTECTION INC.  
191 PINE STREET PORTLAND TOWNHOUSE HC

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Date 9/14/12

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
2 to 1	0.0 48.36	2.157 120 0.0199	0.0 0.0 0.0	7.500 0.0 7.500	33.285 5.949 0.149		* Fixed loss = 4 Vel = 4.25
1 to 0	0.0 48.36	2.009 140 0.0212	3E 0.0 0.0	17.368 17.368 52.368	35.000 0.0 1.109	39.383	Vel = 4.89
0 to TEST	0.0 48.36	8.27 140 0.0	1T 0.0 0.0	55.354 55.354 455.354	400.000 0.0 0.010	40.492	Vel = 0.29
	0.0 48.36					40.502	K Factor = 7.60



... Fire Protection by Computer Design

FREEDOM FIRE PROTECTION INC.  
209 QUAKER RIDGE ROAD  
CASCO, MAINE 04015  
207-627-4109

Job Name : 191 PINE STREET PORTLAND HC4  
Building : 191 PINE STREET  
Location : PORTLAND, MAINE 04104  
System : #1 AREA#4  
Contract :  
Data File : 191 PINE STREET PORTLAND HC4.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - 191 PINE STREET PORTLAND Date - 9/14/12  
Location - PORTLAND, MAINE 04104  
Building - 191 PINE STREET System No. - #1 AREA#4  
Contractor - Contract No. -  
Calculated By - MIKE NOBLIT Drawing No. - FP-3  
Construction: (X) Combustible ( ) Non-Combustible Ceiling Height 11'-6"  
OCCUPANCY - TOWNHOUSE

S Type of Calculation: (X)NFPA 13 Residential (X)NFPA 13R ( )NFPA 13D  
Y Number of Sprinklers Flowing: ( )1 ( )2 ( )4 (X)3  
S ( )Other  
T ( )Specific Ruling Made by Date  
E  
M Listed Flow at Start Point - 19 Gpm System Type  
Listed Pres. at Start Point - 18.6 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 TYCO Model LFII  
I Elevation at Highest Outlet - 17'-0"Feet Size 1/2" K-Factor 4.4  
G Note: Temperature Rating 155  
N

Calculation Summary Gpm Required 58.695 C-Factor Used: Psi Required 40.068 Overhead 120 At Test Underground 140

W Water Flow Test: Pump Data: Tank or Reservoir:  
A Date of Test - 8/31/12 Rated Cap. Cap.  
T Time of Test - @ Psi Elev.  
E Static (Psi) - 46 Elev.  
R Residual (Psi) - 24 Other Well  
S Flow (Gpm) - 780 Proof Flow Gpm  
Elevation -  
P Location:  
P  
L Source of Information: PORTLAND WATER DISTRICT  
Y

Fittings Used Summary

FREEDOM FIRE PROTECTION INC.  
191 PINE STREET PORTLAND HC4

Page 3  
Date 9/14/12

Fitting Legend		½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24	
Abbrev.	Name																					
E	90' Standard Elbow	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61	
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	

Pressure / Flow Summary - STANDARD

FREEDOM FIRE PROTECTION INC.  
191 PINE STREET PORTLAND HC4

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Date 9/14/12

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
401	17.0	4.4	20.79	na	20.06	0.05	0.001	18.6
44	17.0		22.6	na				
43	17.0		22.91	na				
403	17.0	4.4	18.6	na	18.98	0.05	0.001	18.6
402	17.0	4.4	19.96	na	19.66	0.05	0.001	18.6
42	17.0		21.56	na				
41	17.0		22.16	na				
40	17.0		23.08	na				
31	17.0		23.87	na				
30	4.5		29.82	na				
5	4.5		30.38	na				
4	4.5		31.83	na				
3	4.5		31.95	na				
2	4.5		32.31	na				
1	0.0		38.47	na				
0	0.0		40.05	na				
TEST	0.0		40.07	na				

The maximum velocity is 8.47 and it occurs in the pipe between nodes 40 and 31

Final Calculations - Hazen-Williams

FREEDOM FIRE PROTECTION INC.  
191 PINE STREET PORTLAND HC4

Page 5  
Date 9/14/12

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
401	20.06	1.049	2E 4.0	4.830	20.789		K Factor = 4.40
to		120	1T 5.0	9.000	0.0		
44	20.06	0.1309	0.0	13.830	1.810		Vel = 7.45
44	0.0	1.38	1T 6.0	3.166	22.599		
to		120	0.0	6.000	0.0		
43	20.06	0.0345	0.0	9.166	0.316		Vel = 4.30
43	0.0	1.61	1T 8.0	2.330	22.915		
to		120	0.0	8.000	0.0		
40	20.06	0.0162	0.0	10.330	0.167		Vel = 3.16
	0.0						
	20.06				23.082		K Factor = 4.18
403	18.98	1.049	2E 4.0	2.500	18.600		K Factor = 4.40
to		120	1T 5.0	9.000	0.0		
402	18.98	0.1181	0.0	11.500	1.358		Vel = 7.05
402	19.65	1.38	1T 6.0	7.830	19.958		K Factor = 4.40
to		120	0.0	6.000	0.0		
42	38.63	0.1157	0.0	13.830	1.600		Vel = 8.29
42	0.0	1.61	1E 4.0	7.000	21.558		
to		120	0.0	4.000	0.0		
41	38.63	0.0546	0.0	11.000	0.601		Vel = 6.09
41	0.0	1.61	0.0	16.916	22.159		
to		120	0.0	0.0	0.0		
40	38.63	0.0546	0.0	16.916	0.923		Vel = 6.09
40	20.06	1.682	1E 4.95	3.330	23.082		
to		120	0.0	4.950	0.0		
31	58.69	0.0958	0.0	8.280	0.793		Vel = 8.47
31	0.0	2.157	1E 6.153	12.500	23.875		
to		120	0.0	6.153	5.414		
30	58.69	0.0285	0.0	18.653	0.531		Vel = 5.15
30	0.0	2.157	0.0	19.500	29.820		
to		120	0.0	0.0	0.0		
5	58.69	0.0285	0.0	19.500	0.555		Vel = 5.15
5	0.0	2.157	1E 6.153	32.458	30.375		
to		120	1T 12.307	18.460	0.0		
4	58.69	0.0285	0.0	50.918	1.451		Vel = 5.15
4	0.0	2.157	0.0	4.330	31.826		
to		120	0.0	0.0	0.0		
3	58.69	0.0286	0.0	4.330	0.124		Vel = 5.15
3	0.0	2.157	1E 6.153	6.330	31.950		
to		120	0.0	6.153	0.0		
2	58.69	0.0284	0.0	12.483	0.355		Vel = 5.15
2	0.0	2.157	0.0	7.500	32.305		
to		120	0.0	0.0	5.949		* Fixed loss = 4
1	58.69	0.0285	0.0	7.500	0.214		Vel = 5.15



Final Calculations - Standard

FREEDOM FIRE PROTECTION INC.  
191 PINE STREET PORTLAND HC4

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Date 9/14/12

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	***** Notes *****
1 to 0	0.0 58.69	2.009 140 0.0303	3E	17.368 0.0 17.368 0.0 52.368	35.000 0.0 17.368 0.0 52.368	38.468 0.0 1.586	Vel = 5.94
0 to TEST	0.0 58.69	8.27 140 0.0	1T	55.354 0.0 0.0 455.354	400.000 55.354 0.0 455.354	40.054 0.0 0.014	Vel = 0.35
	0.0 58.69					40.068	K Factor = 9.27