

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK CITY OF PORTLAND

BUILDING PERMIT



This is to certify that <u>FREEDOM FIRE PROTECTION</u> 209 QUAKER RIDGE RD <u>CASCO, ME 04015</u> For installation at 23 OREGON ST SINGLE-FAMILY

Job ID: 2012-09-5040-FAFS

CBL: 433- I-003-001

has permission to install NFPA 13D 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

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

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.





Strengthening a Remarkable City, Building a Community for Life . www.portlandmaine.gov

Director of Planning and Urban Development Jeff Levine

Job ID: <u>2012-09-5040-FAFS</u> install NFPA 13D sprinkler system

For installation at: <u>23 OREGON ST</u> <u>SINGLE-FAMILY</u> CBL: 433- I-003-001

Conditions of Approval:

Fire

The sprinkler system shall be installed in accordance with NFPA 13D. A compliance letter is required.

All control valves shall be supervised in accordance with NFPA 13D. Pad locks shall only be installed on valves designed to be secured in the open position by pad lock.

Application requires State Fire Marshal approval.

City of Portland, Maine - Building or Use Permit Application

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

Job No: 2012-09-5040-FAFS	Date Applied: 9/26/2012		CBL: 433- I-003-001				
Location of Construction: 23 OREGON ST	Owner Name: SUSAN NADEAU		Owner Address: 23 OREGON STRE PORTLAND, ME		1		Phone: 767-7604
Business Name:	Contractor Name: Freedom Fire Prote	ction, Inc.	Contractor Addre 209 QUAKER RID		IAINE 04015	5	Phone: (207) -627-4109
Lessee/Buyer's Name:	Phone:		Permit Type: FIRE SUPPRESSIO	DN			Zone: R-5
Past Use: Single Family Dwelling	Proposed Use: Same: Single Family	Dwelling	Cost of Work: \$9,000.00				CEO District:
Single Failing Divening	- to install fire supp system	•	Fire Dept:	Approved () Denied N/A	(condition	F	Inspection: Use Group: Type:
		<u></u>	Signature: Bj	1.	58		Signature:
Proposed Project Description fire sprinkler system	n:		Pedestrian Activi	ities Distr¶ct (P.A	D.)		
Permit Taken By: Gayle	<u> </u>			Zoning Appr	oval		
1		Special Zo	one or Reviews	Zoning Appea	I Hi	istoric Pre	eservation
 This permit application Applicant(s) from meeti Federal Rules. 	ng applicable State and	Wetland	S	Variance			or Landmark equire Review
 Building Permits do not septic or electrial work. Building permits are voi 	d if work is not started	Flood Zo		Conditional Us	-	Requires R	eview
within six (6) months of False informatin may in permit and stop all work	validate a building	Site Plan	\bigcirc	Approved Denied		Approved	w/Conditions
		Maj Date: V	9/26/12	Date:	Da	Denied	-5
		CERTIF	ICATION	•••••			/

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

Enles 308

2012 09 5040

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One- or Two-family Fire Sprinkler 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.

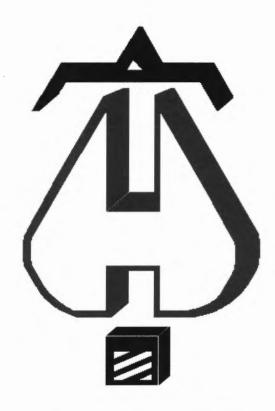
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433 I O	20
Installation address: 23 Oregon Street, Por	rtland Me.
Building owner: Susan Nadeau	Phone: 207-767-7604
Building owner: Susan Nadeau	
Installer: Freedom Fire Protection, Inc.	Phone: 207-627-4109
Total sq/ft of building floor space per unit:	3.700sq/ft Single-family home or
Sq/ft of sprinklered floor space per unit: 3,7	700sq/ft Two-family home
Is this a multipurpose piping system? Y $$ / N	Sprinkler piping uses Pex? Y / N
Water supply: 🛛 Municipal Water 🗌 Well pump	Stored water Other
Include electronic copy of approved State Sprink	kler Permit plans: y
Additional cost to the owner for the home fire a	sprinkler system for <u>each</u> dwelling
unit minus costs necessary for domestic needs (S	See below): A= <u>\$8,200.00</u>
Attach cost breakdown: N A City plumb	oing permit has been pulled: 🗌
RECEIVED	COST OF WORK: <u>\$8,200.00</u> (A times number of units)
SEP 2 6 2012 Dept. of Building Inspections City of Portland Maine	NO FEE REQUIRED

Additional information and Frequently asked questions about home fire sprinkler systems may be found at

www.portlandmaine.gov/fireprevention.

Sprinkler system cost must deduct costs that would have been incurred if the system did not provide sprinkler service. In a well pump system it would include the difference between the well pump to be installed and the one that would have been installed if there were no sprinkler demand on the system. Includes additional piping and valves that are required only because of NFPA Standard 13D, and not already required for domestic needs. Includes cost of sprinkler heads and additional installation costs.



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... Fire Protection by Computer Design

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

Job Name : NADEAU STOVER RESIDENCE Building : 23 OREGON STREET Location : PORTLAND, MAINE 04103 System : #1 AREA #1 Contract : Data File : Nadeau Stover Residence HC1.WXF

FREEDOM FIRE PROTECTION INC. NADEAU STOVER RESIDENCE

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Page 1 Date 9/24/12

HYDRAULIC DESIGN INFORMATION SHEET Date - 9/24/12 Name - NADEAU STOVER RESIDENCE Location - PORTLAND, MAINE 04103 Building - 23 OREGON STREET System No. - #1 AREA #1 Contractor - FREEDOM FIRE PROTECTION Contract No. -Drawing No. - FP-2 Calculated By - MICHAEL NOBLIT Construction: (X) Combustible () Non-Combustible Ceiling Height VARIES OCCUPANCY - HOUSE Type of Calculation: (X)NFPA 13 Residential ()NFPA 13R S (X)NFPA 13D Number of Sprinklers Flowing: ()1 (X)2 ()4 () Y S ()Other т ()Specific Ruling Made by Date Е GpmSystem typePsi(X) Wet() Dry'() Deluge() PreAdGpmSprinkler or NozzleTVCOModel LFI Listed Flow at Start Point - 13 Μ Listed Pres. at Start Point - 7 MAXIMUM LISTED SPACING 16' x 16' D () PreAction Domestic Flow Added - 0 Gpm Sprinkler or Nozzle Additional Flow Added - 0 Gpm Make TYCO Model LFII Ε S Elevation at Highest Outlet - 25'-3"Feet Size 1/2" Ι K-Factor 4.9 Temperature Rating 155 G Note: Ν Calculation Gpm Required 26.156 Psi Required 72.520 At Test Summary C-Factor Used: Overhead 150 Underground 140 Tank or Reservoir: W Water Flow Test: Pump Data: Date of Test - 3/9/2012 Rated Cap. Cap. Α Т Time of Test -@ Psi Elev. Static (Psi) - 101 Ε Elev. Residual (Psi) - 0 Other Well R - 1321 Proof Flow Gpm Flow (Gpm) Elevation S Ρ Location: Ρ Source of Information: PORTLAND WATER DISTRICT T. Υ

Water Supply Curve (C)

EEDOM FI				 			Page 2 Date 9/24/1
City Water C1 - S C2 - R C2 - R	Supply: tatic Pres esidual F esidual F	sure : / ressure: (low : /	101) 1321			Demand: D1 - Ele D2 - Sys D2 - Sys Hose (A Hose (D D3 - Sys Safety M	vation : 10.93 stem Flow : 26.156 stem Pressure : 72.52 Adj City) : Demand) : stem Demand : 26.156 Margin : 28.40
150				 1		 	
140						 	
130						 	
120					-	 	
110 C	:1					 	
100							
90							
)2						
70							
60							
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30						 	
20						 	
10 D	01				2		

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Fittings Used Summary

	EDOM FIRE PROTECT EAU STOVER RESIDE		C.																age ate	3 9/24/1	2
-	Legend v. Name	1/2	3/4	1	1¼	1½	2	2½	3	31⁄2	4	5	6	8	10	12	14	16	18	20	2
E T Zaa	90' Standard Elbow 90' Flow Thru Tee Ames 2000B	2 3 Fitti	2 4 ng gene	2 5 erates a	3 6 a Fixed I	4 8 Loss Ba	5 10 ased or	6 12 n Flow	7 15	8 17	10 20	12 25	14 30	18 35	22 50	27 60	35 71	40 81	45 91	50 101	6 1

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Pressure / Flow Summary - STANDARD

FREEDOM FIRE PROTECTION INC. NADEAU STOVER RESIDENCE

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Page 4 Date 9/24/12

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
101	05.05	10	7.0		10.00	0.05	250	7.0
101	25.25	4.9	7.0	na	12.96	0.05	256	7.0
18	27.25		6.33	na				
102	25.25	4.9	7.25	na	13.19	0.05	256	7.0
17	27.25		6.58	na				
16	27.75		6.58	na				
15	27.75		8.77	na				
14	27.75		10.44	na				
13	22.75		13.78	na				
12	22.75		15.39	na				
11	14.083		21.18	na				
10	14.083		22.61	na				
9	14.083		24.38	na				
8	14.083		27.62	na				
7	4.66		33.19	na				
6	4.66		34.68	na				
5	4.66		38.53	na				
4	4.66		40.13	na				
3	4.66		41.38	na				
2			48.4					
4	0.0			na				
	0.0		54.41	na				
0	0.0		72.51	na				
TEST	0.0		72.52	na				

The maximum velocity is 19.25 and it occurs in the pipe between nodes 1 and 0

Final Calculations - Hazen-Williams

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FREEDOM FIRE PROTECTION INC. -

Hyd. Ref.	Qa	Dia. "C"		ting or	Pipe Ftng's	Pt Pe	Pt Pv	****** Notes *****
Point	Qt	Pf/Ft		v. Ln.	Total	Pf	Pn	1003
101	12.96	1.101	1E	3.825	2.500	7.000		K Factor = 4.90
.o 18	12.96	150 0.0305		0.0 0.0	3.825 6.325	-0.866 0.193		Vel = 4.37
18 o 16	0.0 12.96	1.101 150 0.0305	1E 1T	3.825 9.563 0.0	2.000 13.387 15.387	6.327 -0.217 0.470		Vel = 4.37
	0.0	0.0000		0.0	10.001			
102 o	12.96 13.19	1.101 150	1E	3.825 0.0	2.500 3.825	6.580 7.248 -0.866		K Factor = 5.05 K Factor = 4.90
17 17 0	13.19 0.0	0.0315 1.101 150	1E	0.0 3.825 0.0	6.325 3.000 3.825	0.199 6.581 -0.217		Vel = 4.44
16 16 0	13.19 12.97	0.0316 1.101 150	1T	0.0 9.563 0.0	6.825 10.000 9.562	0.216 6.580 0.0		Vel = 4.44
15 15 0	26.16 0.0	0.1117 1.101 150	3E	0.0 11.475 0.0	19.562 3.500 11.475	2.186 8.766 0.0		Vel = 8.82
14	26.16	0.1118		0.0	14.975	1.674		Vel = 8.82
14 o 13	0.0 26.16	1.101 150 0.1118	1E	3.825 0.0 0.0	6.660 3.825 10.485	10.440 2.166 1.172		Vel = 8.82
13 o 12	0.0 26.16	1.101 150 0.1118	1E 1T	3.825 9.563 0.0	1.000 13.387 14.387	13.778 0.0 1.608		Vel = 8.82
12 0	0.0	1.101 150	1T	9.563 0.0	8.660 9.562	15.386 3.754		
11 11 0	26.16 0.0	0.1118 1.101 150	1T	0.0 9.563 0.0	18.222 3.250 9.562	2.037 21.177 0.0		Vel = 8.82
10 10 0	26.16 0.0	0.1118 1.101 150	1T	0.0 9.563 0.0	12.812 6.250 9.562	1.432 22.609 0.0		Vel = 8.82
9 9 0	26.16 0.0	0.1118 1.101 150	1E 1T	0.0 3.825 9.563	15.812 15.660 13.387	1.767 24.376 0.0		Vel = 8.82
8 8	26.16 0.0	0.1118	1E	0.0 3.825	29.047 9.500	3.247 27.623		Vel = 8.82
0 7	26.16	150 0.1118	12	0.0 0.0	3.825 13.325	4.081 1.490		Vel = 8.82
7 0 6	0.0 26.16	1.049 150 0.1415	1E	3.022 0.0 0.0	7.500 3.022 10.522	33.194 0.0 1.489		Vel = 9.71

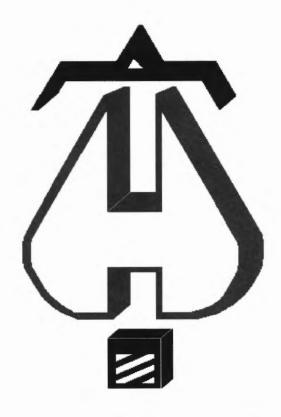
Computer Programs by Hydratec Inc. Route 111 Windham N.H. USA 03087

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FREEDOM FIRE PROTECTION INC. NADEAU STOVER RESIDENCE

Page 6 Date 9/24/12

NADEAU	STOVE	RESIDEN	ICE					Date 9/24/12
Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft		ing or v. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	****** Notes ******
6	0.0	1.049	3E	6.0	12.000	34.683		
to 5	0.0 26.16	120 0.2138	SE	0.0 0.0	6.000 18.000	0.0 3.848		Vel = 9.71
5 5 to 4	0.0	1.049 120 0.2137	1E	2.0 0.0 0.0	5.500 2.000 7.500	38.531 0.0 1.603		Vel = 9.71
4 to 3	0.0	1.049 120 0.2139	1T	5.0 0.0 0.0	0.830 5.000 5.830	40.134 0.0 1.247		Vel = 9.71
3 to 2	0.0	1.049 120 0.2137	1Zaa	0.0 0.0 0.0	4.660 0.0 4.660	41.381 6.018 0.996		* Fixed loss = 4 Vel = 9.71
2 to 1	0.0 26.16	1.125 150 0.1006		0.0 0.0 0.0	20.000 0.0 20.000	48.395 4.000 2.013		* Fixed loss = 4 Vel = 8.44
1 to 0	0.0 26.16	0.745 140 0.8509		0.0 0.0 0.0	17.750 0.0 17.750	54.408 3.000 15.104		* Fixed loss = 3 Vel = 19.25
0 to TEST	0.0 26.16	6.16 140 0.0		0.0 0.0 0.0	250.000 0.0 250.000	72.512 0.0 0.008		Vel = 0.28
	0.0 26.16					72.520		K Factor = 3.07



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... Fire Protection by Computer Design

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

Job Name : NADEAU STOVER RESIDENCE HC2 Building : 23 OREGON STREET Location : PORTLAND, MAINE 04103 System : #1 AREA #2 Contract : Data File : Nadeau Stover Residence HC2.WXF

FREEDOM FIRE PROTECTION INC. NADEAU STOVER RESIDENCE HC2

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Page 1 Date 9/24/12

HIDRAULIC	DESIGN INFORMA	TION SHEET	
ation - PORTLAND, MAINE 04103 lding - 23 OREGON STREET tractor - FREEDOM FIRE PROTEC culated By - MICHAEL NOBLIT struction: (X) Combustible		Date - 9/24/12 System No #1 AREA #2 Contract No Drawing No FP-2 cible Ceiling Height 7'-6"	
Number of Sprinklers Flowing ()Other ()Specific Ruling Listed Flow at Start Point Listed Pres. at Start Point MAXIMUM LISTED SPACING 16 Domestic Flow Added	: ()1 (X)2 Made B - 16 Gpm - 13.2 Psi ' x 16' - 0 Gpm - 0 Gpm Ma - Feet S:	<pre>()4 () Dy Date System Type (X) Wet () Dry () Deluge () PreAction Sprinkler or Nozzle ake TYCO Model LFII ize 1/2" K-Factor 4.4</pre>	
culation Gpm Required 32.02 mary C-Factor Used:	5 Psi Required Overhead 15	d 74.153 At Test 50 Underground 140	
Date of Test - 3/9/2012 Time of Test - Static (Psi) - 101 Residual (Psi) - 0 Flow (Gpm) - 1321 Elevation - Location:	Rated Cap. @ Psi Elev. Other	Tank or Reservoir: Cap. Elev. Well Proof Flow Gpm	
	<pre>e - NADEAU STOVER RESIDENCE ation - PORTLAND, MAINE 04103 lding - 23 OREGON STREET tractor - FREEDOM FIRE PROTEC culated By - MICHAEL NOBLIT struction: (X) Combustible UPANCY - HOUSE Type of Calculation: (X)NFPA Number of Sprinklers Flowing ()Other ()Specific Ruling Listed Flow at Start Point Listed Pres. at Start Point MAXIMUM LISTED SPACING 16 Domestic Flow Added Additional Flow Added Elevation at Highest Outlet Note: culation Gpm Required 32.025 mary C-Factor Used: Water Flow Test: Date of Test - 3/9/2012 Time of Test - Static (Psi) - 101 Residual (Psi) - 0 Flow (Gpm) - 1321 Elevation - Location:</pre>	e - NADEAU STOVER RESIDENCE ation - PORTLAND, MAINE 04103 lding - 23 OREGON STREET tractor - FREEDOM FIRE PROTECTION culated By - MICHAEL NOBLIT struction: (X) Combustible () Non-Combust UPANCY - HOUSE Type of Calculation: (X)NFPA 13 Residential Number of Sprinklers Flowing: ()1 (X)2 ()Other ()Specific Ruling Made 1 Listed Flow at Start Point - 16 Gpm Listed Flow at Start Point - 13.2 Psi MAXIMUM LISTED SPACING 16' x 16' Domestic Flow Added - 0 Gpm Additional Flow Added - 0 Gpm Additional Flow Added - 0 Gpm Kelevation at Highest Outlet - Feet Si Note: Te Water Flow Test: Pump Data: Date of Test - 0 Static (Psi) - 101 Elev. Residual (Psi) - 0 Flow (Gpm) - 1321 Elevation - Location:	ation - PORTLAND, MAINE 04103 lding - 23 OREGON STREET System No #1 AREA #2 tractor - FREEDOM FIRE PROTECTION Contract No culated By - MICHAEL NOBLIT Drawing No FP-2 struction: (X) Combustible () Non-Combustible Ceiling Height 7'-6" UPANCY - HOUSE Type of Calculation: (X)NFPA 13 Residential ()NFPA 13R (X)NFPA 13D Number of Sprinklers Flowing: ()1 (X)2 ()4 () ()Other ()Specific Ruling Made by Date Listed Flow at Start Point - 16 Gpm System Type Listed Pres. at Start Point - 13.2 Psi (X) Wet () Dry MAXIMUM LISTED SPACING 16' x 16' () Deluge () PreAction Domestic Flow Added - 0 Gpm Make TYCO Model LFII Elevation at Highest Outlet - Feet Size 1/2" K-Factor 4.4 Note: Temperature Rating 155 Culation Gpm Required 32.025 Psi Required 74.153 At Test mary C-Factor Used: Overhead 150 Underground 140 Water Flow Test: Pump Data: Tank or Reservoir: Date of Test - 3/9/2012 Rated Cap. Cap. Time of Test - 0 Other Well Flow (Gpm) - 1321 Proof Flow Gpm

Water Supply Curve (C)

FREEDOM FIRE PROTECTION INC. NADEAU STOVER RESIDENCE HC2

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City Wat C1 - C2 - C2 -	er Supply: Static Pre Residual I Residual I	ssure : (Pressure: (Flow :	101) 1321					Deman D1 D2 D2 Ho Ho D3 Sat	d: - Elevation - System Flo - System Pr se (Adj City se (Demano - System De fety Margin	9.85 ow 32.02 essure 74.1) 1) emand <u>32.02</u> 26.7
150		T								
140										
130										
120		-			-					
	C1									
100										
90										
G I	D2									
70										
50 + 40 +										
30										
20					J					
	D1				\rightarrow					
	internation of the		<u> </u>	<u> </u>		C2	<u> </u>			
20	00 400	600 8	800 1	000 FLOW	1200 (N ^ 1.85)	1400	16	00	1800	

Fittings Used Summary

	EDOM FIRE PROTECT EAU STOVER RESIDE																		age 3 ate 9	3 9/24/12	2
	Legend v. Name	1/2	3/4	1	1¼	1½	2	21⁄2	3	31/2	4	5	6	8	10	12	14	16	18	20	24
E T Zaa	90' Standard Elbow 90' Flow Thru Tee Ames 2000B	2 3 Fitti	2 4 ng gene	2 5 erates a	3 6 a Fixed I	4 8 Loss Ba	5 10 ased or	6 12 n Flow	7 15	8 17	10 20	12 25	14 30	18 35	22 50	27 60	35 71	40 81	45 91	50 101	61 121

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Pressure / Flow Summary - STANDARD

FREEDOM FIRE PROTECTION INC. NADEAU STOVER RESIDENCE HC2

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Page 4 Date 9/24/12

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
201	22.75	4.4	13.29	na	16.04	0.05	0.001	13.2
26	22.75		13.48	na				
202	22.75	4.4	13.2	na	15.99	0.05	0.001	13.2
25	22.75		13.39	na				
24	14.083		17.71	na				
23	14.083		18.06	na				
22	14.083		19.28	na				
21	4.66		26.46	na				
20	4.66		32.81	na				
3	4.66		34.52	na				
2	0.0		42.25	na				
- 1	0.0		49.18	na				
0	0.0		74.14	na				
TEST	0.0		74.15	na				

The maximum velocity is 23.57 and it occurs in the pipe between nodes 1 and 0

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FREEDOM FIRE PROTECTION INC. NADEAU STOVER RESIDENCE HC2

P	age 5	
D	ate 9/	24/12

NADEAU STOVER RESIDENCE HC2						Date 9/24/12		
Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft		ng or v. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
201 to 26	16.04 16.04	1.101 150 0.0451	1E	3.825 0.0 0.0	0.500 3.825 4.325	13.288 0.0 0.195		K Factor = 4.40 Vel = 5.41
26 to 23	0.0	1.101 150 0.0452	1T	9.563 0.0 0.0	8.660 9.562 18.222	13.483 3.754 0.824		Vel = 5.41
	0.0 16.04					18.061		K Factor = 3.77
202 to 25	15.99 15.99	1.101 150 0.0449	1E	3.825 0.0 0.0	0.500 3.825 4.325	13.200 0.0 0.194		K Factor = 4.40 Vel = 5.39
25 to 24	0.0	1.101 150 0.0449	1E	3.825 0.0 0.0	8.660 3.825 12.485	13.394 3.754 0.561		Vel = 5,39
24 to 23	0.0	1.101 150 0.0450	1E	3.825 0.0 0.0	4.000 3.825 7.825	17.709 0.0 0.352		Vel = 5.39
23 to	16.03	1.101 150	1E	3.825 0.0 0.0	3.660 3.825 7.485	18.061 0.0 1.217		Vel = 10.79
22 22 to	32.02 0.0	0.1626 1.101 150	1T	9.563 0.0	9.500 9.562	19.278 4.081		
21 21 to 20	32.02 0.0 32.02	0.1626 1.049 120 0.3109	1T	0.0 5.0 0.0 0.0	19.062 15.416 5.000 20.416	3.099 26.458 0.0 6.347		Vel = 10.79 Vel = 11.89
20 to 3	0.0	1.049 120 0.3109	1T	5.0 0.0 0.0	0.500 5.000 5.500	32.805 0.0 1.710		Vel = 11.89
3 to 2	0.0	1.049 120 0.3109	1Zaa	0.0 0.0 0.0	4.660 0.0 4.660	34.515 6.285 1.449		* Fixed loss = 4.267 Vel = 11.89
2 to	0.0	1.125 150 0.1464		0.0 0.0 0.0	20.000 0.0 20.000	42.249 4.000 2.927		* Fixed loss = 4 Vel = 10.33
1 1 to	0.0	0.745 140		0.0 0.0	17.750 0.0	49.176 3.000		* Fixed loss = 3 Vel = 23.57
0 0 to	<u>32.02</u> 0.0	1.2375 6.16 140		0.0 0.0 0.0	17.750 250.000 0.0	21.966 74.142 0.0	- 44 - fuit i par	
TEST	32.02	0.0		0.0	250.000	0.011		Vel = 0.34

0.0

Final Calculations - Stan	dard
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		ROTECTIO					Pag Da	
Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******	Notes *****
	32.02				74.153		K Facto	r = 3.72



Strengthening a Remarkable City, Building a Community for Life . www.portlandmaine.gov

Receipts Details:

Receipt Header:

Cashier Id: gguertin Receipt Date: 9/26/2012 Receipt Number: 48616

Receipt Details:

8139	Fee Type:	BP-Constr
0	Payment Date:	
110.00	Charge Amount:	110.00
2-09-5040-FAFS - fire sprinkler system		
ents:		· · · · ·
	0 110.00 2-09-5040-FAFS - fire sprinkler system	0 Payment Date: 110.00 Charge Amount: 2-09-5040-FAFS - fire sprinkler system

Thank You for your Payment!