DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND
BUILDING PERMIT

This is to certify that

BUCKSTAR LLC /Freedom Fire Protection, Inc

Located at

178 MIDDLE ST

PERMIT ID: 2013-00167

CBL: 032 I001001

has permission to **Install NFPA 13 sprinkler system to basement, first, second, third, fourth levels.**
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 clsoed-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 procured prior to occupancy.

Fire Prevention Officer (58)

Code Enforcement Officer / Plan Reviewer

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

BUILDING PERMIT INSPECTION PROCEDURES
Please call 874-8703 (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.**

REQUIRED INSPECTIONS:

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.

City of Portland, Maine - Building or Use Permit

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

Permit No:	Date Applied For:	CBL:
2013-00167	01/28/2013	032 I001001

Location of Construction:	Owner Name:	Owner Address:	Phone:
178 MIDDLE ST	BUCKSTAR LLC	100 SILVER ST	
Business Name:	**Contractor Name:**	**Contractor Address:**	**Phone**
	Freedom Fire Protection, Inc	209 Quaker Ridge Road Casco	(207) 627-4109
Lessee/Buyer's Name	**Phone:**	**Permit Type:**	
Timothy Vess	2076274109	Fire Suppression Water Based	

Proposed Use:	Proposed Project Description:
Same: Restaurant and retail on 1st floor with offices above	Install NFPA 13 sprinkler system to basement, first, second, third, fourth levels.

Dept: Zoning **Status:** Approved w/Conditions **Reviewer:** Marge Schmuckal **Approval Date:** 01/29/2013

Note: **Ok to Issue:** ☑

1) ANY exterior work requires a separate review and approval thru Historic Preservation. This property is located within an Historic District.

Dept: Fire **Status:** Approved w/Conditions **Reviewer:** Ben Wallace Jr **Approval Date:** 02/14/2013

Note: **Ok to Issue:** ☑

1) Installation shall be in accordance with the City of Portland Fire Department Regulations and NFPA 13 as published. A copy of the State Sprinkler permit with RMS date and signature and the Contractor's Material and Test Certificate for Aboveground Piping (NFPA 13 figure 24.1) shall be provided prior to scheduling of the final inspection.
2) Notice: The first scheduled final inspection fee is at no charge. Additional inspections shall be billed at $75 for each inspector.
3) Sprinkler supervision shall be provided in accordance with NFPA 101, Life Safety Code, and NFPA 72, National Fire Alarm and Signaling Code.
4) A sprinkler supervisory system shall be provided in accordance with NFPA 101, Life Safety Code, and NFPA 72, National Fire Alarm and Signaling Code. Sprinkler supervisory systems shall monitor for water flow and sprinkler supervisory signals via an approved fire alarm panel to central station. One smoke detector shall be located over the panel, a manual pull station located at the front door, and an audible water flow alarm provided. A separate fire alarm permit is required from a certified fire alarm company.
5) A Knox Box is required.
6) The entire sprinkler system shall be maintained in accordance with NFPA 25, Standard for Inspection, Testing and Maintenance of Water-Based Fire Protection Systems, 2008 edition.
7) System acceptance and commissioning must be coordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.
8) Fire department connection shall be two 2 ½" inlets.

City of Portland, Maine - Building or Use Permit Application

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

Permit No:	Issue Date:	CBL:
2013-00167		032 I001001

Location of Construction:	Owner Name:	Owner Address:	Phone:
178 MIDDLE ST	BUCKSTAR LLC	100 SILVER ST PORTLAND , ME 04101	
Business Name:	**Contractor Name:**	**Contractor Address:**	**Phone**
	Freedom Fire Protection, Inc	209 Quaker Ridge Road Casco ME 04015	(207) 627-4109
Lessee/Buyer's Name	**Phone:**	**Permit Type:**	**Zone:**
Timothy Vess	(207) 627-4109	Fire Suppression Water Based	B3
Past Use:	**Proposed Use:**	**Permit Fee:** / **Cost of Work:**	**CEO District:**
Restaurant and retail on first floor with offices above	Same: Restaurant and retail on 1st floor with offices above	$990.00 / $96,892.00	2

FIRE DEPT: ☑ Approved ☐ Denied ☐ N/A

2/14/13

Signature: SJ (SD)

INSPECTION: Use Group: Type:

Signature:

Proposed Project Description:
Install Water Based Fire Suppression to basement, first, second, third, fourth levels.

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)

Action: ☐ Approved ☐ Approved w/Conditions ☐ Denied

Signature: Date:

Permit Taken By:	Date Applied For:
gg	01/28/2013

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..

Zoning Approval

Special Zone or Reviews	Zoning Appeal	Historic Preservation
☐ Shoreland	☐ Variance	☐ Not in District or Landmark
☐ Wetland	☐ Miscellaneous	☐ Does Not Require Review
☐ Flood Zone	☐ Conditional Use	☐ Requires Review
☐ Subdivision	☐ Interpretation	☐ Approved
☐ Site Plan	☐ Approved	☐ Approved w/Conditions
Maj ☑ Minor ☐ MM ☐	☐ Denied	☐ Denied
Date: OK with conditions 1/29/13	Date:	Date: Any exterior work requires SA Separate Review & Approval

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

Entered & electronic file

RECEIVED
JAN 28 2013
Dept. of Building Inspections
City of Portland Maine

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.

2013 00167

Installation address: 178 Middle Street CBL: 032 I 001

Exact location: (within structure) Basement, First, Second, Third, Fourth Levels

Type of occupancy(s) (NFPA & ICC): Office Space

Building owner: ~~Commercial Properties Management~~ Dan Catlin Bucksteer LLC

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

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

Installing contractor: Freedom Fire Protection License No: 295

Contractor phone: 207/627-4109 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: NFPA-13 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 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: $96,892.00

PERMIT FEE: $990.00

($10 PER $1,000 + $30 FOR THE FIRST $1,000)

PLANNING & URBAN DEVELOPMENT
CITY OF PORTLAND
FOR CREDIT TO THE ACCOUNT OF
TO BANKNORTH, N.A. MAINE
PAY TO THE ORDER OF

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TO BANKNORTH, N.A. MAINE
FOR CREDIT TO THE ACCOUNT OF
CITY OF PORTLAND
PLANNING & URBAN DEVELOPMENT

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: WM Wales Date: January 24, 2013

CITY OF PORTLAND
DEPARTMENT OF PLANNING & URBAN DEVELOPMENT
389 Congress Street
Portland, Maine 04101

RECEIPT OF FEES

Application No: 201300167 **Applicant:** BUCKSTAR LLC
Project Name: **Location:** 178 MIDDLE ST
CBL: 032 I001001 **Permit Type:** Fire Suppression Water Based
Invoice Date: 01/28/2013

Previous Balance	-	Payment Received	+	Current Fees	-	Current Payment	=	Total Due	Payment Due Date
$0.00		$0.00		$990.00		$990.00		$0.00	On Receipt

Previous Balance **$0.00**

Fee Description	Qty	Fee/Deposit Charge
Building Permit Fee First $1000	1	$30.00
Building Permit Fee Add'l $1000	1	$960.00
		$990.00

Total Current Fees:	+	**$990.00**
Total Current Payments:	-	**$990.00**
Amount Due Now:		**$0.00**

CBL 032 I001001
Application No: 201300167
Invoice Date: 01/28/2013
Invoice No: 39879
Total Amt Due: $0.00
Payment Amount: $990.00

Bill to: BUCKSTAR LLC
100 SILVER ST
PORTLAND , ME 04101

Make checks payable to the ***City of Portland,*** ATTN: Inspections, 3rd Floor, 389 Congress Street, Portland, ME 04101.

. . . Fire Protection by Computer Design

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

Job Name	:	178 MIDDLE STREET HC1
Building	:	178 MIDDLE STREET
Location	:	PORTLAND, MAINE 04101
System	:	#1 AREA#1
Contract	:	
Data File	:	178 MIDDLE STREET HC1.WXF

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

Hydraulic Design Information Sheet

Name - 178 MIDDLE STREET — Date - 1/22/13
Location - PORTLAND, MAINE 04101
Building - 178 MIDDLE STREET — System No. - #1 AREA#1
Contractor - — Contract No. -
Calculated By - MIKE NOBLIT — Drawing No. - FP-3
Construction: (X) Combustible ( ) Non-Combustible — Ceiling Height - 9'-7"
Occupancy - OFFICES

SYSTEM DESIGN

(X) NFPA 13 (X) Lt. Haz. Ord.Haz.Gp. ( ) 1 ( ) 2 ( ) 3 ( ) Ex.Haz.
( ) NFPA 231 ( ) NFPA 231C ( ) Figure Curve
Other

Specific Ruling		Made By	Date
Area of Sprinkler Operation	- ROOM	System Type	Sprinkler/Nozzle
Density	- 0.10	(X) Wet	Make TYCO
Area Per Sprinkler	- 196	( ) Dry	Model TY-FRB
Elevation at Highest Outlet	- 55'-0"	( ) Deluge	Size 1/2"
Hose Allowance - Inside	-	( ) Preaction	K-Factor 5.6
Rack Sprinkler Allowance	-	( ) Other	Temp.Rat.155
Hose Allowance - Outside	- 100		

Note

Calculation Summary — Flow Required - 218.951 Press Required - 72.735 At Test
C-Factor Used: 120 Overhead 140 Underground

WATER SUPPLY

Water Flow Test:		Pump Data:		Tank or Reservoir:
Date of Test	- 7/19/2009			Cap. -
Time of Test	-	Rated Cap.-		Elev.-
Static Press	- 83	@ Press	-	
Residual Press	- 0	Elev.	-	Well
Flow	- 1342			Proof Flow
Elevation	-			

Location -

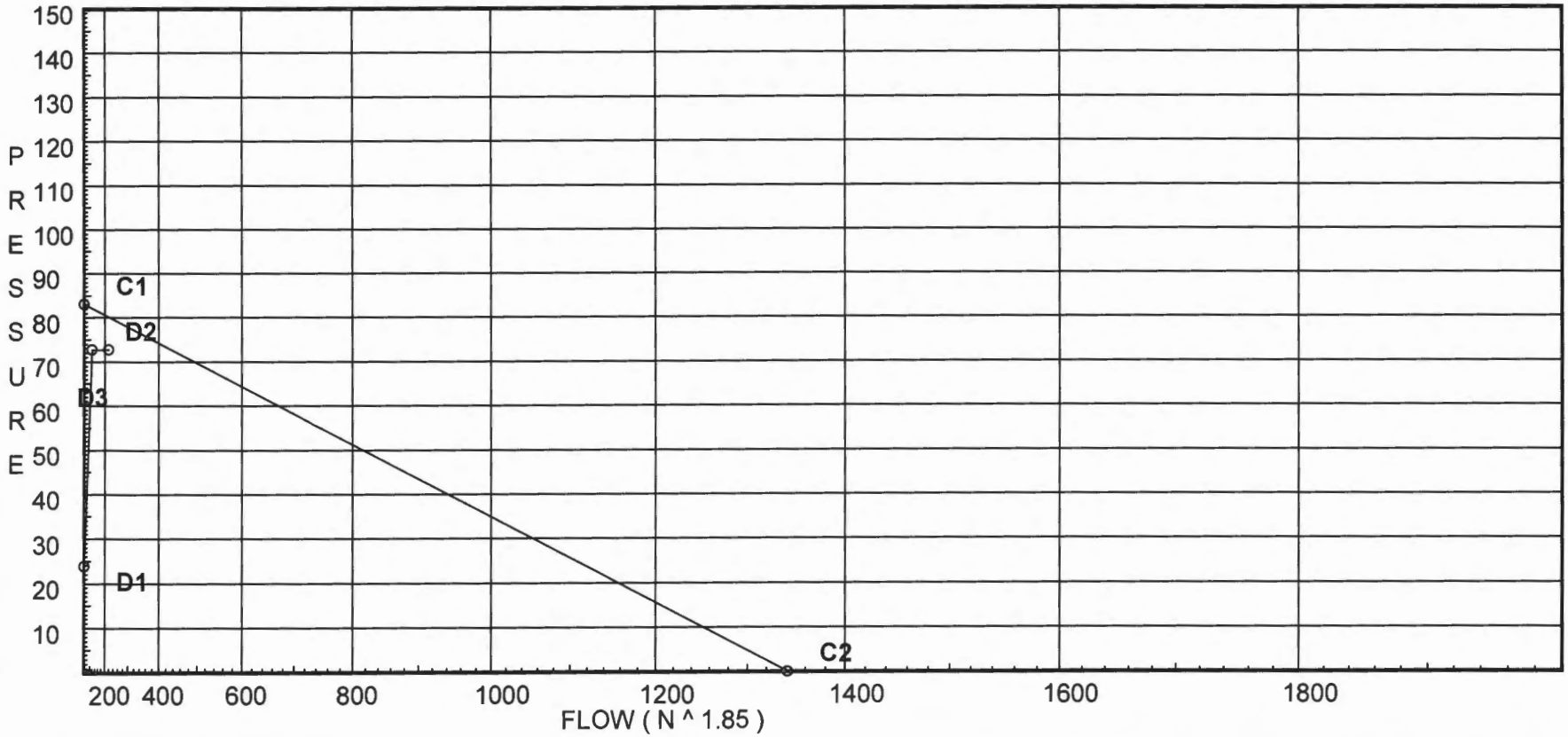
Source of Information - PORTLAND WATER DISTRICT

FREEDOM FIRE PROTECTION INC.
178 MIDDLE STREET HC1

City Water Supply:
C1 - Static Pressure : 83
C2 - Residual Pressure: 0
C2 - Residual Flow : 1342

Demand:

D1 - Elevation	:	23.820
D2 - System Flow	:	118.951
D2 - System Pressure	:	72.735
Hose (Adj City)	:	
Hose (Demand)	:	100
D3 - System Demand	:	218.951
Safety Margin	:	7.365



FREEDOM FIRE PROTECTION INC.
178 MIDDLE STREET HC1

Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24
A	Generic Alarm Valve	0	0	0	0	0	0	7.7	21.5	0	17	17	27	29	0	0	0	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	0	0	0	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

Pressure / Flow Summary - STANDARD

FREEDOM FIRE PROTECTION INC.
178 MIDDLE STREET HC1

Date 1/22/13

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
102	55.0	5.6	7.92	na	15.76	0.1	0.001	7.0
103	55.0	5.6	7.08	na	14.9	0.1	0.001	7.0
104	55.0	5.6	7.0	na	14.82	0.1	0.001	7.0
13	55.0		7.45	na				
12	55.0		8.13	na				
11	55.0		8.42	na				
10	55.0		10.71	na				
101	55.0	5.6	11.28	na	18.8	0.1	130	7.0
106	55.0	5.6	10.03	na	17.73	0.1	0.001	7.0
107	55.0	5.6	9.54	na	17.29	0.1	0.001	7.0
17	55.0		10.13	na				
16	55.0		10.51	na				
15	55.0		10.65	na				
14	55.0		12.07	na				
105	55.0	5.6	12.31	na	19.65	0.1	130	7.0
9	55.0		12.76	na				
8	55.0		29.61	na				
7	54.5		33.48	na				
6	54.5		43.33	na				
5	54.5		44.71	na				
4	6.416		67.79	na				
3	6.416		69.75	na				
2	6.416		69.82	na				
1	0.0		72.73	na				
TEST	0.0		72.74	na	100.0			

The maximum velocity is 19.03 and it occurs in the pipe between nodes 9 and 8

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	15.76	1.049	1T	5.0	1.000	7.916		K Factor = 5.60
to		120		0.0	5.000	0.0		
11	15.76	0.0837		0.0	6.000	0.502		Vel = 5.85
	0.0							
	15.76					8.418		K Factor = 5.43
103	14.90	1.049	1E	2.0	7.000	7.077		K Factor = 5.60
to		120	1T	5.0	7.000	0.0		
12	14.9	0.0754		0.0	14.000	1.056		Vel = 5.53
	0.0							
	14.90					8.133		K Factor = 5.22
104	14.82	1.049	1T	5.0	1.000	7.000		K Factor = 5.60
to		120		0.0	5.000	0.0		
13	14.82	0.0747		0.0	6.000	0.448		Vel = 5.50
13	0.0	1.049		0.0	9.166	7.448		
to		120		0.0	0.0	0.0		
12	14.82	0.0747		0.0	9.166	0.685		Vel = 5.50
12	14.89	1.38		0.0	4.000	8.133		
to		120		0.0	0.0	0.0		
11	29.71	0.0712		0.0	4.000	0.285		Vel = 6.37
11	15.76	1.38	1T	6.0	8.660	8.418		
to		120		0.0	6.000	0.0		
10	45.47	0.1563		0.0	14.660	2.292		Vel = 9.75
10	0.0	1.598		0.0	11.166	10.710		
to		150		0.0	0.0	0.0		
101	45.47	0.0507		0.0	11.166	0.566		Vel = 7.27
101	18.80	1.598	1T	11.656	3.750	11.276		K Factor = 5.60
to		150		0.0	11.656	0.0		
9	64.27	0.0961		0.0	15.406	1.481		Vel = 10.28
	0.0							
	64.27					12.757		K Factor = 17.99
106	17.73	1.049	1T	5.0	1.000	10.029		K Factor = 5.60
to		120		0.0	5.000	0.0		
15	17.73	0.1042		0.0	6.000	0.625		Vel = 6.58
	0.0							
	17.73					10.654		K Factor = 5.43
107	17.29	1.049	1T	5.0	1.000	9.537		K Factor = 5.60
to		120		0.0	5.000	0.0		
17	17.29	0.0995		0.0	6.000	0.597		Vel = 6.42
17	0.0	1.049		0.0	3.830	10.134		
to		120		0.0	0.0	0.0		
16	17.29	0.0995		0.0	3.830	0.381		Vel = 6.42

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
16	0.0	1.38		0.0	5.330	10.515		
to		120		0.0	0.0	0.0		
15	17.29	0.0261		0.0	5.330	0.139		Vel = 3.71
15	17.74	1.38	1T	6.0	8.660	10.654		
to		120		0.0	6.000	0.0		
14	35.03	0.0965		0.0	14.660	1.415		Vel = 7.51
14	0.0	1.598		0.0	7.750	12.069		
to		150		0.0	0.0	0.0		
105	35.03	0.0314		0.0	7.750	0.243		Vel = 5.60
105	19.65	1.598		0.0	6.250	12.312		K Factor = 5.60
to		150		0.0	0.0	0.0		
9	54.68	0.0712		0.0	6.250	0.445		Vel = 8.75
9	64.27	1.598	1E	5.828	50.330	12.757		
to		150		0.0	5.828	0.0		
8	118.95	0.3002		0.0	56.158	16.857		Vel = 19.03
8	0.0	1.598	1T	11.656	0.500	29.614		
to		150		0.0	11.656	0.217		
7	118.95	0.3002		0.0	12.156	3.649		Vel = 19.03
7	0.0	1.598	1E	5.828	27.000	33.480		
to		150		0.0	5.828	0.0		
6	118.95	0.3002		0.0	32.828	9.854		Vel = 19.03
6	0.0	2.157	1E	9.298	10.500	43.334		
to		150		0.0	9.298	0.0		
5	118.95	0.0697		0.0	19.798	1.379		Vel = 10.44
5	0.0	2.635	1E	8.237	48.583	44.713		
to		120		0.0	8.237	20.825		
4	118.95	0.0397		0.0	56.820	2.257		Vel = 7.00
4	0.0	2.635	2E	16.474	32.660	67.795		
to		120		0.0	16.474	0.0		
3	118.95	0.0397		0.0	49.134	1.951		Vel = 7.00
3	0.0	4.026	1E	10.0	5.000	69.746		
to		120		0.0	10.000	0.0		
2	118.95	0.0050		0.0	15.000	0.075		Vel = 3.00
2	0.0	4.026	1A	17.0	6.416	69.821		
to		120	1G	2.0	19.000	2.779		
1	118.95	0.0050		0.0	25.416	0.128		Vel = 3.00
1	0.0	6.16		0.0	15.000	72.728		
to		140		0.0	0.0	0.0		
TEST	118.95	0.0005		0.0	15.000	0.007		Vel = 1.28
	100.00							Qa = 100.00
	218.95					72.735		K Factor = 25.67

. . . Fire Protection by Computer Design

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

Job Name	:	178 MIDDLE STREET HC2
Building	:	178 MIDDLE STREET
Location	:	PORTLAND, MAINE 04101
System	:	#1 AREA#2
Contract	:	
Data File	:	178 MIDDLE STREET HC2.WXF

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

Hydraulic Design Information Sheet

Name - 178 MIDDLE STREET
Location - PORTLAND, MAINE 04101
Building - 178 MIDDLE STREET
Contractor -
Calculated By - MIKE NOBLIT
Construction: (X) Combustible ( ) Non-Combustible
Occupancy - OFFICES

Date - 1/22/13
System No. - #1 AREA#2
Contract No. -
Drawing No. - FP-3
Ceiling Height - 9'-7"

SYSTEM DESIGN

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

Area of Sprinkler Operation - ROOM	System Type	Sprinkler/Nozzle	
Density - 0.10	(X) Wet	Make TYCO	
Area Per Sprinkler - 120	( ) Dry	Model TY-FRB	
Elevation at Highest Outlet - 44'-4"	( ) Deluge	Size 1/2"	
Hose Allowance - Inside -	( ) Preaction	K-Factor 5.6	
Rack Sprinkler Allowance -	( ) Other	Temp.Rat.155	
Hose Allowance - Outside - 100			

Note

Calculation Summary: Flow Required - 247.278 Press Required - 70.999 At Test
C-Factor Used: 150 Overhead 140 Underground

WATER SUPPLY

Water Flow Test:	Pump Data:	Tank or Reservoir:
Date of Test - 7/19/2009		Cap. -
Time of Test -	Rated Cap.-	Elev.-
Static Press - 83	@ Press -	
Residual Press - 0	Elev. -	Well
Flow - 1342		Proof Flow
Elevation -		

Location -

Source of Information - PORTLAND WATER DISTRICT

Water Supply Curve (C)

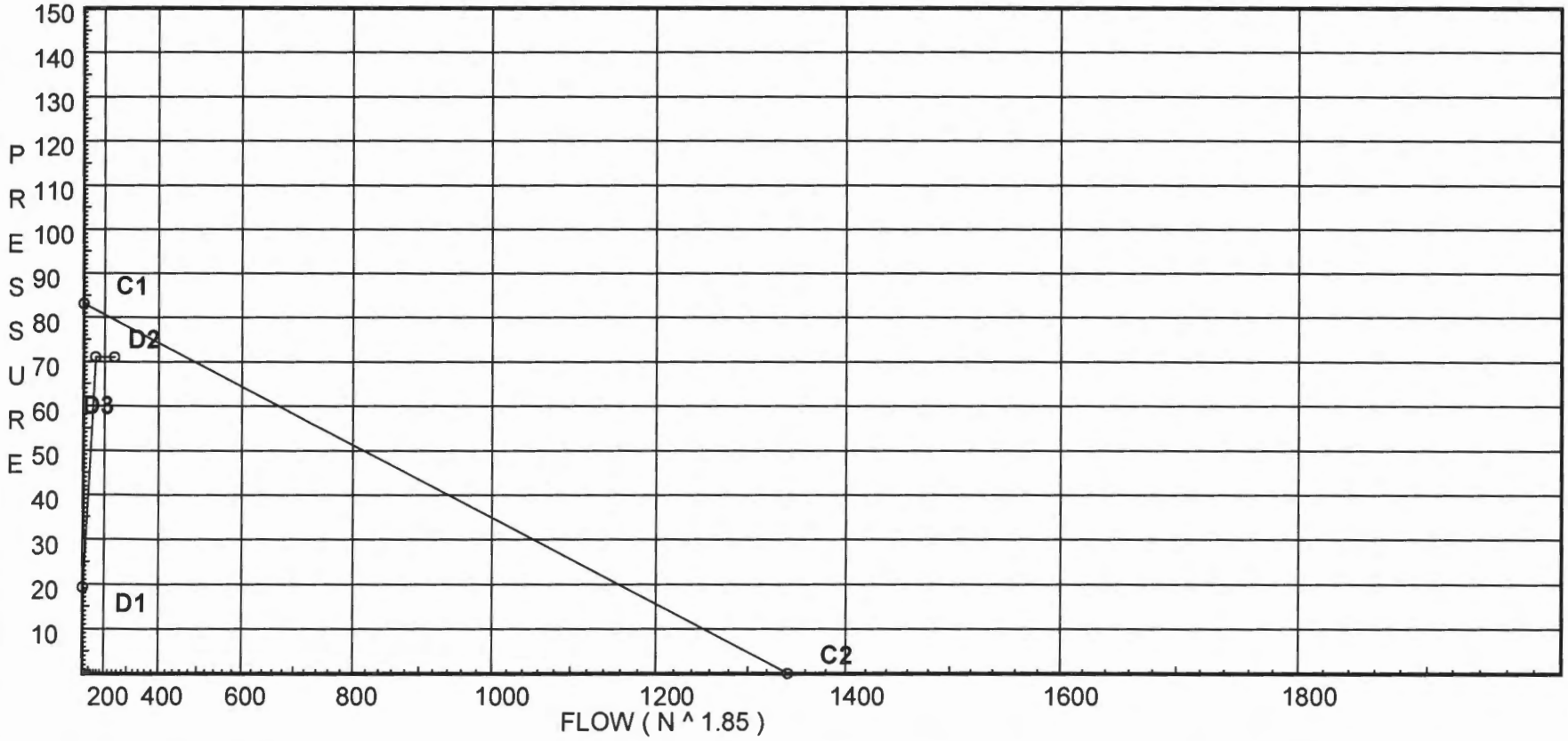
FREEDOM FIRE PROTECTION INC.
178 MIDDLE STREET HC2

Date 1/22/13

City Water Supply:
C1 - Static Pressure : 83
C2 - Residual Pressure: 0
C2 - Residual Flow : 1342

Demand:

D1 - Elevation	:	19.199
D2 - System Flow	:	147.278
D2 - System Pressure	:	70.999
Hose (Adj City)	:	
Hose (Demand)	:	100
D3 - System Demand	:	247.278
Safety Margin	:	8.370



FREEDOM FIRE PROTECTION INC.
178 MIDDLE STREET HC2

Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24
A	Generic Alarm Valve	0	0	0	0	0	0	7.7	21.5	0	17	17	27	29	0	0	0	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	0	0	0	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

Pressure / Flow Summary - STANDARD

FREEDOM FIRE PROTECTION INC.
178 MIDDLE STREET HC2

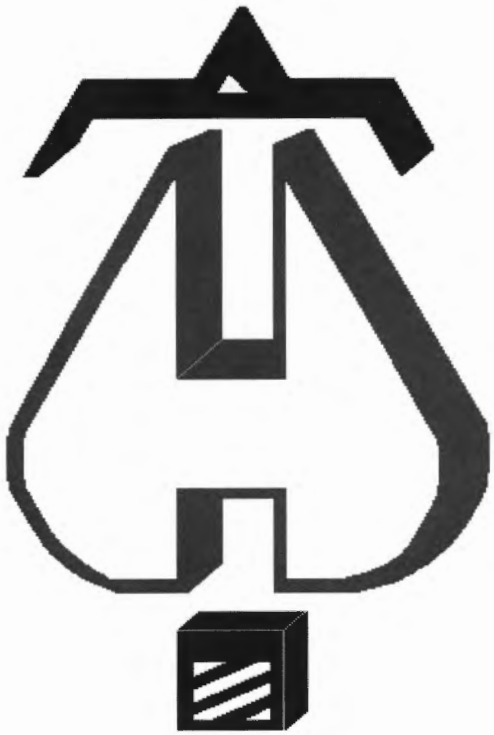
Date 1/22/13

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
201	44.33	5.6	14.53	na	21.35	0.1	120	7.0
204	44.33	5.6	12.23	na	19.59	0.1	120	7.0
203	44.33	5.6	13.02	na	20.21	0.1	120	7.0
202	44.33	5.6	15.93	na	22.35	0.1	120	7.0
205	44.33	5.6	8.86	na	16.67	0.1	120	7.0
208	44.33	5.6	7.0	na	14.82	0.1	120	7.0
207	44.33	5.6	7.47	na	15.3	0.1	120	7.0
206	44.33	5.6	9.21	na	17.0	0.1	120	7.0
25	44.33		9.32	na				
24	44.33		9.86	na				
23	44.33		16.11	na				
22	43.66		21.82	na				
21	43.66		36.24	na				
20	43.66		46.2	na				
4	6.416		65.01	na				
3	6.416		67.91	na				
2	6.416		68.02	na				
1	0.0		70.99	na				
TEST	0.0		71.0	na	100.0			

The maximum velocity is 23.56 and it occurs in the pipe between nodes 23 and 22

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
201	21.35	1.101	1T	9.563	11.000	14.532		K Factor = 5.60
to		150		0.0	9.562	0.0		
23	21.35	0.0768		0.0	20.562	1.579		Vel = 7.19
	0.0							
	21.35					16.111		K Factor = 5.32
204	19.59	1.101		0.0	12.000	12.234		K Factor = 5.60
to		150		0.0	0.0	0.0		
203	19.59	0.0655		0.0	12.000	0.786		Vel = 6.60
203	20.20	1.101		0.0	12.000	13.020		K Factor = 5.60
to		150		0.0	0.0	0.0		
202	39.79	0.2429		0.0	12.000	2.915		Vel = 13.41
202	22.36	1.394		0.0	1.000	15.935		K Factor = 5.60
to		150		0.0	0.0	0.0		
23	62.15	0.1760		0.0	1.000	0.176		Vel = 13.06
	0.0							
	62.15					16.111		K Factor = 15.48
205	16.67	1.101	1T	9.563	11.000	8.858		K Factor = 5.60
to		150		0.0	9.562	0.0		
24	16.67	0.0486		0.0	20.562	0.999		Vel = 5.62
	0.0							
	16.67					9.857		K Factor = 5.31
208	14.82	1.101		0.0	12.000	7.000		K Factor = 5.60
to		150		0.0	0.0	0.0		
207	14.82	0.0391		0.0	12.000	0.469		Vel = 4.99
207	15.30	1.101		0.0	12.000	7.469		K Factor = 5.60
to		150		0.0	0.0	0.0		
206	30.12	0.1451		0.0	12.000	1.741		Vel = 10.15
206	17.00	1.394		0.0	1.000	9.210		K Factor = 5.60
to		150		0.0	0.0	0.0		
25	47.12	0.1060		0.0	1.000	0.106		Vel = 9.91
25	0.0	1.598		0.0	10.000	9.316		
to		150		0.0	0.0	0.0		
24	47.12	0.0541		0.0	10.000	0.541		Vel = 7.54
24	16.66	1.598	1E	5.828	60.166	9.857		
to		150		0.0	5.828	0.0		
23	63.78	0.0948		0.0	65.994	6.254		Vel = 10.20
23	83.50	1.598	1T	11.656	0.500	16.111		
to		150		0.0	11.656	0.290		
22	147.28	0.4456		0.0	12.156	5.417		Vel = 23.56
22	0.0	1.598	1E	5.828	26.541	21.818		
to		150		0.0	5.828	0.0		
21	147.28	0.4457		0.0	32.369	14.426		Vel = 23.56

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
21	0.0	1.61	1E	4.0	11.330	36.244		
to		120		0.0	4.000	0.0		
20	147.28	0.6493		0.0	15.330	9.954		Vel = 23.21
20	0.0	2.635	1E	8.237	37.250	46.198		
to		120		0.0	8.237	16.130		
4	147.28	0.0590		0.0	45.487	2.682		Vel = 8.67
4	0.0	2.635	2E	16.474	32.660	65.010		
to		120		0.0	16.474	0.0		
3	147.28	0.0590		0.0	49.134	2.897		Vel = 8.67
3	0.0	4.026	1E	10.0	5.000	67.907		
to		120		0.0	10.000	0.0		
2	147.28	0.0075		0.0	15.000	0.112		Vel = 3.71
2	0.0	4.026	1A	17.0	6.416	68.019		
to		120	1G	2.0	19.000	2.779		
1	147.28	0.0075		0.0	25.416	0.190		Vel = 3.71
1	0.0	6.16		0.0	15.000	70.988		
to		140		0.0	0.0	0.0		
TEST	147.28	0.0007		0.0	15.000	0.011		Vel = 1.59
	100.00							Qa = 100.00
	247.28					70.999		K Factor = 29.35



. . . Fire Protection by Computer Design

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

Job Name	:	178 MIDDLE STREET HC3
Building	:	178 MIDDLE STREET
Location	:	PORTLAND, MAINE 04101
System	:	#1 AREA#3
Contract	:	
Data File	:	178 MIDDLE STREET HC3.WXF

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

Hydraulic Design Information Sheet

Name - 178 MIDDLE STREET — Date - 1/22/13
Location - PORTLAND, MAINE 04101
Building - 178 MIDDLE STREET — System No. - #1 AREA#3
Contractor - — Contract No. -
Calculated By - MIKE NOBLIT — Drawing No. - FP-2
Construction: (X) Combustible ( ) Non-Combustible — Ceiling Height - 7'-11"
Occupancy - BASEMENT STORAGE

SYSTEM DESIGN

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

Area of Sprinkler Operation	- ROOM	System Type	Sprinkler/Nozzle
Density	- 0.15	(X) Wet	Make TYCO
Area Per Sprinkler	- 130	( ) Dry	Model TY-FRB
Elevation at Highest Outlet	- 6'-11"	( ) Deluge	Size 1/2"
Hose Allowance - Inside	-	( ) Preaction	K-Factor 5.6
Rack Sprinkler Allowance	-	( ) Other	Temp.Rat.155
Hose Allowance - Outside	- 250		

Note

Calculation Summary

Flow Required - 407.054 Press Required - 52.216 At Test
C-Factor Used: 120 Overhead 140 Underground

WATER SUPPLY

Water Flow Test:		Pump Data:		Tank or Reservoir:
Date of Test	- 7/19/2009			Cap. -
Time of Test	-	Rated Cap.-		Elev.-
Static Press	- 83	@ Press	-	
Residual Press	- 0	Elev.	-	Well
Flow	- 1342			Proof Flow
Elevation	-			

Location -

Source of Information - PORTLAND WATER DISTRICT

Water Supply Curve (C)

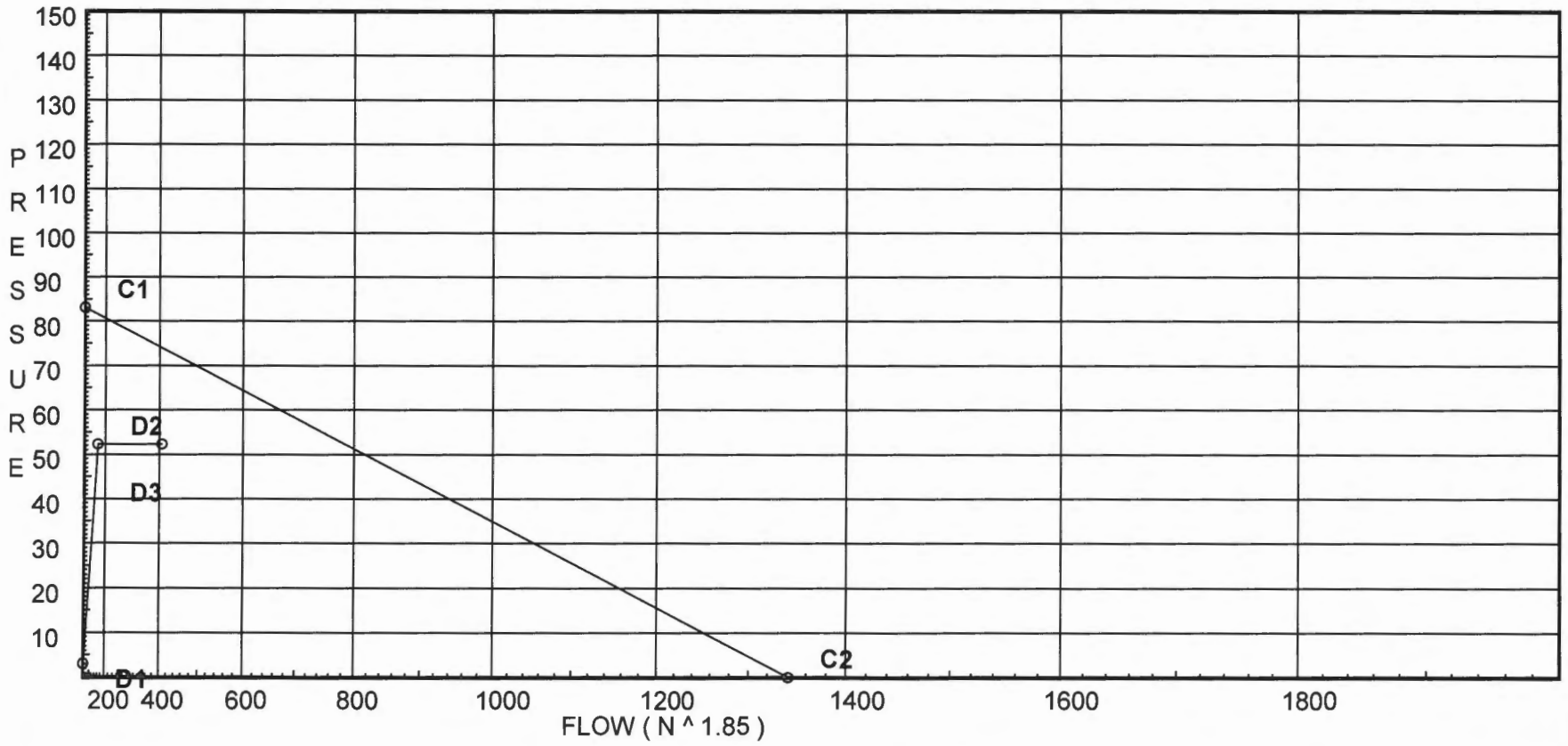
FREEDOM FIRE PROTECTION INC.
178 MIDDLE STREET HC3

Date 1/22/13

City Water Supply:
- C1 - Static Pressure : 83
- C2 - Residual Pressure: 0
- C2 - Residual Flow : 1342

Demand:

D1 - Elevation	:	2.995
D2 - System Flow	:	157.054
D2 - System Pressure	:	52.216
Hose (Adj City)	:	
Hose (Demand)	:	250
D3 - System Demand	:	407.054
Safety Margin	:	21.651



Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
304	6.916	5.6	12.13	na	19.5	0.15	130	7.0
303	6.916	5.6	13.12	na	20.28	0.15	130	7.0
302	6.916	5.6	18.89	na	24.34	0.15	130	7.0
301	6.916	5.6	21.91	na	26.21	0.15	130	7.0
306	6.916	5.6	14.21	na	21.11	0.15	130	7.0
307	6.916	5.6	13.82	na	20.82	0.15	130	7.0
35	6.916		15.07	na				
305	6.916	5.6	19.59	na	24.79	0.15	130	7.0
34	6.916		25.45	na				
33	6.916		25.81	na				
32	6.916		40.11	na				
31	6.416		42.58	na				
30	6.416		49.11	na				
2	6.416		49.21	na				
1	0.0		52.2	na				
TEST	0.0		52.22	na	250.0			

The maximum velocity is 19.38 and it occurs in the pipe between nodes 301 and 33

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
304	19.50	1.049		0.0	8.000	12.125		K Factor = 5.60
to		120		0.0	0.0	0.0		
303	19.5	0.1242		0.0	8.000	0.994		Vel = 7.24
303	20.28	1.049		0.0	12.416	13.119		K Factor = 5.60
to		120		0.0	0.0	0.0		
302	39.78	0.4644		0.0	12.416	5.766		Vel = 14.77
302	24.34	1.38		0.0	10.250	18.885		K Factor = 5.60
to		120		0.0	0.0	0.0		
301	64.12	0.2954		0.0	10.250	3.028		Vel = 13.75
301	26.21	1.38	1T	6.0	1.000	21.913		K Factor = 5.60
to		120		0.0	6.000	0.0		
33	90.33	0.5569		0.0	7.000	3.898		Vel = 19.38
	0.0							
	90.33					25.811		K Factor = 17.78
306	21.11	1.049	1T	5.0	1.000	14.212		K Factor = 5.60
to		120		0.0	5.000	0.0		
35	21.11	0.1437		0.0	6.000	0.862		Vel = 7.84
	0.0							
	21.11					15.074		K Factor = 5.44
307	20.82	1.049		0.0	8.916	13.824		K Factor = 5.60
to		120		0.0	0.0	0.0		
35	20.82	0.1402		0.0	8.916	1.250		Vel = 7.73
35	21.11	1.049		0.0	8.830	15.074		
to		120		0.0	0.0	0.0		
305	41.93	0.5120		0.0	8.830	4.521		Vel = 15.57
305	24.79	1.38	1T	6.0	12.416	19.595		K Factor = 5.60
to		120		0.0	6.000	0.0		
34	66.72	0.3179		0.0	18.416	5.855		Vel = 14.31
34	0.0	2.157		0.0	10.000	25.450		
to		120		0.0	0.0	0.0		
33	66.72	0.0361		0.0	10.000	0.361		Vel = 5.86
33	90.33	2.157	1E	6.153	75.083	25.811		
to		120		0.0	6.153	0.0		
32	157.05	0.1760		0.0	81.236	14.297		Vel = 13.79
32	0.0	2.157	1T	12.307	0.500	40.108		
to		120		0.0	12.307	0.217		
31	157.05	0.1759		0.0	12.807	2.253		Vel = 13.79
31	0.0	2.157	1T	12.307	24.830	42.578		
to		120		0.0	12.307	0.0		
30	157.05	0.1760		0.0	37.137	6.536		Vel = 13.79
30	0.0	4.26	1E	13.167	2.000	49.114		
to		120		0.0	13.167	0.0		
2	157.05	0.0064		0.0	15.167	0.097		Vel = 3.54

Final Calculations - Standard

FREEDOM FIRE PROTECTION INC.
178 MIDDLE STREET HC3

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	0.0	4.026	1A	17.0	6.416	49.211		
to		120	1G	2.0	19.000	2.779		
1	157.05	0.0084		0.0	25.416	0.214		Vel = 3.96
1	0.0	6.16		0.0	15.000	52.204		
to		140		0.0	0.0	0.0		
TEST	157.05	0.0008		0.0	15.000	0.012		Vel = 1.69
	250.00							Qa = 250.00
	407.05					52.216		K Factor = 56.33