DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND

BUILDING PERMIT

This is to certify that
HIGH TECH FIRE PROTECTION CO, INC.
PO BOX 156
MINOT, ME 04258

For installation at
38 PREBLE ST
TEEN SHELTER

Job ID: 2012-08-4798-FAFS

CBL: 037- F-020-001

has permission to install sprinkler and standpipes
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

Bjarkell (58)

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.

PORTLAND MAINE

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

Director of Planning and Urban Development
Jeff Levine

Job ID: 2012-08-4798-FAFS
install sprinkler and standpipes

For installation at:
38 PREBLE ST
TEEN SHELTER

CBL: 037- F-020-001

Conditions of Approval:

Fire

Gauges for Class I and III standpipe hose connections. The Fire Department requires the installer to provide two Kochek 2 ½" NH 45 Degree Line Gauge [LG25-45] to the Fire Department for each new Class I standpipe.

Fire department connection shall be three 2 ½". The Fire department connection shall indicate auto sprinkler and standpipe and will require Knox locking caps.

Class I Standpipes shall be installed in accordance with the City of Portland Fire Department Regulations and NFPA 14. A signed compliance letter will be required.

The sprinkler system shall be installed in accordance with the City of Portland Fire Department Regulations and NFPA 13. A signed compliance letter will be required.

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.

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

A separate sprinkler permit is required from the State Fire Marshal's Office.

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:	Date Applied:	CBL:	
2012-08-4798-FAFS	**8/23/2012**	**037- F-020-001**	
Location of Construction: **38 PREBLE ST**	Owner Name: **PREBLE STREET**	Owner Address: **38 PREBLE STREET** **PORTLAND ME 04101**	Phone:
Business Name:	Contractor Name: **High Tech Fire Protection**	Contractor Address: **PO Box 156, Minot, ME 04258**	Phone: **207-998-2551**
Lessee/Buyer's Name:	Phone:	Permit Type: **FIRE SUPPRESSON - Fire Supression**	Zone: **B-3**
Past Use: Teen Shelter – Permit #2012-04-3738	Proposed Use: Same – Teen Shelter – install a fire suppression system	Cost of Work: **36000.00**	CEO District:
		Fire Dept: ✓ Approved w/ conditions ___ Denied ___ N/A 9/10/12 Signature: BJ Caldwell (58)	Inspection: Use Group: Type: Signature:
Proposed Project Description: **fire suppression system**		Pedestrian Activities District (P.A.D.)	
Permit Taken By: **Gayle**		**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 electrial work.
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.

Special Zone or Reviews	Zoning Appeal	Historic Preservation
___ Shoreland	___ Variance	___ Not in Dist or Landmark
___ Wetlands	___ Miscellaneous	___ Does not Require Review
___ Flood Zone	___ Conditional Use	___ Requires Review
___ Subdivision	___ Interpretation	✓ Approved
___ Site Plan	___ Approved	___ Approved w/Conditions
___ Maj ___ Min ___ MM	___ Denied	___ Denied
Date: OK w/ condition 8/30/12 tbl	Date:	Date: 9/4/12 D. Andrews

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 appication 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 RDS

2012-08-4798

66

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: 38 Preble St CBL: 037 F020

Exact location: (within structure) Teen Shelter Building

Type of occupancy(s) (NFPA & ICC): Office / Residential

Building owner:

Managing Supervisor: Ed Poulin License No: 515

Supervisor phone: E-mail: EPoulin@faicpoint.net

Installing contractor: High Tech Fire Protection License No: 102

Contractor phone: 207-998-2551 E-mail: HTFP@faicpoint.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: 2121371

NFPA Standard will this system is designed to: 13 Edition: 2010

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

Download a new copy of this document from Inspection Division on-line at www.portlandmaine.gov for every submittal. Attach all design information and complete approved submittals as may be required by the State Fire Marshal's Office on 11X17 copies or 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: $35,735.00

PERMIT FEE: $380.00

($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: Timothy M Foster Date: 8-14-12

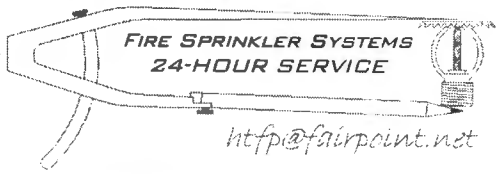
RECEIVED

AUG 23 2012

Dept. of Building Inspections
City of Portland Maine

HIGH TECH FIRE PROTECTION

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



Letter of Transmittal

To: Inspections Dept
Portland, Maine 04141

Date: 8-13-12	Job No.
Attention: Inspection Dept	
Re: 38 Preble St (Teen Shelter)	

We are sending you:

☐ Owners Manuals ☑ Preliminary Plans ☐ Asbuilt Plans ☑ Hydraulic Calculations

☐ Product Data ☑ Permit Check ☐ _____

Copies	Date	No.	Description
1	8-13-12		Fire Protection Drawing (FP-01& FP-02)
1	8-13-12		Hydraulic Calculations (3rd Fl & Stand Pipe)
1	8-13-12		Payment for Permit (Check)
1	8-13-12		CD with the PDF's of the above Drawings and Calc's
1	8-13-12		Permit Application

These are Transmitted as checked below:

☑ For Approval ☐ For your use ☐ Return _____ corrected copy

☐ As requested ☐ For review and comment

Comments:

Signed : _____
Tim Fortin

PORTLAND MAINE

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Receipts Details:

Tender Information: Check , BusinessName: High Tech Fire Protection, Check Number: 18252
Tender Amount: 380.00

Receipt Header:

Cashier Id: gguertin
Receipt Date: 8/23/2012
Receipt Number: 47491

Receipt Details:

Referance ID:	7779	Fee Type:	BP-Constr
Receipt Number:	0	Payment Date:	
Transaction Amount:	380.00	Charge Amount:	380.00
Job ID: Job ID: 2012-08-4798-FAFS - fire suppression system			
Additional Comments: 38 Preble St., High Tech Fire Protection			

Thank You for your Payment!

. . . Fire Protection by Computer Design

HIGH TECH FIRE PROTECTION
PO. BOX 156
MINOT, ME 04258-0258
207-998-2551

Job Name : Teen Sheter
Building : TEEN SHELTER
Location : 38 PREBLE ST
System : WET
Contract : 042712-1
Data File : Teen Shelter.WXF

Hydraulic Design Information Sheet

Name - TEEN SHELTER
Date - 8-20-12
Location - 38 PREBLE ST
Building - TEEN SHELTER
System No. - WET
Contractor - HIGH TECH FIRE PROTECTION
Contract No. - 042712-1
Calculated By -
Drawing No. - FP-01/FP-02
Construction: (X) Combustible ( ) Non-Combustible
Ceiling Height - VARIES
Occupancy - LIGHT HAZARD

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	- 900	System Type	Sprinkler/Nozzle
Density	- .1	(X) Wet	Make GLOBE
Area Per Sprinkler	- 225	( ) Dry	Model GL5606
Elevation at Highest Outlet	- 43	( ) Deluge	Size 1/2"
Hose Allowance - Inside	-	( ) Preaction	K-Factor 5.6
Rack Sprinkler Allowance	-	( ) Other	Temp.Rat.165
Hose Allowance - Outside	- 100		

Note

Calculation Summary: Flow Required - 310; Press Required - 75; C-Factor Used: 120; Overhead 140; Underground

WATER SUPPLY

Water Flow Test:		Pump Data:		Tank or Reservoir:	
Date of Test	- 10-10-97			Cap. -	
Time of Test	-	Rated Cap.-		Elev.-	
Static Press	- 102	@ Press	-		
Residual Press	- 88	Elev.	-		Well
Flow	- 1342				Proof Flow
Elevation	-				

Location - PORTLAND STREET AND PREBLE STREET

Source of Information - PORTLAND WATER DISTRICT

COMMODITY STORAGE RACK

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

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

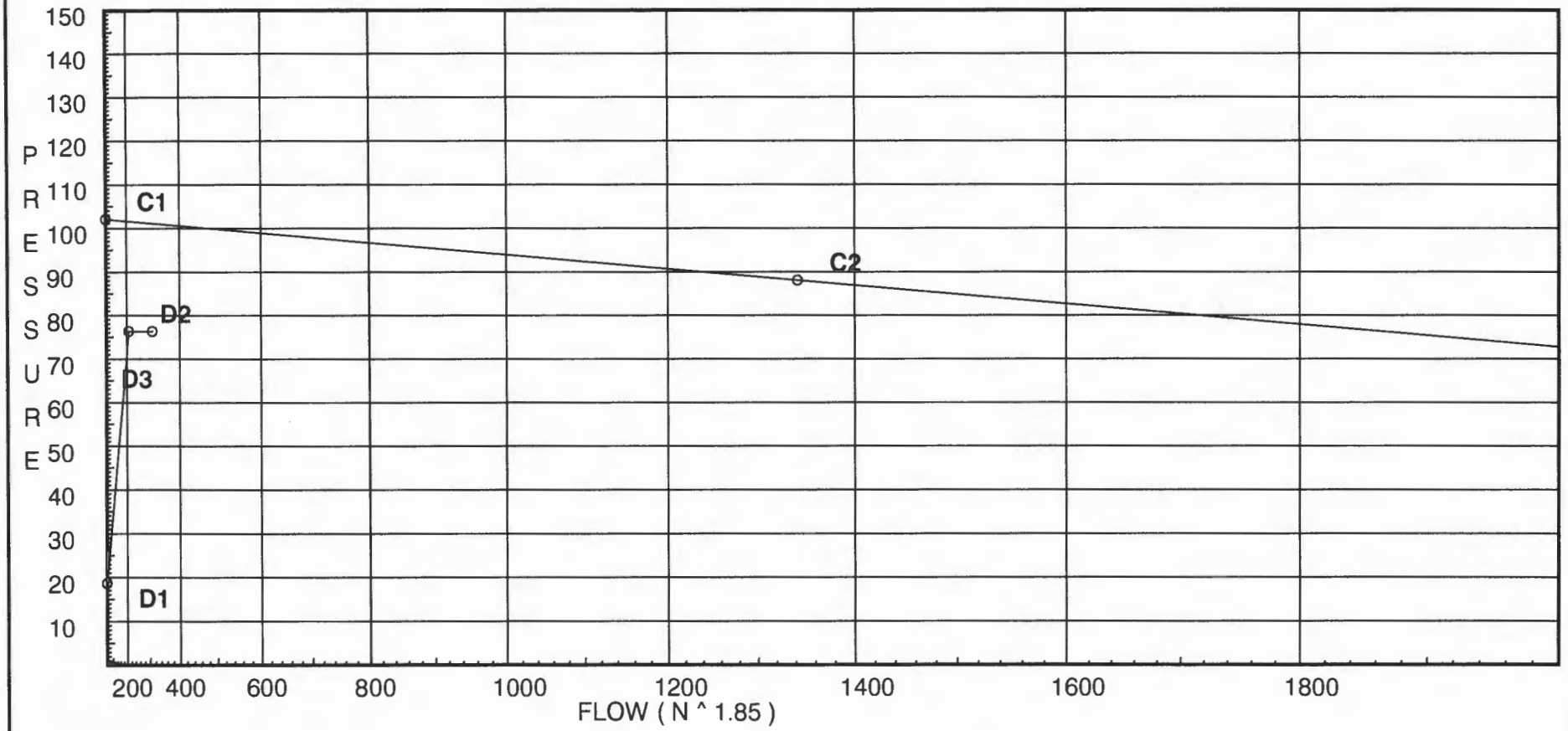
Flue Spacing Clearance:Storage to Ceiling
Longitudinal Transverse

Horizontal Barriers Provided:

City Water Supply:
C1 - Static Pressure : 102
C2 - Residual Pressure: 88
C2 - Residual Flow : 1342

Demand:

D1 - Elevation	:	18.623
D2 - System Flow	:	211.684
D2 - System Pressure	:	76.286
Hose (Adj City)	:	
Hose (Demand)	:	100
D3 - System Demand	:	311.684
Safety Margin	:	24.774



Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24
B	Generic Butterfly Valve	0	0	0	5	6	7.5	7	10	0	12	9	10	12	19	21	0	0	0	0	0
Cv	Check Viking D1-G1							6	10		13		20	23							
E	90' Standard Elbow	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
Fsp	Flow Switch Potter VSR	Fitting generates a Fixed Loss Based on Flow																			
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
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
Zib	Wilkins 350A	Fitting generates a Fixed Loss Based on Flow																			

Units Summary

Diameter Units	Inches
Length Units	Feet
Flow Units	US Gallons per Minute
Pressure Units	Pounds per Square Inch

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
DP1	41.0	5.6	16.14	na	22.5	0.1	225	7.0
10	43.0	K = K @ EQO1	35.36	na	22.5			
11	43.0	K = K @ EQO1	35.54	na	22.56			
12	43.0	K = K @ EQO1	36.7	na	22.92			
13	43.0	K = K @ EQO1	38.98	na	23.63			
14	43.0	K = K @ EQO1	41.02	na	24.23			
20	43.0	K = K @ EQO1	39.21	na	23.7			
21	43.0	K = K @ EQO1	39.46	na	23.77			
22	43.0	K = K @ EQO1	40.31	na	24.02			
23	43.0	K = K @ EQO1	41.43	na	24.36			
M1	43.0		41.42	na				
M2	43.0		41.84	na				
M3	43.0		43.2	na				
M4	43.0		46.98	na				
R3	43.0		53.13	na				
R2	28.0		59.76	na				
R1	18.0		64.22	na				
R	8.0		68.66	na				
B1	3.0		71.28	na				
B2	3.0		71.33	na				
UND	-4.0		77.83	na				
U1	-4.0		77.87	na				
U2	-10.0		80.5	na				
U3	-16.0		83.11	na				
TEST	0.0		76.29	na	100.0			

The maximum velocity is 13.23 and it occurs in the pipe between nodes 13 and M1

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
DP1	22.50	1.049	1E	2.0	2.000	16.143		K Factor = 5.60
to		120.0	1T	5.0	7.000	17.757		
EQO1	22.5	0.1619		0.0	9.000	1.457		Vel = 8.35
	0.0							
	22.50					35.357		K Factor = 3.78
10	22.50	1.682		0.0	11.000	35.357		K Factor @ node EQO1
to		120.0		0.0	0.0	0.0		
11	22.5	0.0162		0.0	11.000	0.178		Vel = 3.25
11	22.56	1.682	2E	9.9	9.900	35.535		K Factor @ node EQO1
to		120.0		0.0	9.900	0.0		
12	45.06	0.0587		0.0	19.800	1.162		Vel = 6.51
12	22.92	1.682	2E	9.9	8.300	36.697		K Factor @ node EQO1
to		120.0		0.0	9.900	0.0		
13	67.98	0.1255		0.0	18.200	2.284		Vel = 9.82
13	23.62	1.682	1T	9.9	1.300	38.981		K Factor @ node EQO1
to		120.0		0.0	9.900	0.0		
M1	91.6	0.2180		0.0	11.200	2.442		Vel = 13.23
	0.0							
	91.60					41.423		K Factor = 14.23
14	24.23	1.682	1T	9.9	11.900	41.017		K Factor @ node EQO1
to		120.0		0.0	9.900	0.0		
M1	24.23	0.0186		0.0	21.800	0.406		Vel = 3.50
	0.0							
	24.23					41.423		K Factor = 3.76
20	23.70	1.682		0.0	14.000	39.213		K Factor @ node EQO1
to		120.0		0.0	0.0	0.0		
21	23.7	0.0179		0.0	14.000	0.250		Vel = 3.42
21	23.77	1.682		0.0	13.100	39.463		K Factor @ node EQO1
to		120.0		0.0	0.0	0.0		
22	47.47	0.0646		0.0	13.100	0.846		Vel = 6.85
22	24.02	1.682	1T	9.9	1.200	40.309		K Factor @ node EQO1
to		120.0		0.0	9.900	0.0		
M2	71.49	0.1378		0.0	11.100	1.530		Vel = 10.32
	0.0							
	71.49					41.839		K Factor = 11.05
23	24.36	1.682	1T	9.9	11.900	41.429		K Factor @ node EQO1
to		120.0		0.0	9.900	0.0		
M2	24.36	0.0188		0.0	21.800	0.410		Vel = 3.52
	0.0							
	24.36					41.839		K Factor = 3.77
M1	115.84	2.635		0.0	11.000	41.423		
to		120.0		0.0	0.0	0.0		
M2	115.84	0.0378		0.0	11.000	0.416		Vel = 6.82

HIGH TECH FIRE PROTECTION
Teen Sheter

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	******* Notes ******
M2	95.84	2.635		0.0	11.800	41.839		
to		120.0		0.0	0.0	0.0		
M3	211.68	0.1153		0.0	11.800	1.361		Vel = 12.45
M3	0.0	2.635	1V	5.903	26.900	43.200		
to		120.0		0.0	5.903	0.0		
M4	211.68	0.1153		0.0	32.803	3.783		Vel = 12.45
M4	0.0	2.635	1V	5.903	3.500	46.983		
to		120.0	1B	9.61	23.750	3.000		* Fixed loss = 3
R3	211.68	0.1153	1Fsp	0.0	27.250	3.143		Vel = 12.45
			1Cv	8.237				
	0.0							
	211.68					53.126		K Factor = 29.04
R3	211.68	4.26		0.0	12.000	53.126		
to		120.0		0.0	0.0	6.496		
R2	211.68	0.0112		0.0	12.000	0.134		Vel = 4.76
R2	0.0	4.26		0.0	12.000	59.756		
to		120.0		0.0	0.0	4.331		
R1	211.68	0.0111		0.0	12.000	0.133		Vel = 4.76
R1	0.0	4.26		0.0	10.000	64.220		
to		120.0		0.0	0.0	4.331		
R	211.68	0.0112		0.0	10.000	0.112		Vel = 4.76
R	0.0	4.26		0.0	40.500	68.663		
to		120.0		0.0	0.0	2.166		
B1	211.68	0.0111		0.0	40.500	0.449		Vel = 4.76
B1	0.0	4.26		0.0	5.000	71.278		
to		120.0		0.0	0.0	0.0		
B2	211.68	0.0112		0.0	5.000	0.056		Vel = 4.76
B2	0.0	4.26	1V	8.954	3.000	71.334		
to		120.0	1Zib	0.0	8.954	6.364		* Fixed loss = 3.333
UND	211.68	0.0111		0.0	11.954	0.133		Vel = 4.76
UND	0.0	6.16	1V	10.786	10.000	77.831		
to		120.0		0.0	10.786	0.0		
U1	211.68	0.0018		0.0	20.786	0.038		Vel = 2.28
U1	0.0	8.27	1E	28.468	20.000	77.869		
to		140.0	1G	6.326	90.148	2.599		
U2	211.68	0.0003	1T	55.354	110.148	0.036		Vel = 1.26
U2	0.0	16.41	1T	166.859	200.000	80.504		
to		140.0		0.0	166.860	2.599		
U3	211.68	0.0		0.0	366.860	0.004		Vel = 0.32
U3	0.0	6.16	1T	43.037	35.000	83.107		
to		140.0		0.0	43.037	-6.930		
TEST	211.68	0.0014		0.0	78.037	0.109		Vel = 2.28

HIGH TECH FIRE PROTECTION
Teen Sheter

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*******	Notes	******
	100.00						Qa = 100.00		
	311.68				76.286		K Factor = 35.69		

. . . Fire Protection by Computer Design

HIGH TECH FIRE PROTECTION
PO. BOX 156
MINOT, ME 04258-0258
207-998-2551

Job Name	:	Teen Sheter Stand Pipe Calc
Building	:	TEEN SHELTER
Location	:	38 PREBLE ST
System	:	HOSE VALVES
Contract	:	042712-1
Data File	:	HOSE VALVE CALC.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - TEEN SHELTER
Location - 38 PREBLE ST
Building - TEEN SHELTER
Contractor - HIGH TECH FIRE PROTECTION
Calculated By - TIM FORITN
Occupancy - LIGHT HAZARD

Date - 8-9-12
System No. - HOSE VALVES
Contract No. - 042712-1
Drawing No. - FP-01/FP-02

SYSTEM DESIGN

(X)NFPA 14 Number of Standpipes ( )1 (X)2 ( )3 ( )4 ( )
( )Other
( )Specific Ruling Made by Date

Flow at Top Most Outlet	- 250	Gpm	System Type	
Pres. at Top Most Outlet	- 21.7	Psi	(X) Wet	( ) Dry
Flow For Ea. Additional Standpipe	- 250	Gpm		
Total Additional Flow	- 450	Gpm		
Elevation at Highest Outlet	- 37.5	Feet		

Hose Valve Connection ( )1 1/2" (X)2 1/2"
Class Service (X)I ( )II ( )III
Note:CITY OF PORTLAND PUMPER TRUCK INFO: 1250 GPM AT 150 PSI

Calculation Summary: Gpm Required 750; Psi Required 21.7 At Test; C-Factor Used: Overhead 120, Underground

WATER SUPPLY

Water Flow Test:
Date of Test -
Time of Test -
Static (Psi) - 200
Residual (Psi) - 150
Flow (Gpm) - 1250
Elevation - 3.5

Pump Data:
Rated Cap.
@ Psi
Elev.

Tank or Reservoir:
Cap.
Elev.

Well
Proof Flow Gpm

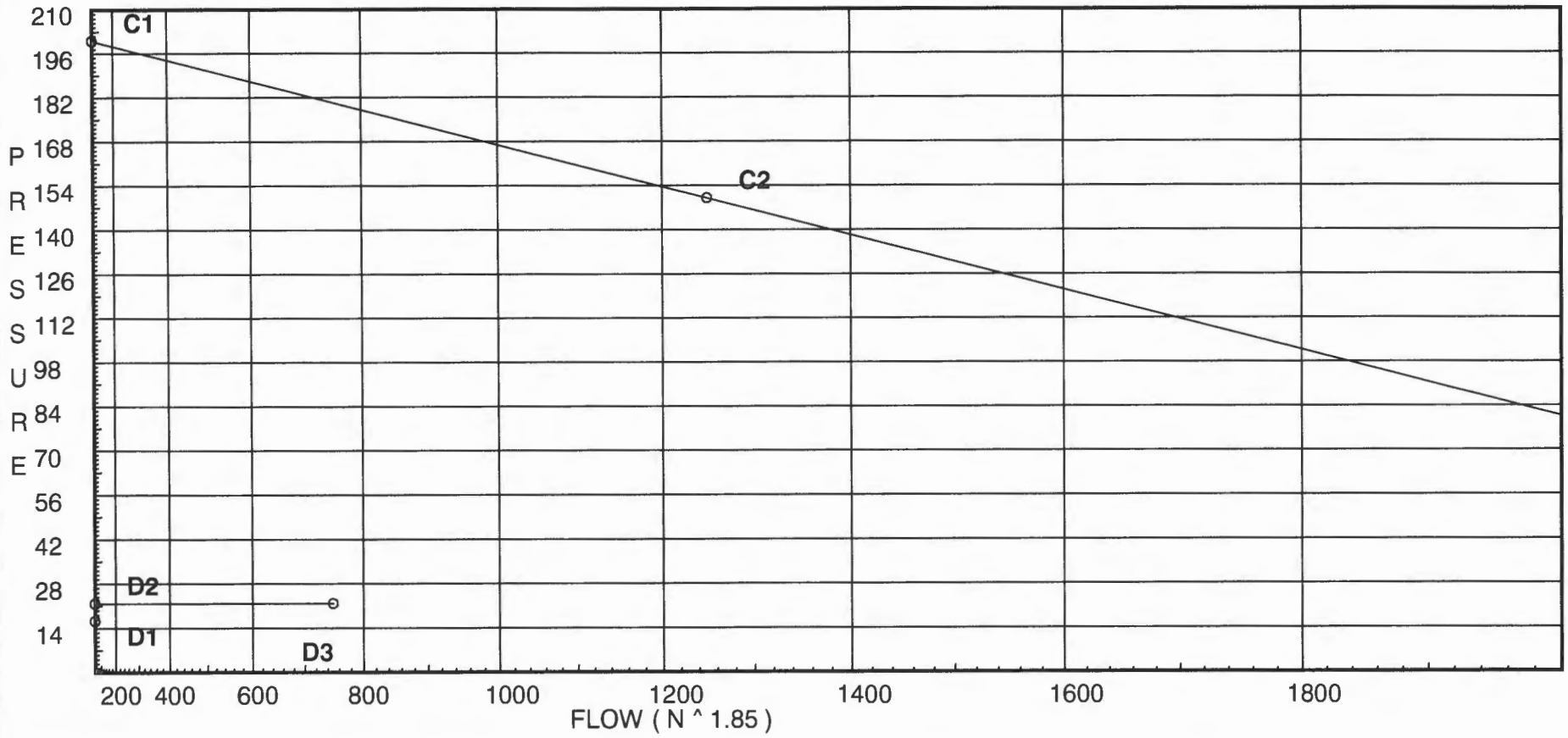
Location: PUMPER TRUCK HOOKED UP TO FIRE DEPARTMENT CONNECTION

Source of Information: CITY OF PORTLAND

City Water Supply:
C1 - Static Pressure : 200
C2 - Residual Pressure: 150
C2 - Residual Flow : 1250

Demand:

D1 - Elevation	:	16.241
D2 - System Flow	:	
D2 - System Pressure	:	21.744
Hose (Adj City)	:	
Hose (Demand)	:	750
D3 - System Demand	:	750
Safety Margin	:	158.823



Fitting Legend

Abbrev.	Name	½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24

Units Summary

Diameter Units	Inches
Length Units	Feet
Flow Units	US Gallons per Minute
Pressure Units	Pounds per Square Inch

Note: Fitting Legend provides equivalent pipe lengths for fittings types of various diameters. Equivalent lengths shown are standard for actual diameters of Sched 40 pipe and CFactors of 120 except as noted with *. The fittings marked with a * show equivalent lengths values supplied by manufacturers based on specific pipe diameters and CFactors and they require no adjustment. All values for fittings not marked with a * will be adjusted in the calculation for CFactors of other than 120 and diameters other than Sched 40 per NFPA.

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
HV1	37.5		0.0	na	250.0			
HV2	25.5		5.38	na	250.0			
S	37.5		0.11	na				
S1	25.5		5.49	na				
S2	12.5		11.77	na				
S3	9.0		13.94	na				
S4	9.0		14.02	na				
S5	9.0		16.06	na				
HV3	37.5		4.55	na	250.0			
R3	37.5		4.63	na				
R2	25.5		9.88	na				
R1	12.5		15.69	na				
S6	3.5		19.71	na				
TEST	0.0		21.74	na				

The maximum velocity is 16.88 and it occurs in the pipe between nodes S6 and TEST

HIGH TECH FIRE PROTECTION
Teen Sheter Stand Pipe 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 ******
HV1	250.00	2.469	0.0	0.500	0.0		Qa = 250
to		120.0	0.0	0.0	0.0		
S	250.0	0.2160	0.0	0.500	0.108		Vel = 16.75
	0.0						
	250.00				0.108		K Factor = 760.73
HV2	250.00	2.469	0.0	0.500	5.379		Qa = 250
to		120.0	0.0	0.0	0.0		
S1	250.0	0.2140	0.0	0.500	0.107		Vel = 16.75
	0.0						
	250.00				5.486		K Factor = 106.74
S	250.00	4.26	0.0	12.000	0.108		
to		120.0	0.0	0.0	5.197		
S1	250.0	0.0151	0.0	12.000	0.181		Vel = 5.63
S1	250.00	4.26	0.0	12.000	5.486		
to		120.0	0.0	0.0	5.630		
S2	500.0	0.0546	0.0	12.000	0.655		Vel = 11.25
S2	0.0	4.26	0.0	12.000	11.771		
to		120.0	0.0	0.0	1.516		
S3	500.0	0.0545	0.0	12.000	0.654		Vel = 11.25
S3	0.0	4.26	0.0	1.500	13.941		
to		120.0	0.0	0.0	0.0		
S4	500.0	0.0547	0.0	1.500	0.082		Vel = 11.25
S4	0.0	4.26	0.0	37.300	14.023		
to		120.0	0.0	0.0	0.0		
S5	500.0	0.0545	0.0	37.300	2.033		Vel = 11.25
S5	0.0	4.26	0.0	23.300	16.056		
to		120.0	0.0	0.0	2.382		
S6	500.0	0.0545	0.0	23.300	1.270		Vel = 11.25
	0.0						
	500.00				19.708		K Factor = 112.63
HV3	250.00	2.635	0.0	0.500	4.549		Qa = 250
to		120.0	0.0	0.0	0.0		
R3	250.0	0.1580	0.0	0.500	0.079		Vel = 14.71
R3	0.0	4.26	0.0	3.500	4.628		
to		120.0	0.0	0.0	5.197		
R2	250.0	0.0151	0.0	3.500	0.053		Vel = 5.63
R2	0.0	4.26	0.0	12.000	9.878		
to		120.0	0.0	0.0	5.630		
R1	250.0	0.0152	0.0	12.000	0.182		Vel = 5.63
R1	0.0	4.26	0.0	8.000	15.690		
to		120.0	0.0	0.0	3.898		
S6	250.0	0.0150	0.0	8.000	0.120		Vel = 5.63

HIGH TECH FIRE PROTECTION
Teen Sheter Stand Pipe 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 ******
	0.0							
	250.00					19.708		K Factor = 56.31
S6	750.00	4.26	0.0		4.500	19.708		
to		120.0	0.0		0.0	1.516		
TEST	750.0	0.1156	0.0		4.500	0.520		Vel = 16.88
	0.0							
	750.00					21.744		K Factor = 160.84