

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
385 CUMBERLAND AVE
SHALOM HOUSE

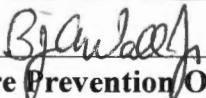
Job ID: 2012-08-4855-FAFS

CBL: 033- I-009-001

has permission to install NFPA 13R sprinkler and Class I 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


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

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: 2012-08-4855-FAFS
install NFPA 13R sprinkler and Class I
standpipes

For installation at:
385 CUMBERLAND AVE
SHALOM HOUSE

CBL: 033- I-009-001

Conditions of Approval:

Fire

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

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

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.

The Standpipe system shall be installed in accordance with the City of Portland Fire Department Regulations and NFPA 14. A signed compliance letter will be required.

This system is a manual wet standpipe. Each hose connection shall be provided with a conspicuous sign that reads "MANUAL STANDPIPE FOR FIRE DEPARTMENT USE ONLY." (14:5.4.2) Letters shall be red with a white background and shall be 2 1/2" in height. (14:6.3.8.5.2)

Gauges for Class I and III standpipe hose connections. The Fire Department requires the installer to provide two Kochek 2 1/2" NH 45 Degree Line Gauge [LG25-45] to the Fire Department for each new Class I and III standpipe. The Fire Department may waive this requirement if enough gauges are available for fire department standpipe kits and only with written approval of the Fire Prevention Bureau.

FDC connection for the Class I standpipes shall be three 2 1/2" and shall indicate "Manual Standpipe." FDC connection for the sprinkler system shall be one 2 1/2" and shall indicate "Auto Sprinkler." Knox locking caps will be required on FDCs.

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: 2012-08-4855-FAFS	Date Applied: 8/30/2012	CBL: 033- 1-009-001	
Location of Construction: 385 CUMBERLAND AVE	Owner Name: SHALOM HOUSE	Owner Address: 106 GILMAN ST PORTLAND, ME 04102	Phone:
Business Name:	Contractor Name: HIGH TECH FIRE PROTECTION CO, INC.	Contractor Address: PO BOX 156 MINOT MAINE 04258	Phone: (207) -998-2551
Lessee/Buyer's Name:	Phone:	Permit Type: FIRE SUPPRESSION	Zone: B-3
Past Use: Eight (8) residential dwelling units	Proposed Use: Same: 8 residential dwelling units – to install fire suppression system in entire building	Cost of Work: \$18,000.00	CEO District:
		Fire Dept: 6/10/12 Signature: <i>Björn</i> (50)	Inspection: Use Group: Type: Signature:
Proposed Project Description: WB Fire Supression		Pedestrian Activities District (P.A.D.)	
Permit Taken By: Brad		Zoning Approval	

<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>Special Zone or Reviews</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>9/4/12</i></p>	<p>Zoning Appeal</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>Historic Preservation</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>Date:</p>
	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



Water-Based Fire Suppression System Permit

Amend 8/30/12
(BS)
B-3

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.

2012-08-4855-FAS

Installation address: 385 Cumberland Avenue CBL: 033 J 009

Exact location: (within structure) Entire Structure

Type of occupancy(s) (NFPA & ICC): Residential Use Group R-2

Building owner: Shalom House Inc.

Managing Supervisor (RMS): Jeremy A. Foss License No: 808

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

Installing contractor: High Tech Fire Protection License No: 102

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

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

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

NFPA Standard this system is designed to: 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 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: <u>17,600</u>
PERMIT FEE: <u>200</u>
(\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)
RECEIVED
AUG 30 2012
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: [Signature] Date: 07/31/2012



PORTLAND MAINE

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Receipts Details:

Tender Information: Check , Check Number: 18258

Tender Amount: 200.00

Receipt Header:

Cashier Id: bsaucier

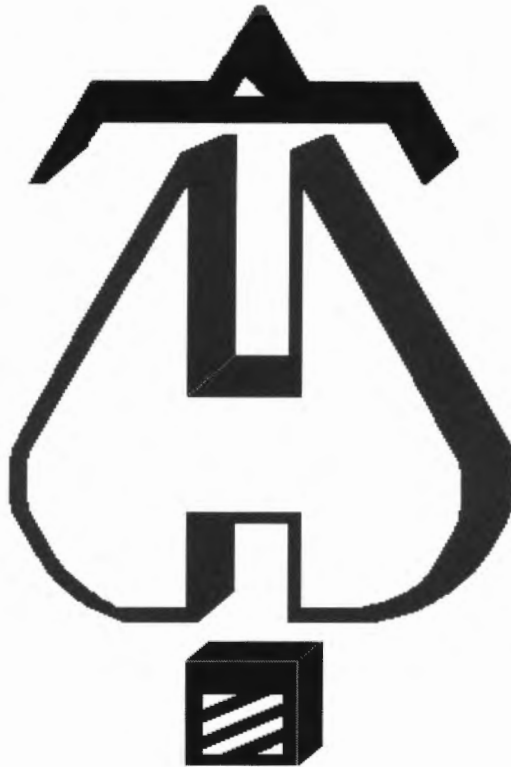
Receipt Date: 8/30/2012

Receipt Number: 47726

Receipt Details:

Referance ID:	7857	Fee Type:	BP-Constr
Receipt Number:	0	Payment Date:	
Transaction Amount:	200.00	Charge Amount:	200.00
Job ID: Job ID: 2012-08-4855-FAFS - WB Fire Supression			
Additional Comments: 385 Cumberland			

Thank You for your Payment!



... Fire Protection by Computer Design

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

Job Name : Fourth Floor Calc.
Building : Shalom House
Location : 385 Cumberland Avenue
System : NFPA 13R
Contract : 040512-1
Data File : Fourth Floor Calc.wxf

HYDRAULIC DESIGN INFORMATION SHEET

Name - Fourth Floor Calc. Date - 06/06/2012
Location - 385 Cumberland Avenue
Building - Shalom House System No. - NFPA 13R
Contractor - High Tech Fire Protection Contract No. - 040512-1
Calculated By - Jeremy A. Foss Drawing No. - FP-1.1
Construction: (X) Combustible () Non-Combustible Ceiling Height 8'-0"
OCCUPANCY - Apartment Building

S Type of Calculation: ()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 - 14 Gpm System Type
Listed Pres. at Start Point - 10.2 Psi (X) Wet () Dry
D MAXIMUM LISTED SPACING 14 x 14 () Deluge () PreAction
E Domestic Flow Added - 0 Gpm Sprinkler or Nozzle
S Additional Flow Added - 0 Gpm Make Reliable Model Res 44
I Elevation at Highest Outlet - 41 Feet Size 1/2" K-Factor 4.4
G Note: Temperature Rating 155
N

Calculation Gpm Required 62 Psi Required 55 At Test
Summary C-Factor Used: Overhead 150 Underground 100

W Water Flow Test: Pump Data: Tank or Reservoir:
A Date of Test - 05/07/2010 Rated Cap. Cap.
T Time of Test - @ Psi Elev.
E Static (Psi) - 66 Elev.
R Residual (Psi) - 62 Other Well
Flow (Gpm) - 1186 Proof Flow Gpm
S Elevation - 28

P Location: Test Hydrant Located at Corner of Oak Street and Congress

P
L Source of Information: Portland Water District
Y

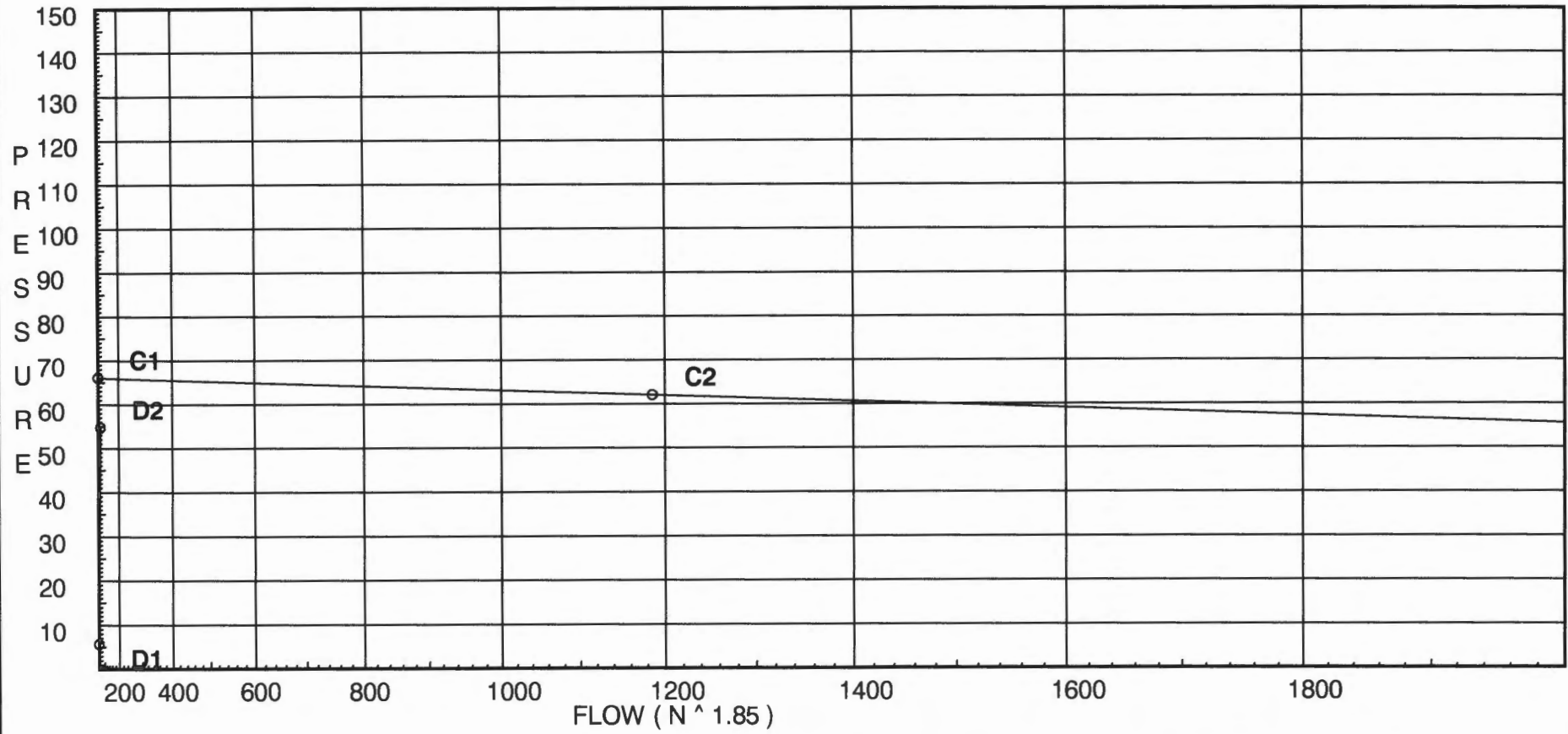
Water Supply Curve (C)

HIGH TECH FIRE PROTECTION
Fourth Floor Calc.

Page 2
Date 06/06/2012

City Water Supply:
C1 - Static Pressure : 66
C2 - Residual Pressure: 62
C2 - Residual Flow : 1186

Demand:
D1 - Elevation : 5.630
D2 - System Flow : 62.0869
D2 - System Pressure : 54.678
Hose (Adj City) : _____
Hose (Demand) : _____
D3 - System Demand : 62.0869
Safety Margin : 11.305



Fittings Used Summary

HIGH TECH FIRE PROTECTION
Fourth Floor Calc.

Page 3
Date 06/06/2012.

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
G	Generic Gate Valve	0	0	1	1	1	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
N*	CPVC 90'Ell Harvel-Spears	7	7	7	8	9	11	12	13	0	0	0	0	0	0	0	0	0	0	0	0
O*	CPVC Tee-Branch	3	3	5	6	8	10	12	15	0	0	0	0	0	0	0	0	0	0	0	0
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
Z	Generic Flow Switch	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
Zik	Wilkins 950XL	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.

Pressure / Flow Summary - STANDARD

HIGH TECH FIRE PROTECTION
Fourth Floor Calc.

Page 4
Date 06/06/2012

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
DP1	0.0	4.4	10.2	na	14.05	0.05	196	10.2
DP2	0.0	4.4	10.2	na	14.05	0.05	196	10.2
201	41.0	K = K @ EQ01	10.47	na	14.05			
202	41.0	K = K @ EQ02	10.81	na	14.33			
203	41.0	K = K @ EQ02	13.65	na	16.1			
204	41.0	K = K @ EQ02	16.31	na	17.6			
A1	41.0		18.11	na				
A2	32.0		24.99	na				
A3	32.0		34.94	na				
A4	5.0		50.02	na				
A5	5.0		51.31	na				
TOR	5.0		53.18	na				
BOR	1.0		56.49	na				
BASE	1.0		64.21	na				
H1	1.0		66.21	na				
H2	6.0		64.07	na				
H3	6.0		64.09	na				
H4	28.0		54.58	na				
H5	28.0		54.67	na				
TEST	28.0		54.68	na				

The maximum velocity is 13.05 and it occurs in the pipe between nodes 204 and A1

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 to EQ01	14.05 14.05	1.101 150.0 0.0355	1N	7.0 0.0 0.0	0.500 7.000 7.500	10.200 0.0 0.266			K Factor = 4.40 Vel = 4.73	
	0.0 14.05						10.466		K Factor = 4.34	
DP2 to EQ02	14.05 14.05	1.101 150.0 0.0355	1O	5.0 0.0 0.0	0.500 5.000 5.500	10.200 0.0 0.195			K Factor = 4.40 Vel = 4.73	
	0.0 14.05						10.395		K Factor = 4.36	
201 to 202	14.05 14.05	1.101 150.0 0.0354	1N	7.0 0.0 0.0	2.800 7.000 9.800	10.466 0.0 0.347			K Factor @ node EQ01 Vel = 4.73	
202 to 203	14.33 28.38	1.101 150.0 0.1300	2N	14.0 0.0 0.0	7.800 14.000 21.800	10.813 0.0 2.835			K Factor @ node EQ02 Vel = 9.56	
203 to 204	16.11 44.49	1.394 150.0 0.0946	2N	16.0 0.0 0.0	12.100 16.000 28.100	13.648 0.0 2.659			K Factor @ node EQ02 Vel = 9.35	
204 to A1	17.60 62.09	1.394 150.0 0.1753	1O	6.0 0.0 0.0	4.300 6.000 10.300	16.307 0.0 1.806			K Factor @ node EQ02 Vel = 13.05	
A1 to A2	0.0 62.09	1.394 150.0 0.1753	1N	8.0 0.0 0.0	9.000 8.000 17.000	18.113 3.898 2.980			Vel = 13.05	
A2 to A3	0.0 62.09	1.394 150.0 0.1753	2O 1N	12.0 8.0 9.523	27.200 29.523 56.723	24.991 0.0 9.945			Vel = 13.05	
A3 to A4	0.0 62.09	1.682 120.0 0.1062	1E	4.95 0.0 0.0	27.000 4.950 31.950	34.936 11.694 3.392			Vel = 8.97	
A4 to A5	0.0 62.09	1.682 120.0 0.1061	1T	9.9 0.0 0.0	2.200 9.900 12.100	50.022 0.0 1.284			Vel = 8.97	
A5 to TOR	0.0 62.09	1.682 120.0 0.1062	1E	4.95 0.0 0.0	12.700 4.950 17.650	51.306 0.0 1.874			Vel = 8.97	
TOR to BOR	0.0 62.09	1.61 120.0 0.1313	1E 1Z	4.0 4.0 0.0	4.000 8.000 12.000	53.180 1.732 1.576			Vel = 9.78	
BOR to BASE	0.0 62.09	1.61 120.0 0.1314	1Zik 1E	0.0 4.0 0.0	2.500 4.000 6.500	56.488 6.867 0.854			* Fixed loss = 6.867 Vel = 9.78	

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
BASE	0.0	1.72	1G	0.617	25.000	64.209			
to		150.0	1T	6.174	6.792	0.0			
H1	62.09	0.0630		0.0	31.792	2.003		Vel = 8.57	
H1	0.0	6.28	1T	25.37	75.000	66.212			
to		100.0		0.0	25.370	-2.166			
H2	62.09	0.0002		0.0	100.370	0.025		Vel = 0.64	
H2	0.0	6.28	1T	25.37	50.000	64.071			
to		100.0		0.0	25.370	0.0			
H3	62.09	0.0002		0.0	75.370	0.018		Vel = 0.64	
H3	0.0	8.39		0.0	300.000	64.089			
to		100.0		0.0	0.0	-9.528			
H4	62.09	0.0001		0.0	300.000	0.018		Vel = 0.36	
H4	0.0	6.28		0.0	360.000	54.579			
to		100.0		0.0	0.0	0.0			
H5	62.09	0.0002		0.0	360.000	0.088		Vel = 0.64	
H5	0.0	6.16	1E	20.084	10.000	54.667			
to		140.0	1G	4.304	67.425	0.0			
TEST	62.09	0.0001	1T	43.037	77.425	0.011		Vel = 0.67	
	0.0								
	62.09					54.678		K Factor = 8.40	



... Fire Protection by Computer Design

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

Job Name : Basement Calc.
Building : Shalom House
Location : 385 Cumberland Avenue
System : NFPA 13R
Contract : 040512-1
Data File : Basement Calc.wxf

Hydraulic Design Information Sheet

Name - Basement Calc. Date - 06/06/2012
 Location - 385 Cumberland Avenue
 Building - Shalom House System No. - NFPA 13R
 Contractor - High Tech Fire Protection Contract No. - 040512-1
 Calculated By - Jeremy A. Foss Drawing No. - FP-1.1
 Construction: (X) Combustible () Non-Combustible Ceiling Height - 6'-0"
 Occupancy - Basement - Mech.

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

S Other

T Specific Ruling Made By Date

E
 M Area of Sprinkler Operation - 450 System Type Sprinkler/Nozzle
 Density - .15 (X) Wet Make Globe
 D Area Per Sprinkler - 130 () Dry Model GL5615
 E Elevation at Highest Outlet - 5 () Deluge Size 1/2"
 S Hose Allowance - Inside - 0 () Preaction K-Factor 5.6
 I Rack Sprinkler Allowance - NA () Other Temp.Rat.200
 G Hose Allowance - Outside - 0

N Note

Calculation Flow Required - 84 Press Required - 29
 Summary C-Factor Used: 120 Overhead 100 Underground

W Water Flow Test: Pump Data: Tank or Reservoir:
 A Date of Test - 05/07/2010 Cap. -
 T Time of Test - Rated Cap.- Elev.-
 E Static Press - 66 @ Press -
 R Residual Press - 62 Elev. - Well
 Flow - 1186 Proof Flow
 S Elevation - 28

U
 P Location - Test Hydrant Located at Corner of Oak Street and Congress

P
 L Source of Information - Portland Water District
 Y

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

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

G
 E Horizontal Barriers Provided:

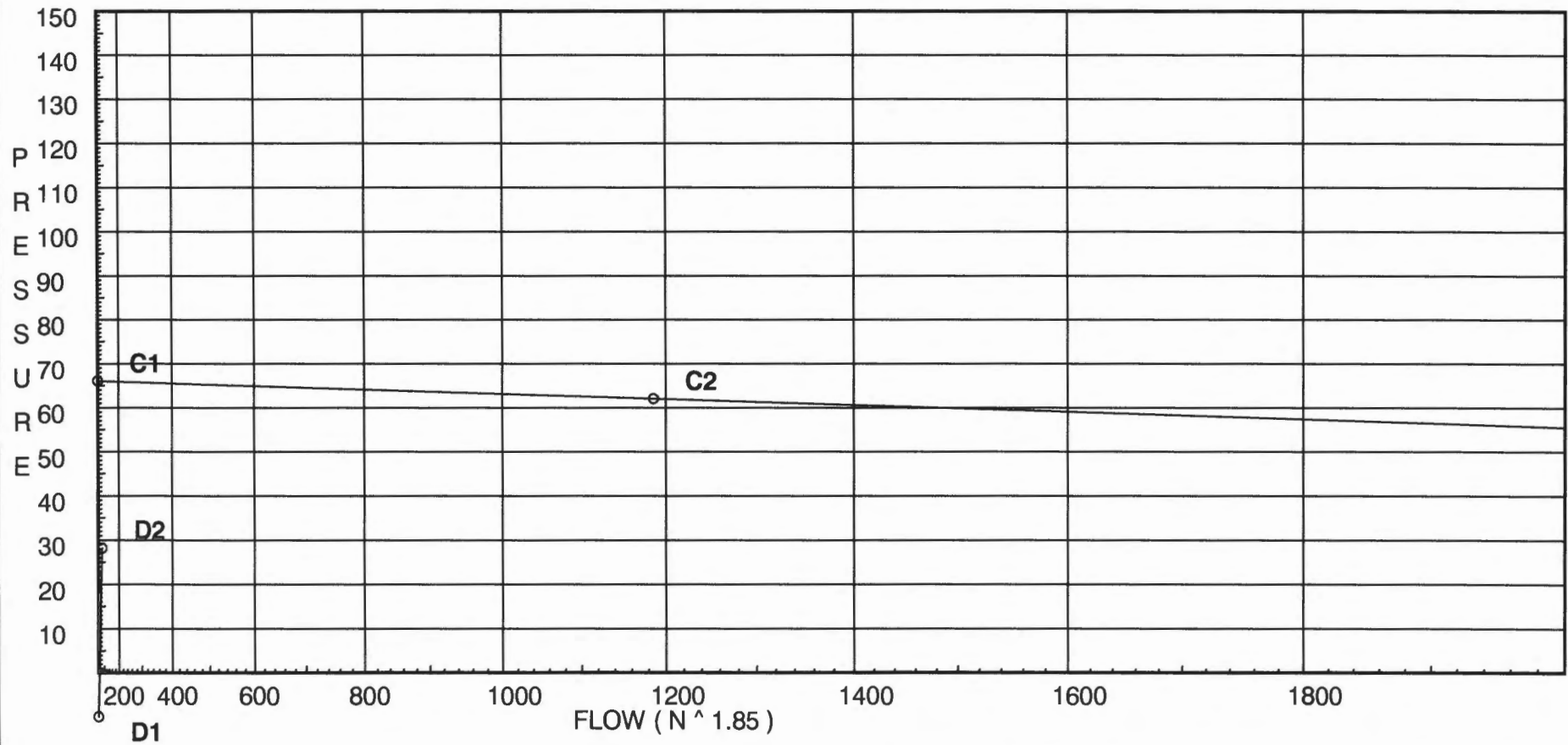
Water Supply Curve (C)

HIGH TECH FIRE PROTECTION
Basement Calc.

Page 2
Date 06/06/2012

City Water Supply:
C1 - Static Pressure : 66
C2 - Residual Pressure: 62
C2 - Residual Flow : 1186

Demand:
D1 - Elevation : -9.961
D2 - System Flow : 83.6371
D2 - System Pressure : 28.119
Hose (Adj City) : _____
Hose (Demand) : _____
D3 - System Demand : 83.6371
Safety Margin : 37.851



Fittings Used Summary

HIGH TECH FIRE PROTECTION
Basement Calc.

Page 3
Date 06/06/2012 -

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
G	Generic Gate Valve	0	0	1	1	1	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13
T	90' Flow Thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121
Z	Generic Flow Switch	2	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61
Zik	Wilkins 950XL	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.

Pressure / Flow Summary - STANDARD

HIGH TECH FIRE PROTECTION
Basement Calc.

Page 4
Date 06/06/2012

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
401	5.0	5.6	14.03	na	20.98	0.15	130	7.0
B1	5.0		15.81	na				
402	5.0	5.6	15.87	na	22.31	0.15	130	7.0
B2	5.0		17.14	na				
403	5.0	5.6	12.13	na	19.5	0.15	130	7.0
404	5.0	5.6	13.86	na	20.85	0.15	130	7.0
B3	5.0		17.63	na				
TOR	5.0		22.76	na				
BOR	1.0		27.23	na				
BASE	1.0		36.06	na				
H1	1.0		39.54	na				
H2	6.0		37.41	na				
H3	6.0		37.44	na				
H4	28.0		27.95	na				
H5	28.0		28.1	na				
TEST	28.0		28.12	na				

The maximum velocity is 14.98 and it occurs in the pipe between nodes 404 and B3

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	20.98	1.049		12.500	14.033			K Factor = 5.60	
to		120.0	0.0	0.0	0.0				
B1	20.98	0.1422		12.500	1.777			Vel = 7.79	
B1	0.0	1.38		1.600	15.810				
to		120.0	0.0	0.0	0.0				
402	20.98	0.0369		1.600	0.059			Vel = 4.50	
402	22.31	1.38	1T 6.0	2.900	15.869			K Factor = 5.60	
to		120.0	0.0	6.000	0.0				
B2	43.29	0.1428		8.900	1.271			Vel = 9.29	
B2	0.0	1.682		9.000	17.140				
to		120.0	0.0	0.0	0.0				
B3	43.29	0.0544		9.000	0.490			Vel = 6.25	
	0.0								
	43.29				17.630			K Factor = 10.31	
403	19.50	1.049		14.000	12.125			K Factor = 5.60	
to		120.0	0.0	0.0	0.0				
404	19.5	0.1242		14.000	1.739			Vel = 7.24	
404	20.85	1.049	1T 5.0	2.900	13.864			K Factor = 5.60	
to		120.0	0.0	5.000	0.0				
B3	40.35	0.4767		7.900	3.766			Vel = 14.98	
B3	43.29	1.682	1E 4.95	22.900	17.630				
to		120.0	0.0	4.950	0.0				
TOR	83.64	0.1842		27.850	5.131			Vel = 12.08	
TOR	0.0	1.61	1E 4.0	4.000	22.761				
to		120.0	1Z 4.0	8.000	1.732				
BOR	83.64	0.2279		12.000	2.735			Vel = 13.18	
BOR	0.0	1.61	1Zik 0.0	2.500	27.228				
to		120.0	1E 4.0	4.000	7.350			* Fixed loss = 7.35	
BASE	83.64	0.2280		6.500	1.482			Vel = 13.18	
BASE	0.0	1.72	1G 0.617	25.000	36.060				
to		150.0	1T 6.174	6.792	0.0				
H1	83.64	0.1093		31.792	3.476			Vel = 11.55	
H1	0.0	6.28	1T 25.37	75.000	39.536				
to		100.0	0.0	25.370	-2.166				
H2	83.64	0.0004		100.370	0.043			Vel = 0.87	
H2	0.0	6.28	1T 25.37	50.000	37.413				
to		100.0	0.0	25.370	0.0				
H3	83.64	0.0004		75.370	0.032			Vel = 0.87	
H3	0.0	8.39		300.000	37.445				
to		100.0	0.0	0.0	-9.528				
H4	83.64	0.0001		300.000	0.031			Vel = 0.49	
H4	0.0	6.28		360.000	27.948				
to		100.0	0.0	0.0	0.0				
H5	83.64	0.0004		360.000	0.152			Vel = 0.87	

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Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
H5	0.0	6.16	1E 20.084	10.000	28.100				
to		140.0	1G 4.304	67.425	0.0				
TEST	83.64	0.0002	1T 43.037	77.425	0.019		Vel = 0.90		
	0.0								
	83.64				28.119		K Factor = 15.77		