



DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK



CITY OF PORTLAND

BUILDING PERMIT

This is to certify that **BERNARDINI, ANTHONY R** Located At **274 PARK**

has permission to **Install a fire protection system**

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes 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 procured prior to occupancy.

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.

PERMIT ISSUED

FEB 10 2011

City of Portland

City of Portland, Maine - Building or Use Permit Application

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

Job No: 2011-01-304-FAFS	Date Applied: 1/20/2011 19	CBL: 065 - - E - 002 - 001 - - - - -	
Location of Construction: 274 PARK	Owner Name: PROPERTIES LLC GALAPAGOS	Owner Address: 68 WOLCOTT ST PORTLAND, ME - MAINE 04102	Phone:
Business Name:	Contractor Name: Flynt, William	Contractor Address: 170 Kittyhawk AVE AUBURNMAINE04211	Phone: 784-1507
Lessee/Buyer's Name:	Phone:	Permit Type: FIRE SYS WB - Fire Suppression Water Based	Zone: R-6
Past Use: 6 residential dwelling units	Proposed Use: 6 residential dwelling units	Cost of Work: 15000.00	CEO District:
		Fire Dept: <input checked="" type="checkbox"/> Approved w/ conditions <input type="checkbox"/> Denied <input type="checkbox"/> N/A	Inspection: Use Group: Type: Fire Suppression IBC, 2009
		Signature: <i>[Signature]</i> - 58	Signature: <i>[Signature]</i>
Proposed Project Description: 274 Park Avenue / Fire Suppression		Pedestrian Activities District (P.A.D.)	

Permit Taken By: 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. FEB 10 2011 City of Portland	Zoning Approval		
	Special Zone or Reviews <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetlands <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan <input type="checkbox"/> Maj <input type="checkbox"/> Min <input type="checkbox"/> MM Date: 1/21/11 <i>ABM</i> OK w/ conditions	Zoning Appeal <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date:	Historic Preservation <input checked="" type="checkbox"/> Not in Dist or Landmark <input type="checkbox"/> Does not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: <i>ABM</i>

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	PHON

legal use 6 du.

Job Summary Report
Job ID: 2011-01-304-FAFS

Report generated on Jan 21, 2011 10:55:37 AM

Job Type:	Fire Alarm / Suppression	Job Description:	274 Park Avenue / Fire Suppression	Job Year:	2011
Building Job Status Code:	Initiate Plan Review	Pin Value:	494	Tenant Name:	
Job Application Date:		Public Building Flag:	N	Tenant Number:	
Estimated Value:	15,000	Square Footage:			
Related Parties:		PROPERTIES GALAPAGOS		<i>Property Owner</i>	
		- William Flynt		<i>GENERAL CONTRACTOR</i>	

Job Charges

Fee Code Description	Charge Amount	Permit Charge Adjustment	Net Charge Amount	Payment Date	Receipt Number	Payment Amount	Payment Adjustment Amount	Net Payment Amount	Outstanding Balance
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Location ID: 10684

Location Details

Alternate Id	Parcel Number	Census Tract	GIS X	GIS Y	GIS Z	GIS Reference	Longitude	Latitude
G23408	065 E 002 001			U			-70.27861	43.655629

Location Type	Subdivision Code	Subdivision Sub Code	Related Persons	Address(es)
1				274 PARK AVENUE NORTH

Location Use Code	Variance Code	Use Zone Code	Fire Zone Code	Inside Outside Code	District Code	General Location Code	Inspection Area Code	Jurisdiction Code
FIVE TO TEN FAMILY		NOT APPLICABLE	R-6				DISTRCT 4	ST JOHN ST

Structure Details

Structure: Fire Suppression System

Occupancy Type Code:

Structure Type Code	Structure Status Type	Square Footage	Estimated Value	Address
Muti-Family 5+ Building	0			274 PARK AVENUE NORTH

Longitude	Latitude	GIS X	GIS Y	GIS Z	GIS Reference	User Defined Property Value

Permit #: FIRE SYS WB-868

Permit Data

Location Id	Structure Description	Permit Status	Permit Description	Issue Date	Reissue Date	Expiration Date
10684	Fire Suppression System	Initialized	Fire Supression system			

Job Summary Report
Job ID: 2011-01-304-FAFS

Report generated on Jan 21, 2011 10:55:37 AM

Inspection Details								
Inspection Id	Inspection Type	Inspection Result Status	Inspection Status Date	Scheduled Start Timestamp	Result Status Date	Final Inspection Flag		
Fees Details								
Fee Code Description	Charge Amount	Permit Charge Adjustment	Permit Charge Adj Remark	Payment Date	Receipt Number	Payment Amount	Payment Adjustment Amount	Payment Adj Comment
Job Valuation Fees	\$340.00							



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.

Installation address: 274 Park Ave. CBL: 065 E 002

Exact location: (within structure) Entire Building

Type of occupancy(s) (NFPA & ICC): Apartment Building

Building owner: _____

Managing Supervisor (RMS): William A. Flynt License No: 368

Supervisor phone: 784-1507 170 KITTY HAWK AVE E-mail: FlyntWA@teameastern.com
PO BOX 1390

Installing contractor: Eastern Fire Protection License No: 101

Contractor phone: 784-1507 Suburb 04311-1390 E-mail: _____

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 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.

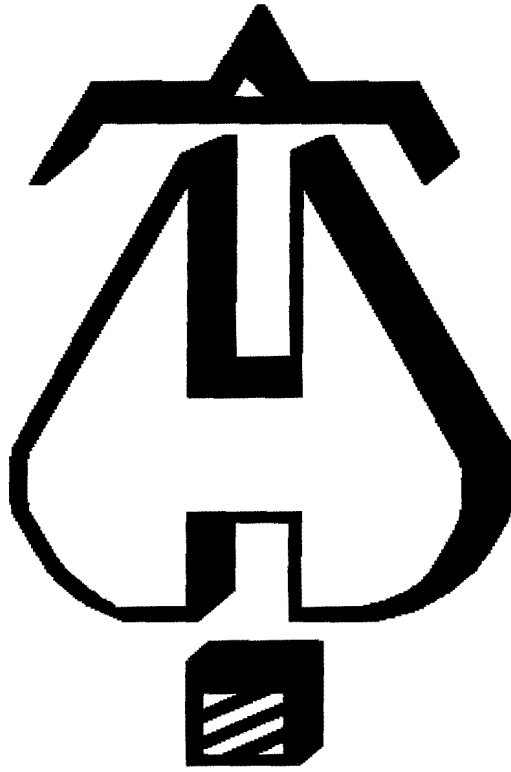
COST OF WORK: <u>\$15,000</u>
PERMIT FEE: <u>\$180</u>
<small>(\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)</small>
RECEIVED
JAN 19 2011
Dept. of Building Inspections City of Portland Maine

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: Derek Cash Date: 14 January 2011



... Fire Protection by Computer Design

EASTERN FIRE PROTECTION.
172 KITTYHAWK AVE.
P.O. BOX 1390
AUBURN, MAINE, 04211
207-784-1507

Job Name : 274 PARK AVE
Drawing : WOOD FRAME
Location : 274 PARK AVE. PORTLAND, ME
Remote Area :
Contract : AU-4658
Data File : 274 PARK PROOF.WXF

HYDRAULIC DESIGN INFORMATION SHEET

Name - 274 PARK AVE Date - 07/01/11
Location - 274 PARK AVE. PORTLAND, ME
Building - WOOD FRAME System No. -
Contractor - EASTERN FIRE PROTECTION Contract No. - AU-4658
Calculated By - DLC Drawing No. - 1 OF 1
Construction: (X) Combustible () Non-Combustible Ceiling Height VARIES
OCCUPANCY - LIGHT HAZARD

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 - 16 Gpm System Type
Listed Pres. at Start Point - 14.5 Psi (X) Wet () Dry
D MAXIMUM LISTED SPACING 16' x 16' () Deluge () PreAction
E Domestic Flow Added - 0 Gpm Sprinkler or Nozzle
S Additional Flow Added - 0 Gpm Make TYCO Model LF II
I Elevation at Highest Outlet - 133.25 Feet Size 1/2" K-Factor 4.2
G Note: Temperature Rating 155
N

Calculation Summary Gpm Required 67.53 C-Factor Used: Psi Required 63.5 Overhead 150 At Test Underground 150

W Water Flow Test: Pump Data: Tank or Reservoir:
A Date of Test - 07/30/07 Rated Cap. Cap.
T Time of Test - @ Psi Elev.
E Static (Psi) - 108 Elev.
R Residual (Psi) - 107 Other Well
Flow (Gpm) - 2122 Proof Flow Gpm
S Elevation - 0

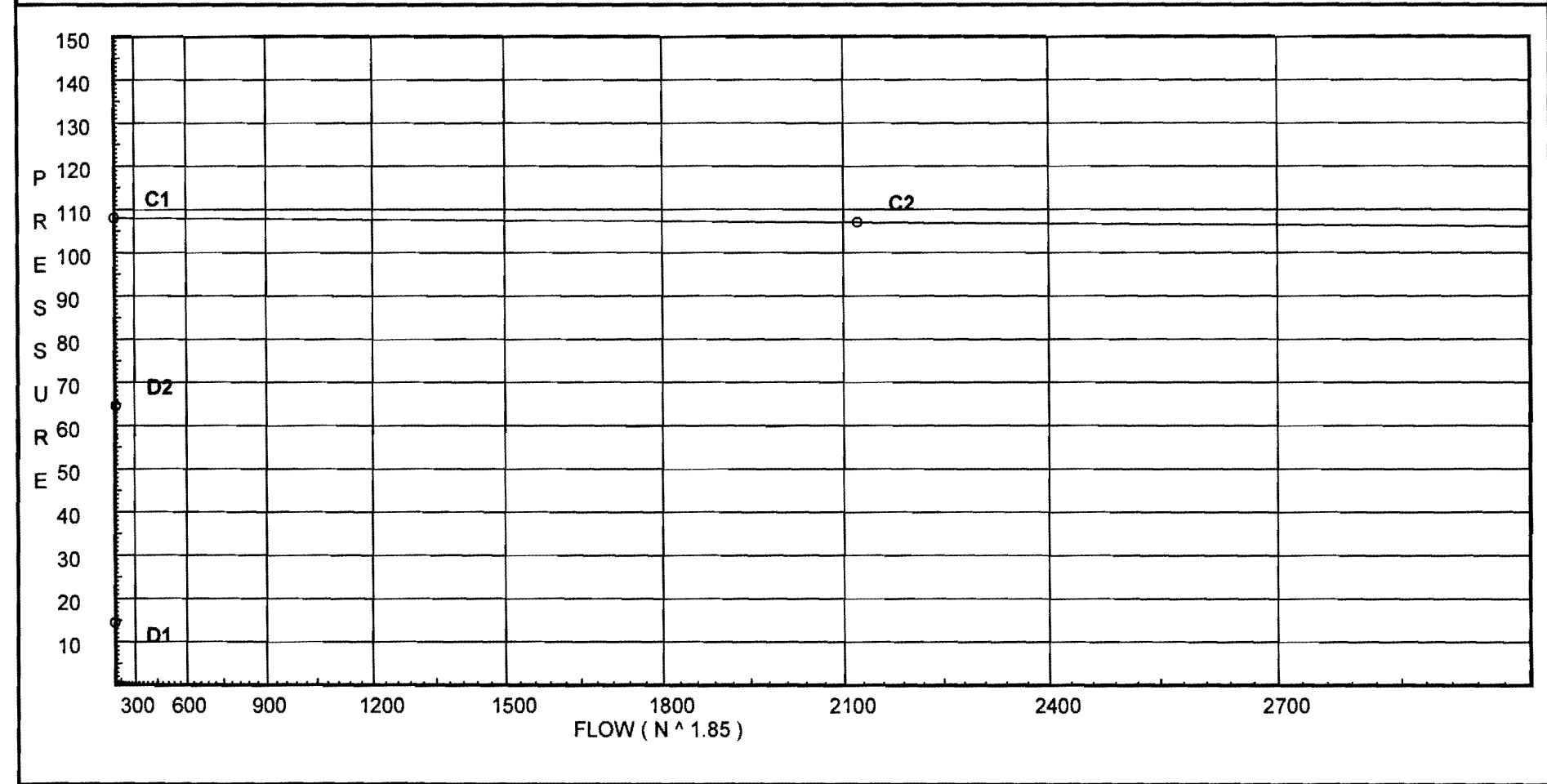
P Location: TEST HYDRANT LOCATED ON GILMAN ST.

P
L Source of Information: PORTLAND WATER DISTRICT
Y

Water Supply Curve (C)

EASTERN FIRE PROTECTION.
274 PARK AVE

City Water Supply:	Demand:
C1 - Static Pressure : 108	D1 - Elevation : 14.401
C2 - Residual Pressure: 107	D2 - System Flow : 67.382
C2 - Residual Flow : 2122	D2 - System Pressure : 64.536
	Hose (Demand) : _____
	D3 - System Demand : 67.382
	Safety Margin : 43.462



Fittings Used Summary

EASTERN FIRE PROTECTION.
274 PARK AVE

Page 3
Date 07/01/11

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
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
Zaa	Ames 2000B	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.

SUPPLY ANALYSIS

<i>Node at Source</i>	<i>Static Pressure</i>	<i>Residual Pressure</i>	<i>Flow</i>	<i>Available Pressure</i>	<i>Total Demand</i>	<i>Required Pressure</i>
TEST	108.0	107	2122.0	107.998	67.38	64.536

NODE ANALYSIS

<i>Node Tag</i>	<i>Elevation</i>	<i>Node Type</i>	<i>Pressure at Node</i>	<i>Discharge at Node</i>	<i>Notes</i>
A	133.25	4.2	16.85	17.24	
E	116.0		26.74		
O	116.0		29.9		
B	133.25	4.2	16.91	17.27	
F	116.0		26.11		
C	133.25	4.2	16.33	16.97	
G	116.0		25.48		
D	133.25	4.2	14.33	15.9	
H	116.0		23.03		
I	116.0		26.88		
J	116.0		27.1		
K	116.0		27.79		
L	106.3		34.35		
M	106.3		38.48		
N	106.3		42.2		
12	106.3		47.37		
TOR	106.3		51.45		
BASE	100.0		60.44		
TEST	100.0		64.54		

Final Calculations - Hazen-Williams - 2007

EASTERN FIRE PROTECTION.
274 PARK AVE

Page 5
Date 07/01/11

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv.	Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
A to E	133.250 116	4.20	17.24 17.24	1 1.101	2E 2T	7.65 19.125 0.0	20.000 26.776 46.776	150 0.0517	16.849 7.471 2.418		Vel = 5.81	
E to O	116 116		0.0 17.24	1 1.049	2T	10.0 0.0 0.0	22.000 10.000 32.000	120 0.0989	26.738 0.0 3.164		Vel = 6.40	
O to L	116 106.300		0.0 17.24	1.25 1.38	1T	6.0 0.0 0.0	3.417 6.000 9.417	120 0.0260	29.902 4.201 0.245		Vel = 3.70	
L			0.0 17.24						34.348		K Factor = 2.94	
B to F	133.250 116	4.20	17.27 17.27	1 1.101	1E 1T	3.825 9.563 0.0	20.000 13.387 33.387	150 0.0519	16.908 7.471 1.732		Vel = 5.82	
F to K	116 116		0.0 17.27	1 1.049	1T	5.0 0.0 0.0	11.917 5.000 16.917	120 0.0992	26.111 0.0 1.678		Vel = 6.41	
K			0.0 17.27						27.789		K Factor = 3.28	
C to G	133.250 116	4.20	16.97 16.97	1 1.101	1E 1T	3.825 9.563 0.0	20.000 13.387 33.387	150 0.0502	16.330 7.471 1.676		Vel = 5.72	
G to J	116 116		0.0 16.97	1 1.049	1T	5.0 0.0 0.0	11.917 5.000 16.917	120 0.0961	25.477 0.0 1.625		Vel = 6.30	
J			0.0 16.97						27.102		K Factor = 3.26	
D to H	133.250 116	4.20	15.90 15.9	1 1.101	2E	7.65 0.0 0.0	20.000 7.650 27.650	150 0.0445	14.332 7.471 1.230		Vel = 5.36	
H to I	116 116		0.0 15.9	1 1.049	5E 1T	10.0 5.0 0.0	30.167 15.000 45.167	120 0.0851	23.033 0.0 3.845		Vel = 5.90	
I to J	116 116		0.0 15.9	1.25 1.38		0.0 0.0 0.0	10.000 0.0 10.000	120 0.0224	26.878 0.0 0.224		Vel = 3.41	
J to K	116 116		16.97 32.87	1.25 1.38		0.0 0.0 0.0	8.000 0.0 8.000	120 0.0859	27.102 0.0 0.687		Vel = 7.05	
K to L	116 106.300		17.27 50.14	1.25 1.38	1T	6.0 0.0 0.0	6.583 6.000 12.583	120 0.1874	27.789 4.201 2.358		Vel = 10.76	
L to M	106.300 106.300		17.24 67.38	1.25 1.38	1E	3.0 0.0 0.0	9.750 3.000 12.750	120 0.3238	34.348 0.0 4.128		Vel = 14.45	
M to N	106.300 106.300		0.0 67.38	1.25 1.38	1E 1T	3.0 6.0 0.0	2.500 9.000 11.500	120 0.3238	38.476 0.0 3.724		Vel = 14.45	



EASTERN FIRE PROTECTION

P.O. Box 1390
Kittyhawk Ave.
Auburn, ME 04210

PH # (207) 784-1507
FAX # (207) 782-0566

LETTER OF TRANSMITTAL

DATE	14 Jan 2011	JOB NO.
ATTENTION		
RE:	274 Park Ave.	

TO Building Inspections Dept.
389 Congress St. RM 35
Portland, ME 04101

WE ARE SENDING YOU Attached Under separate cover via _____ the following items:

- Shop drawings Descriptive data Hydraulic calculations
 Copy of letter Literature _____

QUANTITY	DRAWING NO.	DATE	DESCRIPTION	STATUS
2	1 of 1	14 Jan	Shop Drawings	C/E
1	1 of 1	14 Jan	11x17 Shop Drawing	E
2	—	—	Hydraulic Calculations	C/E
1	—	—	Permit Application	C
1	—	14 Jan	Permit Fee Check	E

- Status code A. Approved D. Corrected & resubmitted
 B. Approved as noted E. For your files
 C. Submitted for approval F. Refer to remarks

Please return 1 letter ~~copies~~ each indicating your approval and/or comments.

REMARKS State permit will follow once I receive
it.

RECEIVED

JAN 19 2011

Dept. of Building Inspections
City of Portland Maine

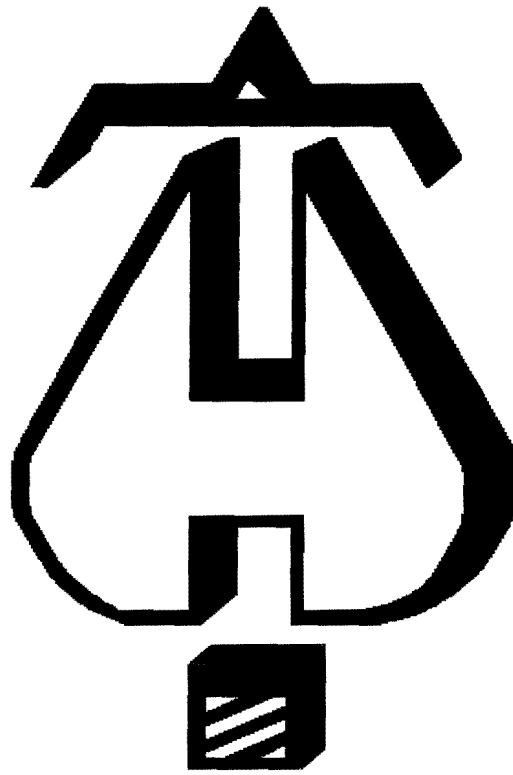
COPY TO _____

SIGNED

John Ouellet

If enclosures are not as noted, kindly notify us at once

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv.	Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
N to 12	106.300 106.300		0.0 67.38	1.5 1.61	1T	8.0 0.0 0.0	25.833 8.000 33.833	120 0.1528	42.200 0.0 5.170			Vel = 10.62
12 to TOR	106.300 106.300		0.0 67.38	2 2.067	1E 1T 1Fsp	5.0 10.0 0.0	8.833 15.000 23.833	120 0.0453	47.370 3.000 1.079		* Fixed loss = 3	Vel = 6.44
TOR to BASE	106.300 100		0.0 67.38	2 2.067	1Zaa 1E	0.0 5.0 0.0	6.000 5.000 11.000	120 0.0453	51.449 8.497 0.498		* Fixed loss = 5.768	Vel = 6.44
BASE to TEST	100 100		0.0 67.38	2 2.003	1G 2E 1T	1.296 12.965 12.965	90.000 27.226 117.226	150 0.0349	60.444 0.0 4.092			Vel = 6.86
TEST			0.0 67.38						64.536		K Factor = 8.39	



... Fire Protection by Computer Design

EASTERN FIRE PROTECTION.
172 KITTYHAWK AVE.
P.O. BOX 1390
AUBURN, MAINE, 04211
207-784-1507

Job Name : 274 PARK AVE
Drawing : 1 OF 1
Location : 274 PARK AVE. PORTLAND, ME
Remote Area : BASEMENT
Contract : AU-4658-10
Data File : 274 PARK BASEMENT.WXF

HYDRAULIC CALCULATIONS
for

Project name: 274 PARK AVE
Location: 274 PARK AVE. PORTLAND, ME
Drawing no: 1 OF 1
Date: 01/07/11

Design

Remote area number: BASEMENT
Remote area location: BASEMENT
Occupancy classification: ORDINARY HAZARD I
Density: .15 - Gpm/SqFt
Area of application: 988 - SqFt
Coverage per sprinkler: 110 - SqFt
Type of sprinklers calculated: TYCO TY-FRB BRASS UPRIGHT
No. of sprinklers calculated: 9
In-rack demand: - GPM
Hose streams: 0 - GPM
Total water required (including hose streams): 178 - GPM @ 87.45 - Psi
Type of system: WET
Volume of dry or preaction system: - Gal

Water supply information

Date: 07/30/11
Location: TEST HYDRANT LOCATED ON GILMAN ST.
Source: PORTLAND WATER SUPPLY

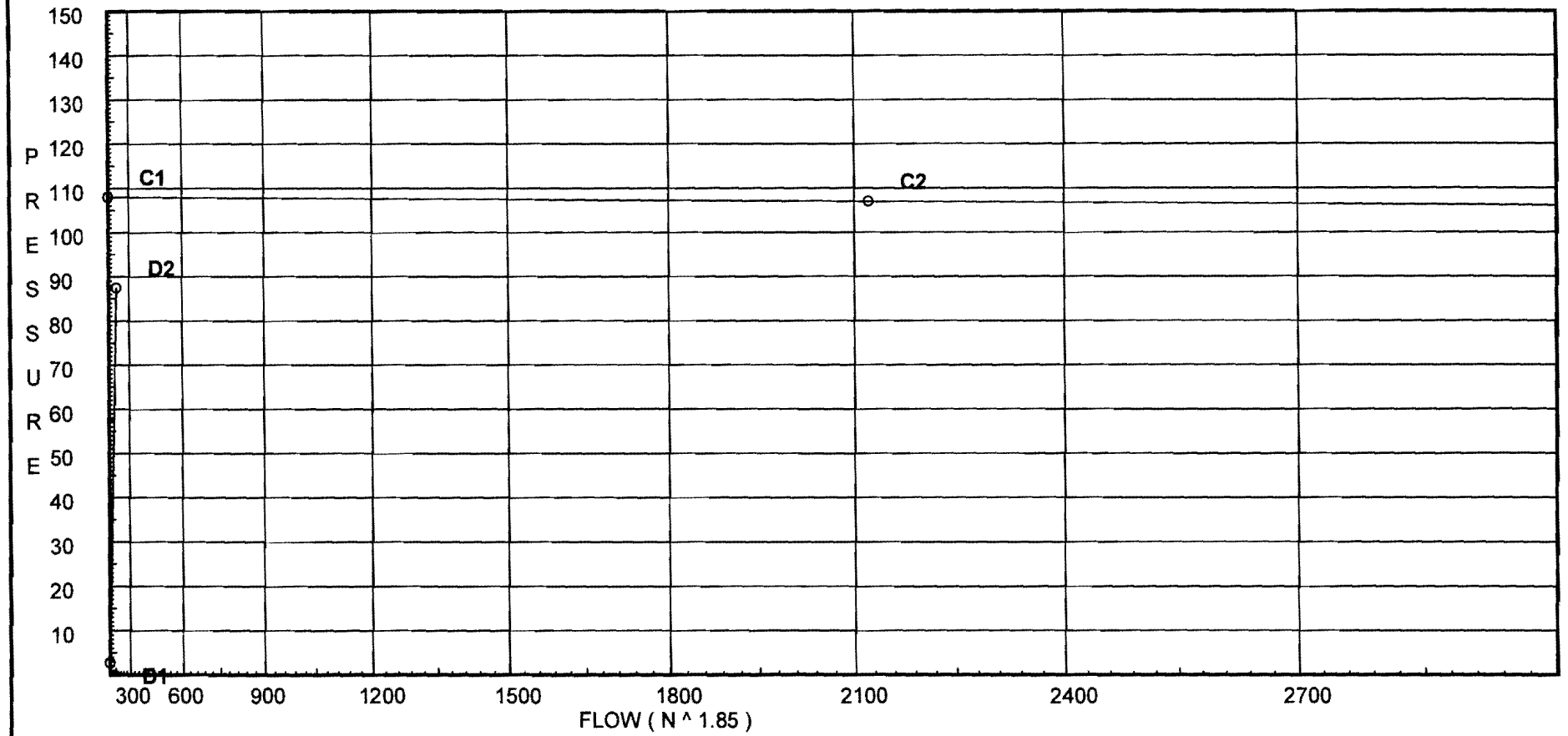
Name of contractor: EASTERN FIRE PROTECTION.
Address: 172 KITTYHAWK AVE. / P.O. BOX 1390 / AUBURN, MAINE, 04211
Phone number: 207-784-1507
Name of designer: DLC
Authority having jurisdiction: STATE FIRE MARSHALL
Notes: (Include peaking information or gridded systems here.)

Water Supply Curve (C)

EASTERN FIRE PROTECTION.
274 PARK AVE

City Water Supply:
C1 - Static Pressure : 108
C2 - Residual Pressure: 107
C2 - Residual Flow : 2122

Demand:
D1 - Elevation : 2.707
D2 - System Flow : 178.054
D2 - System Pressure : 87.449
Hose (Demand) :
D3 - System Demand : 178.054
Safety Margin : 20.541



Fittings Used Summary

EASTERN FIRE PROTECTION.
274 PARK AVE

Page 3
Date 07/01/11

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
Fsp	Flow Switch Potter VSR	Fitting generates a Fixed Loss Based on Flow																			
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
Zaa	Ames 2000B	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.

SUPPLY ANALYSIS

<i>Node at Source</i>	<i>Static Pressure</i>	<i>Residual Pressure</i>	<i>Flow</i>	<i>Available Pressure</i>	<i>Total Demand</i>	<i>Required Pressure</i>
TEST	108.0	107	2122.0	107.99	178.05	87.449

NODE ANALYSIS

<i>Node Tag</i>	<i>Elevation</i>	<i>Node Type</i>	<i>Pressure at Node</i>	<i>Discharge at Node</i>	<i>Notes</i>
1	106.25	5.6	8.68	16.5	
2	106.25	5.6	9.48	17.24	
3	106.25	5.6	12.44	19.75	
4	106.25	5.6	14.27	21.16	
6	106.25	5.6	8.83	16.64	
7	106.25	5.6	10.03	17.73	
8	106.25	5.6	14.64	21.42	
10	106.25	5.6	17.96	23.74	
11	106.25	5.6	18.18	23.87	
5	106.25		18.51		
9	106.25		18.97		
12	106.25		20.21		
TOR	106.25		29.71		
BASE	100.0		42.16		
TEST	100.0		87.45		

Final Calculations - Hazen-Williams - 2007

EASTERN FIRE PROTECTION.
274 PARK AVE

Page 5
Date 07/01/11

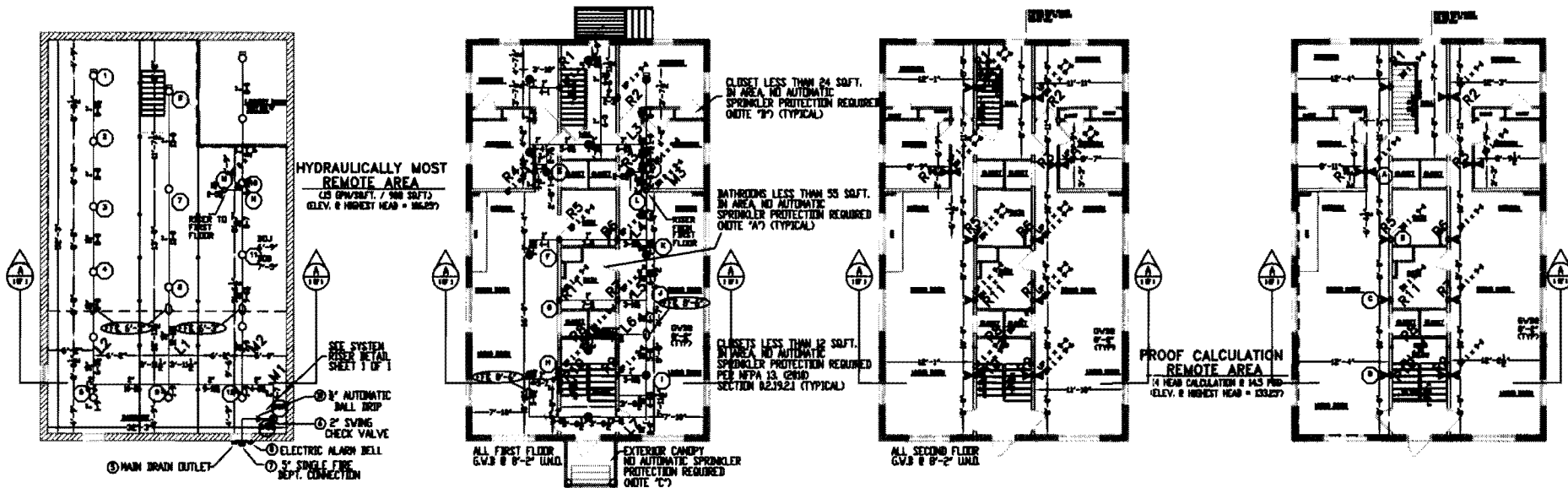
Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv.	Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
1 to 2	106.250 106.250	5.60	16.50 16.5	1 1.049		0.0 0.0	8.708 0.0	120 0.0912	8.681 0.0 0.794			Vel = 6.13
2 to 3	106.250 106.250	5.60	17.24 33.74	1 1.049		0.0 0.0	8.667 0.0	120 0.3424	9.475 0.0 2.968			Vel = 12.53
3 to 4	106.250 106.250	5.60	19.75 53.49	1.25 1.38		0.0 0.0	8.667 8.667	120 0.2111	12.443 0.0 1.830			Vel = 11.47
4 to 5	106.250 106.250	5.60	21.16 74.65	1.5 1.61	1T	8.0 0.0	14.958 8.000	120 0.1847	14.273 0.0 4.241			Vel = 11.76
5			0.0 74.65						18.514			K Factor = 17.35
6 to 7	106.250 106.250	5.60	16.64 16.64	1 1.049		0.0 0.0	13.000 0.0	120 0.0926	8.826 0.0 1.204			Vel = 6.18
7 to 8	106.250 106.250	5.60	17.73 34.37	1 1.049		0.0 0.0	13.000 0.0	120 0.3543	10.030 0.0 4.606			Vel = 12.76
8 to 9	106.250 106.250	5.60	21.43 55.8	1.25 1.38	1T	6.0 0.0	12.958 6.000	120 0.2284	14.636 0.0 4.330			Vel = 11.97
9			0.0 55.80						18.966			K Factor = 12.81
10 to 11	106.250 106.250	5.60	23.74 23.74	1.5 1.61		0.0 0.0	9.542 0.0	120 0.0222	17.964 0.0 0.212			Vel = 3.74
11 to 12	106.250 106.250	5.60	23.87 47.61	1.5 1.61	1T	8.0 0.0	17.292 8.000	120 0.0804	18.176 0.0 2.033			Vel = 7.50
12			0.0 47.61						20.209			K Factor = 10.59
5 to 9	106.250 106.250		74.65 74.65	2 2.157		0.0 0.0	10.167 0.0	120 0.0445	18.514 0.0 0.452			Vel = 6.55
9 to 12	106.250 106.250		55.79 130.44	2 2.157		0.0 0.0	9.958 0.0	120 0.1248	18.966 0.0 1.243			Vel = 11.45
12 to TOR	106.250 106.250		47.61 178.05	2 2.067	1E 1T 1Fsp	5.0 10.0 0.0	8.792 15.000 23.792	120 0.2732	20.209 3.000 6.500			* Fixed loss = 3 Vel = 17.02
TOR to BASE	106.250 100		0.0 178.05	2 2.067	1E 1Zaa	5.0 0.0	6.000 5.000	120 0.2732	29.709 9.450 3.005			* Fixed loss = 6.743 Vel = 17.02
BASE to TEST	100 100		0.0 178.05	2 1.72	2E 1T	6.174 6.174	90.000 12.350	150 0.4425	42.164 0.0 45.285			Vel = 24.59

Final Calculations - Hazen-Williams - 2007

EASTERN FIRE PROTECTION.
274 PARK AVE

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Date 07/01/11

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqv.	Ln.	Pipe Ftng's Total	CFact Pf/Ft	Pt Pe Pf	*****	Notes	*****
TEST			0.0 178.05							87.449	K Factor = 19.04	



HYDRAULIC-SYSTEM
THIS BUILDING IS PROTECTED BY A HYDRAULICALLY DESIGNED AUTOMATIC SPRINKLER SYSTEM.

LOCATION	BASMENT
NO. OF SPRINKLERS	9
COLLARS	
BASIS OF DESIGN	
1. DESIGN AREA (SQ. FT.)	15
2. DESIGN AREA (SQ. FT.)	580
SYSTEM HEAD	
1. WATER FLOW RATE (GPM)	170
2. DESIGN PRESSURE (PSI)	42.2
3. THE NAME OF THE USER (FIRM)	

HYDRAULIC DATA NAMEPLATE
TO BE MOUNTED AT SYSTEM RISER

○ = HYDRAULIC REFERENCE POINT
□ = HIGHEST HEAD = 104.25'

FIRE SPRINKLER PLAN - BASEMENT

SCALE: 1/8"=1'-0"
AREA PROTECTED: 1685' SQ. FT.
FINISH FLOOR ELEVATION 100'-0"
COLOR CODE: WHITE



TYCO LF II
LF II RESIDENTIAL HORIZONTAL SIDEWALL SPRINKLER DESIGN REQUIREMENTS

MODEL	COVERED AREA WIDTH LENGTH FT. x FT.	MAXIMUM SPACING FT. ON	MINIMUM DESIGN FLOW AND RESIDUAL PRESSURE			
			155°F/68°C	175°F/79°C	155°F/68°C	175°F/79°C
LF II HORIZONTAL SIDEWALL	12 x 12	12'	12GPK02.2psid	12GPK08.2psid	13GPK09.6psid	13GPK09.6psid
	14 x 14	14'	14GPK03.4psid	16GPK04.5psid	17GPK06.4psid	18GPK08.4psid
	16 x 16	16'	16GPK04.5psid	16GPK04.5psid	18GPK06.4psid	18GPK08.4psid
	16 x 18	16'	19GPK02.8psid	21GPK02.8psid	21GPK02.8psid	21GPK02.8psid
	16 x 20	16'	23GPK03.0psid	23GPK03.0psid	26GPK03.3psid	26GPK03.3psid

FIRE SPRINKLER PLAN - FIRST FLOOR

SCALE: 1/8"=1'-0"
AREA PROTECTED: 1639' SQ. FT.
FINISH FLOOR ELEVATION 107'-6"
COLOR CODE: WHITE



TYCO LF II
LF II RESIDENTIAL RECESSED PENDENT SPRINKLER DESIGN REQUIREMENTS

MODEL	COVERED AREA MAX. SPACE BETWEEN SPINKLERS FROM WALL	MAXIMUM SPACING	MINIMUM DESIGN FLOW AND PRESSURE			
			155°F/68°C OR 175°F/79°C	155°F/68°C	175°F/79°C	175°F/79°C
LF II RECESSED PENDENT	12 x 12	5' OR LESS	13GPK07.0psid	13GPK07.0psid	17GPK08.2psid	17GPK08.2psid
	14 x 14	7'	13GPK07.0psid	13GPK07.0psid	17GPK08.2psid	17GPK08.2psid
	16 x 16	8'	13GPK07.0psid	13GPK07.0psid	17GPK08.2psid	17GPK08.2psid
	18 x 18	9'	17GPK02.8psid	17GPK02.8psid	17GPK02.8psid	17GPK02.8psid
	20 x 20	10'	21GPK03.6psid	21GPK03.6psid	22GPK03.2psid	22GPK03.2psid

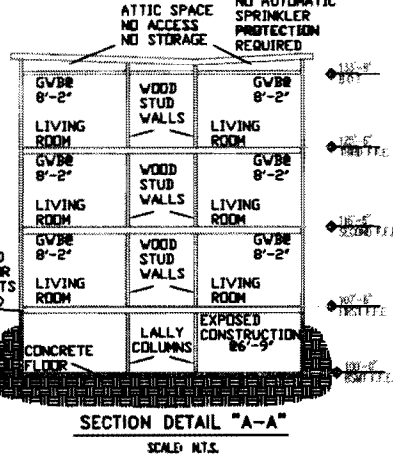
FIRE SPRINKLER PLAN - SECOND FLOOR

SCALE: 1/8"=1'-0"
AREA PROTECTED: 1680' SQ. FT.
FINISH FLOOR ELEVATION 116'-6"
COLOR CODE: WHITE



FIRE SPRINKLER PLAN - THIRD FLOOR

SCALE: 1/8"=1'-0"
AREA PROTECTED: 1717' SQ. FT.
FINISH FLOOR ELEVATION 125'-6"
COLOR CODE: WHITE



APPLYING CEMENT, SETTING AND CURING TIMES
Prepare pipe by beveling outside end 10' to 15', deburring end and wiping away excess filings. Apply a heavy, even coat of solvent cement to the outside end of the pipe, a medium coat to the inside of the fitting socket and for pipe sizes larger than 1", apply a second coat to the end of the pipe. Beveling allows the cement to remain on the fitting socket inside wall.
A bead of solvent cement should be evident around the pipe and fitting joints. If this bead is not continuous around the socket shoulder, it may indicate that insufficient cement was applied.
Wipe off excess cement on the outside of the joint. The solvents will evaporate, but the solvent cement inside the fitting will stay there.
INSTALLING
Avoid applying too much cement. Do not allow the cement to drip beyond the bottom of fitting socket. Excessive cement on the pipe and/or fitting can result in decreasing the overall strength of the pipe and/or fitting and may cause cracks when pressure is applied. Failure to comply could result in property damage due to leaks.
Solvent cement set and cure times are a function of pipe size, temperature, relative humidity, and tightness of fit. Drying time is faster for drier environments, smaller pipe sizes, and higher temperatures. The assembly must be allowed to set, without any stress on the joint, for 1 to 3 minutes, depending on the pipe size and temperature. Following the initial set period, the assembly can be handled carefully avoiding significant stresses to the joints. Refer to the cure time tables for minimum cure times prior to pressure testing.
Store cement in a warmer area when not in use and make sure they remain fluid. Do not allow the cement to freeze or become "jelly-like". Gelled cement shall be discarded.
Sprinkler heads shall be installed only after all the CPVC pipe and fittings, including the sprinkler head adapters, are solvent welded to the piping and allowed to cure for a minimum of 30 minutes. Sprinkler head fittings should be visually inspected and probed with a wooden dowel to insure that the water way and threads are clear of any excess cement.
It is an unacceptable practice to thread the sprinkler head into the adapter fitting prior to cementing the adapter to the drop.
Once an installation is completed and cured, per the appropriate table, the system should be tested with water at 200 psi for 2 hours, or at 30 psi in excess of the maximum pressure when the maximum pressure to be maintained in the system is in excess of 150 psi, in accordance with the requirements established by NFPA 13. Sprinkler systems in one and two family dwellings and mobile homes may be tested at line pressure in accordance with the requirements established by NFPA 13B. When pressure testing, the sprinkler system shall be filled with water and air bled from the highest and furthest sprinkler head before first pressure is applied. All air, condensate, and debris should be removed from the system. If a leak is found, the fitting must be cut out and discarded. A new section can be installed using couplings or a union. Unions should be used in accessible areas only.

NOTES
Based acrylic latex paint is the preferred and recommended paint to be used on Blazemaster CPVC pipe and fittings. All other solvent-based paints may be chemically incompatible with Blazemaster CPVC.
Teflon thread tape is the recommended sealant for threaded connections to CPVC fire sprinkler products. When using Dabco Great White Thread Sealant, it should be applied to male threads only.
Firestop systems such as Mill 13-One have been found to be compatible with CPVC fire sprinkler products. A list of these firestop systems can be found along with approved thread sealants on-line at www.blazemaster.com. Use only these products. Stock has been associated.

CURE TIMES WITH ONE STEP SOLVENT CEMENT
200 PSI (MAXIMUM TEST PRESSURE)

PIPE SIZE Inches	Ambient Temperature During Cure Period		
	60°F to 120°F	40°F to 60°F	0°F to 30°F
3/4"	45 min.	1.5 hr.	24 hr.
1"	45 min.	1.5 hr.	24 hr.
1-1/4"	1.5 hr.	18 hr.	120 hr.
1-1/2"	1.5 hr.	18 hr.	180 hr.
2"	6 hr.	36 hr.	See Note 1
2-1/2"	6 hr.	72 hr.	See Note 1
3"	6 hr.	72 hr.	See Note 1

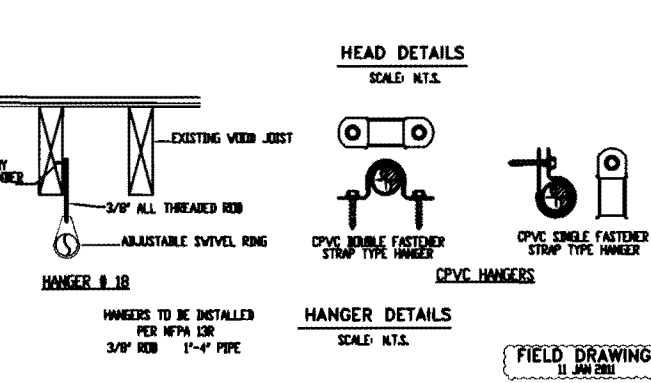
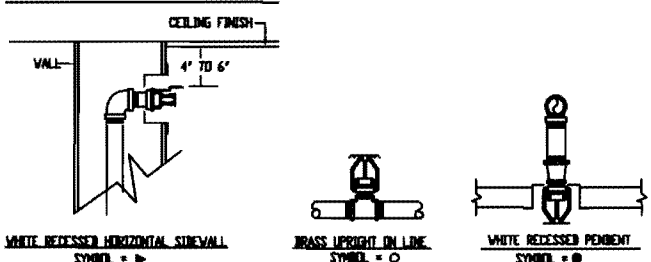
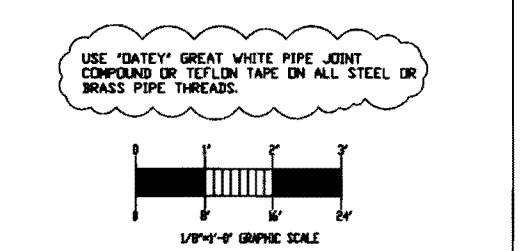
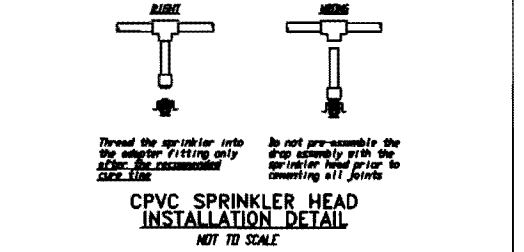
Note 1: For these sizes, the solvent cement can be applied at temperatures below 40°F, however, the sprinkler system temperature must be raised to a temperature of 40°F or above and allowed to cure per the above recommendations prior to pressure testing.

GENERAL NOTES
ALL WIRING TO BE DONE BY OTHERS
ALL PAINTING TO BE DONE BY OTHERS
SPRINKLER SYSTEM INSTALLATION TO COMPLY WITH NFPA PAMPHLET # 13R (2010 EDITION)
ALL DIMENSIONS ARE SHOWN FOR GENERAL LOCATION OF SPRINKLER HEADS; PIPING MAY VARY TO SUIT ACTUAL FIELD CONDITIONS.
OCCUPANCY DESCRIPTION AND CLASSIFICATION: DWELLING UNITS LIGHT HAZARD, BASEMENT, STORAGE, & MECHANICAL ROOMS, ORDINARY HAZARD I
CPVC BLAZEMASTER PIPE TO BE INSTALLED PER TYCO DATASHEET 31-1998.
STORAGE OF MATERIAL SHALL NOT EXCEED 8'-0" IN HEIGHT.
○ = INDICATES HYDRAULIC REFERENCE POINTS.
FF = INDICATES FINISH FLOOR UP TO CENTERLINE OF PIPE.
BD = INDICATES BICK DOWN TO CENTERLINE OF PIPE.

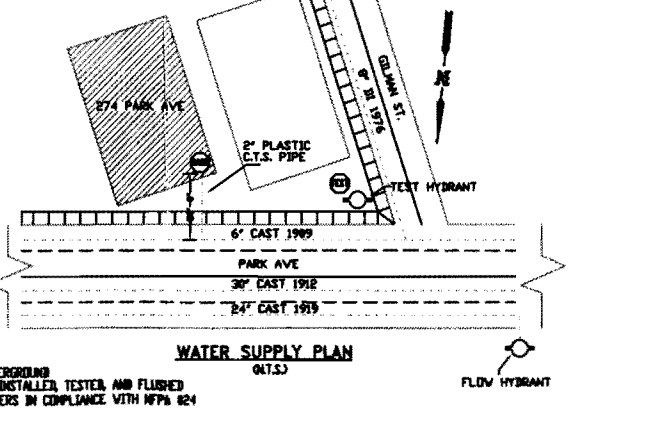
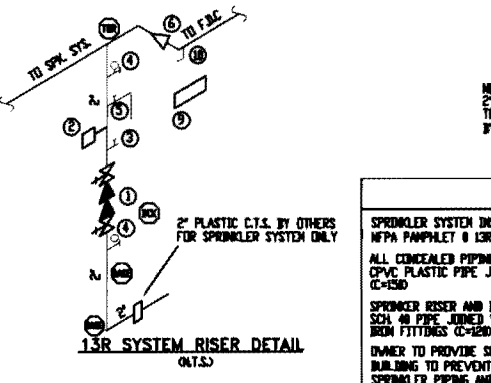
CPVC SPRINKLER HEAD INSTALLATION DETAIL
NOT TO SCALE

Thread the sprinkler into the adapter fitting only after the recommended cure time.
Do not pre-assemble the drop assembly with the sprinkler head prior to cementing all joints.

USE "DATEY" GREAT WHITE PIPE JOINT COMPOUND OR TEFLON TAPE ON ALL STEEL OR BRASS PIPE THREADS.



- LEGEND**
- 2" PAGES MOD. 2000 BACKFLOW PREVENTER W/ 2" BALL VALVES CHAINED & LOCKED.
 - 2" PUFFER MOD. VSR-S (OPT) FLOW SWITCH.
 - 1/2" AUXILIARY DRAIN VALVE.
 - WATER PRESSURE GAUGE W/ 1/2" THREE-WAY VALVE.
 - 1" MAIN DRAIN & ALARM TEST VALVE.
 - 2" SWING CHECK VALVE. (SEE BASEMENT PLAN)
 - 2" FIRE DEPARTMENT CONNECTION W/ PLATE & CAP. (SEE BASEMENT FLOOR PLAN)
 - ELECTRIC BELL. (SEE BASEMENT PLAN)
 - SPARE HEAD BOX WITH WRENCH & 3 SPARE SPRINKLERS OF EACH TYPE.
 - 1/2" AUTOMATIC BALL DRIP. (SEE BASEMENT PLAN)
- NOTE: PIPE BETWEEN UNDERGROUND AND BACKFLOW TO BE GALVANIZED SCH-40 STEEL. ELECTRICAL WIRING DONE BY OTHERS.



GENERAL NFPA #13R NOTES

SPRINKLER SYSTEM INSTALLATION TO COMPLY WITH NFPA PAMPHLET # 13R (2010 EDITION)

ALL CONCEALED PIPING FIRST THIRD FLOOR TO BE CPVC PLASTIC PIPE JOINED WITH CPVC GLEUED FITTINGS (C-1510)

SPRINKLER RISER AND BASEMENT PIPING TO BE BLACK SCH. 40 PIPE JOINED WITH THREADED BRASS/STEEL FITTINGS (C-1510)

DOWNER TO PROVIDE SUFFICIENT HEAT THROUGHOUT BUILDING TO PREVENT FREEZING OF WATER FILLED SPRINKLER PIPING AND EQUIPMENT (C-1510)

SPRINKLERS ARE NOT REQUIRED IN THE FOLLOWING AREAS AS PER NFPA 13B:

- BATHROOMS NOT EXCEEDING 55 SQ. FT.
- SMALL CLOSETS WITHIN THE DWELLING UNIT LESS THAN 24 SQ. FT. IN AREA WITH THE LEAST DIMENSION NOT EXCEEDING 3'-0"
- OPEN ATTACHED PORCHES, BALCONIES, CORRIDORS, CARPETS AND STAIRS.
- CRAWL SPACES AND ATTICS NOT USED FOR STORAGE OR ANY OTHER LIVING PURPOSES.
- CLOSETS ON EXTERIOR BALCONIES W/ NO DIRECT ACCESS FROM THE DWELLING UNIT.

REQUIRED APPROVALS		CONTRACT WITH VIKING RESTORATION	
DRAWN BY	BLC		JOB NUMBER: AU-4658-10
CHECKED BY	VNF		
DATE	07/20/17	SCALE	AS NOTED
CONTRACTOR LICENSE #	30	DATE	06/07/18
CONTRACTOR INS #	360		

274 PARK AVE.
PORTLAND, ME

EASTERN FIRE PROTECTION
AUBURN/LEWISTON INDUSTRIAL AIRPARK, AUBURN, MAINE 04210