

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK CITY OF PORTLAND

Please Read Application And Notes, If Any, Attached

BUILDING DEPARTMENT PERMIT

Permit Number: 091208

This is to certify that ELEVEN EXCHANGE LLC / d/b/a & All
has permission to install a Fire Suppression System Permit
AT 9 EXCHANGE ST CP 032 F010001

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 buildings and structures, and of the application on file in this department.

Apply to Public Works for street line and grade if nature of work requires such information.

Notification of inspection must be given and written permission procured before this building or part thereof is lath or other work is set-in. 2 HOUR NOTICE IS REQUIRED.

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

OTHER REQUIRED APPROVALS

Fire Dept. [Signature]
Health Dept. _____
Appeal Board _____
Other _____
Department Name

[Signature] 10/29/09
Director - Building & Inspection Services

PENALTY FOR REMOVING THIS CARD

PERMIT ISSUED

OCT 29 2009

City of Portland

City of Portland, Maine - Building or Use Permit Application

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

Permit No: 09-1208	Issue Date:	CBL: 032 F010001
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Location of Construction: 9 EXCHANGE ST	Owner Name: ELEVEN EXCHANGE LLC	Owner Address: PO BOX 4894	Phone:
Business Name:	Contractor Name: Dean & Allyn Inc.	Contractor Address: P.O. Box 709, 32 Lewiston Rd Gray	Phone 2076575646
Lessee/Buyer's Name	Phone:	Permit Type: Fire Suppression System	Zone:

Past Use: Commercial " Giovanni"	Proposed Use: Commercial " Giovanni" - install a Fire Suppression System Permit	Permit Fee: \$70.00	Cost of Work: \$4,750.00	CEO District: 1
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Proposed Project Description:
install a Fire Suppression System Permit

FIRE DEPT: Approved Denied
w/conditions
10/29/2009

INSPECTION: Use Group: A-2 Type: Sprinkler
IBC-2003
Signature: [Signature] Date: 10/29/09

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)

Action: Approved Approved w/Conditions Denied

Signature: _____ Date: _____

Permit Taken By: Ldobson	Date Applied For: 10/27/2009	Zoning Approval
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<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 information 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"/> Wetland</p> <p><input type="checkbox"/> Flood Zone</p> <p><input type="checkbox"/> Subdivision</p> <p><input type="checkbox"/> Site Plan <i>ek</i></p> <p>Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/></p> <p>Date: <i>JMS 10/29/09</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 District or Landmark</p> <p><input checked="" 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: <i>JMB</i></p>
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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.

PERMIT ISSUED

SIGNATURE OF APPLICANT	ADDRESS	DATE	PHONE
		OCT 29 2009	
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE		DATE	PHONE
		City of Portland	

City of Portland, Maine - Building or Use Permit

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

Permit No: 09-1208	Date Applied For: 10/27/2009	CBL: 032 F010001
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Location of Construction: 9 EXCHANGE ST	Owner Name: ELEVEN EXCHANGE LLC	Owner Address: PO BOX 4894	Phone:
Business Name:	Contractor Name: Dean & Allyn Inc.	Contractor Address: P.O. Box 709, 32 Lewiston Rd Gray	Phone (207) 657-5646
Lessee/Buyer's Name	Phone:	Permit Type: Fire Suppression System	

Proposed Use: Commercial " Giovanni" - install a Fire Suppression System Permit	Proposed Project Description: install a Fire Suppression System Permit
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Dept: Zoning **Status:** Approved with Conditions **Reviewer:** Jeanine Bourke **Approval Date:** 10/29/2009

Note: **Ok to Issue:**

1) Approved as an existing restaurant use to remain.

Dept: Building **Status:** Approved **Reviewer:** Jeanine Bourke **Approval Date:** 10/29/2009

Note: **Ok to Issue:**

Dept: Fire **Status:** Approved with Conditions **Reviewer:** Ben Wallace Jr. **Approval Date:** 10/29/2009

Note: **Ok to Issue:**

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

2) Sprinkler system shall be supervised by the building fire alarm system.

3) The Fire Department will require knock locking caps on all Fire Department Connections on the exterior of the building.

4) 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.

5) A single source supplier should be used for all through penetrations.

6) The sprinkler system shall be installed in accordance with NFPA 13.

7) Application requires State Fire Marshal approval.

PERMIT ISSUED

OCT 29 2009

City of Portland

32-F-10



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: 15 Exchange Street CBL: _____

Exact location: (within structure) Former Walter's Restaurant

Type of occupancy(s) (NFPA & ICC): Restaurant

Building owner: Joe Soley / 15 Exchange St LLC / LINCOLN Mgmt

Managing Supervisor: DANA Stewart License No: 064544

Supervisor phone: 657 5646 E-mail: hKing@Maine.rr.com

Installing contractor: Dean and Allyn Inc License No: 262

Contractor phone: 657 5646 E-mail: hKing@deanandallyn.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 will this system is designed to: NFPA #13 Edition: 2009

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

Attach all design information and complete approved submittals as may be required by the State Fire Marshal's Office.

Contractor shall verify location and type of all FDCs shall be approved in writing by the Fire Prevention Bureau.

COST OF WORK: <u>4750</u> PERMIT FEE: <u>\$ 20⁰⁰</u> (\$10 PER \$1,000 + \$30 FOR THE FIRST \$1,000)

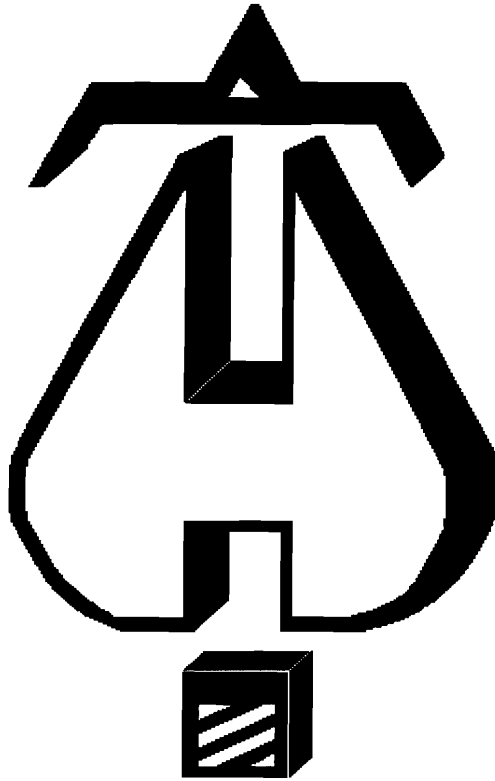
Download a new copy of this document from www.portlandmaine.gov for every submittal. Submit all information to the Building Inspections Department, 389 Congress Street, Room 315, Portland, Maine 04101.

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).

RECEIVED
OCT 27 2009
Dept. of Building Inspections
City of Portland Maine

Applicant signature: Harry King 207 2339105 Date: 10/27/09



... Fire Protection by Computer Design

DEAN & ALLYN, INC.
32 LEWISTON ROAD BUILDING 1C
P.O. BOX 709
GRAY, ME 04039
207-657-5646

Job Name : 15 EXCHANGE ST. BASEMENT
Building :
Location : 15 EXCHANGE STREET PORTLAND MAINE
System : ONE
Contract : C09914
Data File : 15 EXCHANGE ST basement.WXF

Hydraulic Design Information Sheet

Name - 15 EXCHANGE STREET Date - 10-25-09
 Location - 15 EXCHANGE STREET PORTLAND MAINE
 Building - System No. - ONE
 Contractor - DEAN AND ALLYN, INC. Contract No. - C09914
 Calculated By - H. KING Drawing No. - 1 OF 1
 Construction: (X) Combustible () Non-Combustible Ceiling Height - 8'
 Occupancy - RESTAURANT BASEMENT

S (X) 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 - ENTIRE System Type Sprinkler/Nozzle
 Density - .15 (X) Wet Make VIKING
 D Area Per Sprinkler - 100/130 () Dry Model MICROFAST
 E Elevation at Highest Outlet - 7 () Deluge Size 1/2"
 S Hose Allowance - Inside - () Preaction K-Factor 5.6
 I Rack Sprinkler Allowance - () Other Temp.Rat.155
 G Hose Allowance - Outside - 250

N Note CUSHION 8.8 PSI

Calculation Flow Required - 563.41 Press Required - 99.77 CITY
 Summary C-Factor Used: 120 Overhead 140 Underground

W Water Flow Test: Pump Data: Tank or Reservoir:
 A Date of Test - 4-27-05 Cap. -
 T Time of Test - Rated Cap.- Elev.-
 E Static Press - 109 @ Press -
 R Residual Press - 106 Elev. - Well
 Flow - 1635 Proof Flow
 S Elevation - 0

U Location - COMMERCIAL AT UNION

P
 L Source of Information - P. W. D.
 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:

Fittings Used Summary

DEAN & ALLYN, INC.
15 EXCHANGE ST. BASEMENT

Page 2
Date 10-25-09

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																					
A	Alarm Rel E1 & E3							7.7	21.5		17		27	29								
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61	
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13	
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121	

Units Summary

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

Pressure / Flow Summary - STANDARD

DEAN & ALLYN, INC.
15 EXCHANGE ST. BASEMENT

Page 3
Date 10-25-09

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
20	0.0	5.6	7.28	na	15.11	0.15	100	7.0
21	0.0	5.6	7.17	na	15.0	0.15	100	7.0
22	0.0	5.6	7.44	na	15.27	0.15	100	7.0
23	0.0	5.6	8.89	na	16.7	0.15	100	7.0
24	0.0	5.6	9.16	na	16.95	0.15	100	7.0
25	0.0	5.6	15.73	na	22.21	0.15	100	7.0
26	0.0	5.6	18.23	na	23.91	0.15	130	7.0
27	0.0	5.6	16.47	na	22.72	0.15	100	7.0
28	0.0	5.6	17.45	na	23.4	0.15	100	7.0
29	0.0	5.6	18.19	na	23.89	0.15	100	7.0
30	0.0	5.6	19.28	na	24.59	0.15	100	7.0
31	0.0	5.6	20.66	na	25.45	0.15	130	7.0
32	0.0	5.6	36.16	na	33.68	0.15	130	7.0
33	0.0	5.6	38.05	na	34.55	0.15	100	7.0
80	0.0		7.4	na				
81	0.0		10.02	na				
82	0.0		20.93	na				
83	0.0		23.09	na				
84	0.0		38.04	na				
61	0.0		38.4	na				
TR	0.0		96.46	na				
FF	0.0		99.53	na				
CTY	0.0		99.78	na	250.0			

The maximum velocity is 23.44 and it occurs in the pipe between nodes 83 and 61

Final Calculations - Hazen-Williams

DEAN & ALLYN, INC.
15 EXCHANGE ST. BASEMENT

Page 4
Date 10-25-09

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
20	15.11	1.38		0.0	6.200	7.276			K Factor = 5.60	
to		120.0		0.0	0.0	0.0				
80	15.11	0.0203		0.0	6.200	0.126			Vel = 3.24	
	0.0									
	15.11					7.402			K Factor = 5.55	
21	15.00	1.38	1T	6.0	5.300	7.175			K Factor = 5.60	
to		120.0		0.0	6.000	0.0				
80	15.0	0.0201		0.0	11.300	0.227			Vel = 3.22	
	0.0									
	15.00					7.402			K Factor = 5.51	
22	45.38	1.61	2E	8.0	11.800	7.438			K Factor = 5.60	
to		120.0		0.0	8.000	0.0				
23	45.38	0.0736		0.0	19.800	1.457			Vel = 7.15	
23	16.70	1.61	1E	4.0	4.600	8.895			K Factor = 5.60	
to		120.0		0.0	4.000	0.0				
81	62.08	0.1313		0.0	8.600	1.129			Vel = 9.78	
	0.0									
	62.08					10.024			K Factor = 19.61	
24	16.95	1.049	1E	2.0	2.000	9.162			K Factor = 5.60	
to		120.0	1T	5.0	7.000	0.0				
81	16.95	0.0958		0.0	9.000	0.862			Vel = 6.29	
	0.0									
	16.95					10.024			K Factor = 5.35	
25	101.24	2.067	2E	10.0	16.000	15.731			K Factor = 5.60	
to		120.0		0.0	10.000	0.0				
26	101.24	0.0961		0.0	26.000	2.499			Vel = 9.68	
26	23.91	2.067	1E	5.0	14.000	18.230			K Factor = 5.60	
to		120.0		0.0	5.000	0.0				
82	125.15	0.1423		0.0	19.000	2.704			Vel = 11.97	
	0.0									
	125.15					20.934			K Factor = 27.35	
27	22.72	1.049		0.0	6.000	16.465			K Factor = 5.60	
to		120.0		0.0	0.0	0.0				
28	22.72	0.1648		0.0	6.000	0.989			Vel = 8.43	
28	23.40	1.049	1T	5.0	0.700	17.454			K Factor = 5.60	
to		120.0		0.0	5.000	0.0				
82	46.12	0.6105		0.0	5.700	3.480			Vel = 17.12	
	0.0									
	46.12					20.934			K Factor = 10.08	
29	23.89	1.049		0.0	6.000	18.194			K Factor = 5.60	
to		120.0		0.0	0.0	0.0				
30	23.89	0.1808		0.0	6.000	1.085			Vel = 8.87	
30	24.59	1.049	1T	5.0	0.700	19.279			K Factor = 5.60	
to		120.0		0.0	5.000	0.0				
83	48.48	0.6695		0.0	5.700	3.816			Vel = 18.00	
	0.0									
	48.48					23.095			K Factor = 10.09	

Final Calculations - Hazen-Williams

DEAN & ALLYN, INC.
15 EXCHANGE ST. BASEMENT

Page 5
Date 10-25-09

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
31 to 83	25.45 25.45	1.049 120.0 0.2033	1T	5.0 0.0 0.0	7.000 5.000 12.000	20.656 0.0 2.439			K Factor = 5.60 Vel = 9.45	
	0.0 25.45						23.095		K Factor = 5.30	
32 to 84	33.68 33.68	1.049 120.0 0.3411		0.0 0.0 0.0	5.500 0.0 5.500	36.162 0.0 1.876			K Factor = 5.60 Vel = 12.50	
	0.0 33.68						38.038		K Factor = 5.46	
33 to 61	68.22 68.22	2.635 120.0 0.0142	1T	16.474 0.0 0.0	8.000 16.474 24.474	38.055 0.0 0.347			K Factor = 5.60 Vel = 4.01	
	0.0 68.22						38.402		K Factor = 11.01	
80 to 22	30.11 30.11	1.38 120.0 0.0720		0.0 0.0 0.0	0.500 0.0 0.500	7.402 0.0 0.036			Vel = 6.46	
	0.0 30.11						7.438		K Factor = 11.04	
81 to 25	79.03 79.03	1.61 120.0 0.2053	3E	12.0 0.0 0.0	15.800 12.000 27.800	10.024 0.0 5.707			Vel = 12.45	
	0.0 79.03						15.731		K Factor = 19.93	
82 to 83	171.27 171.27	2.067 120.0 0.2542		0.0 0.0 0.0	8.500 0.0 8.500	20.934 0.0 2.161			Vel = 16.38	
83 to 61	73.93 245.2	2.067 120.0 0.4938	1E 1T	5.0 10.0 0.0	16.000 15.000 31.000	23.095 0.0 15.307			Vel = 23.44	
	0.0 245.20						38.402		K Factor = 39.57	
84 to 33	33.68 33.68	2.635 120.0 0.0040		0.0 0.0 0.0	4.300 0.0 4.300	38.038 0.0 0.017			Vel = 1.98	
	0.0 33.68						38.055		K Factor = 5.46	
61 to TR	313.42 313.42	2.635 120.0 0.2384	15E	123.557 0.0 0.0	120.000 123.557 243.557	38.402 0.0 58.060			Vel = 18.44	
TR to FF	0.0 313.42	3.26 120.0 0.0845	1A 1G	28.895 1.344 0.0	6.000 30.239 36.239	96.462 0.0 3.064			Vel = 12.05	
FF to CTY	0.0 313.42	6.16 140.0 0.0029	1E 1G 1T	20.084 4.304 43.037	20.000 67.425 87.425	99.526 0.0 0.251			Vel = 3.37	

Final Calculations - Hazen-Williams

DEAN & ALLYN, INC.
15 EXCHANGE ST. BASEMENT

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Date 10-25-09

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv. Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
	250.00								Qa = 250.00
	563.42				99.777				K Factor = 56.40

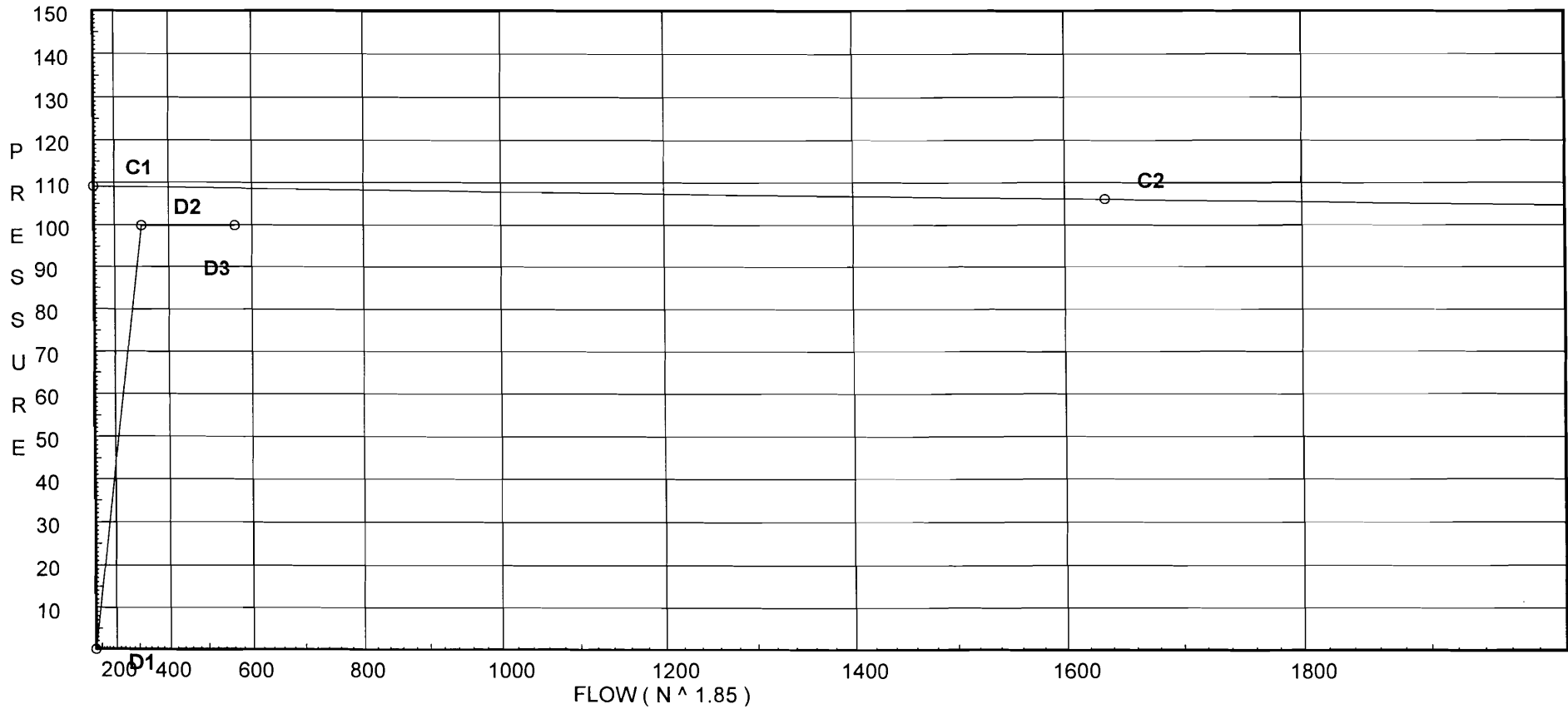
Water Supply Curve (C)

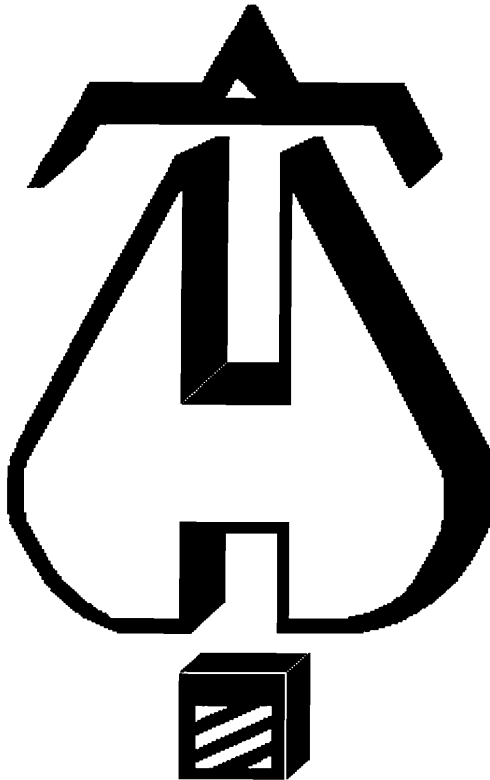
DEAN & ALLYN, INC.
15 EXCHANGE ST. BASEMENT

Page 7
Date 10-25-09

City Water Supply:
 C1 - Static Pressure : 109
 C2 - Residual Pressure: 106
 C2 - Residual Flow : 1635

Demand:
 D1 - Elevation : _____
 D2 - System Flow : 313.416
 D2 - System Pressure : 99.777
 Hose (Adj City) : _____
 Hose (Demand) : 250
 D3 - System Demand : 563.416
 Safety Margin : 8.805





... **Fire Protection by Computer Design**

DEAN & ALLYN, INC.
32 LEWISTON ROAD BUILDING 1C
P.O. BOX 709
GRAY, ME 04039
207-657-5646

Job Name : 15 EXCHANGE ST. FIRSTFLOOR
Building :
Location : 15 EXCHANGE STREET PORTLAND MAINE
System : ONE
Contract : C09914
Data File : 15 EXCHANGE ST FIRST FLOOR.WXF

Hydraulic Design Information Sheet

Name - 15 EXCHANGE STREET FIRST FLOOR Date - 10-25-09
 Location - 15 EXCHANGE STREET PORTLAND MAINE
 Building - Contractor - DEAN AND ALLYN, INC. System No. - ONE
 Calculated By - H. KING Contract No. - C09914
 Construction: (X) Combustible () Non-Combustible Drawing No. - 1 OF 1
 Occupancy - RESTAURANT Ceiling Height - 13'

S (X) NFPA 13 (X) Lt. Haz. Ord.Haz.Gp. () 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 - ENTIRE FL System Type Sprinkler/Nozzle
 Density - .10/.15 (X) Wet Make VIKING
 D Area Per Sprinkler - 288/120 () Dry Model MICROFAST
 E Elevation at Highest Outlet - 13 () Deluge Size 1/2"
 S Hose Allowance - Inside - () Preaction K-Factor 5.6
 I Rack Sprinkler Allowance - () Other Temp.Rat.155
 G Hose Allowance - Outside - 250

N Note CUSHION 8.95PSI

Calculation Flow Required - 485.23 Press Required - 99.74 CITY
 Summary C-Factor Used: 120 Overhead 140 Underground

W Water Flow Test: Pump Data: Tank or Reservoir:
 A Date of Test - 4-27-05 Cap. -
 T Time of Test - Rated Cap.- Elev.-
 E Static Press - 109 @ Press -
 R Residual Press - 106 Elev. - Well
 Flow - 1635 Proof Flow
 S Elevation - 0

U
 P Location - COMMERCIAL AT UNION

L Source of Information - P. W. D.
 Y

C Commodity Class Location
 O Storage Ht. Area Aisle W.
 M Storage Method: Solid Piled % Palletized % Rack
 () 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:

Fittings Used Summary

DEAN & ALLYN, INC.
15 EXCHANGE ST. FIRSTFLOOR

Page 2
Date 10-25-09

Fitting Legend		½	¾	1	1¼	1½	2	2½	3	3½	4	5	6	8	10	12	14	16	18	20	24	
Abbrev.	Name																					
A	Alarm Rel E1 & E3							7.7	21.5		17		27	29								
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61	
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13	
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121	

Units Summary

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

Pressure / Flow Summary - STANDARD

DEAN & ALLYN, INC.
15 EXCHANGE ST. FIRSTFLOOR

Page 3
Date 10-25-09

Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
30A	58.0	4.9	27.3	na	25.6	0.1	256	7.0
10	13.0	5.6	26.8	na	28.99	0.1	288	26.8
11	13.0	5.6	27.19	na	29.2	0.1	288	26.8
12	13.0	5.6	28.63	na	29.96	0.1	288	26.8
13	9.0	5.6	18.02	na	23.77	0.1	120	7.0
14	13.0	5.6	18.7	na	24.22	0.1	120	7.0
15	13.0	5.6	13.67	na	20.7	0.15	130	7.0
15.5	13.0	5.6	13.44	na	20.53	0.15	130	7.0
16	13.0	5.6	18.7	na	24.22	0.15	130	7.0
17	8.0	5.6	36.07	na	33.63	0.1	130	7.0
72	8.0		38.56	na				
70	13.0		14.91	na				
71	13.0		20.37	na				
57	13.0		30.55	na				
58	13.0		32.04	na				
73	13.0		39.01	na				
59	9.0		44.31	na				
60	0.0		54.61	na				
61	0.0		63.64	na				
TR	0.0		97.79	na				
FF	0.0		99.59	na				
CTY	0.0		99.74	na	250.0			

The maximum velocity is 24.3 and it occurs in the pipe between nodes 71 and 58

Final Calculations - Hazen-Williams

DEAN & ALLYN, INC.
15 EXCHANGE ST. FIRSTFLOOR

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Date 10-25-09

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
30A	25.60	1.049	1T	5.0	1.000	27.295			K Factor = 4.90	
to		120.0		0.0	5.000	25.120				
30	25.6	0.2055		0.0	6.000	1.233			Vel = 9.50	
	0.0									
	25.60					53.648			K Factor = 3.50	
10	28.99	1.61		0.0	12.300	26.800			K Factor = 5.60	
to		120.0		0.0	0.0	0.0				
11	28.99	0.0321		0.0	12.300	0.395			Vel = 4.57	
11	29.20	1.61		0.0	12.300	27.195			K Factor = 5.60	
to		120.0		0.0	0.0	0.0				
12	58.19	0.1165		0.0	12.300	1.433			Vel = 9.17	
12	29.97	2.067	1E	5.0	10.800	28.628			K Factor = 5.60	
to		120.0	1T	10.0	15.000	0.0				
57	88.16	0.0744		0.0	25.800	1.920			Vel = 8.43	
	0.0									
	88.16					30.548			K Factor = 15.95	
13	23.77	1.049	2E	4.0	9.500	18.015			K Factor = 5.60	
to		120.0		0.0	4.000	-1.732				
14	23.77	0.1790		0.0	13.500	2.417			Vel = 8.82	
14	24.22	1.049	1E	2.0	13.300	18.700			K Factor = 5.60	
to		120.0	1T	5.0	7.000	0.0				
58	47.99	0.6569		0.0	20.300	13.336			Vel = 17.82	
	0.0									
	47.99					32.036			K Factor = 8.48	
15	20.70	1.049	1T	5.0	4.000	13.665			K Factor = 5.60	
to		120.0		0.0	5.000	0.0				
70	20.7	0.1388		0.0	9.000	1.249			Vel = 7.68	
	0.0									
	20.70					14.914			K Factor = 5.36	
15.5	20.53	1.049	1T	5.0	5.800	13.439			K Factor = 5.60	
to		120.0		0.0	5.000	0.0				
70	20.53	0.1366		0.0	10.800	1.475			Vel = 7.62	
	0.0									
	20.53					14.914			K Factor = 5.32	
16	24.22	1.049	1T	5.0	4.000	18.703			K Factor = 5.60	
to		120.0		0.0	5.000	0.0				
71	24.22	0.1853		0.0	9.000	1.668			Vel = 8.99	
	0.0									
	24.22					20.371			K Factor = 5.37	
17	33.63	1.049	1T	5.0	2.300	36.073			K Factor = 5.60	
to		120.0		0.0	5.000	0.0				
72	33.63	0.3404		0.0	7.300	2.485			Vel = 12.48	
72	0.0	1.049	1T	5.0	2.700	38.558				
to		120.0		0.0	5.000	-2.166				
73	33.63	0.3405		0.0	7.700	2.622			Vel = 12.48	
	0.0									
	33.63					39.014			K Factor = 5.38	

Final Calculations - Hazen-Williams

DEAN & ALLYN, INC.
15 EXCHANGE ST. FIRSTFLOOR

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Date 10-25-09

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
70	41.23	1.049		0.0	11.000	14.914				
to		120.0		0.0	0.0	0.0				
71	41.23	0.4961		0.0	11.000	5.457		Vel = 15.31		
71	24.22	1.049	1T	5.0	5.000	20.371				
to		120.0		0.0	5.000	0.0				
58	65.45	1.1665		0.0	10.000	11.665		Vel = 24.30		
	0.0									
	65.45					32.036		K Factor = 11.56		
57	88.16	2.067	1E	5.0	5.000	30.548				
to		120.0	1T	10.0	15.000	0.0				
58	88.16	0.0744		0.0	20.000	1.488		Vel = 8.43		
58	113.43	2.067	2E	10.0	10.300	32.036				
to		120.0		0.0	10.000	0.0				
73	201.59	0.3437		0.0	20.300	6.978		Vel = 19.27		
73	33.63	2.067	1E	5.0	2.800	39.014				
to		120.0		0.0	5.000	1.732				
59	235.22	0.4573		0.0	7.800	3.567		Vel = 22.49		
59	0.0	2.067	1E	5.0	9.000	44.313				
to		120.0		0.0	5.000	3.898				
60	235.22	0.4573		0.0	14.000	6.402		Vel = 22.49		
60	0.0	2.635	2E	16.474	15.000	54.613				
to		120.0	2T	32.948	49.422	0.0				
61	235.22	0.1402		0.0	64.422	9.031		Vel = 13.84		
61	0.0	2.635	15E	123.557	120.000	63.644				
to		120.0		0.0	123.557	0.0				
TR	235.22	0.1402		0.0	243.557	34.143		Vel = 13.84		
TR	0.0	3.26	1A	28.895	6.000	97.787				
to		120.0	1G	1.344	30.239	0.0				
FF	235.22	0.0497		0.0	36.239	1.801		Vel = 9.04		
FF	0.0	6.16	1E	20.084	20.000	99.588				
to		140.0	1G	4.304	67.425	0.0				
CTY	235.22	0.0017	1T	43.037	87.425	0.148		Vel = 2.53		
	250.00							Qa = 250.00		
	485.22					99.736		K Factor = 48.59		

Water Supply Curve (C)

DEAN & ALLYN, INC.
15 EXCHANGE ST. FIRSTFLOOR

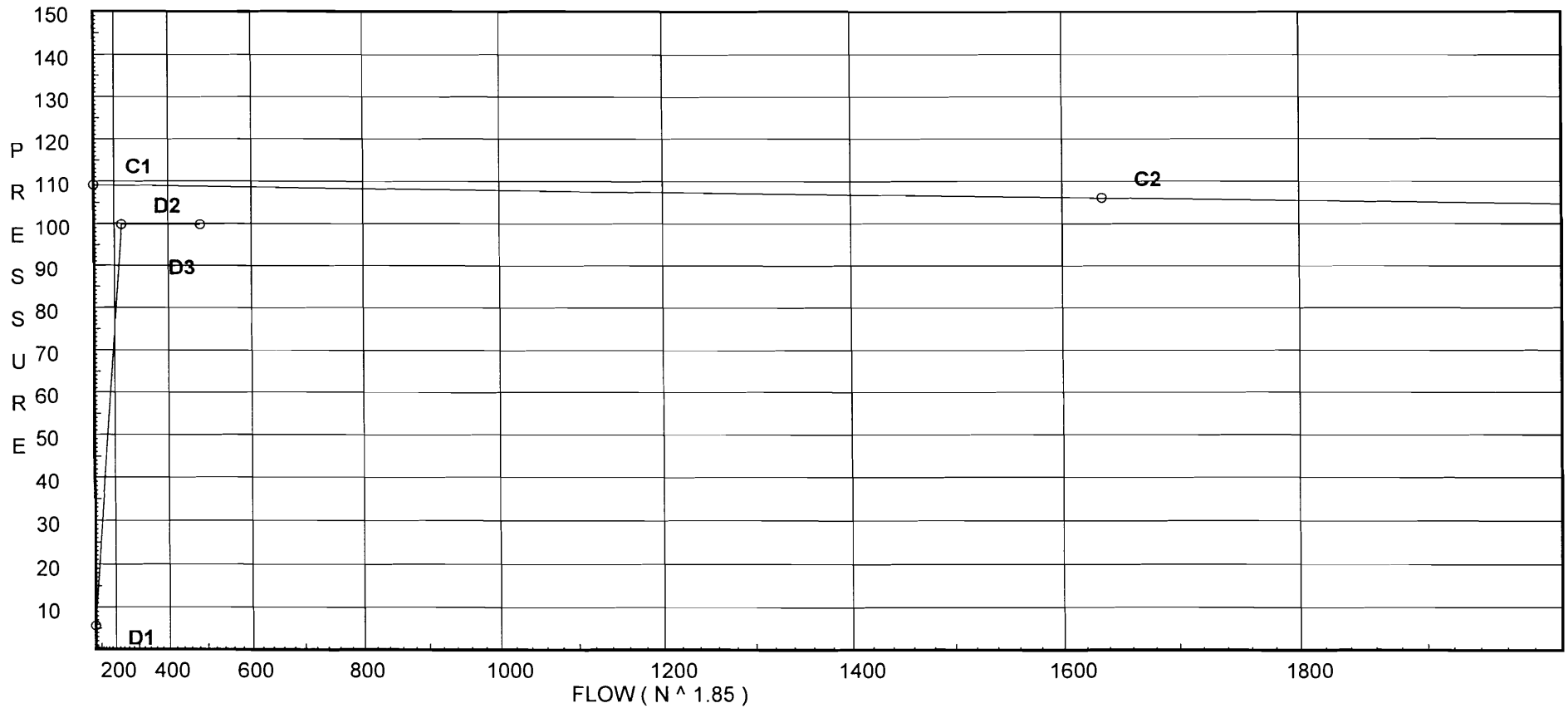
Page 6
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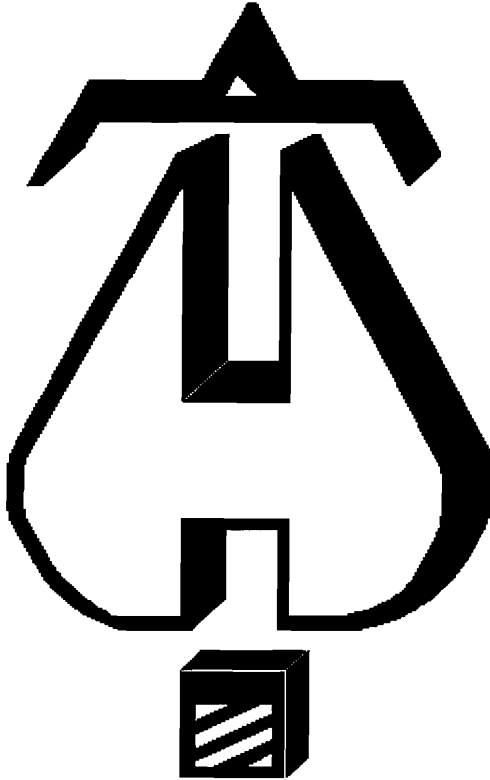
City Water Supply:

C1 - Static Pressure : 109
C2 - Residual Pressure: 106
C2 - Residual Flow : 1635

Demand:

D1 - Elevation : 5.630
D2 - System Flow : 235.225
D2 - System Pressure : 99.736
Hose (Adj City) : _____
Hose (Demand) : 250
D3 - System Demand : 485.225
Safety Margin : 8.947





... Fire Protection by Computer Design

DEAN & ALLYN, INC.
32 LEWISTON ROAD BUILDING 1C
P.O. BOX 709
GRAY, ME 04039
207-657-5646

Job Name : 15 EXCHANGE ST. SECOND FLOOR
Building :
Location : 15 EXCHANGE STREET PORTLAND MAINE
System : ONE
Contract : C09914
Data File : 15 EXCHANGE ST SECOND FLOOR.WXF

Hydraulic Design Information Sheet

Name - 15 EXCHANGE STREET SECOND FLOOR Date - 10-25-09
 Location - 15 EXCHANGE STREET PORTLAND MAINE
 Building - Contractor - DEAN AND ALLYN, INC. System No. - ONE
 Calculated By - H. KING Contract No. - C09914
 Construction: (X) Combustible () Non-Combustible Drawing No. - 1 OF 1
 Occupancy - RESTAURANT Ceiling Height - 10'

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

S Other
 T Specific Ruling Made By Date

M Area of Sprinkler Operation - LARGEST+2 System Type Sprinkler/Nozzle
 Density - .10 (X) Wet Make VIKING
 D Area Per Sprinkler - 288/130 () Dry Model MICROFAST
 E Elevation at Highest Outlet - 24 () Deluge Size 1/2"
 S Hose Allowance - Inside () Preaction K-Factor 5.6
 I Rack Sprinkler Allowance - () Other Temp.Rat.155
 G Hose Allowance - Outside - 100

N Note CUSHION 9.79 PSI

Calculation Flow Required - 271.39 Press Required - 99.1 CITY
 Summary C-Factor Used: 120 Overhead 140 Underground

W Water Flow Test: Pump Data: Tank or Reservoir:
 A Date of Test - 4-27-05 Cap. -
 T Time of Test - Rated Cap.- Elev.-
 E Static Press - 109 @ Press -
 R Residual Press - 106 Elev. - Well
 Flow - 1635 Proof Flow
 S Elevation - 0

U Location - COMMERCIAL AT UNION
 P
 L Source of Information - P. W. D.
 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

E Horizontal Barriers Provided:

Fittings Used Summary

DEAN & ALLYN, INC.
15 EXCHANGE ST. SECOND FLOOR

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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																					
A	Alarm Rel E1 & E3							7.7	21.5		17		27	29								
E	NFPA 13 90' Standard Elbow	1	2	2	3	4	5	6	7	8	10	12	14	18	22	27	35	40	45	50	61	
G	NFPA 13 Gate Valve	0	0	0	0	0	1	1	1	1	2	2	3	4	5	6	7	8	10	11	13	
T	NFPA 13 90' Flow thru Tee	3	4	5	6	8	10	12	15	17	20	25	30	35	50	60	71	81	91	101	121	

Units Summary

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

Pressure / Flow Summary - STANDARD

DEAN & ALLYN, INC.
15 EXCHANGE ST. SECOND FLOOR

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Node No.	Elevation	K-Fact	Pt Actual	Pn	Flow Actual	Density	Area	Press Req.
30A	58.0	4.9	27.3	na	25.6	0.1	256	7.0
1	24.0	5.6	27.65	na	29.45	0.1	288	26.8
2	24.0	5.6	21.75	na	26.11	0.1	130	7.0
3	24.0	5.6	20.98	na	25.65	0.1	130	7.0
4	24.0	5.6	26.8	na	28.99	0.1	288	26.8
5	24.0	5.6	29.32	na	30.33	0.1	288	26.8
6	24.0	5.6	30.39	na	30.87	0.1	288	26.8
51	24.0		24.32	na				
52	24.0		25.16	na				
50	24.0		28.83	na				
53	24.0		30.12	na				
54	24.0		35.78	na				
55	24.0		40.37	na				
56	13.0		48.95	na				
57	13.0		52.51	na				
58	13.0		57.61	na				
59	9.0		66.52	na				
60	0.0		73.98	na				
61	0.0		79.01	na				
TR	0.0		98.02	na				
FF	0.0		99.02	na				
CTY	0.0		99.1	na	100.0			

The maximum velocity is 16.39 and it occurs in the pipe between nodes 6 and 54

Final Calculations - Hazen-Williams

DEAN & ALLYN, INC.
15 EXCHANGE ST. SECOND FLOOR

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Date 10-25-09

Hyd. Ref. Point	Qa Qt	Dia. "C" Pf/Ft	Fitting or Eqv.	Ln.	Pipe Ftng's Total	Pt Pe Pf	Pt Pv Pn	*****	Notes	*****
30A to 30	25.60 25.6	1.049 120.0 0.2055	1T	5.0 0.0 0.0	1.000 5.000 6.000	27.295 25.120 1.233			K Factor = 4.90 Vel = 9.50	
	0.0 25.60						53.648		K Factor = 3.50	
1 to 50	29.45 29.45	1.38 120.0 0.0701	1T	6.0 0.0 0.0	10.800 6.000 16.800	27.653 0.0 1.177			K Factor = 5.60 Vel = 6.32	
	0.0 29.45						28.830		K Factor = 5.48	
2 to 52	26.12 26.12	1.049 120.0 0.2132	1T 1E	5.0 2.0 0.0	9.000 7.000 16.000	21.747 0.0 3.411			K Factor = 5.60 Vel = 9.70	
	0.0 26.12						25.158		K Factor = 5.21	
3 to 51	25.65 25.65	1.049 120.0 0.2062	2T	10.0 0.0 0.0	6.200 10.000 16.200	20.977 0.0 3.340			K Factor = 5.60 Vel = 9.52	
	0.0 25.65						24.317		K Factor = 5.20	
4 to 50	80.75 80.75	1.61 120.0 0.2137	1T	8.0 0.0 0.0	1.500 8.000 9.500	26.800 0.0 2.030			K Factor = 5.60 Vel = 12.73	
	0.0 80.75						28.830		K Factor = 15.04	
5 to 53	30.33 30.33	1.38 120.0 0.0740		0.0 0.0 0.0	10.800 0.0 10.800	29.324 0.0 0.799			K Factor = 5.60 Vel = 6.51	
	0.0 30.33						30.123		K Factor = 5.53	
6 to 54	171.40 171.4	2.067 120.0 0.2546	1E	5.0 0.0 0.0	16.200 5.000 21.200	30.387 0.0 5.398			K Factor = 5.60 Vel = 16.39	
	0.0 171.40						35.785		K Factor = 28.65	
51 to 52	25.65 25.65	1.38 120.0 0.0543	1E 1T	3.0 6.0 0.0	6.500 9.000 15.500	24.317 0.0 0.841			Vel = 5.50	
52 to 4	26.11 51.76	1.61 120.0 0.0938	1E	4.0 0.0 0.0	13.500 4.000 17.500	25.158 0.0 1.642			Vel = 8.16	
	0.0 51.76						26.800		K Factor = 10.00	
50 to 53	110.20 110.2	2.067 120.0 0.1124	1T	10.0 0.0 0.0	1.500 10.000 11.500	28.830 0.0 1.293			Vel = 10.54	
53 to 6	30.33 140.53	2.067 120.0 0.1760		0.0 0.0 0.0	1.500 0.0 1.500	30.123 0.0 0.264			Vel = 13.44	

Final Calculations - Hazen-Williams

DEAN & ALLYN, INC.
15 EXCHANGE ST. SECOND FLOOR

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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	*****
	0.0 140.53									
						30.387			K Factor = 25.49	
54 to 55	171.40 171.4	2.067 120.0 0.2546	2E	10.0 0.0	8.000 10.000	35.785 0.0				
				0.0	18.000	4.583			Vel = 16.39	
55 to 56	0.0 171.4	2.067 120.0 0.2545	1E	5.0 0.0	10.000 5.000	40.368 4.764				
				0.0	15.000	3.818			Vel = 16.39	
56 to 57	0.0 171.4	2.067 120.0 0.2546	1E	5.0 0.0	9.000 5.000	48.950 0.0				
				0.0	14.000	3.565			Vel = 16.39	
57 to 58	0.0 171.4	2.067 120.0 0.2546	1E 1T	5.0 10.0	5.000 15.000	52.515 0.0				
				0.0	20.000	5.092			Vel = 16.39	
58 to 59	0.0 171.4	2.067 120.0 0.2546	3E	15.0 0.0	13.200 15.000	57.607 1.732				
				0.0	28.200	7.180			Vel = 16.39	
59 to 60	0.0 171.4	2.067 120.0 0.2546	1E	5.0 0.0	9.000 5.000	66.519 3.898				
				0.0	14.000	3.564			Vel = 16.39	
60 to 61	0.0 171.4	2.635 120.0 0.0780	2E 2T	16.474 32.948	15.000 49.422	73.981 0.0				
				0.0	64.422	5.028			Vel = 10.08	
61 to TR	0.0 171.4	2.635 120.0 0.0780	15E	123.557 0.0	120.000 123.557	79.009 0.0				
				0.0	243.557	19.009			Vel = 10.08	
TR to FF	0.0 171.4	3.26 120.0 0.0277	1A 1G	28.895 1.344	6.000 30.239	98.018 0.0				
				0.0	36.239	1.003			Vel = 6.59	
FF to CTY	0.0 171.4	6.16 140.0 0.0009	1E 1G 1T	20.084 4.304 43.037	20.000 67.425 87.425	99.021 0.0 0.082				
									Vel = 1.85	
	100.00 271.40					99.103			Qa = 100.00 K Factor = 27.26	

Water Supply Curve (C)

DEAN & ALLYN, INC.
15 EXCHANGE ST. SECOND FLOOR

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City Water Supply:

C1 - Static Pressure : 109
C2 - Residual Pressure: 106
C2 - Residual Flow : 1635

Demand:

D1 - Elevation : 10.394
D2 - System Flow : 171.397
D2 - System Pressure : 99.103
Hose (Adj City) : _____
Hose (Demand) : 100
D3 - System Demand : 271.397
Safety Margin : 9.789

