

City of Portland, Maine - Building or Use Permit Application
 389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

Permit No:	10-0497	Issue Date:		CBL:	034 D007001
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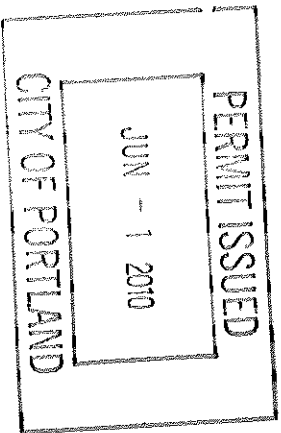
Location of Construction:	87 MARGINAL WAY	Owner Name:	87 MARGINAL WAY LLC	Owner Address:	1735 MARKET ST STE A-400	Phone:	
Business Name:	Trader Joe's	Contractor Name:	Prime General Contracting/Scott	Contractor Address:	P.O. Box 811 North Kingston	Phone	4019320229
Lessee/Buyer's Name		Phone:	781-455-7337	Permit Type:	Alterations - Commercial	Zone:	B-7

Past Use:	Commercial - Retail	Proposed Use:	Commercial - Retail - "Trader Joe's" - Interior remodel of existing retail space, remodel exterior entry canopy	Permit Fee:	\$6,770.00	Cost of Work:	\$675,000.00	CEO District:	1
Proposed Project Description:	Interior remodel of existing retail space, remodel exterior entry canopy			FIRE DEPT:	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied	INSPECTION:	Use Group: <i>MA</i> Type: <i>2B</i>		

Signature:	<i>[Signature]</i>	Signature:	<i>[Signature]</i>
Action:	<input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied	Date:	<i>[Date]</i>

Permit Taken By:	Idobson	Date Applied For:	05/10/2010	Zoning Approval	
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- This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.
- Building permits do not include plumbing, septic or electrical work.
- 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.



Special Zone or Reviews	Zoning Appeal	Historic Preservation
<input type="checkbox"/> Shoreland <i>NA</i> <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <i>Prod 13</i> <input type="checkbox"/> Subdivision <i>Prod 13</i>	<input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation	<input checked="" type="checkbox"/> Not in District 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"/> Site Plan <i>NA</i> <input type="checkbox"/> Major <i>NA</i> <input type="checkbox"/> Minor <i>NA</i> <input type="checkbox"/> MM <i>NA</i>	<input type="checkbox"/> Approved <input type="checkbox"/> Denied	<input type="checkbox"/> Denied
Date: <i>05/10/10</i>	Date: <i>5/10/10</i>	Date: <i>S</i>

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 _____

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK CITY OF PORTLAND

Please Read
Application And
Notes, If Any,
Attached

BUILDING INSPECTION

PERMIT

Permit Number: 100497

JUN - 1 2010

PERMIT ISSUED

This is to certify that 87 MARGINAL WAY LLC / Prime General Contracting / Scott
has permission to Interior remodel of existing retail space, remodel exterior entry canopy

AT 87 MARGINAL WAY

CB 034 D007001

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 with 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 lathed or otherwise closed-in. 24 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. CAPT. R. [Signature]

Health Dept. _____

Appeal Board _____

Other _____

Department Name

[Signature]
Director - Building & Inspection Services

SCANNED

City of Portland, Maine - Building or Use Permit

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

Permit No:	Date Applied For:	CBL:
10-0497	05/10/2010	034 D007001

Location of Construction:	Owner Name:	Owner Address:	Phone:
87 MARGINAL WAY	87 MARGINAL WAY LLC	1735 MARKET ST STE A-400	
Business Name:	Contractor Name:	Contractor Address:	Phone
Trader Joe's	Prime General Contracting/Scott	P.O. Box 811 North Kingston	(401) 932-0229
Lessee/Buyer's Name	Phone:	Permit Type:	
	781-455-7337	Alterations - Commercial	

Proposed Use: Commercial - Retail - "Trader Joe's" - Interior remodel of existing retail space, remodel exterior entry canopy

Proposed Project Description: Interior remodel of existing retail space, remodel exterior entry canopy

Dept: Zoning Status: Approved with Conditions Reviewer: Marge Schmuckel Approval Date: 05/10/2010
 Note: Ok to Issue:

- 1) This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.
- 2) Separate permits shall be required for any new signage.
- 3) This property shall remain a retail use for both establishments in the structure. Any change of use shall require a separate permit application for review and approval.

Dept: Building Status: Approved with Conditions Reviewer: Jeanine Bourke Approval Date: 05/27/2010
 Note: Ok to Issue:

- 1) Separate permits are required for any electrical, plumbing, sprinkler, fire alarm HVAC systems, heating appliances, commercial hood exhaust systems and fuel tanks. Separate plans may need to be submitted for approval as a part of this process.
- 2) All penetrations through rated assemblies must be protected by an approved firestop system installed in accordance with ASTM 814 or UL 1479, per IBC 2003 Section 712.
- 3) New cafe, restaurant, lounge, bar or retail establishment where food or drink is sold and/or prepared shall meet the requirements of the City and State Food Codes
- 4) Approval of City license is subject to health inspections per the Food Code.
- 5) Prior to the final inspection a sealed letter shall be submitted to this office confirming that based on inspections performed all discrepancies have been corrected and the work is in substantial compliance with the approved plans.
- 6) Application approval based upon information provided by applicant. Any deviation from approved plans requires separate review and approval prior to work.

Dept: Fire Status: Approved with Conditions Reviewer: Capt Keith Gautreau Approval Date: 05/21/2010
 Note: Ok to Issue:

- 1) All construction shall comply with NFPA 1 and 101.
- 2) All fire alarm records required by NFPA 72 should be stored in an approved cabinet located at the FACP labeled "FIRE ALARM RECORDS". Records cabinet, FACP, annunciator(s), and pull stations shall be keyed alike.
- 3) Central Station monitoring for addressable fire alarm systems shall be by point.
- 4) A separate Suppression System Permit is required for all new suppression systems or sprinkler work effecting more than 20 heads.
- 5) The fire alarm system shall comply with the City of Portland Standard for Signaling Systems for the Protection of Life and Property. All fire alarm installation and servicing companies shall have a Certificate of Fitness from the Fire Department.
- 6) Any cutting or welding and hot work taking place in a commercial building requires a separate "Hot Work Permit" from the Fire Department.
- 7) The Fire alarm and Sprinkler systems shall be reviewed by a licensed contractor[s] for code compliance. Compliance letters are required.

Location of Construction:	Owner Name:	Owner Address:	Phone:
87 MARGINAL WAY	87 MARGINAL WAY LLC	1735 MARKET ST STE A-400	
Business Name:	Contractor Name:	Contractor Address:	Phone
Trader Joe's	Prime General Contracting/Scott	P. O. Box 811 North Kingston	(401) 932-0229
Lessee/Buyer's Name	Phone:	Permit Type:	
	781-455-7337	Alterations - Commercial	
<p>8) Occupancies with an occupant load of 100 persons or more require panic hardware on all doors serving as a means of egress.</p> <p>9) Emergency lights and exit signs are required. Emergency lights and exit signs are required to be labeled in relation to the panel and circuit.</p> <p>10 Fire extinguishers required. Installation per NFPA 10</p> <p>11 Emergency lights are required to be tested at the electrical panel on the same circuit as the lighting for the area they serve.</p> <p>12 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.</p> <p>13 Fire Alarm system shall be maintained. If system is to be off line over 4 hours a fire watch shall be in place. Dispatch notification required 874-8576.</p> <p>14 A separate Fire Alarm Permit is required for new systems; or for work effecting more than 5 fire alarm devices; or replacement of a fire alarm panel with a different model.</p> <p>15 System acceptance and commissioning must be co-ordinated with alarm and suppression system contractors and the Fire Department. Call 874-8703 to schedule.</p>			

Comments:
5/27/2010-jimb: Spoke with Janet Bade the project manager for architect, discussed engineering oversight of the new canopy. She will notify the client and secure a local engineer to inspect the steel bolting and submit a sealed letter prior to the final inspection..



General Building Permit Application

If you or the property owner owes real estate or personal property taxes or user charges on any property within the City, payment arrangements must be made before permits of any kind are accepted.

Location / Address of Construction: <u>87 MARSHALL WAY, PORTLAND, ME 04101</u>		Square Footage of Lot <u>10193.51 (2.34 ACRES)</u>	
Total Square Footage of Proposed Structure / Area <u>23,930.51 (EXISTING)</u>		Tax Assessor's Chart, Block & Lot Chart# <u>34</u> Block# <u>D</u> Lot# <u>147</u>	
Applicant *must be owner, Lessee or Buyer* Name <u>TRADER JOb's COMPANY</u> Address <u>117 KENDRICK STREET</u> City, State & Zip <u>NEEDHAM, MA 02494</u>		Telephone: <u>781-455-7337</u>	
Lessee/DBA (If Applicable) <u>TRADER JOE'S COMPANY</u> <u>117 KENDRICK ST.</u> <u>SUITE 700</u> <u>NEEDHAM MA 02494</u>		Owner (if different from Applicant) Name <u>HAMPSHIRE REAL ESTATE CO.</u> Address <u>15 MAPLE AVENUE</u> City, State & Zip <u>MORRISTOWN, N.J.</u> <u>07960</u>	
Current legal use (i.e. single family) If vacant, what was the previous use? <u>RETAIL GROCERY</u> Proposed Specific use: <u>RETAIL GROCERY</u>		Cost Of Work: \$ <u>675,000</u> C of O Fee: \$ <u>46,770</u> Total Fee: \$ <u>721,770</u>	
Is property part of a subdivision? <u>NO</u> If yes, please name _____			
Project description: <u>INTERIOR REMODEL OF EXISTING RETAIL SPACE FOR NEW TENANT (TRADER JOE'S) TO INCLUDE NEW INTERIOR PARTITIONS, ELECTRICAL, PLUMBING, LIGHTING, AND MECHANICAL MODIFICATIONS. EXTERIOR ENTRY CANOPY REMODEL</u>			
Contractor's name: <u>SCOTT MAURO - PRIME GENERAL CONTRACTING</u>			
Address: <u>P.O. Box 811</u>		Telephone: <u>401-932-0029</u>	
City, State & Zip <u>NOETH KINGSTON, R.I. 02852</u>		Telephone: <u>914-289-0011</u>	
Who should we contact when the permit is ready? <u>JERRY TAYLOR</u>			
Mailing address: <u>TAYLOR ASSOCIATES ARCHITECTS, 572 N. BROADWAY, WHITE PLAINS, N.Y. 10603</u>			

Please submit all of the information outlined on the applicable Checklist. Failure to do so will result in the automatic denial of your permit.

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In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at www.portlandmaine.gov or download copies of Division office, room 315 City Hall or call 874-8703.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. All applicable laws of this jurisdiction. In addition, if a permit for work described in this application is sold, Portland Maine Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature: Kieran Stone - Trader Joe's Date: 5/1/10

This is not a permit; you may not commence ANY work until the permit is issued

Raymond H. Ayers
Leasing Consultant
rayers@hampshireco.com

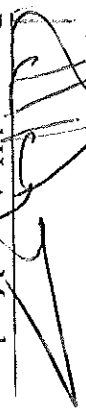
April 30, 2010

Kieran Stone
Director of Construction
Trader Joes Company
117 Kendrick Street
Needham, MA 02494

Re: Trader Joes store location at 87 Marginal Way, Portland, Maine.

Dear Mr. Stone:

The Hampshire Companies, as authorized managers of the above referenced property for WO Portland, LLC, your Landlord, does hereby authorize Trader Joe's Company, as tenant under the Lease, to file an application for a Building Permit with the City of Portland. The permit application will be for the purpose of renovating and remodeling the existing building in order to allow its re-opening as a new Trader Joes store.

Very truly yours,
The Hampshire Companies
By:  RHA Associates LLC

Raymond H. Ayers, Member

SENT VIA EMAIL ONLY

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MAY 10 2010
Dept. of Building Inspections
City of Portland Maine

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 Inspection 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 with construction.

Framing/Rough Plumbing/Electrical: Prior to Any Insulating or drywalling

Final inspection required at completion of work.

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OR 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.

Frederick Taylor Associates
Architects, P.C.

572 North Broadway
White Plains, N.Y. 10603

Tel 914 289 0011
Fax 914 289 0022

Taylor Associates Architects

TRANSMITTAL FORM

TO:	City of Portland Building Department 389 Congress Street Portland ME 04101 T 207 874 8693 F 207 874 8716 Attn: Lannie Dobson		7972
RE:	Trader Joe's 87 Marginal Way, Portland, ME	Date:	05/04/10
From:	Lori Armstrong, Administrative Assistant	Via:	Fed-Ex

Copies	Date	No.	Description
1*	Current	Set	Construction Drawings
1*	Current	Set	Energy Code Calculations
1*	Current	Set	Structural Calculations
1	Current	Set	Construction Drawings (pdf format - on CD)
1*			Accessibility Building Code Certificate
1*			Certificate of Design
1			Certificate of Design Application
1			Landlord Letter of Authorization
1			General Building Permit Application
1			Application for Food Service Establishment
2			Checks: Permit Fee & Health Department Review Fee (\$6,770 & \$555)
			*Signed & Sealed

Lannie,

Enclosed you will find one (1) set of signed & sealed construction drawings (and in pdf format on CD), energy code calcs, structural calcs, accessibility certificate, certificate of design application, certificate of design, a letter of authorization provided from the Landlord, building permit application and application for food service establishment – forwarded to you for review and approval of building permit for the interior alteration of a new Trader Joe's store.

If you have any questions or require additional documentation, please do not hesitate to call. Thank you!

Lori Armstrong
Administrative Assistant

PACKAGE 1 OF 2

Cc: Trader Joe's: Kieran Stone (TO)

Transmitted as checked below:	
For Approval	Approved as Submitted
X For Your Use	Approved as Noted
As Requested	Returned for Corrections
For Review and Comment	For Bids Due on

Frederick Taylor Associates
Architects, P.C.

572 North Broadway
White Plains, N.Y. 10603

Tel 914 289 0011
Fax 914 289 0022

Taylor Associates Architects

TRANSMITTAL FORM

TO:	City of Portland Building Department 389 Congress Street Portland ME 04101 T 207 874 8693 F 207 874 8716 Attn: Lannie Dobson		7972
RE:	Trader Joe's 87 Marginal Way, Portland, ME	Date:	05/04/10
From:	Lori Armstrong, Administrative Assistant	Via:	Fed-Ex

Copies	Date	No.	Description
1*	Current	Set	Construction Drawings
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If you have any questions or require additional documentation, please do not hesitate to call. Thank you!

Lori Armstrong
Administrative Assistant

Cc: Trader Joe's; Kieran Stone (TO)

Transmitted as checked below:			
<input type="checkbox"/>	For Approval	<input type="checkbox"/>	Approved as Submitted
X	For Your Use	<input type="checkbox"/>	Approved as Noted
<input type="checkbox"/>	As Requested	<input type="checkbox"/>	Returned for Corrections
<input type="checkbox"/>	For Review and Comment	<input type="checkbox"/>	For Bids Due on

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Dept. of Building Inspections
City of Portland Maine
PH/MSK 2 of 2



Accessibility Building Code Certificate

Designer: JEFFREY TAYLOR, AIA

Address of Project: 87 MARGINAL WAY, PORTLAND, ME 04101

Nature of Project: TRADER JOE'S - NEW RETAIL GROCERY

STORE IN EXISTING RETAIL SPACE.

TENANT IMPROVEMENT TO INCLUDE

INTERIOR REMODEL AND REMODEL OF

EXTERIOR ENTRY CANOPY

The technical submissions covering the proposed construction work as described above have been designed in compliance with applicable referenced standards found in the Maine Human Rights Law and Federal Americans with Disability Act. Residential Buildings with 4 units or more must conform to the Federal Fair Housing Accessibility Standards. Please provide proof of compliance if applicable.

Signature: JWT MAY 04 2010

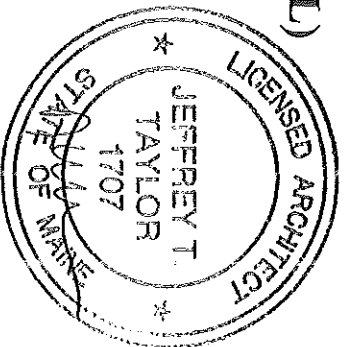
Title: ARCHITECT

Firm: TAYLOR ASSOCIATES ARCHITECTS

Address: 572 N. BROADWAY

WHITE PLAINS, N.Y. 10603

Phone: 914-289-0011



(SEAL)

For more information or to download this form and other permit applications visit the Inspections Division on our website at www.portlandmaine.gov

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Certificate of Design Application

From Designer: JERRY TAYLOR, AIA

Date: APRIL 29, 2010

Job Name: TRADER JOE'S - TENANT IMPROVEMENT

Address of Construction: 87 MARGINAL WAY, PORTLAND, ME. 04101

2003 International Building Code
Construction project was designed to the building code criteria listed below:

Building Code & Year 2003 IBC Use Group Classification (S) MERCHANTILE
Type of Construction IIB

Will the Structure have a Fire suppression system in Accordance with Section 903.3.1 of the 2003 IRC YES

Is the Structure mixed use? NO If Yes, separated or non separated (section 302.3) _____

Supervisory alarm System? YES Geotechnical/Soils report required? (See Section 1802.2) NO

Structural Design Calculations

YES Submitted for all structural members (106.1 - 106.11)

Design Loads on Construction Documents (1603)

Uniformly distributed floor live loads (7603.11, 1807)
Floor Area Use Loads Shown

Wind loads (1603.1.4, 1609)

Design option utilized (1609.1.1, 1609.6)

Basic wind speed (1809.3)

Building category and wind importance Factor, I_w

table 1604.5, 1609.5)

Wind exposure category (1609.4)

Internal pressure coefficient (ASCE 7)

Component and cladding pressures (1609.1.1, 1609.6.2.2)

Main force wind pressures (7603.1.1, 1609.6.2.1)

Earth design data (1603.1.5, 1614-1623)

Design option utilized (1614.1)

Seismic use group ("Category")

Spectral response coefficients, S_D & S_I (1615.1)

Site class (1615.1.5)

Live load reduction

Roof live loads (1603.1.2, 1607.11)

Roof snow loads (1603.7.3, 1608)

Ground snow load, P_g (1608.2)

If $P_g > 10$ psf, flat-roof snow load p_f

If $P_g > 10$ psf, snow exposure factor, C_e

If $P_g > 10$ psf, snow load importance factor, I_s

Roof thermal factor, C_t (1608.4)

Sloped roof snowload, p_s (1608.4)

Seismic design category (1616.3)

Basic seismic force resisting system (1617.6.2)

Response modification coefficient, R_d and

deflection amplification factor C_d (1617.6.2)

Analysis procedure (1616.6, 1617.5)

Design base shear (1617.4, 1617.5.1)

Flood loads (1803.1.6, 1612)

Flood Hazard area (1612.3)

Elevation of structure

Other loads

Concentrated loads (1607.4)

Partition loads (1607.5)

Misc. loads (Table 1607.8, 1607.6.4, 1607.7,
1607.12, 1607.13, 1610, 1611, 2404)

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Portland, Maine



Certificate of Design

Date: APRIL 29, 2010

From: JEFFREY TAYLOR, AIA

These plans and / or specifications covering construction work on:

TRADER JOE'S - 87 MARGINAL WAY, PORTLAND, ME 04101

Have been designed and drawn up by the undersigned, a Maine registered Architect / Engineer according to the *2003 International Building Code* and local amendments.

Signature: *JTW* MAY 04 2010

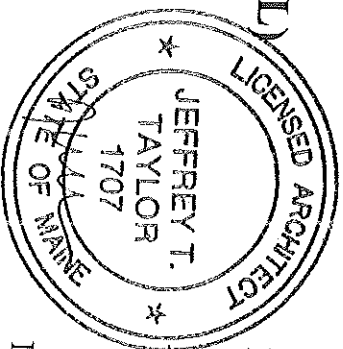
Title: ARCHITECT

Firm: TAYLOR ASSOCIATES ARCHITECTS

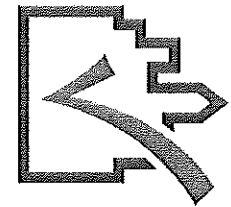
Address: 572 N. BROADWAY

WHITE PLAINS, N.Y. 10603

Phone: 914-289-0011



For more information or to download this form and other permit applications visit the Inspections Division on our website at www.portlandmaine.gov



COMcheck Software Version 3.7.1 Interior Lighting and Power Compliance Certificate

90.1 (2001) Standard

Section 1: Project Information

Project Type: **New Construction**
Project Title : **Trader Joe's**
Construction Site: **Owner/Agent:**
87 Marginal Way
Portland, ME 04101
Designer/Contractor:

Section 2: General Information

Building Use Description by: **Activity Type**

<u>Activity Type(s)</u>	<u>Floor Area</u>
Retail and Banking:General Retail Sales Area	16840
Common Space Types:Active Storage	4915
Common Space Types:Restrooms	238
Common Space Types:Corridor/Transition	242
Common Space Types:Electrical/Mechanical	522
Common Space Types:Conference/Meeting/Multipurpose	242
Common Space Types:Lobby	180

Section 3: Requirements Checklist

Interior Lighting:

1. Total proposed watts must be less than or equal to total allowed watts.
- | <u>Allowed Watts</u> | <u>Proposed Watts</u> | <u>Complies</u> |
|----------------------|-----------------------|-----------------|
| 42544 | 32870 | YES |

Exterior Lighting:

2. Minimum efficacy of 60 lumens/watt for lamps greater than 100W.
3. Lighting power for canopies, entrances, and exits meets the following criteria (trade-offs allowed among these applications):
- (i) Lighting power for free-standing canopy areas or building entrances with canopies is less than or equal to 3 watts per square foot.
 - (ii) Lighting power for building entrances without a canopy is less than or equal to 33 watts per linear foot of door width.
 - (iii) Lighting power for building exits is less than or equal to 20 watts per linear foot of exit door width.
4. Lighting power for building facades is less than or equal to 0.25 watts per square foot of the illuminated area.

Exceptions:
Controlled by motion sensor, signal or advertising signage, highlighting features of historic monuments and buildings, or required for safety or security.

Controls, Switching, and Wiring:

5. Independent manual or occupancy sensing controls for each space (remote switch with indicator allowed for safety or security).
6. Automatic shutoff control for lighting in >5000 sq.ft buildings by time-of-day device, occupant sensor, or other automatic control.
- Exceptions:*
24 hour operation lighting.
7. Master switch at entry to hotel/motel guest room.
8. Separate control device for display/accent lighting, case lighting, task lighting, nonvisual lighting, fighting for sale, and demonstration lighting.

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MAY 10 2010

- 9. Photocell/astromonical time switch on exterior lights.

Exceptions:

Covered vehicle entrance/exit areas requiring lighting for safety, security and eye adaptation.

- 10. Tandem wired one-lamp and three-lamp ballasted luminaires (No single-lamp ballasts).

Exceptions:

Electronic high-frequency ballasts;

Luminaires not on same switch;

Recessed luminaires 10 ft. apart or surface/pendant not continuous;

Luminaires on emergency circuits.

Voltage Drop:

- 11. Feeder conductors have been designed for a maximum voltage drop of 2 percent.
- 12. Branch circuit conductors have been designed for a maximum voltage drop of 3 percent.

Section 4: Compliance Statement

Compliance Statement: The proposed lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting system has been designed to meet the 90.1 (2001) Standard requirements in COMcheck Version 3.7.1 and to comply with the mandatory requirements in the Requirements Checklist.

Don Penn, P.E.



APR 30 2010

Name - Title

Signature

Date

Section 5: Post Construction Compliance Statement

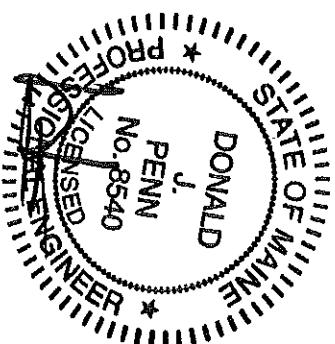
Record Drawings and Operating and Maintenance Manuals:

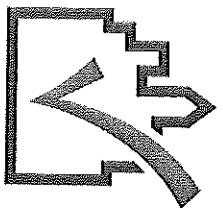
- 1. Construction documents with record drawings and operating and maintenance manuals provided to the owner.

Lighting Designer or Contractor Name

Signature

Date





COMcheck Software Version 3.7.1 Interior Lighting Application Worksheet

90.1 (2001) Standard

Section 1: Allowed Lighting Power Calculation

A Area Category	B Floor Area (ft ²)	C Allowed Watts / ft ²	D Allowed Watts (B x C)
Retail and Banking: General Retail Sales Area	16840	2.1	35364
Common Space Types: Active Storage	4915	1.1	5407
Common Space Types: Restrooms	238	1	238
Common Space Types: Corridor/Transition	242	0.7	169
Common Space Types: Electrical/Mechanical	522	1.3	679
Common Space Types: Conference/Meeting/Multipurpose	242	1.5	363
Common Space Types: Lobby	180	1.8	324
Total Allowed Watts =			42544

Section 2: Proposed Lighting Power Calculation

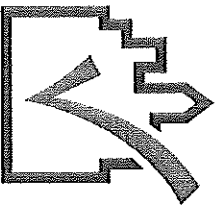
A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Retail and Banking: General Retail Sales Area (16840 sq.ft.)				
Linear Fluorescent 1: R: 8 ft. Direct/Indirect / 48" T8 32W (Super T8) / Electronic	8	34	248	8432
Linear Fluorescent 2: F: 12 ft Direct/Indirect / 48" T8 32W (Super T8) / Electronic	6	108	196	21168
Common Space Types: Active Storage (4915 sq.ft.)				
Linear Fluorescent 3: E: Fluorescent Strip / 48" T8 32W (Super T8) / Electronic	1	35	27	945
Incandescent 1: Q: Vapor Proof Inc / Incandescent 100W	1	9	100	900
Common Space Types: Restrooms (238 sq.ft.)				
Linear Fluorescent 4: D: 4 ft. Fluorescent / 48" T8 32W (Super T8) / Electronic	2	4	54	216
Common Space Types: Corridor/Transition (242 sq.ft.)				
Linear Fluorescent 5: D: 4 ft. Fluorescent / 48" T8 32W (Super T8) / Electronic	2	2	54	108
Linear Fluorescent 6: E: Fluorescent Strip / 48" T8 32W (Super T8) / Electronic	1	4	27	108
Common Space Types: Electrical/Mechanical (522 sq.ft.)				
Linear Fluorescent 7: E: Fluorescent Strip / 48" T8 32W (Super T8) / Electronic	1	9	27	243
Common Space Types: Conference/Meeting/Multipurpose (242 sq.ft.)				
Linear Fluorescent 8: A: 2x4 Fluorescent Troffer / 48" T8 32W (Super T8) / Electronic	3	6	81	486
Linear Fluorescent 9: D: 4 ft. Fluorescent / 48" T8 32W (Super T8) / Electronic	2	1	54	54
Common Space Types: Lobby (180 sq.ft.)				
Compact Fluorescent 1: GF: CF Downlight / Triple 4-pin 32W / Electronic	1	6	35	210
Total Proposed Watts =			32870	

Section 3: Compliance Calculation

If the Total Allowed Watts minus the Total Proposed Watts is greater than or equal to zero, the building complies.

Total Allowed Watts = 42544
 Total Proposed Watts = 32870
 Project Compliance = 9674

Interior Lighting PASSES: Design 23% better than code



COMcheck Software Version 3.7.1 Mechanical Compliance Certificate

90.1 (2001) Standard

Section 1: Project Information

Project Type: **New Construction**

Project Title : **Trader Joe's**

Construction Site: **Owner/Agent:**

87 Marginal Way
Portland, ME 04101

Designer/Contractor:

Section 2: General Information

Building Location (for weather data):

Portland, Maine

Heating Degree Days (base 65 degrees F):

7378

Cooling Degree Days (base 50 degrees F):

1943

Section 3: Mechanical Systems List

Quantity System Type & Description

- | | |
|---|---|
| 1 | HVAC System 1: Heating: Central Furnace, Gas, Capacity 168 kBtu/h / Cooling: Rooftop Package Unit, Capacity 126 kBtu/h, Air-Cooled Condenser/ Single Zone |
| 1 | Water Heater 1: Electric Storage Water Heater, Capacity: 50 gallons w/ Circulation Pump |

Section 4: Requirements Checklist

Requirements Specific To: HVAC System 1 :

- 1. Equipment minimum efficiency: Central Furnace (Gas): 80.0 % Et (or 78% AFUE)
- 2. Equipment minimum efficiency: Rooftop Package Unit: 10.1 EER
- 3. Integrated air economizer required

Requirements Specific To: Water Heater 1 :

- 1. Electric Water Heater efficiency: 0.9 EF (267 SL, Btu/h (If > 12 kW))
- 2. All piping in circulating system insulated
- 3. Hot water storage temperature adjustable down to 120 degrees F or lower
- 4. Automatic time control of heat tapes and recirculating systems present
- 5. Controls will shut off operation of circulating pump between water heater/boiler and storage tanks within 5 minutes after end of heating cycle
- 6. Hot water system sized per manufacturer's sizing guide or engineering standards acceptable to the adopting authority.

Generic Requirements: Must be met by all systems to which the requirement is applicable:

- 1. Load calculations per ASHRAE Fundamentals
- 2. Automatic Controls: Setback to 55 degrees F (heat) and 85 degrees F (cool); 7-day clock, 2-hour occupant override, 10-hour backup
 - Exception: Continuously operating zones
 - Exception: Residential occupancies may use controls that can start and stop the system under two different time schedules per week.
- 3. Hot water pipe insulation: 1 in. for pipes <=1.5 in. and 2 in. for pipes >1.5 in. Chilled water/refrigerant/brine pipe insulation: 1 in. for pipes <=1.5 in. and 1.5 in. for pipes >1.5 in. Steam pipe insulation: 1.5 in. for pipes <=1.5 in. and 3 in. for pipes >1.5 in.
 - Exception: Piping within HVAC equipment.
 - Exception: Fluid temperatures between 60 and 105 degrees F.

Project Title: **Trader Joe's**

Data filename: **C:\Users\Owner\Documents\COMcheck\jstr7972.cck**

Report date: **04/29/10**

Page 4 of 8

- Exception: Fluid not heated or cooled.
- Exception: Runouts <4 ft in length.
- Exception: Pipe unions in heating systems.
- 4. Piping, insulated to 1/2 in. if nominal diameter of pipe is <1.5 in.; Larger pipe insulated to 1 in. thickness
- 5. Lavatory faucet outlet temperatures in public restrooms limited to 110 degrees F (43 degrees C)
- 6. Thermostatic controls have 5 degrees F deadband
 - Exception: Thermostats requiring manual changeover between heating and cooling
 - Exception: Special occupancy or special applications where wide temperature ranges are not acceptable and are approved by the authority having jurisdiction.
- 7. Where separate thermostats are used for heating and cooling, acceptable measures are used to prevent simultaneous heating and cooling
- 8. Stair and elevator shaft vents are equipped with motorized dampers
- 9. Acceptable measures used to prevent simultaneous humidification and dehumidification
 - Exception: Desiccant systems and systems for uses requiring specific humidity levels (approval required)
- 10. Automatic controls for freeze protection systems present
- 11. Automatic ventilation controls (e.g., CO2 controls) or exhaust air heat recovery present for high design occupancy areas (>100 person/1000 ft2) with >3,000 cfm outside air capacities
- 12. Duct, plenum, and piping insulation surfaces suitably protected from weather, moisture, or likely damage
- 13. R-6 supply and return air ducts in unconditioned spaces R-8 supply and return air ducts outside the building R-8 insulation between ducts and the building exterior when ducts are part of a building assembly R-3.5 supply and return air ducts insulation underground
- 14. Duct Sealing: a) Pressure sensitive tape is not used as the primary sealant, b) longitudinal and transverse seams for ducts in unconditioned spaces, c) longitudinal and transverse seams and duct wall penetrations for ducts outside the building, d) transverse seams on buried ducts
- 15. Motorized, automatic shutoff dampers required on exhaust and outdoor air supply openings
 - Exception: Gravity dampers acceptable in buildings <3 stories
 - Exception: Gravity (non-motorized) dampers are acceptable in systems with a design outside air intake or exhaust capacity of 300 cfm or less.
- 16. Humidistat controls prevent reheating, recooling, and mixing of mechanically heated air with mechanically cooled air
- 17. Exhaust air heat recovery included for systems 5,000 cfm or greater with more than 70% outside air fraction or specifically heated air
- 18. Kitchen hoods >5,000 cfm provided with 50% makeup air that is uncooled and heated to no more than 60 degrees F or specifically heated and meeting the following: a) 75% make up air quantity, and /or b) within 2 degrees F of room temperature and/or c) no humidification d) no simultaneous heating and cooling
- 19. Buildings with fume hood systems must have variable air volume hood design, exhaust heat recovery, or separate makeup air system

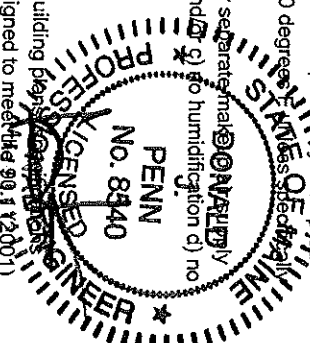
Section 5: Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building department standards and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the Standard requirements in COMcheck Version 3.7.1 and to comply with the mandatory requirements in the Requirements Checklist.

Name - Title Don Penn, PE

Signature

Date APR 30 2010



Section 6: Post Construction Compliance Statement

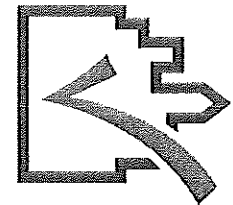
- HVAC record drawings of the actual installation and performance data for each equipment provided to the owner within 90 days after system acceptance.
- HVAC O&M documents for all mechanical equipment and system provided to the owner within 90 days after system acceptance.
- Written HVAC balancing report provided to the owner.

The above post construction requirements have been completed.

Principal Mechanical Designer-Name

Signature

Date



COMcheck Software Version 3.7.1

Mechanical Requirements

Description

90.1 (2001) Standard

The following list provides more detailed descriptions of the requirements in Section 4 of the Mechanical Compliance Certificate.

Requirements Specific To: HVAC System 1 :

1. The specified heating and/or cooling equipment is covered by the ASHRAE 90.1-2001 Standard and must meet the following minimum efficiency: Central Furnace (Gas): 80.0 % Et (or 78% AFUE)
2. The specified heating and/or cooling equipment is covered by ASHRAE 90.1-2001 Standard and must meet the following minimum efficiency: Rooftop Package Unit: 10.1 EER
3. An integrated air economizer is required for individual cooling systems over 65 Kbtuh in the selected project location. An integrated economizer allows simultaneous operation of outdoor-air and mechanical cooling.

Requirements Specific To: Water Heater 1 :

1. Service water heating equipment used solely for heating potable water, pool heaters, and hot water storage tanks must meet the following minimum efficiency: Electric Water Heater efficiency: 0.9 EF (267 SL, Btu/h (If > 12 kW))
2. Insulation must be provided for recirculating system piping, including the supply and return piping of a circulating tank type water heater.
3. Temperature controls must be provided that allow for storage temperature adjustment from 120 degrees F or lower to a maximum temperature compatible with the intended use except when the manufacturer's installation instructions specify a higher minimum thermostat setting to minimize condensation and resulting corrosion. Documentation of the installation instructions must be provided to be exempted from this requirement.
4. Systems designed to maintain usage temperatures in hot water pipes, such as recirculating hot water systems or heat trace, must be equipped with automatic time switches or other controls that can be set to switch off the temperature maintenance system during extended periods when hot water is not required.
5. When used to maintain storage tank water temperature, recirculating pumps must be equipped with controls limiting operation to the start of the heating cycle to a maximum of 5 minutes after the end of the heating cycle.
6. Service water heating system design loads for the purpose of sizing systems and equipment must be determined in accordance with manufacturers' published sizing guidelines or generally accepted engineering standards and handbooks acceptable to the adopting authority (e.g. ASHRAE Handbook - HVAC Applications).

Generic Requirements: Must be met by all systems to which the requirement is applicable:

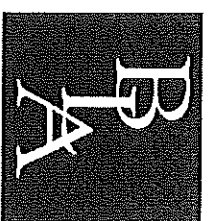
1. Design heating and cooling loads for the building must be determined using procedures in the ASHRAE Handbook of Fundamentals or an approved equivalent calculation procedure.
2. The system or zone control must be a programmable thermostat or other automatic control meeting the following criteria: a) capable of setting back temperature to 55 degrees F during heating and setting up to 85 degrees F during cooling, b) capable of automatically setting back or shutting down systems during unoccupied hours using 7 different day schedules, c) have an accessible 2-hour occupant override, d) have a battery back-up capable of maintaining programmed settings for at least 10 hours without power.
 - Exception: A setback or shutoff control is not required on thermostats that control systems serving areas that operate continuously.
 - Exception: Residential occupancies may use controls that can start and stop the system under two different time schedules per week.
3. All pipes serving space-conditioning systems must be insulated as follows: Hot water piping for heating systems: 1 in. for pipes <=1 1/2-in. nominal diameter, 2 in. for pipes >1 1/2-in. nominal diameter. Chilled water, refrigerant, and brine piping systems: 1 in. insulation for pipes <=1 1/2-in. nominal diameter, 1 1/2 in. insulation for pipes >1 1/2-in. nominal diameter. Steam piping: 1 1/2 in. insulation for pipes <=1 1/2-in. nominal diameter, 3 in. insulation for pipes >1 1/2-in. nominal diameter.
 - Exception: Factory-installed piping within HVAC equipment.
 - Exception: Piping that conveys fluids having a design operating temperature range between 60 degrees F and 105 degrees F.
 - Exception: Piping that conveys fluids that have not been heated or cooled through the use of nonrenewable energy.
 - Exception: Runout piping not exceeding 4 ft in length between shutoff valve and coil and 1 in. in diameter between the control valve and HVAC coil.
 - Exception: Pipe unions in heating systems.
4. Service hot water piping, where required, must be insulated to 1/2 in. if pipe less than 1.5 in. nominal diameter. Larger pipe must be insulated to 1 in.. Pipe insulation will have a conductivity of less than 0.28 Btu.in/(h-ft2-degrees F).
5. Temperature controlling means must be provided to limit the maximum temperature of water delivered from lavatory faucets in public facility restrooms to 110 degrees F.
6. Thermostats controlling both heating and cooling must be capable of maintaining a 5 degrees F deadband (a range of temperature where no heating or cooling is provided).

- Exception: Deadband capability is not required if the thermostat does not have automatic changeover capability between heating and cooling.
 - Exception: Special occupancy or special applications where wide temperature ranges are not acceptable and are approved by the authority having jurisdiction.
7. Where zone heating and cooling are controlled by separate zone thermostats, means (such as limit switches, mechanical stops, or, for DDC systems, software programming) must be provided to prevent simultaneous heating and cooling to the zone.
 8. Stair and elevator shaft vents must be equipped with motorized dampers capable of being automatically closed during normal building operation and interlocked to open as required by fire and smoke detection systems. All gravity outdoor air supply and exhaust hoods, vents, and ventilators must be equipped with motorized dampers that will automatically shut when the spaces served are not in use.
 - Exception: Gravity (non-motorized) dampers are acceptable in buildings less than three stories in height above grade.
 - Exception: Ventilation systems serving unconditioned spaces.
 9. Where a zone is served by a system(s) with both humidification and dehumidification capability, means (such as limit switches, mechanical stops, or software programming) must be provided to prevent simultaneous operation of humidification and dehumidification equipment.
 - Exception: Zones served by desiccant systems, used with direct evaporative cooling in series; Systems serving zones where specific humidity levels are required.
 10. All freeze protection systems, including self-regulating heat tracing, must include automatic controls capable of shutting off the systems when outside air temperatures are above 40 degrees F or when the conditions of the protected fluid will prevent freezing. Snow- and ice-melting systems must include automatic controls capable of shutting off the systems when the pavement temperature is above 50 degrees F and no precipitation is falling, and an automatic or manual control that will allow shutoff when the outdoor temperature is above 40 degrees F.
 11. Systems with design outside air capacities >3,000 cfm serving areas having an average design occupancy density exceeding 100 people per 1000 ft2 must include means to automatically reduce outside air intake below design rates when spaces are partially occupied. Ventilation controls must be in compliance with ASHRAE Standard 62 and local standards.
 12. Duct and pipe insulation exposed to weather must be suitable for outdoor service; e.g., protected by aluminum, sheet metal, painted canvas, or plastic cover. Cellular foam insulation must be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation that can cause degradation of the material. Insulation covering chilled water piping, refrigerant suction piping, or cooling ducts located outside the conditioned space must include a vapor retardant located outside the insulation (unless the insulation is inherently vapor retardant), all penetrations and joints of which must be sealed.
 13. R-6 supply and return air ducts in unconditioned spaces R-8 supply and return air ducts outside the building R-8 insulation between ducts and the building exterior when ducts are part of a building assembly R-3.5 supply and return air ducts insulation underground
 14. Duct Sealing Requirements: a) Pressure sensitive tape prohibited as the primary sealant. b) Longitudinal and transverse seams for ducts in unconditioned spaces, c) Longitudinal and transverse seams and duct wall penetrations for ducts outside the building. d) Transverse seams on buried ducts
 15. Outdoor air supply and exhaust systems must have motorized dampers that automatically shut when the systems or spaces served are not in use. Dampers must be capable of automatically shutting off during pre-occupancy building warm-up, cool-down, and setback, except when ventilation reduces energy costs (e.g., night purge) or when ventilation must be supplied to meet code requirements. Both outdoor air supply and exhaust air dampers must have a maximum leakage rate of 4 cfm/ft2 at 1.0 in. w.g. when tested in accordance with AMCA Standard 500.
 - Exception: Gravity (non-motorized) dampers are acceptable in buildings less than three stories in height.
 - Exception: Gravity (non-motorized) dampers are acceptable in systems with a design outside air intake or exhaust capacity of 300 cfm (140 U/s) or less.
 16. Where humidistat controls are provided, such controls must prevent reheating, mixing of hot and cold air streams, or other means of simultaneous heating and cooling of the same air stream.
 - Exception: Capability to first reduce flow rate.
 - Exception: Cooling capacity <80 kBtu/h and capability to unload cooling equipment
 - Exception: Cooling capacity <40 kBtu/h.
 - Exception: Rigid humidity requirements.
 - Exception: Site-recovered or site-solar energy sources or.
 - Exception: Use of a desiccant systems.
 17. Individual fan systems with a design supply air capacity of 5000 cfm or greater and minimum outside air supply of 70% or greater of the supply air capacity must have an energy recovery system with at least a 50% effectiveness. If an air economizer is also required, heat recovery must be bypassed or controlled to permit air economizer operation.
 - Exception: Laboratory fume hood systems with a total exhaust rate of 15,000 cfm or less.
 - Exception: Systems serving spaces that are not cooled and heated to <60 degrees F.
 - Exception: Systems with more than 60% of the outdoor heating energy is provided from site-recovered or site solar energy.
 - Exception: Cooling systems in climates with a 1% cooling design wet-bulb temperature less than 64 degrees F.
 18. Individual kitchen exhaust hoods larger than 5000 cfm must be provided with make-up air sized for at least 50% of exhaust air volume that is uncooled and either unheated or heated to no more than 60 degrees F

- Exception: Where hoods are used to exhaust ventilation air that would otherwise exfiltrate or be exhausted by other fan systems.
 - Exception: Certified grease extractor hoods that require a face velocity no >60 fpm.
19. Buildings with fume hood systems having a total exhaust rate >15,000 cfm must either have variable air volume hood design, exhaust air heat recovery, or separate make up air supply meeting the following makeup air requirements: a) at least 75% of exhaust flow rate, b) heated to no more than 2 degrees F below room setpoint temperature, c) cooled to no lower than 2 degrees F above room setpoint temperature, d) no humidification added, e) no simultaneous heating and cooling

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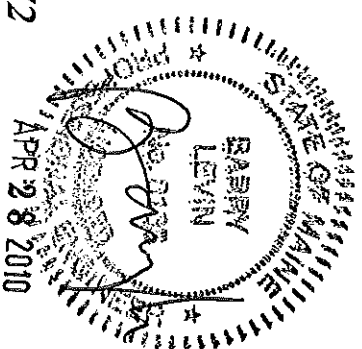


TRADER JOE'S
87 Marginal Way
Portland, Maine

STRUCTURAL CALCULATIONS

Applicable Structural Code: IBC 2003 Edition

BLA PROJECT NO. 2010-709
TAYLOR ASSOCIATES NO. FT-7972



RECEIVED

MAY 10 2010

Dept of Building Inspections
City of Portland, Maine



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JOB NO. _____

DATE 3/21/10

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CHECKED BY _____

JOB NAME TJ Portland, Me

SUBJECT Front Canopy

Wind loads ASCE 7-05, Section 6.5

1. V (Fig 6.1) = 100 mph

K_d (Table 6-4) = 0.85

2. I (Section 6.5.5) : Occupancy Category (Table 1.1) = II, I = (Table 6.1) = 1.00

3. Exposure Category: 6.5.6.2 Surface Roughness B K_z or K_h

6.5.6.3 Exposure B (typ)

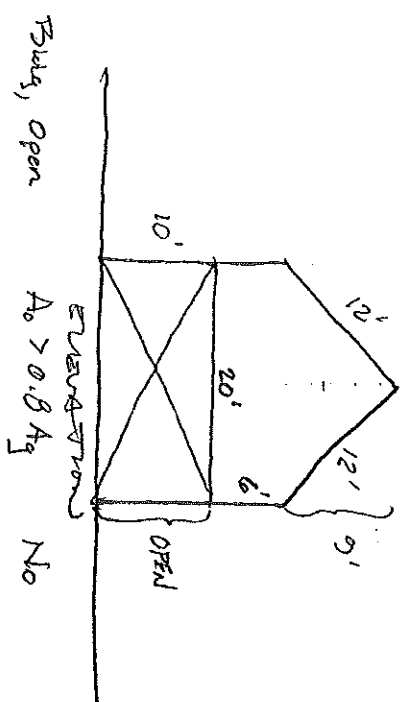
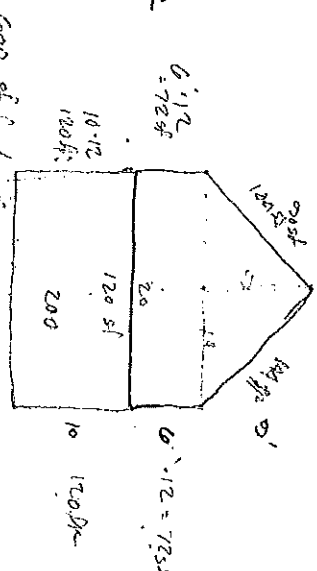
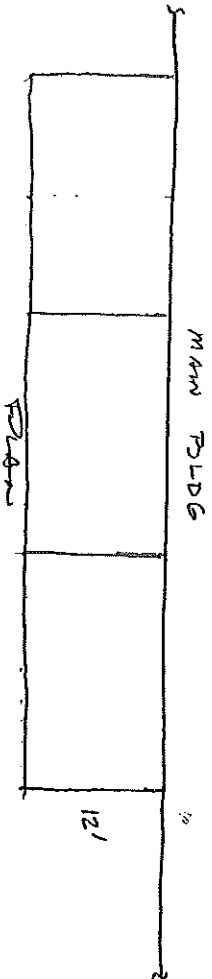
6-15 0.85
20 0.90
25 0.94

Exposure C (month + west sectors) ← use for canopy.

4. K_{zt} (Section 6.5.7) $K_{zt} = 1.0$ (no hills or escarpments)

5. G (Section 6.5.8) = 0.85

6. Enclosure classification (Section 6.5.9)



Buildg, Open $A_o > 0.8 A_g$ No

Buildg, Partially Enclosed

1. $A_o = 10' \cdot 20' \cdot 3 = 600 \text{ sf}$

$A_{oi} = 12' \cdot 10' \cdot 2 = 240 \text{ sf}$

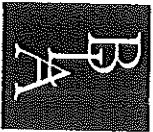
2. $600 \text{ sf} > 4 \text{ sf}$ ✓

$A_{gi} = (10' \cdot 12') \cdot 2 + (12' \cdot 12') \cdot 2 \cdot 3 + [10' \cdot 20' + 90 \text{ ft}^2] \cdot 3$
 $= 384 \text{ ft}^2 + 864 + 1030 \text{ ft}^2 = 2478 \text{ ft}^2$
 $240 / 2478 = 0.10 < 0.20$

∴ by Code, Canopy considered "partially enclosed"

$\Sigma A_{oi} = \frac{240}{0.72} = 200 \text{ sf}$

$600 \text{ sf} \text{ wind wall}$
 $600 \text{ vs } 200 \text{ sf}$



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DATE 3/21/10, 4/11/10

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JOB NAME TJ P-Hood, ME

SUBJECT Front Canopies

7. Internal Pressure Coefficients
GC_{pi} (Section 6.5.11.1) Fig. 6-5 = +0.55, -0.55

8. External Pressure Coefficients (Section 6.5.11.2)
(6.5.11.2.1) C_p WALLS Fig. 6-6 Gable Roof
end/or Fig 6-10
(6.5.11.2.2) C_s C Fig. 13

9. Velocity Pressure (Section 6.5.10)

$$\begin{aligned} q_{30m} &= 0.00256 \cdot K_z \cdot K_{zt} \cdot K_d \cdot V^2 \cdot I \\ &= 0.00256 \cdot K_z \cdot 1.0 \cdot 0.85 \cdot (100)^2 \cdot 1.0 \\ &= 21.8 \text{ psf} \cdot K_z \end{aligned}$$

$$6.5.12.4 \text{ C \& C} \quad P = q_h [(GC_p) - (GC_{pe})] \text{ psf}$$

Uplift on roofing components

$$\text{stacking} \quad P = \frac{21.8(0.94)}{20.5 \text{ psf}} [-2.5 - (0.55)] = \frac{62.5 \text{ psf}}{\text{uplift}} < \text{snow load} = 100 \text{ psf}$$

$$\text{Fig. 6-13 where } a = 0.10 \cdot 20' = 2.0' \leftarrow \text{use smaller}$$

$$0.4h^{\sigma} = 0.4 \left(\frac{10+20}{2} \right) = 8.2'$$

but not less than

$$0.04 \cdot 20' = 0.8$$

3' ← CONTROLS

$$\text{w/ } \phi = 33^\circ \quad \text{zone } \textcircled{2} \quad GC_p = +1.0, -2.5$$

Timber beams

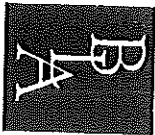
$$\text{effective area} \quad 0' \cdot 10' = 60 \text{ sf} \quad \text{interior}$$

$$10' / 3 \cdot 10' = 33 \text{ sf} \quad \text{exterior}$$

use 50 sf

$$\textcircled{1} +0.9, -1.4 \quad \text{avg value} +0.9, -1.7$$

$$\begin{aligned} \text{uplift based on timber beam } 0.6D + W &= 0.6(12+2.5) - 46 \text{ psf} = 37.3 \text{ psf uplift} \\ W: P &= 21.8 \cdot 0.94 [-1.7 - (0.55)] = 46 \text{ psf} \end{aligned}$$



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SHEET NO. _____

JOB NO. _____

DATE 4/1/10

COMPUTED BY BSO

CHECKED BY _____

JOB NAME TJ Portland, ME

SUBJECT Front Canopies

Wind Uplift on Structure

@ posts (ridge): Area = $\frac{20'}{2} \cdot \frac{12'}{2} = 60 sf$

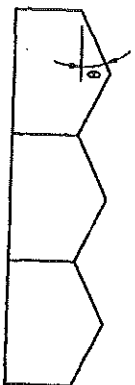
use 37 psf (same as for timber beam)

Figure 6-13

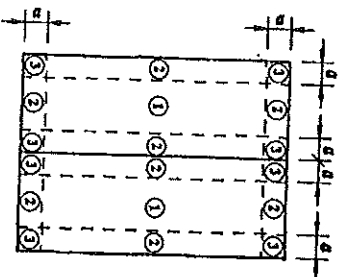
External Pressure Coefficients, GC_p

Enclosed, Partially Enclosed Buildings

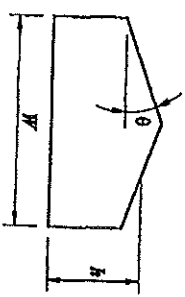
Multispan Gable Roofs



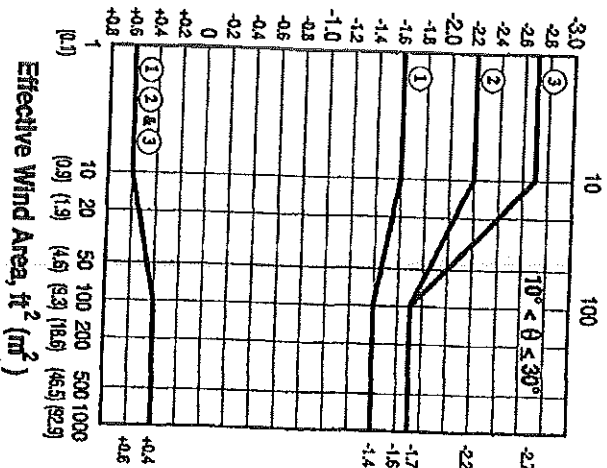
ELEVATION OF BUILDING
(2 or More Spans)



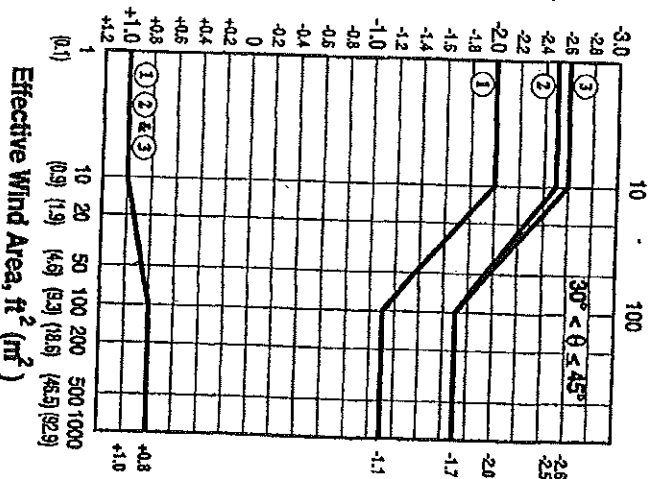
PLAN AND ELEVATION OF
A SINGLE SPAN MODULE



External Pressure Coefficient, GC_p

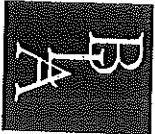


External Pressure Coefficient, GC_p



Notes:

1. Vertical scale denotes GC_p to be used with q_h .
 2. Horizontal scale denotes effective wind area A_e , in square feet (square meters).
 3. Plus and minus signs signify pressures acting toward and away from the surfaces, respectively.
 4. Each component shall be designed for maximum positive and negative pressures.
 5. For $\theta \leq 10^\circ$, values of GC_p from Fig. 6-11 shall be used.
- Notation:
- a : 10 percent of least horizontal dimension of a single-span module or $0.4h$, whichever is smaller, but not less than either 4 percent of least horizontal dimension of a single-span module or 3 ft (0.9 m).
 - h : Mean roof height, in feet (meters), except that eave height shall be used for $\theta \leq 10^\circ$.
 - W : Building module width, in feet (meters).
 - θ : Angle of plane of roof from horizontal, in degrees.



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SHEET NO. _____

JOB NO. _____

DATE 4/8/10

COMPUTED BY RSO

CHECKED BY _____

JOB NAME TI - Portland, ME

SUBJECT wind on Gables

6.5.12.2 HAWERS

6.5.12.2.2

$$P = g_h [(G C_{pe}) - (G C_{pi})]$$

mean roof height = $\frac{25 + 17}{2} = 21'$

$G C_{pe}$ [Fig. 6-10]	1	0.40	$a = 10 - 12' = 1.2'$	\rightarrow	$0.4h = 0.4(21') = 8.4'$
	1E	0.61	$0.4(20') = 0.8$,	\leftarrow	$3'$
	4	-0.37	$a = 3'$	\rightarrow	$2 \cdot a = 6'$
	4E	-0.43			

$$G C_{pi} (Fig. 6-5) + 0.55, -0.55$$

$$P = 19.8 [(G C_{pe}) - (-0.55, +0.55)]$$

$$P_1 = 19.8 [0.40] = 8 \text{ psf}$$

$$P_{1E} = 19.8 [0.61] = 12.1$$

$$P_4 = 19.8 [-0.37] = 7.3$$

$$P_{4E} = 19.8 [-0.43] = 8.5$$

$$g_h = 21.8 \cdot K_h$$

$$= 19.8 \text{ psf}$$

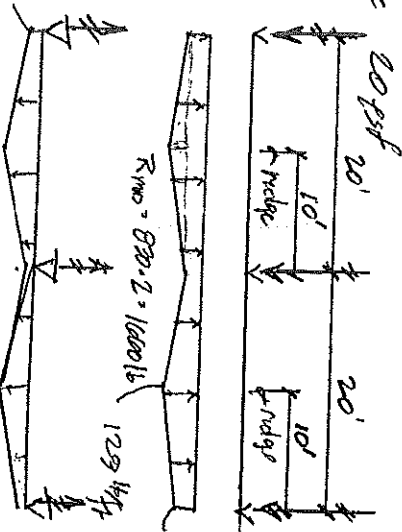
$$K_h = 0.91 \text{ (Table 6-3)}$$

wind load - use 20 psf

on diaphragm

$$R_{end} = 10' (37 \frac{1}{2} \text{ psf}) + \frac{1}{2} (10') (109 - 26) \cdot 2 \cdot \frac{1}{2}$$

$$= 370 \text{ lb} + 4605 \text{ lb} = 830 \text{ lb}$$



$$R_{end} = 10' (26 \frac{1}{2} \text{ psf}) + \frac{1}{2} (10') (119 - 26) \cdot 2 \cdot \frac{1}{2} = 260 + 4605 = 785 \text{ lb}$$

wind blowing to bldg

$$W_{windy} = G_e \cdot 12.1 \text{ psf} = 37 \frac{1}{2} \text{ psf}$$

$$W_{ridge} = (25 - 10') / 2 \cdot 12.1 \text{ psf} + \frac{25 - 10'}{2} \cdot 8.5 \text{ psf} = 90.8 + 38.2 = 129 \frac{1}{2} \text{ psf}$$

wind blowing away from bldg

$$W_{valley} = \frac{6'}{2} \cdot 8.5 = 26 \frac{1}{2} \text{ psf}$$

$$W_{ridge} = \frac{25 - 10'}{2} \cdot 8.5 \text{ psf} + \frac{25 - 10'}{2} \cdot 12.1 \text{ psf} = 64 + 55 = 119 \frac{1}{2} \text{ psf}$$