DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK

CITY OF PORTLAND

BUILDING PERMIT

This is to certify that * 50 INDUSTRIAL WAY LLC **Located At 50 INDUSTRIAL**

Job ID: 2011-05-1223-ALTCOMM **CBL: 326 - - B - 009 - 001 - - - - -**

has permission to Renovate interior of tasting/retail area, add 2nd floor in bottling area for lockers & conference/break room **provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statues of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of the buildings and structures, and of the application on file in the department.**

Notification of inspection and written permission procured before this building or part thereof is lathed or otherwise closed-in. 48 HOUR NOTICE IS REQUIRED.	A final inspection must be completed by owner before this building or part thereof is occupied. If a certificate of occupancy is required, it must be

6/24/11

Fire Prevention Officer **Code Enforcement Officer / Plan Reviewer**

THIS CARD MUST BE POSTED ON THE STREET SIDE OF THE PROPERTY

PENALTY FOR REMOVING THIS CARD

City of Portland, Maine - Building or Use Permit Application

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

Job No:	Date Applied:	CBL:
2011-05-1223-ALTCOMM	**5/31/2011**	**326 - - B - 009 - 001 - - - - -**

Location of Construction:	Owner Name:	Owner Address:	Phone:
50 INDUSTRIAL WAY	**50 INDUSTRIAL WAY LLC**	**50 INDUSTRIAL WAY PORTLAND, ME 04103**	207-878-5385
Business Name:	Contractor Name: **LANGFORD, & LOW INC**	Contractor Address: **PO BOX 662 PORTLAND MAINE 04104**	Phone: **(207) 797-5141**
Lessee/Buyer's Name:	Phone:	Permit Type: **BUILDING**	Zone: **I-M**
Past Use: Brewery	Proposed Use: Brewery – interior renovations – retail space is ancillary to the permitted use as a brewery.	Cost of Work: **140000.00**	CEO District:
		Fire Dept: ✓ Approved w/ Conditions ___ Denied ___ N/A Signature: CAPT. R. Gautheur	Inspection: S-2 Use Group: F-2/M Type: 2B IBC-2009 Signature: JMB 6/27/11
Proposed Project Description: **interior renovations** including 2nd Fl Area		Pedestrian Activities District (P.A.D.)	

Permit Taken By:

1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.
2. Building Permits do not include plumbing, septic or electrial work.
3. Building permits are void if work is not started within six (6) months of the date of issuance. False informatin may invalidate a building permit and stop all work.

Zoning Approval

Special Zone or Reviews	Zoning Appeal	Historic Preservation
___ Shoreland	___ Variance	✓ Not in Dist or Landmark
___ Wetlands	___ Miscellaneous	___ Does not Require Review
___ Flood Zone	___ Conditional Use	___ Requires Review
___ Subdivision	___ Interpretation	___ Approved
___ Site Plan	___ Approved	___ Approved w/Conditions
___ Maj ___ Min ___ MM	___ Denied	___ Denied
Date: Ok w/ conditions 6/3/11 ABM	Date:	Date: ABM

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the appication is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provision of the code(s) applicable to such permit.

SIGNATURE OF APPLICANT ADDRESS DATE PHONE

RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE DATE PHON

7/18/11 See submittals on Fire retardant Lumber/Ply
See design cert to classify as Type IIB - [illegible]

PORTLAND MAINE

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

Director of Planning and Urban Development
Penny St. Louis

Job ID: 2011-05-1223-ALTCOMM **Located At:** 50 INDUSTRIAL **CBL:** 326 - - B - 009 - 001 - - - - -

Conditions of Approval:

Zoning

1. This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.
2. This permit is being issued with the condition that the retail is only ancillary and must remain to the permitted use as a brewery

Fire

1. Emergency lights and exit signs are required. Emergency lights and exit signs are required to be labeled in relation to the panel and circuit and on the same circuit as the lighting for the area they serve.
2. Fire extinguishers are required per NFPA 10.
3. 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.
4. 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.
5. All construction shall comply with City Code Chapter 10.
6. This permit is being approved on the basis of the plans submitted. Any deviation from the plans would require amendments and approval.

Building

1. Application approval based upon information provided by applicant. Any deviation from approved plans requires separate review and approval prior to work.
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 2009 Section 713.
3. Separate permits are required for any electrical, plumbing, sprinkler, fire alarm, HVAC systems, heating appliances, including pellet/wood stoves, commercial hood exhaust systems and fuel tanks. Separate plans may need to be submitted for approval as a part of this process.
4. Per IBC 2009, Table 1021.2, Stories With One Exit, the Occupant Load of the 2nd floor area above the locker room is restricted to 29.

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)

or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the city of Portland Inspections Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- **Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.**
- **Permits expire in 6 months. If the project is not started or ceases for 6 months.**
- **If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue.**

1. Under slab plumbing test
2. Close In Framing/Plumbing/Electrical
3. Final Inspection at completion of work/ Certificate of Occupancy JMB

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

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCU0PIED.

JM

5/31/11

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: 50 INDUSTRIAL WAY		
Total Square Footage of Proposed Structure/Area	Square Footage of Lot	
Tax Assessor's Chart, Block & Lot Chart# Block# Lot# 326-B-9	Applicant *must be owner, Lessee or Buyer* Name ROB TOD Address 50 INDUSTRIAL WAY City, State & Zip PORTLAND, ME 04103	Telephone: 207.878.5385
Lessee/DBA (If Applicable)	Owner (if different from Applicant) Name SEE ABOVE Address City, State & Zip	Cost Of Work: $ 140,000 C of O Fee: $ Total Fee: $ 1,470

Current legal use (i.e. single family) BREWERY (FACTORY-2 / BUSINESS)
If vacant, what was the previous use?
Proposed Specific use: SAME
Is property part of a subdivision? NO If yes, please name
Project description: ALLAGASH BREWING COMPANY INTERIOR RENOVATION TO RETAIL + 2 STORY-LOCKER ROOMS/LAB/CONF./BREAKROOM RENO

Contractor's name: LANGFORD AND LOW
Address: 248 WARREN AVE
City, State & Zip PORTLAND, ME 04103 Telephone: 207.797.5141
Who should we contact when the permit is ready: GABBY RUSSELL Telephone: 207.240.6403 CELL
Mailing address: PO BOX 662, PORTLAND ME 04104

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

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 stop by the Inspections 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. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the 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.

RECEIVED
MAY 31 2011
Dept. of Building Inspections
City of Portland Maine

Signature: Date: 5/27/11

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

Certificate of Design Application

From Designer: ASSOCIATED DESIGN PARTNERS, INC

Date: 5-27-11

Job Name: Allagash Brewery - Interior Renovations

Address of Construction: 50 Industrial Way , PORTLAND MAINE

2003 International Building Code

Construction project was designed to the building code criteria listed below:

Building Code & Year 2009 IBC Use Group Classification (s) F2

Type of Construction ~~5B~~ 2B (SAME AS ORIGINAL BUILDING)

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

Is the Structure mixed use? Y If yes, separated or non separated or non separated (section 302.3) Separated

Supervisory alarm System? N Geotechnical/Soils report required? (See Section 1802.2) N

Structural Design Calculations

____ 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
Office Mezz	50 PSF

Wind loads (1603.1.4, 1609)

NA 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)

NA Design option utilized (1614.1)

____ Seismic use group ("Category")

____ Spectral response coefficients, S_{DS} & S_{D1} (1615.1)

____ Site class (1615.1.5)

NA 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_w and deflection amplification factor C_d (1617.6.2)

____ Analysis procedure (1616.6, 1617.5)

____ Design base shear (1617.4, 16175.5.1)

Flood loads (1803.1.6, 1612)

NA Flood Hazard area (1612.3)

NA Elevation of structure

Other loads

NA Concentrated loads (1607.4)

NA Partition loads (1607.5)

NA Misc. loads (Table 1607.8, 1607.6.1, 1607.7, 1607.12, 1607.13, 1610, 1611, 2404

Underwriters Laboratories Inc.

ADDITIONAL INFORMATION

For additional information, see Surface Burning Characteristics (**BIKT**) and Building Materials (**AABM**).

REQUIREMENTS

The basic standard used to investigate products in this category is UL 723, "Test for Surface Burning Characteristics of Building Materials."

UL MARK

The Classification Mark of Underwriters Laboratories Inc. on the product is the only method provided by UL to identify products manufactured under its Classification and Follow-Up Service. The Classification Mark for these products includes the UL symbol, the word "CLASSIFIED" above the UL symbol (as illustrated in the Introduction of this Directory) or the statement "UND. LAB. INC. CLASSIFIED," the product identity "TREATED LUMBER," a control number, and the statement "SURFACE BURNING CHARACTERISTICS" or "FR-S LUMBER."

Classification Marks with the statement "SURFACE BURNING CHARACTERISTICS" will include the specific numerical ratings applicable to the product, and if so qualified the added statement "In test of 30 min duration, the flame spread did not progress more than ten and one-half (10-1/2) ft beyond the center line of the burners, with no evidence of significant progressive combustion" (or the abbreviation "30 min.").

Classification Marks with the statement "FR-S LUMBER" are applicable to treated lumber having numerical ratings not more than 25 for flame spread and smoke developed, and also eligible for the "30 min test" statement quoted above.
Any of these Classification Mark texts may be imprinted on the lumber, either once per board or at 2 ft intervals, or may be separable paper Classification Marks applied one per board, or one per bundle of 50 pieces or less, where acceptable to the Authority Having Jurisdiction.

See **WWW.ul.com** Follow link to "Online Certification Directory". Search by Company Name (**Hoover Treated Wood Products Inc.**), Category (**BUGV**) or File Number (**R7003**).

Underwriters Laboratories Inc.

BPVV R7002
Lumber, Treated

R7002

HOOVER TREATED WOOD PRODUCTS INC
154 WIRE RD
THOMSON, GA 30824 USA

Lumber, impregnated by pressure process to reduce combustibility.

PYRO-GUARD

Specie Type or Grade	Flame Spread	Smoke Developed	Adjunct Statement
Douglas Fir	FR-S	FR-S	C, H, I
Southern Yellow Pine	10	20-50	B, C, H, I
Ponderosa Pine	10	20-50	B, C, H, I
White Fir	FR-S	FR-S	C, H, I
Western Hemlock	FR-S	FR-S	C, H, I
Hem/Fir	FR-S	FR-S	C, H, I
White Spruce	FR-S	FR-S	C, H, I
Red Spruce	FR-S	FR-S	C, H, I
Black Spruce	FR-S	FR-S	C, H, I
Engleman Spruce	FR-S	FR-S	C, H, I
Jack Pine	FR-S	FR-S	C, H, I
Lodgepole Pine	FR-S	FR-S	C, H, I
Alpine Fir	FR-S	FR-S	C, H, I
Balsam Fir	FR-S	FR-S	C, H, I
SPF	FR-S	FR-S	C, H, I

See **WWW.ul.com** Follow link to "Online Certification Directory". Search by Company Name (**Hoover Treated Wood Products Inc.**), Category (**BUGV**) or File Number (**R7003**).
Consult the Guide information for explanations of adjunct statements

Underwriters Laboratories Inc.

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BPVV R7002
Lumber, Treated

HOOVER TREATED WOOD PRODUCTS INC **R7002**
154 WIRE RD
THOMSON, GA 30824 USA

Lumber, impregnated by pressure process to reduce combustibility.

Exterior Fire X, Type II

Specie Type or Grade	Flame Spread	Smoke Developed	Adjunct Statement
Southern Yellow Pine	15	50	A, B, I
Douglas Fir	FR-S	FR-S	A, I
Redwood	10	10-115	A, B, I
Western Red Cedar	10	30-105	A, B, I

See **WWW.ul.com** Follow link to "Online Certification Directory". Search by Company Name (**Hoover Treated Wood Products Inc.**), Category (**BUGV**) or File Number (**R7003**).
Consult the Guide information for explanations of adjunct statements

Underwriters Laboratories Inc.

BPVV Guide Information
Lumber, Treated

GENERAL

This category covers the surface burning characteristics of lumber that has been treated by pressure impregnation to reduce combustibility.
To be eligible for Classification, treated lumber must have a flame spread of less than 70 or 70 percent of the flame spread of untreated lumber of the same species, whichever results in the lesser value.

In some cases, the designation "FR-S" appears in the individual Classifications in place of the flame spread and smoke developed values. This designation denotes that the flame spread and smoke developed values applicable to a particular species are 25 or less and that the species has been subjected to tests of 30 min duration during which the flame spread did not progress more than ten and one-half (10-1/2) ft beyond the center line of the burners, with no evidence of significant progressive combustion.

Unless otherwise indicated, the treatments consist of water soluble salts which will be affected by repeated exposure to water or conditions that may result in the condensation of water. In order to determine the effect of moisture conditions on the surface burning characteristics, treated lumber (where indicated in the individual Classifications) has been subjected to a Standard Rain Test consisting of cyclic wetting and drying periods per ASTM D2898-94, "Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing." These products are eligible to bear the supplemental statement "No increase in the listed Classification when subjected to the Standard Rain Test, ASTM D2898 -94 ."

The surface burning characteristics are established on samples dried to equilibrium at Standard conditions without further processing or machining. As the lumber is not necessarily treated throughout its cross section, it is imperative that no outer material be removed if the published Classifications are to be maintained. However, some species of treated lumber, as indicated in the individual Classifications, may have been factory milled on either surface without altering the existing classification, as determined by fire testing material before and after milling.

Some species of treated lumber, as indicated in the individual Classifications, have also been tested for the spread of flame and evidence of significant progressive combustion for test of 30 min duration under the same conditions of exposure. These products are eligible to bear the supplemental statement "In test of 30 min duration, the flame spread did not progress more than ten and one-half (10-1/2) ft beyond the center line of the burners, with no evidence of significant progressive combustion."

Underwriters Laboratories Inc.

In addition to the surface burning characteristics, as indicated in the individual Classifications, treated lumber conforming to AWPA Standard C20-93, "Structural Lumber — Fire-Retardant Treatment by Pressure Processes" (moisture content and flame spread Classification performance rating) may be provided. This standard contains specifications relating to moisture content, flame spread and hygroscopicity for "Interior Type A" performance ratings.

Some species of treated lumber, as indicated in the individual Classifications, have been tested in accordance with ASTM D3201-94, "Standard Test Method for Hygroscopic Properties of Fire-Retardant Wood and Wood-Base Products." These species of lumber are eligible to bear the supplement statement "Equilibrium moisture content of less than 28 percent when tested in accordance with ASTM D3201 -94 at 92 percent relative humidity."

Some species of treated lumber, as indicated in the individual Classifications, have been kiln dried after treatment per ASTM D4442-92, "Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials"/ASTM D4444, "Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters." These species of lumber are eligible to bear the supplement statement "Kiln dried after treatment to a maximum moisture content of 19 percent in accordance with ASTM D4442/D4444 -92 ."

One or more of the following adjunct statements, referenced above, may be indicated in the individual Classifications by alphabetical letters having the following meanings:

A - No increase in the listed Classifications when subjected to the Standard Rain Test, ASTM D2898 -94 .
B - In test of 30 minutes duration, flame spread did not progress more than 10.5 feet beyond the center line of the burners and there was no evidence of significant progressive combustion.
C - In accordance with AWPA Standard C20-93, Interior Type A.
F - Factory milled after treatment.
G - May have been factory milled after treatment.
H - Equilibrium moisture content less than 28 percent when tested in accordance with ASTM D3201 -94 at 92 percent relative humidity.
I - Kiln dried after treatment to a maximum moisture content of 19 percent in accordance with ASTM D4442/D4444 -92 .
The structural qualities of this lumber have not been determined. The Classifications are confined to the materials themselves and do not pertain to the structures in which they may be installed.
The toxicity of the products of combustion and other properties have not been investigated.
Authorities Having Jurisdiction should be consulted before installation.

Certificate of Design Application

From Designer: ASSOCIATED DESIGN PARTNERS, INC

Date: 5-27-11

Job Name: Allagash Brewery - Interior Renovations

Address of Construction: 50 Industrial Way , PORTLAND MAINE

2003 International Building Code

Construction project was designed to the building code criteria listed below:

Building Code & Year 2009 IBC Use Group Classification (s) F2

Type of Construction ~~5B~~ 2B confirmed w/ Gabby R. of Langford + Low

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

Is the Structure mixed use? Y If yes, separated or non separated or non separated (section 302.3) Separated

Supervisory alarm System? N Geotechnical/Soils report required? (See Section 1802.2) N

Structural Design Calculations

____ 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
Office Mezz	50 PSF

Wind loads (1603.1.4, 1609)

NA 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)

NA Design option utilized (1614.1)

____ Seismic use group ("Category")

____ Spectral response coefficients, S_{Ds} & S_{D1} (1615.1)

____ Site class (1615.1.5)

NA 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)

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____ Design base shear (1617.4, 16175.5.1)

Flood loads (1803.1.6, 1612)

NA Flood Hazard area (1612.3)

NA Elevation of structure

Other loads

NA Concentrated loads (1607.4)

NA Partition loads (1607.5)

NA Misc. loads (Table 1607.8, 1607.6.1, 1607.7, 1607.12, 1607.13, 1610, 1611, 2404

Accessibility Building Code Certificate

Designer: ASSOCIATED DESIGN PARTNERS, INC

Address of Project: 50 Industrial Way

Nature of Project: INTERIOR RENOVATION

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.

STATE OF MAINE
AARON S. WILSON
NO 10429
LICENSED
PROFESSIONAL ENGINEER
(SEAL)

Signature:

Title: ENGINEER

Firm: ASSOCIATED DESIGN PARTNERS, INC

Address: 80 LEIGHTON RD
FALMOUTH, ME 04105

Phone: 878-1751

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

Certificate of Design

Date: 5-27-11

From: ASSOCIATED DESIGN PARTNERS, INC

These plans and / or specifications covering construction work on:

50 Industrial Way

INTERIOR RENOVATION

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

STATE OF MAINE
AARON S. WILSON
No. 10429
LICENSED
PROFESSIONAL ENGINEER
(SEAL)

Signature:

Title: ENGINEER

Firm: ASSOCIATED DESIGN PARTNERS, INC

Address: 80 LEIGHTON RD

FALMOUTH, ME 04105

Phone: 878-1751

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

ClarkWestern
Building Systems
Atlanta, GA (P) 1-877-832-3206
Scarborough, ME (F) 1-877-832-3208

JOB TITLE	Allagash Brewery Interior Renovations		
JOB NO.	2318113180-0	SHEET NO.	
CALCULATED BY	NB	DATE	6/23/11
CHECKED BY	NB	DATE	

www.struware.com

STRUCTURAL CALCULATIONS

FOR

Allagash Brewery

Portland, ME

STATE OF MAINE
06-23-11
NATHANIEL J.
BACON
No. 11825
PROFESSIONAL ENGINEER

ClarkDietrich
ENGINEERING SERVICES

Project Number: 18113180-0
Project Name: ALLEGASH BREWERY
Eng. Name:
Date: 6/11

Subject:

1

DESIGN CASE 1

- DEAD LOADS:
  - 3/4" P.W = 3.0 PSF
  - FLOORING = 1.0 PSF
  - FLOOR JOISTS = 2.5 PSF
  - 5/8" GYP = 2.6 PSF
  - COLLATERAL = 5.0 PSF

  14.1 PSF ⟹ 15.0 PSF

- LIVE LOAD:
  - ~~LOBBY~~ / COMMON AREAS = 100 PSF

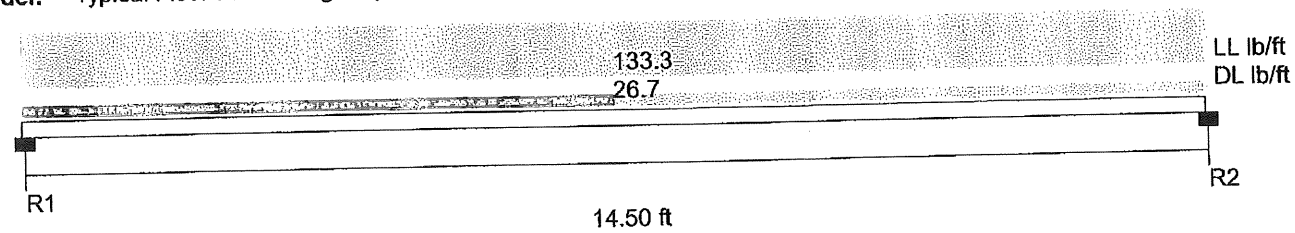
- BUILDING CODE: IBC 2006
  ASCE 7-05

TO BE APPROVED BY OWNER'S ARCHITECT AND ENGINEER

2001 NASPEC w/2004 Supplement

Project: Allagash Brewery Interior Renovation - Portland, ME
Model: Typical Floor Joist - Single Span Condition

Date: 6/21/2011



Section : 1200S162-54 Single C Stud (X-X Axis)
Maxo = 4776.1 Ft-Lb **Moment of Inertia, I =** 14.298 in^4
Joist Spacing = 16 in
Deflection Limits: Total Load - L/240 Live Load - L/360

Fy = 50.0 ksi
Va = 1377.4 lb

Load Cases:
1. **DL + LL All spans**
2. **DL + LL Even spans**
3. **DL + LL Odd spans**
4. **LL All spans**
5. **LL Even spans**
6. **LL Odd spans**

Joist Flexural and Deflection Summary

Span	Mmax Ft-Lb	Mmax/ Maxo	Load Case	Total Ld Defl	Load Case	LL Defl	Load Case
Center Span	4205	0.880	1	L/461	1	L/553	4

Joist Bending and Web Crippling Summary

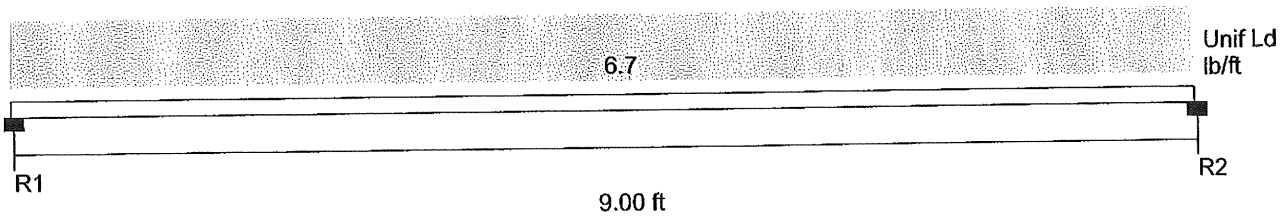
Rxn	Load lb	Load Case	Brng in	Pa lb	Max Intr	Load Case	Stiffeners Req'd
R1	1160.0	1	3.50	NA	NA	1	YES
R2	1160.0	1	3.50	NA	NA	1	YES

Joist Bending and Shear Summary

Rxn	Vmax lb	Load Case	Va Factor	V/Va	M/Ma	Intr. Unstiffen	Load Case	Intr. Stiffen	Load Case
R1	1160.0	1	1.000	0.84	0.00	0.71	1	NA	NA
R2	1160.0	1	1.000	0.84	0.00	0.71	1	NA	NA

2001 NASPEC w/2004 Supplement

Project: Allagash Brewery Interior Renovation - Portland, ME **Date:** 6/23/2011
Model: Typical Interior Bearing Wall [16" o.c.]



Section : (2) 362S162-43 Back-to-Back C Stud (X-X Axis) **Fy =** 33.0 ksi
Maxo = 1224.0 Ft-Lb **Moment of Inertia, I =** 1.420 in^4 **Va =** 3478.2 lb

Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Flexural and Deflection Check

Span	Mmax Ft-Lb	Mmax/ Maxo	Mpos Ft-Lb	Bracing (in)	Ma(Brc) Ft-Lb	Mpos/ Ma(Brc)	Deflection (in)	Deflection Ratio
Center Span	67.3	0.055	67.3	Mid-Pt	1224.0	0.055	0.023	L/4607

Combined Bending and Web Crippling

Reaction or Pt Load	Load P(lb)	Brng (in)	Pa (lb)	Pn (lb)	Mmax (Ft-Lb)	Intr. Value	Stiffen Req'd ?
R1	29.9	1.00	1271.3	2542.7	0.0	0.01	No
R2	29.9	1.00	1271.3	2542.7	0.0	0.01	No

Combined Bending and Shear

Reaction or Pt Load	Vmax (lb)	Mmax (Ft-Lb)	Va Factor	V/Va	M/Ma	Intr. Unstiffen	Intr. Stiffen
R1	29.9	0.0	1.00	0.01	0.00	0.00	NA
R2	29.9	0.0	1.00	0.01	0.00	0.00	NA

Combined Bending and Axial Load

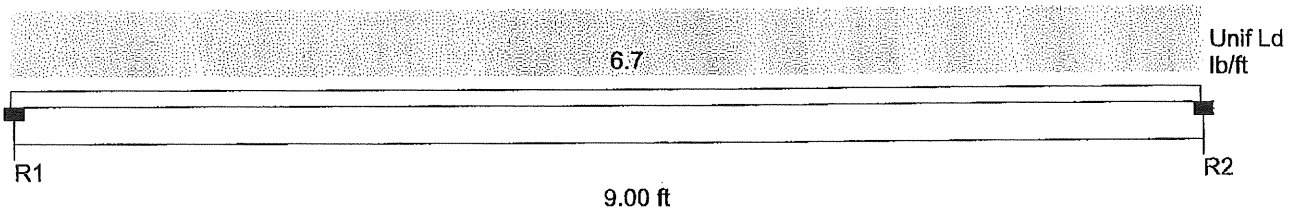
Span	Axial Ld (lb)	Bracing (in) KyLy	Bracing (in) KtLt	Max KL/r	Allow Ld (lb)	P/Pa	Intr. Value
Center Span	2675.0 (c)	Mid-Pt	Mid-Pt	75	7146.4 (c)	0.37	0.44

Member Interconnection Spacing = 12.00 in
See NASPEC C4.5 for add'nl interconnection requirements

4

2001 NASPEC w/2004 Supplement

Project: Allagash Brewery Interior Renovation - Portland, ME **Date:** 6/21/2011
Model: Typical Perimeter Bearing Wall [16" o.c.] CHASE WALL STUDS SIM.



Section : 362S162-43 Single C Stud (X-X Axis) **Fy =** 33.0 ksi
Maxo = 612.0 Ft-Lb **Moment of Inertia, I =** 0.710 in^4 **Va =** 1739.1 lb

Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Flexural and Deflection Check

Span	Mmax Ft-Lb	Mmax/ Maxo	Mpos Ft-Lb	Bracing (in)	Ma(Brc) Ft-Lb	Mpos/ Ma(Brc)	Deflection (in)	Ratio
Center Span	67.3	0.110	67.3	Mid-Pt	596.7	0.113	0.047	L/2304

Combined Bending and Web Crippling

Reaction or Pt Load	Load P(lb)	Brng (in)	Pa (lb)	Pn (lb)	Mmax (Ft-Lb)	Intr. Value	Stiffen Req'd ?
R1	29.9	1.00	276.7	484.3	0.0	0.06	No
R2	29.9	1.00	276.7	484.3	0.0	0.06	No

Combined Bending and Shear

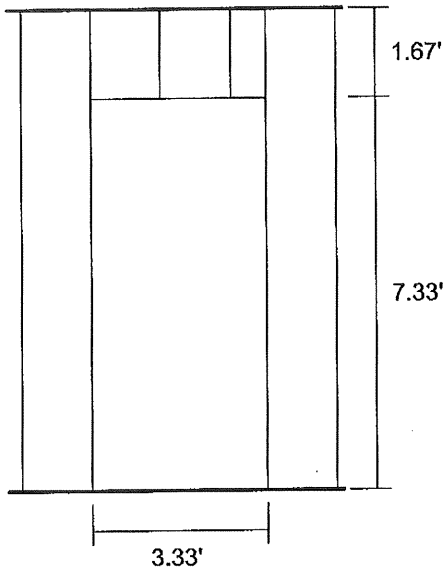
Reaction or Pt Load	Vmax (lb)	Mmax (Ft-Lb)	Va Factor	V/Va	M/Ma	Intr. Unstiffen	Intr. Stiffen
R1	29.9	0.0	1.00	0.02	0.00	0.00	NA
R2	29.9	0.0	1.00	0.02	0.00	0.00	NA

Combined Bending and Axial Load

Span	Axial Ld (lb)	Bracing (in) KyLy	KtLt	Max KL/r	Allow Ld (lb)	P/Pa	Intr. Value
Center Span	1510.0 (c)	Mid-Pt	Mid-Pt	88	2534.3 (c)	0.60	0.73

2001 NASPEC w/2004 Supplement

Project: Allagash Brewery Interior Renovation - Portland, ME **Date:** 6/23/2011
Model: Typical 3' Door in Bearing Wall



Design Loads
Wall Lateral Pressure = 5 psf
RO Lateral Pressure: Head/Sill Only
Lateral Element Forces multiplied by 1 for strength checks
Lateral Forces multiplied by 1 for deflection determination
Gravity Load at Header = 840 lb/ft

Jamb Studs Try 362S162-43 (33), Single
Maximum Moment Ratio = 0.21
Bending + Axial Interaction = 0.80
Jamb Deflection = L/2218
Base Reaction = 52 lb (unmodified)
Upper Reaction = 46 lb (unmodified)

Use 362S162-43 (33), Single Jambs
Flexural Bracing: None
Axial Bracing: Mid-Pt

Header (Vertical) Try 362S162-43 (33), (2)Back-to-Back
Design Load = 840.0 lb/ft End Reaction = 1398.6 lb
Header Moment Ratio (Vert.) = 0.95
Header Deflection (Vert.) = L/720

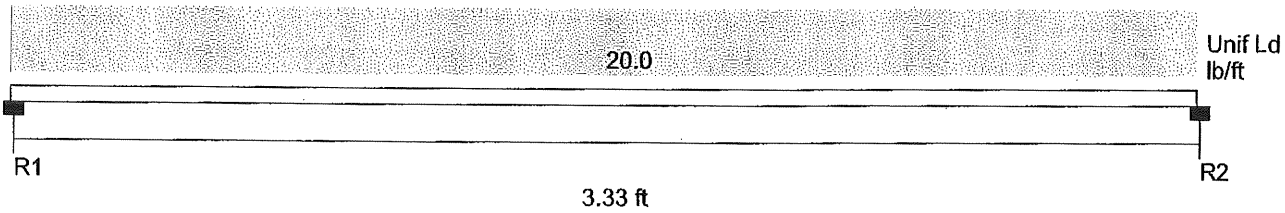
Use 362S162-43 (33), (2)Back-to-Back

Header (Lateral) Try 362T125-43 (33), Single
Header Moment Ratio (Lateral) = 0.08
Header Deflection (Lateral) = L/10051
Uniform Lateral Load = 22.5 lb/ft End Reaction = 37.5 lb

Use 362T125-43 (33), Single

2001 NASPEC w/2004 Supplement

Project: Allagash Brewery Interior Renovation - Portland, ME **Date:** 6/23/2011
Model: Typical 3' Door_Lower Header



Section : 362T125-43 Single (Y-Y Axis) **Fy =** 33.0 ksi
Mayo = 43.2 Ft-Lb **Moment of Inertia, I =** 0.033 in^4 **Va =** 1265.5 lb

Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Flexural and Deflection Check

Span	Mmax Ft-Lb	Mmax/ Maxo	Mpos Ft-Lb	Bracing (in)	Ma(Brc) Ft-Lb	Mpos/ Ma(Brc)	Deflection (in)	Ratio
Center Span	27.7	0.642	27.7	Full	43.2	0.642	0.058	L/694

Combined Bending and Web Crippling

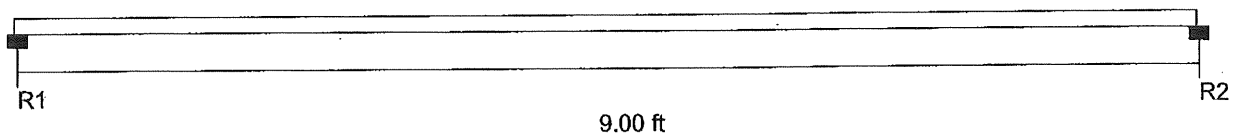
Reaction or Pt Load	Load P(lb)	Brng (in)	Pa (lb)	Pn (lb)	Mmax (Ft-Lb)	Intr. Value	Stiffen Req'd ?
R1	33.3	1.00	602.5	1054.3	0.0	0.03	No
R2	33.3	1.00	602.5	1054.3	0.0	0.03	No

Combined Bending and Shear

Reaction or Pt Load	Vmax (lb)	Mmax (Ft-Lb)	Va Factor	V/Va	M/Ma	Intr. Unstiffen	Intr. Stiffen
R1	33.3	0.0	1.00	0.03	0.00	0.00	NA
R2	33.3	0.0	1.00	0.03	0.00	0.00	NA

2001 NASPEC w/2004 Supplement

Project: Allagash Brewery Interior Renovation - Portland, ME **Date:** 6/23/2011
Model: Typical 3' Door_Jack Stud



Section : 362S162-54 Single C Stud (X-X Axis) **Fy =** 50.0 ksi
Maxo = 1106.7 Ft-Lb **Moment of Inertia, I =** 0.873 in^4 **Va =** 3371.6 lb

Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Flexural and Deflection Check

Span	Mmax Ft-Lb	Mmax/ Maxo	Mpos Ft-Lb	Bracing (in)	Ma(Brc) Ft-Lb	Mpos/ Ma(Brc)	Deflection (in)	Deflection Ratio
Center Span	0.0	0.000	0.0	Mid-Pt	972.4	0.000	0.000	L/0

Combined Bending and Web Crippling

Reaction or Pt Load	Load P(lb)	Brng (in)	Pa (lb)	Pn (lb)	Mmax (Ft-Lb)	Intr. Value	Stiffen Req'd ?
R1	0.0	1.00	634.4	1110.2	0.0	0.00	No
R2	0.0	1.00	634.4	1110.2	0.0	0.00	No

Combined Bending and Shear

Reaction or Pt Load	Vmax (lb)	Mmax (Ft-Lb)	Va Factor	V/Va	M/Ma	Intr. Unstiffen	Intr. Stiffen
R1	0.0	0.0	1.00	0.00	0.00	0.00	NA
R2	0.0	0.0	1.00	0.00	0.00	0.00	NA

Combined Bending and Axial Load

Span	Axial Ld (lb)	Bracing (In) KyLy	Bracing (In) KtLt	Max KL/r	Allow Ld (lb)	P/Pa	Intr. Value
Center Span	1500.0 (c)	Mid-Pt	Mid-Pt	89	3582.1 (c)	0.42	0.42

ClarkDietrich ENGINEERING SERVICES

Project Number: 18113180-0

Project Name: ALLEGASH BREWERY

Eng. Name:

Subject:

Date: 6/11

8

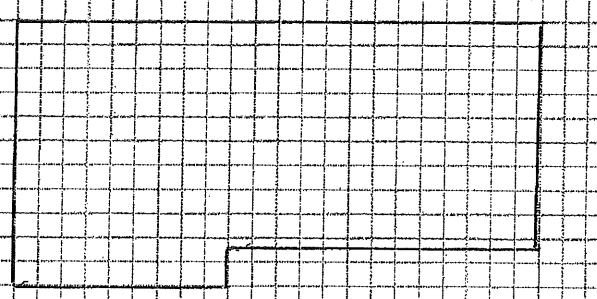
LATERAL BRACING

- INTERIOR PRESSURE = ½ 5 PSF

$V_{E-W} = (1/2)(26')(43')(5^{PSF}) = 2{,}795^{\#}$ ⟸
$V_{N-S} = (1/2)(26')(16')(5^{PSF}) = 1{,}040^{\#}$

- SEISMIC DESIGN CRITERIA:
  - SEISMIC IMPORTANCE FACTOR, $I = 1.0$
  - OCCUPANCY CATEGORY II
  - $S_S = 0.314g$
  - $S_1 = 0.077g$
  - SITE CLASS D
  - $S_{DS} = \frac{2}{3}S_{MS} = \frac{2}{3}(F_a)(S_s) = \frac{2}{3}(1.55)(0.314) = 0.324$
  - $S_{D1} = \frac{2}{3}S_{M1} = \frac{2}{3}(F_v)(S_1) = \frac{2}{3}(2.4)(0.077) = 0.123$
  - SEISMIC DESIGN CATEGORY, B
  - SEISMIC FORCE RESISTING SYSTEM:
    ↳ LIGHT-FRAMED B.W. W/ FLAT STRAP BRACING; R=4 (USE R=3 FOR DESIGN)
  - ANALYSIS PROCEDURE: EQUIV. LATERAL FORCE PROCEDURE

- AREA OF NEW MEZZ. ≅ 43' x 16' = 690 ft²
- BEARING WALL HT = 8'-0" ±
- PERIMETER PARTITION HT ABOVE DECK ≅ 17'-0" ±



PLAN
NTS

N

- $V = C_S \cdot W$
  - $C_S = \frac{S_{DS}}{R/I} = 0.108$
  - $W_{E-W} = (690\,ft^2)(15^{PSF}) + (1/2)(26')(10^{PSF})(43')$
    $= 15{,}940^{\#}$
  - $W_{N-S} = (690\,ft^2)(15^{PSF}) + (2)(1/2)(26')(16')(10^{PSF}) + (2)(1/2)(8')(16')(10^{PSF})$
    $= 15{,}790^{\#}$
- $V_{E-W} = 1722^{\#}$
- $V_{N-S} = 1{,}705^{\#}$ ⟸

⟹

TO BE APPROVED BY OWNER'S ARCHITECT AND ENGINEER

ClarkDietrich
ENGINEERING SERVICES

Project Number: 18113180-0
Project Name: ALLEGASH BREWERY
Eng. Name:
Date: 6/11

Subject:

LATERAL BRACING (CONT'D)

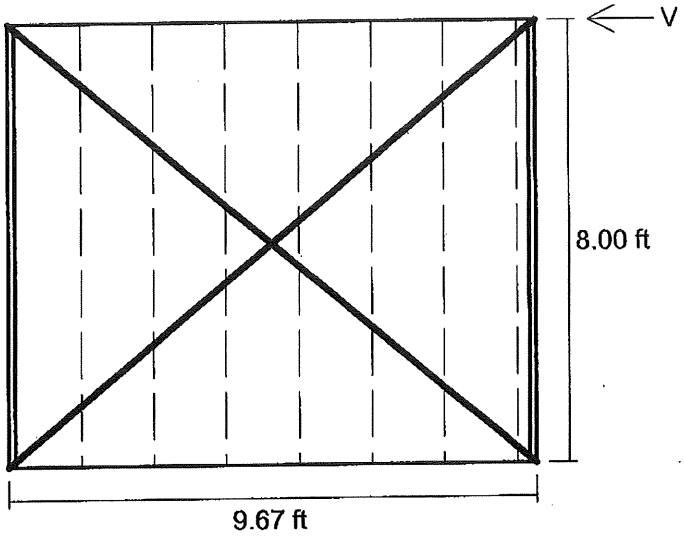
- PROVIDE (4) BRACES IN E-W DIRECTION & (2) BRACES IN N-S DIRECTION
- SHEAR AT END X-BRACE:

$$V_{BR_{E-W}} = \frac{2{,}795^{\#}}{4} = 699^{\#}/\text{BRACE}$$

$$V_{BR_{N-S}} = \frac{1{,}705^{\#}}{2} = 853^{\#}/\text{BRACE} \Leftarrow \text{CONTROLS BRACE DESIGN}$$

Project: Allagash Brewery Interior Renovation - Portland, ME
Model: Typical X-Brace

DATE: 6/21/2011



Load Data

V(wind) = 0 lb
V(seismic) = 853 lb
Loads multiplied by 1.00 for strength checks

Connection Factor (seismic) = 1.00

Strap Data

Straps ONE side only

Strap Design Tension, T =	1107	lb/strap
Strap Yield Stress, Fy =	33	ksi
Specified Strap Thickness =	0.0451	in
Specified Strap Width =	4.00	in
Allowable Strap Tension, Ta =	3565	lb/strap

Strap Connections

Top Connection

Horiz. Strap Connection Force	853	lb/strap
Vert. Strap Connection Force	706	lb/strap
Allowable Connection Force	263	lb/Fastener
Required Connection (Horiz)	4	Fasteners
Required Connection (Vert)	3	Fasteners

Bottom Connection

Horiz. Strap Connection Force	853	lb/strap
Vert. Strap Connection Force	706	lb/strap
Allowable Connection Force	263	lb/Fastener
Required Connection (Horiz)	4	Fasteners
Required Connection (Vert)	3	Fasteners

Chord Data

Chords: 362S162-43 (33) (2)Back-to-Back

Chord Fastener Spacing, a =	16	in
Vertical Component of Brace Force =	706	lb
Additional Axial Loads =	2500	lb
Total Axial Loads =	3206	lb
KyLy, KtLt for Axial Capacity =	48	in
Maximum KL/r =	66	
Allowable Axial Load =	7515	
Ecc. Moment from Strap Force =	107	Ft-Lb
Additional Design Moment =	67	Ft-Lb
Total Chord Moment =	174	Ft-Lb
Flexural Bracing =	Mid-Pt	
Allowable Moment =	1224	Ft-Lb
Chord Interaction =	0.58	

MAX UPLIFT WITHOUT CONSIDERATION OF FLOOR LOADS AND WALL ABOVE:
0.6D + 0.7E
→ USE 1.0E (CONS.)

$$\text{UPLIFT} = \frac{853(8.0) - (0.6)(10^{\#/F})(8')(9.67')\left(\frac{9.67'}{2}\right)}{9.67'}$$

$= 474^{\#}$ MAX.

Drift Data (at Service Load)

Wind Drift =	0.010	in
Seismic Drift =	0.053	in

ClarkDietrich
ENGINEERING SERVICES

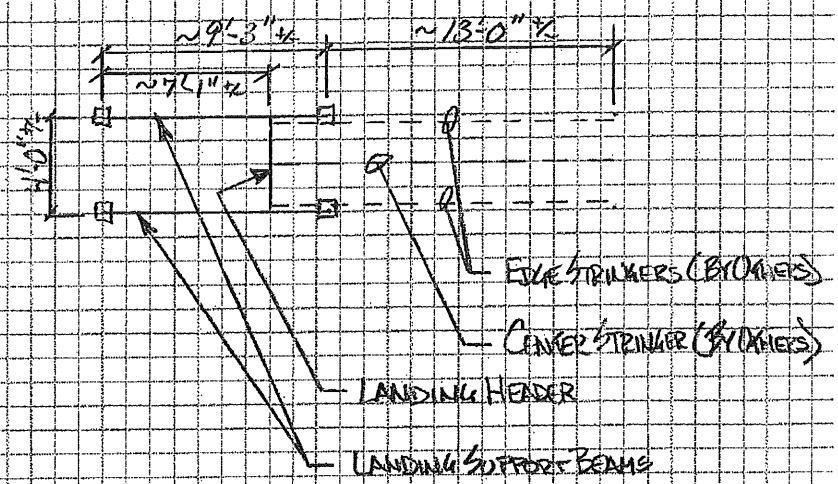
Project Number: 18113180-0
Project Name: ALLEGASH BREWERY
Eng. Name:
Date: 6/11

Subject:

11

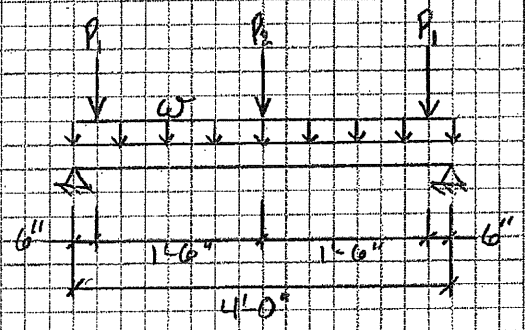
STAIR LANDING H-FRAME

- DEAD LOAD:
  - STAIRS & LANDING = 15 PSF
- LIVE LOAD:
  - STAIRS & LANDING = 100 PSF OR 300#



LOADS ON LANDING HEADER:

- NOTE - TREADS DIST. LOAD AS A MULTI-SPAN BEAM
- L.C. = 1.0D + 1.0L
- $P_1 = (1/2)(15'-2")(86.3\ PLF) = 654\#$
- $P_2 = (1/2)(15'-2")(287.5\ PLF) = 2{,}180\#$
- $\omega = (3/2)(7'-1")(100+15) = 4071\ PLF$

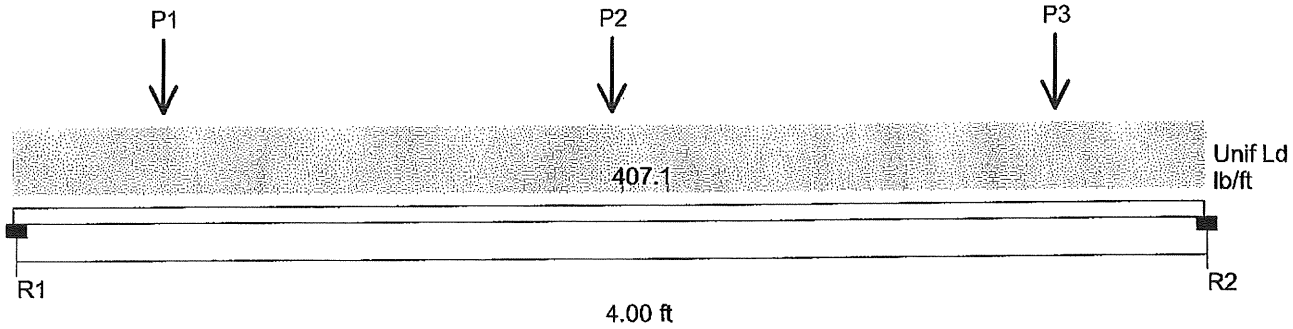


LANDING HEADER

TO BE APPROVED BY OWNER'S ARCHITECT AND ENGINEER

2001 NASPEC w/2004 Supplement

Project: Allagash Brewery Interior Renovation - Portland, ME **Date:** 6/22/2011
Model: Stair Landing Header



Point Loads	P1	P2	P3
Load(lb)	654	2180	654
X-Dist.(ft)	0.50	2.00	3.50

Section : (2) 1200S162-68 Back-to-Back C Stud (X-X Axis) **Fy =** 50.0 ksi
Maxo = 13199.0 Ft-Lb **Moment of Inertia, I =** 36.780 in^4 **Va =** 5541.5 lb

Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Flexural and Deflection Check

Span	Mmax Ft-Lb	Mmax/ Maxo	Mpos Ft-Lb	Bracing (in)	Ma(Brc) Ft-Lb	Mpos/ Ma(Brc)	Deflection (in)	Deflection Ratio
Center Span	3321.2	0.252	3321.2	Full	13199.0	0.252	0.008	L/6146

Combined Bending and Web Crippling

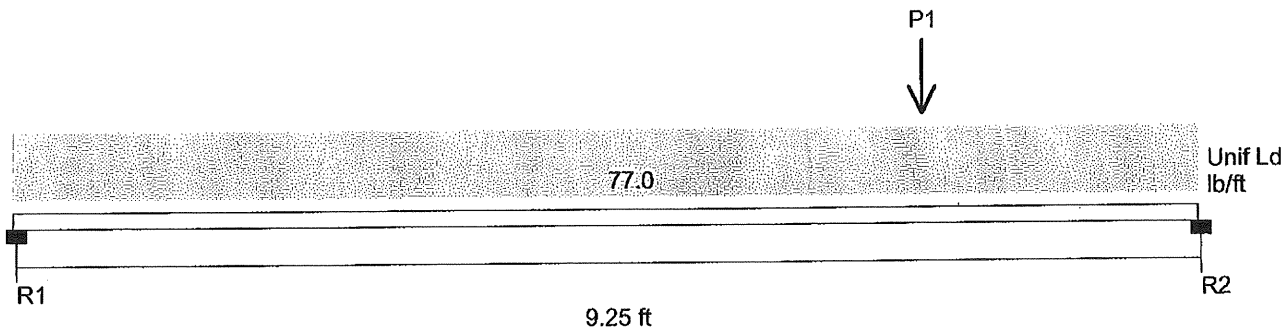
Reaction or Pt Load	Load P(lb)	Brng (in)	Pa (lb)	Pn (lb)	Mmax (Ft-Lb)	Intr. Value	Stiffen Req'd ?
R1	2558.2	3.00	2602.9	5205.9	0.0	0.43	No
R2	2558.2	3.00	2602.9	5205.9	0.0	0.43	No
P1	654.0	2.00	2439.8	4879.5	1228.2	0.17	No
P2	2180.0	2.00	6118.1	10094.9	3321.2	0.34	No
P3	654.0	2.00	2439.8	4879.5	1228.2	0.17	No

Combined Bending and Shear

Reaction or Pt Load	Vmax (lb)	Mmax (Ft-Lb)	Va Factor	V/Va	M/Ma	Intr. Unstiffen	Intr. Stiffen
R1	2558.2	0.0	1.00	0.46	0.00	0.21	NA
R2	2558.2	0.0	1.00	0.46	0.00	0.21	NA
P1	2356.3	1228.2	1.00	0.43	0.09	0.19	NA
P2	1091.6	3321.2	1.00	0.20	0.25	0.10	NA
P3	2356.3	1228.2	1.00	0.43	0.09	0.19	NA

2001 NASPEC w/2004 Supplement

Project: Allagash Brewery Interior Renovation - Portland, ME **Date:** 6/22/2011
Model: Stair Landing Support Beam



Point Loads	**P1**
Load(lb)	2560
X-Dist.(ft)	7.08

Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Built-Up Section:

Section Number	Section	Ixx (in^4)	% of Total Ixx	Area (in^2)	% of Total Area
1	1200S162-68 (50)	18.390	61.6%	1.121	57.8%
2	1200T125-54 (50)	11.460	38.4%	0.820	42.2%

Overall Member Inputs:

Span	Flexural Bracing (in)	Load (lb)	Axial KyLy (in)	KtLt (in)
Center Span	Full	0	N.A.	N.A.

Reaction and Point Load Data:

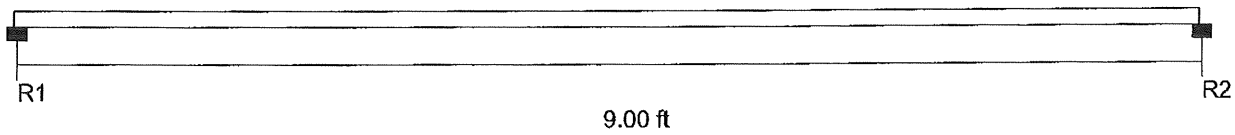
	R1	R2	P1
Load (lb)	956.7	2315.6	2560.0
Brng (in)	3.50	3.50	3.50

Analysis Summary:

	Flexure		Web Crippling	Shear & Bending			Axial	
Section	**Defl.**	**M/Ma**	**Stiffen Req'd**	**V/Va**	**Unstiffened**	**Stiffened**	**P/Pa**	**Combined**
1200S162-68 (50)	L/1605	0.452	YES	0.51	0.27	0.00	0.00	0.00
1200T125-54 (50)	L/1605	0.579	YES	0.66	0.43	0.00	0.00	0.00

2001 NASPEC w/2004 Supplement

Project: Allagash Brewery Interior Renovation - Portland, ME **Date:** 6/22/2011
Model: Post At Stair Landing Support Beam



Section : (2) 362S162-43 Back-to-Back C Stud (X-X Axis) **Fy =** 33.0 ksi
Maxo = 1224.0 Ft-Lb **Moment of Inertia, I =** 1.420 in^4 **Va =** 3478.2 lb

Loads have not been modified for strength checks
Loads have not been modified for deflection calculations

Flexural and Deflection Check

Span	Mmax Ft-Lb	Mmax/ Maxo	Mpos Ft-Lb	Bracing (in)	Ma(Brc) Ft-Lb	Mpos/ Ma(Brc)	Deflection (in)	Ratio
Center Span	0.0	0.000	0.0	Full	1224.0	0.000	0.000	L/0

Combined Bending and Web Crippling

Reaction or Pt Load	Load P(lb)	Brng (in)	Pa (lb)	Pn (lb)	Mmax (Ft-Lb)	Intr. Value	Stiffen Req'd ?
R1	0.0	1.00	1271.3	2542.7	0.0	0.00	No
R2	0.0	1.00	1271.3	2542.7	0.0	0.00	No

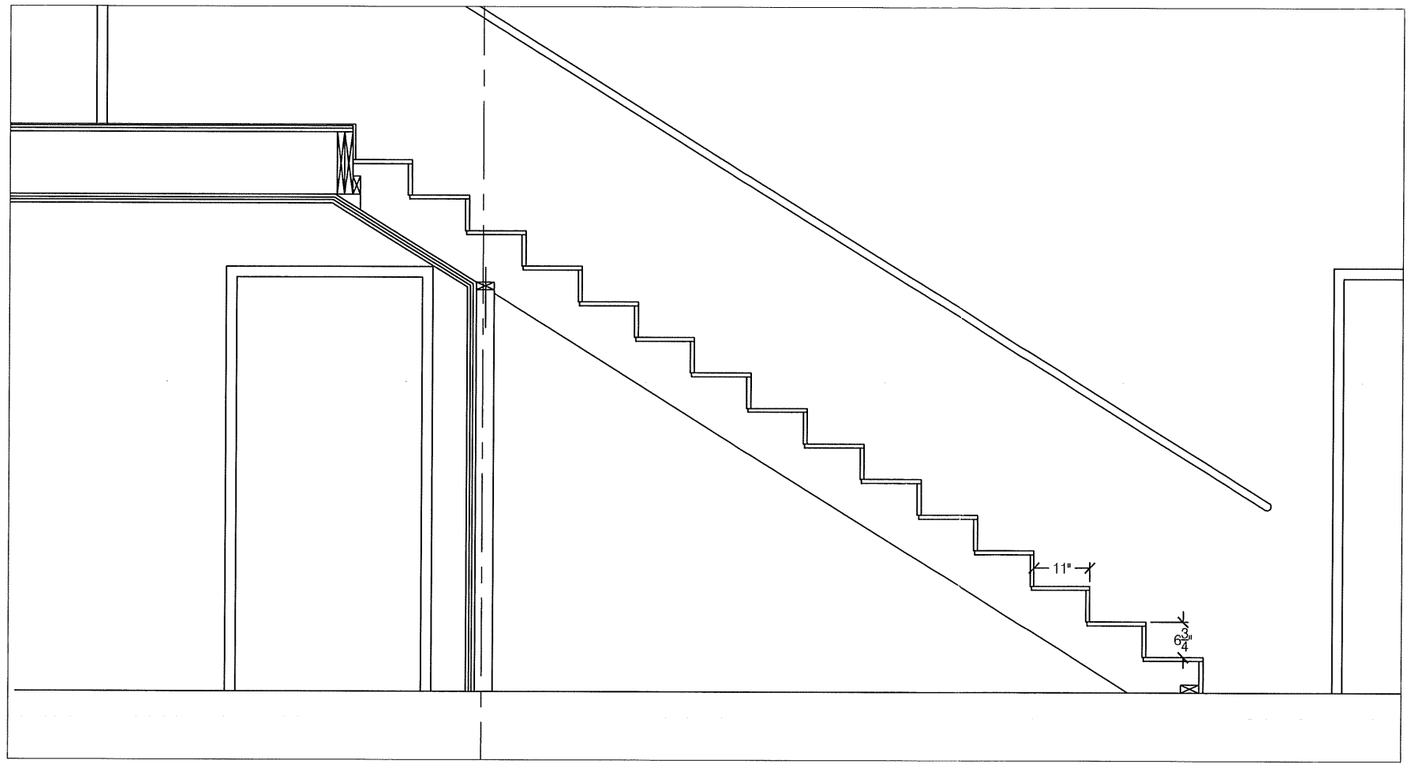
Combined Bending and Shear

Reaction or Pt Load	Vmax (lb)	Mmax (Ft-Lb)	Va Factor	V/Va	M/Ma	Intr. Unstiffen	Intr. Stiffen
R1	0.0	0.0	1.00	0.00	0.00	0.00	NA
R2	0.0	0.0	1.00	0.00	0.00	0.00	NA

Combined Bending and Axial Load

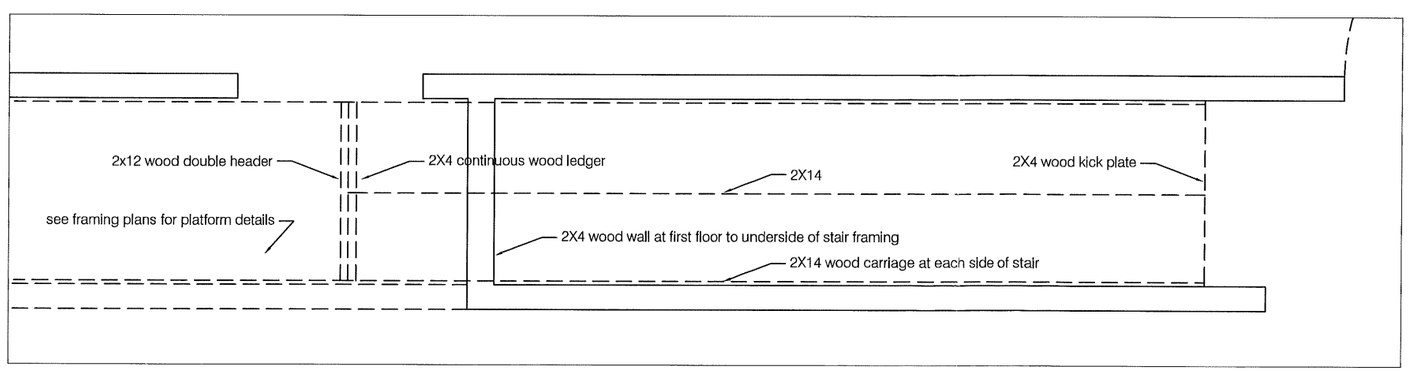
Span	Axial Ld (lb)	Bracing (in) KyLy	KtLt	Max KL/r	Allow Ld (lb)	P/Pa	Intr. Value
Center Span	2400.0 (c)	None	None	135	4130.4 (c)	0.58	0.58

Member Interconnection Spacing = 16.00 in
See NASPEC C4.5 for add'nl interconnection requirements



1 Stair Construction Detail - Section

Scale: 1/2"=1'



2 Stair Construction Detail - Plan View

Scale: 1/2"=1'

LANGFORD AND LOW
GENERAL CONTRACTOR

DRAWN BY:

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LANGFORD AND LOW
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REVIEWED BY
-

JOB NUMBER
-

DRAWING STATUS

- ☑ OFFICE REVIEW
- ☐ CLIENT REVIEW
- ☐ PERMIT SET
- ☐ BID / ESIMATING SET
- ☐ CONTRACT DRAWINGS
- ☐ CONSTRUCTION SET

CONSULTANTS

STRUCTURAL:
MECHANICAL:
ELECTRICAL:
LANDSCAPE:
CODE:
DESIGN:

REGISTERED PROFESSIONAL'S SEAL

PROJECT NAME & LOCATION

ALLAGASH
Interior Renovation
50 INDUSTRIAL WAY
PORTLAND, ME 04103

DRAWING TITLE

Stair Construction

DATE

JUNE 24, 2011

REVISIONS

REVISION #:
DATE:
DESCRIPTION:

REVISION #:
DATE:
DESCRIPTION:

REVISION #:
DATE:
DESCRIPTION:

SCALE

AS NOTED

SHEET NUMBER

SK-1