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 WAY

Job ID: 2012-09-4996-ALTCOMM CBL: 326- B-009-001

20124839?

has permission to **Add to Allagash for Brewing, Retail & Ext Tanks**
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

Joanne Bourke 11/05/2012

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

Certificate of Occupancy

CITY OF PORTLAND, MAINE

Department of Planning and Urban Development
Building Inspections Division

Location: 50 Industrial Way

CBL: 326 B009001

Issued To: 50 Industrial Way Llc

Issued Date: 05/01/2013

This is to certify that the building, premises, or part thereof, at the above location, built-altered-changed as to use under Building Permit No. 201248397 has had a final inspection, has been found to conform substantially to the requirements of the Building Code and the Land Use Code of the City of Portland, and is hereby approved for occupancy or use, limited or otherwise, as indicated below.

PORTION OF BUILDING OR PREMISES
RETAIL SALES

TEMPORARY

APPROVED OCCUPANCY
USE GROUP F-2/B/M
TYPE 2B
BREWERY/WAREHOUSE/ACCESSORY
TASTING & SALES
MUBEC '09

LIMITING CONDITIONS: THIS IS A TEMPORARY CERTIFICATE OF OCCUPANCY AND IT EXPIRES ON JULY 1, 2013, PENDING FINAL APPROVAL OF ENTIRE PROJECT.

Approved:

Inspector

Inspection Division Director

Notice: This certificate identifies the legal use of the building or premises, and ought to be transferred from owner to owner upon the sale of the property.

PORTLAND MAINE

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

Director of Planning and Urban Development
Jeff Levine

Job ID: 2012-09-4996-ALTCOMM **Located At:** 50 INDUSTRIAL WAY **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. Separate permits shall be required for any new signage.
3. This I-M zone has maximum noise allowances. The City of Portland strictly enforces the level of sound generated on the property. Any verified noise violations shall require the owner to take mitigating measures to bring the property and the noise it generates into compliance. Separate permits are required for any new HVAC units showing appropriate dBAs.

Building

1. Application approval based upon information provided by the applicant or design professional, including revised plans dated received after 9/19/12. 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 E 814 or UL 1479, per IBC 2009 Section 713.
3. A final special inspection report shall be submitted prior to issuance of a certificate of occupancy. This report must demonstrate all deficiencies and corrective measures that were taken.
4. 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.
5. Ventilation of this space is required per ASHRAE 62.2 or 62.1, 2007 edition.

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.**

Foundation/Rebar

Certificate of Occupancy Inspection

Plumbing Rough Commercial

Close In Elec/Plmb/Frame prior to insulate or gyp

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

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

Benjamin Wallace - Allagash Brewery - 50 Industrial Way - permit 2012-09-4996-ALTCOMM

From: Benjamin Wallace
To: Jeanie Bourke
Date: 10/29/2012 1:35 PM
Subject: Allagash Brewery - 50 Industrial Way - permit 2012-09-4996-ALTCOMM
CC: Chris Pirone
Attachments: Benjamin Wallace.vcf

Jeanie,
Could you forward this to Michael Hays? I don't have his e-mail.
Thanks,
Ben

Jeanie Bourke Rebar

Hi Michael,
I have the Allagash permit and a few questions I need clarified.

1. What is the occupancy sub-classification (NFPA 101:40.1.4.1)? I'm not sure this meets the intent of Special-Purpose Industrial so I think it's general purpose industrial.
2. The "mezzanine" does not appear to meet the area limitations of 101:8.6.9.2. Please explain if it is a mezzanine in accordance with the *Life Safety Code* or a story and how that affects your exits and separation of stories.
3. The plans show 1-hour wall separation between the new mercantile area and the Brew House but not from the "mezzanine" above or the production area in the existing building where the mercantile is currently located. The North wall of the new mercantile space was an existing exterior wall with windows and a door and is assumed to have no fire resistance rating. Please explain both.
4. The existing exit stair from the second floor office space currently discharges directly outside. The South and East exit stair walls are assumed to have no fire resistance rating. Please explain this and also how the single exit from the new office space is allowed to discharge through the level of exit discharge (Brew House) which might be considered a hazardous area. Please also consider 101:40.2.5.1 when explaining.
5. Door 108 is not listed on the door schedule. What is its fire resistance rating?
6. The Brew House does not have the required remoteness; 51'-6" as indicated on your plan. An overhead door can not be used as an exit door and the replacement door is not listed on the door schedule. Please explain.
7. The new stair from the mezzanine is not enclosed at the top as required by 101:7.2.2.5. Please explain.
8. Please explain if the fermentation tank bunkers are required to protected by sprinklers under the scope of NFPA 13, *Standard for the Installation of Sprinkler Systems*, 2007 edition. It looks like they are covered by the building's roof and may have walls around them?

Thanks,
Ben

Lt. Benjamin Wallace Jr.
Fire Prevention Officer
Portland Fire Department
380 Congress Street
Portland, Maine 04101
(207)874-8400
wallaceb@portlandmaine.gov

Building Address: 50 Industrial Way

Portland Fire Fighter Safety Building Marking System
Reflective white background

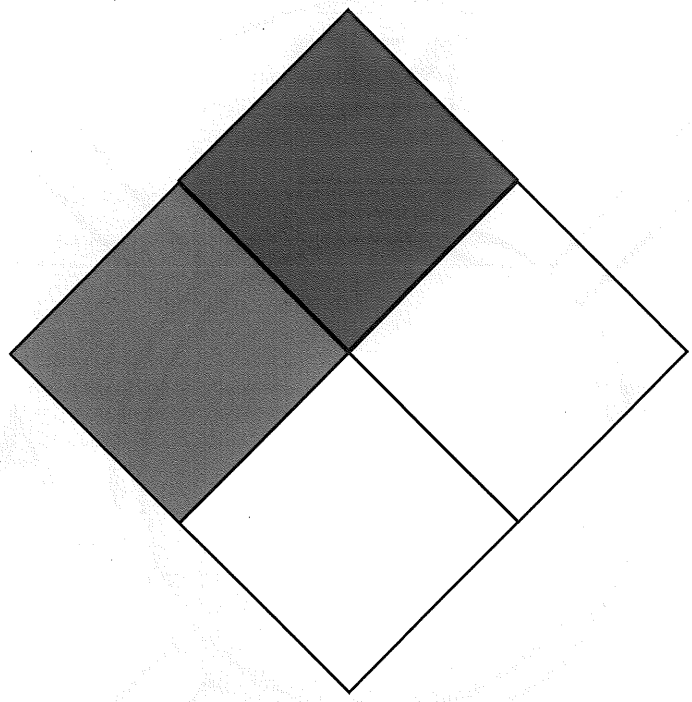
Hazard of Contents (left at 9 o'clock):
L- Low hazard; O- Ordinary Hazard; H- High hazard

Construction Type (top at 12 o'clock):
(the least of these types): FR- Fire-resistive; NC- Noncombustible; ORD- Ordinary; HT- Heavy Timber; C- Combustible

Automatic Sprinkler and Standpipe Systems (right at 3 o'clock):
(One or a combination): A- Automatic fire sprinkler throughout; P- Partial fire sprinkler; S- Standpipe; N- None

Occupancy/ Life Safety Issues (bottom at 6 o'clock):
L- Business, industrial, mercantile, residential, and storage occupancies; M- Ambulatory health care, assembly, educational, and day-care occupancies; H- Detention and Corrections, health care, and board and care occupancies.

Special Hazards (Center):
T- Truss or light weight construction; Other; Year at bottom of center



NFPA 704 Signage

NOT required IF not filled in

Left (9 o'clock):	Health Hazards (Blue background)
Top (12 o'clock):	Flammability Hazards (Red background)
Right (3 o'clock):	Instability Hazards (Yellow background)
Bottom (6 o'clock):	Special Hazards (white background)
Under:	Other Special Hazards

Special Notes:

(ie: fire alarm or MSDS sheet location, property management co and em contact phone)

ALLAGASH BREWING COMPANY
50 INDUSTRIAL WAY
PORTLAND, ME 04103-1042

Signs may be purchased from:
Awards & Recognition Inc., 955 Forest Ave (left side of building), Portland, ME 04101.
207-772-8770

Sign to be 8 ½" x 14" vertical if NFPA 704 signage is required, or 8 ½" x 11" vertical if NFPA 704 signage is not required. Signs must be mounted directly above each Knox Box or other approved located at approximately 6 feet above grade.

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:	
2012-09-4996-ALTCOMM	9/19/2012	326- B-008-001	
Location of Construction: 50 INDUSTRIAL WAY	Owner Name: 50 INDUSTRIAL WAY LLC	Owner Address: 50 INDUSTRIAL WAY PORTLAND, ME 04103	Phone: 878-5385
Business Name: Allagash Brewery	Contractor Name: TBD- Rob Tod	Contractor Address:	Phone: 878-5385
Lessee/Buyer's Name:	Phone:	Permit Type: BLDG ADD	Zone: I-M
Past Use: Brewery with warehouse and accessory tastings with sales	Proposed Use: Same: Brewery with warehouse and accessory tastings with sales – to add addition in rear and front of the main brewery building and to expand parking lot	Cost of Work: $650,000.00 Fire Dept: 11/5/12 ✓ Approved w/ conditions ___ Denied ___ N/A Signature: B. Caldwell 58	CEO District: Inspection: Use Group: F-2/B/M Type: 2B MUBEC '09 Signature: 11/5/12
Proposed Project Description: new addition to the existing Allagash Brewing Co.		Pedestrian Activities District (P.A.D.)	
Permit Taken By: Gayle			

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 N/A	___ Variance	✓ Not in Dist or Landmark
___ Wetlands	___ Miscellaneous	___ Does not Require Review
___ Flood Zone	___ Conditional Use	___ Requires Review
___ Subdivision	___ Interpretation	___ Approved
K Site Plan #2012-539 Level II	___ Approved	___ Approved w/Conditions
___ Maj ___ Min ___ MM	___ Denied	___ Denied
Date: OK with conditions 9/19/12	Date:	Date:

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 PHONE

11-6-12 DWM Paul 233-1172 Footings for tanks OK w special inspection

11-13-12 GF REBAR & FORMS OK - SPL. INSP. [SW COLE] CONC. COMP. & REBAR

3-4-13 DWM Rick 272-9394 Close M OK

Entered PSS

2012-09-4996

General Building Permit Application

Paul Ureneck
CBRE-Boulos
871.1290(o)
233.1172(c)

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; PORTLAND, MAINE		
Total Square Footage of Proposed Structure/Area: 9,100 SF ADDITION	Square Footage of Lot: 191,979 S.F.	
Tax Assessor's Chart, Block & Lot Chart# Block# Lot# 326-B-8/9 & 10	Applicant *must be owner, Lessee or Buyer* Name 50 INDUSTRIAL WAY Address 50 INDUSTRIAL WAY LLC City, State & Zip PORTLAND, ME 04103	Telephone: 207.878.5385 ROB TOD
Lessee/DBA (If Applicable) ALLAGASH BREWING CO. 50 INDUSTRIAL WAY PORTLAND, ME 04103 207.878.5385 ROB TOD	Owner (if different from Applicant) Name ROB TOD % 50 LLC Address 50 INDUSTRIAL WAY City, State & Zip PORTLAND, ME 207.878.5385 04103	Cost Of Work: $ 650,000.00 C of O Fee: $ Total Fee: $ 6520.00

Current legal use (i.e. single family) FACTORY (F-2)
If vacant, what was the previous use? SAME
Proposed Specific use: BELGIAN BEER MANUFACTURING
Is property part of a subdivision? NO If yes, please name —
Project description:
NEW ADDITION TO THE EXISTING ALLAGASH BREWING COMPANY MANUFACTURING FACILITY

Contractor's name: TBD
Address:
City, State & Zip Telephone:
Who should we contact when the permit is ready: ROB TOD; PRESIDENT / 878-5385 Telephone:
Mailing address: 50 INDUSTRIAL WAY, PORTLAND, ME 04103

contact
CBRE-Boulos / Canal Plaza 5th F/2 Portland Me 04101

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.

Signature: Michael F. Hays, ARCHITECT Date: SEPT 10, 2012

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

For ROB TOD

Gayle Guertin - 50 Industrial Way, Allagash Brewery Expansion - Building Permit Issuance

326 B 001

From: Philip DiPierro
To: Code Enforcement & Inspections
Date: 10/11/2012 4:34 PM
Subject: 50 Industrial Way, Allagash Brewery Expansion - Building Permit Issuance

Hi all, this project, site plan #2012-539, the Allagash Brewery Expansion project at 50 Industrial Way, meets minimum DRC site plan requirements for the issuance of the building permit. All conditions of approval prior to the issuance of the building permit have been met. Please see 1S for sign off.

Thanks.

Phil

Accessibility Building Code Certificate

Designer: MICHAEL P. HAYS ; GRANT HAYS ASSOCIATES

Address of Project: 50 INDUSTRIAL WAY ; PORTLAND, MAINE

Nature of Project: 9,100 SF ADDITION TO EXISTING ALLAGASH BREWING COMPANY FOR EXPANSION OF PRODUCTION AREAS

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.

LICENSED ARCHITECT (SEAL) MICHAEL F. HAYS No. 1724 STATE OF MAINE

Signature: Michael F. Hays

Title: PRINCIPAL / ARCHITECT

Firm: GRANT HAYS ASSOC.

Address: P.O. BOX 6179
FALMOUTH, ME 04105

Phone: 207. 871. 5900

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: SEPT 10, 2012

From: MICHAEL F. HAYS ; GRANT HAYS ASSOCIATES

These plans and / or specifications covering construction work on:

NEW ADDITION FOR ALLAGASH BREWING COMPANY

50 INDUSTRIAL WAY ; PORTLAND ; MAINE 04103

Have been designed and drawn up by the undersigned, a Maine registered Architect / Engineer according to the **2009 International Building Code** and local amendments.

LICENSED ARCHITECT
MICHAEL F. HAYS
(SEAL) No. 1704
STATE OF MAINE

Signature: Michael F. Hays

Title: PRINCIPAL / ARCHITECT

Firm: GRANT HAYS ASSOCIATES

Address: P.O. BOX 679

FALMOUTH MAINE 04105

Phone: 207. 871. 5100

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 Application

From Designer: ASSOCIATED DESIGN PARTNERS, INC

Date: 9-13-12

Job Name: ALLAGASH BREWERY ADDITION

Address of Construction: 50 INDUSTRIAL WAY, PORTLAND ME

2009 International Building Code

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

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

Type of Construction _____

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

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

Supervisory alarm System? _____ Geotechnical/Soils report required? (See Section 1802.2) Y, SEE 2006 AND 2010 REPORTS

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
BREWERY GROUND FLOOR	250 PSF
MEZZANINE	250 PSF

Wind loads (1603.1.4, 1609)

ANALYTICAL Design option utilized (1609.1.1, 1609.6)

98 Basic wind speed (1809.3)

1.0 Building category and wind importance Factor, I_w table 1604.5, 1609.5)

B Wind exposure category (1609.4)

.18 Internal pressure coefficient (ASCE 7)

PER ASCE BASED ON EWA Component and cladding pressures (1609.1.1, 1609.6.2.2)

15PSF Main force wind pressures (7603.1.1, 1609.6.2.1)

Earth design data (1603.1.5, 1614-1623)

ASCE 12.8.1 Design option utilized (1614.1)

I Seismic use group ("Category")

.314 / .125 Spectral response coefficients, S_{DS} & S_{D1} (1615.1)

D Site class (1615.1.5)

NO Live load reduction

20 Roof *live* loads (1603.1.2, 1607.11)

42+drift Roof snow loads (1603.7.3, 1608)

60 Ground snow load, P_g (1608.2)

42 If P_g > 10 psf, flat-roof snow load P_f

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

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

1.0 Roof thermal factor, C_t (1608.4)

NA Sloped roof snowload, P_s (1608.4)

B Seismic design category (1616.3)

OCBF/OMF Basic seismic force resisting system (1617.6.2)

_____ Response modification coefficient, R_I and deflection amplification factor C_d (1617.6.2)

ASCE 12.8.1 Analysis procedure (1616.6, 1617.5)

18.8K 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

STATEMENT OF SPECIAL CONSTRUCTION MONITORING

PROJECT: **ALLAGASH BREWERY ADDITION AND FERMENTATION TANK STRUCTURE**
50 Industrial Way, Portland Maine

PERMIT APPLICANT: **Allagash Brewing Company**
APPLICANT'S ADDRESS: **50 Industrial Way, Portland, ME 04103**

STRUCTURAL ENGINEER OF RECORD: **Associated Design Partners, Inc**

CONTRACTOR: **TBD**

This Statement of Special Construction Monitoring is submitted as a condition for building permit issuance in accordance with Section 1704.0 of the 2009 International Building Code. It includes the Schedule of Special Construction Monitoring and Testing as applicable to this project. Also included is a listing of agents and other approved agencies to be retained for conducting the monitoring and testing applicable to this project.

The Special Construction Monitoring Coordinator shall keep records of all observations listed herein, and shall furnish field reports to the Registered Design Professional of Record. All discrepancies shall be brought to the immediate attention of the Contractor for correction, and to the Registered Design Professional of Record. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the Registered Design Professional of Record. Interim reports shall be submitted to the Registered Design Professional of Record monthly, unless more frequent submissions are requested.

The Special Inspection program does not relieve the Contractor of his or her responsibilities. Job site safety is solely the responsibility of the Contractor. Materials and activities covered under the monitoring schedule are not to include the Contractor's equipment and methods used to erect or install the materials listed.

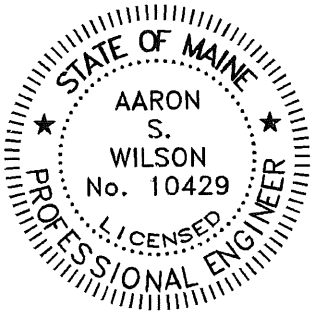
Prepared by:

Aaron S. Wilson, P.E.

(type or print name)

09/14/12

Signature Date



Design Professional Seal

Owner's Authorization:

Signature Date

Building Official's Acceptance:

Signature Date

SPECIAL CONSTRUCTION MONITORING AGENTS

This Statement of Special Construction Monitoring / Quality Assurance Plan includes the following building systems:

- ☒ Soils and Foundations
- ☒ Cast-in-Place Concrete
- ☐ Precast Concrete
- ☐ Masonry
- ☒ Structural Steel
- ☒ Cold-Formed Steel Framing
- ☐ Spray Fire Resistant Material
- ☐ Wood Construction
- ☐ Exterior Insulation and Finish System
- ☐ Mechanical & Electrical Systems
- ☐ Architectural Systems
- ☒ Special Cases

AGENT	FIRM	CONTACT INFORMATION
1. Engineer of Record	**Associated Design Partners**	**80 Leighton Rd Falmouth ME 04105 Ph: 878-1751**
2. Special Construction Monitoring Coordinator	**Associated Design Partners**	**80 Leighton Rd Falmouth ME 04105 Ph: 878-1751**
3. Field Monitor	**S.W. Cole**	**286 Portland Road Gray, ME 04039-9586 P: (207) 657.2866**
4. Testing Agency	**S.W. Cole**	**286 Portland Road Gray, ME 04039-9586 P: (207) 657.2866**
5. Other		

Note: The construction monitoring agent and testing agency shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

QUALITY ASSURANCE FOR LATERAL SYSTEMS

Quality Assurance for Seismic Requirements

Seismic Design Category *B*

Quality Assurance Plan Required (Y/N) *N*

If seismic design category C, and plan is not required, explain (see exceptions to 1705.1)

Description of seismic force resisting system and designated seismic systems:
Ordinary Concentric Steel Braced Frames, Ordinary Steel Moment Frames, Concrete Shearwalls, Intermediate Reinforced Concrete Moment Frames, Concrete Diaphragms, Metal Deck Diaphragms.

Quality Assurance for Wind Requirements

Basic Wind Speed (3 second gust) *98MPH*

Quality Assurance Plan Required (Y/N) *N*

Description of wind force resisting system and designated wind resisting components:
Ordinary Concentric Steel Braced Frames, Ordinary Steel Moment Frames, Concrete Shearwalls, Intermediate Reinforced Concrete Moment Frames, Concrete Diaphragms, Metal Deck Diaphragms.

Statement of Responsibility

Each contractor responsible for the construction or fabrication of a system or component designated above must submit a Statement of Responsibility in accordance with section 1705.3, and 1706.3 of the 2009 IBC code.

The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided if requested.

Key for Minimum Qualifications of Inspection Agents:

When the Registered Design Professional in Responsible Charge deems it appropriate that the individual performing a stipulated test or inspection have a specific certification or license as indicated below, such designation shall appear below the *Agency Number* on the Schedule.

PE/SE Structural Engineer – a licensed SE or PE specializing in the design of building structures

PE/GE Geotechnical Engineer – a licensed PE specializing in soil mechanics and foundations

EIT Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination

American Concrete Institute (ACI) Certification

ACI-CFTT	Concrete Field Testing Technician – Grade 1
ACI-CCI	Concrete Construction Inspector
ACI-LTT	Laboratory Testing Technician – Grade 1&2
ACI-STT	Strength Testing Technician

American Welding Society (AWS) Certification

AWS-CWI	Certified Welding Inspector
AWS/AISC-SSI	Certified Structural Steel Inspector

American Society of Non-Destructive Testing (ASNT) Certification

ASNT	Non-Destructive Testing Technician – Level II or III.

International Code Council (ICC) Certification

ICC-SMSI	Structural Masonry Special Inspector
ICC-SWSI	Structural Steel and Welding Special Inspector
ICC-SFSI	Spray-Applied Fireproofing Special Inspector
ICC-PCSI	Prestressed Concrete Special Inspector
ICC-RCSI	Reinforced Concrete Special Inspector

National Institute for Certification in Engineering Technologies (NICET)

NICET-CT	Concrete Technician – Levels I, II, III & IV
NICET-ST	Soils Technician - Levels I, II, III & IV
NICET-GET	Geotechnical Engineering Technician - Levels I, II, III & IV

Exterior Design Institute (EDI) Certification

EDI-EIFS	EIFS Third Party Inspector

TABLE 1 – SCHEDULE OF SPECIAL CONSTRUCTION MONITORING

MATERIAL / ACTIVITY		EXTENT of MONITORING (Continuous, Periodic, Other, Exempt, None)	COMMENTS	AGENT #	DATE COMPLETED	REV #
1704.3 STEEL CONSTRUCTION						
1. Material Verification of high strength bolts, nuts, and washers.	a. Identification markings to conform to ASTM standards specified in the approved construction documents.	Periodic		1		
	b. Manufacturers Certificate of Compliance required.	Periodic		1		
2. Inspection of High – Strength Bolting	a. Bearing type connections	Periodic		3		
	b. Slip – critical connections	None	No SC connections in building			
3. Material Verification of structural steel	a. Identification marking to conform to ASTM standards specified in the contract documents.	All	SER to verify on shop drawings. #3 to verify in field	3		
	b. Manufacturers certified mill test Reports.	Exempt	Engage AISC certified fabricator			
4. Material Verification of weld filler materials:	a. Identification marking to conform to ASTM standards specified in the contract documents.	All	SER to verify on shop drawings.	3		
	b. Manufacturers Certificate of Compliance required.	Exempt	Engage AISC certified fabricator			
5. Inspection of Welding – Structural Steel	a. Single Pass fillet welds < 5/16"	Periodic		1,3		
	b. Floor and deck welds	Periodic		1,3		
6. Inspection of Steel Frame Joint details for compliance with approved construction documents.	a. Bracing connections	All		3		
	b. Member locations	Periodic		3		
	c. Application of joint details at each connection.	Periodic				

TABLE 1 – STATEMENT OF SPECIAL INSPECTIONS, cont.

MATERIAL/ACTIVITY		EXTENT of INSPECTION (Continuous, Periodic, Other, None)	COMMENTS	AGENT #	DATE COMPLETED	REV #
1704.4 CONCRETE CONSTRUCTION						
1. Inspection of reinforcing steel, including placement.		Continuous		3		
2. Inspection of reinforcing steel welding		None	No welded reinforcing.			
1. Inspect bolts embedded into concrete prior to and during placement of concrete where allowable loads have been increased.		None	Allowable loads have not been increased for lateral loads.			
2. Verify use of required concrete mix design(s)		Continuous	SER review and approve mix design prior to installation. SI verify delivery ticket matches approved mix design.	1,3		
3. Sample fresh concrete for strength tests, perform slump and air content tests, and determine temperature of concrete.		Continuous		3		
6. Inspection of concrete placement for proper techniques.		Continuous		3		
7. Inspection for maintenance of specified curing temperature and techniques.		Periodic		3		
1704.5 MASONRY CONSTRUCTION - Level 1 Special Inspection for non-essential facility – 1704.5.2						
1 As Masonry Construction begins, the following shall be verified to ensure conformance	a. Proportions of site-prepared mortar	None				
	b. Construction of mortar joints	None				
	c. Location of reinforcement	None				
	d. Pre-stressing technique	None	No pre-stressing in building			
	e. Grade and size of pre-stressing tendons.	None	No pre-stressing in building			
2. The Inspection program shall verify the following:	a. Size and location of structural elements.	None				
	b. Type, size, and location of embedded anchors.	None				
	c. Size, grade, and type of reinforcing	None				

TABLE 1 – STATEMENT OF SPECIAL INSPECTIONS, cont.

MATERIAL/ACTIVITY		EXTENT of INSPECTION (Continuous, Periodic, Other, None)	COMMENTS	AGENT #	DATE COMPLETED	REV #
1704.5MASONRY CONSTRUCTION - Level 1 Special Inspection for non-essential facility – 1704.5.2						
2. The Inspection program shall verify the following, cont:	d. welding of reinforcing bars	None				
	e. Protection of Masonry during cold weather (temp. below 40 deg F.)	None				
	f. Application and measurement of pre-stressing reinforcement	None	No pre-stressing in building			
3. Prior to grouting, the following shall be verified to ensure compliance.	a. Grout space is clean	None				
	b. Placement of reinforcement	None				
	c. Proportions of site-prepared grout	None				
	d. Construction of mortar joints	None				
4. Grout placement shall be verified to ensure compliance with code and construction document provisions.		Continuous				
5. Preparation of any grout specimens, mortar specimens and/or prisms shall be observed		Continuous				
4. Compliance with required inspection provisions of the construction documents and the approved submittals shall be verified.		Periodic				
1704.6WOOD CONSTRUCTION						
1. Horizontal Diaphragms and Vertical Shearwalls	a. Inspect sheathing size, grade, and thickness for conformance with construction documents.	None				
	b. Inspect sheathing fastener size and pattern for conformance with construction documents.	None				
	c. Verify attachment to supporting elements is per contract documents.	None				
2. Wood truss fabricator certification / quality control procedures	Verify shop fabrication and quality control procedures for wood truss plant.	None				
3. Material Grading	Verify material grading for sawn lumber for compliance with construction documents. Verify manufactured lumber (LVL'S, PSL's) for conformance with construction documents.	None				

TABLE 1 – STATEMENT OF SPECIAL INSPECTIONS, cont.

MATERIAL/ACTIVITY		EXTENT of INSPECTION (Continuous, Periodic, Other, None)	COMMENTS	AGENT #	DATE COMPLETED	REV #
1704.6WOOD CONSTRUCTION						
4. Wood Connections	Verify that connections are made as shown in the contract documents. For connections not specifically detailed, verify conformance with IBC 2003 Ch. 23	None				
5. Framing	Verify that framing is installed in accordance with construction documents.	None				
6. Pre-Fabricated Wood Trusses						
1704.7SOILS						
1. Site Preparation	Inspect preparation of site for conformance with Geotechnical recommendations prior to placement of prepared fill.	Periodic		3		
2. Fill Placement	During Fill Placement verify that material and lift thickness comply with approved Geotechnical report.	Periodic		3		
3. In-Place Soil Density	Verify compliance of in-place compacted dry density with approved Geotechnical report.			3		
1704.7PILE FOUNDATIONS	Record installation and testing of procedures of each pile. Submit reports to building official and EOR. Reports to include pile tip cutoff elevation relative to a common benchmark.	None				
1704.10 ARCHITECTURAL WALL PANELS AND VENEERS	Verify compliance of attachment of interior and exterior Architectural veneers to supporting structure for building in Seismic Design Category E or F.	None				
1704.11 SPRAYED FIRE-RESISTANT MATERIAL	a. Verify conformance of the prepared surface with manufacturer's specifications prior to application of material.					
	b. Verify that substrate's ambient					

TABLE 1 – STATEMENT OF SPECIAL INSPECTIONS, cont.

MATERIAL/ACTIVITY		EXTENT of INSPECTION (Continuous, Periodic, Other, None)	COMMENTS	AGENT #	DATE COMPLETED	REV #
	temperature meet manufacturer's specifications.					
	c. Verify that material thickness meets design specifications.					
	d. Verify that the material density meets the design specifications. Test in accordance with ASTM E 605.					
	e. Verify that bond strength between material and substrate is greater than or equal to 150 psf. Test in accordance with ASTM E 736 and IBC 2003 1704.11.5.1 – 1704.11.5.2					
1704.12 EXTERIOR AND INSULATION AND FINISH SYSTEMS (EIFS)	Verify conformance of EFIS installation with manufacturers and design specifications.		Not Required if applied over a water resistive barrier with a means of draining moisture to the outside. Not required for EIFS installed over concrete or masonry walls.			
1704.13 SPECIAL CASES COLD FORMED METAL FRAMING						
1. Horizontal Diaphragms and Vertical Shearwalls	a. Inspect sheathing size, grade, and thickness for conformance with construction documents.	None				
	b. Inspect sheathing fastener size and pattern for conformance with construction documents.					
2. Framing	Verify member size, thickness, material, and spacing is in accordance with design specifications and drawings.	Periodic		3		
3. Wood truss fabricator certification / quality control procedures	Verify shop fabrication and quality control procedures for wood truss plant.	None				
4. Framing Connections	Verify that member connections are in accordance with design specifications and drawings.	None				

TABLE 1 – STATEMENT OF SPECIAL INSPECTIONS, cont.

MATERIAL/ACTIVITY		EXTENT of INSPECTION (Continuous, Periodic, Other, None)	COMMENTS	AGENT #	DATE COMPLETED	REV #
5. Welding	Verify welding of cold formed members is in accordance with design specifications and AWS standards.	None				
6. Light Gage Trusses	a. Verify that light gage trusses are design in accordance with the loads specified on the contract documents.	None				
	b. Verify that light gage trusses and truss bracing is installed per manufacturers specifications, contract documents, and BCSI 1-03 guidelines.					
1704.10 SPECIAL CASE – ELEVATED FERMENTATION TANKS						
	a. Verify welding of tank base to support structure is per tank manufacturer requirements and per approved drawings.	Continuous		3		

PORTLAND MAINE

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Receipts Details:

Tender Information: Check , BusinessName: 50 Industrial Way, Check Number: 158
Tender Amount: 6520.00

Receipt Header:

Cashier Id: gguertin
Receipt Date: 9/19/2012
Receipt Number: 48398

Receipt Details:

Referance ID:	8073	Fee Type:	BP-Constr
Receipt Number:	0	Payment Date:	
Transaction Amount:	6520.00	Charge Amount:	6520.00
Job ID: Job ID: 2012-09-4996-ALTCOMM - new addition to the existing Allagash Brewing Co.			
Additional Comments: 50 Industrial Way,			

Thank You for your Payment!

Jeanie Bourke - Re: Industrial Way - Allagash addition review

From: Michael Hays <mhays@earthlink.net>
To: Jeanie Bourke <JMB@portlandmaine.gov>
Date: 10/22/2012 3:34 PM
Subject: Re: Industrial Way - Allagash addition review

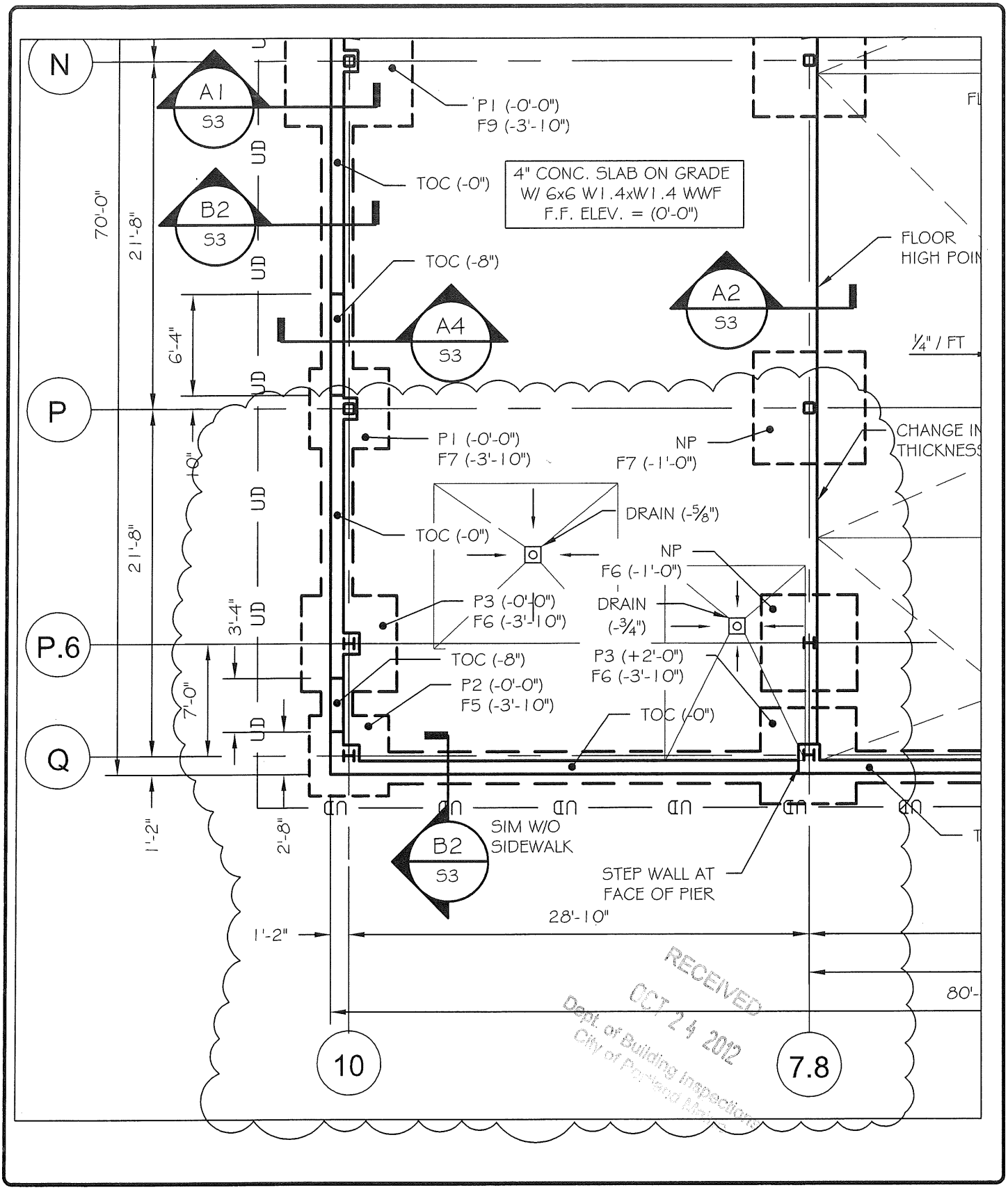
Jeanie - I spoke with the project manager (Paul Ureneck of Boulos) and the Structural Engineer (ADP)....see my comments below. Thanks!

On 10/18/2012 9:24 AM, Jeanie Bourke wrote:

> Hi Mike,
> Just following up my voice message with an email of the list of items from my review, let me know if you have any questions on my comments.
>
> 1. Plan total SF with additions shows 22,800; does this include the new tank area of 1,464? There are no architectural plans for this area, but there are structural plans. The New Tank Area is a service bunker for the beer tanks above. There is piping and other mechanical items there related to the beer-making process. The access is for maintenance purposes. There is no "architecture" involved. Portland issued a permit for a similar bunker built in 2011, of which documents were prepared by the Structural Engineer and submitted for permitting by Boulos Property Management. No architectural drawings were prepared for that project, similar to this one.
> 2. Plan A1.1 , existing stair to exst. Mezzanine not shown on 1st floor plan Noted - GHA will revise and resubmit.
> 3. Plan A1., the existing stair from the office mimics the 1st floor direction, should be different Noted - GHA will revise & resubmit.
> 4. Plan A1.1, seems like the 1st and 2nd floor plans are overlaid at the storage mezz/mech/office Noted - GHA will revise & resubmit
> 5. Plan A4.1calls out window F as 1hr interior, where is this on the plan - These are located in the new Second Floor Office 203 (best seen on Sheet A-1.4).
> 6. Plan A3.2, slab insulation required to be from the top of the slab per IECC 502.2.6 for a thermal break, they are showing it from the bottom of slab - GHA & ADP will revise & resubmit.
> 7. Plan S.1 does not show floor drains in the bathroom and there are no Mech/plumbing plans Noted - ADP will revise & resubmit.
>
> Thanks Mike,
>
> Jeanie

Jeanie Bourke
CEO/LPI/Plan Reviewer

City of Portland



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OCT 24 2012
Dept. of Building Inspections
City of Portland Maine

ASSOCIATED DESIGN PARTNERS INC.

80 Leighton Road
Falmouth, Maine 04105

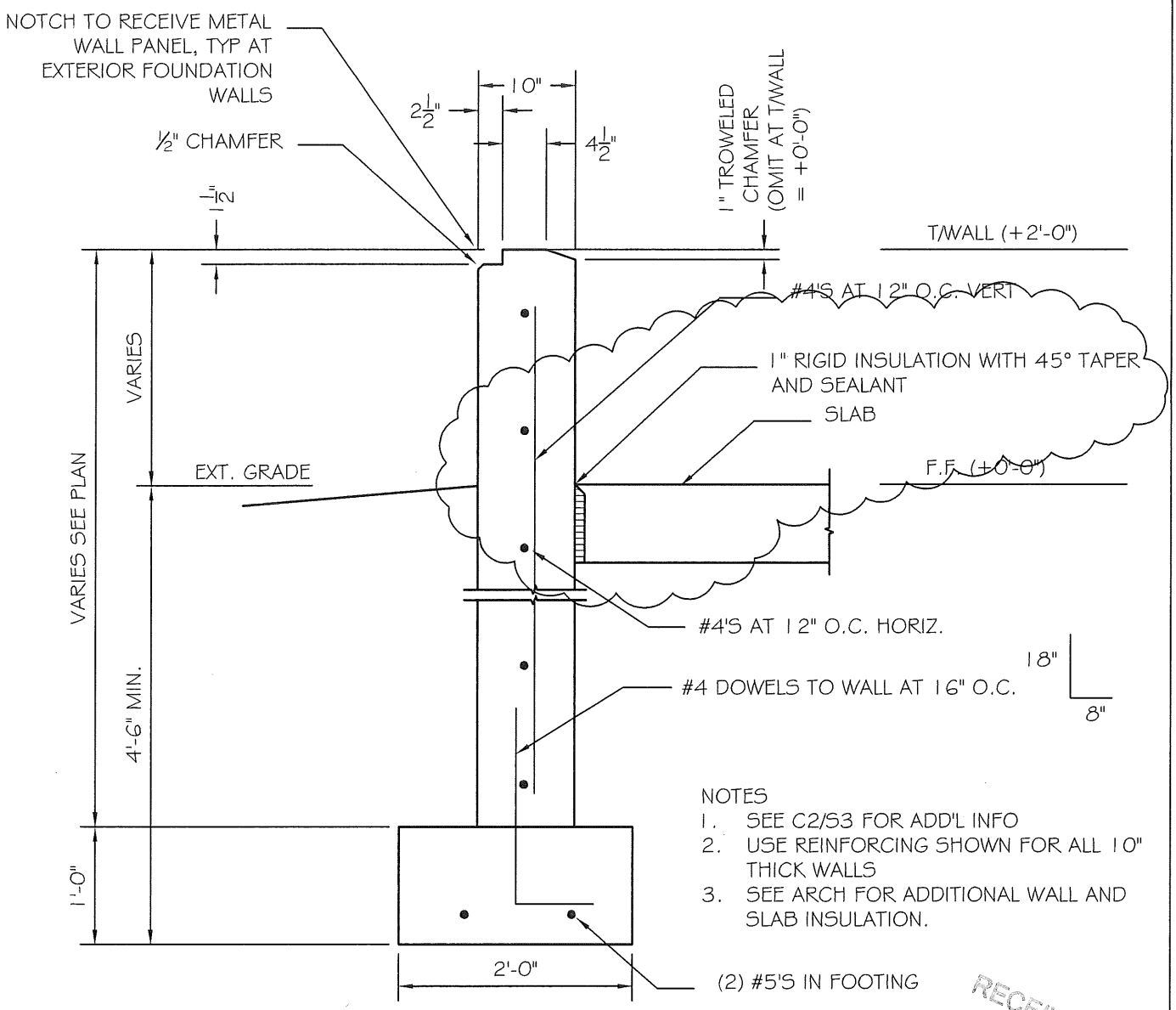
Office: (207) 878-1751
Fax: (207) 878-1788
E-Mail: adp@adpengineering.com

PROJECT: **ALLAGASH BREWERY**
BREWHOUSE ADDITION
FOR:

SHEET TITLE:
FLOOR DRAINS AT BATHROOMS

REVISIONS			
No.	BY	DESCRIPTION	DATE
1			
2			
3			
4			

DATE : 10-23-12
SCALE : 1/8"=1'-0"
DESIGN BY: ASW
DRAWN BY: RSC
FILE #:
PROJECT NUMBER: 12160
SHEET NO: SKC-1



NOTES

1. SEE C2/S3 FOR ADD'L INFO
2. USE REINFORCING SHOWN FOR ALL 10" THICK WALLS
3. SEE ARCH FOR ADDITIONAL WALL AND SLAB INSULATION.

ASSOCIATED DESIGN PARTNERS INC.
80 Leighton Road
Falmouth, Maine 04105
Office: (207) 878-1751
Fax: (207) 878-1788
E-Mail: adp@adpengineering.com

PROJECT: ALLAGASH BREWERY
BREWHOUSE ADDITION
FOR:

SHEET TITLE: THERMAL BREAK AT FND WALL AND SLAB

REVISIONS			
No.	BY	DESCRIPTION	DATE
1			
2			
3			
4			

DATE : 10-23-12
SCALE : 3/4"=1'-0"
DESIGN BY: ASW
DRAWN BY: RSC
FILE #:
PROJECT NUMBER: 12160
SHEET NO: SKC-2

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:

1. Footings.
2. Foundation walls.
3. Slabs-on-grade.
4. Suspended slabs.

1.3 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1. Indicate amounts of mixing water to be withheld for later addition at Project site.

C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

D. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:

1. Aggregates..

E. Material Certificates: For each of the following, signed by manufacturers:

1. Cementitious materials.
2. Admixtures.
3. Steel reinforcement and accessories.
4. Waterstops.
5. Curing compounds.

F. Floor surface flatness and levelness measurements to determine compliance with specified tolerances.

G. Field quality-control test reports.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.

B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

C. Testing Agency Qualifications: An independent agency, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.

D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.

E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301, "Specification for Structural Concrete," Sections 1 through 5.
2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

F. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

1.6 PROJECT CONDITIONS

A. Frost Protection: Protect footings and slabs from freezing temperatures and prevent frost from occurring beneath footings and slabs. Frozen water found on soil or concrete surface shall be reason for rejection of protection method. Provide corrective measures within 24 hours after notice of condition is given. Evidence of frost at these locations shall be reason for rejection, removal, and replacement at no additional cost to the Owner. See Section 3.6E for cold weather concrete protection.

B. Apply surface evaporation retardant to slab surface when water loss reaches .15 lbs of water loss per square foot (.6 kg per sm) per hour as determined in ACI 308.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.

2.2 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

1. Plywood, metal, or other approved panel materials.
2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:

a. Structural 1, B-B or better; mill oiled and edge sealed.
b. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber-reinforced plastic, paper, or fiber tubes that will produce surfaces with gradual or abrupt irregularities not exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.

D. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

E. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

F. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
2. Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.

2.3 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

B. Plain-Steel Wire: ASTM A 82, as drawn.

C. Plain-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from as-drawn steel wire into flat sheets.

2.4 REINFORCEMENT ACCESSORIES

A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.

2.5 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

1. Portland Cement: ASTM C 150, Type I or II. Supplement with the following:

a. Fly Ash: ASTM C 618, Class F.

B. Normal-Weight Aggregates: ASTM C 33, No. 57, graded.

1. Fine Aggregate: Sand shall consist of hard, tough and preferably siliceous material, clean, free from mineral or other coatings, soft particles, clay, loam or other deleterious matter.

2. Coarse Aggregate: Crushed stone or gravel, having clean, hard, durable, uncoated particles, free from deleterious matter. The 1-1/2" (38 mm) aggregate shall conform to gradation #467 and the 3/4" (19 mm) aggregate to size #67 in Table II of ASTM C-33. 3/4" (19 mm) aggregate shall be the minimum permissible size used, unless required for structural clearances between reinforcing bars or between bars and the forms require smaller aggregate size. Clearances requiring smaller aggregate size shall be submitted to the Engineer for verification and approval.

C. Water: ASTM C 94/C 94M and potable.

2.6 ADMIXTURES

A. Air-Entraining Admixture: ASTM C 260.

B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A or Type F.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
7. Provide Xypex c-500 waterproofing additive (2% per weight of portland cement) to exterior walls and elevated slabs at fermentation tank structure. Contractor shall coordinate with Xypex and adjust percentage of additive as recommended by Xypex. verify additive type with Xypex.

2.7 FIBER REINFORCEMENT

A. Synthetic Micro-Fiber: Fibrillated polypropylene fibers engineered and designed for use in concrete, complying with ASTM C 1116/C 1116M, Type III, 1/2 to 1-1/2 inches long.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Fibrillated Micro-Fibers:

1) Euclid Chemical Company (The); Fiberstrand F.
2) FORTA Corporation; FORTA Econo-Net.
3) Grace Construction Products, W. R. Grace & Co.; Grace Fibers.
4) Propex Concrete Systems Corp; Fibermesh 300.

2.8 VAPOR RETARDERS

A. Refer to Division 07 Section "Under-Slab Vapor Retarders."

2.9 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

1. Available Products:
   a. Dayton Superior Corporation; Sure Film.
   b. Euclid Chemical Company (The); Eucobar.
   c. L&M Construction Chemicals, Inc.; E-Con.
   d. MBT Protection and Repair, Div. of ChemRex; Confilm.
   e. Sika Corporation, Inc.; SikaFilm.

B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

D. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, nondissipating, certified by curing compound manufacturer to not interfere with bonding of floor covering.

1. Available Products:

   a. Anti-Hydro International, Inc.; AH Clear Cure WB.
   b. Dayton Superior Corporation; Safe Cure and Seal (J-18).
   c. Euclid Chemical Company (The); Aqua Cure VOX.
   d. L&M Construction Chemicals, Inc.; Dress & Seal WB.
   e. Tamms Industries, Inc.; Clearseal WB 150.

2.10 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: Refer to Division 07 Section "Under-Slab Vapor Retarders."

B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

1. Available Products:

   a. Conproco Corp.: Conpro Primer.
   b. Lambert Corp.: Acrylbond.
   c. L&M Construction Chemicals, Inc.: Everbond.
   d. Quickrete: Concrete Bonding Adhesive.

2.11 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 4100 psi at 28 days when tested according to ASTM C 109/C 109M.

B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C 109/C 109M.

2.12 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Cementitious Materials: Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.

1. Fly Ash: 25 percent.
2. Combined Fly Ash and Pozzolan: 25 percent.
3. Ground Granulated Blast-Furnace Slag: 50 percent.
4. Combined Fly Ash or Pozzolan and Ground Granulated Blast-Furnace Slag: 50 percent portland cement minimum, with fly ash or pozzolan not exceeding 25 percent.
5. Silica Fume: 10 percent.
6. Combined Fly Ash, Pozzolans, and Silica Fume: 35 percent with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent.

7. Combined Fly Ash or Pozzolans, Ground Granulated Blast-Furnace Slag, and Silica Fume: 50 percent with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent.

C. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.3
3. Provide Xypex c-500 waterproofing additive at exterior walls and elevated slabs/beams of fermentation support structure.

2.13 CONCRETE MIXTURES FOR BUILDING ELEMENTS

A. Footings: Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: 3000 psi at 28 days.
2. Maximum Water-Cementitious Materials Ratio: 0.50.
3. Slump Limit: 4 inches, plus or minus 1 inch.
4. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 3/4-inch nominal maximum aggregate size.

B. Foundation Walls at Brewhouse Addition: Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: 3000 psi at 28 days.
2. Maximum Water-Cementitious Materials Ratio: 0.50.
3. Slump Limit: 4 inches, plus or minus 1 inch.
4. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 3/4-inch nominal maximum aggregate size.

C. Foundation Walls, Columns, Beams, and Elevated Slabs at Fermentation Tank Structure: Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: 5000 psi at 28 days.
2. Maximum Water-Cementitious Materials Ratio: 0.50.
3. Slump Limit: 4 inches, plus or minus 1 inch.
4. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 3/4-inch nominal maximum aggregate size.

D. Interior Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: 4000 psi at 28 days.
1. Maximum Water-Cementitious Materials Ratio: 0.45.
2. Slump Limit: 4 inches, plus or minus 1 inch.
3. Air Content: Do not allow air content of troweled finished floors to exceed 3 percent.
4. Synthetic Micro-Fiber (where indicated): Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than 1.0 lb/cu. yd..

E. Elevated Slabs on Metal Decking: Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: 4000 psi at 28 days.
2. Maximum Water-Cementitious Materials Ratio: 0.45.
3. Slump Limit: 4 inches, plus or minus 1 inch.
4. Air Content: Do not allow air content of troweled finished floors to exceed 3 percent.

F. Exterior Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: 4000 psi at 28 days.
1. Maximum Water-Cementitious Materials Ratio: 0.45.
2. Slump Limit: 4 inches, plus or minus 1 inch.
3. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 3/4-inch nominal maximum aggregate size.

2.14 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.15 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:

1. Class A, 1/8 inch for smooth-formed finished surfaces.
2. Class C, 1/2 inch for rough-formed finished surfaces.

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.

1. Install keyways, reglets, recesses, and the like, for easy removal.
2. Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

H. Do not chamfer exterior corners and edges of permanently exposed concrete.

I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."

3.3 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.

B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

1. Weld reinforcing bars according to AWS D1.4, where indicated.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.5 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
5. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.
2. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface where joint sealants, specified in Division 07 Section "Joint Sealants," are indicated.
3. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

3.6 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.

B. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.

1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

D. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
2. Maintain reinforcement in position on chairs during concrete placement.
3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Slope surfaces uniformly to drains where required.
5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

E. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

F. Hot-Weather Placement: Comply with ACI 301 and as follows:

1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.7 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

1. Apply to concrete surfaces not exposed to public view.

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities. Revise locations in subparagraph below to suit Project. Retain rubbed finish option if additional finishing is required.

1. Apply to concrete surfaces exposed to public view.

C. Rubbed Finish: Not Applicable.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent

formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.8 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

1. Apply float finish to surfaces indicated to receive trowel finish.

C. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.

1. Apply a trowel finish to interior surfaces.
2. Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, 10-ft.-long straightedge resting on two high spots and placed anywhere on the surface does not exceed 1/8 inch.

D. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.9 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

3.10 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.

D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

E. Cure concrete foundations and exterior concrete slabs according to ACI 308.1, by the following method:

1. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

a. After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer.

F. Cure interior concrete slabs according to ACI 308.1, by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

a. Water.
b. Continuous water-fog spray.
c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project..

3.11 JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.

1. Defer joint filling until concrete has aged at least [**one**] [**six**] month(s). Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.12 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension in solid concrete, but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.

5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.13 FIELD QUALITY CONTROL

A. Testing: Engage a qualified testing and inspecting agency to perform tests and to submit reports.

B. Concrete Tests: Refer to Special Inspections.

C. Measure floor and slab flatness and levelness according to ASTM E 1155 within 48 hours of finishing.

END OF SECTION 033000

SECTION 051200 - STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Structural steel.
2. Grout.

B. Related Requirements:

1. Section 053100 "Steel Decking" for field installation of shear connectors through deck.
2. Section 055000 "Metal Fabrications" for miscellaneous steel fabrications and other steel items not defined as structural steel.

1.3 DEFINITIONS

A. Structural Steel: Elements of the structural frame indicated on Drawings and as described in AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

B. Seismic-Load-Resisting System: Elements of structural-steel frame designated as "SLRS" or along grid lines designated as "SLRS" on Drawings, including columns, beams, and braces and their connections.

C. Heavy Sections: Rolled and built-up sections as follows:

1. Shapes included in ASTM A 6/A 6M with flanges thicker than 1-1/2 inches.
2. Welded built-up members with plates thicker than 2 inches.
3. Column base plates thicker than 2 inches.

1.4 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Show fabrication of structural-steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
2. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
3. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical, high-strength bolted connections.
4. Identify members and connections of the Seismic-Load-Resisting System.

C. Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs): Provide according to AWS D1.1/D1.1M, "Structural Welding Code - Steel," for each welded joint whether prequalified or qualified by testing, including the following:

1. Power source (constant current or constant voltage).
2. Electrode manufacturer and trade name, for demand critical welds.

D. Delegated-Design Submittal: For structural-steel connections indicated on plan to comply with design loads, include analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified fabricator.

B. Welding certificates.

C. Product Test Reports: For the following:

1. Bolts, nuts, and washers including mechanical properties and chemical analysis.
2. Shop primers.

1.7 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

1. Welders and welding operators performing work on bottom-flange, demand-critical welds shall pass the supplemental welder qualification testing, as required by AWS D1.8/D1.8M. FCAW-S and FCAW-G shall be considered separate processes for welding personnel qualification.

B. Comply with applicable provisions of the following specifications and documents:

1. AISC 303.
2. RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

1.8 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.

1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.

1. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.
2. Clean and relubricate bolts and nuts that become dry or rusty before use.
3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F 1852 fasteners and for retesting fasteners after lubrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Connections: Provide details of connections required by the Contract Documents to be selected or completed by structural-steel fabricator, including comprehensive engineering analysis by a qualified professional engineer, to withstand loads indicated and comply with other information and restrictions indicated.

1. Select and complete connections using schematic details indicated.

2.2 STRUCTURAL-STEEL MATERIALS

A. W-Shapes, Channels: ASTM A 572/A 572M, Grade 50.

B. Angles, Plates, Bar: ASTM A 36/A 36M.

C. Cold-Formed Hollow Structural Sections: ASTM A 500/A 500M, Grade B, structural tubing.

D. Steel Pipe: ASTM A 53/A 53M, Type E or Type S, Grade B.

1. Finish: Black except where indicated to be galvanized.

E. Welding Electrodes: Comply with AWS requirements.

2.3 BOLTS, CONNECTORS, AND ANCHORS

A. High-Strength Bolts, Nuts, and Washers: ASTM A 325, Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade C, heavy-hex carbon-steel nuts; and ASTM F 436, Type 1, hardened carbon-steel washers; all with plain finish.

B. Headed Anchor Rods: ASTM F 1554, Grade 36, straight.

1. Nuts: ASTM A 563 heavy-hex carbon steel.
2. Plate Washers: ASTM A 36/A 36M carbon steel.
3. Washers: ASTM F 436, Type 1, hardened carbon steel.
4. Finish: Plain.

C. Threaded Rods: ASTM A 36/A 36M.

1. Nuts: ASTM A 563 heavy-hex carbon steel.
2. Washers: ASTM A 36/A 36M carbon steel.
3. Finish: Plain.

D. Clevises and Turnbuckles: Made from cold-finished carbon steel bars, ASTM A 108, Grade 1035.

2.4 PRIMER

A. Primer: Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer complying with MPI#79 and compatible with topcoat.

2.5 GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107/C 1107M, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

2.6 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC 303, "Code of Standard Practice for Steel Buildings and Bridges," and to AISC 360.

1. Camber structural-steel members where indicated.
2. Fabricate beams with rolling camber up.
3. Identify high-strength structural steel according to ASTM A 6/A 6M and maintain markings until structural steel has been erected.
4. Mark and match-mark materials for field assembly.
5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.

B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1/D1.1M.

C. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.

D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.

E. Cleaning: Clean and prepare steel surfaces that are to remain unpainted according to SSPC-SP 2, "Hand Tool Cleaning."

F. Steel Wall-Opening Framing: Select true and straight members for fabricating steel wall-opening framing to be attached to structural-steel frame. Straighten as required to provide uniform, square, and true members in completed wall framing. Build up welded framing, weld exposed joints continuously, and grind smooth.

G. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel members.

1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
2. Baseplate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.
3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

2.7 SHOP CONNECTIONS

A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.

1. Joint Type: Snug tightened.

B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

1. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in AISC 303 for mill material.

2.8 SHOP PRIMING

A. Shop prime steel surfaces except the following:

1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
2. Surfaces to be field welded.

B. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:

1. SSPC-SP 2, "Hand Tool Cleaning."

C. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

1. Stripe paint corners, crevices, bolts, welds, and sharp edges.
2. Apply two coats of shop paint to surfaces that are inaccessible after assembly or erection. Change color of second coat to distinguish it from first.

PART 3 - EXECUTION

3.1 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.

1. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.

3.2 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.

B. Baseplates, Bearing Plates and Leveling Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.

1. Set plates for structural members on wedges, shims, or setting nuts as required.
2. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
3. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.

C. Maintain erection tolerances of structural steel within AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

D. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that are in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure.
2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.

E. Do not use thermal cutting during erection unless approved by Architect. Finish thermally cut sections within smoothness limits in AWS D1.1/D1.1M.

F. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

3.3 FIELD CONNECTIONS

A. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.

1. Joint Type: Snug tightened.

B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

1. Comply with AISC 303 and AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
2. Remove backing bars or runoff tabs where indicated, back gouge, and grind steel smooth.
3. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in AISC 303, "Code of Standard Practice for Steel Buildings and Bridges," for mill material.

3.4 FIELD QUALITY CONTROL

A. Refer to Special Inspections.

3.5 REPAIRS AND PROTECTION

A. Touchup Painting: Immediately after erection, clean exposed areas where primer is damaged or missing and paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.

END OF SECTION 051200

SECTION 052100 - STEEL JOIST FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. K-series steel joists.
2. Joist girders.
3. Joist accessories.

1.3 DEFINITIONS

A. SJI's "Specifications": Steel Joist Institute's "Standard Specifications, Load Tables and Weight Tables for Steel Joists and Joist Girders."

B. Special Joists: Steel joists or joist girders requiring modification by manufacturer to support nonuniform, unequal, or special loading conditions that invalidate load tables in SJI's "Specifications."

1.4 ACTION SUBMITTALS

A. Product Data: For each type of joist, accessory, and product.

B. Shop Drawings:

1. Include layout, designation, number, type, location, and spacing of joists.
2. Include joining and anchorage details, bracing, bridging, and joist accessories; splice and connection locations and details; and attachments to other construction.
3. Indicate locations and details of bearing plates to be embedded in other construction.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. Welding certificates.

C. Manufacturer certificates.

D. Mill Certificates: For each type of bolt.

E. Comprehensive engineering analysis of special joists and top chord extenstions signed and sealed by the qualified professional engineer responsible for its preparation.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A manufacturer certified by SJI to manufacture joists complying with applicable standard specifications and load tables in SJI's "Specifications."

1. Manufacturer's responsibilities include providing professional engineering services for designing special joists to comply with performance requirements.

B. Welding Qualifications: Qualify field-welding procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle joists as recommended in SJI's "Specifications."

B. Protect joists from corrosion, deformation, and other damage during delivery, storage, and handling.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide special joists and connections capable of withstanding design loads indicated.

1. Use ASD; data are given at service-load level.
2. Design special joists to withstand design loads with live-load deflections no greater than the following:

a. Floor Joists: Vertical live load deflection of 1/360 of the span.
b. Roof Joists: Vertical live load deflection of 1/240 of the span.

2.2 K-SERIES STEEL JOISTS

A. Manufacture steel joists of type indicated according to "Standard Specifications for Open Web Steel Joists, K-Series" in SJI's "Specifications," with steel-angle top- and bottom-chord members, underslung ends, and parallel top chord.

1. Joist Type: K-series steel joists.

B. Steel Joist Substitutes: Manufacture according to "Standard Specifications for Open Web Steel Joists, K-Series" in SJI's "Specifications," with steel-angle or -channel members.

C. Provide holes in chord members for connecting and securing other construction to joists.

D. Top-Chord Extensions: Extend top chords of joists with SJI's Type S top-chord extensions where indicated, complying with SJI's "Specifications."

E. Extended Ends: Extend bearing ends of joists with SJI's Type R extended ends where indicated, complying with SJI's "Specifications."

F. Do not camber joists.

G. Camber joists according to SJI's "Specifications.".

H. Equip bearing ends of joists with manufacturer's standard beveled ends or sloped shoes if joist slope exceeds 1/4 inch per 12 inches.

2.3 JOIST GIRDERS

A. Manufacture joist girders according to "Standard Specifications for Joist Girders" in SJI's "Specifications," with steel-angle top- and bottom-chord members; with end and top-chord arrangements as follows:

1. End Arrangement: Underslung with bottom-chord extensions.
2. Top-Chord Arrangement: Pitched 1/8 inch per 12 inches, two ways.

B. Provide holes in chord members for connecting and securing other construction to joist girders.

C. Camber joist girders according to SJI's "Specifications.".

D. Equip bearing ends of joists with manufacturer's standard beveled ends or sloped shoes if joist slope exceeds 1/4 inch per 12 inches.

2.4 PRIMERS

A. Primer: SSPC-Paint 15, or manufacturer's standard shop primer complying with performance requirements in SSPC-Paint 15.

2.5 JOIST ACCESSORIES

A. Bridging: Provide bridging anchors and number of rows of horizontal or diagonal bridging of material, size, and type required by SJI's "Specifications" for type of joist, chord size, spacing, and span. Furnish additional erection bridging if required for stability.

B. Furnish ceiling extensions, either extended bottom-chord elements or a separate extension unit of enough strength to support ceiling construction. Extend ends to within 1/2 inch of finished wall surface unless otherwise indicated.

C. High-Strength Bolts, Nuts, and Washers: ASTM A 325, Type 1, heavy hex steel structural bolts; ASTM A 563 heavy hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers.

1. Finish: Plain.

D. Welding Electrodes: Comply with AWS standards.

E. Furnish miscellaneous accessories including splice plates and bolts required by joist manufacturer to complete joist assembly.

2.6 CLEANING AND SHOP PAINTING

A. Clean and remove loose scale, heavy rust, and other foreign materials from fabricated joists and accessories by power-tool cleaning, SSPC-SP 3.

B. Apply one coat of shop primer to joists and joist accessories to be primed to provide a continuous, dry paint film not less than 1 mil thick.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting substrates, embedded bearing plates, and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Do not install joists until supporting construction is in place and secured.

B. Install joists and accessories plumb, square, and true to line; securely fasten to supporting construction according to SJI's "Specifications," joist manufacturer's written recommendations, and requirements in this Section.

1. Before installation, splice joists delivered to Project site in more than one piece.
2. Space, adjust, and align joists accurately in location before permanently fastening.
3. Install temporary bracing and erection bridging, connections, and anchors to ensure that joists are stabilized during construction.
4. Delay rigidly connecting bottom-chord extensions to columns or supports until dead loads are applied.

C. Field weld joists to supporting steel. Coordinate welding sequence and procedure with placement of joists. Comply with AWS requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.

D. Bolt joists to supporting steel framework using high-strength structural bolts. Comply with Research Council on Structural Connection's "Specification for Structural Joints Using ASTM A 325 or ASTM A 490 Bolts" for high-strength structural bolt installation and tightening requirements.

E. Install and connect bridging concurrently with joist erection, before construction loads are applied. Anchor ends of bridging lines at top and bottom chords if terminating at walls or beams.

3.3 FIELD QUALITY CONTROL

A. Refer to Special Inspections.

3.4 PROTECTION

A. Repair damaged galvanized coatings on galvanized items with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

B. Touchup Painting: After installation, promptly clean, prepare, and prime or reprime field connections, rust spots, and abraded surfaces of prime-painted joists abutting structural steel, and accessories.

1. Clean and prepare surfaces by hand-tool cleaning according to SSPC-SP 2, or power-tool cleaning according to SSPC-SP 3.
2. Apply a compatible primer of same type as primer used on adjacent surfaces.

C. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that joists and accessories are without damage or deterioration at time of Substantial Completion.

END OF SECTION 052100

SECTION 053100 - STEEL DECKING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Roof deck.
2. Composite floor deck.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of deck, accessory, and product indicated.

B. Shop Drawings:

1. Include layout and types of deck panels, anchorage details, reinforcing channels, pans, cut deck openings, special jointing, accessories, and attachments to other construction.

1.4 INFORMATIONAL SUBMITTALS

A. Welding certificates.

B. Product Certificates: For each type of steel deck.

C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that each of the following complies with requirements:

1. Power-actuated mechanical fasteners.

D. Evaluation Reports: For steel deck.

E. Field quality-control reports.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated.

B. Welding Qualifications: Qualify procedures and personnel according to AWS D1.3, "Structural Welding Code - Sheet Steel."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.

B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

1. Protect and ventilate acoustical cellular roof deck with factory-installed insulation to maintain insulation free of moisture.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. AISI Specifications: Comply with calculated structural characteristics of steel deck according to AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members."

2.2 ROOF DECK

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Canam United States; Canam Group Inc.
2. CMC Joist & Deck.
3. Consolidated Systems, Inc.; Metal Dek Group.
4. Epic Metals Corporation.
5. Nucor Corp.; Vulcraft Group.
6. Verco Manufacturing Co.
7. Wheeling Corrugating Company; Div. of Wheeling-Pittsburgh Steel Corporation.

B. Roof Deck: Fabricate panels, without top-flange stiffening grooves, to comply with "SDI Specifications and Commentary for Steel Roof Deck," in SDI Publication No. 31, and with the following:

1. Prime-Painted Steel Sheet: ASTM A 1008/A 1008M, Structural Steel (SS), Grade 33 minimum, shop primed with manufacturer's standard baked-on, rust-inhibitive primer.

a. Color: Gray.

2. Deck Profile: Type B.
3. Profile Depth: 1-1/2 inches.
4. Design Uncoated-Steel Thickness: 22 gage.
5. Span Condition: Triple span or more.

6. Side Laps: Overlapped.

2.3 COMPOSITE FLOOR DECK

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Canam United States; Canam Group Inc.
2. CMC Joist & Deck.
3. Consolidated Systems, Inc.; Metal Dek Group.
4. Epic Metals Corporation.
5. Nucor Corp.; Vulcraft Group.
6. Verco Manufacturing Co.
7. Wheeling Corrugating Company; Div. of Wheeling-Pittsburgh Steel Corporation.

B. Composite Floor Deck: Fabricate panels, with integrally embossed or raised pattern ribs and interlocking side laps, to comply with "SDI Specifications and Commentary for Composite Steel Floor Deck," in SDI Publication No. 31, with the minimum section properties indicated, and with the following:

1. Prime-Painted Steel Sheet: ASTM A 1008/A 1008M, Structural Steel (SS), minimum, with top surface phosphatized and unpainted and underside surface shop primed with manufacturers' standard gray baked-on, rust-inhibitive primer.
2. Profile Depth: 1-1/2 inches.
3. Design Uncoated-Steel Thickness: 20 gage.
4. Span Condition: Triple span or more.

2.4 ACCESSORIES

A. General: Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.

B. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws.

C. Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 10 minimum diameter.

D. Flexible Closure Strips: Vulcanized, closed-cell, synthetic rubber.

E. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi, not less than 0.0359-inch design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.

F. Pour Stops and Girder Fillers: Steel sheet, minimum yield strength of 33,000 psi, of same material and finish as deck, and of thickness and profile **[indicated]** **[recommended by SDI Publication No. 31 for overhang and slab depth]**.

G. Column Closures, End Closures, Z-Closures, and Cover Plates: Steel sheet, of same material, finish, and thickness as deck unless otherwise indicated.

H. Piercing Hanger Tabs: Piercing steel sheet hanger attachment devices for use with floor deck.

I. Recessed Sump Pans: Single-piece steel sheet, 0.0747 inch thick, of same material and finish as deck, with 3-inch- wide flanges and level recessed pans of 1-1/2-inch minimum depth. For drains, cut holes in the field.

J. Repair Paint: Manufacturer's standard rust-inhibitive primer of same color as primer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 31, manufacturer's written instructions, and requirements in this Section.

B. Install temporary shoring before placing deck panels if required to meet deflection limitations.

C. Locate deck bundles to prevent overloading of supporting members.

D. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks.

E. Place deck panels flat and square and fasten to supporting frame without warp or deflection.

F. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to deck.

G. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of deck, and support of other work.

H. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used for correcting welding work.

I. Mechanical fasteners may be used in lieu of welding to fasten deck. Locate mechanical fasteners and install according to deck manufacturer's written instructions.

3.3 ROOF-DECK INSTALLATION

A. Fasten roof-deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated or arc seam welds with an equal perimeter that is not less than 1-1/2 inches long, and as follows:

1. Weld Diameter: 5/8 inch, nominal.
2. Weld Spacing: Weld edge and interior ribs of deck units with a minimum of two welds per deck unit at each support. Space welds as indicated.

B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals of 1 fastener per span, and as follows:

1. Mechanically fasten with self-drilling, No. 10 diameter or larger, carbon-steel screws.

C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches, with end joints as follows:

1. End Joints: Lapped 2 inches minimum.

D. Roof Sump Pans and Sump Plates: Install over openings provided in roof deck and mechanically fasten flanges to top of deck. Space mechanical fasteners not more than 12 inches apart with at least one fastener at each corner.

3.4 FLOOR-DECK INSTALLATION

A. Fasten floor-deck panels to steel supporting members by power fastener and as follows:

1. Fastener: Hilti X-ENP-19 or equal.
2. Fastener Spacing: Space and locate fasteners as indicated.

B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals of 3 per span, and as follows:

1. Mechanically fasten with self-drilling, No. 10 diameter or larger, carbon-steel screws.

C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches, with end joints as follows:

1. End Joints: Lapped.

D. Pour Stops and Girder Fillers: Weld steel sheet pour stops and girder fillers to supporting structure according to SDI recommendations unless otherwise indicated.

E. Floor-Deck Closures: Weld steel sheet column closures, cell closures, and Z-closures to deck, according to SDI recommendations, to provide tight-fitting closures at open ends of ribs and sides of deck.

3.5 FIELD QUALITY CONTROL

A. Refer to Special Inspections.

3.6 PROTECTION

A. Repair Painting: Wire brush and clean rust spots, welds, and abraded areas on both surfaces of prime-painted deck immediately after installation, and apply repair paint.

1. Apply repair paint, of same color as adjacent shop-primed deck, to bottom surfaces of deck exposed to view.

B. Provide final protection and maintain conditions to ensure that steel deck is without damage or deterioration at time of Substantial Completion.

END OF SECTION 053100

SECTION 072616 - BELOW-GRADE VAPOR RETARDERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Vapor retarders under slabs-on-grade.

1.3 DEFINITIONS

A. Vapor Retarder: Material with a water vapor transmission rating of not over 0.04g per square foot per hour.

B. Vapor Barrier: Material with a water vapor transmission rating of not over 0.015g per square foot per hour.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Verification: 12 inch square units for each type of vapor retarder, vapor barrier, or air barrier indicated.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers and Products: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following products listed in Part 2 of this Section.

2.2 VAPOR RETARDERS FOR UNDER SLABS

A. Vapor Retarder with extremely low permeance for critically sensitive, low permeance floor coverings such as rubber, vinyl, urethane, epoxy and methyl methacrylate, as well as linoleum and wood, having the following qualities:

1.	Minimum Permeance:	ASTM E-96, not greater than 0.01 perms.
2.	Tensile Strength:	ASTM E154 or D638, Class A – over 45 lbf/in.
3.	Puncture Resistance:	ASTM E-154, Class B – over 1700 grams.
4.	Water Vapor Barrier:	ASTM E-1745, meets or exceeds Class B.
5.	Thickness of Barrier (Plastic)	ACI 302.1R-96, not less than 15 mils.

B. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

1. Stego Wrap, 15 mil thick vapor retarder by Stego Industries LLC, (877) 464-7834.
2. Vaporguard by Reef Industries.
3. Sealtight Perminator 15 mil Underslab Vapor-Mat by W.R. Meadows, Inc.
4. Viper VaporCheck 16 by Insulation Solutions, Inc.

C. Vapor-Retarder Tape (for slabs): Stego Warp red polyethylene tape or tape as recommended by the manufacturer.

D. Double-Stick Edge Tape: Preformed 1-1/2" wide two-sided adhesive. Available products include "Fab Tape" by Reef Industries.

E. Expansion Joint Filler: Installer may elect to use Deck-O-Foam Expansion Joint Filler by WR Meadows or equal. Foam expansion joint filler with pre-scored removable strip for installation of joint sealant.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for Sections in which substrates and related work are specified and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of substances harmful to vapor retarders, including removing projections capable of puncturing vapor retarders, or of interfering with attachment.

B. Do not install carpet over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive and concrete slabs have pH range recommended by carpet manufacturer.

3.3 INSTALLATION, GENERAL

A. Comply with manufacturer's written instructions applicable to products and application indicated.

B. Extend retarders in thickness indicated to envelop entire area to be covered. Cut and fit tightly around obstructions. Remove projections that interfere with placement.

3.4 INSTALLATION OF UNDER-SLAB VAPOR RETARDERS

A. Moisture vapor retarder system shall be installed at all interior floor slabs and as otherwise indicated in the drawings in strict accordance with the manufacturer's printed instructions and as follows:

1. Snap chalk line along inside perimeter of foundation walls at top of slab elevation.
2. Without wetting, clean a 3" wide band on the surface of the concrete below the chalk line at approximately mid-slab height. Remove dirt, residual form release, or other bond inhibiting surface contaminates. Grind smooth any surface projections within the band.
3. While removing the contact paper on the backside, firmly press 2" wide double-stick edge tape onto wall, parallel to the chalk line on the cleaned band at mid-slab elevation.
4. Remove contact paper on the face side.
5. Apply a 12" wide strip of vapor retarder covering only the bottom 1" of contact surface on the edge tape. Cut, fit, and seal corner details with vapor retarder seaming tape.
6. Align top edge of Deck-O-Foam expansion joint material to chalk line, and press material onto remaining 1" of exposed perimeter strip adhesive.
7. Roll out vapor retarder material, overlapping edge rolls and all seams by 3". Tape all seams with vapor retarder seaming tape.
8. All tears, punctures, etc. to be repaired and taped as required to maintain the watertight integrity of the vapor retarder system.

3.5 PROTECTION

A. Protect installed vapor retarders from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where vapor retarders are subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION 072616

SECTION 26 00 00

GENERAL REQUIREMENTS FOR ELECTRICAL WORK

PART ONE: GENERAL

1.1 General Requirements

1.1.1 Definition of Work

Conditions of the Contract, Specifications, Change Orders, and Addenda apply to work of this section.

1.1.2 Provisions

As used in this section, "provide" means "furnish and install", "furnish" means "to purchase and deliver to the project site complete with every necessary appurtenance and support and to store in a secure area in accordance with manufacturers instructions", and "install" means "to unload at the delivery point at the site or retrieve from storage, move to point of installation and perform every operation necessary to establish secure mounting and correct operation at the proper location in the project".

1.1.3 Existing Site Conditions – Responsibilities Prior to Bid

Before submitting a bid, the Electrical Subcontractor shall visit and carefully examine site to identify existing conditions and difficulties that may affect the work of this Section. No extra payment will be allowed for additional work caused by unfamiliarity with site conditions.

1.1.4 Existing Site Conditions – Responsibilities Prior to Starting Work

Before starting work in a particular area of the project, the Electrical Subcontractor shall examine the conditions under which work must be performed including preparatory work performed under other Sections of the Contract, or by the Owner and report conditions which might adversely affect the work in writing to the Engineer. Do not proceed with work until defects have been corrected and conditions are satisfactory. Commencement of work shall be construed as complete acceptance of existing conditions and preparatory work.

1.2 Applicable Codes and Standards

1.2.1 Work

All work shall be in accordance with the laws, rules, codes, and regulations set forth by Local, State, and Federal authorities having jurisdiction. All products and materials shall be manufactured, installed and tested as specified, but not limited to the latest accepted edition of the following codes, standards and regulations:

NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Act
NEC	National Electrical Code (NFPA 70)
UL	Underwriters Laboratory
NESC	National Electrical Safety Code
FM	Factory Mutual Association

MBC	Maine State Building Code
IECC	International Energy Conservation Code - 2009
Local AHJ	Local and State building, electrical, fire and health department and public safety codes agencies.

1.2.2 Code Conflicts

When requirements cited in this Paragraph conflict with each other or with Contract Documents, the most stringent requirements shall govern conduct of work. The Engineer may relax this requirement when such relaxation does not violate the ruling of authorities that have jurisdiction. Approval for such relaxation shall be obtained in writing. Should the Electrical Subcontractor perform any work that does not comply with the requirements of the applicable building codes, state laws, and industry standards, he shall bear all costs arising in correcting these deficiencies.

1.3 Contract Documents

1.3.1 Work to be Provided

It is the intent of this Performance Specification to define the equipment and materials for installation at Allagash Brewing Company, 50 Industrial Way, Portland, Maine for the new addition that is being installed at their existing plant. If required by the City of Portland or other Authority having Jurisdiction, this work shall include the design services of an Electrical Engineer Licensed in the State of Maine to provide stamped electrical design documents.

1.3.2 Coordination of Work

The General Contractor shall coordinate the work of all trades including that of the electrical contractor, with all other subcontractors to determine whether there will be any interference with the electrical work. If the Electrical Subcontractor fails to check with the General Contractor and the electrical work is later found to interfere with the work of other subcontractors, then he shall make necessary changes, without additional cost to the Owner, to eliminate such interference.

1.3.3 Intent of Design

This performance specification is not intended to indicate and specify each component required, but does require that the components and materials be provided for a complete and operational installation.

1.3.4 Discrepancies in Documents

Each bidder shall be responsible for examining the specifications carefully before submitting his bid, with particular attention to errors, omissions, conflicts with provisions of laws and codes imposed by authorities having jurisdiction, conflicts between portions of specifications, and ambiguous definition of the extent of coverage in the contract. Any such discrepancy discovered shall be brought to the immediate attention of the Engineer for correction. Should any of the aforementioned errors, omissions, conflicts or ambiguities exist in the specification, the Electrical Subcontractor shall have the same explained and adjusted in writing before signing the contract or proceeding with work. Failure to notify the Engineer in writing of such irregularities prior to signing the Contract will cause the Engineer's interpretation of the Contract Documents to be final. No additional compensation will be approved because of discrepancies thus resolved.

1.3.5 Conflicts with Codes and Regulations

The specifications are intended to comply with all the above mentioned Codes, Rules and Regulations. If discrepancies occur, the Electrical Subcontractor shall immediately notify the Engineer in writing of said discrepancies and apply for an interpretation and, unless and interpretation is offered in writing by the Engineer prior to the execution of the contract, the applicable rules and regulations shall be complied with as a part of the contract.

PART TWO: SCOPE OF WORK

2.1 General Requirements

2.1.1 General Scope

The work to be accomplished under these specifications includes providing all labor, materials, equipment, consumable items, supervision, administrative tasks, tests and documentation required to install complete and fully operational electrical systems as described.

2.1.2 Administrative Responsibilities

The Electrical Subcontractor shall file plans, obtain permits and licenses, pay fees and obtain necessary inspections and approvals from authorities that have jurisdiction, as required to perform work in accordance with all legal requirements.

2.1.3 Coordination with Local Utility Companies

The Electrical Subcontractor shall coordinate with the local Power, Telephone, and Cable System Utilities, if required. The Electrical Subcontractor shall be responsible for paying any Utility charges and excess costs. The Electrical Subcontractor shall perform all work in accordance with utility company requirements.

2.2 Work to be Provided Under this Division

2.2.1 General Scope

The Work shall be complete from point of service to each outlet or device with all accessory construction and materials required to make each item of equipment or system complete and ready for operation. The work shall include but not be limited to the following. The Electrical Subcontractor shall provide:

A. **Service Entrance:** The intent is to use the existing service to the building and install new breakers in the existing 3000 Amp service panel.

B. **Grounding System:** Provide all equipment and wiring to connect new feeders, equipment and other systems as required by the National Electrical Code to the existing building grounding system.

C. **Temporary Power:** Temporary power shall be obtained from the existing electrical service to the building.

D. **Power Distribution Systems:** Intent is to provide additional equipment to the existing power distribution systems including panelboards, overcurrent devices, raceway, cable and wire.

E. **Feeder and Branch Circuit Wiring:** Provide feeder and branch circuits and devices for power to equipment and convenience receptacles. This includes branch wiring to system control panels furnished under other sections.

F. **Motor Circuit Wiring:** Provide all motor wiring, safety disconnects, and motor starters unless integral with equipment.

G. **Interior Lighting Systems:** Provide complete interior lighting system including normal and emergency fixtures, exit signs, lamps, controls, trim and accessories.

H. **Telephone and Data Systems:** Provide complete voice/data system conduits, Cat 5e wiring and patch panel to be installed in the existing data room.

I. **Security Systems:** Furnish conduits and power for security equipment as shown on the plans.

J. **Cable Television Systems:** Provide empty conduit for CATV outlets.

K. **Control Wiring:** Provide control wiring not provided by Division 15000.

L. **Supports and Fittings:** Provide all support material and hardware for raceway, cable tray and electrical equipment.

M. **Terminations:** Provide terminations of all cable and wire unless otherwise noted.

N. **Penetrations:** Provide all building wall, floor and roof penetrations for raceway and cable tray where not provided by the General Contractor.

O. **Other Items Furnished By Others:** Install the following equipment furnished by others:

1. Motors

2. Control Panels

3. Wiring to magnetic door holders.

2.3 Work not Included Under this Division

2.3.1 Related Work Included in Other Sections

The following work is not included in this Section and shall be performed under other sections:

A. Excavation and backfill.

B. Concrete work, including concrete housekeeping pads and other pads and blocks for vibrating and rotating equipment.

C. Cutting and patching of masonry, concrete, tile, and other parts of structure, with the exception of drilling for hangers and providing holes and openings in metal decks. The Electrical Subcontractor shall identify locations of penetrations, excavations, structural supports, etc. required for the completion of the Work of this Section to the General Contractor in a timely manner.

D. Installation of access panels in ceilings and wall construction.

E. Painting, except as specified herein.

F. Temporary water, heat, gas and sanitary facilities for use during construction and testing.

G. Outdoor air intake or exhaust louvers.

H. Cathodic anti-corrosion protection for buried piping and tanks.

I. Control wiring specifically indicated as part of Division 15.

2.4 General Equipment and Materials Requirements

2.4.1 General Requirements

All equipment and materials shall be new and of the quality specified. All materials shall be free from defects at the time of installation. Materials or equipment damaged in shipment or otherwise damaged during construction shall not be repaired at the jobsite, but shall be replaced with new materials.

2.4.2 Representation of Equipment

All equipment installed on this project shall have local representation, local factory authorized service and a local stock of repair parts.

2.4.3 Warranties

No equipment or material shall be installed in such a manner as to void a manufacturer's warranty. The Electrical Subcontractor shall notify the Engineer of any discrepancies between the Contract Documents and manufacturer's recommendations prior to execution of the work. Refer to Division 1, General Requirements for Warranty Requirements.

2.5 Shop Drawings

2.5.1 General Requirements

After the Contract is awarded, but prior to proceeding with the Work, the Electrical Subcontractor shall obtain complete shop drawings, product data and samples from manufacturers, suppliers, vendors, and Subcontractors for all materials and equipment specified herein, and submit data and details of such materials and equipment for review by the Engineer. Submission of such items shall follow the guidelines set in the General Section of the Specification Document. Prior to submission of the shop drawings, product data and samples to the Engineer, the Electrical Subcontractor shall review and certify that the shop drawings, product data and samples are in compliance with the Contract Documents. Further, the Electrical Subcontractor shall check all materials and equipment after their arrival on the jobsite and verify their compliance with the Contract Documents. A minimum period of ten working days, exclusive of transmittal time will be required in the Engineer's office each time shop drawings, product data and/or samples are submitted or resubmitted for review. This time period shall be considered by the Electrical Subcontractor when scheduling his Work.

2.5.2 Information to be included in Submittal

The shop drawing submittal shall include all data necessary for interpretation as well as manufacturer's name and catalog number. Sizes, capacities, colors, etc., specified on the drawings shall be specifically noted or marked on the shop drawings.

2.5.3 Information Not to be included in Submittal

Submittals shall contain only information specific to systems, equipment and materials required by Contract Documents for this Project. Do not submit catalogs that describe products, models, options or accessories, other than those required, unless irrelevant information is marked out or unless relevant information is highlighted clearly. Marks on submittals, whether by Contractor, Subcontractor, manufacturer, etc., shall not be made in red ink. Red is reserved for review process.

2.5.4 Responsibility of Submitted Equipment

The Engineer's review of such drawings shall not relieve the Subcontractor of responsibility for deviations from the Contract Specifications, unless he has in writing called the attention of the Engineer to such deviations at the time of the submission. The Engineer's review shall not relieve the Electrical Subcontractor from responsibility for errors or omissions in such drawings.

2.5.5 Proposal of Other Equipment

If the Electrical Subcontractor proposes an item of equipment other than that specified which requires any redesign of the wiring or any other part of the mechanical, electrical or architectural layout, the required changes shall be made at the expense of the trade furnishing the changed equipment at no cost to the Owner.

2.5.6 Substitution of Equipment of Equal Quality

Manufacturer's names are listed herein and on the drawings to establish a standard for quality and design. Where one manufacturer's name is mentioned, products of other manufacturers will be acceptable if, in the opinion of the Engineer the substitute material is of quality equal to or better than that of the material specified. Where two or more manufacturer's names are specified, material shall be by one of the named manufacturers only.

2.6 Equipment Manuals

2.6.1 General Requirements

The Electrical Subcontractor shall provide three copies of operations and maintenance manuals for all items. These manuals shall be packaged with additional information including equipment cut sheets and as-built wiring diagrams. Manuals shall contain names and addresses of manufacturers and local representatives who stock or furnish repair parts for items or equipment.

2.6.2 Schedule

Deliver manuals no less than 30 days prior to acceptance of equipment to permit Owner's personnel to become familiar with equipment and operation prior to acceptance.

2.6.3 Instruction of Owner's Operating Personnel

Upon completion of installation or when Owner accepts portions of building and equipment for operational use, instruct the Owner's operating personnel in any and all parts of various systems. Such

instructions shall cover period of control such as will take mechanical equipment through complete cycle. Make adjustments under actual operating conditions.

2.7 Record Drawings

2.7.1 General Requirements

As work progresses, and for duration of the Contract, the Electrical Subcontractor shall maintain a complete and separate set of prints of Contract Drawings at job site at all times and record work completed and all changes from original Contract. Drawings shall clearly and accurately include work installed as a modification or added to the original design. At completion of work and prior to final request for payment, the Electrical Subcontractor shall submit a complete set of reproducible record drawings showing all systems as actually installed.

2.8 Equipment Specifications

2.8.1 Panelboards

Panelboards, including lighting and appliance panelboards and power distribution panelboards, shall be of the sizes, rating and arrangement shown on the attached sketch. Panelboards shall be provided complete with all overcurrent devices, accessories and trim. All panelboards shall be provided with safety barriers for dead front construction. The required short circuit ratings of assembled panelboards are shown on the Drawings. The short circuit rating of every overcurrent device in the panel shall meet or exceed the panel rating. Unless otherwise noted on the Drawings, series rated combinations will not be permitted.

A. Enclosures

Boxes shall be code gauge galvanized sheet steel. Trim shall be code gauge steel, ANSI-61 gray finish with stainless steel flush type lock/latch handle. All locks shall be keyed alike. Trim for surface mounted panels shall be door-in-door construction such that the gutter space may be exposed by a hinged door. Directory frames shall be metal frame with plastic covers.

B. Bus Work

All bus work shall be 1000 amp/sq. in. copper or 750 amp/sq. in. aluminum. Unless otherwise noted on the drawings, neutral busses shall be 100% rated with adequate connections for all outgoing neutral conductors. Panelboards shall be provided with copper or aluminum ground busses.

C. Circuit Breakers

Overcurrent devices shall be trip-free molded case, bolt-on, thermal magnetic circuit breakers. Main circuit breakers shall be individually mounted and bolted to bus assembly. Back-fed branch mounted circuit breakers are prohibited. Front faces of all circuit breakers shall be flush. Trip indication shall be clearly shown by the handle position between the ON and OFF positions. All connections shall be rated for 75°C copper conductors.

2.8.2 Locations

A. The new panelboards for the retail space and brewhouse lighting and HVAC shall be located on the new equipment storage mezzanine.

B. The new panelboards for the new tank bunker spaces shall be in the new tank bunker.

2.8.2 Grounding System:

A. A green equipment grounding conductor shall be run with each branch circuit. Grounding conductors shall be soft drawn bare copper.

B. The new addition footing steel shall be connected to the existing Grounding Electrode system at a minimum of one location. This connection shall be by isothermic weld at the footing.

2.8.3 Feeder and Branch Circuit Wiring:

A. Provide feeder and branch circuits and devices for power to equipment and convenience receptacles. This includes branch wiring to system control panels furnished under other sections.

B. All circuits feeding panels, circuit feeders and circuit wiring shall be copper, minimum size #12 AWG. Conductors shall be 600V rated with THHN/THWN insulation.

D. All exposed wiring shall be in PVC conduit. Wiring above acoustic ceiling tiles may be in conduit or as part of an MC cable assembly.

E. PVC conduits shall be properly supported with hangers or clips at a spacing not to exceed 10 feet. Minimum conduit size is ¾".

F. Flexible metal conduit shall be used for connections to vibrating equipment.

G. Liquid-Tight flexible metal conduit shall be used for connections to vibrating equipment in wet or damp locations. Liquid tight shall not penetrate the roof or exterior walls and shall not be used in lengths exceeding 36".

H. All conduits or penetrations in fire rated walls shall be furnished with fire stopping material to maintain the integrity of the rating.

I. All conduits penetrating the roof or exterior walls shall be furnished with watertight seals.

2.8.4 Receptacle Wiring:

A. Convenience Receptacles: Receptacles shall be commercial specification grade in the retail space and industrial heavy-duty industrial grade in the Brewhouse; grounding type, NEMA5-20R, side wired as manufactured by Leviton, Pass and Seymour, or equal.

B. Device coverplates shall be brushed stainless steel in all areas.

C. For the purposes of this design the following receptacles shall be carried in the bid and located as directed by the Owner during construction:

- New Brewhouse: (10) – 120V, double-duplex, GFCI receptacles with while-in use waterproof receptacle covers, these receptacles shall be centered on each 20' wall section and equally distributed among (5) 20A, 1P circuits. Also in the brewhouse shall be provisions for a 60A, 3-phase, 480V (confirm size and location with owner prior to installation) receptacle or disconnect for connection to a pump skid.
- Future Retail Space: Spare circuits in the panelboards shall be dedicated for future build-out of the retail space.
- A GFCI receptacle shall be installed in the Men's and Women's Rooms. Mounted in the vicinity of the sink at 42" Above Finished Floor (AFF).
- A standard convenience receptacle mounted 18" AFF shall be installed in the stairwell.
- A GFCI receptacle with weatherproof while-in-use cover shall be installed outdoors one the wall in the vicinity of all exterior doors.
- A 120V, double-duplex, GFCI receptacle with while-in use waterproof receptacle cover shall be installed in the tank bunker. Also a 208V, three-phase receptacle or switch shall be installed in this space in a location as directed by the Owner.

2.8.5 Motor Circuit Wiring: Provide all motor wiring, safety disconnects, and motor starters unless integral with equipment.

A. Safety Switches: Shall be fused or non-fused as required by code. Construction shall be heavy-duty horsepower rated type. Enclosure shall be NEMA 1 where installed indoors and Nema 3R where installed outdoors.

B. Manual motor starters: Shall be Single phase fractional HP manual motor starters shall be toggle operated, enclosed, one or two pole switches as required by the installation. The enclosure shall be NEMA 1 for indoor locations and NEMA 4 for outdoor, wet and damp locations. A handle guard shall be provided to allow the toggle operator to be padlocked in the OFF position. Starters shall be provided with trip free melting alloy thermal overloads.

C. Mechanical equipment wiring:
   - In the brewhouse and retail space areas shall be fed from circuits in panel LPA for 480 or 277 Volts and PPA for 208 or 120 Volts. Contractor shall furnish breakers as required by such equipment.
   - In the tank bunker shall be fed from panel LPB for 480 or 277 Volts and PPB for 208 or 120 Volts. Contractor shall furnish breakers as required by such equipment.
   - In all areas, GFCI convenience receptacles shall be provided in proximity to the mechanical equipment as required by the NEC. If located outdoors these shall be provided with weatherproof while-in-use covers.

2.8.6 Lighting Systems:

A. Light fixtures shall be provided with housings, trims, ballasts, lamps, lamp holders, sockets, reflectors, wiring and other components required, as a factory-assembled unit for a complete installation. Provide electrical wiring within light fixtures suitable for connecting to branch circuit wiring in accordance with N.E.C. Article 410, Paragraph 25. Provide fluorescent fixtures of sizes, types and ratings indicated and specified in the Lighting Fixture Schedule on the Contract Drawings.

B. Contractor shall communicate with and provide all rebate worksheets and corresponding equipment cut sheets to Efficiency Maine for approval prior to ordering the fixtures to ensure that the Owner can receive the full value of the rebate for providing high efficiency fixtures and approved lamp/ballast combinations.

C. Occupancy Sensors: Occupancy sensors of the type and model specified on the drawings shall be provided, installed and wired into the local lighting circuit in the area that the sensors are installed. The engineer will consider equipment of another equal manufacturer, where suitable coverage can be documented.

- Passive Infrared Wall-Mount Fixtures: Wall mounted occupancy sensors shall be suitable for dual circuit operation as specified on the contract drawings.
- Ultrasonic/Infrared Ceiling-Mounted Sensors: Ceiling mounted occupancy sensors shall be self-calibrating type as specified on the contract drawings.
- Power Packs: Power packs shall be provided as required for each room provided with occupancy sensors as needed.
- Slave Relay Packs: Slave relay packs shall be provided in rooms with more than one lighting circuit controlled by the occupancy sensor.
- Installation Requirements: Provide all miscellaneous equipment and wiring for a complete installation.

D. Fixture Types:

- Brewhouse high bay fixtures: 4 foot long, fluorescent T5HO six-lamp, high bay with (1)-2 lamp ballast and (1)-4-lamp ballast, chain hung at the bottom of the joists. Match lamp color to the adjacent area. Fixture shall be as manufactured by Columbia, Versabay model, LHV4-654-GW, 277V ballasts. Fixtures shall be spaced 20' on center and wired to circuits in panel LPA.
- Storage Mezzanine fixtures: 4 foot long, fluorescent T5HO four-lamp, high bay with (2)-2 lamp ballasts, chain hung at the bottom of the joists. Match lamp color to the adjacent area. Fixture shall be as manufactured by Columbia, Versabay model, LHV4-454-GW, 277V ballasts. Fixtures shall be spaced 20' on center and wired to circuits in panel LPA.
- Tank Bunker fixtures: Shall be 4-foot long, fluorescent Super T8 two-lamp, enclosed and gasketed fiberglass fixtures. Fixture shall be as manufactured by Columbia, model LUN4-232E-U, 277V ballasts. Fixtures shall be spaced 12' on center and wired to circuits in panel LPB.
- Exterior Light Fixtures: Exterior HID Wallpacks to match existing shall be placed (1) each on the south and east walls. Confirm the existing lighting fixture type in field. Fixtures shall be connected to existing lighting control system or furnish with integral photocell for lighting control.

E. Lighting Control Intent:

- Fixtures shall be switched on by switch, off by switch or occupancy sensor. Fixtures in the Brewhouse area and Storage Mezzanine shall be furnished with three-way switches at each end of the building such that one set of switches control the 4-lamp ballasts and

the other set of switches control the 2-lamp ballasts (or separately control each 2-lamp ballast in mezzanine area).

- A daylight sensor shall be located in both the brewhouse and storage mezzanine spaces, such that when the ambient lighting in the space exceeds 60FC, 2-lamps per fixture in theat space are switched off. When lighting drops below 30FC in the area the lamps shall switch on.
- Fixtures in the Tank bunker shall be by manual toggle switch at the entry.

F. Emergency Lighting Fixtures and Emergency Exit Signs:

- Shall be located as shown on the architectural plans. Battery operated emergency lights mounted near exterior doors shall also be furnished with remote weatherproof exterior heads to be powered by the exit sign. These sources shall be furnished with enough excess capacity to power all lighting heads including the exterior lighting heads for a minimum of 90 minutes upon loss of power.
- Emergency light shall be as manufactured by Dual-Lite, model LZ20, with 5W Halogen lamps, or equal.
- Exit signs shall be as manufactured by Dual-Lite, model LXURWE, LED type, or equal.
- Remote lighting heads shall be as manufactured by Dual-Lite, model OCR-SZ0605, 5W Halogen lamps, or equal.

2.8.6 Fire Alarm Systems:

A. Fire Alarm devices shall be placed as shown on the architectural plans. Candela ratings of strobes shall be sized as per NFPA 72 requirements.

B. Coordinate all fire alarm system devices and wiring with Norris, Inc., (800) 370-3473. All devices shall be complaint for use with the existing Notifier SFP-1024 Fire Alarm Control Panel. Provide all equipment, wiring, conduits, boxes and programming for a complete and operable installation.

C. The Electrical Contractor shall also be responsible for coordinating all work with the City Of Portland Fire Department and providing all equipment and devices that may be required for City Approval, whether shown on the architectural plans or not.

PART THREE: EXECUTION

3.1 Wiring Methods

3.1.1 Requirements

Unless otherwise noted all wiring shall be installed in raceway as follows:

A. **Power Distribution Indoors:** Unless otherwise noted, all other power distribution wiring including feeders and branch circuits shall be installed in electrical metallic tubing (EMT) when exposed and MC Cable when concealed.

B. **Telephone & Data:** Shall be installed in EMT from the device box to an accessible area above the hung ceiling. Cables installed above the hung ceiling shall be properly installed in a neat and orderly manner on j-hooks.

C. **Cable Television (CATV):** Shall be installed in EMT from the device box to an accessible area above the hung ceiling. Cables installed above the hung ceiling shall be properly installed in a neat and orderly manner on j-hooks.

D. **Fire Alarm Wiring:** Shall be installed in MC Cable assemblies installed in a neat and orderly manner on j-hooks or cable tray.

3.2 Equipment Arrangement and Access

3.2.1 Location of Equipment

Locate all equipment which must be serviced, operated or maintained in fully accessible positions. Minor deviations from the drawings may be made to allow for better accessibility at no additional cost to the Owner, but changes shall not be made without review by the Engineer. Minimum clearances in front of or around equipment shall conform to the latest applicable code requirements.

3.2.1 Arrangement of Equipment

The size of equipment shown on the drawings is based on the dimensions of a particular manufacturer. Where other manufacturers are acceptable, it is the responsibility of the Electrical Subcontractor to determine if the equipment he proposed to furnish will fit the space available. Layout drawings shall be prepared by the Subcontractor when required by the Engineer or Owner to indicate a suitable arrangement.

3.3 Equipment Labeling

3.3.1 Panelboards

All panelboards, indoor transformers, cabinets and other specified equipment shall be labeled with engraved laminated plastic plates, minimum 3/4" high with 3/8" engraved letters. Punch tapes with mastic backings are not acceptable.

3.3.2 Starters and Disconnect Switches

All starters, disconnect switches and other specified equipment shall be marked with engraved laminated plastic plates, minimum 1/2" high with 1/4" engraved letters. Where individual switches or circuit breakers in power or distribution panelboards do not have cardholders, they shall be marked with 1/2" high labels.

3.3.3 Empty Conduits

All empty conduits shall have labels tied to the pull string at each end of each empty conduit, marked as to identification of each end. Junction boxes with circuits provided for future use shall be labeled with appropriate circuit designation.

3.4.4 Panelboard Directories

Cardholders for panelboards shall be filled out with typewritten identification of each circuit, except that the word "spare" shall be written in soft pencil to identify all circuit breakers installed that are not used.

3.4 Temporary Light and Power

3.4.1 Requirements

The Electrical Subcontractor shall provide a temporary service to the space in the building as required to provide electric light and power while the space is under construction and until the permanent feeders have been installed, tested and accepted by the Owner. The Electrical Subcontractor shall furnish, install and remove the temporary electrical power and lighting systems and pay for all labor, materials, and equipment required therefore. All such temporary electrical work shall meet the requirements of the National Electrical Code, the local utility company, and OSHA. The Electrical Subcontractor shall furnish all lamps, both initial and replacement, used for the temporary lighting system.

3.4.2 Equipment Provided by Others

The General Contractor and all subcontractors, individually, shall furnish all extension cords, portable lights and lamps therefore, sockets, motors, and accessories as required for their work.

3.4.3 Reimbursable Items

The General Contractor and all subcontractors shall reimburse the Electrical Subcontractor for the following:

A. Any temporary wiring of a special nature, other than that specified above, required for their work.

B. Any temporary wiring of construction offices and buildings used by them, other than the office of the General Contractor and the Clerk of the Works.

3.4.4 Removal of Equipment and Wiring

All temporary wiring, service equipment, and accessories thereto shall be removed by the Electrical Subcontractor when directed by the General Contractor.

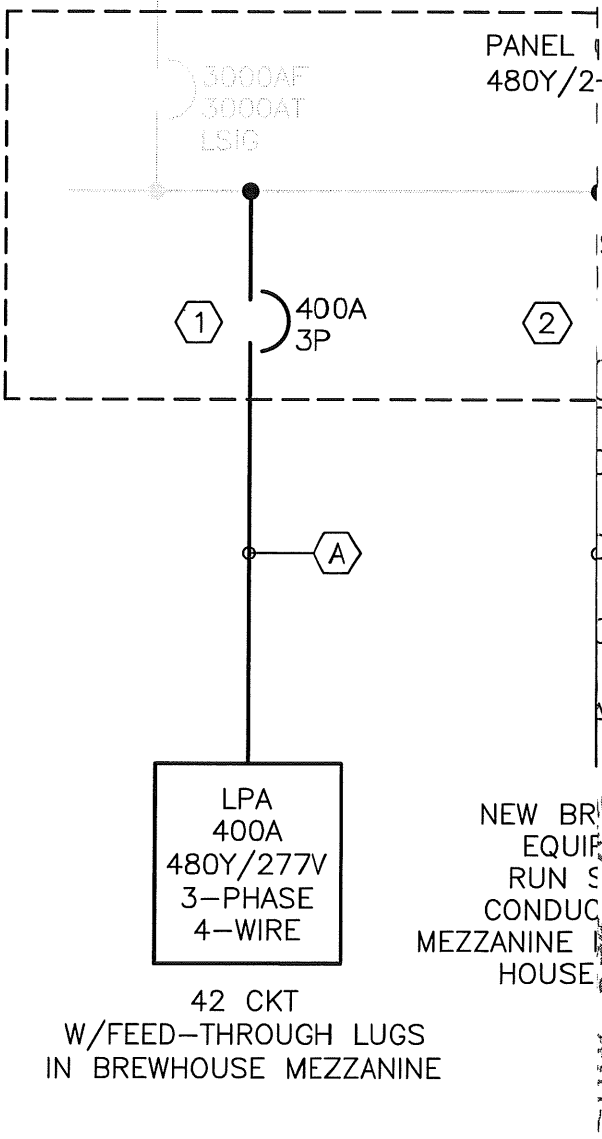
ATTACHMENT: SKE-1 – Electrical One-Line Drawing

END OF SECTION 26 00 00

KEY

1. NEW S[illegible]OR ROOM LAYOUTS. RETAIL SPACE LIGHTING [illegible]BY OTHERS. PROVIDE 6 SPARE 20A, 1P [illegible]URE.
2. NEW S[illegible]D TO MATCH EXISTING EQUIPMENT.
3. NEW S[illegible] SPACE TO BE TRAINED ALONG THE WEST [illegible]OWING EXISTING TRAPEZE TYPE CONDUIT [illegible]S SHALL NOT BE PERMITTED.
4. NEW S[illegible]ER SHALL FOLLOW THE NORTH WALL
5. [illegible]NG IN EXISTING TANK BUNKER SHALL [illegible]PANEL [illegible]RED OVER TO NEW PANEL LPB AS PART [illegible]480Y/2[illegible]IS SCOPE. CONFIRM IN FIELD THAT [illegible]NG BALLASTS ARE UNIVERSAL VOLTAGE [illegible] PROVIDE NEW WIRING AND CONDUIT AS [illegible]RED.

[illegible]SH ALL BREAKERS IN NEW PANELS AS [illegible]RED BY MECHANICAL CONTRACTOR.



[illegible]G KEY:

- [illegible]0 KCM CU & #3GND, 4"C.
- [illegible]0 KCM CU & #4GND, 3"C
- [illegible]0 AWG & #4GND, 2-1/2"C.
- [illegible]AWG & #6GND, 1-1/2"C.

NEW BR[illegible]
EQUIP[illegible]
RUN [illegible]
CONDUC[illegible]
MEZZANINE [illegible]
HOUSE[illegible]

[illegible] OF MA[illegible]
[illegible]OTHY D.
[illegible]TTHEWS
[illegible]o. 9139
[illegible]GISTERED
[illegible]ONAL ENGINEER

1 ELECTRICAL

SCALE: NOT TO SCAL[illegible]

SWIFTCURRENT
Engineering Services
10 Forest Falls Dr., Unit 8B
Yarmouth, ME 04096
Tel: (207) 847-9280

ALLAGASH BREWING CO. PORTLAND, ME	
SCALE: AS NOTED	
DATE: 09-10-2012	
SKE1.0	

ONE Solution - not blue or pulsey - not READY for comments 7/11/12
comments by e-MAIL - 8/2/12
final by e-mail - 8/24/12

City of Portland
Development Review Application
Planning Division Transmittal form

Application Number: 2012-539 **Application Date:** 7/9/2012 12:00:00 AM
CBL: 326-B-8-9-10
Project Name: Allagash Brewery Expansion
Address: 50 Industrial Way

Project Description: Building Additions, Parking Lot and Stormwater Mgmt. Pond
Zoning: IM
Other Reviews Required: Stormwater Quality
Review Type: Level II Site Plan Review

Distribution List:

☐ Planner	Nell Donaldson	☐ Parking	John Peverada
☐ Zoning	Marge Schmuckal	☐ Design Review	Alex Jaegerman
☐ Traffic Engineer	Tom Errico	☐ Corporation Counsel	Danielle West-Chuhta
☐ Civil Engineer	David Senus	☐ Sanitary Sewer	John Emerson
☐ Fire Department	Chris Pirone	☐ Inspections	Tammy Munson
☐ City Arborist	Jeff Tarling	☐ Historic Preservation	Deb Andrews
☐ Engineering	David Margolis-Pineo	☑ DRC Coordinator	Phil DiPierro
		☐ Outside Agency	

Comments needed by (7 days later): July 18, 2012

Marge Schmuckal - 50 Alagash - 2012-539

From: Marge Schmuckal
To: Helen Donaldson
Date: 8/24/2012 9:48 AM
Subject: 50 Alagash - 2012-539

50-100 Industrial Way 326-B-8-9-10
#2012-539 - I-M Zone
8/24/2012

The applicant supplied more information for the front addition, reducing it in size and adjusting the front setback. The revisions meet the I-M zone setback requirements. I have also reviewed the floor plans and elevation plans that were submitted.

I now understand that the lots have merged and any future bifurcation of the lot will need to meet the underlying zone requirements.

I am also understanding that the car parking for the newly acquired lot will be removed - all striping and some pavement in rear. All remaining pavement will be for the continued warehouse use and truck access and turning for those trucks.

Separate permits are required for construction and any new signage.

Currently all I-M zone requirements are shown to be met.

Marge Schmuckal
Zoning Administraor

Marge Schmuckal - 50 alagash

From: Marge Schmuckal
To: Helen Donaldson
Date: 8/2/2012 11:07 AM
Subject: 50 alagash

One solution is not allowing comments at this time, so I am resorting to e-mail:

50-100 Industrial Way - 326-B-8-9-10
#2012-539 - I-M Zone
8/2/2012

This project is for a new 64 parking space parking lot and 2 new additions to 50 Industrial Way, Alagash Brewery. One 1,464 sq ft addition is in the rear and one 6,486 sq ft addition is in the front. The proposal is meeting the I-M zone requirements as shown on the submitted site plans. However, I would like confirmation on several concerns.

1. What is the previous and proposed use of the newly acquired property at 100 Industrial Way?
2. Please show the parking for 100 Industrial Way.
3. Please note that if these properties are now merged, They can not be split in the future without meeting the underlying zoning requirements. If the applicant is not anticipating this requirement, it will be necessary to see how the two separate lots will be configured and comply with zoning.
4. Please show building elevations for the new additions. The application gives a building height of 31 feet for which the front setback is being met. I need to confirm such a height.
5. Please submit floor plans for the new front addition.

Separate permits are required for any new signage and must meet the I-M zone sign requirements.

Marge Schmuckal
Zoning Administrator
I am initially not concerned with the public reception/retail area that is proposed. Such reception, tasting and retail areas are commonly ancillary to breweries, wineries and distilleries. I am requesting to see floor plans to confirm my position.

Applicant: Allagash Date: 8/2/12

Address: 50 - 100 Industrial C-B-L: 326-B-8, 9, 10

CHECK-LIST AGAINST ZONING ORDINANCE Now All one lot

Revision - 8/14/12

Date -

Zone Location - I-M yes confirmed in writing 8/14/12

Interior or corner lot - Merging 2 Developed lots - no change

Proposed Use/Work - New parking lot & 2 Additions: 1,464# in rear
~~6,486#~~ in front 80x70 revised
5894# revised

Sewage Disposal -

Lot Street Frontage - ~~200'~~ 60' min - 200'+ shown

Front Yard - 1' for every 1' of Bldg. ~~84'~~ 34' given revised - ~~31.56' at closest front (curve)~~ 37.89' given on plans 35.87' given on curve (closest)

Rear Yard - 25' min - 30.83' AT closest

Side Yard - 25' min - over 100'

Projections -

Width of Lot - N/A

Height - 75' MAX - ~~31' given~~ Av grade 81.5 / Highest roof beam = 115.5 = 34' high
& on Project DATA page

Lot Area - No min req - ≈191,979# given on Zoning plan for all 3 lots

Lot Coverage/Impervious Surface - 75% MAX - 50.1% given on zoning plan 50.1% given

Area per Family - N/A

Off-street Parking - 21 pkg req previously with New Additions 8 New 10 = 29 req on existing Bldg
(7,950#) 9,800# for the Bldg 39 req 64 spaces shown (#100)
Nothing shown on Acquired property

Loading Bays - has one loading dock on original Bldg & the other prop. has existing

Site Plan - # 2012 - 539

Shoreland Zoning/Stream Protection - N/A

Flood Plains - Panel 1 - Zone C

min 10' pavement setback req - 13.2' shown at closest

SEBAGO
TECHNICS

August 10, 2010
02249

Richard Meek
856-0277

Helen Donaldson, Planner
Planning & Urban Development Department
389 Congress Street
Portland, ME 04101

Level II Final Site Plan Application
Allagash Brewery Addition; 50 Industrial Way
Project ID: 2012-539; CBL: 326-B-8, 9 & 10

Dear Nell:

On behalf of 50 Industrial Way, LLC, Sebago Technics, Inc. is pleased to submit this Level II Final Site Plan application for the proposed expansion of their facility located at 50 Industrial Way. The preliminary plans have been modified to reflect coordination with the architect regarding the proposed addition's footprint and to address staff review comments. In addition, this letter and attached material are provided in response to the staff review comments as contained in your letter dated August 2, 2012. The following numbered responses correspond to the comments within your letter:

Zoning

O/C

1. The existing building located at 100 Industrial Way is currently and will continue to be utilized as warehousing.
2. A parking summary has been added to the Site Plan. The proposed parking (64 spaces) exceeds the zoning requirements for the combined building uses of 50 Industrial Way and 100 Industrial Way. As such, no formal parking is proposed at 100 Industrial Way. The existing pavement (to remain) will be utilized for truck turning movements and access to the loading docks.

SO NO PARKING There Now?

3. The applicant is merging the properties and understands that they cannot be split without meeting the underlying zoning requirements. O K
4. Copies of the proposed building elevations are attached. The average grade around the perimeter of the building is approximately 81.5. The finished floor elevation is approximately 83.5. Based upon the proposed building section the highest beam elevation is approximately 115.5. With a total building height of 34 feet, the building footprint has been reduced to meet the front setback requirement of one foot per one foot of building height.

115.5
−81.5
34 1 high

5. A copy of the proposed floor plan is attached.

1. **Transportation Standards**

   a. A memorandum prepared by Bradley Lyon, P.E. of Sebago Technics, Inc., which summarizes the anticipated trip generation for this development, is attached.

Additionally, the memo addresses high crash locations within ½ mile of the project and level of service at intersections within ¼ mile of the project.

b. Additional wavier criterion is provided to support the sidewalk waiver request. Additional waiver criterion is provided to support the curbing waiver request. Sight distance measurements for all of the proposed driveways have been incorporated on the Site Plan.

c. Not applicable.

d. An additional waiver request is included to reduce the aisle width to 22 feet. Additional directional signing is provided. The required off-street car parking is 43 spaces. Therefore, nine bicycle parking spaces are provided.

e. Not applicable.

2. Environmental Quality Standards

a. We agree that the tree save between the parking lot and roadway is consistent with existing landscape features along Industrial Way. Similarly, it is the intent of the applicant to maintain the 30 foot wide vegetated buffer between this site and the former Spurwink School parcel.

b. The number of proposed trees and their placement is intended to satisfy the City's standard ratio for parking spaces to trees. We have supplemented the wild flower area with Serviceberry trees. A waiver request is included relating to the street tree standard. The dumpsters are currently screened with a stockade fence and a reference note has been added to the Site Plan.

c. A test pit has been performed within the footprint of the proposed wet pond. As indicated in the attached test pit log, no ledge was discovered. The seasonal groundwater elevation is adequate to support the permanent pool elevation and the soils consist of a silty clay. As such, the permanent pool will be lined with a 6" layer of gravel to prevent suspension of fine soil particles within the pond. Erosion control measures have been incorporated on the Grading and Utility Plan. The inspection and maintenance plan has been updated to include the annual reporting requirements. Note 1 regarding anticipated utility crossings is now included on the Grading and Utility Plan. The discrepancy regarding the emergency spillway dimensions has been resolved. Additional detail, including invert elevations of the underdrained gravel bench have been added to the Grading and Utility Plan. The gravel bench detail has been updated to provide a minimum three foot deep section and a minimum of two feet of gravel above the underdrain pipe. The gravel bench detail has been updated to refer to the correct Maine DOT specification.

3. Public Infrastructure and Community Safety Standards

a. No comment.

b. No comments received.

c. The catch basin detail has been updated to depict a three foot sump.

d. Confirmation of wastewater capacity will be forwarded upon receipt.

2. A letter from Bath Savings Institution, which addresses the financial capacity of Allagash Brewing Company, is attached.
3. Evidence of sewer capacity will be forwarded upon receipt.
4. Exterior building elevations are attached.
5. The proposed snow storage areas and limits of disturbance have been added to the Site Plan.

We are hopeful that we have addressed all outstanding issues such that this project may receive final approval. Please call if you have any questions or comments while reviewing this material. Thank you for your consideration.

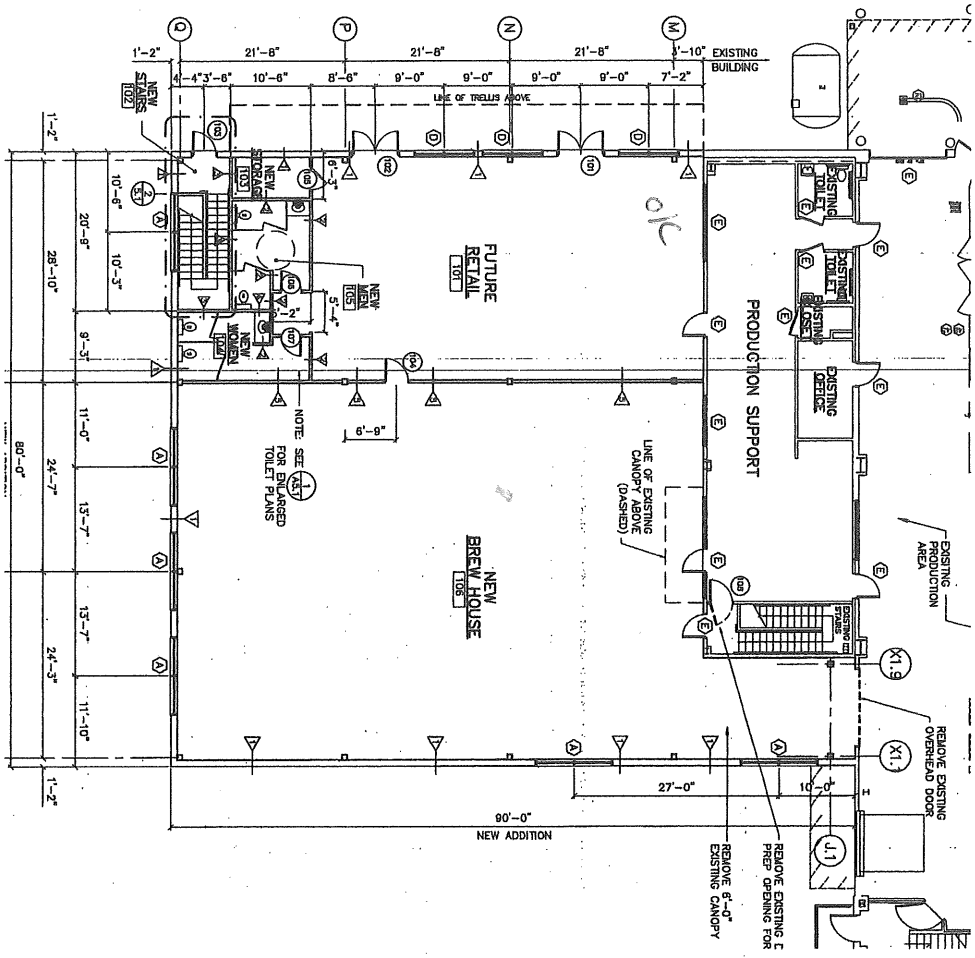
Sincerely,

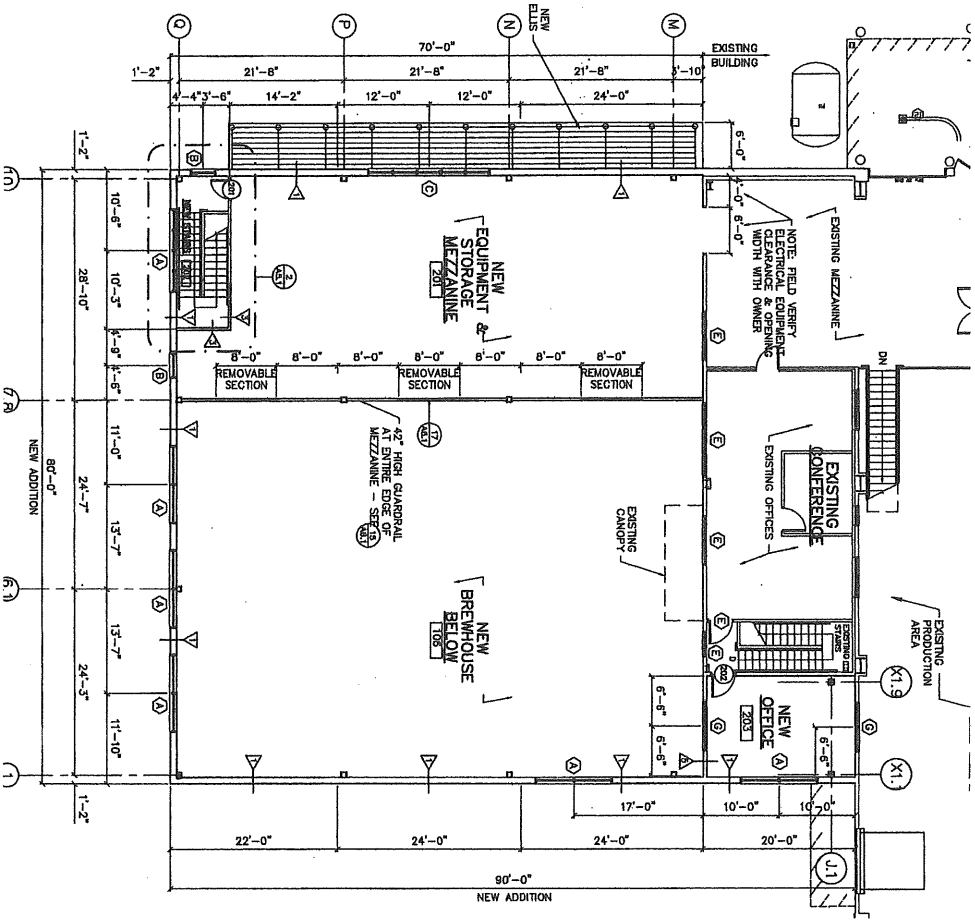
SEBAGO TECHNICS, INC.

Richard L. Meek, P.E.
Sr. Project Engineer

RLM:rlm/dlf/kn
Att.

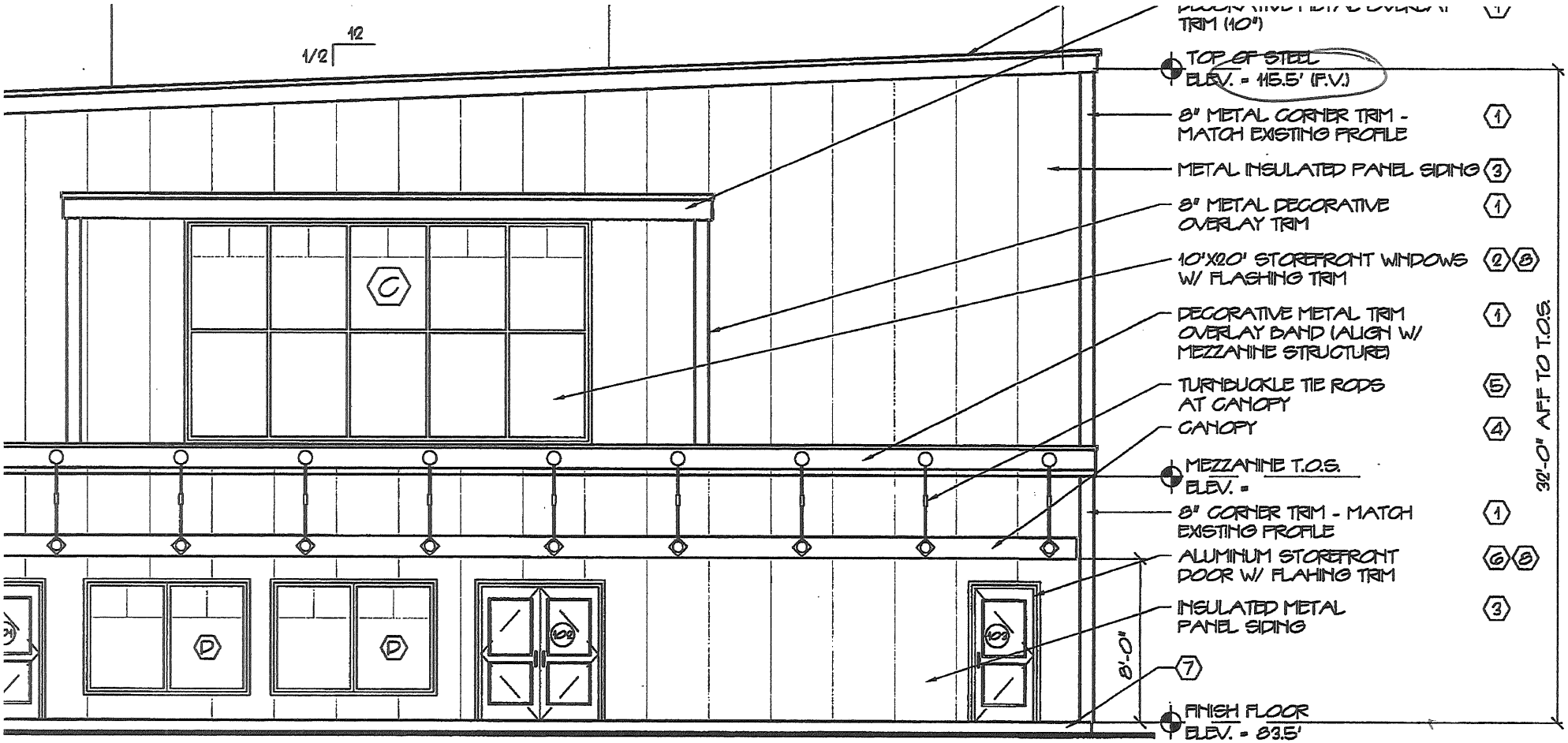
cc: Rob Tod, Allagash Brewing
Paul Ureneck, CB Richard Ellis/Boulos Property Management



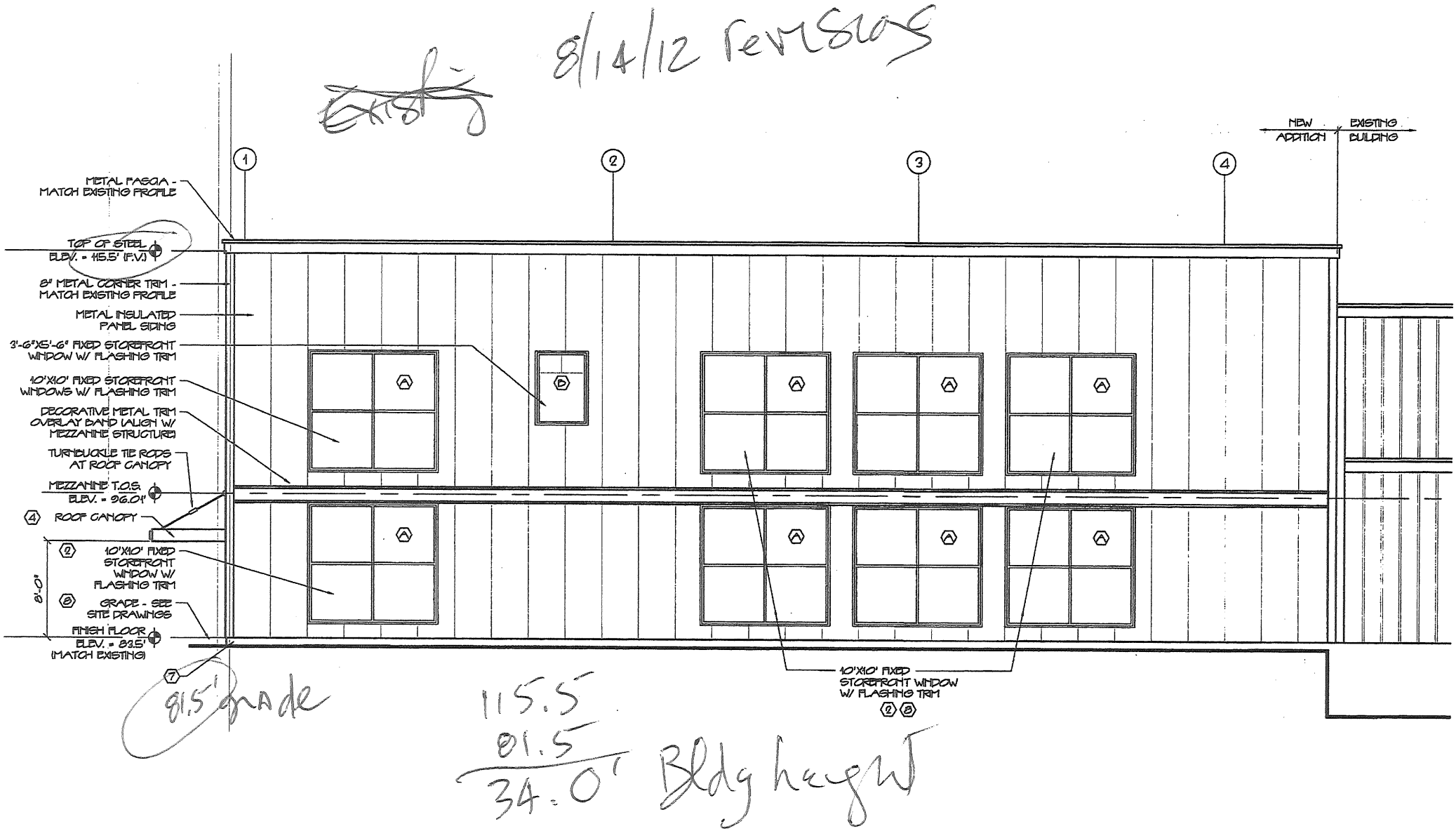


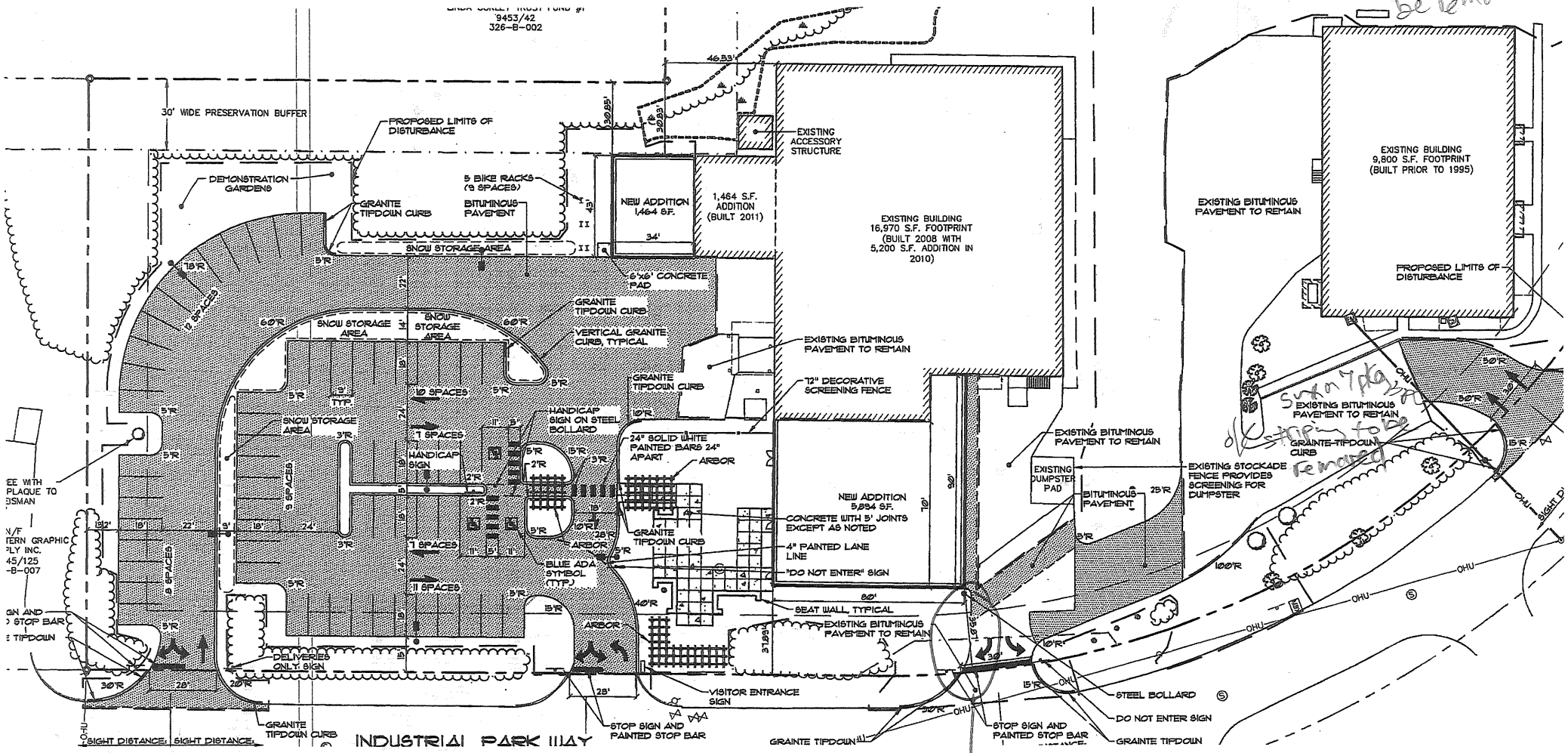
8/14/12 Submittal

8/14/12 Submittal



81.5' Av. grade given = 34' Bldg height


8/14/12 revisions
existing
NEW ADDITION
EXISTING BUILDING
1
2
3
4
METAL FASCIA - MATCH EXISTING PROFILE
TOP OF STEEL ELEV. = 115.5' (F.V.)
8" METAL CORNER TRIM - MATCH EXISTING PROFILE
METAL INSULATED PANEL SIDING
3'-6"X5'-6" FIXED STOREFRONT WINDOW W/ FLASHING TRIM
10'X10' FIXED STOREFRONT WINDOWS W/ FLASHING TRIM
DECORATIVE METAL TRIM OVERLAY BAND (ALIGN W/ MEZZANINE STRUCTURE)
TURNBUCKLE TIE RODS AT ROOF CANOPY
MEZZANINE T.O.S. ELEV. = 96.0'
4 ROOF CANOPY
2 10'X10' FIXED STOREFRONT WINDOW W/ FLASHING TRIM
81'-0"
6 GRADE - SEE SITE DRAWINGS
FINISH FLOOR ELEV. = 83.5' (MATCH EXISTING)
7
81.5' grade
10'X10' FIXED STOREFRONT WINDOW W/ FLASHING TRIM
2 6
115.5
81.5
34.0' Bldg height


8/14/12 Submittal
Per Richard Meek 10/24/12
9 pkg on old lot to be removed
9453/42
326-B-002
30' WIDE PRESERVATION BUFFER
PROPOSED LIMITS OF DISTURBANCE
DEMONSTRATION GARDENS
5 BIKE RACKS (9 SPACES)
GRANITE TIPDOWN CURB
BITUMINOUS PAVEMENT
SNOW STORAGE AREA
NEW ADDITION 1,464 S.F.
1,464 S.F. ADDITION (BUILT 2011)
EXISTING ACCESSORY STRUCTURE
EXISTING BUILDING 16,970 S.F. FOOTPRINT (BUILT 2008 WITH 5,200 S.F. ADDITION IN 2010)
6'x6' CONCRETE PAD
VERTICAL GRANITE CURB, TYPICAL
EXISTING BITUMINOUS PAVEMENT TO REMAIN
72" DECORATIVE SCREENING FENCE
HANDICAP SIGN ON STEEL BOLLARD
24" SOLID WHITE PAINTED BARS 24" APART
ARBOR
NEW ADDITION 5,884 S.F.
CONCRETE WITH 5' JOINTS EXCEPT AS NOTED
4" PAINTED LANE LINE
"DO NOT ENTER" SIGN
BLUE ADA SYMBOL (TYP.)
SEAT WALL, TYPICAL
DELIVERIES ONLY SIGN
VISITOR ENTRANCE SIGN
STOP SIGN AND PAINTED STOP BAR
INDUSTRIAL PARK WAY
EXISTING BUILDING 9,800 S.F. FOOTPRINT (BUILT PRIOR TO 1995)
EXISTING DUMPSTER PAD
EXISTING STOCKADE FENCE PROVIDES SCREENING FOR DUMPSTER
BITUMINOUS PAVEMENT
STEEL BOLLARD
DO NOT ENTER SIGN
GRANITE TIPDOWN
SIGHT DISTANCE
35.07' at closest - OK
given 34' height

02249

Exhibit 2

Project Description

50 Industrial Way, LLC (the applicant) currently owns and operates the Allagash Brewing Company facility located in the I-M zone at 50 Industrial Way, identified as Block B, Lot 9 on the City of Portland Tax Map 326. The original Site Plan was approved in 2006; with construction of 13,000 square feet of floor space occurring in 2007. A 5,200 square foot addition (approved as part of the original Site Plan) was constructed in 2010. The applicant purchased the adjacent, undeveloped, lot identified as Block B, Lot 8 on the City of Portland Tax Map 326 in April 2011. A 1,464 square foot addition was approved and constructed in 2011. Finally, the applicant purchased the adjacent lot identified as Block B, Lot 10 on the City of Portland Tax Map 326 in November 2011.

Warehouse
to remain
warehouse

→ what is the previous & proposed use of this property

The proposed development includes an approximately 6,496 square feet building addition (Brew House), an approximately 1,464 square feet building addition (Fermentation Tank Support), construction of a 64 space parking lot, modification of the pavement associated with the loading area and construction of a stormwater detention/treatment pond. The Brew House addition will accommodate a new public reception/retail area and expand brewing capacity. The fermentation tank support addition will accommodate six – 240 barrel fermenters.

All utilities including: public water, sanitary sewer, natural gas, electrical and communications are currently serving the existing building via connections within Industrial Way. These utilities will be extended to the proposed addition(s) within the boundaries of the site.

The majority of stormwater runoff from the site will be collected and routed to a proposed wet pond such that the post-development peak rates of discharge will be maintained or reduced when compared to the pre-development peak rates of discharge. In addition, the wet pond provides water quality treatment in general conformance with Chapter 500 of the Maine Stormwater Law.

PROJECT DATA Newer4

The following information is required where applicable, in order complete the application

Total Site Area	191,979	sq. ft.
Proposed Total Disturbed Area of the Site	98,900	sq. ft.
(If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland)		
IMPERVIOUS SURFACE AREA		
• Proposed Total Paved Area	57,800	sq. ft.
• Existing Total Impervious Area	72,000	sq. ft.
• Proposed Total Impervious Area	94,770	sq. ft.
• Proposed Impervious Net Change	+22,770	sq. ft.
BUILDING AREA		
• Proposed Building Footprint	35,592	sq. ft.
• Proposed Building Footprint Net change	+7,358	sq. ft.
• Existing Total Building Floor Area	29,356	sq. ft.
• Proposed Total Building Floor Area	36,714	sq. ft.
• Proposed Building Floor Area Net Change	+7,358	sq. ft.
• New Building	No	(yes or no)
ZONING		
• Existing	I-M	
• Proposed, if applicable	I-M	
LAND USE		
• Existing	Brewery	
• Proposed	Brewery	
RESIDENTIAL, IF APPLICABLE		
• Proposed Number of Affordable Housing Units	N/A	
• Proposed Number of Residential Units to be Demolished	N/A	
• Existing Number of Residential Units	N/A	
• Proposed Number of Residential Units	N/A	
• Subdivision, Proposed Number of Lots	N/A	
PARKING SPACES		
• Existing Number of Parking Spaces	37	
• Proposed Number of Parking Spaces	64	
• Number of Handicapped Parking Spaces	3	
• Proposed Total Parking Spaces	64	
BICYCLE PARKING SPACES		
• Existing Number of Bicycle Parking Spaces	0	
• Existing Number of Bicycle Parking Spaces	0	
• Proposed Number of Bicycle Parking Spaces	9	
• Total Bicycle Parking Spaces	9	
ESTIMATED COST OF PROJECT	$1,600,000	

PROJECT DATA

The following information is required where applicable, in order complete the application

Total Site Area	191,979	sq. ft.
Proposed Total Disturbed Area of the Site	152,500	sq. ft.
(If the proposed disturbance is greater than one acre, then the applicant shall apply for a Maine Construction General Permit (MCGP) with DEP and a Stormwater Management Permit, Chapter 500, with the City of Portland)		
IMPERVIOUS SURFACE AREA		
• Proposed Total Paved Area	57,800	sq. ft.
• Existing Total Impervious Area	72,000	sq. ft.
• Proposed Total Impervious Area	94,770	sq. ft.
• Proposed Impervious Net Change	+22,770	sq. ft.
BUILDING AREA		
• Proposed Building Footprint	~~36,194~~	sq. ft.
• Proposed Building Footprint Net change	+7,960	sq. ft.
• Existing Total Building Floor Area	29,356	sq. ft.
• Proposed Total Building Floor Area	37,316	sq. ft.
• Proposed Building Floor Area Net Change	+7,960	sq. ft.
• New Building	No	(yes or no)
ZONING		
• Existing	I-M	
• Proposed, if applicable	I-M	
LAND USE		
• Existing	Brewery	
• Proposed	Brewery	
RESIDENTIAL, IF APPLICABLE		
• Proposed Number of Affordable Housing Units	N/A	
• Proposed Number of Residential Units to be Demolished	N/A	
• Existing Number of Residential Units	N/A	
• Proposed Number of Residential Units	N/A	
• Subdivision, Proposed Number of Lots	N/A	
PARKING SPACES		
• Existing Number of Parking Spaces	37	
• Proposed Number of Parking Spaces	64	
• Number of Handicapped Parking Spaces	3	
• Proposed Total Parking Spaces	64	
BICYCLE PARKING SPACES		
• Existing Number of Bicycle Parking Spaces	0	
• Existing Number of Bicycle Parking Spaces	0	
• Proposed Number of Bicycle Parking Spaces	2	
• Total Bicycle Parking Spaces	2	
ESTIMATED COST OF PROJECT	$1,600,000	

SEBAGO
TECHNICS

July 6, 2012
02249

Barbara Barhydt, Development Review Services Manager
Planning and Urban Development Department
City of Portland
389 Congress Street
Portland, ME 04101

Level II Preliminary Site Plan Application
50 Industrial Way, LLC - Allagash Brewing Company
Tax Map 326 Block B, Lot 8, Lot 9 and Lot 10

Dear Barbara:

On behalf of 50 Industrial Way, LLC, Sebago Technics, Inc. is submitting this Preliminary Site Plan application for an expansion of their facility located at 50 Industrial Way in Portland, Maine. The property is owned and operated as a Brewery (Allagash Brewing Company) by the applicant and is depicted as Lots 8, 9, and 10 on Tax Map 326. As you will recall, we met with you and planning staff on June 27, 2012 to discuss the future development for this property.

The proposed development includes an approximately 6,496 square feet building addition (Brew House), an approximately 1,464 square feet building addition (Fermentation Tank Support), construction of a 64 space parking lot, modification of the pavement associated with the loading area and construction of a stormwater detention/treatment pond. The Brew House addition will accommodate a new public reception/retail area and expand brewing capacity. The fermentation tank support addition will accommodate six - 240 barrel fermenters. The proposed expansion will require removal of the existing 22 parking spaces, as well as, reconfiguration of the four existing access driveways.

All utilities including: public water, sanitary sewer, natural gas, electrical and communications are currently serving the existing building via connections within Industrial Way. These utilities will be extended to the proposed addition(s) within the boundaries of the site.

The majority of stormwater runoff from the site will be collected and routed to a proposed wet pond such that the post-development peak rates of discharge will be maintained or reduced when compared to the pre-development peak rates of discharge. In addition, the wet pond provides water quality treatment in general conformance with Chapter 500 of the Maine Stormwater Law.

With the inclusion of the $650.00 application fee, we are hopeful that the information provided is sufficient to complete a review of the application and to proceed with final approval of the development proposal. Please contact me if you have any questions or if you require additional information. Thank you for your consideration.

Sincerely,

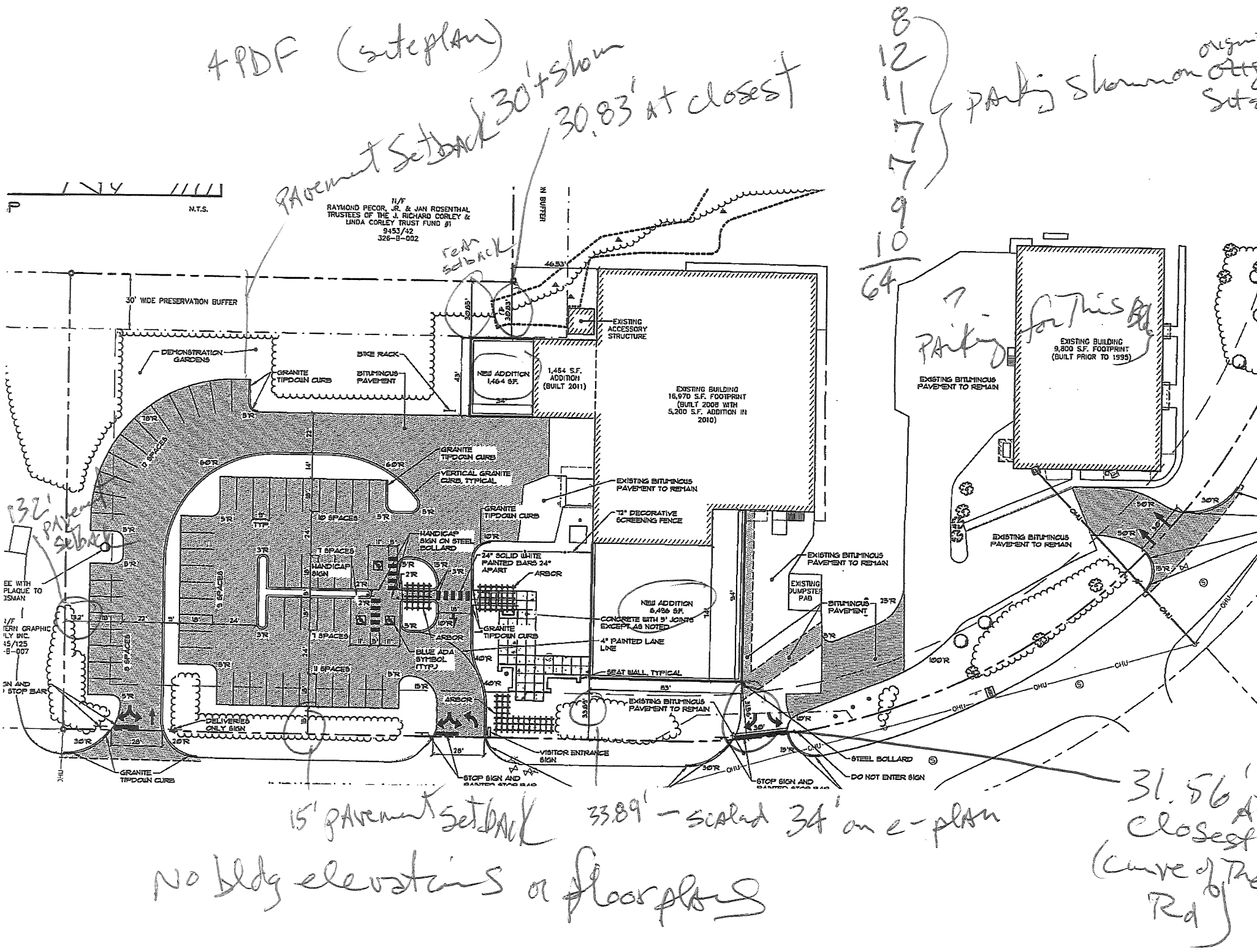
SEBAGO TECHNICS, INC.

Richard L. Meek, P.E.
Sr. Project Engineer

RLM:rlm/dlf

Enclosure

cc: Rob Tod, Allagash Brewing Company


4 PDF (site plan)
Pavement Setback 30'+ shown
30.83' at closest
8
12
11
7
7
9
10
64
parking shown on
N.T.S.
N/F
RAYMOND PECOR, JR. & JAN ROSENTHAL
TRUSTEES OF THE J. RICHARD CORLEY &
LINDA CORLEY TRUST FUND #1
9453/42
326-B-002
rear setback
30' WIDE PRESERVATION BUFFER
DEMONSTRATION GARDENS
GRANITE TIPDOWN CURB
BITUMINOUS PAVEMENT
BIKE RACK
NEW ADDITION 1,464 S.F.
1,454 S.F. ADDITION (BUILT 2011)
EXISTING ACCESSORY STRUCTURE
EXISTING BUILDING 16,970 S.F. FOOTPRINT (BUILT 2008 WITH 5,200 S.F. ADDITION IN 2010)
VERTICAL GRANITE CURB, TYPICAL
EXISTING BITUMINOUS PAVEMENT TO REMAIN
72" DECORATIVE SCREENING FENCE
HANDICAP SIGN ON STEEL BOLLARD
24" SOLID WHITE PAINTED BARS 24" APART
ARBOR
NEW ADDITION 6,486 S.F.
CONCRETE WITH 9' JOINTS EXCEPT AS NOTED
4" PAINTED LANE LINE
SEAT WALL, TYPICAL
BLUE ADA SYMBOL (TYP.)
DELIVERIES ONLY SIGN
VISITOR ENTRANCE SIGN
STOP SIGN AND PAINTED STOP BAR
GRANITE TIPDOWN CURB
EXISTING DUMPSTER PAD
BITUMINOUS PAVEMENT
STEEL BOLLARD
DO NOT ENTER SIGN
EXISTING BUILDING 9,800 S.F. FOOTPRINT (BUILT PRIOR TO 1995)
EXISTING BITUMINOUS PAVEMENT TO REMAIN
EXISTING BITUMINOUS PAVEMENT TO REMAIN
Parking for this
132' pavement setback
15' pavement setback
33.89' - scaled 34' on e-plan
31.56'
closest
(curve of
Rd
No bldg elevations or floorplans

02249

Exhibit 5

Assessment of Zoning

A copy of the zoning map indicating the location of the project site is provided. As depicted, the subject parcel is located entirely within the medium intensity industrial zone (I-M); and does not abut any other City zoning districts.

The proposed use is a brewery, which is a permitted use as described in Section 14-247.a of the City of Portland Code of Ordinances.

In accordance with the dimensional requirements defined in Section 14-250 of the City of Portland Code of Ordinances, the proposed development meets or exceeds the requirements as follows:

	Ordinance Requirement	Provided
Min. lot size	none	4.07 acres
Max. impervious ratio	75%	50.1% – ? Both lots
Max. building height	75 feet	31 feet – no bldg elev. given
Min. side yard	25 feet	30 feet
Min. rear yard	25 feet	30 feet
Min. front yard	1 ft./1 ft. of building height	~~32 feet~~ 31.56' at closest
Min. street frontage	60 feet	881.5 feet
Pavement setback	10 feet	10 feet – 13.2' at closest

GENERAL NOTES

1. THE RECORD OWNER OF THE PARCELS IS 50 INDUSTRIAL WAY LLC, 50 INDUSTRIAL WAY, PORTLAND, MAINE 04103 BY DEEDS RECORDED AT THE CUMBERLAND COUNTY REGISTRY OF DEEDS (CCRD) IN THE FOLLOWING:
   LOT 17 BOOK 29167 PAGE 291, DATED NOVEMBER 30, 2011
   LOT 18 BOOK 18385 PAGE 348, DATED NOVEMBER 14, 2002
   LOT 19 BOOK 28660 PAGE 237, DATED APRIL 26, 2011

2. THE PROPERTY IS SHOWN AS ON THE CITY OF PORTLAND TAX MAP 326 BLOCK B AS LOT 10 (SUBDIVISION LOT 17), LOT 9 (SUBDIVISON LOT 18) AND LOT 8 (SUBDIVISION LOT 19) IS LOCATED IN THE IM ZONE.

3. SPACE AND BULK CRITERIA FOR THE IM ZONE ARE AS FOLLOWS:

	ORDINANCE REQUIREMENT	PROVIDED
MIN. LOT SIZE	NONE	4.407 ACRES
MAX. IMPERVIOUS RATIO	75%	50.1%
MAX. BUILDING HEIGHT	75 FEET	31 FEET
MIN. SIDE YARD	25 FEET	30 FEET
MIN. REAR YARD	25 FEET	30 FEET
MIN. FRONT YARD	1 FT./1 FT. OF BLDG. HEIGHT	32 FEET
MIN. STREET FRONTAGE	60 FEET	8815 FEET
PAVEMENT SETBACK	10 FEET	10 FEET

50.1% Guvenkaet

4. TOTAL AREA OF PARCELS ARE AS FOLLOWS:

LOT 17	+/-38,920 SQUARE FEET
LOT 18	+/-73,073 SQUARE FEET
LOT 19	+/-59,985 SQUARE FEET

} 191,978 SF +/-

5. BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON BOUNDARY, TOPOGRAPHIC AND AS-BUILT SURVEYS PERFORMED BY SEBAGO TECHNICS, INC. FROM 2002 THROUGH 2011.

6. PLAN REFERENCES:
   A. RECORDING PLAT OF THE TURNPIKE INDUSTRIAL PARK, BY LAND USE CONSULTANTS, DATED MARCH 25, 1986 AND LAST REVISED SEPTEMBER 9, 1986, BEING RECORDED IN THE CCRD IN PLAN BOOK 157 PAGE 61.
   B. SITE PLAN SET OF PLANS OF LOT 18, TURNPIKE INDUSTRIAL PARK FOR ALLAGASH BREWING, BY SEBAGO TECHNICS, INC. (PROJECT 05057).

7. PLAN ORIENTATION IS GRID NORTH, MAINE STATE PLANE COORDINATE SYSTEM, WEST ZONE 1802-NAD83, ELEVATIONS DEPICTED HEREON ARE NAVD88, BASED ON DUAL FREQUENCY GPS OBSERVATIONS.

8. UTILITY INFORMATION DEPICTED HEREON IS COMPILED USING PHYSICAL EVIDENCE LOCATED IN THE FIELD. UTILITIES DEPICTED HEREON MAY NOT NECESSARILY REPRESENT ALL EXISTING UTILITIES. CONTRACTORS NEED TO CONTACT DIG-SAFE SYSTEMS, INC. (1-888-DIG-SAFE) AND FIELD VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND/OR

U	UPLAND	
	EDGE WETLAND	
	SIGN	
	EDGE PAVEMENT	
	EDGE CONCRETE	
	PAVEMENT PAINT	
	GRAVEL ROAD	
	CURBLINE	
	TREELINE	
--122-- --120--	CONTOURS	124
o	CHAIN LINK FENCE	
	DECIDUOUS TREE	
	CONIFEROUS TREE	
o	BOLLARD	
G	GAS	G
GV	GAS GATE VALVE	
GM	GAS METER	
W	WATER	W
	WATER GATE VALVE	
	WATER SHUT OFF	
	HYDRANT	
W	WATER MANHOLE	
S	SEWER	S
S	SEWER MH	
SD	STORM DRAIN	SD
UD	UNDERDRAIN	UD
	CATCH BASIN	
D	DRAINAGE MH	
	CULVERT	SD
OHU	OVERHEAD UTILITY	OHU
UGU	UNDERGROUND UTILITY	UGU
T	TRANSFORMER PAD	T
	LIGHT POLE/WALL	
	UTILITY POLE	
	GUY	
	RIPRAP	

4 PDF (site plans)

CJ LT
75 John R. Smith Pl.
Tel.

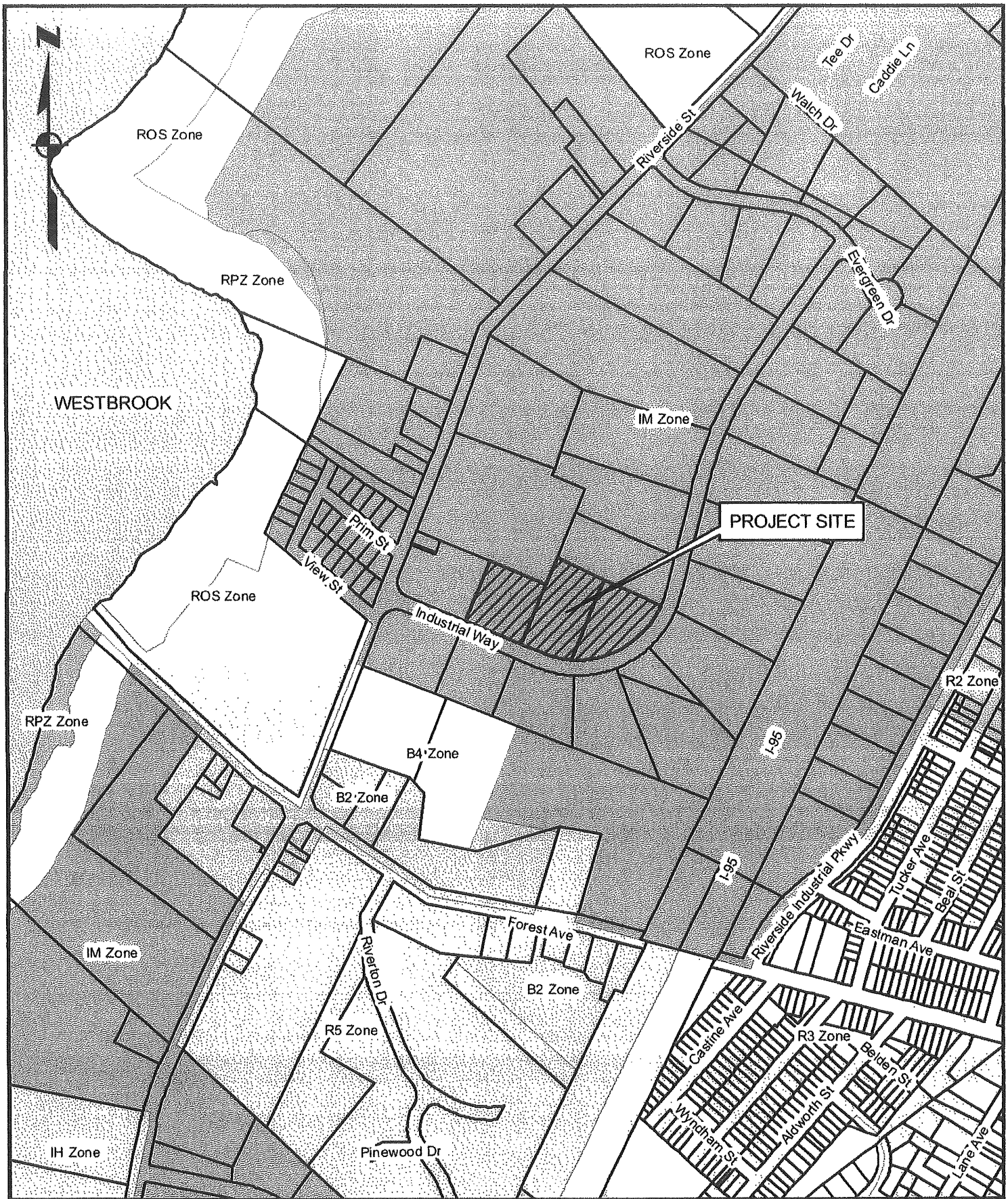
PROJECT NO. 02249

SITE PLAN
OF:
ALLAGASH BREWING COMPANY
INDUSTRIAL WAY
PORTLAND, MAINE
FOR:
50 INDUSTRIAL WAY, LLC
50 INDUSTRIAL WAY
PORTLAND, MAINE 04103

DATE	SCALE
06/19/12	1" = 30'

9S.dwg, TAB: 02249S

EXISTING AND PROPOSED IMPERVIOUS AREA=1665 SF TREATMENT REQUIRED AND PROVIDED
EXISTING IMPERVIOUS AREA=350 SF TREATMENT REQUIRED BUT NOT PROVIDED
NEW IMPERVIOUS AREA=1250 SF TREATMENT REQUIRED AND PROVIDED
EXISTING IMPERVIOUS AREA=19014 SF TREATMENT REQUIRED BUT NOT PROVIDED
NEW IMPERVIOUS AREA=128 SF TREATMENT REQUIRED BUT NOT PROVIDED



SEBAGO TECHNICS

WWW.SEBAGOTECHNICS.COM

75 John Roberts Rd - Suite 1A
South Portland, ME 04106
Tel. 207-200-2100

250 Goddard Rd - Suite B
Lewiston, ME 04240
Tel. 207-783-5656

ZONING MAP
OF LOT 18, TURNPIKE INDUSTRIAL PARK

SCALE: 1 " = 500 '

DATE: 07/03/12

LOCATION:
INDUSTRIAL WAY
PORTLAND, MAINE

INFORMATION:
ZONING MAP AND PARCEL DATA FROM
THE CITY OF PORTLAND GIS DEPARTMENT

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

Planning & Urban Development Department
Jeff Levine, AICP, Director

Planning Division
Alexander Jaegerman, Director

August 31, 2012

Rob Tod
50 Industrial Way, LLC
50 Industrial Way
Portland, ME 04103

Richard Meek
Sebago Technics
75 John Roberts Road, Suite 1A
South Portland, ME 04106

Project Name: Allagash Brewery Expansion
Address: 50 Industrial Way, Portland, ME
Project ID: 2012-539
CBLs: 326-B-8, 9, and10
Applicant: 50 Industrial Way, LLC
Planner: Nell Donaldson

Dear Mr. Tod:

On August 31, 2012, the Planning Authority approved with conditions a Level II site plan for the expansion of the Allagash Brewery at 50 Industrial Way. The decision is based upon the application as submitted by 50 Industrial Way, LLC and prepared by Sebago Technics, Inc. (dated August 10, 2012). The proposal was reviewed for conformance with the standards of the City of Portland's site plan ordinance (Section 14-526). The Level II site plan is approved with the following waivers and conditions:

A. WAIVERS

Sidewalk

The applicant requested a waiver from the site plan standard requiring sidewalks on all frontages. The waiver request cited two of the six sidewalk waiver criteria in accordance with Section 14-506(b):

1) There is no reasonable expectation of pedestrian usage coming from, going to, and traversing the site; and
6) Strict adherence to the sidewalk requirement would result in the loss of significant site features related to landscaping or topography that are deemed to be of greater public value.

The Planning Authority recognizes, in particular, the importance of the existing drainage system in the right-of-way along Industrial Way. As such, the sidewalk requirement is waived.

Development Review Coordinator will confirm that the contractor is working from the approved site plan. The site/building contractor shall provide three (3) copies of a detailed construction schedule to the attending City representatives. It shall be the contractor's responsibility to arrange a mutually agreeable time for the pre-construction meeting.

7. **Department of Public Services Permits** If work will occur within the public right-of-way such as utilities, curb, sidewalk and driveway construction, a street opening permit(s) is required for your site. Please contact Carol Merritt at 874-8300, ext. 8828. (Only excavators licensed by the City of Portland are eligible.)

8. **As-Built Final Plans** Final sets of as-built plans shall be submitted digitally to the Planning Division, on a CD or DVD, in AutoCAD format (*,dwg), release AutoCAD 2005 or greater.

The Development Review Coordinator must be notified five (5) working days prior to the date required for final site inspection. The Development Review Coordinator can be reached at the Planning Division at 874-8632. All site plan requirements must be completed and approved by the Development Review Coordinator prior to issuance of a Certificate of Occupancy. Please schedule any property closing with these requirements in mind.

If there are any questions, please contact Nell Donaldson at (207) 874-8723

Sincerely,

Alexander Jaegerman
Planning Division Director

cc: Jeff Levine, Director of Planning and Urban Development
Alexander Jaegerman, Planning Division Director
Barbara Barhydt, Development Review Services Manager
Philip DiPierro, Development Review Coordinator, Planning
Marge Schmuckal, Zoning Administrator, Inspections Division
Tammy Munson, Inspection Division Director
Lannie Dobson, Administration, Inspections Division
Gayle Guertin, Administration, Inspections Division
Michael Bobinsky, Public Services Director
Katherine Earley, Engineering Services Manager, Public Services
Bill Clark, Project Engineer, Public Services
David Margolis-Pineo, Deputy City Engineer, Public Services
Doug Roncarati, Stormwater Coordinator, Public Services
Greg Vining, Associate Engineer, Public Services
Michelle Sweeney, Associate Engineer
John Low, Associate Engineer, Public Services
Matt Doughty, Field Inspection Coordinator, Public Services
Mike Farmer, Project Engineer, Public Services
Jane Ward, Administration, Public Services
Jeff Tarling, City Arborist, Public Services
Captain Chris Pirone, Fire Department
Thomas Erriso, P.E., TY Lin Associates
David Senus, P.E., Woodard and Curran
Rick Blackburn, Assessor's Department
Approval Letter File