Rising Tide Brewing - Expansion
130 Fox Street
Portland, Maine
SI Job#: 17-0113

DESIGN LIVE LOADS: 2009 IBC/MUEBC, U.O.N.

Snow	60 psf(Pg)
Wind	100 mph, exp B, 3 second gust
Rooftop Deck/ Assembly	100 psf
Office	50 psf
Stairs	100 psf

STRUCTURAL STEEL:
Structural Beams: ASTM A992
Angles, misc: ASTM A36
Anchor Bolts: ASTM A307 or A36.
Expansion Anchors shall be ICC-ES approved, installed in accordance with manufacturers specifications.
In concrete: Wedge Type
In solid masonry: Sleeve Type
Non-shrink grout beneath column base and beam bearing plates shall be non-metallic with minimum compressive strength 5000psi.
All structural steel shall be fabricated and erected per the current edition of AISC Steel Construction Manual.
Welding by qualified welders. E70XX electrodes. 3/16" fillet welds, unless noted otherwise.
Except as noted, framed beam connections shall be detailed to develop 0.6 x Allowable Uniform Load values tabulated in the 9th Edition AISC Manual, Pp. 2-27 and following.
All beams shall have full depth web stiffeners each side of webs above and below columns. (3" or as noted)
Attach wood nailer plates to beams with 1/2" diameter machine or carriage bolts at maximum 16" o.c., or 3/8" diameter bolts at 16" with glued contact face, or 5/32" diameter powder actuated drive pins at 12" o.c., U.O.N.

Expansion anchors shall be approved "wedge" type unless specifically noted to be "sleeve" type.
Chemical anchors shall be approved epoxy or similar adhesive type and shall have current ICC Evaluation Report. Where base material is not solid, approved screen tubes shall be used.
Grout beneath column base and beam-bearing plates shall be
minimum 28-day compressive strength of 7,500 psi,
approved pre-bagged, non-metallic, non-gaseous, bleed free,
non-shrink, when tested in accordance with ASTM C1107
Grade B or C at a flow cone fluid consistency of 20 to 30 seconds

LIGHT GAUGE STRUCTURAL STEEL FRAMING:
Member forming shall conform to AISI Cold-Formed Steel Specifications.
All structural framing (studs, joists, track, runners, bracing, and bridging) shall be galvanized sheet steel conforming to ASTM A525, G-60.
Studs and joists 54 mils (16 gauge) and heavier shall be 50 ksi yield.
43 mils (18 gauge) and lighter shall be 33 ksi yield, unless noted otherwise on plan.
Subcontractor shall provide bridging and blocking at a maximum of 6 foot spacing or as required for stability and stiffness of the final assembly wherever sheathing does not provide adequate bracing.
Supplier shall design required jambs, lintels and headers at openings where not specifically detailed.
Member sizes noted on drawings are in the new SSMA standard nomenclature:
(##d)(sd)(##w)-(##t)
(##d) Member Depth (inches.hundredths)
(sd) Style Designation (see Style Designation in table below)
(##w) Flange Width (inches.hundredths)
(##t) Material Thickness (mils) (see Mils vs equivalent Gauge in table below)

(sd) Style Designation	Member Type		(##t) Mils Thickness	Equivalent Gauge
S	Punched C-Section		18	25
J	Unpunched C-Section		27	22
T	Track		30	20 – Drywall
U	Channel		33	20 – Structural
F	Furring Channel		43	18
			54	16
			68	14
			97	12

STRUCTURAL MASONRY:
Design is based on Unit Strength Method
MSJC, Section SC-1.4 B.2.
Compressive strength of masonry assembly used for design is 1500 psi, based on net-bedded area.
Hollow load-bearing concrete masonry (CMU) shall be medium-weight units conforming to ASTM C90,
Grade N1, minimum compressive strength 1,900 psi based on average net area.
Mortar shall be Type S conforming to ASTM C270.
Masonry cement shall not be used.
Provide full shoved mortar in all head and bed joints.
Admixtures shall not be added for any reason unless approved by the Architect.
Except for lintels, bond beam units shall be produced from standard vertically voided units with pre-cut knockout cross walls.
Grout used in masonry walls and block cells shall be:
coarse grout, as defined by ASTM C476, with a minimum cube strength = 2,000 psi.
3000 psi concrete using 3/8" diameter aggregate. placed by vibrating unless an approved self consolidating mix is used
Lifts shall not exceed five feet in height
If grout pour height exceeds 5 feet, clean-out holes shall be provided.
Space continuous horizontal joint reinforcing at 16" maximum in all CMU walls.
Joint reinforcing shall be welded type with 9 gage side-wires and 9 gage trussed or ladder cross wires.
Reinforcing bars shall be as for reinforced concrete except as noted.
At splices, lap bars 48 diameters.
Provide reinforced grouted vertical cells
at corners, ends of walls, jambs of openings, each side of vertical control joints, and
at spacing shown on drawings.
Reinforcement shall be secured against displacement prior to grouting
by wire bar locators or other suitable devices at intervals not exceeding 200 bar diameters or 10 feet.
Where noted on the drawings,
provide clearance between masonry and structural elements, or
wrap steel with polyethylene film.
Provide vertical control joints in all masonry walls
as located on architectural drawings or
at 25'-0 maximum spacing.
at both jambs of openings wider than six feet.
Submit for review
Certificates for materials used in masonry construction indicating compliance with the contract documents
Special Inspection is required by design. See Special Inspection Notes.
MSJC **Level 2** Quality Assurance, MSJC Table 1.14.2
Prism and grout tests will be required prior to the start of masonry work shall consist of five (5) masonry prisms.
Test specimens shall be made by the masons, at the direction of the owner's representative,
with materials and techniques currently being used in the wall.
Specimens shall be protected and field cured for 48 hours before being transported to a testing agency.
The testing agent will be hired by the owner and shall be responsible for laboratory care and curing of specimens, testing, and reporting results to the owner, contractor, architect, and engineer in accordance with ASTM E447-92

LOOSE LINTELS:
Unless noted otherwise, provide galvanized loose lintels per general notes detail.

STRUCTURAL WOOD FRAMING:
In-Grade Base Values have been used for design.
2x framing shall be Spruce-Pine-Fir S4S No. 2 and better unless noted.
All lumber shall be 19% maximum moisture content, unless noted.
Solid timber beams and posts shall be Douglas Fir-Larch No. 1.

Existing roof purlins have been analyzed using assumed allowable Fb = 1580 psi and E = 1,600,000 psi, similar to Douglas Fir Select Structural, based on findings in limited areas of the roof framing. Existing roof framing throughout the structure should be verified in the field as typical of the assumed conditions. Notify S.I. if conditions other than the indicated assumptions exist.

Studs shall be Spruce-Pine-Fir S4S No. 2 and better.
Top and bottom plates shall be Spruce-Pine-Fir S4S No. 2 and better.
Wood in contact with concrete shall be pressure-treated Spruce-Pine-Fir S4S No. 2 or Southern Yellow Pine.
Conventional light framing shall comply with IBC Section 2308.
Except as noted otherwise, minimum nailing shall be provided as specified in IBC Table 2304.9.1 "Fastening Schedule."
Plywood and oriented strand board (OSB) floor and roof sheathing shall be APA graded with panel identification index, thickness, and nailing as noted on the drawings.
Nail (or screw to light gauge structural steel framing) wall sheathing with 8d commons (or #10 tek screws to light gauge structural steel framing) at 4" o.c. at panel edges, and 12" o.c. at intermediate framing except as noted.
SHEATH ALL EXTERIOR WALLS. SHEATH INTERIOR WALLS AS SHOWN ON THE DRAWINGS.
BLOCK AND NAIL/SCREW ALL EDGES BETWEEN STUDS.
Sheathing shall be continuous from bottom plate to top plate. Cut in "L" and "T" shapes around openings. Lap sheathing over rim joists min. 4" at all floors to tie upper and lower stud walls together.
Minimum height of sheathing panels shall be 16" to assure that plates are tied to studs.
Minimum 3-8d per stud and nail plates with "edge nail" spacing.
Sole plate at all perimeter walls and at designated shear walls shall be nailed as for braced panels with 3-16d x 3 1/2" long box nails (coated or deformed shank) per 16". 12d nails are not acceptable.
Provide solid blocking between joists under jamb studs of openings.
Pre-engineered, prefabricated trusses shall be designed for the fabricator by a Professional Engineer Registered in the State of construction, and shall comply with Code Requirements.
Truss to truss connections specified shall be by truss supplier, unless specifically noted on the drawings.
Lower chord of gable end trusses shall be anchored to wall plate with framing anchors at 4'-0 spacing and laterally braced to roof framing at 8'-0 spacing.
Truss supplier shall specify all floor and roof truss bracing and bridging.
All roof rafters, joists, trusses, and beams shall be anchored to supports with metal framing anchors.
Light gage framing anchors shown or required, shall be Simpson "Strong Tie" and installed with the number and type of nails recommended by the manufacturer to develop the rated capacity.
Note that heavy-duty hangers and skewed hangers may not be stocked locally and require special order from the factory.
All beams and trusses shall be braced against rotation at points of bearing.
Unless otherwise indicated, install two lengths of solid blocking x joist depth x 12 inches long in floor framing under column loads.
Columns must have a continuous load path to foundation.
Lead holes for lag screws shall be drilled in accordance with Table 6.23 of the AITC Timber Construction Manual, 3rd edition.

FIELD VERIFICATION OF EXISTING CONDITIONS:
Contractor shall thoroughly inspect and survey existing structure to verify conditions that affect the work shown on the drawings.
Contractor shall report any variations or discrepancies to the Architect before proceeding.

STRUCTURAL ERECTION AND BRACING REQUIREMENTS:
The structural drawings illustrate the completed structure with elements in their final positions, properly supported and braced.
These construction documents contain typical and representative details to assist the contractor.
Details shown apply at all similar conditions unless otherwise indicated.
Although due diligence has been applied to make the drawings as complete as possible, not every detail is illustrated, nor is every exceptional condition addressed.
All proprietary connections shall be installed in accordance with the manufacturers' recommendations.
All work shall be accomplished in a workmanlike manner and in accordance with the applicable code and local ordinances.
The general contractor is responsible for coordination of all work, including layout and dimension verification, materials coordination, shop drawing review, and the work of subcontractors.
Any discrepancies or omissions discovered in the course of the work shall be immediately reported to the architect for resolution.
Continuation of work without notification of discrepancies relieves the architect and engineer from all consequences.
Unless otherwise specifically indicated, the drawings do not describe methods of construction.
The contractor, in the proper sequence, shall perform or supervise all work necessary to achieve the final completed structure, and to protect the structure, workmen, and others during construction.
Such work shall include, but not be limited to, bracing, shoring for construction equipment, shoring for excavation, formwork, scaffolding, safety devices and programs of all kinds, support and bracing for cranes and other erection equipment.
Do not backfill against basement or retaining walls until supporting slabs and floor framing are in place and securely anchored, unless adequate bracing is provided.
Temporary bracing shall remain in place until all floors, walls, roofs and any other supporting elements are in place.
The architect and engineer bear no responsibility for the above items, and observation visits to the site do not in any way include inspection of them.

SINGLE-PLATE SHEAR CONNECTION SCHEDULE

BM. SIZE	# OF 3/4"Ø BOLTS	L (in.)	CONN CAP. (kips)
W8, W10	2	6	16.3
W12, W14	3	9	25.6
W16	4	12	34.8
W18	5	15	43.5
W21	6	18	51.6
W24	7	21	59.7

*ALL BOLTS TO BE ASTM A325 -TYP UNO
TYPICAL SINGLE PLATE SHEAR CONNECTION
(PROVIDE SIMILAR BOLTING AT BEAM-TO-BEAM CONNECTION)

ABBREVIATIONS KEY

AB	Anchor Rod (Bolt)	EF	Each Face	MACH	Machine	SC	Slip Critical
ADDL	Additional	EJ	Expansion Joint	MASY	Masonry	SCH	Schedule
ADJ	Adjustable	ELEV	Elevation	MATL	Material	SDST	Self Drilling Self Tapping
AFF	Above Finished Floor	ELEC	Electric (Electrical)	MAX	Maximum	SECT	Section
ALT	Alternate	ENGR	Engineer	MB	Machine bolt	SF	Square Feet
AMT	Amount	EQ	Equal	MECH	Mechanical	SHT	Sheet
ANCH	Anchor, Anchorage	EQUIP	Equipment	MEZZ	Mezzanine	SHTG	Sheathing
APPROX	Approximate	EQUIV	Equivalent	MFR	Manufacture, -er, -ed	SIM	Similar
ARCH	Architect, -ural	ES	Each Side	MIN	Minimum	SLH	Short Leg Horizontal
ATR	All Thread Rod	EST	Estimate	ML	Microllam (Trus-joist brand LVL)	SLV	Short Leg Vertical
AVG	Average	E-W	East to West			SOG	Slab on Grade
BC	Bottom of Concrete	EXC	Excavate	MO	Masonry Opening	SP	Spaces
BL	Brick Ledge	EXP	Expansion	MTL	Metal	SPEC	Specifications
BLK	Block	EXT	Exterior	NF	Near Face	SQ	Square
BLKG	Blocking	FND	Foundation	NIC	Not In Contract	ST	Snug Tight
BM	Beam	FF	Far Face, Finished Floor	NS	Near Side	STD	Standard
BOT	Bottom	F-F	Face to Face	N-S	North to South	STIFF	Stiffener
BRG	Bearing	FIG	Figure	NTS	Not to Scale	STL	Steel
BW	Bottom of Wall	FL	Flush	OCJ	OSHA Column Joist	STRUCT	Structure, -al
CB	Counterbore	FLG	Flange	OD	Outside Diameter	SUPT	Support
CF	Cubic Foot	FLR	Floor	OF	Outside Face	SY	Square Yard
CG	Center of Gravity	FO	Face of	OH	Opposite Hand	SYM	Symmetrical
CIP	Cast in Place	FP	Full Penetration	OPNG	Opening	T&B	Top and Bottom
CJ	Construction Joint (Control Joint)	FS	Far Side	OPP	Opposite	T&G	Tongue and Groove
		FTG	Footing	OSB	Oriented Strand Board	TB	Top of Beam
CLG	Ceiling	GA	Gage (Gauge)	PAF	Powder Actuated Fast'nr	TC	Top of Concrete
CLR	Clear	GALV	Galvanized	PC	Precast	TD	Top of Deck
CM	Construction Manager (Management)	GC	General Contractor	PCF	Pounds Per Cubic Foot	THD	Thread
		GEN	General	PEN	Penetration	THK	Thick, -ness
CMU	Concrete Masonry Unit	GL	Glue laminated (Glulam)	PERP	Perpendicular	TJ	Top of Joist
COL	Column	GND	Ground	PL	Property Line	TL	Total Load
COM	Common	GR	Grade	PLF	Pounds per Linear Foot	TPG	Topping
COMB	Combination	GT	Girder Truss	PNL	Panel	TRANS	Transverse
CONC	Concrete	GYP BD	Gypsum Board	PP	Panel Point	TW	Top of Wall
CONN	Connection	HAS	Headed Anchor Stud	PS	Prestressed	TYP	Typical
CONT	Continue (Continuous)	HORIZ	Horizontal	PSF	Pounds per Square Foot	ULT	Ultimate
COORD	Coordinate, -tion	HT	Height	PSI	Pounds per Square Inch	UNO	Unless Noted Otherwise
CS	Countersink	ID	Inside Diameter	PSL	Parallel Strand Lumber (generic term)	VERT	Vertical
CTR	Center	IF	Inside Face			VIF	Verify in Field
CY	Cubic Yard	INT	Interior (Intermediate)	PT (1)	Post Tensioned	WA	Wedge Anchor
DAB	Deformed Anchor Bar	JB	Joist Bearing	PT (2)	Pressure Treated	WP	Work Point
DET	Detail	JST	Joist	PTN	Partition	WT	Weight
DEV	Develop	JT	Joint	PWD	Plywood	WWF	Welded Wire Fabric
DIAG	Diagonal	K	Kip (1,000 lbs.)	QTY	Quantity	XS	Extra Strong
DIM	Dimension	LD	Load	R	Radius	XSECT	Cross-section
DL	Dead Load	LL	Live Load	RE	Reference (refer to)	XXS	Double Extra Strong
DN	Down	LLH	Long Leg Horizontal	RECT	Rectangle		
DP	Drilled Pier	LLV	Long Leg Vertical	REINF	Reinforce, -ed, -ing	(E)	Existing
DT	Double Tee	LOC	Location	REQ	Required	(N)	New
DWG	Drawing	LSL	Laminated Strand Lumber (generic term)	REQMT	Requirement	(R)	Remove
DWL	Dowel			RET	Retaining		
EA	Each	LT	Light	RM	Room		
ECC	Eccentric	LVL	Laminated Veneer Lumber (generic term)	RMO	Rough Masonry Opening		
E-E	End to End			RO	Rough Opening		

TYPICAL LOOSE LINTEL INSTALLATION
NO SCALE

OPENING SIZE	LINTEL SIZE	GROUTED JAMB WIDTH
LESS THAN 4'-0	L 4" x 3-1/2" x 3/8" LLV	8"
4'-1" TO 5'-4"	L 5" x 3-1/2" x 1/4" LLV	8"
5'-5" TO 6'-6"	L 6" x 3-1/2" x 5/16" LLV	1'-4"

* Minimum lintel except as noted, one angle for each 4" of wall thickness to bear 4" each end

Structural Drawing Index

S1.0	General Notes, Etc.
S1.1	Mezzanine Framing Plan
S1.2	Roof Framing Plan
S2.1	Details

FOR PERMIT

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S1.0