

**GENERAL STRUCTURAL NOTES**

44 Quebec Street  
Portland, ME  
SI Job # 17-0017

**DESIGN LIVE LOADS:**

	2009 IBC, MUEBC
* Snow	60 psf (Pg)
* Wind	90 mph, exp B, 3 second gust
* Floor	40 psf

**FOUNDATION EXISTING:**

- \* Foundations are designed without an engineer's soil investigation. Foundation design criteria was assumed for purpose of foundation design and shall be confirmed by a soils engineer, at owner's expense, prior to construction. (This procedure may require revisions to foundation design, at additional expense to the owner, if soils engineer determines that such design criteria are inappropriate for this building site.)
- \* Footings shall be placed on undisturbed natural soil or compacted fill tested and approved by soils engineer.
- \* Allowable bearing pressure = 1,500 psf. Bear on soil approved by the Soils Engineer. -typ

**CONCRETE AND REINFORCEMENT:**

- \* Concrete shall conform to applicable provisions of ACI-301 and 318. Minimum 28 day compressive strength (F'c) as follows:
 

Footings:	3,000	psi
Piers:	4,000	psi w/4-6% air entrainment
Interior Slabs:	3,500	psi w/fibermesh
Exterior Slabs:	4,000	psi w/4-6% air entrainment and fiber mesh
- \* Cement Type: 1/II
- \* Deformed reinforcement: ASTM A615 grade 60, except bars specified to be field-bent, stirrups, and ties which shall be grade 40.
- \* Fibermesh: 100% virgin polypropylene, fibrillated fibers as manufactured by Fibermesh Co. per ASTM C-1116 type 111 4.1.3 and ASTM C-1116 performance level one, 1.5 lb. per cubic yard.
- \* Welded Wire Fabric (WWF): ASTM A185. See also plan.
- \* Typical minimum foundation reinforcing: 2 #4 top and bottom, (except as noted) continuous at corners and steps.
- \* Reinforcement shall be fabricated and placed per ACI Manual of Standard Practice (ACI-315). At splices, lap bars 50 diameters unless noted otherwise.
- \* Minimum 2 #4 around all four sides of all openings, extend min. 2'-0 beyond openings.
- \* Concrete cover over reinforcing: 1 1/2" for concrete placed against forms; 3" for concrete placed against earth. See also drawings.
- \* In continuous members, splice top bars at mid span and bottom bars over supports.
- \* Keep reinforcement clean and free of dirt, oil, and scale. Oil forms prior to placing reinforcement.
- \* Expansion Anchors shall be ICC-ES approved, installed in accordance with manufacturers specifications. In concrete: Wedge Type

**WOOD FRAMING:**

- \* Dimension Lumber is designed and shall be supplied using BASE VALUES Design Criteria.
- \* SPF #2 and better (Maximum Moisture Content 19%) U.O.N.
- \* Plates: Sill plates: Pressure Treated SPF or Southern Pine;
- \* "Pressure treated lumber" shall be framing material of the specified species which has been pressure treated with a decay and insect resistant solution, meeting all current standards for wood in contact with concrete, masonry, or in a wet location.
- \* Sill plates in contact with masonry or concrete foundations, footings or slabs may be treated Timber Strand LSL (zinc borate treatment). Sodium borate treatment may also be acceptable for sill plate applications when protected from weather.
- \* Acceptable treatment mediums for wood in contact with earth or in exterior applications include ACQ-C and ACQ-D (Alkaline Copper Quaternary) and copper azole (CBA-A and CBA-B).
- \* DO NOT USE WOODS WHICH HAVE BEEN TREATED WITH AMMONIA BASED CARRIERS.
- \* All connectors shall meet the recommendations of the pressure treated wood manufacturer, but shall be not less than Hot Dipped Galvanized meeting requirements of ASTM A653, such as Simpson ZMAX, (G185). All screws, nails and bolts shall match hangers and other connectors, and shall meet ASTM A129 for individual connectors, and ASTM A153 for fasteners.
- \* For durability, it is our recommendation that connectors used in exposed conditions with treated lumber be stainless steel.
- \* Do not mix galvanized and stainless products.
- \* Do not allow aluminum to contact treated wood.
- \* Top and Bottom Plates: SPF No 2 and better
- \* 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.
- \* SHEATH ALL EXTERIOR WALLS.
- \* Minimum nailing shall comply with IBC Table 2304.9.1 except where more or larger nailing shown on drawings.
- \* All roof rafters, joists, beams shall be anchored to supports with metal framing anchors.
- \* Double joists under partitions where joists are parallel to partitions.
- \* Provide continuous wall studs each side of wall openings equal to one half or greater of number of studs interrupted by openings.
- \* All wall studs shall be continuous from floor to floor or from floor to roof.
- \* Cross bridge all dimension lumber roof and floor joists at midspan or 8'-0" o.c. max and provide solid blocking or rim joists at all joist supports and joist ends.
- \* Metal connectors: Simpson Strong Tie unless otherwise noted, installed with number and type of nails to achieve maximum rated capacity. Note that heavy duty and skewed hangers may require special order.
- \* All beams shall be braced against rotation at points of bearing.
- \* Drypack grout all steel beam pockets flush after beams are set.
- \* 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 bolts shall be 60% to 70% of lag shank diameter in compliance with AITC criteria.

**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.
- \* The contractor, in the proper sequence, shall provide proper shoring and bracing as may be required to achieve the final completed structure.
- \* 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.
- \* These plans have been engineered for construction at one specific building site. Builder assumes ALL responsibility for use of these plans at Any Other building site. Plans shall not be used for construction at any other building site without specific review by the engineer.
- \* Observations of foundation reinforcing or framing required by the owner, lender, insurer, building department or any other party will be accomplished by the engineer at the owner's expense. At least 24 hours advance notice is requested.
- \* All slabs on grade shall be separated from adjacent structural and finish elements to allow free movement of the slab, unless specifically shown and noted otherwise.

**PLANT FABRICATED / PRE-ENGINEERED WOOD FRAMING:**

- \* Trussed floor joists and roof joists shall be designed and stamped by a registered engineer to support the full dead loads and the superimposed design loads noted on the drawings.
- \* All pre-engineered trusses shall be designed for the deflection listed:
 

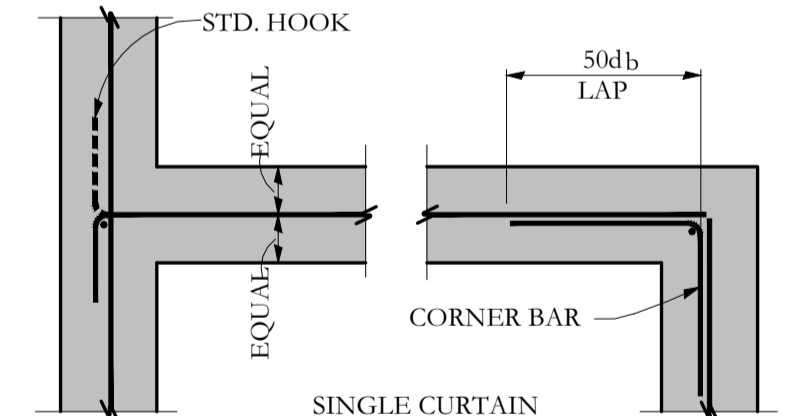
Floor: Total Load = L/240 or 1" max.	Live Load = L/600
Roof: Total Load = L/240 or 1" max.	Snow Load = L/300
- \* Stresses shall not exceed those listed in the NDS. 15% stress increase may not be used.
- \* Web arrangement and member forces shall be determined by the fabricator.
- \* Manufacture and installation of trusses shall comply with ANSI/TPI 1 "National Design Standard for Metal-Plate-Connected Wood Truss Construction", TPI H1B "Commentary and Recommendations for Handling Installing and Bracing Metal Plate Connected Wood Trusses", TPI DSB "Recommended Design Specification for Temporary Bracing of Metal Plate Connected Wood Trusses".
- \* Calculations and shop drawings, including member sizes, lumber species and grades, and substantiating data for connector capacities, shall be submitted to the Architect and Engineer for review prior to fabrication.
- \* Manufacture "I"-series roof and floor joists shall be by TJI/I-Level, LPI, BCI, NJI, OJ with structural wood flanges and webs, and carry Code approval for the composite section.
- \* Bridging and blocking shall be installed according to the fabricator's requirements.
- \* Shop drawings shall be submitted to the Architect for review prior to fabrication.
- \* Beams noted as LVL on plan shall be 1-3/4" wide Laminated Veneer Lumber beams of the depth noted on plan. Shall be plant-fabricated and manufactured by I Level, Shall have the following minimum allowable design stresses:
 

Fb = 2600 psi	Fv = 285 psi	Fc (  ) = 2460 psi	Fc(⊥) = 750 psi	E = 1900 ksi
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- \* Beams noted as PSL on plan shall be plant-fabricated. Manufactured by I Level, and have the following minimum allowable design stresses:
 

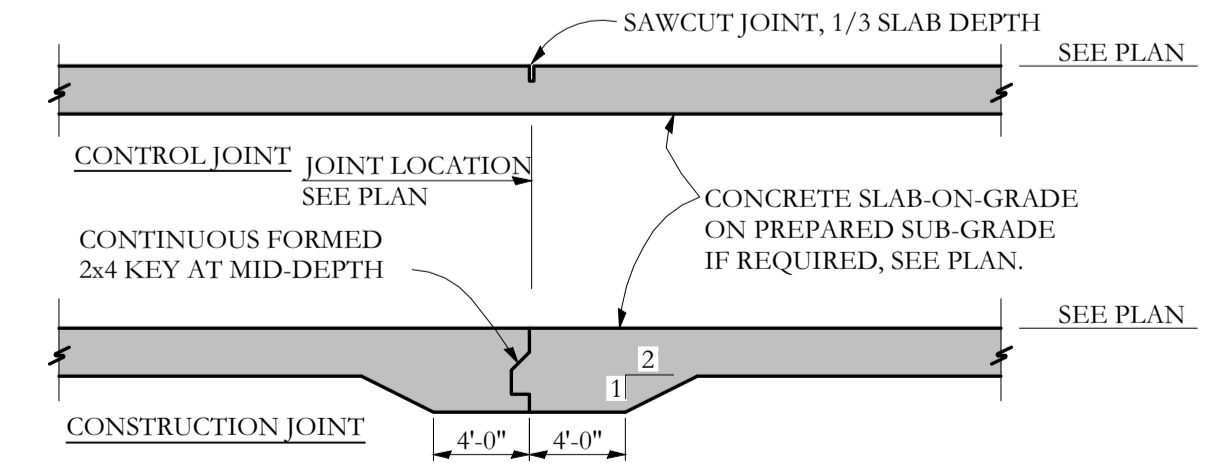
Fb = 2900 psi	Fv = 290 psi	Fc (  ) = 2900 psi	Fc(⊥) = 750 psi	E = 2000 ksi
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ABBREVIATIONS KEY			
AB	Anchor Rod (Bolt)	EF	Each Face
ADDL	Additional	EJ	Expansion Joint
ADJ	Adjustable	ELEV	Elevation
AFF	Above Finished Floor	ELEC	Electric (Electrical)
ALT	Alternate	ENGR	Engineer
AMT	Amount	EQ	Equal
ANCH	Anchor, Anchorage	EQUIP	Equipment
APPROX	Approximate	EQUIV	Equivalent
ARCH	Architect, -ural	ES	Each Side
ATR	All Thread Rod	EST	Estimate
AVG	Average	E-W	East to West
BC	Bottom of Concrete	EXC	Excavate
BL	Brick Ledge	EXP	Expansion
BLK	Block	EXT	Exterior
BLKG	Blocking	FND	Foundation
BM	Beam	FF	Far Face, Finished Floor
BOT	Bottom	F-F	Face to Face
BRG	Bearing	FIG	Figure
BW	Bottom of Wall	FL	Flush
CB	Counterbore	FLG	Flange
CF	Cubic Foot	FLR	Floor
CG	Center of Gravity	FO	Face of
CIP	Cast in Place	FP	Full Penetration
CJ	Construction Joint (Control Joint)	FS	Far Side
CLR	Clear	FTG	Footing
CLG	Ceiling	GA	Gage (Gauge)
CM	Construction Manager (Management)	GALV	Galvanized
CMU	Concrete Masonry Unit	GC	General Contractor
COL	Column	GEN	General
COM	Common	GL	Glue laminated (Glulam)
COMB	Combination	GND	Ground
CONC	Concrete	GR	Grade
CONN	Connection	GT	Girder Truss
CONT	Continue (Continuous)	GYP BD	Gypsum Board
COORD	Coordinate, -tion	HAS	Headed Anchor Stud
CS	Countersink	HORIZ	Horizontal
CTR	Center	HT	Height
CY	Cubic Yard	ID	Inside Diameter
DAB	Deformed Anchor Bar	IF	Inside Face
DET	Detail	INT	Interior (Intermediate)
DEV	Develop	JB	Joist Bearing
DIAG	Diagonal	JST	Joist
DIM	Dimension	JT	Joint
DL	Dead Load	K	Kip (1,000 lbs.)
DN	Down	LD	Load
DP	Drilled Pier	LL	Live Load
DT	Double Tee	LLH	Long Leg Horizontal
DWG	Drawing	LLV	Long Leg Vertical
DWL	Dowel	LOC	Location
EA	Each	LSL	Laminated Strand Lumber (generic term)
ECC	Eccentric	LT	Light
E-E	End to End	LVL	Laminated Veneer Lumber (generic term)
MACH	Machine	MFR	Manufacture, -er, -ed
MASY	Masonry	MIN	Minimum
MATL	Material	ML	Minimum
MAX	Maximum	MO	Masonry Opening
MB	Machine bolt	MTL	Metal
MECH	Mechanical	NF	Near Face
MEZZ	Mezzanine	NIC	Not In Contact
MFR	Manufacture, -er, -ed	NS	Near Side
SIM	Similar	N-S	North to South
SLH	Short Leg Horizontal	NTS	Not to Scale
SLV	Short Leg Vertical	OCJ	OSHA Column Joist
SOG	Slab on Grade	OD	Outside Diameter
SP	Spaces	OF	Outside Face
SPEC	Specifications	OH	Opposite Hand
SQ	Square	OPNG	Opening
ST	Standard	OPP	Opposite
STD	Standard	OSB	Oriented Strand Board
STIFF	Stiffener	OSB	Oriented Strand Board
STL	Steel	PAF	Powder Actuated Fast'n
STRUC	Structure, -al	PC	Precast
SUPT	Support	PCF	Pounds Per Cubic Foot
SY	Square Yard	PEN	Penetration
SYM	Symmetrical	PERP	Perpendicular
T&B	Top and Bottom	PL	Property Line
T&G	Tongue and Groove	PLF	Pounds per Linear Foot
TB	Top of Beam	PNL	Panel
TC	Top of Concrete	PP	Panel Point
TD	Top of Deck	PS	Prestressed
THD	Thread	PSF	Pounds per Square Foot
THK, -ness	Thickness	PSI	Pounds per Square Inch
TJ	Top of Joist	UNO	Unless Noted Otherwise
TL	Total Load	VERT	Vertical
TPTG	Topping	VIF	Verify in Field
TRANS	Transverse	WA	Wedge Anchor
TW	Top of Wall	WP	Work Point
TYP	Typical	WT	Weight
ULT	Ultimate	WWF	Welded Wire Fabric
XS	Extra Strong	XS	Extra Strong
R	Radius	XSECT	Cross-section
RE	Reference (refer to)	XXS	Double Extra Strong
RECT	Rectangle		
REIN	Reinforce, -ed, -ing	(E)	Existing
REQ	Required	(N)	New
REQMT	Requirement	(R)	Remove
RET	Retaining		
RM	Room		
RMO	Rough Masonry Opening		
RO	Rough Opening		

FRAMING PLAN SYMBOLS KEY	
□	WOOD POST
○	STEEL COLUMN
⊗	NUMBER OF WOOD STUDS IN POST BELOW
A	COLUMN ABOVE THIS LEVEL
C	COLUMN CONTINUOUS THROUGH THIS LEVEL
—	JOIST BEARING
—	CONTINUOUS JOIST WITH INTERMEDIATE BEARING
—	FLUSH FRAMED JOIST BEARING WITH HANGER
—	WOOD STUD BEARING WALL BELOW
—	OVER FRAMING BY OTHERS -TYP
⊗	NUMBER OF TRIM STUDS UNDER HEADER
⊗	NUMBER OF KING STUDS ADJACENT TO HEADER



**TYPICAL CONCRETE WALL INTERSECTIONS**  
NO SCALE



**TYPICAL JOINTS AT INTERIOR SLAB-ON-GRADE**  
NO SCALE

Structural Drawing Index	
S1.0	General Notes, Etc.
S1.1	Foundation Plan
S1.2	First Floor Framing
S1.3	Second Floor Framing
S1.4	Third Floor Framing
S1.5	Roof Framing/Plan
S2.1	Sections / Details
S2.2	Sections / Details

**Structural Integrity**  
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Date: 2/7/2017

PROJECT NO. --

PROJECT NAME  
**44 Quebec Street  
Portland, ME**

REVISIONS

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