

STRUCTURAL GENERAL NOTES

Pam MMJ
803 Forest Avenue, Unit B
Portland, ME

SI Job #: 16-0136

DESIGN LOADS: International Building Code; IBC 2009 Edition, except as noted
Occupancy Category, Table 1604.5

Roofs:	II	Standard
Ground Snow, Pg	60 psf	(used for drifting calculations)
Flat Roof Snow, PF	42 psf	
Snow Exposure Factor, Ce	Table 1608.3.1	1.0
Snow importance Factor, Is	Table 1604.5	1.0
Snow Thermal Factor, Ct	Table 1608.3.2	1.0
Floors:		
Retail 1 st Floor	100 psf	

Lateral	Wind	IBC 1603.1.4, ASCE 7-05	Analytic Method
	3 Second Gust Velocity		100 mph
	Importance Factor		1.0
	Building Category and Internal Pressure Coefficient		
	IBC 1609.2, ASCE Figure 6-5	Enclosed	GC _{pi} =0.18
	Exposure	B	
	Components and Cladding Pressures	DP 45 uno.	Also see specs
Seismic	Use Group	1	
	Importance Factor	1.0	
	Spectral Response	Acceleration	Coefficient
	Short Period	S _s 0.317 g	S _{DS} 0.327 g
	One Second	S ₁ 0.077 g	S ₀₁ 0.124 g
	Soils Site Class	Table 1615.1.1	D
	Design Category	Table 1616.3	B
	Basic Force Resisting System	Table 1617.6.2	
	Design Base Shear		88 kips
	Seismic Response Coefficient	C _s	0.218
	Response Modification Coefficient	R	2
	Analysis Procedure		Equivalent Lateral Force

FOUNDATION DESIGN:

Foundations are designed without an engineer's soil investigation. Foundation criteria was assumed for purposes of foundation design and shall be confirmed by a soils engineer, at owner's expense, prior to construction. (This procedure may require revision to foundation design, at additional expense to the owner, if soils engineer determines that such design criteria are inappropriate for this building site.) Soils engineer shall verify soil conditions and types during excavation and prior to concrete placement.

--Footings--

Design of footings is based on assumed maximum allowable soil pressure of 1500 psf on crushed stone, on firm virgin soil. Footings shall be placed on undisturbed natural soil or compacted fill tested and approved by soils engineer.

REINFORCED CONCRETE:

We encourage the use of blast furnace slag. Design is based on "Building Code Requirements for Reinforced Concrete"(ACI 318). Concrete work shall conform to "Standard Specifications for Structural Concrete" (ACI 3019).

Intended Use	f _c , psi 28day	Max W/C Ratio	Maximum Aggregate	Slump inches	Entrained Air Percent ±1.5%	Cement Type	Admixtures, Comments
Footings	3,000	.6	¾" Stone	4	---	I/II	
walls	4,000	.45	¾" Stone	4	6%	I/II	
exterior slab on grade	4,500	.45	¾" Stone	4	6%	I/II	Fibermesh
interior slabs on grade	3,000	.5	¾" Stone	4	---	I/II	Fibermesh
beams, columns	4,000	.45	¾" Stone	4	6%	I/II	

Detailing, fabrication, and placement of reinforcing steel shall be in accordance with the Manual of Standard Practice for Detailing Reinforced Concrete Structures (ACI 315).

Welded wire fabric shall conform to ASTM A185.

Reinforcing bars shall conform to ASTM A615,

Grade 60,

except ties or bars shown to be field-bent, which shall be Grade 40.

Epoxy coated reinforcing bars shall conform to ASTM 775.

Zinc coated (galvanized) reinforcing bars shall conform to ASTM 767.

Bars to be welded shall conform to ASTM 706.

At splices, lap bars 50 diameters unless noted otherwise.

At corners and intersections, make horizontal bars continuous or provide matching corner bars.

Around openings in walls and slabs, provide 2-#5, extending 2'-0" beyond edge of opening.

In continuous members, splice top bars at mid-span and splice bottom bars over supports.

Provide intermittent shear keys at all construction joints and elsewhere as shown on the drawings.

Except as noted on the drawings, concrete protection for reinforcement in cast-in-place concrete shall be as follows:

- Cast against and permanently exposed to earth 3"
- Exposed to earth or weather:
 - #6 through #18 bars 2"
 - #5 bar, W31 or D31 wire, and smaller 1-1/2"
- Not exposed to weather or in contact with ground:
 - Slabs, walls, joists: #11 bar and smaller 3/4"
 - Beams, columns:
 - Primary reinforcement 1-1/2"
 - Stirrups, ties, spirals 1-1/2"

Fibermesh admixture shall be 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 lbs per cubic yard of concrete.

Anchor bolts and rods for beam and column-bearing plates shall be placed with setting templates.

Permanent corrugated steel forms for concrete floor slabs shall be manufactured and erected according to the "Specifications and Code of Standard Practice" of the Steel Deck Institute.

All concrete work is subject to inspection by a qualified special inspector employed by the owner in accordance with IBC Section 1704.4.

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.

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.

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 wall sheathing with 8d commons 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 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.

ABBREVIATIONS KEY

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

Structural Drawing Index

S1.0	General Notes, Etc.
S1.1	Partial First Floor Framing Plan and Details

ALPHAarchitects

17 CHESTNUT STREET
PORTLAND, ME 04101
PHONE: 207.761.9500
FAX: 207.761.9595
design@alphaarchitects.com

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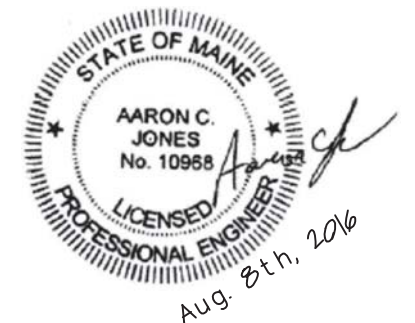
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Pam MMJ
803 Forest Ave. Unit B
Portland, ME. 04102

JOB: 16130

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Structural Integrity
Consulting Engineers, Inc.

SI # 16-0136

77 Oak Street
Portland, ME, 04101
p. 207-774-4614
f. 866-793-7835
www.structuralintegrity.com

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