

GENERAL NOTES:

- The notes on the drawings are not intended to replace specifications, in addition to general notes. See specifications for requirements.
- Structural drawings shall be used in conjunction with job specifications and architectural, mechanical, electrical, plumbing, and site drawings. Consult, openings, chases, inserts, reglets, sleeves, depressions, and other details not shown on structural drawings.
- All dimensions and conditions must be verified in the field. Any discrepancies shall be brought to the attention of the engineer before proceeding with the affected part of the work.
- Do not scale plans.
- Sections and details shown on any structural drawings shall be considered typical for similar conditions.
- All proprietary products shall be installed in accordance with the manufacturers written instructions.
- The structure is designed to be self supporting and stable after the erection is complete. It is the contractor's sole responsibility to determine erection procedures and sequencing to ensure the safety of the building and its components during erection. This includes the addition of necessary shoring, sheeting temporary bracing, guys or tiedowns. Such material shall remain the property of the contractor after completion of the project.
- All applicable federal, state, and municipal regulations shall be followed, including the federal department of labor occupational safety and health act.

DESIGN LOADS:

- Building code: IBC (2003) International Building Code.
- Design Live Loads: (Ground Snow load = 50 psf)
 - Roof 45 psf + drift as applicable
 - Floors 100 psf
 - Common areas and corridors. 100 psf
 - Stairs & exit ways 100 PSF
- Design wind loads are based on exposure B using 100 mph basic wind speed.
- Seismic Design per IBC 2003.

FOUNDATION NOTES:

- Foundations have been designed with a presumptive soil bearing capacity of 2000 psf to be verified by the general contractor in the field.
- Interior spread footings and exterior strip footings shall be founded on undisturbed native soil or compacted structural fill.
- Exterior strip and spread footings shall be founded a minimum of 4'-0" below finished site grade.
- Slabs on grade shall bear on a minimum of 12" of compacted structural fill or compacted 3/8" crushed stone. If loose or undesirable fills are encountered at the slab subgrade level, they shall be over excavated to the surface of the natural soil and replaced with structural fill. Refer to drawings and specifications for vapor barrier requirements. Moist cure slabs in accordance with ACI.
- Structural fill shall be used at all locations below footings and slabs and adjacent to the foundation walls. Prior to placement of structural fill, remove all topsoil and other unsuitable material. Compacted structural fill shall consist of clean granular material free of organics, loam, trash, snow, ice, frozen soil or any other objectionable material. It shall be well graded within the following limits:

SCREEN OR SIEVE SIZE	PERCENT FINER BY WEIGHT
6 INCH	100
3 INCH	70-100
NO. 4	35-70
NO. 40	5-35
NO. 200	0-5
- Structural fill (or 3/8" crushed stone) beneath slabs shall be placed in layers not exceeding 6 inches in loose measure and compacted by self-propelled compaction equipment at approximate optimum moisture content to a dry density of at least 95% of the maximum in place dry density as determined by the modified proctor test (ASTM D-1557). For structural fill or 100% of the rodded unit weight as determined by ASTM C-29 for 3/8" crushed stone.
- Underdrains shall be placed as shown on the site drawings. Underdrains shall be installed to positively drain to a suitable discharge point away from the structure. Refer to site drawings for additional information.
- Exterior concrete slabs on grade, shall be underlain by at least 4 feet of structural fill meeting gradation and compaction requirements noted above. Reinforce top of slabs with 6X6 - W1.4xW1.4 WWF.
- Backfill both sides of foundation walls simultaneously.

CONCRETE NOTES:

- All concrete work shall conform to ACI 318-Latest Edition.
- Concrete strength at 28 days shall be:
 - a) 3000 psi for footings, frost walls & piers.
 - b) 4000 psi for all slabs on grade.
- All concrete shall be air entrained 4% to 6% per the specifications.
- Concrete shall not be placed in water or on frozen ground.
- Provide PVC sleeves where pipes pass through concrete walls or slabs.
- Reinforcing bars shall conform to ASTM A615 Grade 60 deformed bars, and shall be detailed, fabricated and erected in accordance with ACI 315-Latest edition.
- Welded wire fabric shall be provided in flat sheets.
- Fiber reinforced concrete shall conform to ASTM C-1116.
- Splices of reinforcing bars shall be in accordance with ACI 318. Splices of WWF shall be 6" minimum.
- Concrete finishes: See specifications and Architectural drawings for applicable finishes.
- Anchor bolts shall conform to ASTM A307 hot dipped galvanized unless noted otherwise on plan.
- The general contractor shall be responsible for coordination of door bondout locations, slab depression & other required bondouts. Coordinate location of bondouts with Architectural, Mechanical & Plumbing, Electrical and equipment vendors as necessary to properly install each specific item.
- Provide formed or saw cut control joints 1/2" wide X 1" deep at 15'x15' (225 square feet max) intervals.

MASONRY NOTES:

- All hollow load bearing concrete masonry units shall be ASTM C90 grade N, type I standard weight standard blocks including stretchers & corner blocks unless noted otherwise.
- All load bearing concrete masonry units shall conform ASTM C90 grade N, type I standard weight standard blocks including stretchers & corner blocks.
- Masonry prism strength (f'm) shall be 1,500 psi.
- Mortar shall conform to ASTM Specification C270, type M or S.
- Concrete masonry units shall be laid in running bond.
- Wall penetrations shall be coordinated with the Architect and Owners vendors/designers and shall be field located.
- Provide joint reinforcing per drawings & specifications in all concrete masonry unit construction.
- All masonry reinforcement shall be spliced 48 bar diameters.
- Reinforcing bars shall conform to ASTM A615 grade 60 deformed bars and shall be detailed, fabricated and placed in accordance with ACI 315-Latest Edition.
- Masonry walls which support structural members shall have cells grouted solid full height under bearing with 2-#5 minimum vertical reinforcing bar in each cell UNO on plan.
- Bond beams shall be filled with grout capable of achieving 3000 psi compressive strength at 28 days. Reinforcing shall be supported prior to placing concrete to provide a minimum 1/2" clearance around all bars.
- Cells of masonry units containing vertical reinforcing shall be filled with grout Unless otherwise noted. Maximum grout lift without cleanouts and inspection shall be 4'-0". Support all vertical bars in units as shown on the drawings.
- Provide steel lintels for all masonry openings unless cmu lintel is indicated. Refer to lintel schedule for lintel sizes. All lintels used in exterior masonry walls shall be hot dipped galvanized.
- All steel permanently exposed to view shall be hot dipped galvanized in accordance with ASTM A653.

STRUCTURAL STEEL NOTES:

- Structural steel fabrication, erection, and connection design shall conform to AISC "Specification for the design, fabrication, and erection of structural steel"-Ninth edition.
- Structural steel:
 - a) Structural steel shall conform to ASTM A-36.
 - b) Structural tubing shall conform to ASTM A-500 GR-B
 - c) Structural pipe shall conform to ASTM A-53, TYPE E OR S
- Design connections for the reactions shown on the drawings or the maximum end reaction that can be produced by a laterally supported uniformly loaded beam for each given beam size and span.
- Field connections shall be bolted using 3/4" diameter ASTM A325 high strength bolts except where field welding is indicated on the drawings.
- All welding shall conform to AWS D1.1-Latest edition. Welding electrodes shall be E70XX.
- Structural Steel Primer Paint, TNEPEC 10-99 Alkyd rust inhibitive primer, 2.0 to 3.5 mils dry thickness, or approved alternate.
- Structural Steel Top Coat for steel permanently exposed to view. TNEPEC series 2 TNEPEC-GLOSS Enamel, 3.0 to 5.0 mils dry thickness, or approved alternate.

LIGHT GAGE METAL FRAMING:

- Acceptable light gage Manufacturer: Dietrick, Marino, or approved equal
- The extent of the work for the exterior metal stud wall system is detailed on the Architectural drawings. These notes shall be worked in conjunction with those drawings and the specifications.
- The following specifications and publications shall be followed.
 - a) American iron and steel institute cold form design manual, specification for the design of cold form steel structural members - latest edition.
 - b) American society for testing and materials (ASTM).
 - c) American institute of steel construction Manual of Steel Construction - 9TH Edition.
- Fabrication of light gage steel shall conform with requirements of ASTM A446 with the following minimum yield points (Fy):
 - a) 16 gage. and heavier - Fy = 50,000 psi (Grade D)
 - b) 18 gage. - Fy = 33,000 Psi (Grade A)
 - c) 20 gage. - Fy = 33,000 PSI (Grade A)
- Manufacturer of studs, runners, tracks and other framing members shall comply with ASTM C955.
- Framing components and accessories shall be galvanized per ASTM A525 minimum G60 coating.
- Screws and other attachment devices shall have a protective coating equivalent to cadmium or zinc plating and shall comply with ASTM A165 Type NS. self tapping screws shall be of the minimum diameter as indicated on the design drawings for each specific attachment detail. Penetration through joined materials shall not be less than three exposed threads.
- Standard steel shoves, plates, etc. shall conform to the material and finish specifications under Division 5.

EXTERIOR LIGHT GAGE CURTAIN WALLS:

- Provide channel shaped studs, joists, runners, tracks, blocking, clip angles, shoes, reinforcements, fasteners and other accessories recommended by the manufacturer for a complete framing system.
- The exterior stud framing subcontractor shall submit shop drawings and design calculations as specified in the previous mentioned specifications and publications. These drawings shall illustrate the design of the steel stud exterior wall framing and sheathing including steel lintels and all necessary structural steel stiffening and bracing.
- The exterior wall system shall be designed for a maximum allowable deflection, either horizontal or vertical, of 1/360 for EIFS and clapboard siding or 1/600 when in contact with masonry of the span in inches measured from point of attachment to structural steel or concrete including affect of studs only, not sheathing board or facing material.
- The design wind pressure shall be determined in accordance with 2003 IBC
- Securely anchor studs in track to floor construction and overhead structure. Provide slip joints where nonbearing vertical studs meet floor or roof structural members allow for 1/2" of vertical live load deflection at slip joints. Do not install steel studs until all dead load has been applied to the structure.
- Frame all openings larger than two feet with a minimum of double studs or as determined by the design submitted.
- Welding of framing components will be permitted only where indicated on structural drawings or as approved by the Engineer of Record.
- Field cutting of holes in steel framing members shall not be permitted.
- Touch up all steel bored by welding with zinc rich paint.
- Splices of axially loaded members shall not be permitted.
- Wire tying of members is not permitted.
- Complete bearing on supports shall be maintained for studs in axially loaded assemblies.

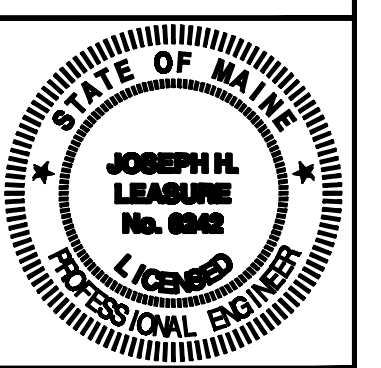
TIMBER FRAMING:

- All Timber framing shall be in accordance with the AITC timber construction manual or the national design specification (NDS) - latest edition
- Individual timber framing members shall be visually graded, minimum grade #2 Spruce-Pine-Fir (SPF), kiln dried to 19% maximum moisture content.
- Timber shall be southern yellow pine treated with ACQ water borne preservative in accordance with AWPA treatment C1 with 0.40 PCF retainage for items in contact with roofing, masonry or concrete with 0.60 PCF retainage for items in contact with earth.
- Metal connectors shall be used at all timber to timber connections or as noted on the design drawings. All metal connectors in contact with pressure treated timber shall be stainless steel.
- Provide Simpson H2.5 hurricane anchors where timber framing and/or trusses bear on bearing wall and structural beams.
- Nailing not specified shall conform with IBC 2003. All nails in contact with pressure treated timber shall be stainless steel.
- Provide 1/2" thick APA rated exterior wall sheathing fastened w/ 10d nails @ 4" o.c. at panel edges and 6" o.c. intermediate. Lap sheathing 1'-0" minimum over existing structure (Where applicable).
- Provide 3/8" thick APA rated roof sheathing fastened w/ 10d nails @ 6" o.c. at panel edges and intermediate.
- Provide 3/4" thick APA rated floor sheathing fastened w/ construction adhesive and 10d ring shank nails @ 6" o.c. at panel edges and intermediate.
- LVL indicated laminated veneer lumber beams manufactured by Boise Cascade or approved equal.

TIMBER TRUSS NOTES:

- Timber trusses shall be designed in accordance with structural loading produced by IBC 2003 and ASCE 7-88.
- Materials: Stress graded lumber, metal plate connectors. Minimum grade No. 2 M.S.R. Lumber, kiln dried, 15% maximum M.C., or approved alternate.
- Applicable specifications:
 - a) National Design Specification for stress graded lumber and its fastening (NDS).
 - b) Design specifications for light metal plate connected wood trusses (TPI-latest edition).
- Bracing: The truss manufacturer shall specify all bracing required both for temporary construction loading and for permanent lateral support of compression members and for permanent chord/web bracing.
- Submittals:
 - a) Submit design calculations, shop drawings, and erection procedures all affixed with the seal of a professional structural engineer licensed in the State of Maine.
 - b) Shop drawings shall show stress grade and size of members, size and location of plate connectors, size and location of bracing, and shall be approved by the truss designer.
- All fabricated trusses shall be inspected at the fabrication plant and approved trusses shall receive the TPI mark of approval in accordance with the truss plate institute in-plant inspection license agreement.
- Connector plates shall be galvanized.
- Provide Simpson H2.5 hurricane anchors at all locations where trusses bear on bearing walls and structural beams.

L & L STRUCTURAL ENGINEERING SERVICES, INC.
 SIX O. STREET
 SOUTH PORTLAND, MAINE 04106
 PHONE: (207) 767-4830
 FAX: (207) 799-5432



designed by: JHL	date: 5-21-10	description: FOR PERMIT ONLY	app'd: JHL
drawn by: AKB	rev: A		
checked by: JHL			
scale: AS NOTED			
date: 5-21-10			
plot date: 5-21-10			
project #: 2010-073			

58 CITY LINE DRIVE
 PORTLAND, MAINE
 GENERAL NOTES

S1

THESE DRAWINGS HAVE BEEN DEVELOPED BY L&L STRUCTURAL ENGINEERING SERVICES, INC. FOR THE TITLED SET ONLY. THE DRAWINGS ARE THE SOLE PROPERTY OF L&L ENGINEERING SERVICES, INC. AND THEY SHALL NOT BE USED, LENT, COPIED OR ALTERED WITHOUT THE WRITTEN CONSENT OF L&L STRUCTURAL ENGINEERING SERVICES, INC.