GENERAL STRUCTURAL NOTES

DESIGN LIVE LOADS: 2009 IBC, U.O.N.
Occupancy Category II
* Snow 60 psf
* Wind 100 mph, Exp D, 3 second gust
* Floor 40 psf

FOUNDATION:
* Foundations are designed without an engineer's soil investigation. Design criteria were 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 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.
* Maximum design soil pressure: 1500 psf

CONCRETE AND REINFORCEMENT:
* Concrete shall conform to applicable provisions of ACI-301 and 318.
Minimum 28 day compressive strength (F'c) as follows:
Footings : 2500 psi, 5% Air entrainment
Foundation Walls: 3500 psi, 5% Air entrainment
Interior Slabs: 3500 psi w/ WWR per plan
* Cement Type: I/II
Concrete exposed to soil:
All other:
* Deformed reinforcement: ASTM A615 grade 60, except bars specified to be field-bent, stirrups, and ties which shall be grade 40.
* Fibremesh: 100% virgin polypropylene, fibrillated fibers as manufactured by Fibremesh 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 #5 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 48 diameters unless noted otherwise.
* Minimum 2 #5 around all four sides of all openings, extend min. 2'-0 beyond openings.
* Concrete cover over reinforcing: 11/2" 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.

STRUCTURAL STEEL:
* Structural Beams: A992
* Angles, misc.: ASTM A36
* Anchor Bolts: ASTM A307 or A36.
* Standard pipe columns: ASTM A 53, Grade B.
* Tube Columns: ASTM A500, Grade B, 46 ksi
* Steel to Steel Connections: A325-TYP
* Connector bolts: ASTM A307
* Adjustable pipe columns:
3" diameter, 11 (eleven) gage, shall be certified by the manufacturer for a safe load capacity of 13,500 lbs. at 7'-6"
3" diameter "Heavy Duty" schedule 40 (3.5" O.D.) Columns shall be certified for 28,000 lbs. at 7'-6". Maximum screw extension 2".
* Expansion Anchors shall be ICC/ESR approved, installed in accordance with manufacturers specifications.
In concrete: Wedge Type
In solid masonry: Sleeve Type
* All exposed steel members, components, and connectors shall be hot dip galvanized.
* 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.
* 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 fitted web stiffeners welded to each side of webs above and below columns. (." plate or as noted)
* Attach wood nailer plates to beams with 1/2" diameter machine or carriage bolts at maximum 32" o.c., or 3/8" diameter bolts at 32" with glued contact face, or 5/32" diameter powder actuated drive pins at 24" o.c., U.O.N.

WOOD FRAMING:
* Dimension Lumber is designed and shall be supplied using BASE VALUES Design Criteria.
* Hem-Fir #2 and better (Maximum Moisture Content 19%) U.O.N.
Plates: Sill plates: Pressure Treated Hem Fir 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 or earth.
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 A123 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: Hem Fir
Hem Fir Studs U.O.N: 2 x 4 and 2 x 6 to 8'-0: stud grade
2 x 4 over 8'-0: standard and better
2 x 6 over 8'-0: No. 2 and better
Floor Joists: 2x12 @ 16" o.c. –typ, also see plan.
Rafters: 2x10 @ 16" o.c. –typ, also see plan
* Beams: Hem-Fir S.S., Fb=1350 psi, E=1,600,000 psi
* Columns: Hem-Fir No.1, Fb=1200 psi, E=1,600,000 psi
* Laminated Veneer Lumber (LVL): Manufactured 1 3/4" wide Microllam (ML) by Trus Joist or equivalent.
Fb=2,600 psi, E=1,900,000 psi, Fv=285 psi, depth noted on plans.
* LSL Rim Joists = 1-1/4" x depth indicated laminated strand lumber by Trus Joist. No substitutions.
* Glued, laminated framing members per ANSI Standard A190.1-92. Mark members with an AITC Quality Stamp and furnish an AITC Certificate of Conformance.
* All plywood and oriented strand board (OSB) sheathing shall be engineered grades with APA grade stamp indicating appropriate maximum spacing of supports.
Floor sheathing: nominal 3/4", APA Sturd-i-floor @ 24 inch o.c. tongue & groove glued and nailed.
Roof sheathing: minimum 5/8" CDX plywood, or 15/32" OSB, APA 32/16, nailed.
Wall sheathing: 1/2" CDX plywood or 7/16" OSB, APA 24/16, blocked and nailed.
* Nail wall sheathing with 8d commons at 6" o.c. at panel edges, and 12" o.c. field U.N.O. BLOCK AND NAIL ALL PANEL 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. Use 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". 10d/12d nails are not acceptable.
* End stud at each door jamb, at all exterior corners, and at ends of OSB sheathed wall sections shall have one H4 anchor to the sole plate.
See plans for sheathing locations other than code minimums (corners and 25' o.c.)

STRUCTURAL ERECTION AND BRACING REQUIREMENTS
* The structural drawings illustrate the completed structure with all 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 plans have been engineered for construction at this 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.
* Special Inspections/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.
* The foundation design shown assumes that the owner/builder is aware of the presence of expansive soils, and that he has read the previously referenced soils report. Use of these plans is indication that the owner/builder accepts the risks associated with building on this site, especially those related to slab on grade construction in finished areas. S.I. will not be held liable for damages caused by slab movement.

SHOP DRAWINGS
Fabricator and/or supplier of rebar and structural steel shall submit shop and erection drawings for architect and engineer review. Submit one reproducible and two prints for each drawing. Allow five working days for review.

5 NEW BEAM DETAIL
SCALE: 3/4" = 1'-0"

4 = # OF STUDS FOR BEAM BRG / TYPE OF COLUMN
2T, 1K = # TRIMMER AND KING STUDS
A = COLUMN ABOVE (A) OR BELOW (B)

***ALL TEMPORARY SHORING BY G.C.**

IF NEW 3" SLAB OVER EXISTING

4 THICKEND SLAB DETAIL AT NEW POST
SCALE: 3/4" = 1'-0"

IF ALTERNATE 4" SLAB ALTERNATE IS SELECTED

4ALT ALTERNATE: THICKEND SLAB DETAIL AT NEW POST
SCALE: 3/4" = 1'-0"

6 SLAB DETAIL AT PERIMETER SILL
SCALE: 3/4" = 1'-0"

2 STRUCTURAL - 1ST FLOOR FRAMING/FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

1 STRUCTURAL - 2ND FLOOR FRAMING PLAN
SCALE: 1/4" = 1'-0"

NO NEW WORK PROPOSED THIS LEVEL SHOWN FOR REFERENCE ONLY

3 STRUCTURAL - ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"

PERMIT SET

PROPOSED STRUCTURAL PLANS

S-1.0

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STUDIO MANAGER:
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CHANGES THIS ISSUE:

ID	DESCRIPTION

SUBMISSIONS:

ISSUE	DATE	DESCRIPTION
01	12/8/15	PERMIT SET

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