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STRUCTURAL GENERAL NOTES

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

Table with 3 columns: Category, Value, and Note. Includes Roofs (Ground Snow, Snow Exposure Factor, etc.) and Floors (Residential, Roof Deck, etc.).

Table with 3 columns: Category, Value, and Note. Includes Lateral (Wind, 3 Second Gust Velocity, etc.) and Foundation (Design lateral soil pressure, etc.).

FOUNDATION: Foundations are designed without an engineer's soil investigation. Foundation design criteria was assumed for purposes of foundation design and shall be confirmed by a soils engineer, at owner's expense, prior to construction.

FOUNDATION WALLS: Design lateral soil pressure (equivalent fluid pressure): Walls: 45 pcf. Backfill all retaining walls with free draining granular material except the top two feet.

REINFORCED CONCRETE: We encourage the use of bladed 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).

Table with 8 columns: Intended Use, Fc, psi, Max W/C Ratio, Maximum Aggregate, Slump inches, Entrained Air Percent, Cement Type, and Admixtures, Comments. Rows include footings, walls, exterior slab on grade, interior slabs on grade.

Reinforced Concrete Structures (ACI 315). Welded wire fabric shall conform to ASTM A185. Reinforcing bars shall conform to ASTM A615, Grade 60.

Bars to be welded shall conform to ASTM 706. 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.

- a. Cast against and permanently exposed to earth 3"
b. Exposed to earth or weather: #6 through #18 bars 2"
#5 bar, W31 or D31 wire, and smaller 1-1/2"
c. 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.

STRUCTURAL STEEL: Structural steel shall be detailed, fabricated, and erected in accordance with latest AISC Specifications, and Code of Standard Practice.

Structural steel wide flange beams shall conform to ASTM A992. Except as noted, framed beam connections shall be bearing-type with 3/4" diameter, snug tight, A490-N bolts, detailed in conformance with Part 4, Tables II and III, for 0.6 times the allowable uniform loads tabulated in Part 2 of the AISC Manual, 9th Edition.

All beams shall have full depth web stiffeners each side of webs above and below columns. Anchor rods shall conform to ASTM F1554, Grade 55, with weldability supplement S1. Headed anchor studs (HAS) shall be attached to structural steel with equipment approved by the stud manufacturer according to the stud manufacturer's recommendations.

Welding shall be done by a certified welder in accordance with AISC and AWS specifications and recommendations using E70-electrodes. Where not specifically noted, minimum weld shall be 3/16" fillet by length of contact edge. All post-installed anchors shall have current National Evaluation Report, and shall be installed in accordance with the manufacturer's requirements.

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 National 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

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. Wall sheathing: 1/2" CDX plywood or 7/16" OSB, APA 2416, blocked and nailed.

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.

SHOP DRAWINGS:

Construction Documents are copyrighted and shall not be copied for use as erection plans or shop details. Use of SI Inc.'s electronic files as base for shop drawings requires prior approval by SI Inc, signed release of liability by subcontractor, payment of an administration fee of \$100 per drawing sheet to SI Inc, and deletion of SI Inc's name and Logo from all sheets so used.

The General Contractor and his subcontractors shall submit in writing any requests to modify the plans or specifications. All shop and erection drawings shall be checked and stamped by the General Contractor prior to submission for Engineer's review. Unchecked submittals will be returned without review.

Furnish one (1) reproducible and two (2) prints of shop and erection drawings to the Structural Engineer for review prior to fabrication for reinforcing steel, structural steel and wood trusses. Submit in a timely manner to permit ten (10) working days for review.

In any drawings submitted for review do not constitute "in writing" unless specific suggested changes are clearly marked. Shop events, such changes by means of the shop drawing submittal process become the responsibility of the one initiating such change.

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.

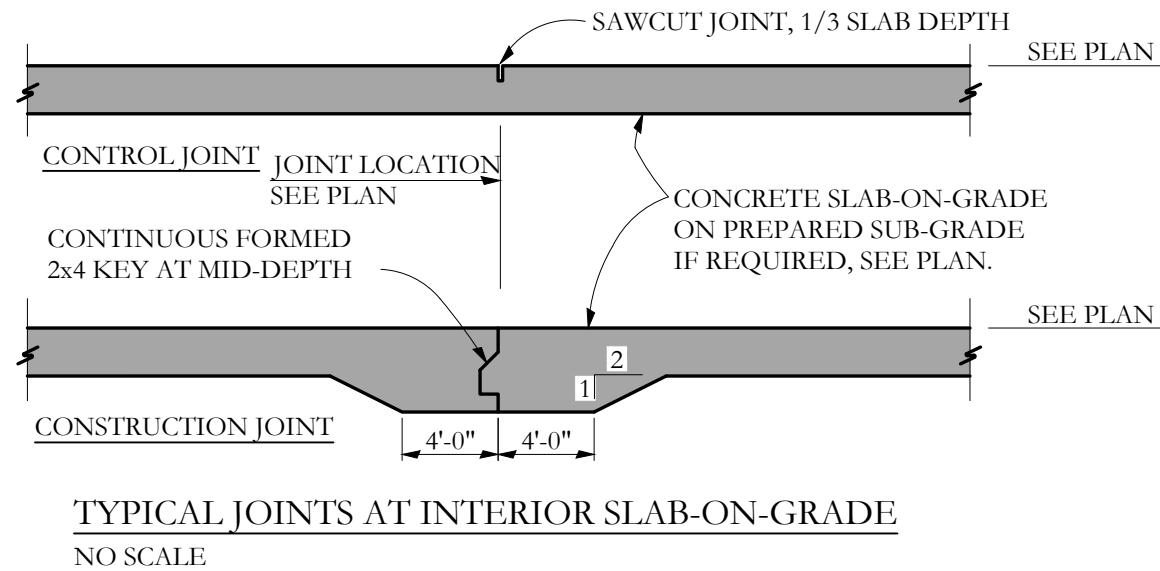
STRUCTURAL ERECTION AND BRACING REQUIREMENTS: The structural drawings illustrate the completed structure with elements in their final positions, properly supported and braced. These construction documents contain typical and representative details to assist the contractor.

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.

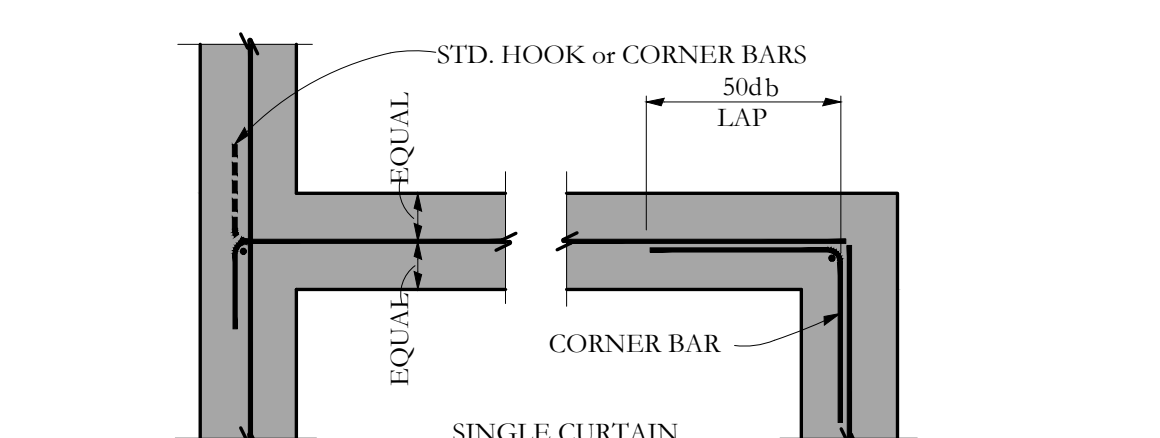
All proprietary connections shall be installed in accordance with the manufacturers' recommendations. All work shall be accomplished in a workmanlike manner and in accordance with the applicable code and local ordinances. The general contractor is responsible for coordination of all work, including layout 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.

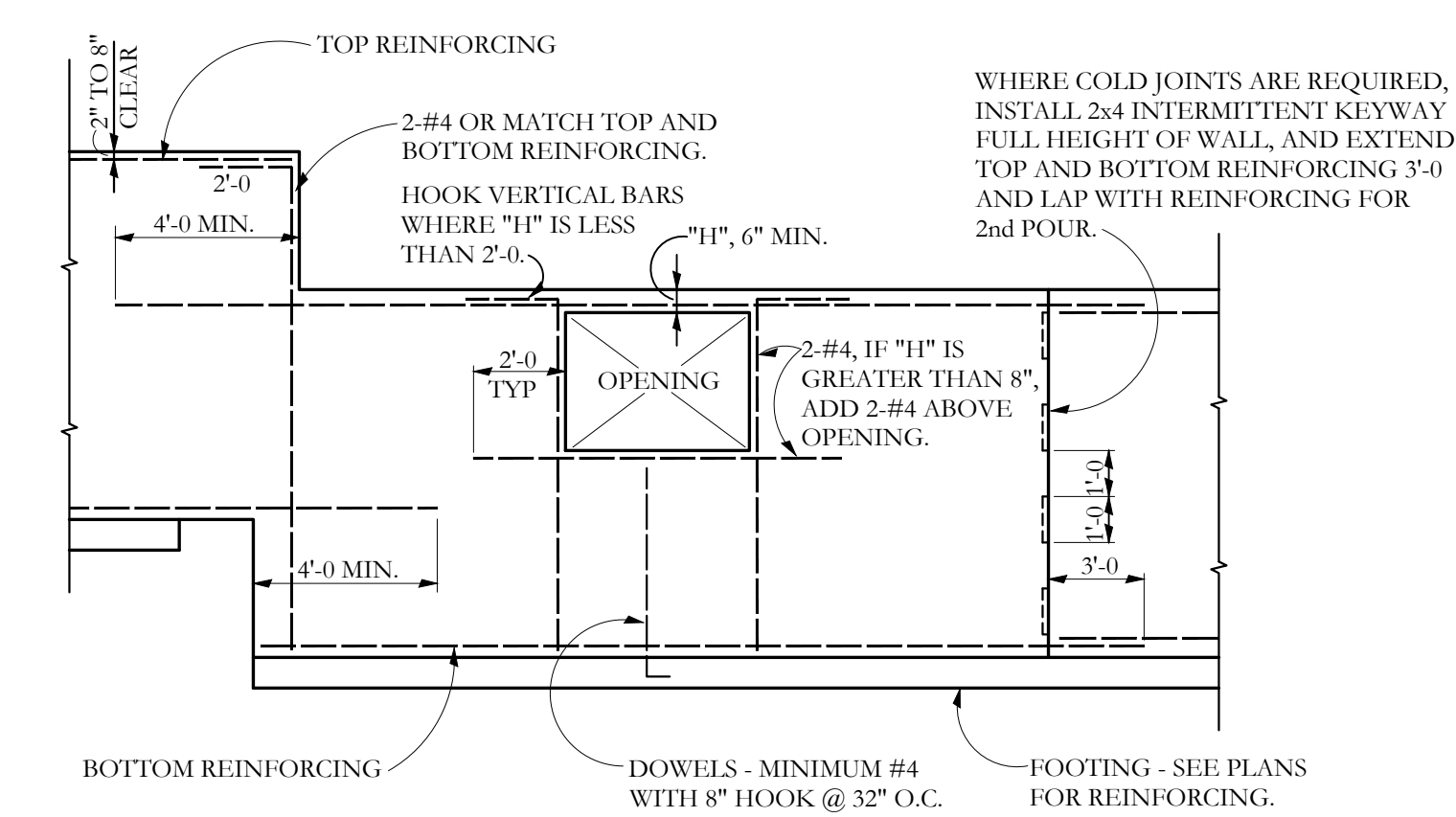
The contractor, in the proper sequence, shall perform or supervise all work necessary to achieve the final completed structure, and to protect the structure, workmen, and others during construction. Such work shall include, but not be limited to, bracing, shoring for construction equipment, shoring for excavation, formwork, scaffolding, safety devices and programs of all kinds, support and bracing for cranes and other erection equipment.



TYPICAL JOINTS AT INTERIOR SLAB-ON-GRADE NO SCALE



TYPICAL CONCRETE WALL INTERSECTIONS NO SCALE



TYPICAL REINFORCING AT STEPS AND OPENINGS NO SCALE

ABBREVIATIONS KEY

Large table listing abbreviations for various construction materials and components, including Anchor Rod (Bolt), Expansion Joint, Elevation, Electric (Electrical), Engineer, Equal, Equipment, Equivalent, Architect, -ural, Each Side, Estimate, East to West, Excavate, Expansion, Exterior, Foundation, Far Face, Finished Floor, Face to Face, Figure, Flush, Flange, Outside Diameter, Floor, Face of, Full Penetration, Far Side, Footing, Gage (Gauge), Galvanized, General Contractor, General, Glue laminated (Glulam), Ground, Grade, Girder Truss, Headed Anchor Stud, Horizontal, Height, Inside Diameter, Inside Face, Interior (Intermediate), Joist Bearing, Joist, Joint, Kip (1,000 lbs.), Load, Live Load, Long Leg Horizontal, Long Leg Vertical, Location, Laminated Strand Lumber (generic term), Light, Laminated Veneer Lumber (generic term), Machine, Masonry, Material, Maximum, Machine bolt, Mechanical, Mezzanine, Manufacture, -er, -ed, Minimum, Microlam, Slab on Grade, Masonry Opening, Metal, Near Face, Not In Contract, Near Side, North to South, Not to Scale, Flush, OSHA Column Joist, Outside Diameter, Outside Face, Opposite Hand, Opening, Opposite, Oriented Strand Board, Powder Actuated Fast'n, Precast, Pounds Per Cubic Foot, Penetration, Perpendicular, Property Line, Topping, Panel, Gypsum Board, Panel Point, Prestressed, Pounds per Square Foot, Pounds per Square Inch, Parallel Strand Lumber (generic term), Post Tensioned, Pressure Treated, Partition, Plywood, Quantity, Radius, Reference (refer to), Rectangle, Reinforce, -ed, -ing, Required, Requirement, Retaining, Room, Rough Masonry Opening, Rough Opening, Slip Critical, Schedule, Self Drilling Self Tapping, Section, Square Feet, Sheet, Sheathing, Similar, Short Leg Horizontal, Short Leg Vertical, Spaces, Specifications, Square, Snug Tight, Standard, Stiffener, Steel, Structure, -al, Support, Square Yard, Symmetrical, Top and Bottom, Tongue and Groove, Top of Beam, Top of Concrete, Top of Deck, Thread, Thick, -ness, Top of Joist, Total Load, Transverse, Typical, Ultimate, Unless Noted Otherwise, Vertical, Verify in Field, Wedge Anchor, Work Point, Weight, Welded Wire Fabric, Extra Strong, Cross-section, Double Extra Strong, Existing, New, Remove, Retaining, Room, Rough Masonry Opening, Rough Opening.

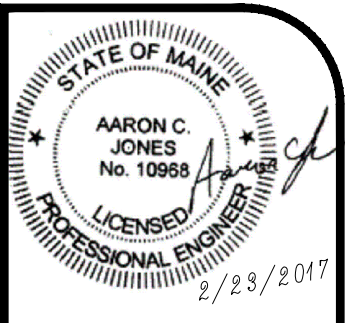
FRAMING PLAN SYMBOLS KEY

Table defining symbols for framing plan elements: Wood Post, Steel Column, Number of Wood Studs in Post Below, Column Above This Level, Column Continuous Through This Level, Joist Bearing, Continuous Joist with Intermediate Bearing, Flush Framed Joist Bearing with Hanger, Wood Stud Bearing Below, Over Framing by Others - TYP, Number of Trim Studs Under Header, Number of King Studs Adjacent to Header.

Structural Drawing Index

Table listing drawing titles and sheet numbers: S1.0 General Notes, Etc.; S1.1 Foundation / Ground Floor Plan; S1.2 1st Floor Framing Plan; S1.3 2nd Floor Framing Plan; S1.4 3rd Floor Framing Plan; S1.5 4th Floor / Roof Framing Plan; S1.6 Upper Roof Framing Plan; S2.1 Sections; S2.2 Sections.

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GENERAL NOTES

DRAWN BY MKL SHEET TITLE AS NOTED

ISSUE DATE 2/23/17 SHEET SCALE AS NOTED S1.0