

THE FOLLOWING BUILDING CODES AND STANDARDS SHALL BE REFERENCED DURING CONSTRUCTION:

Table listing building codes and standards including IBC 2009, ASCE 7, ACI 308, ACI 301, ACI 305, ACI 306, ACI 308, and others.

REFERENCE ARCHITECTURAL PLANS FOR DIMENSIONS NOT SHOWN. REFERENCE MECHANICAL, ELECTRICAL, AND ARCHITECTURAL PLANS FOR SIZES AND LOCATIONS OF WALL AND SLAB OPENINGS, DUCTS, PIPING, CURBS, AND EQUIPMENT PADS.

EXISTING DIMENSIONS AND CONDITIONS ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ALL EXISTING CONSTRUCTION AND DIMENSIONS IN THE FIELD PRIOR TO CONSTRUCTION OR FABRICATION.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF DEVIATIONS OR CHANGES ARE REQUIRED TO THE CONTRACT DOCUMENTS OR APPROVED SHOP DRAWINGS DUE TO INTERFERENCES, FABRICATION ERRORS, OR OTHER CAUSES.

THE STRUCTURE IS SELF-SUPPORTING AND STABLE AFTER THE ENTIRE BUILDING IS COMPLETELY CONSTRUCTED. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ERECTION PROCEDURES AND SEQUENCING DURING CONSTRUCTION AND ERECTION TO PROVIDE AND ENSURE LOCAL AND OVERALL STABILITY OF THE BUILDING AND ITS COMPONENTS DURING CONSTRUCTION AND ERECTION.

GENERAL NOTES

SCALE: NTS

LIVE LOAD: LIVING AREA = 40 PSF LIVE LOAD. SNOW LOADS: GROUND SNOW LOAD, Pg = 50 PSF. SNOW EXPOSURE FACTOR, Ce = 1.0. SNOW LOAD IMPORTANCE FACTOR, I = 1.0. THERMAL FACTOR, Ct = 1.1. FLAT ROOF SNOW LOAD, Pf = 38.5 PSF + DRIFT. WIND LOADS: BASIC WIND SPEED = 100 MPH. IMPORTANCE FACTOR, Iw = 1.0. WIND EXPOSURE B. MAIN WINDFORCE-RESISTING SYSTEM (INCLUDES WINDWARD + LEeward) = 15 PSF.

DESIGN CRITERIA

SCALE: NTS

ALL CONCRETE WORK, INCLUDING MATERIAL SELECTION, ADMIXTURES, MIXING, AND PLACEMENT OF CONCRETE SHALL BE IN CONFORMANCE WITH APPLICABLE BUILDING CODES. IN ADDITION, REFERENCE THE FOLLOWING CONCRETE STANDARDS AND SPECIFICATIONS:

Table listing design criteria references: ACI 318, ACI 301, ACI 305, ACI 306, ACI 308.

REQUIRED CONCRETE PARAMETERS ARE AS FOLLOWS:

Table with columns: LOCATION, MAX W/C RATIO, fc, AIR-ENTRAINMENT. Rows include INT. CONC./WALLS/SLABS, FOUNDATIONS, FOOTINGS, & FOUNDATION WALLS, INT. SLAB-ON-GRADE, EXT. SLAB-ON-GRADE.

WHERE: W/C = WATER TO CEMENT RATIO AND fc = COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS

MAXIMUM AGGREGATE SIZE SHALL BE 3/4", IN CONFORMANCE WITH ASTM C33. USE PORTLAND CEMENT TYPE II, IN CONFORMANCE WITH ASTM 150. AIR ENTRAINING ADMIXTURES SHALL CONFORM TO ASTM C 260.

MAXIMUM SLUMP AFTER THE ADDITION OF A WATER-REDUCING ADMIXTURE IS 8 INCHES.

CONCRETE EXPOSED TO FREEZING AND THAWING, INCLUDING FOUNDATIONS, FOOTINGS, FOUNDATION WALLS, AND EXTERIOR WALKWAYS SHALL BE AIR ENTRAINED WITH AIR CONTENT BETWEEN 5% AND 6%.

CONTRACTOR SHALL SUBMIT PROPOSED CONCRETE MIX DESIGN AND LABORATORY TESTS OF FABRICATED CYLINDERS VERIFYING CONCRETE STRENGTH OR PERFORMANCE HISTORY OF MIX TO ENGINEER FOR ACCEPTANCE PRIOR TO PLACEMENT OF CONCRETE.

CONSTRUCTION JOINTS IN WALLS SHALL BE PERMITTED AS DETAILED ON THE STRUCTURAL DRAWINGS. SURFACES OF CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND LAITANCE REMOVED.

WHERE ELECTRICAL CONDUIT/ RADIANT HEATING TUBES RUN IN THE SLAB, THEY SHALL BE LOCATED AT MID-DEPTH OF THE SLAB.

ANCHOR BOLTS SHALL CONFORM TO ASTM F1554. ANCHOR BOLTS SHALL HAVE HEAVY HEX NUTS AND LOCK WASHERS.

CONCRETE NOTES

SCALE: NTS

USE DEFORMED BILLET-STEEL REINFORCING BARS, GRADE 60, IN CONFORMANCE WITH ASTM A615. REINFORCEMENT SHALL BE ACCURATELY PLACED AND SUPPORTED PRIOR TO CONCRETE PLACEMENT, AND SHALL BE SECURED AGAINST DISPLACEMENT.

THE CONTRACTOR SHALL SUBMIT REINFORCING SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND ACCEPTANCE PRIOR TO COMMENCING FABRICATION.

Table: MINIMUM CONCRETE COVER FOR REINFORCEMENT. Columns: Description, Cover. Rows: Concrete cast against and permanently exposed to earth, concrete exposed to earth or weather, concrete not exposed to earth or weather in slabs and walls, concrete not exposed to earth or weather in columns and beams.

CONTINUOUS REINFORCEMENT SHALL BE TENSION LAP SPLICED PER LAP SPLICE LENGTH TABLE, U.N.O.

Table: LAP SPLICE LENGTH TABLE. Columns: Bar Size, #3, #4, #5, #6, #7, #8, #9. Row: Min Lap Splice (Inches).

REINFORCEMENT HOOKS SHALL CONFORM TO STANDARD HOOKS ACCORDING TO ACI 318. WELDING OF REINFORCEMENT IS NOT PERMITTED, U.N.O.

CONCRETE REINFORCING NOTES

SCALE: NTS

SUBGRADE PREPARATION AND DETERMINATION (INCLUDING ALLOWABLE BEARING PRESSURE, STRUCTURAL FILL GRADATION REQUIREMENTS, COMPACTION REQUIREMENTS AND POST-CONSTRUCTION SETTLEMENT ANALYSIS) BENEATH FOOTINGS AND SLABS-ON-GRADE AND BEHIND FOUNDATION WALLS SHALL BE PROVIDED BY A GEOTECHNICAL ENGINEER.

PRESUMED ALLOWABLE SOIL BEARING PRESSURE USED IN DESIGN = 2,000 PSF. BEARING CAPACITIES SHALL BE VERIFIED BY GEOTECHNICAL ENGINEER.

FOUNDATIONS SHALL BEAR ON UNDISTURBED NATIVE SOIL, UNLESS NOTED OTHERWISE. BEARING ELEVATIONS SHALL BE LOWERED WHERE SUITABLE SOILS ARE NOT ENCOUNTERED.

FOUNDATION WALLS SHALL BE BACKFILLED SIMULTANEOUSLY ON BOTH SIDES OF THE WALL. FOUNDATION WALLS AND SLAB-ON-GRADES SHALL REACH THEIR FULL 28 DAY COMPRESSIVE STRENGTH PRIOR TO BACKFILLING.

PROTECT FOUNDATIONS FROM FROST AND KEEP BOTTOM OF TRENCH DRY DURING CONSTRUCTION. IF GROUNDWATER IS ENCOUNTERED NEAR OR ABOVE THE BASE OF THE FOOTINGS, EXCAVATIONS SHALL BE WATERED DURING CONSTRUCTION.

CONTRACTOR SHALL BE RESPONSIBLE FOR THE SHORING AND BRACING OF EXISTING STRUCTURES DURING EXCAVATION, BACKFILLING, AND CONSTRUCTION.

FOUNDATION NOTES

SCALE: NTS

ALL LUMBER SHALL BE VISUALLY GRADED AND STAMPED WITH GRADE DESIGNATION, SPECIES, AND ADDITIONAL INSPECTION INFORMATION, U.N.O.

CARE SHALL BE TAKEN TO PROTECT TIMBER FROM WEATHER AND DAMPNESS. DO NOT STACK IN SUCH A WAY AS TO CAUSE WARPING OR PREVENT ADEQUATE AIR CIRCULATION.

WOOD GRADES AND SPECIES: 1. SPRUCE-PINE-FIR, No.1/No.2 OR BETTER FOR TYPICAL LUMBER (JOISTS, WALLS, ETC) U.N.O. 2. USE SOUTHERN YELLOW PINE FOR EXTERIOR EXPOSURE APPLICATIONS AND WHERE SHOWN ON DRAWINGS AS PRESERVATIVE PRESSURE TREATED LUMBER (PT OR PPT).

Table: A. LVL PROPERTIES. Columns: Property, Value. Rows: Fb, Fv, Ft, Fc (parallel/perpendicular to grain), E.

STRUCTURAL LUMBER SHALL HAVE A MAXIMUM MOISTURE CONTENT OF 19%.

PROVIDE PRESSURE TREATED OR WOLVANIZED LUMBER FOR ALL LUMBER IN CONTACT WITH MASONRY OR CONCRETE.

NOMINAL SIZES ARE TYPICALLY REFERENCED ON THE DRAWINGS. PROVIDE ACTUAL SIZES AS SET FORTH IN U.S. DEPARTMENT OF COMMERCE VOLUNTARY PRODUCT STANDARD PS20-99.

ALL PLYWOOD SHALL BE APA RATED CDX SHEATHING: 1. USE 1/2" PLYWOOD WALL SHEATHING. ATTACH PLYWOOD WITH LONG SIDE PERPENDICULAR TO WALL STUDS.

PROVIDE FULL DEPTH BLOCKING AT ENDS AND INTERIOR SUPPORTS OF ALL JOISTS AND RAFTERS WHERE JOISTS AND RAFTERS FRAME OVER SUPPORTS.

WHERE BEAMS ARE LABELED ON PLAN, DO NOT SPLICE BEAM NOR ANY PLY OF BEAM BETWEEN SUPPORTS.

FASTENERS SHALL COMPLY WITH RECOMMENDED FASTENING SCHEDULE OF REFERENCED BUILDING CODE, U.N.O. ON DRAWINGS, SPIKE TOGETHER ALL FRAMING MEMBERS WHICH ARE BUILT-UP USING A MINIMUM OF 2-ROWS OF 16d NAILS AT 12" O.C. STAGGERED.

ALIGN COLUMNS SUCH THAT COLUMNS BEAR CONTINUOUSLY TO FOUNDATION SUPPORT.

PROVIDE HORIZONTAL BLOCKING FOR ALL LOAD BEARING WALLS AT 4'-0" O.C. VERTICAL, MAXIMUM.

SUBMIT SHOP DRAWINGS FOR ALL PREFABRICATED WOOD JOISTS AND WALL PANELS TO ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.

WOOD NOTES

SCALE: NTS

ALL STRUCTURAL STEEL WORK SHALL CONFORM TO:

AISC AMERICAN INSTITUTE OF STEEL CONSTRUCTION, MANUAL OF STEEL CONSTRUCTION, NINTH EDITION. AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.

STRUCTURAL STEEL MEMBERS SHALL BE IN CONFORMANCE WITH THE FOLLOWING:

Table: ALL STEEL, U.N.O. Columns: Description, Specification. Rows: Angles, plates, structural tubing, steel pipe.

SHOP DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO COMMENCING FABRICATION.

- SHOP DRAWINGS SUBMITTALS SHALL INCLUDE: 1. CERTIFIED MILL TEST REPORTS OF STRUCTURAL STEEL (INCLUDING NAMES AND LOCATIONS OF MILLS AND SHOPS). 2. CERTIFIED MILL TEST REPORTS OF BOLTS, NUTS AND WASHERS (INCLUDING NAMES AND LOCATIONS OF MILLS AND SHOPS).

- OWNER SHALL RETAIN A QUALIFIED TESTING AGENCY TO PERFORM AND VERIFY THE FOLLOWING: 1. VISUAL INSPECTION OF ALL WELDS. 2. ULTRASONIC TESTING, IN ACCORDANCE WITH ASTM E-164, ON 100% OF ALL FIELD FULL PENETRATION WELDS.

- BOLTED CONNECTIONS: 1. FIELD CONNECTIONS SHALL UTILIZE MINIMUM 3/4" DIAMETER A325 HIGH STRENGTH BOLTS, U.N.O. 2. HIGH STRENGTH BOLTS SHALL BE INSTALLED AND TIGHTENED PER AISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS.

- WELDED CONNECTIONS: 1. WELDING SHALL CONFORM TO AWS D1.1. USE LOW-HYDROGEN SMAW ELECTRODES WITH MINIMUM TENSILE STRENGTH OF 70 KSI.

- STRUCTURAL STEEL SHALL RECEIVE THE FOLLOWING PROTECTIVE COATINGS: 1. DO NOT PAINT SURFACES TO RECEIVE METAL DECK AND/OR SHEAR CONNECTORS FASTENED BY WELDING, CONTACT SURFACES OF HIGH STRENGTH BOLTED CONNECTIONS, FINISHED BEARING SURFACES, AND SURFACES TO BE WELDED IN THE FIELD.

- SHEAR CONNECTOR STUDS: 1. SHEAR CONNECTOR STUDS SHALL BE NELSON, OR EQUIVALENT, 3/4" DIAMETER, U.N.O. WELD STUDS PER STUD MANUFACTURER'S RECOMMENDATIONS THROUGH METAL DECKING.

STRUCTURAL STEEL NOTES

SCALE: NTS

Table of abbreviations with columns: Symbol, Description, Units/Notes. Includes symbols for anchor bolt, additional architect, bottom bearing between, structural steel channel, cantilever, cast-in-place concrete, control joint, centerline, clear, concrete masonry unit, construction joint, column opening, concrete connection, continuous, contractor, complete penetration weld, cubic yard, diameter, dimension, discontinuous drawing, existing, each face, elevation, equal, equipment, each side, expansion, exterior, footing designation, foundation, finish floor, flange, floor, foot, footing, field verify, gage, galvanized, horizontal hollow structural shape, height, inside face, information, joint, kip, kips per square inch.

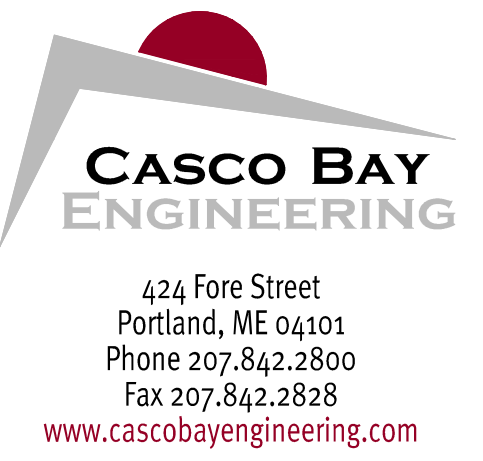
ABBREVIATIONS

SCALE: NTS

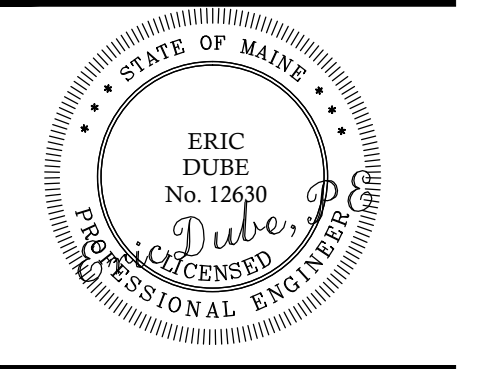
Table showing symbols for slope designation, elevation mark, roof pitch, span direction, section mark, undisturbed earth, ledge, compacted structural fill, concrete, grout, brick, CMU.

LEGEND

SCALE: NTS



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CUMBERLAND AVE. RENOVATION, PORTLAND, ME, 93 CUMBERLAND AVE, BUILDING RENOVATION

Table: ISSUED. Columns: No., Description, Date. Rows: A, B.

SHEET TITLE:

STRUCTURAL NOTES

Table: DESIGNED: SJP, DRAWN: SJP, DATE: 9-17-13, PROJECT NUMBER: 13-099

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