

## GENERAL NOTES

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

IRC 2009	EDITION OF THE IRC - INTERNATIONAL RESIDENTIAL CODE
ASCE 7	AMERICAN SOCIETY OF CIVIL ENGINEERS, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
ACI 301	AMERICAN CONCRETE INSTITUTE SPECIFICATION FOR STRUCTURAL CONCRETE
AISC	AMERICAN CONCRETE INSTITUTE SPECIFICATION FOR STRUCTURAL CONCRETE
ACI 318	AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS
NDS	NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION BY NATIONAL FOREST PRODUCTS ASSOCIATION, 2001.

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. IN THE EVENT OF A CONFLICT BETWEEN THE DRAWINGS, SPECIFICATIONS, OR NOTES ON THE DRAWINGS, THE ENGINEER SHALL BE NOTIFIED PRIOR TO CONSTRUCTION.

EXISTING DIMENSIONS AND CONDITIONS ARE FOR REFERENCE ONLY. CONTRACTOR SHALL VERIFY ALL EXISTING CONSTRUCTION AND DIMENSIONS IN THE FIELD PRIOR TO CONSTRUCTION OR FABRICATION. ALL DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER PRIOR TO COMMENCING WORK.

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. THE CONTRACTOR SHALL RETAIN A LICENSED STRUCTURAL ENGINEER TO DESIGN TEMPORARY BRACING/SHORING AND DETERMINE WHERE THE TEMPORARY BRACING/SHORING IS NEEDED.

## CONCRETE NOTES

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:

ACI 318	AMERICAN CONCRETE INSTITUTE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE
ACI 301	AMERICAN CONCRETE INSTITUTE SPECIFICATIONS FOR STRUCTURAL CONCRETE
ACI 305	STANDARD SPECIFICATION FOR HOT WEATHER CONCRETING
ACI 306	STANDARD SPECIFICATION FOR COLD WEATHER CONCRETING
ACI 308	STANDARD PRACTICE FOR CURING CONCRETE

REQUIRED CONCRETE PARAMETERS ARE AS FOLLOWS:

LOCATION	MAX W/C RATIO	f'c	AIR-ENTRAINMENT
INT. CONC./WALLS/SLABS	.52	3,000 PSI	2% ± 11#2%
FOUNDATIONS, FOOTINGS, & FOUNDATION WALLS	.52	3,000 PSI	5-7%
INT. SLAB-ON-GRADE	.47	4,000 PSI	NONE
EXT. SLAB-ON-GRADE	.45	4,000 PSI	6% ± 11#2%

WHERE: W/C = WATER TO CEMENT RATIO AND  
f'c = 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. ADMIXTURES SHALL CONFORM TO "SPECIFICATION FOR CHEMICAL ADMIXTURES FOR CONCRETE" ASTM C 494. FLY ASH USED AS ADMIXTURES SHALL CONFORM TO ASTM C 618. CALCIUM CHLORIDE OR ADMIXTURES CONTAINING CALCIUM CHLORIDE IS NOT PERMITTED.

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 NOT PLACE CONCRETE ON FROZEN GROUND OR IN WATER. ADEQUATE EQUIPMENT SHALL BE PROVIDED FOR HEATING CONCRETE MATERIALS AND PROTECTING CONCRETE DURING NEAR-FREEZING OR FREEZING WEATHER. REFERENCE ACI 306, AS NOTED ABOVE, FOR RECOMMENDATIONS FOR COLD WEATHER CONCRETING.

CONTRACTOR SHALL SUBMIT PROPOSED CONCRETE MIX DESIGN AND LABORATORY TESTS OF FABRICATED CYLINDERS VERIFYING CONCRETE STRENGTH OR PERFORMANCE HISTORY OF MIX TO ARCHITECT FOR ACCEPTANCE PRIOR TO PLACEMENT OF CONCRETE. CONCRETE USED ON SITE SHALL BE FIELD TESTED IN ACCORDANCE WITH AND IN THE PRESENCE OF AN APPROVED TESTING AGENCY. FIELD TESTING INFORMATION SHALL INDICATE SLUMP, AIR CONTENT, AND TEMPERATURE. COMPRESSION TEST 1 CYLINDER AT 7 DAYS AND 2 AT 28 DAYS. HOLD AN ADDITIONAL CYLINDER FOR A 56 DAY BREAK, IF NECESSARY. PROVIDE A SET OF 4 CYLINDERS FOR EACH PLACEMENT AND PER 50 CUBIC YARDS OF CONCRETE PLACED. THE OWNER SHALL PAY FOR ALL CONCRETE TESTING.

CONSTRUCTION JOINTS IN WALLS SHALL BE PERMITTED AS DETAILED ON THE STRUCTURAL DRAWINGS. SURFACES OF CONCRETE CONSTRUCTION JOINTS SHALL BE CLEANED AND LAITANCE REMOVED. IMMEDIATELY BEFORE NEW CONCRETE IS PLACED, CONSTRUCTION JOINTS SHALL BE WETTED AND STANDING WATER REMOVED. VERTICAL CONSTRUCTION JOINTS IN WALLS SHALL NOT EXCEED A SPACING OF 40 FEET.

WHERE ELECTRICAL CONDUIT/ RADIANT HEATING TUBES RUN IN THE SLAB, THEY SHALL BE LOCATED AT MID-DEPTH OF THE SLAB. ALUMINUM CONDUIT AND SLEEVES ARE NOT PERMITTED.

ANCHOR BOLTS SHALL CONFORM TO ASTM A307. ANCHOR BOLTS SHALL HAVE HEAVY HEX NUTS AND LOCK WASHERS.

Where indicated on the foundation plan, ICF (Insulated Concrete Form) foundation walls to be 11" thick (6" thick concrete core with 2.5" thick insulation forms) with steel reinforcing on concrete spread footings. BuildBlock system as manufactured by BuildBlock Building Systems, LLC.

## CONCRETE REINFORCEMENT

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. REINFORCEMENT SHALL BE DETAILED IN ACCORDANCE WITH ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING OF REINFORCED CONCRETE STRUCTURES".

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

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

MINIMUM CONCRETE COVER FOR REINFORCEMENT	
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3 INCHES
CONCRETE EXPOSED TO EARTH OR WEATHER	2 INCHES
CONCRETE NOT EXPOSED TO EARTH OR WEATHER IN SLABS AND WALLS (FOR PRIMARY REINFORCEMENT, TIES, AND STIRRUPS)	1.5 INCHES
CONCRETE NOT EXPOSED TO EARTH OF WEATHER IN COLUMNS AND BEAMS	1.5 INCHES

LAP SPLICE LENGTH TABLE							
BAR SIZE	#3	#4	#5	#6	#7	#8	#9
MIN LAP SPLICE (INCHES)	18	24	30	36	48	64	81

## WOOD NOTES

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:

- SPRUCE-PINE-FIR, No.1/No.2 OR BETTER FOR TYPICAL LUMBER (JOISTS, WALLS, ETC) U.N.O. WITH THE FOLLOWING MINIMUM ALLOWABLE STRESSES:
  - Fb = 1,000 psi BENDING
  - Fv = 70 psi HORIZONTAL SHEAR
  - Fc = 725 psi COMPRESSION PARALLEL TO GRAIN
  - E = 1,300,000 psi MODULUS OF ELASTICITY
- USE SOUTHERN YELLOW PINE FOR EXTERIOR EXPOSURE APPLICATIONS AND WHERE SHOWN ON DRAWINGS AS PRESERVATIVE PRESSURE TREATED LUMBER (PT OR PPT).
- WHERE NOTED LVL OR PSL ON DRAWINGS, PROVIDE ILEVEL TRUS JOIST MEMBERS BY WEYERHAEUSER, OR EQUIVALENT, WHICH HAVE THE FOLLOWING MINIMUM ALLOWABLE STRESSES:

A. LVL PROPERTIES:

Fb = 2600 PSI Fc = 2510 PSI (PARALLEL TO GRAIN)  
Fv = 285 PSI Fc = 750 PSI (PERPENDICULAR TO GRAIN)  
Ft = 1555 PSI E = 1,900,000 PSI

B. PSL PROPERTIES:

Fb = 2900 PSI Fc = 2900 PSI (PARALLEL TO GRAIN)  
Fv = 290 PSI Fc = 750 PSI (PERPENDICULAR TO GRAIN)  
Ft = 2025 PSI E = 2,000,000 PSI

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.

ALL PRESSURE TREATED LUMBER INDICATED ON THE DRAWINGS AND NOTES SHALL COMPLY WITH THE APPLICABLE REQUIREMENTS OF THE AMERICAN WOOD PRESERVERS BUREAU, AVAILABLE FROM A.W.P.I.. THE PRESERVATIVE TYPE SHALL BE CBA OR ACQ WITH A RATING APPROPRIATE TO THE APPLICATION. ALL FASTENERS INCLUDING NAILS, SCREWS AND HANGERS SHALL BE STAINLESS STEEL, ELECTROGALVANIZED (MIN. RATING OF 40), OR HOT-DIPPED GALVANIZED WITH A G-185 RATING. FLASHING IN CONTACT WITH PRESSURE-TREATED MATERIAL SHALL BE COPPER.

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 SHEATHING SHALL BE APA RATED OSB SHEATHING:

- USE 7/16" ZIP-SYSTEM OSB WALL PANEL SHEATHING. ATTACH PANEL WITH LONG SIDE PERPENDICULAR TO WALL STUDS. STAGGER PANEL ENDS AND BLOCK ALL PANEL EDGES.
- USE 5/8" T&G ADVANTECH WITH 32/16 APA SPAN RATING ROOF SHEATHING. ATTACH SHEATHING WITH LONG SIDE PERPENDICULAR TO FRAMING. STAGGER PANEL ENDS.
- USE 3/4" T&G ADVANTECH OSB FLOOR SHEATHING. ATTACH PLYWOOD WITH LONG SIDE PERPENDICULAR TO FRAMING. STAGGER PANEL ENDS. SCREW AND GLUE FLOOR SHEATHING TO FLOOR JOISTS. USE PL400 CONSTRUCTION ADHESIVE OR BETTER.

PROVIDE FULL DEPTH BLOCKING AT ENDS AND INTERIOR SUPPORTS OF ALL JOISTS AND RAFTERS WHERE JOISTS AND RAFTERS FRAME OVER SUPPORTS. PROVIDE 1x3 DIAGONAL BRIDGING OR FULL DEPTH SOLID BLOCKING FOR EACH 8'-0" OF SPAN FOR ALL JOISTS AND RAFTERS.

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, UNLESS OTHERWISE NOTED IN BOCA OR ON THE DRAWINGS. NAIL MULTIPLE LVL'S TOGETHER AS RECOMMENDED BY THE MANUFACTURER USING A MINIMUM OF 2-ROWS OF 16d NAILS AT 12" o.c. STAGGERED. ALL FASTENERS, NUTS, AND WASHERS SHALL BE HOT-DIPPED GALVANIZED.

ALIGN COLUMNS SUCH THAT COLUMNS BEAR CONTINUOUSLY TO FOUNDATION SUPPORT.

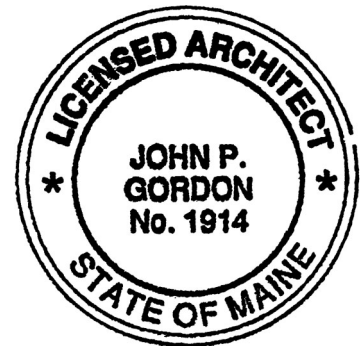
TEMPORARILY BRACE ALL WALLS DURING CONSTRUCTION UNTIL THE ROOF STRUCTURE IS IN PLACE AND COMPLETED CONNECTED TO THE WALLS.

ALL EDGES OF 7/16" WALL SHEATHING SHALL BE NAILED TO STUDS AND BLOCKING WITH 10D GALVANIZED NAILS SPACED AT 6" O.C.. SHEATHING SHALL BE NAILED TO INTERMEDIATE STUDS WITH 10D GALVANIZED NAILS SPACED AT 12" O.C.

ALL EXTERIOR WALL FRAMING TO BE 16" O.C.

ALIGN ROOF FRAMING AND WALL FRAMING MEMBERS FOR CONTINUOUS LOAD PATH TO FOUNDATION SUPPORT.

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



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