

STRUCTURAL NOTES (SOME NOTES NOT USED)



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DESCRIPTION  
DATE  
NO.

DATE: 05/15/2017  
CHECKED BY: JJG  
PROJECT NO: 14-2017  
SHEET: SHEET NOTES

**A0.1**

- LOADING:  
FLOOR 40# L.L. 12# DL. ROOF 30# L.L. 15# D.L.  
GROUND SNOW LOAD 30 PSF WIND 115 MPH EXPOSURE "B"
- EXTERIOR WALL BALLOON AND WALL HEIGHT FRAMING:  
2x4 @ 16" O/C = 10'-0"      2x4 @ 8" O/C = 10'-0"  
2x6 @ 8" O/C = 20'-0"      2x6 @ 16" O/C = 15'-6"  
2x6 @ 12" O/C = 18'-0"      2-2x6 @ 8" O/C = 22'-0"
- =3-2x4 COLUMN EQUAL OR NOTED ON PLAN. OR 3-2x6 COLUMN IN 2x6 WALLS.
- ALL EXTERIOR HEADERS TO BE (2)2X12 W/ 1/2" PLYWOOD BETWEEN. GLUED & NAILED (U.N.O.)
- WINDOWS SHOWN SHALL BE: MARVIN-ENERGY STAR LOW "E" WINDOW MFG. SHALL SUBMIT ALL ROUGH OPENINGS TO CONTRACTOR PRIOR TO CONSTRUCTION AND VERIFY ALL WINDOWS COMPLY WITH IRC R613, IF ALTERNATES TO ABOVE ARE USED.
- ALIGN CENTER LINES OF STUDS AND STRUCTURAL FRAMING MEMBERS W/ TRUSSES AND RAFTERS FOR CONTINUOUS SUPPORT. NOTE: APPLIES IF 2' O/C OR GREATER SPACING IS DESIGNED.
- PROVIDE 1-1/2" BEARING EACH SIDE OF HEADER IN NON-BEARING WALLS AND 3" IN BEARING WALLS. (U.N.O. ON PLANS)
- PROVIDE DOUBLE JOISTS UNDER PARALLEL WALLS, REF., BATH TUBS, STOVES, ETC. WHERE ADDITIONAL WEIGHT IS PRESENT AND/OR BEARING IS REQUIRED.
- USE APPROVED RIDGE VENTS FOR ATTIC VENTILATION.
- STRUCTURAL POSTS REQUIRE SOLID BLOCKING AND TJI PANELS/OR JOISTS. NOTE: DO NOT SUPPORT POSTS OR POINT LOADS DIRECTLY ON JOISTS W/OUT BLOCKING.
- ALL METAL HANGERS SHALL BE SIMPSON-NOTE: USE HEAVY DUTY SADDLE CONNECTORS BETWEEN POSTS AND BEAMS. FINAL DESIGN OF ALL CONNECTIONS BY ENGINEER.
- ALL LUMBER TO BE HEM FIR #2 OR EQUAL UNLESS NOTED.
- ALL GLASS WITHIN A 24" ARC OF A DOOR AND/OR LOWER THAN 18" OFF THE FLOOR, OR WALKWAY SHALL HAVE TEMPERED GLAZING.
- ALL SPECIFIC PRODUCTS, IE. MICROLAM, GLUELAM, ETC. SHALL BE INSTALLED PER MANUFACTURE'S SPECS, AND DESIGN VALUES SHALL CONFORM TO DESIGN CRITERIA SET FORTH BY MANUF. THIS APPLIES TO STOVES, SIDING, CONCRETE, LUMBER, ETC. PRODUCTS TO BE PLACED PER MANUF. SPECS, ICC REPORTS OR STANDARD ACCEPTABLE PRACTICES GOVERNED BY IBC, IRC, IECC, IMC, WESTERN GRADING RULES, OR UBC STANDARDS.
- ALL TRUSS DETAILS, INCLUDING JOIST PRODUCT FRAMING PLANS SHALL BE SUBMITTED TO BUILDING DEPARTMENT AT TIME OF PLAN CHECK. NO SUBSTITUTIONS BY OTHER MANUF. SHALL BE ALLOWED AFTER PLAN CHECK. ALL TRUSSES TO BE PLACED, ERECTED AND BRACED PER TRUSS MANUF. SPECS. ALL LAYOUT/PLANS BY TRUSS SUPPLIERS SHALL SUPERSEDE LAYOUT DRAWINGS BY A&E DESIGN SERVICES.
- GREENBLOCK FOUNDATION, DOVETAIL LOG PACKAGES, PRODUCTS SHALL BE INSTALLED PER MANUF. SPECS.
- STAIRS REQUIRED 10" MIN. TREAD AND 7-3/4" MAX. RISE.
- HANDRAILS TO BE 34" HIGH; GUARDRAILS TO BE 36" HIGH; W/ 2"Ø PICKETS SPACED W/ NO MORE THAN 4" CLEAR SPACE BETWEEN.
- ALL FIREPLACE OPENINGS SHALL BE PROVIDED W/ TEMPERED GLASS DOORS. PROVIDE OUTSIDE COMBUSTION AIR FOR FIREPLACES, WOOD STOVES, AND LIQUID FUEL HEATING APPLIANCES. DIRECT VENT GAS FIREPLACES TO BE CGA/ICC/UL LISTED.
- ALL PLUMBING WALL TO BE 2x6 CONSTRUCTION. U.N.O.
- HOLES DRILLED FOR ELECTRICAL, PLUMBING, AND FIXTURES SHALL NOT COMPROMISE THE STRUCTURAL INTEGRITY OF THE MATERIAL. SEE SPECS FOR MICRO=LAMS, AND TJI MATERIALS.
- LOG ROOF RAFTERS, STRUCTURAL PANELS, STEEL BEAMS, GIRDER & JOIST SYSTEM, FOUNDATION, COLUMN AND STRUCTURAL POSTS TO BE DESIGNED AND/OR VERIFIED BY ENGINEER.
- ALL STRUCTURAL POSTS SHALL BE SUPPORTED WITHIN WALLS WHEREVER POSSIBLE W/ ADDITIONAL HORIZONTAL BRACING.
- INSTALL INVERTED FLOOR JOIST HANGERS TO THE RIM JOIST IN CANTILEVERED AREAS WHERE A DECK IS CURRENTLY DESIGNED TO ATTACH TO THE RIM JOIST, OR IF A FUTURE DECK COULD BE ATTACHED TO THE RIM JOIST.
- TOP OF ALL WINDOWS (BTM OF HEADER) TO BE 6'-8" FROM FINISHED FLOOR. (U.N.O.)
- ALL OPENINGS UP TO THE WIDTH OF 48" ARE TO USE 1-KING & 1-TRIMMER STUD AT EA. SIDE (U.N.O.)
- ALL OPENINGS BETWEEN THE WIDTHS OF 48" & 66" ARE TO USE 2-KING & 2-TRIMMER STUDS AT EA. SIDE (U.N.O.)
- ALL OPENINGS OVER THE WIDTH OF 66" ARE TO USE 3-KING & 3-TRIMMER STUDS AT EA. SIDE (U.N.O.)  
FRAMING LUMBER:  
A) 2x4 (U.N.O.) SILL PLATES: CONST. REDWOOD Fb=825; Ft=475; Fc=925; E=900,000; Fv=160  
B) 2x6 DECKING #2 REDWOOD OPEN GRAIN: Fb=725; Ft=425; Fc=700; E=1,200,000; Fv=160  
C) 2x4 PLATE MATERIAL: HEM-FIR STD AND BTR: Fb=550; Ft=325; Fc=1300; E=1,200,000; Fv=15  
D) 2x4 STUD MATERIAL: HEM FIR STUD GRADE: Fb=650; Ft=400; Fc=800; E=1,200,000; Fv=150  
E) 2X6 AND LARGER: HEM FIR #2 & BTR: Fb=850; Ft=525; Fc=1300; E=1,300,000; Fv=150  
F) 4X4 AND LARGER: HEM FIR #1 & BTR: Fb=1400;Ft=925; Fc=1500; E=1,600,000; Fv=150  
G) BEAMS & STRINGERS: HEM FIR SS: Fb=1300; Fc=925; E=1,300,000; Fv=70  
H) 2X6 AND LARGER: DOUG FIR - LARCH #2 AND BTR: Fb=900; Ft=575; Fc=1350; E=1,600,000; FV=180  
I) 4X4 POSTS: WESTERN CEDAR #2: Fb=700; Ft=425; Fc=650; E=1,000,000; Fv=155  
J) 6X6 POSTS: WESTERN CEDAR #2: Fb=625; Ft=325; Fc=475; E=800,000; Fv=144  
K) 4X4 POSTS: REDWOOD #2: Fb=925; Ft=525; Fc=950; E=1,200,000; Fv=160  
L) 6X6 POSTS AND LARGER: REDWOOD #2: Fb=975; Ft=650; Fc=900; E=1,100,000; Fv=145

- "TIMBERSTRAND LSL" BY "TRUSS-JOIST" MacMillan ARE DESIGNED WITH THE FOLLOWING MINIMUM UNIT STRESSES:  
1.3E TIMBERSTRAND LSL  
A) SHEAR MOD. OF ELAS. G=81,250 PSI  
B) MODULUS OF ELAS. E=1,300,000 PSI  
C) FLEXURAL STRESS Fb=1,700 PSI  
D) COMP. PERP. TO GRAIN PARALLEL TO WIDE FACE OF STRANDS Fcl=680 PSI  
D) COMP. PARALLEL TO GRAIN FcII=1,400 PSI  
1.5E TIMBERSTRAND LSL  
A) SHEAR MOD. OF ELAS. G=93,750 PSI  
B) MODULUS OF ELAS. E=1,500,000 PSI  
C) FLEXURAL STRESS Fb=2,250 PSI  
D) COMP. PERP. TO GRAIN PARALLEL TO WIDE FACE OF STRANDS Fcl=750 PSI  
D) COMP. PARALLEL TO GRAIN FcII=1,950 PSI
- "MICRO-LAMS" BY "TRUSS-JOIST" MacMillan ARE DESIGNED WITH THE FOLLOWING MINIMUM UNIT STRESSES:  
A) SHEAR MOD. OF ELAS. G=118,750 PSI  
B) MODULUS OF ELAS. E=1,900,000 PSI  
C) FLEXURAL STRESS Fb=2,600 PSI  
D) COMP. PERP. TO GRAIN Fcl=750 PSI
- PRE-ENGINEER TRUSSES SHALL BE DESIGNED AND FABRICATED UNDER THE SUPERVISION OF A COLORADO LICENSED PROFESSIONAL STRUCTURAL ENGINEER FOR THE LOADS AND CONDITIONS SPECIFIED ON DRAWINGS. TRUSS FABRICATOR TO DESIGN TRUSSES PER 2009 IRC.
- PLYWOOD SHALL CONFORM TO AMERICAN PLYWOOD ASSOCIATION'S CURRENT PRODUCT STANDARD SPECIFICATION AND SHALL BE PERFORMANCE RATED BY THE AMERICAN PLYWOOD ASSOCIATION TO THE GRADES SPECIFIED.  
A) ROOF SHEATHING SHALL BE 1/2" APA 24/16 EXPOSURE I RATED PLYWOOD. NAIL WITH 10d NAILS 6" O/C. @ PANEL PERIMETER AND @ 12" O/C. @ INTERMEDIATE FRAMING.  
B) FLOOR SHEATHING SHALL BE 3/4" APA 48/24, EXPOSURE I RATED TONGUE AND GROOVE PLYWOOD. OR OSB GLUE AND SCREW WITH #8 WOOD SCREWS @ 6" O/C @ PANEL PERIMETER AND @ 10" O/C @ INTERMEDIATE FRAMING.
- SHEATH ALL EXTERIOR WALLS PER IRC R602.3(1). OR AS NOTED.
- PROVIDED RIM JOIST OR SOLID BLOCKING UNDER ALL BEARING POINTS. BLOCKING UNDER POSTS LARGER THAN 2-2x4's MUST BE FULL AREA OF POST.
- METAL CONNECTIONS SPECIFIED ON DRAWINGS TO BE "SIMPSON" STRONG-TIE OR EQUAL.
- MULTIPLE MEMBERS (2 OR MORE) AND ALL MICRO-LAM SHALL BE GLUED AND NAIL TOGETHER PER NDS STANDARDS. SIDE MOUNTED BEAMS MAY REQUIRE BOLTING SEE MANUF.SPECS.
- NAILING PER INTERNATIONAL BUILDING CODE TABLE 2304.9.1; AS SHOWN ON DRAWINGS; OR AS SPECIFIED BY MANUF. (SIMPSON, TRUS JOIST, ETC.)
- LAMINATED BEAMS: (GLU=LAM)  
A) ALL LAMINATED MEMBERS SHALL BE FABRICATED WITH DOUGLAS FIR.  
B) LAMINATED MEMBERS SHALL BE DETAILED AND FABRICATED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR THE DESIGN AND FABRICATIONS OF STRUCTURAL GLUED LAMINATED LUMBER, PUBLISHED BY THE A.L.T.C. AND THE APPROPRIATE LUMBER PRODUCER'S ASSOCIATION.  
C) ALLOWABLE UNIT STRESSES REQUIRE FOR DRY CONDITIONS OF USE FOR LAMINATED MEMBERS ARE AS FOLLOWS:  
(UNLESS SPECIFIED OTHERWISE ON PLAN)  
(COMBINATION SYMBOL: 24F-V4)  
a) BENDING 1450 PSI  
b) HORIZONTAL SHEAR 240 PSI  
c) COMPRESSION PERP. GRAIN, 560 PSI  
d) COMPRESSION PARALLEL TO GRAIN,650 PSI  
e) MODULUS OF ELASTICITY 1,800,000  
D) LAMINATED MEMBERS SHALL BE BUILT UP USING 2" NOMINAL MATERIAL, LAMINATED MEMBERS SIZE NOTED ARE NET.  
E) MEMBERS EXPOSED TO VIEW SHALL BE FURNISHED IN "ARCHITECTURAL" APPEARANCE GRADE. MEMBERS TO BE CONCEALED BY FINISH MATERIALS OR CEILINGS MAY BE "INDUSTRIAL GRADE".  
F) ADHESIVE USED SHALL COMPLY WITH THE SPECIFICATIONS AS CONTAINED IN VOLUNTARY PRODUCT STANDARD PS56-73, STRUCTURAL GLUED LAMINATED TIMBER. WET-USE ADHESIVE ARE TO BE USED FOR ALL MEMBERS EXPOSED TO THE WEATHER.  
40. STEEL:  
A) ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 EXCEPT PIPE COLUMNS SHALL CONFORM TO ASTM A53 (GRADE B) OR A501.  
B) ADJUSTABLE PIPE COLUMNS TO BE 11 GA. MINIMUM AND BE LOAD RATED FOR 14,600 LBS. MINIMUM @ 7'-0" HEIGHT. ADJUSTABLE COLUMNS SHALL CONFORM TO "USE MATERIALS BULLETIN UM-24B"

GENERAL NOTES TO EXTERIOR:

- STUCCO EXTERIOR VENEER SHALL BE APPLIED PER IRC.
- ALL GRADES SHALL SLOPE AWAY FROM STRUCTURE A MINIMUM OF 10%, OR 1' IN 10' & SHALL CONFORM TO ALL LOCAL REQUIREMENTS. INDICATED IN SOILS REPORT. SOILS REPORT SHALL GOVERN SLABS, FOUNDATION DRAINAGE.
- OVERHANGS SHALL BE 12" (U.N.O.) GABLE ENDS 12" (U.N.O.) PROVIDE 5" MIN. GUTTERS @ ALL OVERHANGS AND DOWN SPOUTS AT ALL CORNERS OR 30' INTERVALS WITH TIP OUTS PAST BACKFILL AREAS.
- ROOF VENTILATION SHALL COMPLY WITH IRC R806.1; R806.2; R806.3 (SEE CALC. ON ROOF FRAMING SHEETS)
- ALL NOTES ON SECTIONS AND ELEVATIONS SHALL APPLY TO ALL OTHER SECTIONS AND/OR ELEVATIONS OF LIKE OR SIMILAR CONSTRUCTION.
- ALL DECK MATERIALS SHALL BE PRESSURE TREATED OR REDWOOD IF WITHIN 18" OF GROUND.
- PROTECT HOUSE FROM MOISTURE W/ FLASHING, CAULKING, AND EXTERIOR FINISHES ETC.

TRUS-JOIST NOTES:

- BRIDGING IS NOT REQUIRED, U.N.O.
- FOR TEMPORARY INSTALLATION STABILITY USE 1x4 STRAPPING 8' O/C.
- REFER TO RESIDENTIAL PRODUCTS REFERENCE GUIDE FOR INSTALLATION OF TRUSS JOIST MATERIAL.
- REFER TO GUIDE FOR ELECTRICAL AND PLUMBING KNOCK OUT LOCATIONS AND SIZE LIMITATIONS.
- WEB STIFFENERS ARE REQUIRED AT INTERMEDIATE SUPPORTS WHERE JOISTS ARE CONTINUOUS SPAN, BEARING WIDTH IS LESS THAN 5 1/4", AND EITHER SPAN IS GREATER THAN 13'-8" FOR 11-7/8" TJI JOISTS @ 24" O/C.
- 1 3/4" MIN. BEARING REQUIRED AT JOIST ENDS.
- 3 1/2" MIN. BEARING AT INTERMEDIATE SUPPORTS.
- 2X6 CRIPPLES MUST BE 1/16" LONGER THAN DEPTH OF JOIST.
- TJI @ BEARING: 2-10d (3") BOX OR 12d (3 1/4") BOX NAILS 1 EA. SIDE, 1 1/2" MIN FROM END TO AVOID SPLITTING.
- BLOCKING PANELS OR RIM JOISTS 10d (3") BOX NAILS @ 6" O/C.
- TIMBERSTRAND, MICRO=LAM, OR LVL RIM JOISTS TOENAIL W/ 10d (3") BOX NAILS @ 6" O/C OR 16d (3 1/2") BOX NAILS @ 12" O/C.
- RIM JOIST 1 3/4" WIDTH OR LESS 2-10d (3") BOX NAILS, ONE EACH @ TOP AND BOTTOM FLANGE. (SECOND FLOOR AREA).
- 2x4 MIN. SQUASH BLOCKS: 2-10d (3") BOX NAILS, ONE EACH @ TOP AND BOTTOM FLANGE.
- WEB STIFFENERS REQUIRED IF SIDES OF HANGERS DO NOT LATERALLY SUPPORT THE TJI JOIST TOP FLANGE.