# GENERAL NOTES

GOVERNING BUILDING CODE: 2018 INTERNATIONAL RESIDENTIAL CODE (IRC) AND ITS APPROPRIATE SUPPLEMENTS

PROJECT DESCRIPTION:

DESIGN LOADS:

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|---|---|
| ROOF DEAD LOAD: | 15 psf |
| ROOF LIVE LOAD: | 20 psf |
| FLOOR DEAD LOAD: | 10 psf |
| FLOOR LIVE LOAD: | |
| BEDROOMS: | 30 psf |
| ALL OTHER LIVING AREAS: | 40 psf |
| WIND LOADS: | Vasd=115 MPH, EXPOSURE C |
| SEISMIC LOADS: | DESIGN CATEGORY "B" |
| ASSUMED ALLOWABLE SOIL BEARING PRESSURE: | 1,500 PSF |

GENERAL:

1. FURNISH ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO COMPLETE THE WORK SHOWN OR INFERRED BY THESE DRAWINGS.
2. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND ELEVATIONS SHOWN ON THE PLANS AND FOR COORDINATING ALL DIMENSIONS AND ELEVATIONS SHOWN WITH THE EXISTING CONDITIONS. IF ERRORS OR DISCREPANCIES IN THE DIMENSIONS OCCUR, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO BRING ALL DISCREPANCIES TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
3. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY BRACING AND SHORING AS REQUIRED DURING CONSTRUCTION TO ENSURE THE SAFETY OF ALL INDIVIDUALS INVOLVED.
4. ALL MECHANICAL, ELECTRICAL, AND PLUMBING ELEMENTS SHALL BE INSTALLED PER THE REQUIREMENTS OF THE GOVERNING BUILDING CODE AND THE LOCAL MUNICIPALITY.
5. NORTON & SCHMIDT CONSULTING ENGINEERS, L.L.C. HAS DESIGNED THE STRUCTURAL FLOOR FRAMING AND WALL BRACING SYSTEM OF THESE PLANS FOR THE CONSTRUCTION OF A RESIDENCE AT THE ADDRESS REFERENCED IN THE PLANS. NORTON & SCHMIDT CONSULTING ENGINEERS, L.L.C. WILL NOT TAKE RESPONSIBILITY FOR ANY RE-USE OF ANY PORTION OF THE DESIGN, PLANS OR SPECIFICATIONS AT ANY OTHER PROPERTY OR ADDRESS WITHOUT OUR PRIOR WRITTEN CONSENT.

BUILDER'S PLANS:

THE TERM "BUILDER'S PLANS" REFERS TO A CERTAIN LEVEL OF DEVELOPMENT OF THE DRAWINGS. AS THE NAME IMPLIES, THESE PLANS REQUIRE THAT THE CONTRACTOR POSSESSES COMPETENCE IN RESIDENTIAL CONSTRUCTION AND A THOROUGH UNDERSTANDING OF THE INTERNATIONAL RESIDENTIAL CODE (IRC). THE CONTRACTOR WARRANTS TO NORTON & SCHMIDT CONSULTING ENGINEERS, L.L.C., THAT HE POSSESSES THE PARTICULAR COMPETENCE AND SKILL IN CONSTRUCTION NECESSARY TO BUILD THIS PROJECT WITHOUT FULL ENGINEERING AND DESIGN SERVICES, AND FOR THAT REASON THE CONTRACTOR OR HOME OWNER HAS RESTRICTED THE SCOPE OF PROFESSIONAL SERVICES. THE CONSTRUCTION DOCUMENTS PROVIDED BY THE LIMITED SERVICES SHALL BE TERMED "BUILDER'S PLANS" IN RECOGNITION OF THE CONTRACTOR'S SOPHISTICATION. ALTHOUGH NORTON & SCHMIDT CONSULTING ENGINEERS, L.L.C. AND OUR CONSULTANTS HAVE PERFORMED THEIR SERVICES WITH DUE CARE AND DILIGENCE, WE CANNOT GUARANTEE PERFECTION. ANY AMBIGUITY OR DISCREPANCY DISCOVERED BY THE USE OF THESE PLANS SHALL BE REPORTED IMMEDIATELY TO NORTON & SCHMIDT CONSULTING ENGINEERS, L.L.C. CONSTRUCTION MAY REQUIRE THAT THE CONTRACTOR ADAPT THE "BUILDER'S PLANS" TO THE FIELD CONDITIONS ENCOUNTERED AND MAKE LOGICAL ADJUSTMENTS IN FIT, FORM, DIMENSION AND QUANTITY. CHANGES MADE FROM THE PLANS WITHOUT THE CONSENT OF NORTON & SCHMIDT CONSULTING ENGINEERS, L.L.C. ARE UNAUTHORIZED. IT IS ALSO UNDERSTOOD THAT THE CONTRACTOR WILL BE RESPONSIBLE FOR MEETING ALL APPLICABLE BUILDING CODES INCLUDING BUT NOT LIMITED TO MECHANICAL, ELECTRICAL, AND PLUMBING CODE REQUIREMENTS (WHICH IS EXCLUDED FROM THESE PLANS). IN THE EVENT ADDITIONAL DETAIL OR GUIDANCE IS NEEDED BY THE CONTRACTOR OR HOMEOWNER FOR CONSTRUCTION OF ANY ASPECT OF THE PROJECT, NORTON & SCHMIDT CONSULTING ENGINEERS, L.L.C. OR A QUALIFIED ARCHITECT/ENGINEER SHALL IMMEDIATELY BE RETAINED. FAILURE TO NOTIFY US OF THESE NEEDS OR OF CHANGES TO THE PLANS SHALL RELIEVE NORTON & SCHMIDT CONSULTING ENGINEERS, L.L.C. OF ALL RESPONSIBILITIES OF THE CONSEQUENCES.

ARCHITECTURAL NOTES:

1. WATER RESISTIVE EXTERIOR WALL COVERING, FREE FROM HOLES AND BREAKS, SHALL BE APPLIED TO STUDS OR SHEATHING OF ALL EXTERIOR WALLS. WRAP SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND SHALL BE IN COMPLIANCE WITH SECTION R703.2.
2. BUILDING SHALL COMPLY WITH IRC SECTION R802.5.2 FOR RAFTER AND CEILING JOIST CONNECTIONS.
3. "UFER" GROUND SHALL BE PROVIDED PER IRC SECTION E3608.1
4. GUTTERS, DOWNSPOUTS, AND SPLASH BLOCKS SHALL BE PROVIDED TO INSURE ALL ROOF DRAINAGE IS DIRECTED 5 FEET MINIMUM FROM HOUSE BEFORE TOUCHING SOIL.

WINDOWS AND SAFETY GLAZING NOTES:

1. GLAZING IN HAZARDOUS LOCATIONS AS IDENTIFIED IN IRC SECTION R308.4 SHALL BE OF APPROVED SAFETY GLAZING MATERIALS: GLASS IN STORM DOORS; INDIVIDUAL FIXED OR OPERABLE PANELS ADJACENT TO A DOOR WHERE THE NEAREST VERTICAL EDGE IS WITHIN A 24" ARCH OF THE DOOR IN A CLOSED POSITION AND WHOSE BOTTOM EDGE IS WITHIN 60" OF THE FLOOR; WALLS ENCLOSING STAIRWAYS AND LANDINGS WHERE THE GLAZING IS WITHIN 60" OF THE TOP OR BOTTOM OF THE STAIR, ENCLOSURES FOR SPAS, TUBS, SHOWERS AND WHIRLPOOLS; GLAZING IN FIXED OR OPERABLE PANELS EXCEEDING 9 SQ. FT. AND WHOSE BOTTOM EDGE IS LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36".
2. ALL WINDOWS SHALL MEET THE FALL PROTECTION REQUIREMENTS OF SECTION R312.2.

EMERGENCY EGRESS NOTES:

1. ALL SLEEPING ROOMS AND BASEMENT SHALL BE PROVIDED WITH PROPER EMERGENCY ESCAPE AND RESCUE OPENINGS PER IRC SECTION R310. PROVIDE (1) WINDOW IN EACH BEDROOM THAT HAS A MINIMUM OPERABLE AREA OF 5.7 SQ. FT. WITH A MINIMUM OPERABLE HEIGHT OF 24" AND WIDTH OF 20".
2. PROVIDE SMOKE ALARMS IN EACH SLEEPING ROOM, OUTSIDE OF EACH SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS AND ON EACH ADDITIONAL FLOOR, INCLUDING BASEMENTS AND STAIRWAYS. ALARMS SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTUATION OF ONE ALARM ACTIVATES ALL OTHERS AND BE HARD WIRED WITH A BATTERY BACKUP, PER IRC SECTION R314 AND NFPA 72.
3. CARBON MONOXIDE DETECTORS SHALL BE PROVIDED PER R315.

CONCRETE & REINFORCING NOTES:

1. CONCRETE STRENGTH SHALL MEET THE FOLLOWING MINIMUM 28 DAY STRENGTH REQUIREMENTS (IRC R402.2):
    - 1.1. 2,500 PSI FOR BASEMENT FLOOR SLABS ON UNDISTURBED GRADE.
    - 1.2. 3,000 PSI FOR FOOTINGS, FOUNDATION WALLS, AND OTHER VERTICAL CONCRETE.
    - 1.3. 3,500 PSI FOR CARPORT AND GARAGE FLOOR SLABS ON UNDISTURBED GRADE.
    - 1.4. 3,500 PSI FOR STRUCTURAL FLOOR SLABS.
2. CONCRETE SHALL BE 6%±1% AIR ENTRAINED FOR GARAGE SLABS AND FOR ALL LOCATIONS (FOOTINGS, WALLS, FLATWORK, ETC.) EXPOSED TO WEATHER.
3. CONCRETE SHALL HAVE A SLUMP OF 4" ± 1". THE SLUMP CAN BE INCREASED THROUGH THE USE OF APPROVED ADDITIVES (NOT WATER).
4. THE REINFORCING STEEL SHALL BE ASTM A615, GRADE 40 MINIMUM UNLESS NOTED OTHERWISE ON THE DRAWINGS. ALL BARS SHALL BE LAPPED A MINIMUM OF 48 BAR DIAMETERS AND/OR CORNER BARS SHALL BE PROVIDED AT ALL FOOTING AND WALL CORNERS, AND FOOTING STEPS.
5. MINIMUM CONCRETE COVER SHALL BE AS FOLLOWS (ACI 318):
    - 5.1. EARTH FORMED - 3"
    - 5.2. EXPOSED TO WEATHER - 1 1/2" FOR #5 BARS & SMALLER
    - 5.3. NOT EXPOSED TO WEATHER - 3/4" FOR SLABS.
6. NO WATER SHALL BE ADDED TO THE CONCRETE MIX AT THE SITE.
7. ADDITION OF CALCIUM CHLORIDE TO CONCRETE IS NOT PERMITTED.
8. NO ALUMINUM SHALL BE EMBEDDED/PLACED IN CONCRETE.
9. CONCRETE PLACED IN COLD WEATHER SHALL COMPLY WITH ACI 306. CONCRETE PLACED IN HOT WEATHER SHALL COMPLY WITH ACI 305.

STRUCTURAL STEEL:

1. ALL STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:

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|---|---|
| STRUCTURAL STEEL | ASTM A992, Fy = 50 KSI |
| MISCELLANEOUS STEEL | ASTM A36 |
| HOLLOW STRUCTURAL STEEL (HSS) | ASTM A500, GRADE B |
| STEEL PIPE | ASTM A53, GRADE B (SCHED 40 MIN) |

2. ALL BEAM CONNECTIONS SHALL BE DESIGNED BY THE STEEL FABRICATOR UNDER THE DIRECTION OF A REGISTERED PROFESSIONAL ENGINEER UNLESS SPECIFIC CONNECTIONS ARE SHOWN ON THE DRAWINGS. CONNECTIONS SHALL BE DESIGNED TO 50% U.D.L. OR THE REACTION PROVIDED ON THE DRAWINGS, WHICH EVER IS GREATER. CONNECTIONS SHALL BE WELDED OR BOLTED PER AISC STEEL CONSTRUCTION MANUAL 13TH EDITION. BOLTS SHALL BE ASTM A325N.
3. ALL COLUMN ANCHOR BOLTS SHALL BE ASTM F1554 GRADE 36.
4. WELDING SHALL CONFORM TO THE LATEST PUBLICATION OF APPLICABLE CODES SET FORTH BY THE AMERICAN WELDING SOCIETY. NO UNAUTHORIZED WELDS WILL BE ACCEPTED.
5. PROVIDE 30# FELT BOND BREAK AROUND ALL STEEL COLUMNS WHERE IN CONTACT WITH SLAB-ON-GRADE.
6. ALL EXTERIOR STEEL EXPOSED TO THE ELEMENTS SHALL BE HOT DIPPED GALVANIZED UNLESS NOTED OTHERWISE.
7. ALL STRUCTURAL STEEL SHALL HAVE ONE COAT OF RUST INHIBITIVE PRIMER CONFORMING TO SPECIFICATIONS. FIELD TOUCHUP ALL UNPAINTED AREAS AND WELD AREAS.

WOOD FRAMING NOTES:

1. ALL STRUCTURAL LUMBER (RAFTERS, CEILING JOISTS, PURLINS AND HEADERS) SHALL BE DOUGLAS FIR LARCH #2 OR BETTER UNLESS OTHERWISE NOTED ON THE DRAWINGS. ALL LOAD BEARING WALL STUDS AND PURLIN STRUTS SHALL BE DOUGLAS FIR STUD GRADE OR BETTER.
2. GLUE LAMINATED MEMBERS MARKED "LVL" (LAMINATED VENEER LUMBER) SHALL HAVE A MINIMUM ALLOWABLE BENDING STRESS (FB) OF 2950 PSI, A MINIMUM ALLOWABLE SHEAR STRESS (FV) OF 285 PSI, AND A MINIMUM MODULUS OF ELASTICITY (E) OF 2,000 KSI. ALL MANUFACTURER'S RECOMMENDATIONS FOR NAILING AND CONNECTIONS SHALL BE FOLLOWED.
3. FLOOR JOISTS: SEE IRC TABLE R502.3.1(1) AND R502.3.1(2) FOR SPAN, SIZE, SPACING, AND GRADE OF FLOOR JOISTS.
4. FLOOR JOISTS BELOW PARTITION WALLS RUNNING PARALLEL TO THE JOIST SPAN SHALL BE DOUBLED. ALL DOUBLED MEMBERS SHALL BE NAILED TOGETHER WITH 16d NAILS 16" ON CENTER IN TWO ROWS STAGGERED OR PER MANUFACTURER SPECS.
5. SOLID BLOCKING BETWEEN FLOOR JOISTS SHALL BE INSTALLED WHERE JOISTS BEAR ON TOP OF BEAMS OR HEADERS AND BELOW POINT LOADS. ALL SOLID BLOCKING AND RIM JOIST MATERIAL SHALL BE THE SAME SIZE AND GRADE AS THE JOISTS.
6. ALL FLOOR AND CEILING JOISTS THAT BUTT INTO THE SIDE OF A HEADER OR STEEL BEAM SHALL BE ANCHORED TO THE HEADER OR STEEL BEAM WITH STANDARD JOIST HANGERS.
7. ALL SUPPORTS FOR WOOD TRUSSES, RAFTERS AND PURLINS, UNLESS SHOWN OTHERWISE ON THE DRAWINGS, SHALL BEAR ON LOAD BEARING WALLS (WALLS LOCATED DIRECTLY ABOVE A BEAM LINE OR CONTINUOUS FOOTING)! ALL CONCENTRATED LOADS SHALL BE CARRIED THROUGH THE FLOOR SYSTEM THICKNESS WITH SOLID BLOCKING OR WITH 2x4 STUB COLUMNS (SQUASH BLOCKS) THAT TRANSFER THE LOAD DOWN TO THE SUPPORT WALL OR BEAM BELOW.
8. ALL NAILING NOT INDICATED ON THE DRAWINGS SHALL CONFORM TO THE NAILING SCHEDULE OF THE GOVERNING BUILDING CODE. SPACING, END DISTANCES AND EDGE DISTANCES OF NAILS AND SPIKES SHALL BE SUCH AS TO AVOID THE UNUSUAL SPLITTING OF THE WOOD.
9. ALL NON-LOADBEARING STUD WALLS IN THE BASEMENT SHALL BE PROVIDED WITH A 1" MINIMUM VERTICAL EXPANSION JOINT TO ALLOW FOR HEAVE IN THE FLOOR SLAB.

    WALLS SHALL NOT BE TIGHT BETWEEN THE SLAB AND THE FRAMING ABOVE!
10. SHEATHING FOR HORIZONTAL DIAPHRAGMS SHALL BE EXTERIOR GRADE, C/D, STRUCTURAL GROUP II OR BETTER. ROOF AND WALL FRAMING SHALL BE OF DOUGLAS FIR-LARCH OR SOUTHERN PINE. PROVIDE SOLID BLOCKING AT ALL PANEL EDGES UNLESS OTHERWISE NOTED. WHERE PANELS ARE APPLIED ON BOTH FACES OF A WALL, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS.
11. ALL WOOD STRUCTURAL PANELS SHALL BE IDENTIFIED WITH THE APPROPRIATE GRADE TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION (APA) AND SHALL MEET THE REQUIREMENTS OF PRODUCT STANDARD PS-1.
12. WOOD STRUCTURAL PANELS SHALL BE SET WITH FACE GRAIN PERPENDICULAR TO SUPPORTING MEMBERS AND STAGGER END JOINTS 4'-0".
13. STANDARD WASHERS SHALL BE USED WITH ALL BOLTS FASTENING WOOD MEMBERS.
14. ALL SAWN LUMBER EXPOSED TO WEATHER OR IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED.
15. ROOF FRAMING - RIDGE BEAMS, VALLEY AND HIP RAFTERS SHALL HAVE A MINIMUM NOMINAL THICKNESS OF 2" AND MINIMUM DEPTH NOT LESS THAN THE END CUT OF THE RAFTERS. HIP AND VALLEY RAFTERS SHALL BE SUPPORTED AT THE RIDGE BY A 2x6 "TEE" BRACE TO A BEARING PARTITION. WHERE ROOF BRACING IS USED TO PERMIT LONGER RAFTERS SPAN, USE 2x6 "TEE" BRACES AT 4'-0" O.C. WITH CONTINUOUS 2x6 PURLIN UNDER THE RAFTERS. BRACE RAFTERS TO BEARING PARTITIONS.
16. PROVIDE CONTINUOUS STRONG BACKS FOR CEILING JOIST SPANS 12'-0" OR GREATER.
17. CEILING JOISTS: SEE IRC TABLE R802.5(1) AND R802.5(2) FOR SPAN, SIZE, SPACING, AND GRADE OF CEILING JOISTS.
18. ROOF RAFTERS: SEE IRC TABLE R802.4.1(1) THRU R802.4.1(8) FOR SPAN, SIZE, SPACING, AND GRADE OF ROOF RAFTERS.
19. BRACE THE COMPRESSION FLANGE OF ALL BEAMS UNLESS NOTED OTHERWISE.
20. ALL BEAMS OR HEADERS THAT BEAR ON WOOD FRAMING SHALL BE SUPPORTED BY ANOTHER BEAM OR HEADER OR A BUILT-UP (2) STUD MIN COLUMN THE FULL WIDTH OF THE BEAM CONTINUOUS TO THE FOUNDATION OR OTHER STRUCTURAL FRAMING MEMBER, U.N.O.
21. ALL LIGHT GAGE METAL FRAMING ACCESSORIES NOTED SHALL BE AS MANUFACTURED BY "SIMPSON STRONG TIE" OR APPROVED EQUAL, ATTACH FRAMING ACCESSORIES TO WOOD FRAMING IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
22. PROVIDE HEADERS AS SHOWN ON PLAN, FOR HEADERS NOT MARKED REFERENCE TYPICAL BEARING WALL HEADER SCHEDULE.
23. FLOOR SHEATHING SHALL BE 3/4" TONGUE & GROOVE WOOD STRUCTURAL PANEL. GLUE & NAIL TO FLOOR JOISTS WITH 8d NAILS AT 6" O.C. AT ALL PANEL EDGES AND AT 12" O.C. AT INTERMEDIATE SUPPORTS.
24. ALL EXTERIOR WOOD WALL FRAMING SHALL BE 2x4 DOUG-FIR STUD GRADE AT 16"oc, UNO.
25. ALL INTERIOR BEARING WALL FRAMING SHALL BE 2x4 DOUG-FIR STUD GRADE AT 16"oc, UNO.
26. MULTIPLE STUD MEMBERS CALLED OUT FOR SUPPORT OF LVL BEAMS AND HEADERS SHALL BE CARRIED DOWN TO TOP OF FOUNDATIONS OR SUPPORT BEAM(S).

FOUNDATION NOTES:

1. ALL FOUNDATIONS SHALL BEAR ON NATIVE, UNDISTURBED SOIL CAPABLE OF SUPPORTING THE ASSUMED ALLOWABLE SOIL BEARING PRESSURE LISTED UNDER THE DESIGN LOADS ON THIS PAGE, UNLESS NOTED OTHERWISE, WITHOUT UNDUE SETTLEMENT OR HEAVING. NORTON & SCHMIDT IS NOT RESPONSIBLE FOR REVIEW OF THE SOIL CONDITIONS AT THE SITE, THE CONTRACTOR OR EXCAVATOR, IF APPROPRIATELY QUALIFIED AND EXPERIENCED OR A QUALIFIED TESTING LAB (APPROVED BY THE OWNER) SHALL FIELD VERIFY THE ACTUAL SOIL'S SUITABILITY, SOIL BEARING CAPACITY AND OTHER SOIL CONDITIONS (SUCH AS EXPANSIVE SOILS, COMPRESSIBLE SOILS, SHIFTING SOILS OR OTHER QUESTIONABLE SOIL CHARACTERISTICS). REFERENCE IRC R401.
2. ALL EXTERIOR FOOTINGS SHALL BEAR A MIN. OF 36" BELOW FINISHED GRADE.
3. IF THE EXISTING SITE TOPOGRAPHY OR SOIL CONDITIONS VARY FROM THE CONDITIONS SHOWN ON THE DRAWINGS, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ARCHITECT/ENGINEER SO THAT A DESIGN THAT IS APPROPRIATE FOR THE SITE CAN BE GENERATED.
4. FOOTINGS SHALL BE POURED CONTINUOUS AT FOOTING STEPS (SOLID JUMPS).
5. THE BUILDER SHALL BE RESPONSIBLE FOR TAKING THE APPROPRIATE STEPS TO MINIMIZE THE EFFECTS OF EXPANSIVE SOIL ON THE FOUNDATION, SLABS, AND WOOD FRAMED PORTIONS OF THE HOUSE. THIS INCLUDES ISOLATING THE FLOOR SLAB AT ALL COLUMNS, INTERIOR BEARING WALLS, AND AT THE FOUNDATION WALLS WITH TWO LAYERS OF 15# FELT. PARTITION WALLS IN THE BASEMENT SHALL NOT BE CONSTRUCTED TIGHT AGAINST THE FRAMING ABOVE.
6. INSTALL CONTINUOUS DRAIN TILE (4" DIAMETER MINIMUM) AROUND THE PERIMETER OF THE ENTIRE LOWER LEVEL AND COVER THE TILE WITH FILTER FABRIC AND COURSE, CLEAN ROCK. INSTALL VERTICAL DRAINS TO PERIMETER DRAIN TILE AT ALL WINDOW WELLS. THE DRAIN TILE SHALL BE CONNECTED TO A 40 GALLON (MINIMUM) SUMP PIT WITH SUFFICIENT DEPTH FOR PROPER SUMP PUMP OPERATION, OR SHALL BE DRAINED BY GRAVITY TO DAYLIGHT AT LEAST 10' FROM THE FOUNDATION. FOUNDATION DRAINAGE SHALL ALSO BE IN ACCORDANCE WITH IRC SECTION R405.1.

RESIDENTIAL BASEMENT WALL NOTES:

1. VERTICAL REBAR SPACING FOR CONCRETE FOUNDATION WALLS SHALL BE PER THE TABLE BELOW:

| | | 60 KSI REINFORCING | | | 40 KSI REINFORCING | |
|---|---|---|---|---|---|---|
| WALL THICKNESS | | 8" | 10" | 12" | 8" | 10" |
| WALL HEIGHT | 6' OR LESS | #4 @ 36" O.C. | #4 @ 36" O.C. | | #4 @ 36" O.C. | #4 @ 36" O.C. |
| | 7' | #4 @ 32" O.C. | #4 @ 36" O.C. | | #4 @ 21" O.C. | #4 @ 36" O.C. |
| | 8' | #4 @ 24" O.C. | #4 @ 36" O.C. | | #4 @ 16" O.C. | #4 @ 36" O.C. |
| | 9' | #4 @ 16" O.C. | #4 @ 20" O.C. | | #4 @ 12" O.C. | #4 @ 16" O.C. |
| | 10' | #4 @ 12" O.C. | #4 @ 16" O.C. | | #4 @ 8" O.C. | #4 @ 12" O.C. |
| | 12' | | | #5 @ 12" O.C. EACH FACE | | |
| | 14' | | | #5 @ 8" O.C. EACH FACE | | |

a. MINIMUM REQUIREMENT FOR VERTICAL REBAR IN PLAIN CONCRETE WALLS IS #4 BARS @ 36" O.C. (ACI 332).
b. VERTICAL BARS SHALL BE CONTINUED TO WITHIN 4" OF THE TOP OF THE WALL.
c. REBAR SHALL BE POSITIONED AT THE TENSION FACE OF THE WALL (2" FROM THE INSIDE FACE.
d. REINFORCEMENT SHALL LAP A MINIMUM OF 24" AT ENDS, SPLICES, AND AROUND CORNERS.
e. DESIGN BY A PROFESSIONAL ENGINEER IS REQUIRED FOR WALLS OVER 10' IN HEIGHT.
f. HORIZONTAL REINFORCING SHALL MATCH THE SIZE OF THE VERTICAL REINFORCING. PROVIDE 1 - BAR WITHIN 12" OF THE TOP OF THE WALL WITH ADDITIONAL BARS SPACED AT 24" O.C. MAX.

2. BARS SHALL LAP A MINIMUM OF 48 BAR DIAMETERS AT ENDS, SPLICES AND AROUND CORNERS. UNLESS OTHERWISE NOTED ON THESE DRAWINGS.
3. CONTINUOUS WALL FOOTINGS SHALL BE A MINIMUM OF 16" WIDE AND 8" DEEP WITH (2) #4 BARS CONTINUOUS WITH 3" CLEARANCE FROM SOIL FOR 8" THICK WALLS, U.N.O. CONTINUOUS WALL FOOTINGS SHALL BE A MINIMUM OF 24" WIDE AND 12" DEEP WITH (2) #4 BARS CONTINUOUS WITH 3" CLEARANCE FROM SOIL FOR 12" THICK WALLS.
4. INSTALL 1/2"Ø x 1'-2" LONG ANCHOR BOLTS (7" EMBEDMENT) AT 2'-0" O.C. AND WITHIN 12" OF THE END OF EACH SILL MEMBER (2-BOLTS MIN PER PLATE SECTION). MINIMUM SILL PLATE TO BE 2x6 PRESSURE TREATED.
5. THE TOPS OF ALL BASEMENT (LOWER LEVEL) FOUNDATION WALLS SHALL BE CONNECTED TO THE FLOOR JOISTS. NAIL EACH FLOOR JOIST END AND END WALL BLOCKING TO THE WOOD SILL PLATE PER THE IRC NAILING SCHEDULE. WHERE FLOOR JOISTS RUN PARALLEL TO THE FOUNDATION WALLS, PROVIDE BLOCKING IN THE FIRST THREE JOIST SPACES AT 2'-0" O.C. OVER THE ENTIRE LENGTH OF THE FLOOR JOISTS.
6. WALLS SHALL BE FULL HEIGHT FROM FOOTING TO FLOOR FRAMING. NO WOOD FRAMED CRIPPLE WALLS EXCEPT AS SPECIFICALLY NOTED ON THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
7. FOUNDATION WALLS SHALL BE DESIGNED FOR AN EQUIVALENT FLUID PRESSURE (EFP) 60 PSF.
8. PROVIDE STEEL SHIMS IN BEAM POCKETS TO LEVEL BEAMS. BEAM POCKETS SHALL BE GROUTED SOLID WITH 4,000 PSI NON-SHRINK GROUT AFTER BEAMS ARE LOADED WITH FRAMING MEMBERS.
9. REINFORCE AROUND BEAM POCKETS BY BENDING TOP CONTINUOUS HORIZONTAL BAR BELOW BEAM POCKET OR INSTALL SEPARATE BENT BAR LAPPED AND TIED MINIMUM 24" EACH SIDE.
10. PROVIDE TWO #4 X 4'-0" LONG DIAGONAL BARS AT THE CORNERS OF ALL OPENINGS IN CONCRETE WALLS AND AT FOOTING STEPS. ALSO PROVIDE 2 ADDITIONAL #4 ON ALL SIDES OF WALL OPENINGS. BARS SHALL BE 3'-0" LONGER THAN OPEN VERTICAL OR HORIZONTAL DIMENSION.
11. FOUNDATION WALLS THAT RETAIN EARTH AND ENCLOSE INTERIOR SPACES AND FLOORS BELOW GRADE SHALL BE DAMP PROOFED FROM THE TOP OF THE FOOTING TO THE FINISHED GRADE WITH A BITUMINOUS COATING IN ACCORDANCE WITH SECTION R406.1.
12. INSULATION SHALL BE INSTALLED FOR ALL BASEMENT WALLS AS REQUIRED PER SECTION N1102.1.
13. ALL SITE RETAINING WALLS GREATER THAN 4'-0" IN HEIGHT SHALL REQUIRE A DESIGN BY A PROFESSIONAL ENGINEER.
14. A CONCRETE ENCASED GROUNDING ELECTRODE CONNECTION SHALL BE PROVIDED TO THE ELECTRICAL SERVICE PER SECTION E3608.1.

# ENERGY REQUIREMENTS

1. THE BUILDING THERMAL ENVELOPE SHALL BE SEALED WITH AN AIR BARRIER PER IRC SECTION N1102.
2. LIGHTING FIXTURES PENETRATING THE THERMAL ENVELOPE SHALL BE IC-RATED, LEAKAGE RATED AND SEALED TO THE GYPSUM WALLBOARD AS REQUIRED PER N1102.
3. PROGRAMMABLE THERMOSTATS SHALL BE INSTALLED AS REQUIRED PER N1103.1.1.
4. AIR HANDLERS SHALL BE RATED FOR MAXIMUM 2% AIR LEAKAGE RATE PER N1103.3.2.1.
5. BUILDING CAVITIES USED AS RETURN AIR PLENUMS SHALL BE SEALED TO PREVENT LEAKAGE ACROSS THE THERMAL ENVELOPE AS REQUIRED PER N1103.
6. BUILDING CAVITIES IN A THERMAL ENVELOPE WALL SHALL NOT BE USED AS RETURN AIR PLENUMS UNLESS THE REQUIRED INSULATION BARRIER IS MAINTAINED PER M1601.1.1.
7. HOT WATER PIPES SHALL BE INSULATED AS REQUIRED PER N1103.4.1.
8. ALL EXHAUST FANS SHALL TERMINATE TO THE BUILDING EXTERIOR AS REQUIRED PER M1505.2.
9. MAKEUP AIR SYSTEMS SHALL BE INSTALLED FOR KITCHEN EXHAUST HOODS THAT EXCEED 400 CFM AS REQUIRED PER M1503.6.
10. AN AIR HANDLING SYSTEM SHALL NOT SERVE BOTH THE LIVING SPACE AND THE GARAGE PER M1601.6.
11. MINIMUM MECHANICAL EFFICIENCY RATING FOR AC EQUIPMENT IS 13 SEER AS REQUIRED PER IRC.
12. MINIMUM MECHANICAL EFFICIENCY RATING FOR FORCED AIR FURNACE IS 78% AS REQUIRED PER IRC.
13. CONTRACTOR SHALL PROVIDE COMPLIANCE REPORT PER N1105.4.2 AND N1105.4.3 TO THE BUILDING OFFICIAL.

# ABBREVIATIONS LEGEND

| | | | |
|---|---|---|---|
| AB | ANCHOR BOLT | LONG | LONGITUDINAL |
| ACI | AMERICAN CONCRETE INSTITUTE | MAX | MAXIMUM |
| AFF | ABOVE FINISH FLOOR | MECH | MECHANICAL |
| AISC | AMERICAN INSTITUTE OF STEEL CONSTRUCTION | MFR | MANUFACTURER |
| AISI | AMERICAN IRON AND STEEL INSTITUTE | MIN | MINIMUM |
| ARCH | ARCHITECTURAL | MISC | MISCELLANEOUS |
| ASTM | AMERICAN SOCIETY FOR TESTING AND MATERIALS | MTL | METAL |
| AWS | AMERICAN WELDING SOCIETY | NO | NUMBER |
| BFF | BELOW FINISH FLOOR | NS | NEAR SIDE |
| BFS | BOTTOM OF FOOTING STEP | NTS | NOT TO SCALE |
| BO | BOTTOM OF | OC | ON CENTER |
| BOS | BOTTOM OF STEEL | OH | OPPOSITE HAND |
| BRG | BEARING | PAF | POWDER ACTUATED FASTENERS |
| BWP | BRACED WALL PANEL | PCF | POUNDS PER CUBIC FEET |
| CIP | CAST-IN-PLACE CONCRETE | PL | PLATE |
| CJ | CONTROL JOINT (WALL) | PLF | POUNDS PER LINEAR FOOT |
| CL | CENTER LINE | PSF | POUNDS PER SQUARE FOOT |
| CLR | CLEAR | PSI | POUNDS PER SQUARE INCH |
| COL | COLUMN | QTY | QUANTITY |
| CONC | CONCRETE | REF | REFERENCE |
| CONST | CONSTRUCTION | REINF | REINFORCING |
| CONT | CONTINUOUS | REQD | REQUIRED |
| DIA | DIAMETER | REV | REVERSE |
| EIFS | EXTERIOR INSULATION AND FINISH SYSTEM | RO | ROUGH OPENING |
| EL | ELEVATION | SIM | SIMILAR |
| ELEC | ELECTRICAL | T&B | TOP AND BOTTOM |
| EQ | EQUAL | TFS | TOP OF FOOTING STEP |
| EW | EACH WAY | THK | THICK |
| FDN | FOUNDATION | TO | TOP OF |
| FF | FINISH FLOOR | TOC | TOP OF CONCRETE |
| FS | FAR SIDE | TOF | TOP OF FOOTING |
| FTG | FOOTING | TOP | TOP OF PAVING |
| GA | GAGE | TOS | TOP OF STEEL |
| GC | GENERAL CONTRACTOR | TRANS | TRANSVERSE |
| GYP BD | GYPSUM BOARD | TYP | TYPICAL |
| HORIZ | HORIZONTAL | UNO | UNLESS NOTED OTHERWISE |
| HSA | HEADED STUD ANCHOR | VERT | VERTICAL |
| INFO | INFORMATION | W | WIDTH |
| JST | JOIST | WBM | WALL BRACE METHOD |
| JT | JOINT | WP | WORK POINT |
| KSI | KIPS PER SQUARE INCH | WS | WALL STEP |
| LBS | POUNDS | WWF | WELDED WIRE FABRIC |

# SYMBOLS LEGEND

| | | | |
|---|---|---|---|
| ELEVATION DESCRIPTION | ELEVATION DESIGNATION | △ 1 | REVISION DESIGNATION |
| —⌇— | CUT SYMBOL | 22 | PLAN NOTE SYMBOL |
| TYPE NO/SHEET | SECTION CUT | 1 | SLAB JOINT DESIGNATION |
| TYPE NO/SHEET | ELEVATION DETAIL | ⌖ 100'-0" | SPOT ELEVATION |
| TYPE NO SHEET TYPE | BLOWUP DETAIL | ▨ | CONCRETE WALL |
| WSP | WOOD STRUCTURAL PANEL | ▤ | WOOD NON-LOAD BEARING STUD WALL |
| CS-WSP | CONTINUOUSLY SHEATHED WOOD STRUCTURAL PANEL | ▩ | BRACED WALL PANEL |
| PFH | PORTAL FRAME WITH HOLD-DOWNS | — — — | BRACED WALL LINE |
| PFG | PORTAL FRAME AT GARAGE | ▬ | WOOD STUD BEARING WALL |

## INSULATION AND FENESTRATION REQUIREMENTS - IRC TABLE N1102.1.2

THESE VALUES ARE BASED ON CLIMATE ZONE 4 PER IRC FIGURE N1101.7 OR TABLE N1101.7. REFERENCE IRC FOR DIFFERENT CLIMATE ZONE VALUES

| COMPONENT | | VALUE |
|---|---|---|
| FENESTRATION | | U ≦ 0.32 (b) |
| SKYLIGHT | | U ≦ 0.55 (b) |
| GLAZED FENESTRATION SHGC | | U ≦ 0.40 (b)(e) |
| CEILING | | R-49 |
| CEILING WITH ATTIC SPACES (OVER 100% OF THE CEILING) | | R-38 |
| CEILING - VAULTED (500 SQ.FT. OR 20% OF THE TOTAL INSULATED CEILING AREA, WHICHEVER IS LESS) | | R-30 |
| WOOD FRAME WALL | | R-20 or R-13 + 5 (h) |
| MASS WALL | | R-8 / R-13 (i) |
| FLOOR | | R-19 |
| BASEMENT WALL | | R-10 / R-13 (c) |
| SLAB (R VALUE/DEPTH) | | R-10 / 2 FT (d) |
| CRAWLSPACE WALL | | R-10 / R-13 (c) |
| DUCTS OUTSIDE OF THE CONDITIONED SPACE | SUPPLY AND RETURN | R-8 |
| | IN FLOOR & CEILING ASSEMBLY | R-6 |

a. R VALUES ARE MINIMUMS. U - FACTORS AND SHGC ARE MAXIMUMS. WHERE INSULATION IS INSTALLED IN A CAVITY THAT IS LESS THAN THE LABEL OR DESIGN THICKNESS OF THE INSULATION, THE INSTALLED R-VALUE OF THE INSULATION SHALL NOT BE LESS THAN THE R-VALUE SPECIFIED IN THE TABLE.
b. THE FENESTRATION U - FACTOR EXCLUDES SKYLIGHTS. THE SHGC APPLIES TO ALL GLAZED FENESTRATION.
c. "10/13" MEANS R-10 CONTINUOUS INSULATION ON THE INTERIOR OR EXTERIOR OF THE HOME OR R-13 CAVITY INSULATION ON THE INTERIOR OF THE BASEMENT WALL.
d. R - 5 SHALL BE PROVIDED UNDER THE FULL SLAB AREA OF A HEATED SLAB IN ADDITION TO THE REQUIRED SLAB EDGE INSULATION R-VALUE FOR SLABS, AS INDICATED IN THE TABLE. THE SLAB EDGE INSULATION FOR HEATED SLABS SHALL NOT BE REQUIRED TO EXTEND BELOW THE SLAB.
e. THERE ARE NO SHGC REQUIREMENTS IN THE MARINE ZONE.
f. BASEMENT WALL INSULATION SHALL NOT BE REQUIRED IN WARM-HUMID LOCATIONS AS DEFINED BY FIGURE N1101.10 AND TABLE N1101.10.
g. ALTERNATIVELY, INSULATION SUFFICIENT TO FILL THE FRAMING CAVITY PROVIDING NOT LESS THAN AN R-VALUE OF R-19.
h. THE FIRST VALUE IS CAVITY INSULATION, THE SECOND VALUE IS CONTINUOUS INSULATION. THEREFORE, AS AN EXAMPLE, "13+5" MEANS R-13 CAVITY INSULATION PLUS R-5 CONTINUOUS INSULATION.
i. MASS WALLS SHALL BE IN ACCORDANCE WITH SECTION N1102.2.5. THE SECOND R-VALUE APPLIES WHEN MORE THAN HALF OF THE INSULATION IS ON THE INTERIOR OF THE MASS WALL.

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23411
10/30/2025

PROJECT INFORMATION

HOUSE ADDITION
307 SW 3RD STREET
LEES SUMMIT MO

ISSUE INFO

DATE: 10/30/2025

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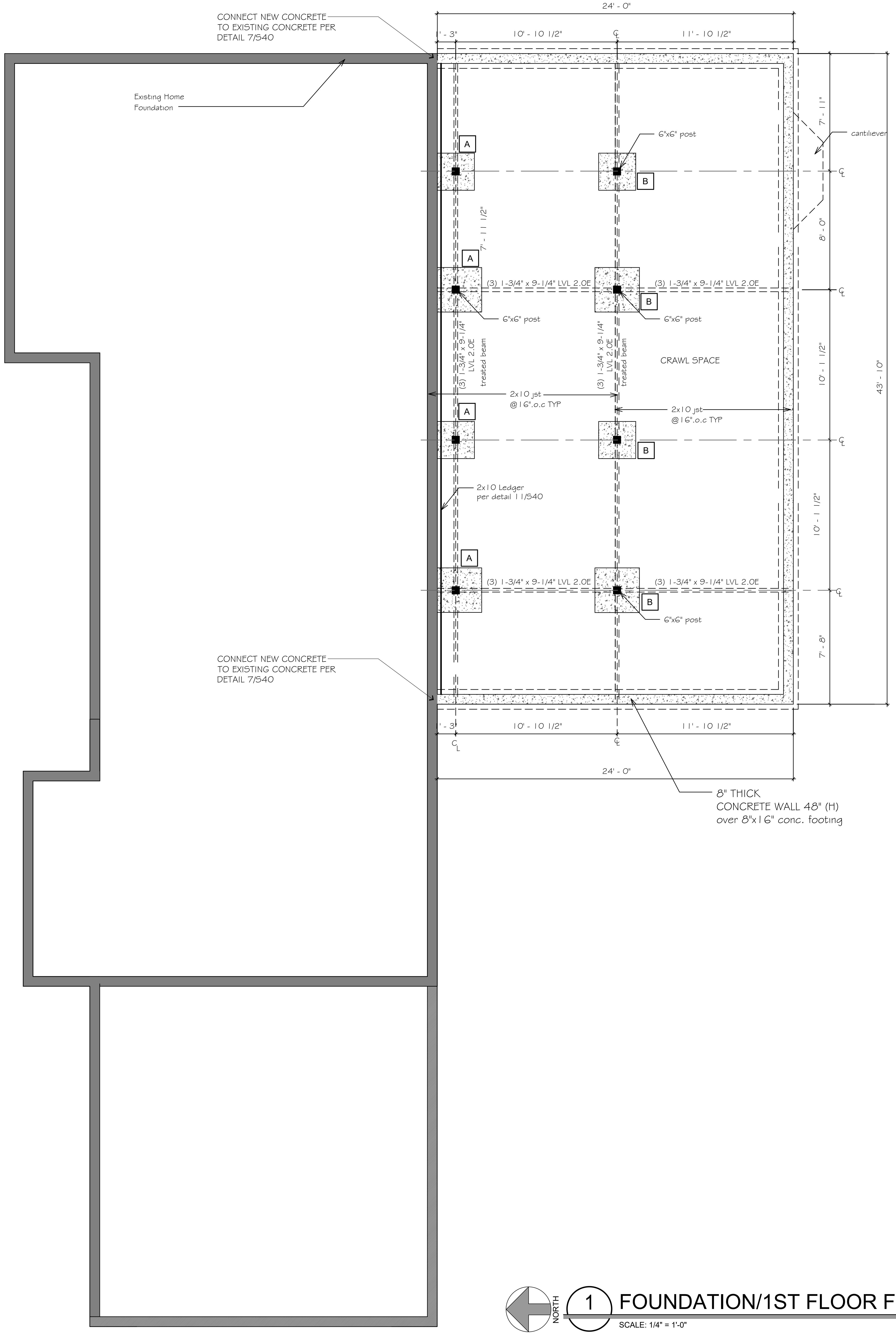
SHEET TITLE

GENERAL NOTES

SHEET NUMBER

S01



## 1 FOUNDATION/1ST FLOOR FRAMING PLAN

SCALE: 1/4" = 1'-0"

## FLOOR FRAMING PLAN NOTES

NOTES ARE TYPICAL UNLESS NOTE NUMBER IS INSIDE OF CIRCLE, THEN THE NOTE REFERS TO A SPECIFIC LOCATION(S) MARKED ON THE PLAN.

1. PROVIDE 3/4" TONGUE AND GROOVE WOOD STRUCTURAL PANEL SHEATHING FOR SUBFLOOR GLUED AND NAILED TO WOOD JOISTS WITH 8d NAILS AT 6"oc AT PANEL EDGES AND 12"oc AT NON-PANEL EDGES.
2. ALL EXTERIOR WALL FRAMING SHALL BE 2x4 OR 2x6 DOUG-FIR STUD GRADE AT 16"oc.
3. PROVIDE APA RATED 24/16 EXTERIOR GRADE PLYWOOD SHEATHING NAILED TO WOOD STUDS WITH 8d NAILS AT 6"oc AT PANEL EDGES AND 12"oc AT NON-PANEL EDGES.
4. ALL INTERIOR BEARING WALL FRAMING SHALL BE 2x4 OR 2x6 DOUG-FIR STUD GRADE AT 16"oc.
5. DOUBLE FLOOR JOISTS UNDER ALL PARTITION WALLS RUNNING PARALLEL WITH JOISTS.
6. PROVIDE PROPER WALL INSULATION AS REQUIRED BY GOVERNING BUILDING CODE.
7. STAIRS SHALL HAVE A MAXIMUM RISE OF 7-3/4" AND MINIMUM TREAD OF 10". ALL RISERS AND TREADS TO BE EQUAL BETWEEN FLOORS.
8. PROVIDE WALL BRACING AS SHOWN ON PLAN.
9. PROVIDE HEADERS AS SHOWN ON PLAN, FOR HEADERS NOT MARKED REFERENCE TYPICAL BEARING WALL HEADER SCHEDULE.
10. FLOOR JOISTS: SEE IRC TABLE R502.3.1(1) AND R502.3.1(2) FOR SPAN, SIZE, SPACING, AND GRADE OF FLOOR JOISTS.
11. PROVIDE MIN (2) STUDS FULL WIDTH BEARING UNDER ALL WOOD BEAMS, LVL'S, AND STEEL BEAMS UNLESS NOTED OTHERWISE.
12. INTERIOR FOOTINGS OF LOAD BEARING WALLS AND COLUMNS SHALL BE ISOLATED FROM THE BASEMENT FLOOR SLAB.

## FOOTING SCHEDULE

| MARK | SIZE L x W x THK | REINFORCING (NO) SIZE LOCATION | COLUMN |
|---|---|---|---|
| A | 2'-6" x 2'-6" x 1'-0" | (5) #5 EW BOTTOM | 6x6 PRESSURE TREATED |
| B | 3'-6" x 3'-6" x 1'-0" | (7) #5 EW BOTTOM | 6x6 PRESSURE TREATED |

## UNDER-FLOOR SPACE NOTES

VENTILATION:

1. THE UNDER-FLOOR SPACE BETWEEN THE BOTTOM OF THE FLOOR JOISTS AND THE EARTH UNDER ANY BUILDING (EXCEPT SPACE OCCUPIED BY A BASEMENT) SHALL HAVE VENTILATION OPENINGS THROUGH FOUNDATION WALLS OR EXTERIOR WALLS. THE MINIMUM NET AREA OF VENTILATION OPENINGS SHALL NOT BE LESS THAN 1 S.F. OF UNDER FLOOR SPACE AREA.
2. THE MINIMUM NET AREA OF VENTILATION OPENINGS SHALL NOT BE LESS THAN 1 S.F. FOR EACH 150 S.F. OF UNDER-FLOOR AREA. ONE VENTILATION OPENING SHALL BE WITHIN 3 FEET OF EACH EXTERIOR CORNER OF THE UNDER-FLOOR SPACE. VENTILATION OPENINGS SHALL BE COVERED FOR THEIR HEIGHT AND WIDTH AS INDICATED IN SECTION R408.2.

ACCESS:

3. ACCESS SHALL BE PROVIDED TO ALL UNDER-FLOOR SPACES. ACCESS OPENINGS THROUGH THE FLOOR SHALL BE A MINIMUM OF 18" x 24" (457 mm x 610 mm). OPENINGS THROUGH A PERIMETER WALL SHALL BE NOT LESS THAN 16" x 24" (607 mm x 610 mm). WHEN ANY PORTION OF THE THROUGH-WALL ACCESS IS BELOW GRADE, AN AREAWAY NOT LESS THAN 16" x 24" SHALL BE PROVIDED. THE BOTTOM OF THE AREAWAY SHALL BE BELOW THE THRESHOLD OF THE ACCESS OPENING. THROUGH WALL ACCESS OPENINGS SHALL NOT BE LOCATED UNDER A DOOR TO THE RESIDENCE.

REMOVAL OF DEBRIS:

4. THE UNDER-FLOOR GRADE SHALL BE CLEANED OF ALL VEGETATION AND ORGANIC MATERIAL. ALL WOOD FORMS USED FOR PLACING CONCRETE SHALL BE REMOVED BEFORE A BUILDING IS OCCUPIED OR USED FOR ANY PURPOSE. ALL CONSTRUCTION MATERIALS SHALL BE REMOVED BEFORE A BUILDING IS OCCUPIED OR USED FOR ANY PURPOSE.

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PROJECT INFORMATION

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307 SW 3RD STREET
LEES SUMMIT MO

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DATE: 10/30/2025

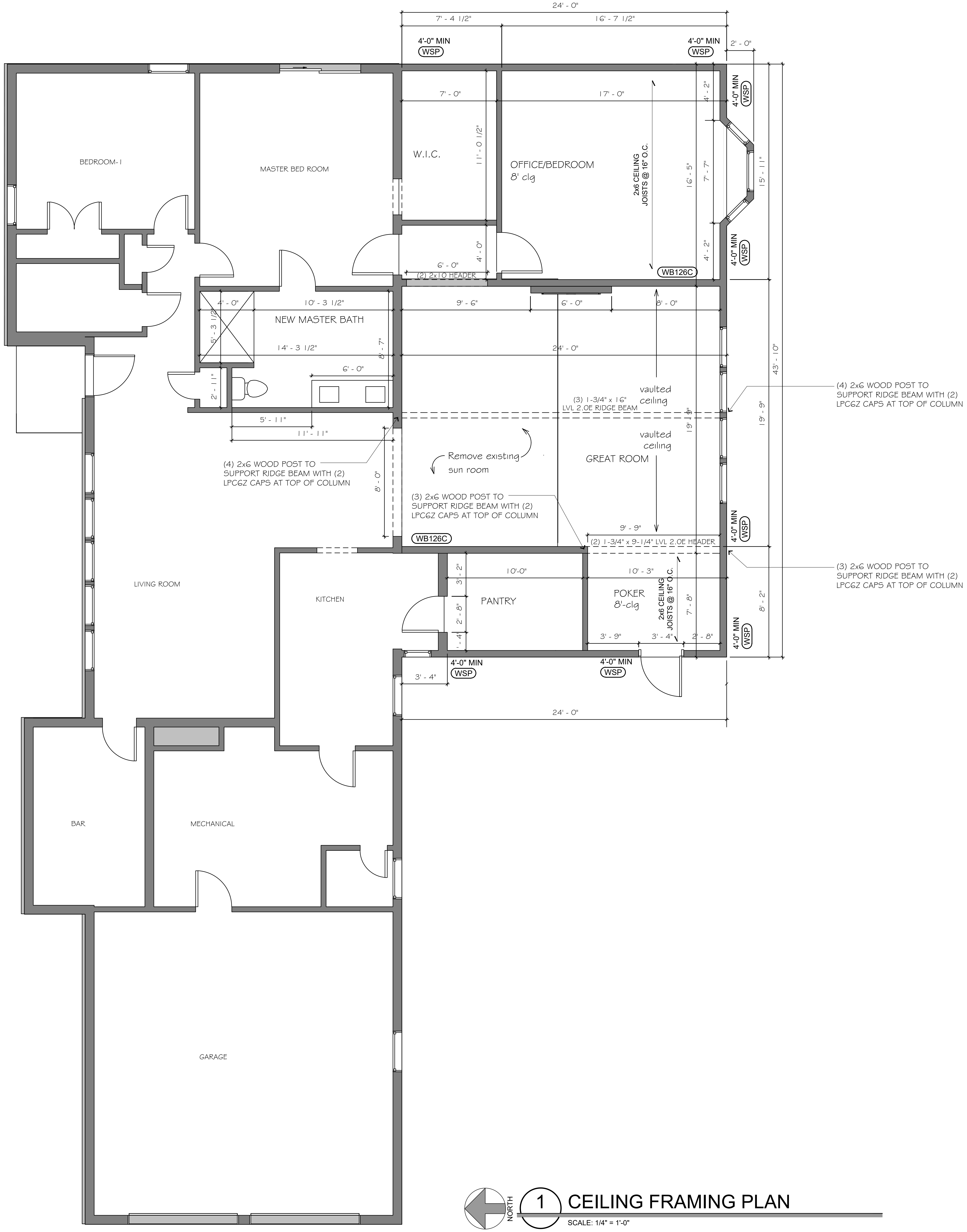
DRAWN BY: SBA
CHECKED BY: SBA
ISSUED FOR: PERMIT

SHEET TITLE

FOUNDATION &
1ST FLOOR
FRAMING PLAN

SHEET NUMBER

S10



## 1 CEILING FRAMING PLAN

SCALE: 1/4" = 1'-0"

## TYPICAL BRACED WALL METHOD

WSP - WOOD STRUCTURAL PANEL; WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN 3/8" FOR 16" STUD SPACING, FASTEN WITH 6d COMMON NAILS (.131"Øx2" LONG) AT 6"oc ALONG EDGES AND 12"oc AT INTERMEDIATE SUPPORTS, WHERE SHOWN ON PLANS. UNLESS OTHERWISE NOTED, PANEL WIDTH = 4'-0".

WB-126C - SEE SHEET S41

## FLOOR FRAMING PLAN NOTES

NOTES ARE TYPICAL UNLESS NOTE NUMBER IS INSIDE OF CIRCLE, THEN THE NOTE REFERS TO A SPECIFIC LOCATION(S) MARKED ON THE PLAN.

1. PROVIDE 3/4" TONGUE AND GROOVE WOOD STRUCTURAL PANEL SHEATHING FOR SUBFLOOR GLUED AND NAILED TO WOOD JOISTS WITH 8d NAILS AT 6"oc AT PANEL EDGES AND 12"oc AT NON-PANEL EDGES.
2. ALL EXTERIOR WALL FRAMING SHALL BE 2x4 OR 2x6 DOUG-FIR STUD GRADE AT 16"oc.
3. PROVIDE APA RATED 24/16 EXTERIOR GRADE PLYWOOD SHEATHING NAILED TO WOOD STUDS WITH 8d NAILS AT 6"oc AT PANEL EDGES AND 12"oc AT NON-PANEL EDGES.
4. ALL INTERIOR BEARING WALL FRAMING SHALL BE 2x4 OR 2x6 DOUG-FIR STUD GRADE AT 16"oc.
5. DOUBLE FLOOR JOISTS UNDER ALL PARTITION WALLS RUNNING PARALLEL WITH JOISTS.
6. PROVIDE PROPER WALL INSULATION AS REQUIRED BY GOVERNING BUILDING CODE.
7. STAIRS SHALL HAVE A MAXIMUM RISE OF 7-3/4" AND MINIMUM TREAD OF 10". ALL RISERS AND TREADS TO BE EQUAL BETWEEN FLOORS.
8. PROVIDE WALL BRACING AS SHOWN ON PLAN.
9. PROVIDE HEADERS AS SHOWN ON PLAN, FOR HEADERS NOT MARKED REFERENCE TYPICAL BEARING WALL HEADER SCHEDULE.
10. FLOOR JOISTS: SEE IRC TABLE R502.3.1(1) AND R502.3.1(2) FOR SPAN, SIZE, SPACING, AND GRADE OF FLOOR JOISTS.
11. PROVIDE MIN (2) STUDS FULL WIDTH BEARING UNDER ALL WOOD BEAMS, LVL'S, AND STEEL BEAMS UNLESS NOTED OTHERWISE.

## CEILING FRAMING PLAN NOTES

NOTES ARE TYPICAL UNLESS NOTE NUMBER IS INSIDE OF CIRCLE, THEN THE NOTE REFERS TO A SPECIFIC LOCATION(S) MARKED ON THE PLAN.

1. PROVIDE PROPER CEILING INSULATION AS REQUIRED BY GOVERNING BUILDING CODE.
2. PROVIDE MIN (2) STUDS FULL WIDTH BEARING UNDER ALL WOOD BEAMS, LVL'S, AND STEEL BEAMS UNLESS NOTED OTHERWISE.
3. LOAD BEARING WALL STUDS SHALL BE CONTINUOUS FROM THE FLOOR TO THE ROOF/CEILING DIAPHRAGM PER IRC 602.3.

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LEES SUMMIT MO

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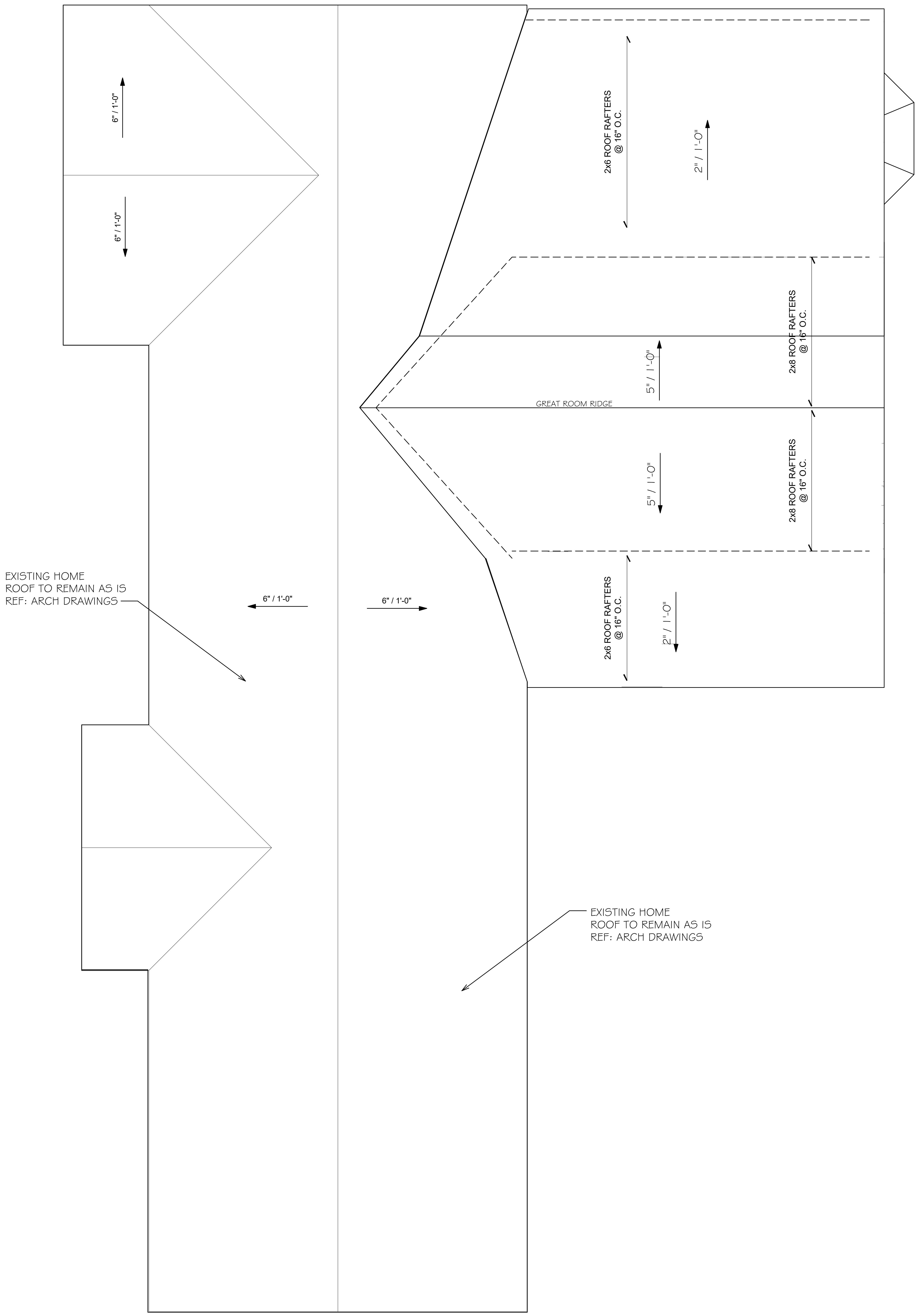
SHEET TITLE

MAIN FLOOR FRAMING PLAN

SHEET NUMBER

S20



NORTH

## ① ROOF FRAMING PLAN

SCALE: 1/4" = 1'-0"

## ROOF FRAMING PLAN NOTES

NOTES ARE TYPICAL UNLESS NOTE NUMBER IS INSIDE OF CIRCLE, THEN THE NOTE REFERS TO A SPECIFIC LOCATION(S) MARKED ON THE PLAN.

1. PROVIDE APA RATED 24/16 EXTERIOR GRADE PLYWOOD SHEATHING NAILED TO ROOF RAFTERS WITH 8d NAILS AT 6"oc AT PANEL EDGES AND 12"oc AT NON-PANEL EDGES.
2. PROVIDE ADDITIONAL DEPTH TO JOISTS AS REQUIRED TO PROVIDE 1" AIR GAP TO PREVENT CONDENSATION PLUS 12" INSULATION TO PROVIDE R-38 INSULATION VALUE TO VAULTED CEILING AREA WHERE SHOWN ON PLAN WITH CROSS HATCH.
3. ALL RIDGE, VALLEY, AND HIP MEMBERS SHALL BE 2" NOMINAL THICKNESS AND NOT LESS IN DEPTH THAN THE CUT END OF THE RAFTER.
4. HIP AND VALLEY MEMBERS SHALL BE SUPPORTED AT THE RIDGE WITH A 2x6 T-BRACE TO A BEARING WALL BELOW.
5. PROVIDE SOFFIT, RIDGE, AND GABLE END VENTS AS REQUIRED TO PROVIDE ADEQUATE VENTILATION FOR ROOF.
6. PROVIDE PROPER FLASHING AND BUILDING PAPER UNDER SHINGLES AS REQUIRED TO PROVIDE WATER TIGHT SEAL AT ALL ROOF PENETRATIONS, RIDGES, VALLEYS, HIPS AND/OR OTHER SLOPE CHANGES.
7. GUTTERS, DOWNSPOUTS, AND SPLASH BLOCKS SHALL BE PROVIDED TO INSURE ALL ROOF DRAINAGE IS DIRECTED 5 FEET MINIMUM FROM HOUSE BEFORE TOUCHING SOIL.
8. ALL GABLE END WALL FRAMING SHALL BE 2x4 DOUG-FIR STUD GRADE AT 16"oc.
9. PROVIDE PROPER CEILING INSULATION AS REQUIRED BY GOVERNING BUILDING CODE.
10. PROVIDE MIN (2) STUDS FULL WIDTH BEARING UNDER ALL WOOD BEAMS, LVL'S, AND STEEL BEAMS UNLESS NOTED OTHERWISE.
11. PROVIDE OVER-BUILD FRAMING AS REQUIRED TO ACHIEVE THE DESIRED ROOF SLOPES/PROFILES.
12. LOAD BEARING WALL STUDS SHALL BE CONTINUOUS FROM THE FLOOR TO THE ROOF/CEILING DIAPHRAGM PER IRC 602.3.
13. ROOF RAFTERS DO NOT EXCEED 200 PLF OF UPLIFT. ATTACH ALL MEMBERS PER FASTENING SCHEDULE ON S42.

NOTE: ROOF HAS BEEN DESIGNED WITH STRUCTURAL HIPS & VALLEYS. ALL HIPS & VALLEYS TO BE BRACED PER HIP/VALLEY RAFTER TABLE. ALL HIPS & VALLEYS TO BE 2x10 MIN UNO.

NOTE: ALL HIPS, VALLEYS, RIDGES, AND ROOF BEAMS SHALL COMPLY WITH IRC R802.3 & R802.4.3 & HAVE (1) SIMPSON H2.5A AT EACH END TO RESIST UPLIFT. WHERE THE ROOF MEMBER IS SUPPORTED BY A STRUT, IN ADDITION TO THE ROOF MEMBER TO STRUT UPLIFT CONNECTION, THE STRUT SHALL ALSO BE CONNECTED TO A BEARING WALL OR BEAM BELOW WITH A SIMPSON H2.5A.

## PURLIN SPAN TABLE

| PURLIN (DF #2) * | MAX SPAN | | | |
|---|---|---|---|---|
| | 2x6 | 2x8 | 2x10 | 2x12 |
| 2x6 RAFTERS AT 24"oc | 4'-3" | 5'-4" | 6'-4" | 7'-1" |
| 2x6 RAFTERS AT 16"oc | 3'-11" | 4'-10" | 5'-10" | 6'-6" |

* BRACE PURLINS WITH 2x6 "T" BRACES.

FOR BRACE LENGTHS LESS THAN 6'-0", 2x4 "T" BRACES MAY BE USED.

FOR BRACE LENGTHS OVER 20', USE 2x8 "T" BRACES.

## HIP/VALLEY RAFTER TABLE

| TYPE | MAX UNBRACED SPAN | | | | | |
|---|---|---|---|---|---|---|
| | 2x6 | 2x8 | 2x10 | 2x12 | $1\frac{3}{4}$"x$9\frac{1}{4}$" LVL | $1\frac{3}{4}$"x$11\frac{1}{4}$" LVL |
| HIP RAFTERS | 9'-6" | 11'-2" | 12'-9" | 14'-1" | 15'-8" | 18'-2" |
| VALLEY RAFTERS | 7'-7" | 8'-10" | 10'-1" | 11'-2" | 13'-2" | 15'-3" |

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LEES SUMMIT MO

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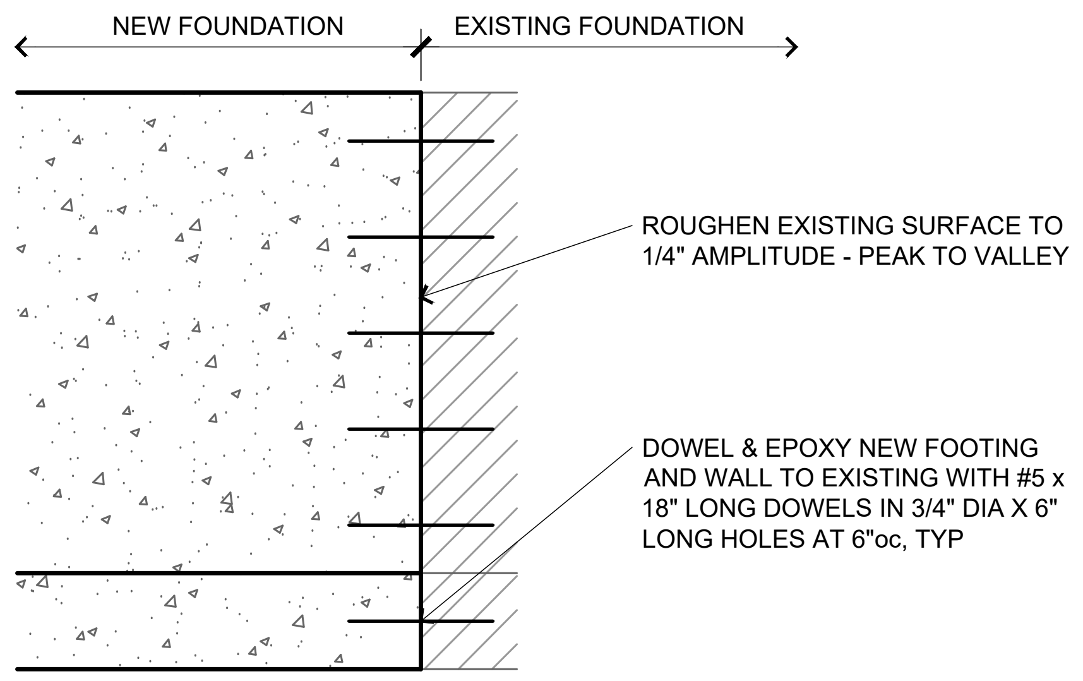
SHEET TITLE

2ND FLOOR
FRAMING PLAN

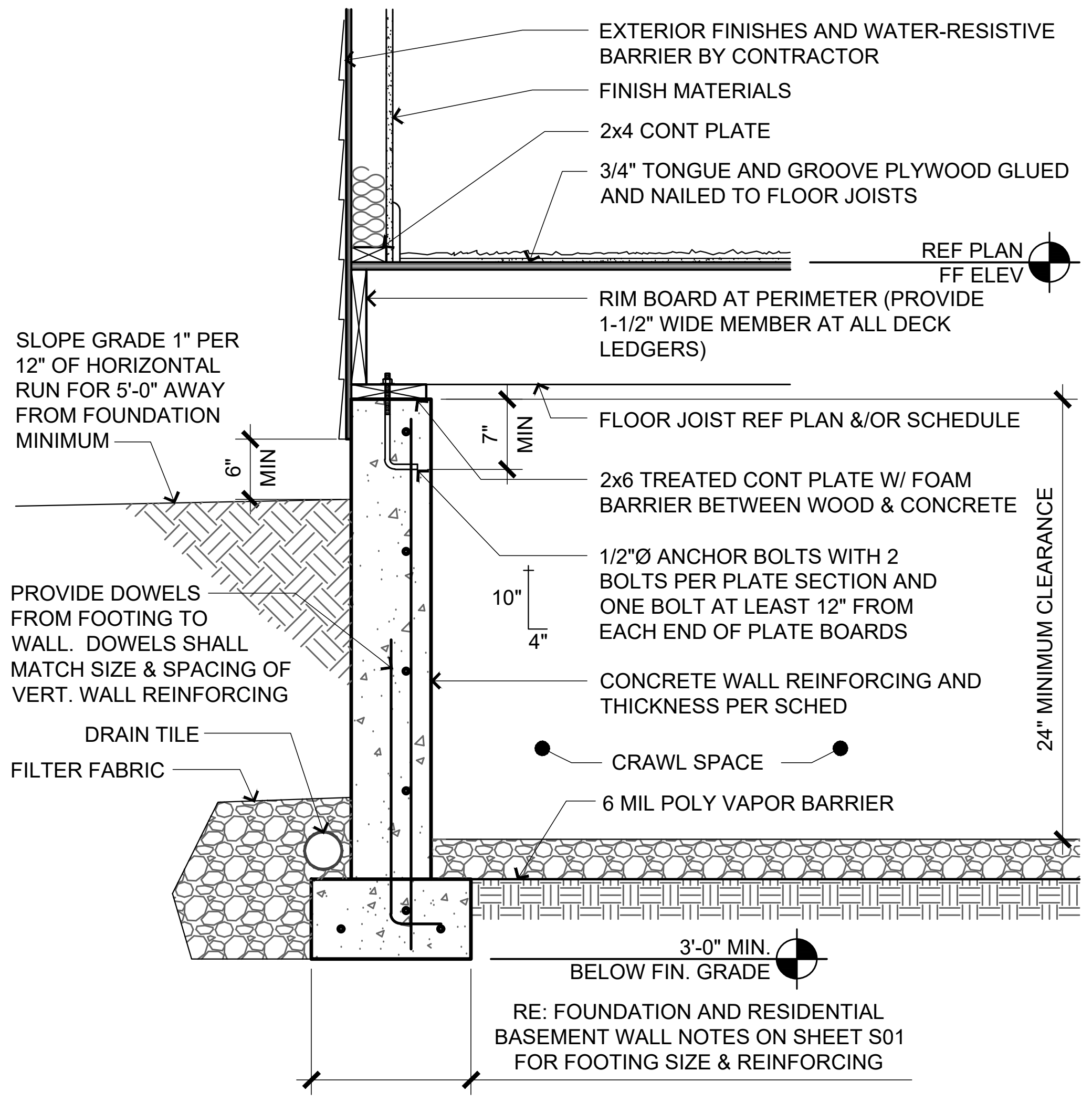
SHEET NUMBER

S21



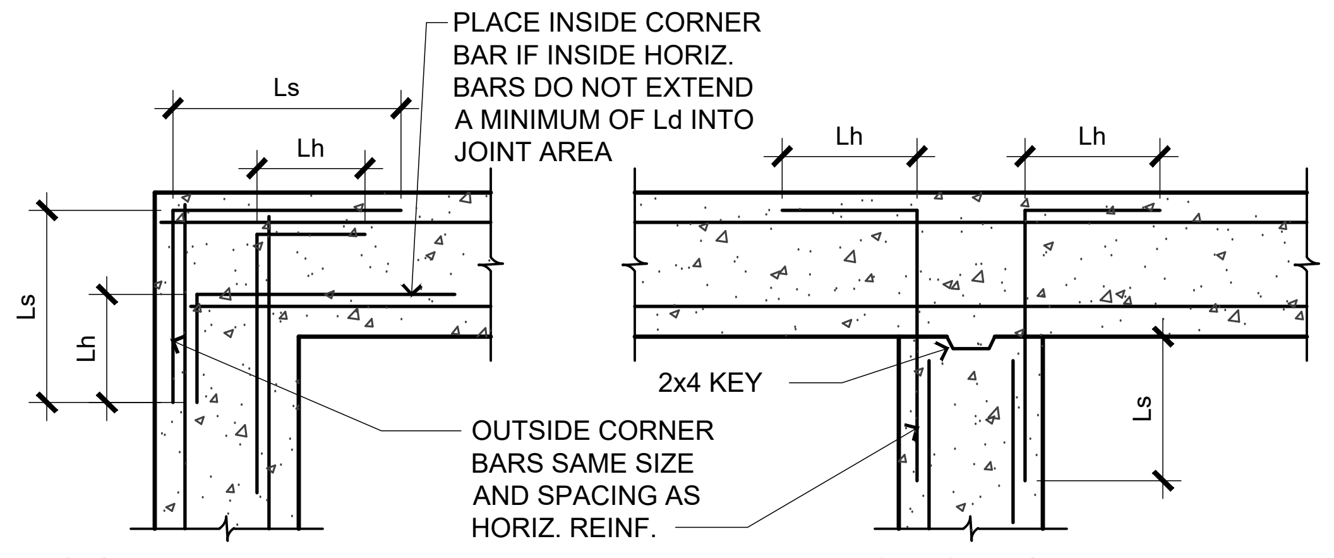
## 7 NEW FOUNDATION TO EXISTING FOUNDATION

SCALE: 3/4" = 1'-0"



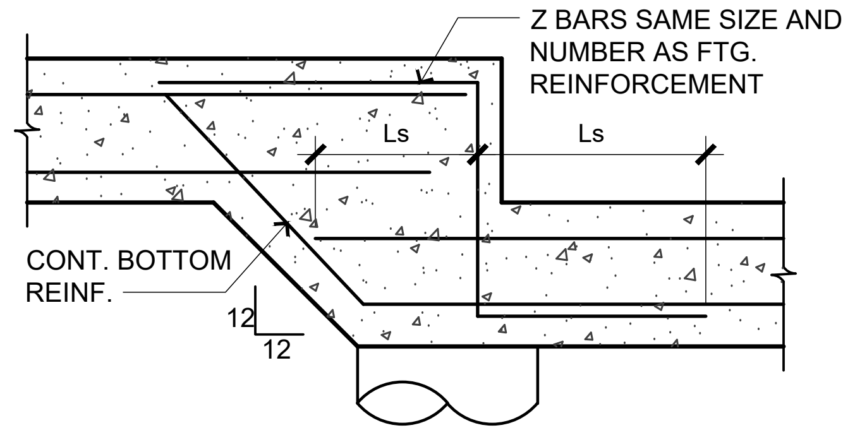
## 4 FOUNDATION BEARING WALL

SCALE: 3/4" = 1'-0"



CORNER PLAN

INTERSECTION PLAN

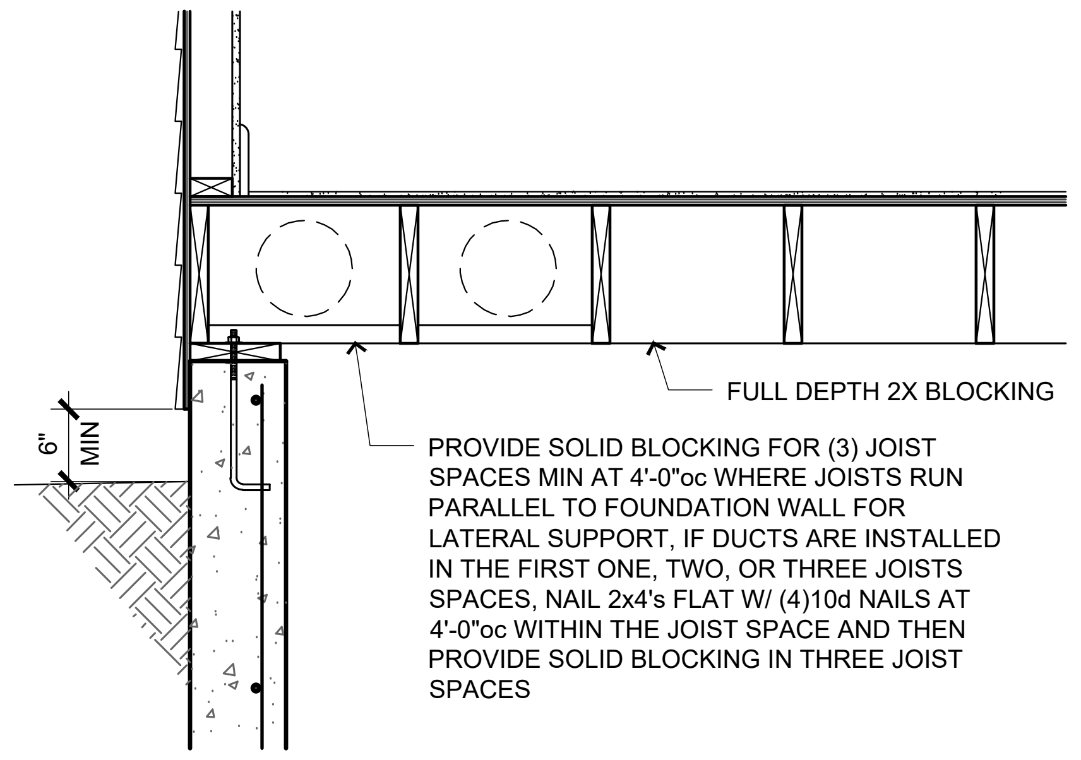


GRADE BEAM STEP ELEV.

| BAR SIZE | Lh | Ld | Ls |
|---|---|---|---|
| 3 | 6" | 14" | 18" |
| 4 | 8" | 19" | 25" |
| 5 | 10" | 23" | 30" |
| 6 | 1'-0" | 28" | 37" |
| 7 | 1'-2" | 42" | 54" |
| 8 | 1'-4" | 48" | 62" |

## 1 TYP WALL AND GRADE BEAM DTL'S

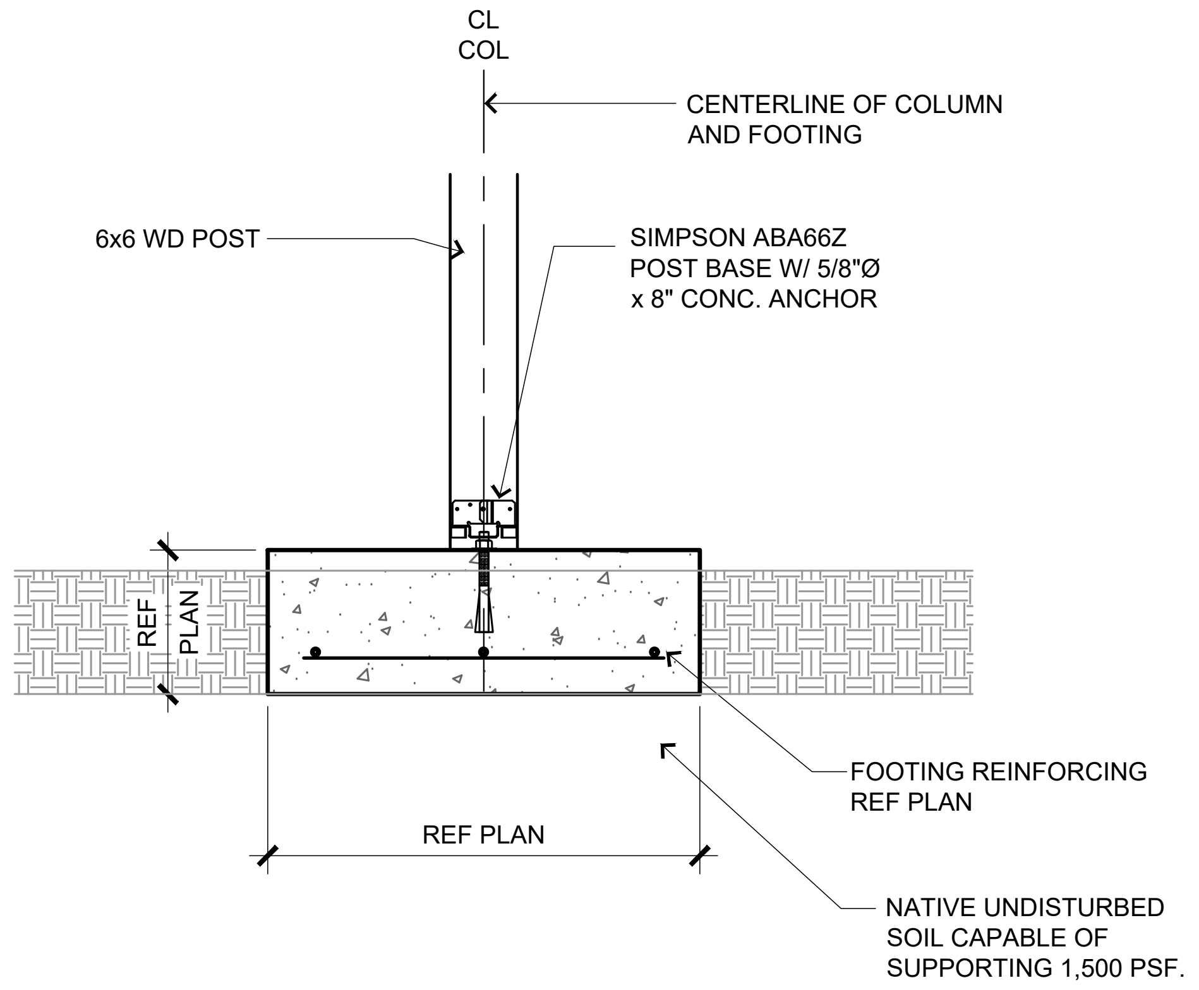
SCALE: 3/4" = 1'-0"



PROVIDE SOLID BLOCKING FOR (3) JOIST SPACES MIN AT 4'-0"oc WHERE JOISTS RUN PARALLEL TO FOUNDATION WALL FOR LATERAL SUPPORT, IF DUCTS ARE INSTALLED IN THE FIRST ONE, TWO, OR THREE JOISTS SPACES, NAIL 2x4's FLAT W/ (4)10d NAILS AT 4'-0"oc WITHIN THE JOIST SPACE AND THEN PROVIDE SOLID BLOCKING IN THREE JOIST SPACES

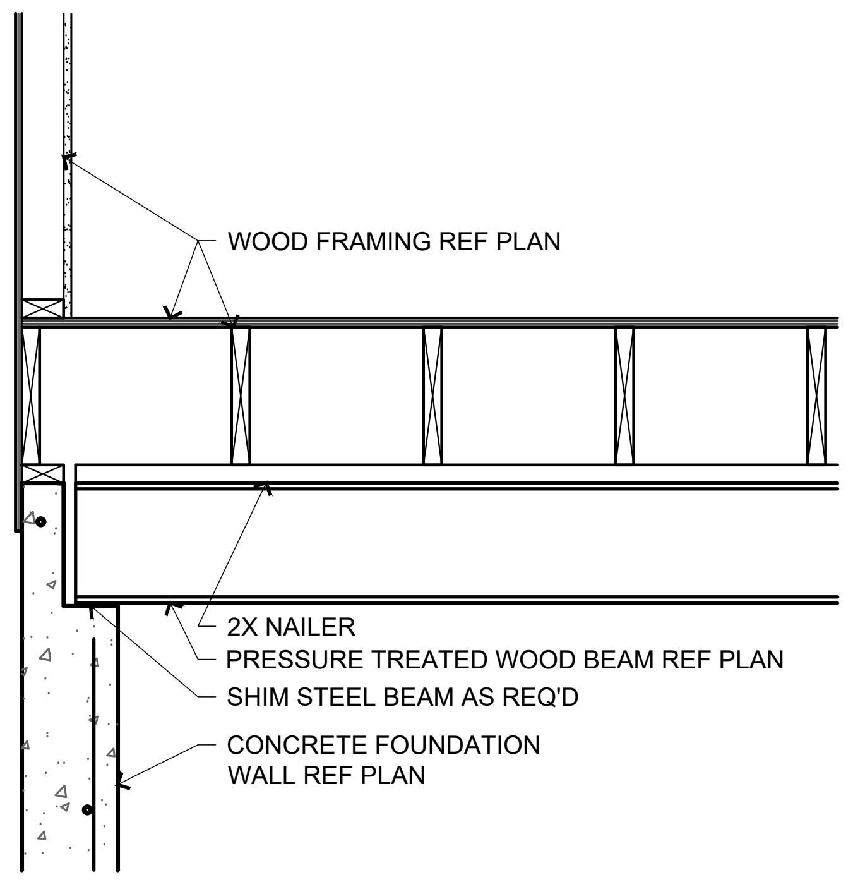
## 5 JOISTS PARALLEL TO WALL

SCALE: 3/4" = 1'-0"



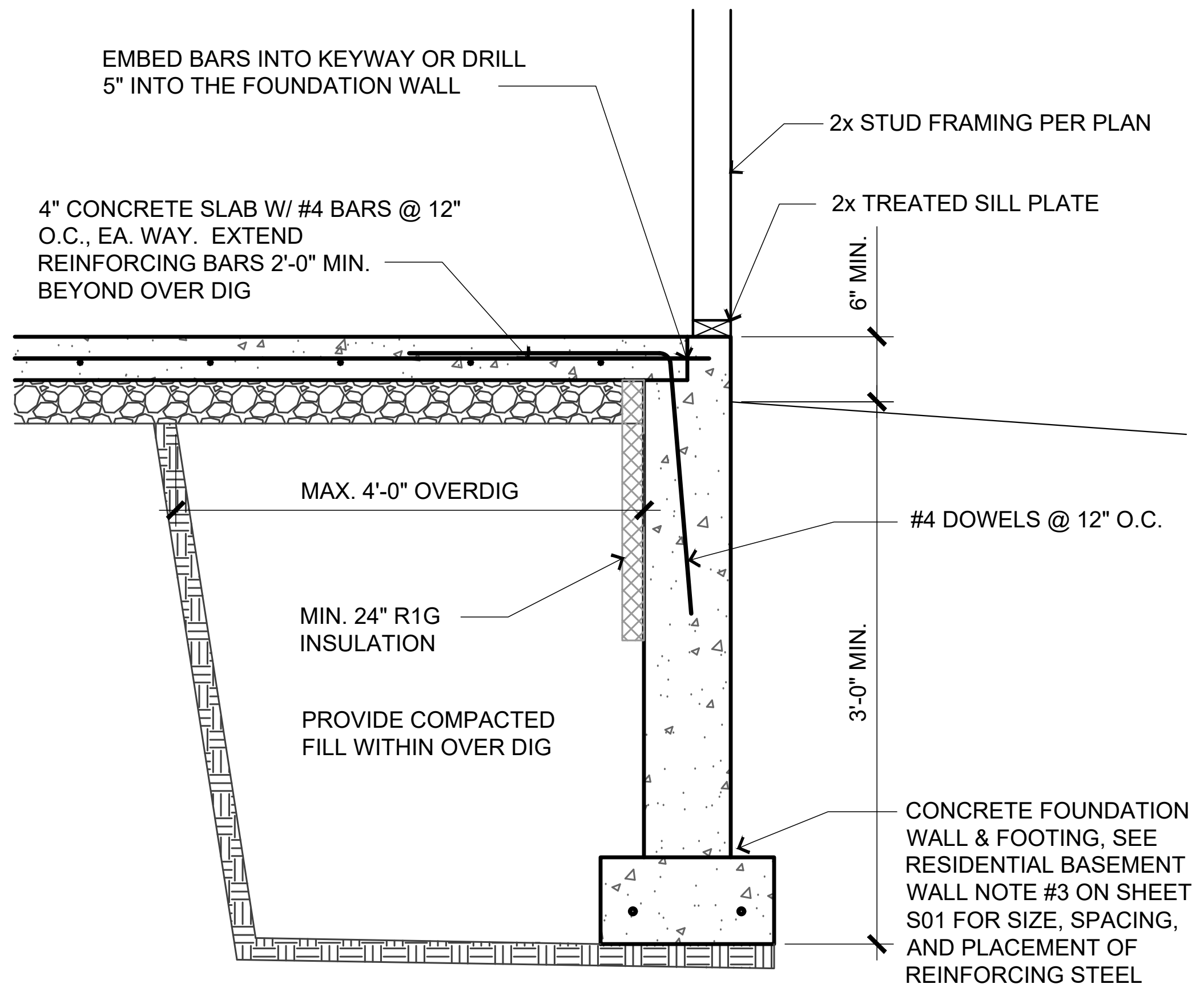
## 2 CRAWLSPACE COLUMN FOOTING

SCALE: 3/4" = 1'-0"



## 6 STL. BM. ON CONC. FNDN. WALL

SCALE: 3/4" = 1'-0"



## 3 OVERDIG SECTION BSMT SLAB

SCALE: 3/4" = 1'-0"

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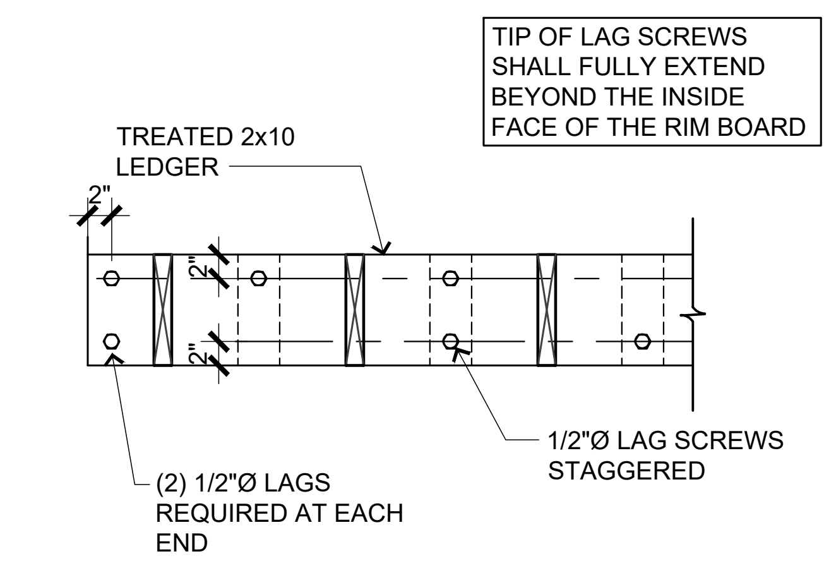
SHEET TITLE

STANDARD DETAILS, SCHEDULES & NOTES

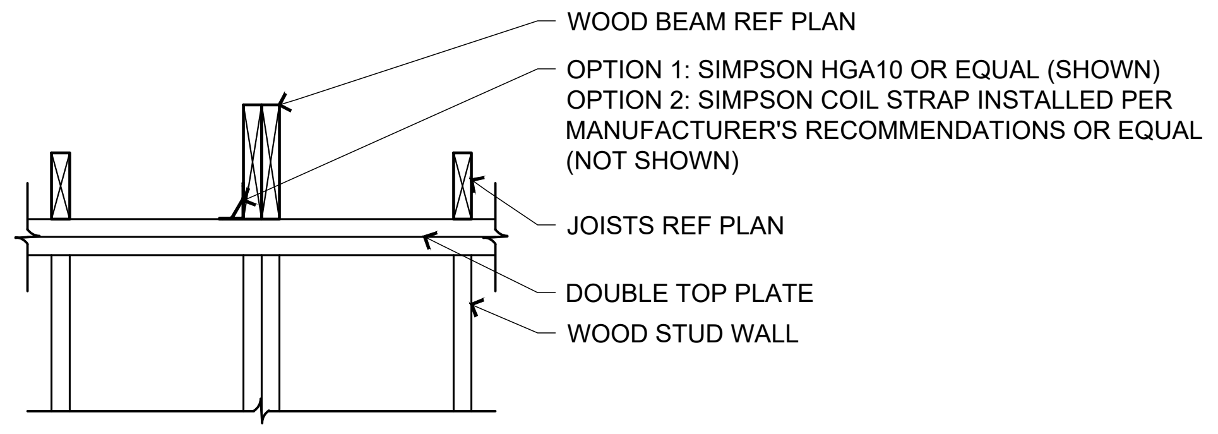
SHEET NUMBER

S40



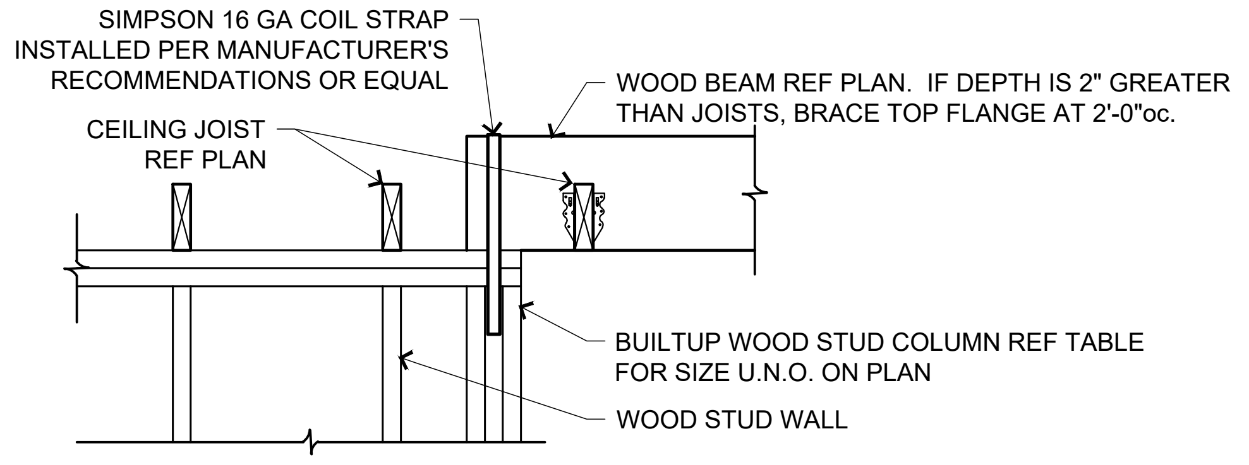
## 11 LEDGER ATTACHMENT

SCALE: 3/4" = 1'-0"



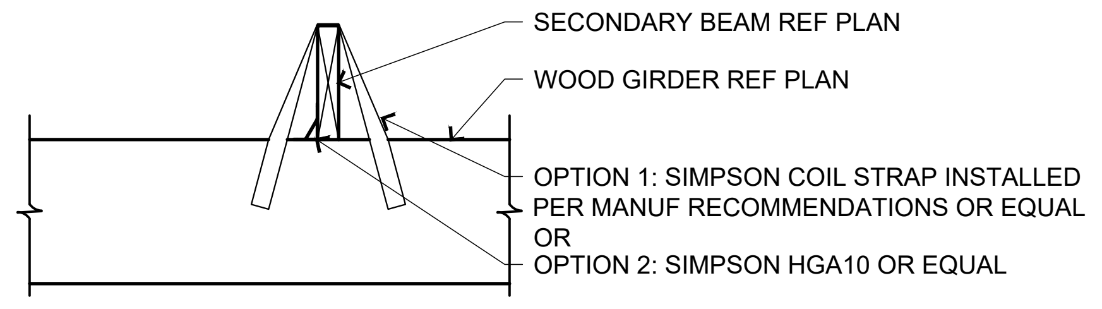
## 7 TYP WOOD BM PERP TO WALL

SCALE: 3/4" = 1'-0"



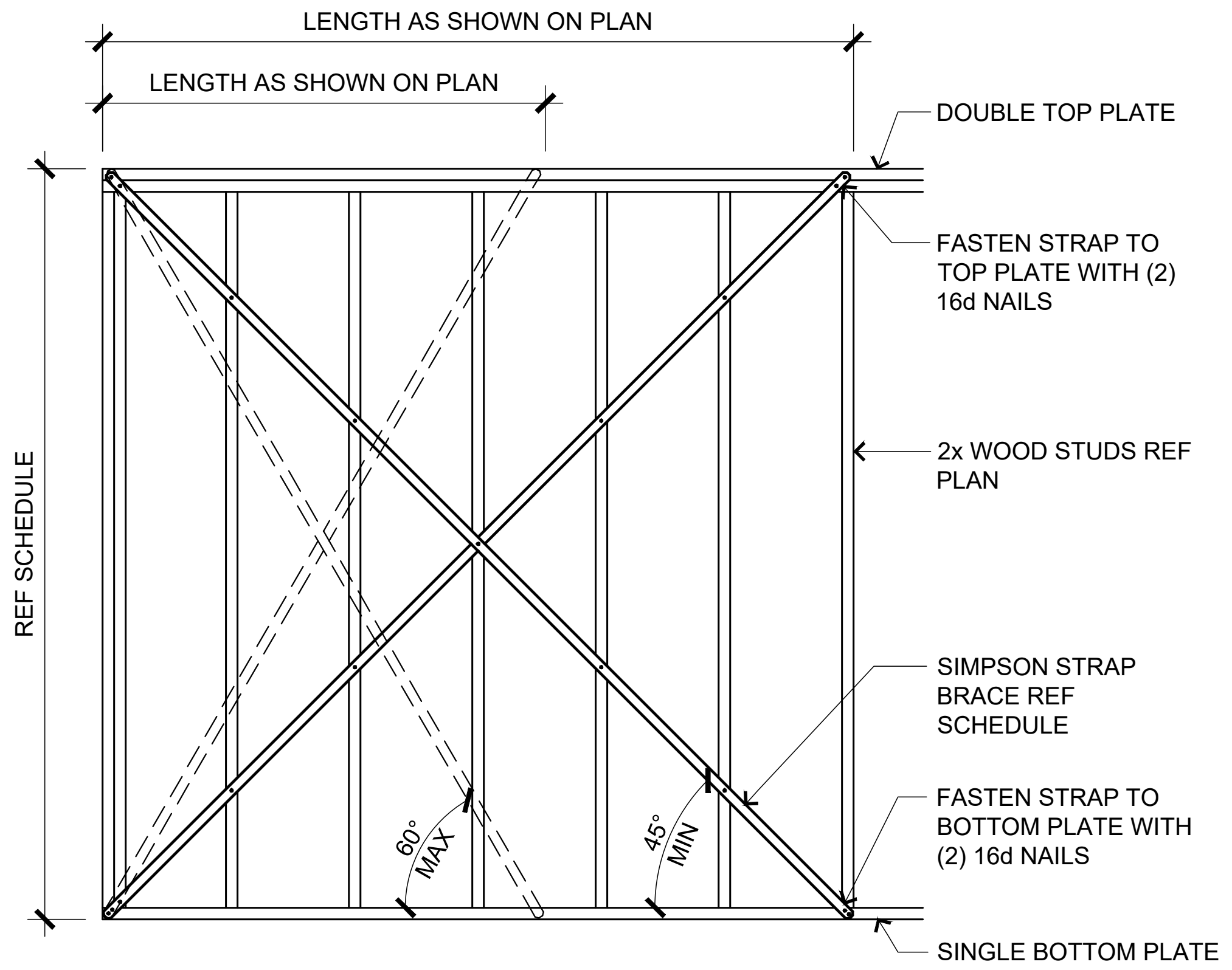
## 8 TYP WD BM PARALLEL TO WALL

SCALE: 3/4" = 1'-0"



## 9 WOOD BM BEARING ON WOOD BM

SCALE: 3/4" = 1'-0"

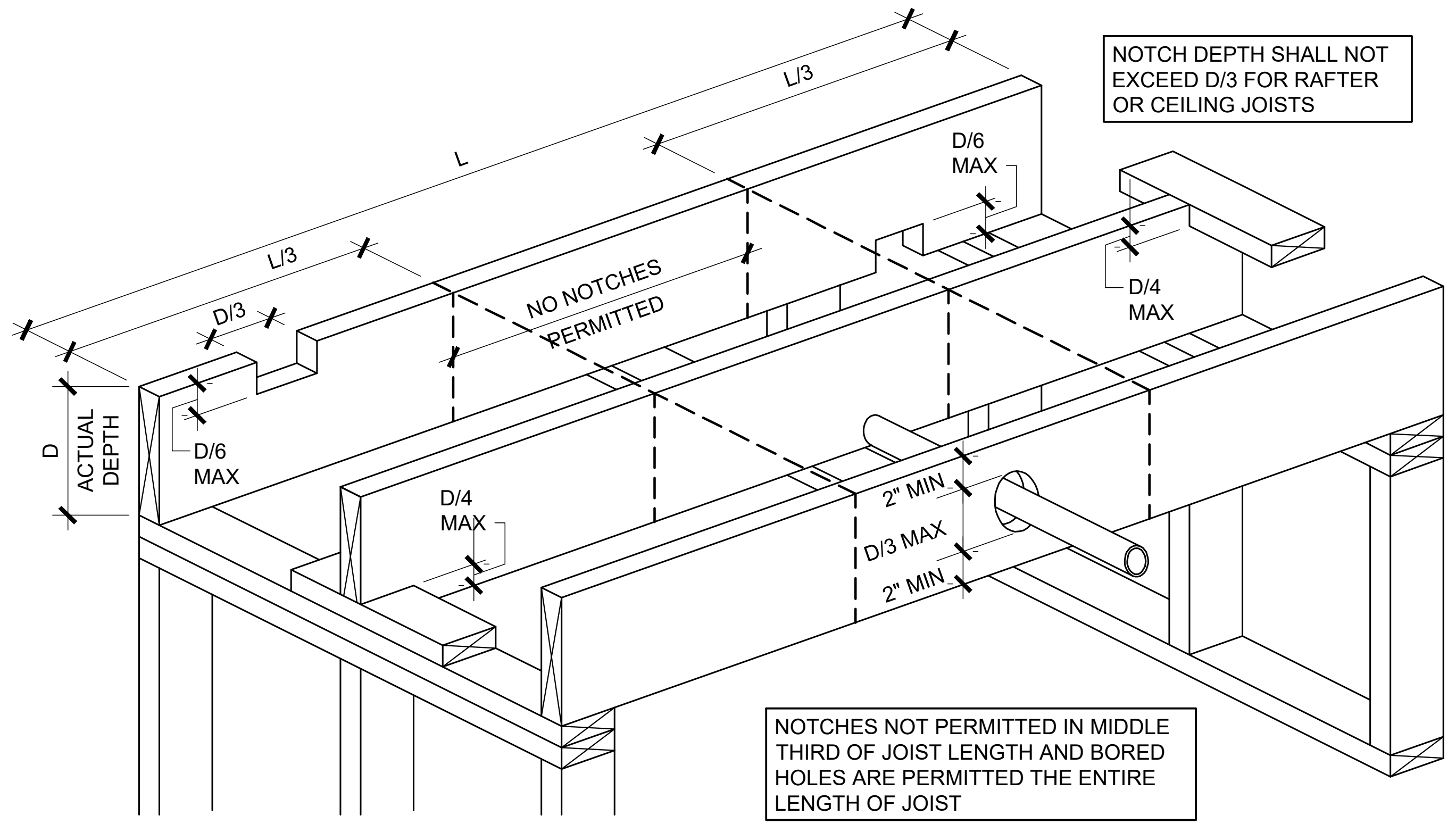


## 10 INTERIOR BRACED WALL (LIB)

SCALE: N.T.S.

### INTERIOR BRACED WALL SCHEDULE

| SIMPSON MODEL NO. | STRAP LENGTH | WALL DIM'S HEIGHT x WIDTH | ANGLE FROM HORIZONTAL | FASTENERS PLATES | FASTENERS EA STUD |
|---|---|---|---|---|---|
| WB106 | 9'-5 5/8" | 8'-0" x 5'-0" | 60° | (2) 16d | (1) 8d |
| WB126 | 11'-4 3/8" | 8'-0" x 8'-0" | 45° | (2) 16d | (1) 8d |
| WB106C | 9'-6" | 8'-0" x 5'-0" | 60° | (2) 16d | (1) 8d |
| WB126C | 11'-4 13/16" | 8'-0" x 8'-0" | 45° | (2) 16d | (1) 8d |
| WB143C | 14'-3" | 10'-0" x 10'-0" | 45° | (2) 16d | (1) 8d |

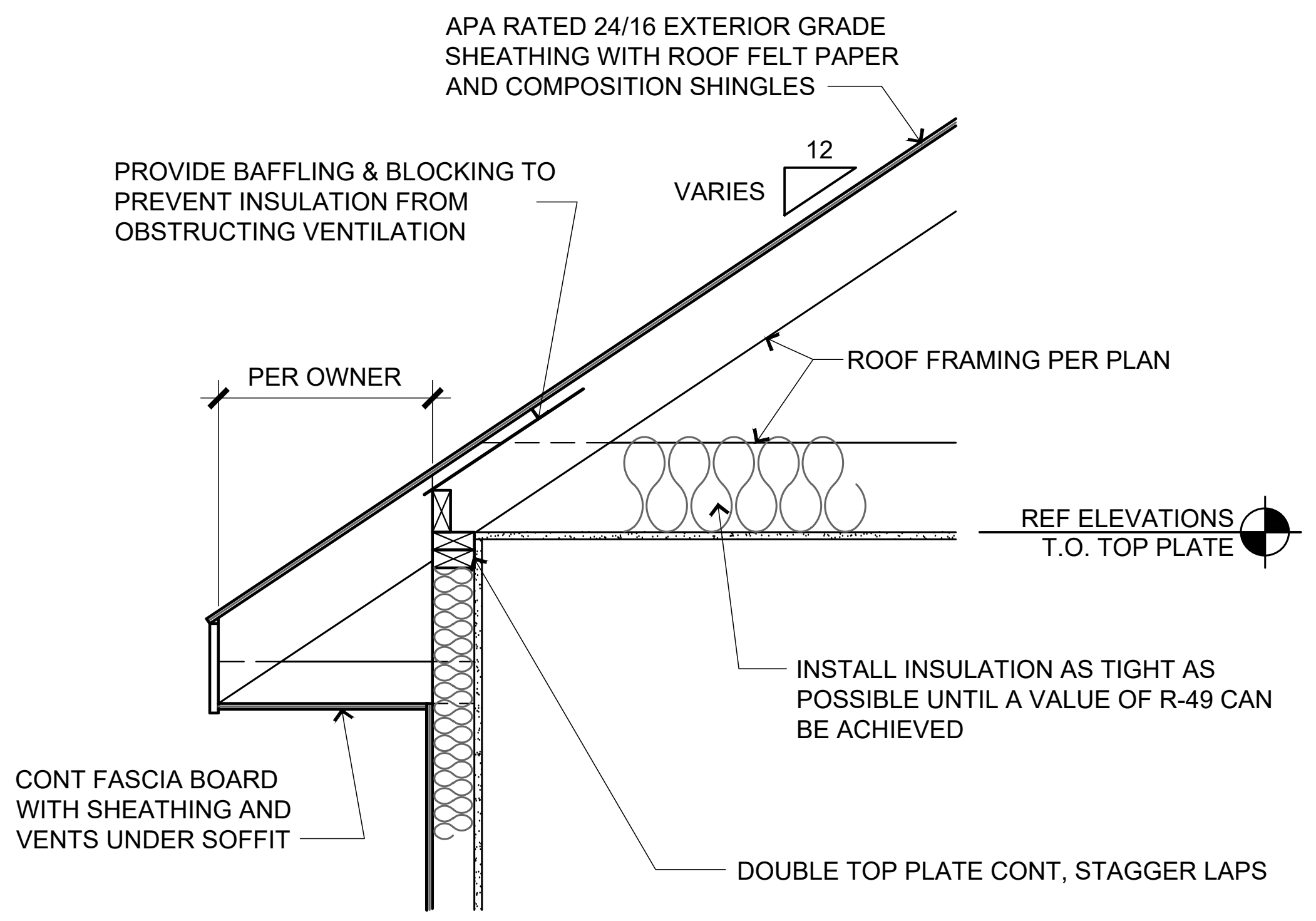


NOTCH DEPTH SHALL NOT EXCEED D/3 FOR RAFTER OR CEILING JOISTS

NOTCHES NOT PERMITTED IN MIDDLE THIRD OF JOIST LENGTH AND BORED HOLES ARE PERMITTED THE ENTIRE LENGTH OF JOIST

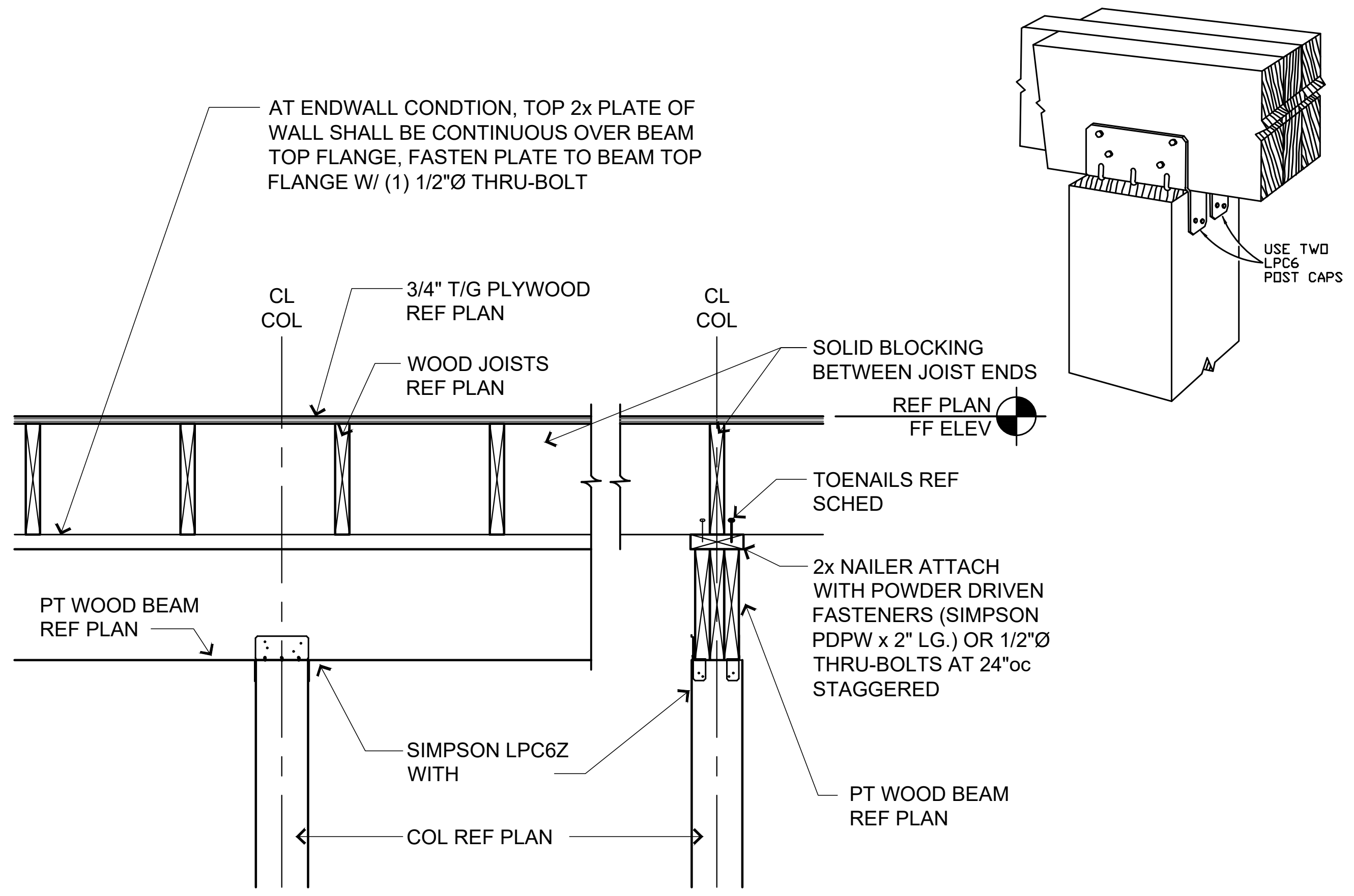
## 4 NOTCHING AND BORING CEILING OR FLOOR JOISTS

SCALE: 3/4" = 1'-0"



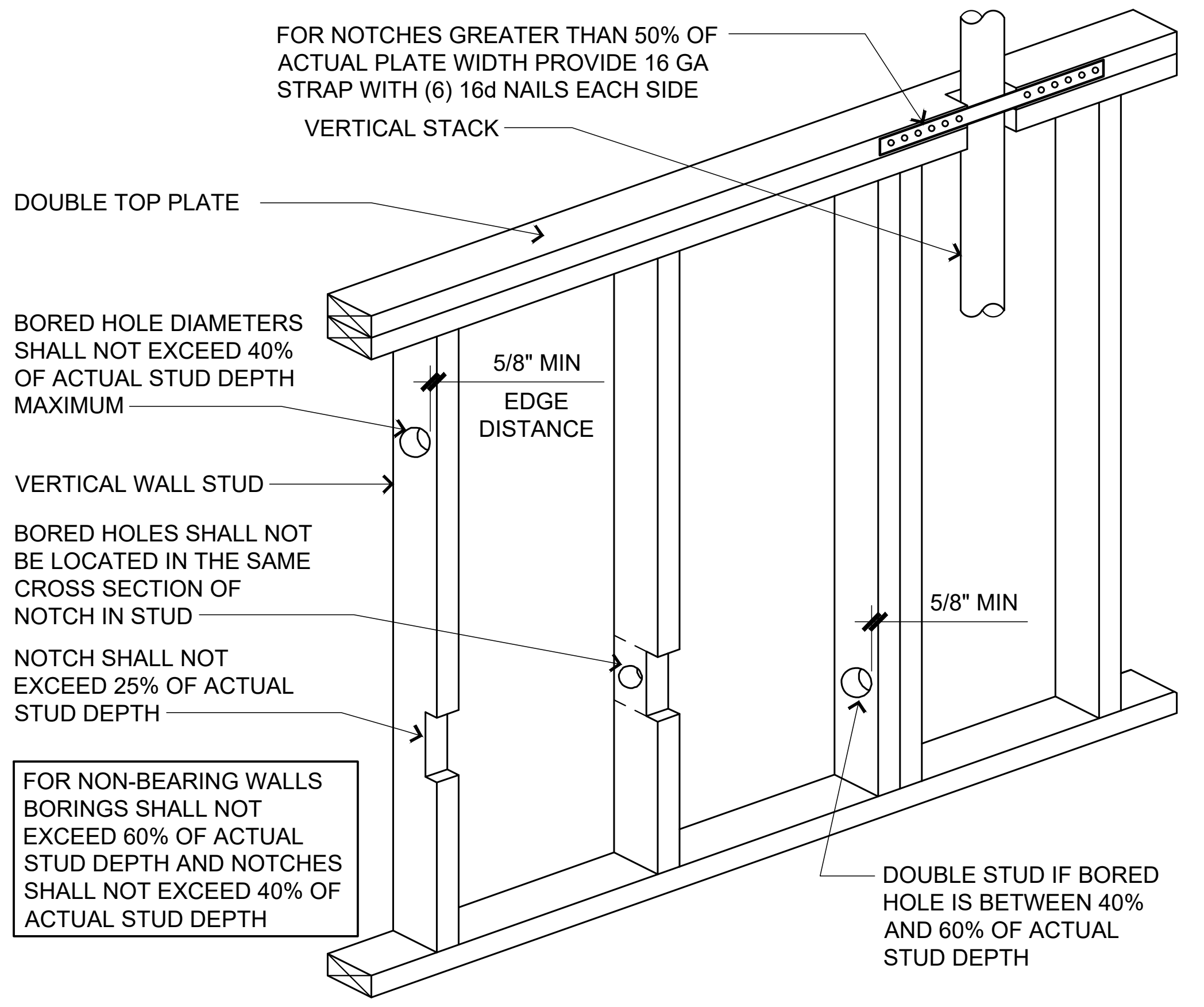
## 5 ROOF RAFTER BEARING

SCALE: 3/4" = 1'-0"



## 6 TYP. BEAM AT COLUMN

SCALE: 3/4" = 1'-0"



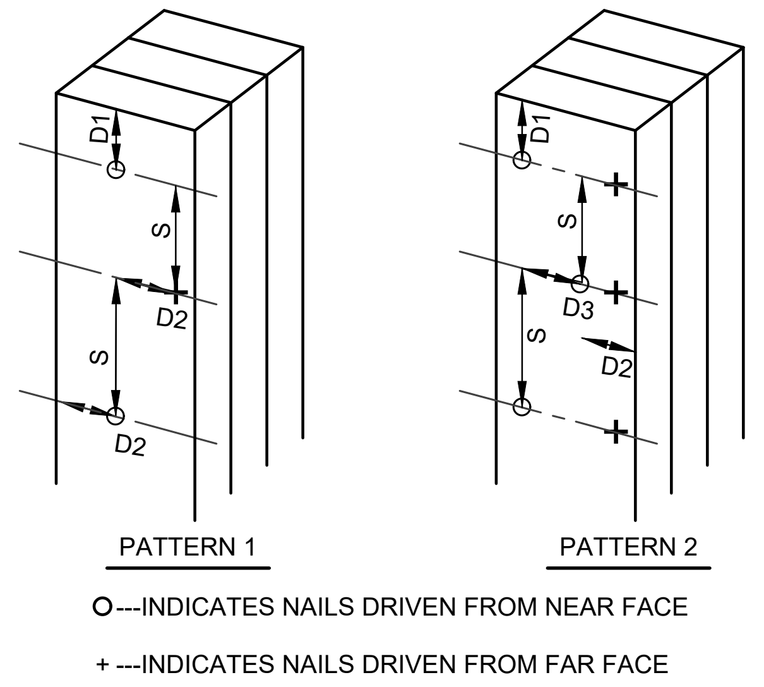
FOR NON-BEARING WALLS BORINGS SHALL NOT EXCEED 60% OF ACTUAL STUD DEPTH AND NOTCHES SHALL NOT EXCEED 40% OF ACTUAL STUD DEPTH

## 1 NOTCHING AND BORING WALLS

SCALE: 3/4" = 1'-0"

### BUILT UP COLUMN NAILING SCHEDULE

| BUILT UP COLUMN | BUILT UP SECTION | PATTERN | END DISTANCE | EDGE DISTANCE | ROW SPACING | NAIL SPACING | NAIL SIZE |
|---|---|---|---|---|---|---|---|
| | | | D1 | D2 | D3 | S | |
| BC1 | (2) 2x6 | 2 | 2 1/2" | 1 1/2" | 2 1/2" | 9" | 10d |
| BC2 | (3) 2x6 | 2 | 3 1/2" | 1 1/2" | 2 1/2" | 9" | 30d |
| BC3 | (4) 2x6 | 2 | 4" | 1 1/2" | 2 1/2" | 9" | 50d |
| BC4 | (2) 2x4 | 1 | 2 1/2" | 1" | --- | 6" | 10d |
| BC5 | (3) 2x4 | 1 | 3 1/2" | 1 1/2" | --- | 8" | 30d |



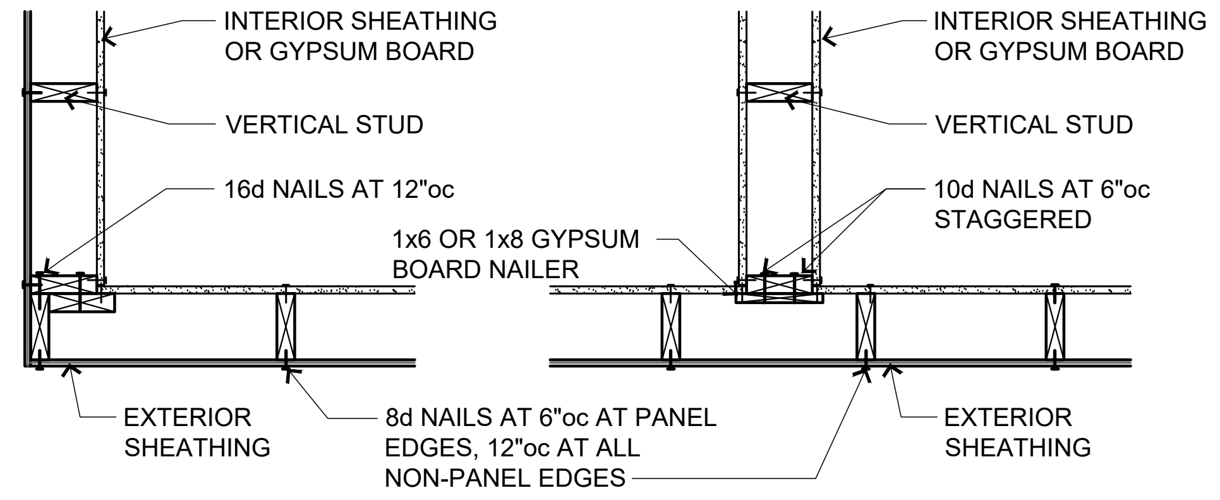
O ---INDICATES NAILS DRIVEN FROM NEAR FACE

+ ---INDICATES NAILS DRIVEN FROM FAR FACE

NOTE:
1. ADJACENT NAILS ARE DRIVEN FROM OPPOSITE SIDES OF THE COLUMN.
2. CONTRACTOR MAY SUBSTITUTE 1/2"Ø BOLTS W/ METAL PLATE OR WASHER IN PLACE OF 30d & 50d NAILS.
3. CONTRACTOR SHALL PRE-DRILL STUDS W/ 1/8" DRILL BIT WHEN USING 30d & 50d NAILS TO PREVENT SPLITTING.
4. ALL BUILT UP COLUMNS SHALL EXTEND TO THE ROOF TRUSSES.

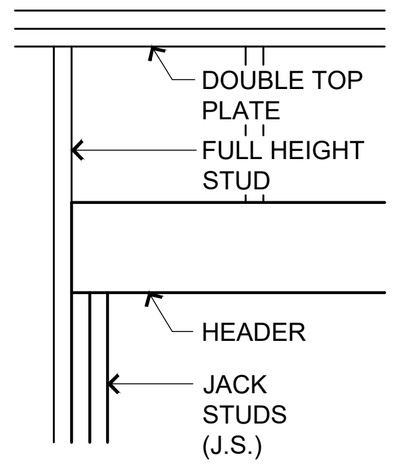
## 2 BUILT UP COLUMN SCHEDULE

SCALE: 3/4" = 1'-0"



TYPICAL CORNER

TYPICAL INTERSECTION



TYPICAL HEADER

### BEARING WALL HEADERS (CENTER BEARING FLOOR)

| SPAN | SIZE | NO. J.S. | SPAN | SIZE | NO. J.S. |
|---|---|---|---|---|---|
| INTERIOR WALL (1 FLOOR)$_3$ | | | EXTERIOR WALL (ROOF ONLY) | | |
| 0'-0" - 4'-5" | (2) 2x8 | 2 | 0'-0" - 5'-4" | (2) 2x8 | 2 |
| 4'-6" - 5'-5" | (2) 2x10 | 2 | 5'-5" - 6'-6" | (2) 2x10 | 2 |
| 5'-6" - 6'-3" | (2) 2x12 | 2 | 6'-7" - 7'-6" | (2) 2x12 | 2 |
| INTERIOR WALL (2 FLOORS)$_3$ | | | EXT WALL (ROOF + FLOOR) | | |
| 0'-0" - 3'-2" | (2) 2x8 | 2 | 0'-0" - 4'-6" | (2) 2x8 | 2 |
| 3'-3" - 3'-10" | (2) 2x10 | 3 | 4'-7" - 5'-6" | (2) 2x10 | 2 |
| 3'-11" - 4'-5" | (2) 2x12 | 3 | 5'-7" - 6'-5" | (2) 2x12 | 2 |
| | | | EXT WALL (ROOF + 2 FLOORS) | | |
| | | | 0'-0" - 3'-9" | (2) 2x8 | 2 |
| | | | 3'-10" - 4'-7" | (2) 2x10 | 2 |
| | | | 4'-8" - 5'-3" | (2) 2x12 | 2 |

NOTE:
1. NOT FOR OPEN WEB TRUSS SYSTEMS
2. MAXIMUM JOIST SPAN OF 18FT
3. HEADERS SUPPORT FLOOR LOADS ONLY, NO ROOF LOADS

## 3 TYP WALL FRAMING DETAILS

SCALE: 3/4" = 1'-0"

N&S NORTONSCHMIDT Consulting Engineers
311 East 11th Avenue
North Kansas City, MO 64116
Phone: (816) 421-4232
www.nortonschmidt.com
N&S JOB NUMBER: 2025-1991

SAMIR B. AWAD
23411
10/30/2025

PROJECT INFORMATION

HOUSE ADDITION
307 SW 3RD STREET
LEES SUMMIT MO

ISSUE INFO

DATE: 10/30/2025

DRAWN BY: SBA
CHECKED BY: SBA
ISSUED FOR: PERMIT

SHEET TITLE

STANDARD DETAILS, SCHEDULES & NOTES

SHEET NUMBER

S41

## ROOF RAFTER SCHEDULE

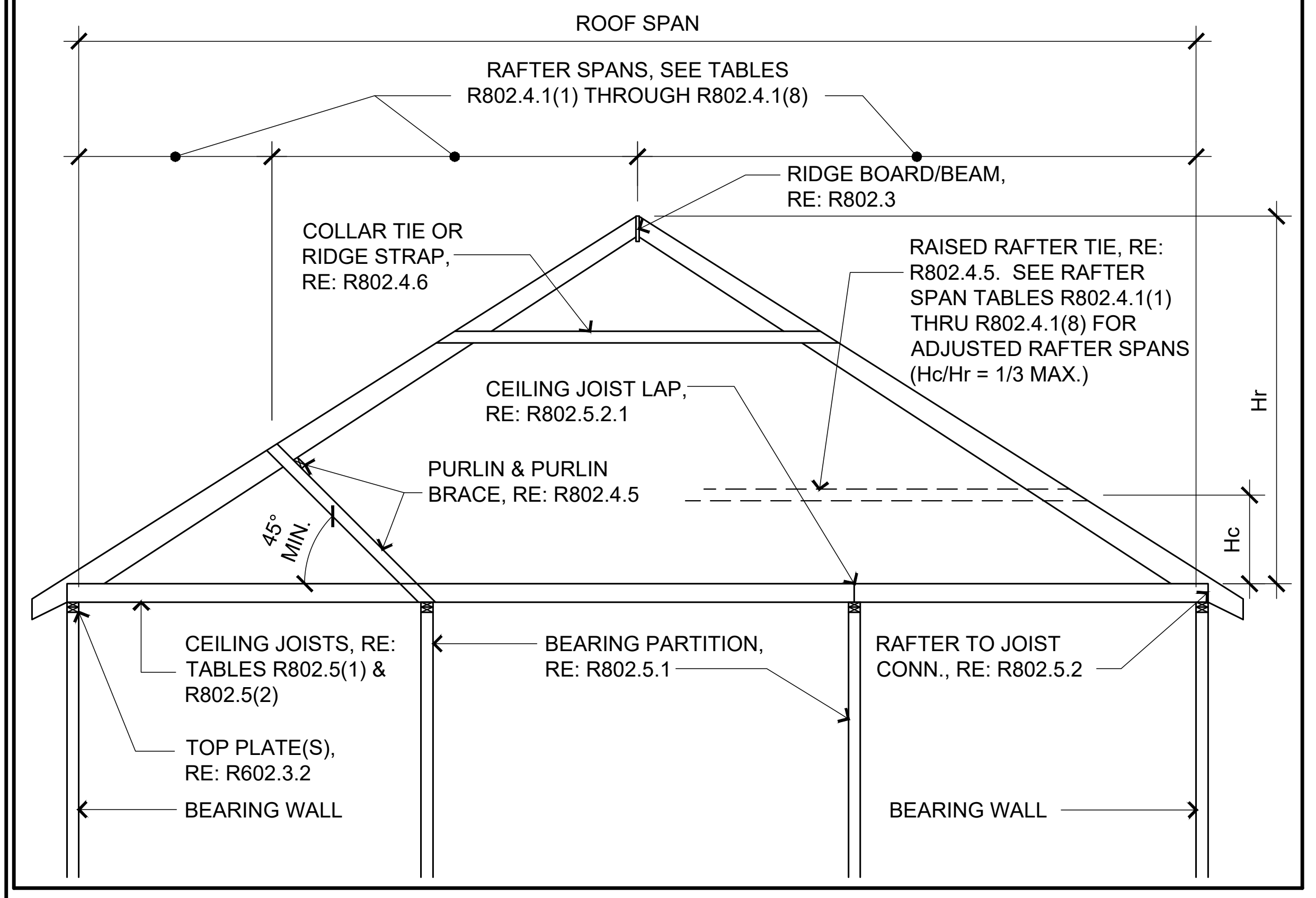
TABLE R802.4.1(2)

| GRADE | MEMBER SIZE / SPACING | MAX SPAN CEILING JSTS AT TOP PLATE | MAX SPAN $H_C/H_R$=0.16 | MAX SPAN $H_C/H_R$=0.20 | MAX SPAN $H_C/H_R$=0.25 | MAX SPAN $H_C/H_R$=0.33 |
|---|---|---|---|---|---|---|
| #2 DF/L | 2x6 / 24"oc | 11'-11" | 10'-8" | 9'-6" | 8'-10" | 7'-11" |
| #2 DF/L | 2x6 / 16"oc | 14'-1" | 12'-8" | 11'-8" | 10'-8" | 9'-5" |
| #2 DF/L | 2x8 / 16"oc | 18'-5" | 16'-6" | 15'-3" | 14'-0" | 12'-4" |
| #2 DF/L | 2x10 / 16"oc | 22'-6" | 20'-3" | 18'-8" | 17'-1" | 15'-0" |
| #2 DF/L | 2x12 / 16"oc | 26'-0" | 23'-4" | 21'-7" | 19'-9" | 17'-5" |

SPANS ABOVE ARE FOR ROOF LIVE LOAD OF 20 PSF AND DEAD LOAD OF 10 PSF WITH CEILINGS ATTACHED TO RAFTERS. RE: TABLES R802.4.1(1) THROUGH R802.4.1(8) FOR ADDITIONAL RAFTER SPAN INFORMATION.

THE ROOF FRAMING ON THIS HOME UTILIZES RAFTERS SPACED AT 16" ON CENTER IN EXPOSURE B WITH A ROOF SPAN LESS THAN 42' ON IN 115 MPH WIND ZONE. THEREFORE THE UPLIFT FORCE ON THE RAFTER IS LESS THAN 200 LBS. AND CAN BE CONNECTED PER TO THE WALL FRAMING PER TABLE R602.3(1).

FIGURE R802.4.5



## TABLE R802.5.2 RAFTER/CEILING JOIST HEEL JOINT CONNECTIONS (a,b,c,d,e,g)

2018 IRC

| RAFTER SLOPE | RAFTER SPACING (inches) | GROUND SNOW LOAD (PSF) 20(f) | | | | 30 | | | | 50 | | | | 70 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ROOF SPAN (FEET) 12 | 20 | 28 | 36 | 12 | 20 | 28 | 36 | 12 | 20 | 28 | 36 | 12 | 20 | 28 | 36 |
| | | REQUIRED NUMBER OF 16d COMMON NAILS(a,b) PER HEEL JOINT SPLICES (c,d,e) | | | | | | | | | | | | | | | |
| 3:12 | 12 | 4 | 6 | 8 | 10 | 4 | 6 | 8 | 11 | 5 | 8 | 12 | 15 | 6 | 11 | 15 | 20 |
| | 16 | 5 | 8 | 10 | 13 | 5 | 8 | 11 | 14 | 6 | 11 | 15 | 20 | 8 | 14 | 20 | 26 |
| | 24 | 7 | 11 | 15 | 19 | 7 | 11 | 16 | 21 | 9 | 16 | 23 | 30 | 12 | 21 | 30 | 39 |
| 4:12 | 12 | 3 | 5 | 6 | 8 | 3 | 5 | 6 | 8 | 4 | 6 | 9 | 11 | 5 | 8 | 12 | 15 |
| | 16 | 4 | 6 | 8 | 10 | 4 | 6 | 8 | 11 | 5 | 8 | 12 | 15 | 6 | 11 | 15 | 20 |
| | 24 | 5 | 8 | 12 | 15 | 5 | 9 | 12 | 16 | 7 | 12 | 17 | 22 | 9 | 16 | 23 | 29 |
| 5:12 | 12 | 3 | 4 | 5 | 6 | 3 | 4 | 5 | 7 | 3 | 5 | 7 | 9 | 4 | 7 | 9 | 12 |
| | 16 | 3 | 5 | 6 | 8 | 3 | 5 | 7 | 9 | 4 | 7 | 9 | 12 | 5 | 9 | 12 | 16 |
| | 24 | 4 | 7 | 9 | 12 | 4 | 7 | 10 | 13 | 6 | 10 | 14 | 18 | 7 | 13 | 18 | 23 |
| 7:12 | 12 | 3 | 4 | 4 | 5 | 3 | 3 | 4 | 5 | 3 | 4 | 5 | 7 | 3 | 5 | 7 | 9 |
| | 16 | 3 | 4 | 5 | 6 | 3 | 4 | 5 | 6 | 3 | 5 | 7 | 9 | 4 | 6 | 9 | 11 |
| | 24 | 3 | 5 | 7 | 9 | 3 | 5 | 7 | 9 | 4 | 7 | 10 | 13 | 5 | 9 | 13 | 17 |
| 9:12 | 12 | 3 | 3 | 4 | 4 | 3 | 3 | 3 | 4 | 3 | 3 | 4 | 5 | 3 | 4 | 5 | 7 |
| | 16 | 3 | 4 | 4 | 5 | 3 | 3 | 4 | 5 | 3 | 4 | 5 | 7 | 3 | 5 | 7 | 9 |
| | 24 | 3 | 4 | 6 | 7 | 3 | 4 | 6 | 7 | 3 | 6 | 8 | 10 | 4 | 7 | 10 | 13 |
| 12:12 | 12 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 4 | 5 |
| | 16 | 3 | 3 | 4 | 4 | 3 | 3 | 3 | 4 | 3 | 3 | 4 | 5 | 3 | 4 | 5 | 7 |
| | 24 | 3 | 4 | 4 | 5 | 3 | 3 | 4 | 6 | 3 | 4 | 6 | 8 | 3 | 6 | 8 | 10 |

a. 40d BOX NAILS SHALL BE PERMITTED TO BE SUBSTITUTED FOR 16D COMMON NAILS.
b. NAILING REQUIREMENTS SHALL BE PERMITTED TO BE REDUCED 25% IF NAILS ARE CLINCHED.
c. HEEL JOINT CONNECTIONS ARE NOT REQUIRED WHEN THE RIDGE IS SUPPORTED BY A LOAD-BEARING WALL, HEADER, OR RIDGE BEAM.
d. WHEN INTERMEDIATE SUPPORT OF THE RAFTER IS PROVIDED BY VERTICAL STRUTS OR PURLINS TO A LOAD-BEARING WALL, THE TABULATED HEEL JOINT CONNECTION REQUIREMENTS SHALL BE PERMITTED TO BE REDUCED PROPORTIONALLY TO THE REDUCTION IN SPAN.
e. EQUIVALENT NAILING PATTERNS ARE REQUIRED FOR CEILING JOIST TO CEILING JOIST LAP SPLICES.
f. APPLIES TO ROOF LIVE LOAD OF 20 psf OR LESS.
g. TABULATED HEEL JOINT CONNECTION REQUIREMENTS ASSUME THAT CEILING JOISTS OR RAFTER TIES ARE LOCATED AT THE BOTTOM OF THE ATTIC SPACE. WHEN CEILING JOISTS OR RAFTER TIES ARE LOCATED HIGHER IN THE ATTIC, HEEL JOINT CONNECTION REQUIREMENTS SHALL BE INCREASED BY THE FOLLOWING FACTORS:

| Hc/Hr | HEEL JOINT CONNECTION ADJUSTMENT FACTOR |
|---|---|
| 1/3 | 1.5 |
| 1/4 | 1.33 |
| 1/5 | 1.25 |
| 1/6 | 1.2 |
| 1/10 OR LESS | 1.11 |

WHERE:

Hc= HEIGHT OF CEILING JOISTS OR RAFTER TIES MEASURED VERTICALLY ABOVE THE TOP OF THE RAFTER SUPPORT WALLS.

Hr=HEIGHT OF ROOF RIDGE MEASURED VERTICALLY ABOVE THE TOP OF THE RAFTER SUPPORT WALLS.

## FASTENING SCHEDULE

IRC 2018 TABLE R602.3(1)

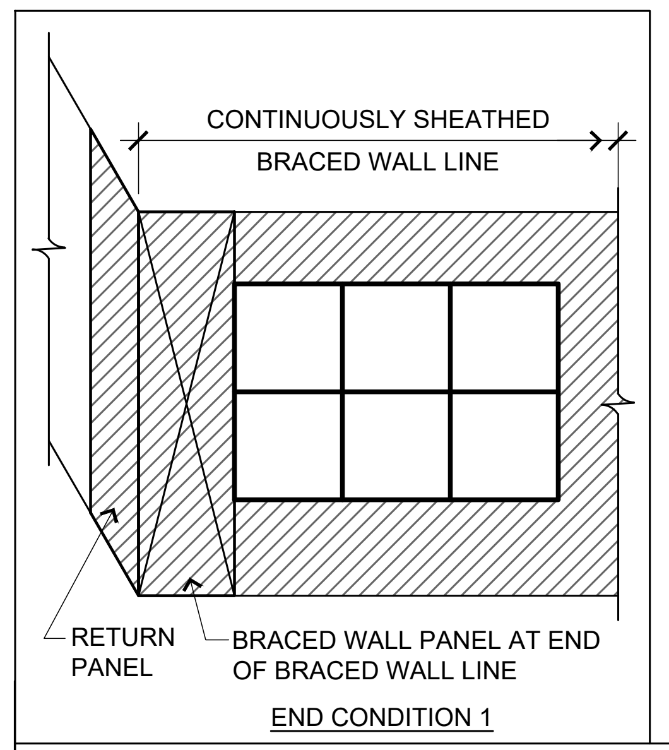
| ITEM | DESCRIPTION OF BUILDING ELEMENTS | NUMBER AND TYPE OF FASTENER (a)(b)(c) | SPACING AND LOCATION |
|---|---|---|---|
| | Roof | | |
| 1 | Blocking between ceiling joists or rafters to top plate | 4-8d box (2-1/2" x 0.113") or<br>3-8d common (2-1/2" x 0.131"); or<br>3-10d box (3" x 0.128"); or<br>3-3" x 0.131" nails | Toe nail |
| 2 | Ceiling joists to top plate | 4-8d box (2-1/2" x 0.113"); or<br>3-8d common (2-1/2" x 0.131"); or<br>3-10d box (3" x 0.128"); or<br>3-3" x 0.131" nails | Per joist, toe nail |
| 3 | Ceiling joist not attached to parallel rafter, laps over partitions (see Section R802.5.2 and Table R802.5.2) | 4-10d box (3" x 0.128"); or<br>3-16d common (3-1/2" x 0.162"); or<br>4-3" x 0.131" nails | Face nail |
| 4 | Ceiling joist attached to parallel rafter (heel joint) (see Section R802.5.2 and Table R802.5.2) | Table R802.5.2 | Face nail |
| 5 | Collar tie to rafter, face nail or 11/4" x 20 ga. ridge strap to rafter | 4-10d box (3" x 0.128"); or<br>3-10d common (3" x 0.148"); or<br>4-3" x 0.131" nails | Face nail each rafter |
| 6 | Rafter or roof truss to plate | 3-16d box nails (3-1/2" x 0.135"); or<br>3-10d common nails (3" x 0.148"); or<br>4-10d box (3" x 0.128"); or<br>4-3" x 0.131" nails | 2 toe nails on one side and 1 toe nail on opposite side of each rafter or truss(i) |
| 7 | Roof rafters to ridge, valley or hip rafters or roof rafter to minimum 2" ridge beam | 4-16d (3-1/2" x 0.135"); or<br>3-10d common (3" x 0.148"); or<br>4-10d box (3" x 0.128"); or<br>4-3" x 0.131" nails | Toe nail |
| | | 3-16d box (3-1/2" x 0.135"); or<br>2-16d common (3-1/2" x 0.162"); or<br>3-10d box (3" x 0.128"); or<br>3-3" x 0.131" nails | End nail |
| | Wall | | |
| 8 | Stud to stud (not at braced wall panels) | 16d common (3-1/2" x 0.162") | 24" o.c. face nail |
| | | 10d box (3" x 0.128"); or<br>3" x 0.131" nails | 16" o.c. face nail |
| 9 | Stud to stud and abutting studs at intersecting wall corners (at braced wall panels) | 16d box (3-1/2" x 0.135"); or<br>3" x 0.131" nails | 12" o.c. face nail |
| | | 16d common (3-1/2" x 0.162") | 16" o.c. face nail |
| 10 | Built-up header (2" to 2" header with 1/2" spacer) | 16d common (3-1/2" x 0.162") | 16" o.c. each edge face nail |
| | | 16d box (3-1/2" x 0.135") | 12" o.c. each edge face nail |
| 11 | Continuous header to stud | 5-8d box (2-1/2" x 0.113"); or<br>4-8d common (2-1/2" x 0.131"); or<br>4-10d box (3" x 0.128") | Toe nail |
| 12 | Top plate to top plate | 16d common (3-1/2" x 0.162") | 16" o.c. face nail |
| | | 10d box (3" x 0.128"); or<br>3" x 0.131" nails | 12" o.c. face nail |
| 13 | Double top plate splice | 8-16d common (3-1/2" x 0.162"); or<br>12-16d box (3-1/2" x 0.135"); or<br>12-10d box (3" x 0.128"); or<br>12-3" x 0.131" nails | Face nail on each side of end joint (minimum 24" lap splice length each side of end joint) |
| 14 | Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels) | 16d common (3-1/2" x 0.162") | 16" o.c. face nail |
| | | 16d box (3-1/2" x 0.135"); or<br>3" x 0.131" nails | 12" o.c. face nail |
| 15 | Bottom plate to joist, rim joist, band joist or blocking (at braced wall panel) | 3-16d box (3-1/2" x 0.135"); or<br>2-16d common (3-1/2" x 0.162"); or<br>4-3" x 0.131" nails | 3 each 16" o.c. face nail<br>2 each 16" o.c. face nail<br>4 each 16" o.c. face nail |
| 16 | Top or bottom plate to stud | 4-8d box (2-1/2" x 0.113"); or<br>3-16d box (3-1/2" x 0.135"); or<br>4-8d common (2-1/2" x 0.131"); or<br>4-10d box (3" x 0.128"); or<br>4-3" x 0.131" nails | Toe nail |
| | | 3-16d box (3-1/2" x 0.135"); or<br>2-16d common (3-1/2" x 0.162"); or<br>3-10d box (3" x 0.128"); or<br>3-3" x 0.131" nails | End nail |
| 17 | Top plates, laps at corners and intersections | 3-10d box (3" x 0.128"); or<br>2-16d common (3-1/2" x 0.162"); or<br>3-3" x 0.131" nails | Face nail |
| 18 | 1" brace to each stud and plate | 3-8d box (2-1/2" x 0.113"); or<br>2-8d common (2-1/2" x 0.131"); or<br>2-10d box (3" x 0.128"); or<br>2 staples 1-3/4" | Face nail |
| 19 | 1" x 6" sheathing to each bearing | 3-8d box (2-1/2" x 0.113"); or<br>2-8d common (2-1/2" x 0.131"); or<br>2-10d box (3" x 0.128"); or<br>2 staples, 1" crown, 16 ga., 1-3/4" long | Face nail |
| 20 | 1" x 8" and wider sheathing to each bearing | 3-8d box (2-1/2" x 0.113"); or<br>3-8d common (2-1/2" x 0.131"); or<br>3-10d box (3" x 0.128"); or<br>3 staples, 1" crown, 16 ga., 1-3/4" long | Face nail |
| | | Wider than 1" x 8"<br>4-8d box (2-1/2" x 0.113"); or<br>3-8d common (2-1/2" x 0.131"); or<br>3-10d box (3" x 0.128"); or<br>4 staples, 1" crown, 16 ga., 1-3/4" long | |

(continued)

| ITEM | DESCRIPTION OF BUILDING ELEMENTS | NUMBER AND TYPE OF FASTENER (a)(b)(c) | SPACING AND LOCATION |
|---|---|---|---|
| | Floor | | |
| 21 | Joist to sill, top plate or girder | 4-8d box (2-1/2" x 0.113"); or<br>3-8d common (2-1/2" x 0.131"); or<br>3-10d box (3" x 0.128"); or<br>3-3" x 0.131" nails | Toe nail |
| 22 | Rim joist, band joist or blocking to sill or top plate (roof applications also) | 8d box (2-1/2" x 0.113") | 4" o.c. toe nail |
| | | 8d common (2-1/2" x 0.131"); or<br>10d box (3" x 0.128"); or<br>3" x 0.131" nails | 6" o.c. toe nail |
| 23 | 1" x 6" subfloor or less to each joist | 3-8d box (2-1/2" x 0.113"); or<br>2-8d common (2-1/2" x 0.131"); or<br>3-10d box (3" x 0.128"); or<br>2 staples, 1" crown, 16 ga., 1-3/4" long | Face nail |
| 24 | 2" subfloor to joist or girder | 3-16d box (3-1/2" x 0.135"); or<br>2-16d common (3-1/2" x 0.162") | Blind and face nail |
| 25 | 2" planks (plank & beam—floor & roof) | 3-16d box (3-1/2" x 0.135"); or<br>2-16d common (3-1/2" x 0.162") | At each bearing, face nail |
| 26 | Band or rim joist to joist | 3-16d common (3-1/2" x 0.162")<br>4-10 box (3" x 0.128"), or<br>4-3" x 0.131" nails; or<br>4-3" x 14 ga. staples, 7/16" crown | End nail |
| 27 | Built-up girders and beams, 2-inch lumber layers | 20d common (4" x 0.192"); or | Nail each layer as follows: 32" o.c. at top and bottom and staggered. |
| | | 10d box (3" x 0.128"); or<br>3" x 0.131" nails | 24" o.c. face nail at top and bottom staggered on opposite sides |
| | | And:<br>2-20d common (4" x 0.192"); or<br>3-10d box (3" x 0.128"); or<br>3-3" x 0.131" nails | Face nail at ends and at each splice |
| 28 | Ledger strip supporting joists or rafters | 4-16d box (3-1/2" x 0.135"); or<br>3-16d common (3-1/2" x 0.162"); or<br>4-10d box (3" x 0.128"); or<br>4-3" x 0.131" nails | At each joist or rafter, face nail |
| 29 | Bridging or blocking to joist | 2-10d box (3" x 0.128"), or<br>2-8d common (2-1/2" x 0.131"); or<br>2-3" x 0.131") nails | Each end, toe nail |

| ITEM | DESCRIPTION OF BUILDING ELEMENTS | NUMBER AND TYPE OF FASTENER (a)(b)(c) | SPACING OF FASTENERS Edges (inches)(h) | Intermediate supports(c)(e) (inches) |
|---|---|---|---|---|
| | Wood structural panels, subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing [see Table R602.3(3) for wood structural panel exterior wall sheathing to wall framing] | | | |
| 30 | 3/8" – 1/2" | 6d common (2" x 0.113") nail (subfloor, wall)(i) 8d common (2-1/2" x 0.131") nail (roof); or RSRS-01 (2-3/8" x 0.113") nail (roof)(j) | 6 | 12(f) |
| 31 | 19/32" – 1" | 8d common nail (21/2" x 0.131"); or RSRS-01; (2-3/8" x 0.113") nail (roof)(j) | 6 | 12(f) |
| 32 | 1-1/8" – 1-1/4" | 10d common (3" x 0.148") nail; or<br>8d (21/2" x 0.131") deformed nail | 6 | 12 |
| | Other wall sheathing(g) | | | |
| 33 | 1/2" structural cellulosic fiberboard sheathing | 1-1/2" galvanized roofing nail, 7/16" head diameter, or 1-1/4" long 16 ga. staple with 7/16" or 1" crown | 3 | 6 |
| 34 | 25/32" structural cellulosic fiberboard sheathing | 1-3/4" galvanized roofing nail, 7/16" head diameter, or 1-1/2" long 16 ga. staple with 7/16" or 1" crown | 3 | 6 |
| 35 | 1/2" gypsum sheathing(d) | 1-1/2" galvanized roofing nail;<br>staple galvanized, 1-1/2" long;<br>1-1/4" screws, Type W or S | 7 | 7 |
| 36 | 5/8" gypsum sheathing(d) | 1-3/4" galvanized roofing nail;<br>staple galvanized, 1-5/8" long;<br>1-5/8" screws, Type W or S | 7 | 7 |
| | Wood structural panels, combination subfloor underlayment to framing | | | |
| 37 | 3/4" and less | 6d deformed (2" x 0.120") nail; or<br>8d common (2-1/2" x 0.131") nail | 6 | 12 |
| 38 | 7/8" – 1" | 8d common (2-1/2" x 0.131") nail; or<br>8d deformed (2-1/2" x 0.120") nail | 6 | 12 |
| 39 | 1-1/8" – 1-1/4" | 10d common (3" x 0.148" ) nail; or<br>8d deformed (2-1/2" x 0.120") nail | 6 | 12 |

a. Nails are smooth-common, box or deformed shanks except where otherwise stated. Nails used for framing and sheathing connections shall have minimum average bending yield strengths as shown: 80 ksi for shank diameter of 0.192 inch (20d common nail), 90 ksi for shank diameters larger than 0.142 inch but not larger than 0.177 inch, and 100 ksi for shank diameters of 0.142 inch or less.
b. Staples are 16 gage wire and have a minimum 7/16-inch on diameter crown width.
c. Nails shall be spaced at not more than 6 inches on center at all supports where spans are 48 inches or greater.
d. Four-foot by 8-foot or 4-foot by 9-foot panels shall be applied vertically.
e. Spacing of fasteners not included in this table shall be based on Table R602.3(2).
f. For wood structural panel roof sheathing attached to gable end roof framing and to intermediate supports within 48 inches of roof edges and ridges, nails shall be spaced at 6 inches on center where the ultimate design wind speed is less than 130 mph and shall be spaced 4 inches on center where the ultimate design wind speed is 130 mph or greater but less than 140 mph.
g. Gypsum sheathing shall conform to ASTM C1396 and shall be installed in accordance with GA 253. Fiberboard sheathing shall conform to ASTM C208.
h. Spacing of fasteners on floor sheathing panel edges applies to panel edges supported by framing members and required blocking and at floor perimeters only. Spacing of fasteners on roof sheathing panel edges applies to panel edges supported by framing members and required blocking. Blocking of roof or floor sheathing panel edges perpendicular to the framing members need not be provided except as required by other provisions of this code. Floor perimeter shall be supported by framing members or solid blocking.
i. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule, provide two toe nails on one side of the rafter and toe nails from the ceiling joist to top plate in accordance with this schedule. The toe nail on the opposite side of the rafter shall not be required.
j. RSRS-01 is a Roof Sheathing Ring Shank nail meeting the specifications in ASTM F1667.



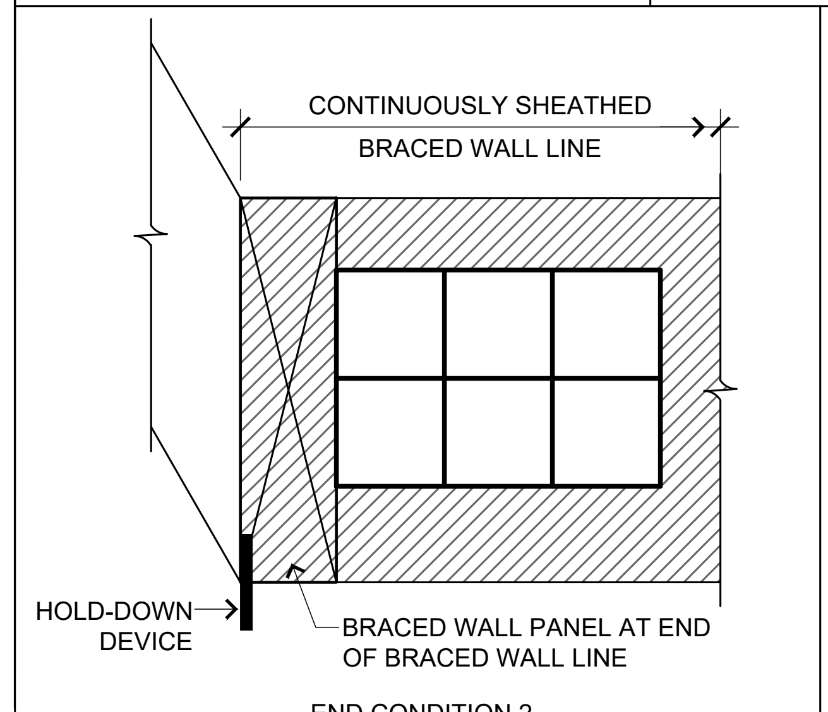
END CONDITION 1

REQUIREMENTS

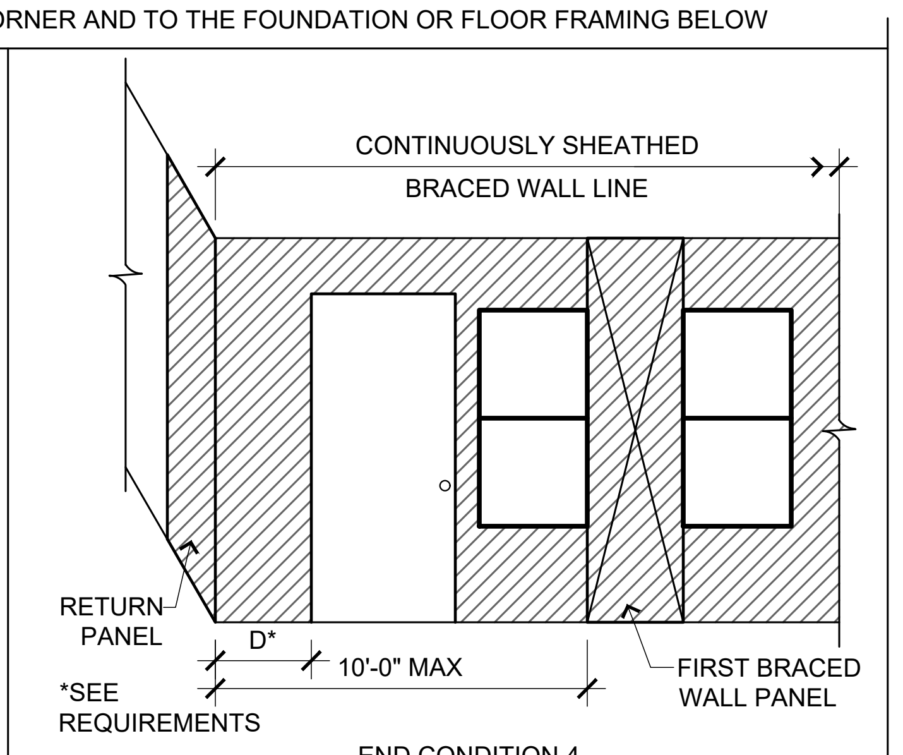
RETURN PANEL:
24" FOR BRACED WALL LINES SHEATHED WITH WOOD STRUCTURAL PANELS
32" FOR BRACED WALL LINES SHEATHED WITH STRUCTURAL FIBERBOARD

DISTANCE D:
24" FOR BRACED WALL LINES SHEATHED WITH WOOD STRUCTURAL PANELS
32" FOR BRACED WALL LINES SHEATHED WITH STRUCTURAL FIBERBOARD

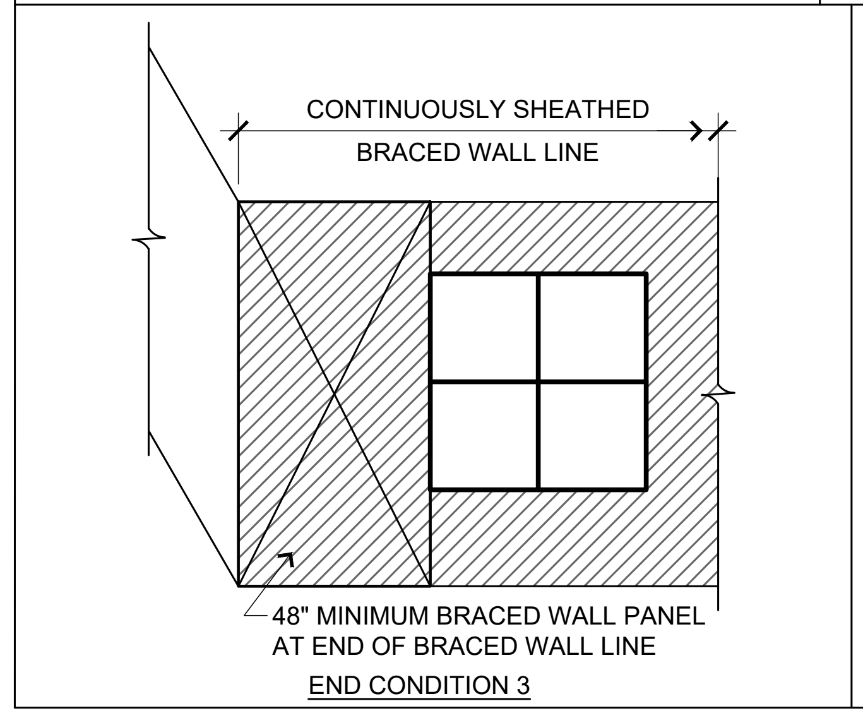
HOLD-DOWN DEVICE:
800 lbs CAPACITY FASTENED TO THE EDGE OF THE BRACED WALL PANEL CLOSEST TO THE CORNER AND TO THE FOUNDATION OR FLOOR FRAMING BELOW



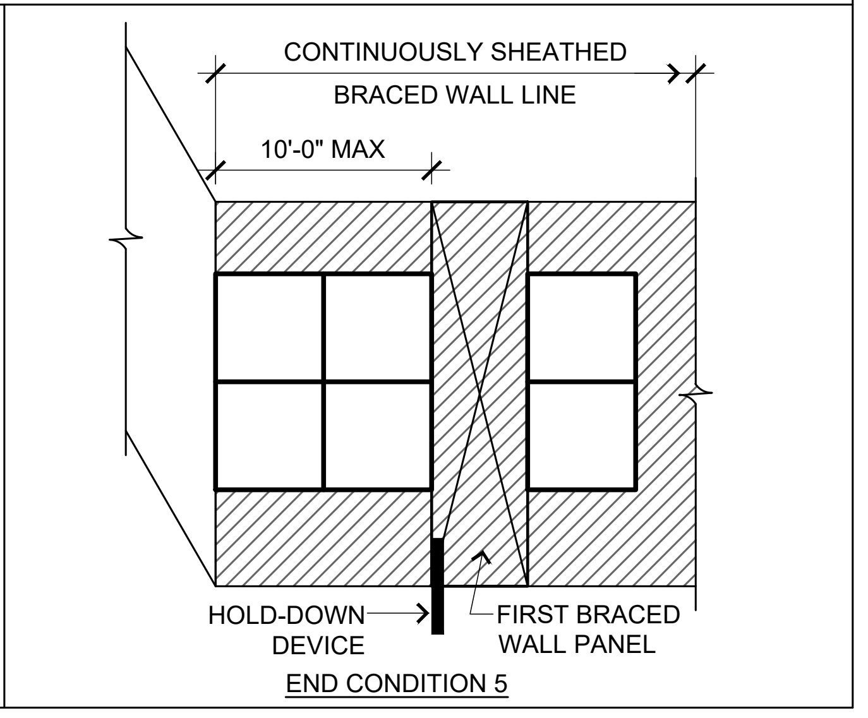
END CONDITION 2



END CONDITION 4



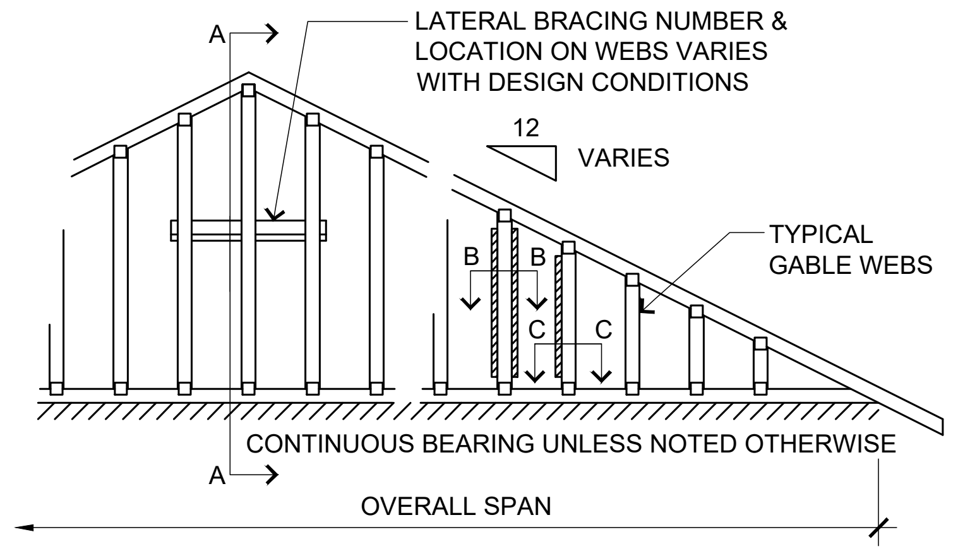
END CONDITION 3



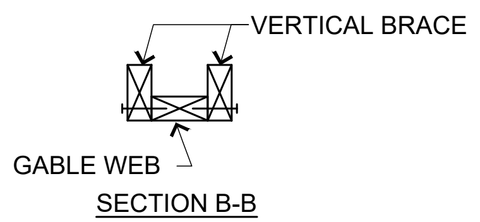
END CONDITION 5

## ① END CONDITIONS FOR BRACED WALL LINES WITH CONTINUOUS SHEATHING R602.10.7

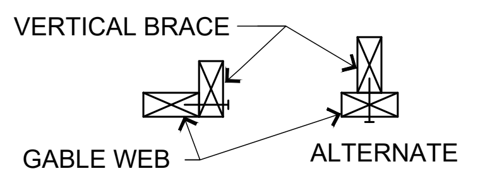
SCALE: NTS



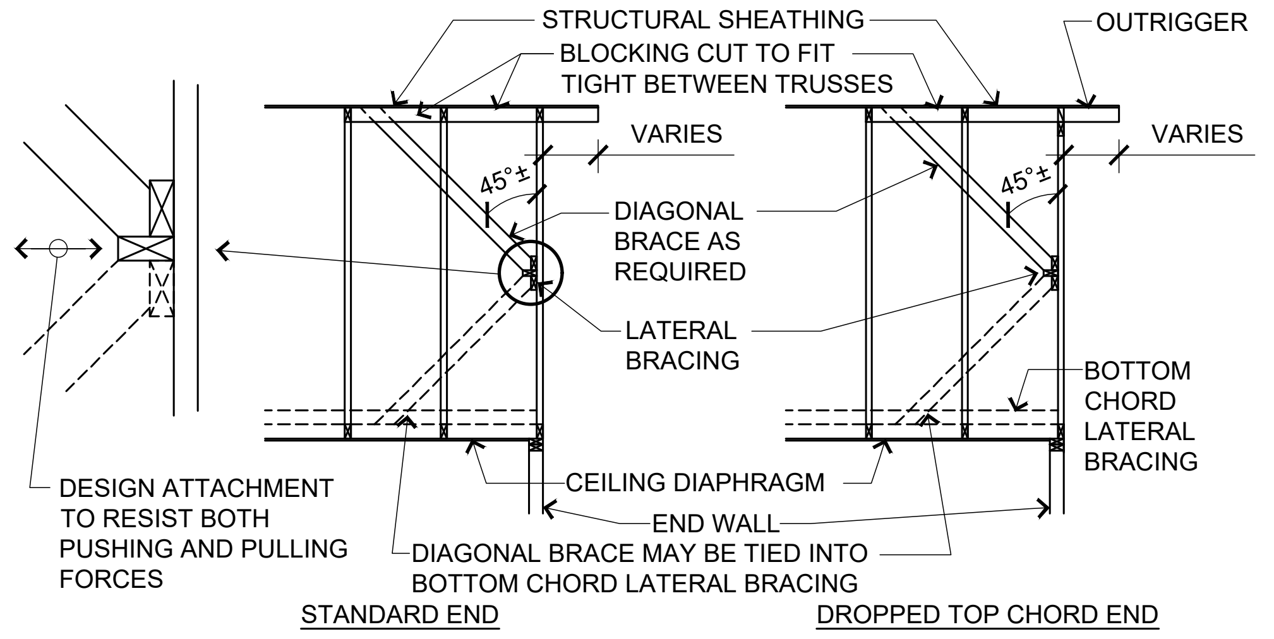
NOTES:
1. ACTUAL BRACING REQUIREMENTS WILL VARY DUE TO WIND LOAD, CODE CRITERIA, BUILDING HEIGHT, TRUSS SPAN, WEB LUMBER GRADE/SPECIES/ON CENTER SPACING AND OTHER VARIABLES. BRACING (AND ATTACHMENT) REQUIREMENTS SHOULD BE DESIGNED FOR EACH SPECIFIC JOB.
2. CONNECTION BETWEEN BOTTOM CHORD OF GABLE END TRUSS AND WALL, AS WELL AS THE DESIGN AND SPECIFICAITON OF TEMPORARY AND PERMANENT BRACING OF THE ROOF SYSTEM IS THE RESPONSIBILITY OF THE BUILDING DESIGNER.



SECTION B-B



SECTION C-C



SECTION A-A

## ② GABLE END BRACING

SCALE: 1/4" = 1'-0"

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N&S JOB NUMBER: 2025-1991
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SAMIR B. AWAD
23411
10/30/2025

PROJECT INFORMATION

HOUSE ADDITION
307 SW 3RD STREET
LEES SUMMIT MO

ISSUE INFO

DATE: 10/30/2025

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DRAWN BY: SBA
CHECKED BY: SBA
ISSUED FOR: PERMIT

SHEET TITLE

STANDARD DETAILS, SCHEDULES & NOTES

SHEET NUMBER

S42