

A.

GENERAL NOTES IRC 2018

A.1

PLANS SHALL COMPLY WITH 2018 INTERNATIONAL RESIDENTIAL CODE (IRC) WITH AMENDMENTS AS ADOPTED BY THE APPROPRIATE GOVERNING JURISDICTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CHANGES OR DEVIATIONS FROM THE PLAN ARE MADE DURING CONSTRUCTION. THE ENGINEER OF RECORD MAY REQUIRE REVISED DRAWING OR CALCULATIONS AT ITS DISCRETION. IF DISCREPANCIES ARE IDENTIFIED THE MOST CONSERVATIVE SPECIFICATION SHALL APPLY.

A.2

LOADING ASSUMPTIONS

DEAD

ROOF

ROOF + CEILING (NO STORAGE)

ROOF + CEILING (STORAGE)

CEILING JOISTS (STORAGE)

EXTERIOR BALCONY / DECK

INTERIOR FLOOR

8" THICK MASONRY WALL

6" THICK MASONRY WALL

EXTERIOR LIGHT FRAMED WOOD WALLS

INTERIOR LIGHT FRAMED WOOD WALLS

(INTERIOR WALLS INCLUDED IN 15 PSF DEAD LOAD)

10 PSF UNO

15 PSF

20 PSF

10 PSF

10 PSF

10 PSF

96 PSF

72 PSF

15 PSF

10 PSF

LIVE

ROOF LIVE LOAD

FLOOR LIVE LOAD

GARAGE

STORAGE

GUARDRAIL:

CONTINUOUS LINEAR

MAXIMUM POINT

20 PSF

40 PSF (HABITABLE)

50 PSF WITH 2000 LB POINT LOAD

20 PSF (UNINHABITABLE)

50 PLF

200 LBS

SNOW

GROUND SNOW LOAD

20 PSF

WIND

VELOCITY

EXPOSURE CATEGORY

115 MPH

B

B.

SOIL AND SITE ASSUMPTIONS

B.1

FOUNDATION DESIGN ASSUMES MINIMUM SOIL BEARING FOR THE SITE OF 1,500 PSF. CONTRACTOR TO VISUALLY INSPECT THE SITE OR PROVIDE GEOTECHNICAL INVESTIGATION TO VERIFY MINIMUM ACCEPTABLE SOIL CONDITIONS FOR CL (SILTY CLAY) AS DEFINED BY 2018 IRC. THE CONTRACTOR IS RESPONSIBLE FOR ANY SOIL CONDITION THAT DOES NOT MEET THE MINIMUM REQUIREMENTS AND FOR CONTACTING THE ENGINEER OF RECORD.

B.2

LATERAL SOIL PRESSURES

ACTIVE

AT REST

60 PSF

100 PSF

B.3

SITE GRADING SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM THE STRUCTURE AT A MINIMUM OF 0.5% (6" IN THE FIRST 10'-0"). ALTERNATE APPROACHES MAY BE APPROVED IF THE ALTERNATE DESIGN IS EQUIVALENT IN EFFECTIVENESS AND PERFORMANCE, AND PROVIDES FOR POSITIVE SITE DRAINAGE.

C.

FOUNDATION NOTES

C.1

FOUNDATION ANCHORAGE (IRC R403.1.6)

SILL PLATES SHALL BE BOLTED TO THE FOUNDATION WALL WITH A MINIMUM 1/2" DIAMETER ANCHOR BOLTS EMBEDDED AT LEAST 7" INTO THE CONCRETE.

BOLTS SHALL BE SPACED NO GREATER THAN 6'-0" O.C.

THERE SHALL BE A MINIMUM OF TWO BOLTS PER PLATE SECTION, WITH A BOLT PLACED WITHIN 12" AND NOT CLOSER THAN 7 BOLT DIAMETERS OF THE END OF EACH PLATE SECTION.

A PROPERLY SIZED NUT AND WASHER SHALL BE TIGHTENED ON EACH BOLT TO THE PLATE, (NOTE: 7" EMBEDMENT + 1-1/2" SILL PLATE + 3/4" FOR NUT AND WASHER EQUALS A 9-1/4" LONG BOLT).

WALL BRACING METHODS (IRC R602) MAY REQUIRE ADDITIONAL ANCHORAGE.

C.2

CONCRETE SLABS

CONCRETE SLABS PLACED ON FILL MATERIAL WHICH SHALL BE COMPARED TO ENSURE UNIFORM SUPPORT OF THE SLAB AND SHALL NOT EXCEED 24" OF COMPACTED GRANULATED MATERIAL (SAND OR GRAVEL) OR 8" OF EARTH:

THIS MAY OCCUR AT GARAGE FLOOR FILLS, OR OVER EXCAVATED AREAS UNDER FLOOR SLABS.

THE DESIGN AND INSTALLATION DETAILS IN THIS DOCUMENT (WHERE APPLICABLE BASED ON SIZE AND SPACING LIMITATIONS) MAY BE USED IN LIEU OF PROVIDING A SEPARATE DESIGN.

STRUCTURAL SLABS EXCEEDING THE SPANS AND CONDITIONS OF THE APPROVED DETAILS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER.

SLABS AT MAX 4'-0" OVER-DIG ADJACENT TO FOUNDATION WALL:

WHERE SOIL IS EXCAVATED FOR A MAXIMUM DIMENSION OF 4'-0" HORIZONTALLY ADJACENT TO A FOUNDATION WALL, THE STANDARD OVER-DIG DETAIL MAY BE USED IN LIEU OF A COMPLETE STRUCTURAL SLAB.

SEE "TYPICAL FOOTING/FOUNDATION WALL/STANDARD SLAB AT MAX 4'-0" OVER-DIG" DETAIL.

C.3

VAPOR RETARDER / BARRIER (IRC R506.2.3)

A 6 MILLIMETER POLYETHYLENE OR APPROVED VAPOR RETARDER WITH JOINTS LAPPED A MINIMUM OF 6" IS REQUIRED BETWEEN THE CONCRETE FLOOR SLAB AND THE BASE COURSE OR PREPARED SUBGRADE, (NOT REQUIRED FOR GARAGE SLABS OR DETACHED UNHEATED ACCESSORY BUILDINGS).

C.4

FOOTINGS

THE BOTTOM OF ALL FOOTINGS SHALL EXTEND NOT LESS THAN 36" BELOW GRADE FOR FROST PROTECTION (IRC R403.1.4).

FOOTINGS FOR FREESTANDING ACCESSORY STRUCTURES WITH AN AREA OF 600 SQ. FT. OR LESS AND AN EAVE HEIGHT OF 10'-0" OR LESS SHALL EXTEND BELOW GRADE A MINIMUM OF 12".

EXTERIOR WALLS, BEARING WALLS, COLUMNS AND PIERS SHALL BE SUPPORTED ON CONTINUOUS SOLID MASONRY OR CONCRETE FOOTINGS, OR APPROVED STRUCTURAL SYSTEM TO SAFELY SUPPORT THE IMPOSED LOADS AND SHALL BE SIZED AND REINFORCED IN ACCORDANCE WITH THIS STANDARD OR SHALL BE ENGINEERED DESIGN.

FOOTINGS UNDER FOUNDATION WALLS SHALL BE CONTINUOUS AROUND THE STRUCTURE AND FROM ONE LEVEL TO THE NEXT.

THE CONTINUOUS TRANSITIONS BETWEEN FOOTINGS AT DIFFERENT LEVELS ENCLOSING USABLE SPACE SHALL BE MADE BY APPROVED SOLID JUMPS OR SUPPORT SYSTEMS TO PROVIDE SAFE SUPPORT OF THE STRUCTURE.

SEE "TYPICAL FOOTING/FOUNDATION WALLS/STANDARD SLAB AT MAXIMUM 4" OVER-DIG" AND "FOOTING JUMP" DETAILS.

C.5

CONCRETE

ALL CONCRETE CONSTRUCTION SHOULD CONFORM TO ACI 318-14 (OR ACI 332) AND 2018 IRC.

THE MINIMUM CONCRETE 28 DAY COMPRESSIVE STRENGTH SHALL BE AS SPECIFIED IN IRC TABLE R402.2.

C.5

CONCRETE (CONT.)

CONCRETE MIX TO UTILIZE A MAXIMUM WATER-CEMENT MATERIALS RATIO OF 0.45 FOR ALL APPLICATIONS. ADMIXTURES SHALL NOT CONTAIN ANY CHLORIDES.

CONCRETE POURED AGAINST AN EXISTING SURFACE SHOULD BE ROUGHENED TO A MINIMUM OF 1/4 INCH AMPLITUDE.

REBAR PLACEMENT SHALL BE AS FOLLOWS:

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH

CONCRETE EXPOSED TO EARTH OR WEATHER

NOT EXPOSED TO WEATHER OR GROUND

3.0 IN CLR

1.5 IN CLR

1) SLABS, WALLS, JOISTS

2) BEAMS, COLUMNS

3/4 IN CLR

1.5 IN CLR

CONCRETE MIX DESIGN SHALL BE 6% (±1%) AIR-ENTRAINED FOR GARAGE SLABS, FOOTINGS, WALLS, OR FLATWORK EXPOSED TO WEATHER.

SHORING AND SUPPORTING FORMWORK SHALL NOT BE REMOVED FROM HORIZONTAL MEMBERS BEFORE CONCRETE STRENGTH REACHES 70% OF STRENGTH DETERMINED BY CYLINDERS OR 28 DAYS.

ALL FOUNDATION WALLS ENCLOSING BELOW GRADE SPACE SHALL BE DAMPROOFED. THE DAMPROOFING SHALL EXTEND FROM THE EDGE OF THE FOOTING TO THE FINISHED GRADE. (IRC R406.1)

C.6

CONCRETE WALLS WITH REINFORCEMENT STEEL

REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 40.

SMOOTH BARS OR WELDED WIRE FABRIC SHALL CONFORM TO ASTM 185.

90 DEG. HOOK SHOWN IN DRAWINGS SHALL BE STANDARD PER ACI 318-14.

STRAIGHT EXTENSION LENGTH = 12X BAR DIA.

BEND DIAMETER = 12X BAR DIA.

HOOKED DOWELS:

HOOKED DOWELS FROM FOUNDATIONS TO WALL SHALL BE PROVIDED TO MATCH VERTICAL WALL REINFORCING AND EXTENDED TO 3" CLEAR FROM BOTTOM OF FOUNDATION.

HOOKED DOWELS MATCH SLAB REINFORCING FROM SLAB TO WALLS OR SLAB TO FOUNDATION.

PROVIDE (2) - #5 BARS AROUND PERIMETER OF ALL SUSPENDED SLABS.

WHERE SPLICES ARE NECESSARY IN REINFORCEMENT, THE LENGTH OF LAP SPlice SHALL BE IN ACCORDANCE WITH TABLE R608.5.4(1) AND FIGURE R608.5.4(1). THE MAXIMUM GAP BETWEEN NONCONTACT PARALLEL BARS AT A LAP SPlice SHALL NOT EXCEED THE SMALLER OF ONE-FIFTH THE REQUIRED LAP LENGTH AND 6 INCHES (152MM) [SEE FIGURE R608.5.4.(1)].

TOP HORIZONTAL REINFORCEMENT SHALL BE PLACED WITHIN 12" FROM THE TOP OF THE WALL.

HORIZONTAL WALL REINFORCEMENT SHALL TERMINATE AT THE END OF THE WALL WITH A STANDARD HOOK

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C.7

COLD WEATHER CONCRETE

COLD WEATHER IS DEFINED AS THREE CONSECUTIVE DAYS WHERE THE AVERAGE DAILY TEMPERATURE DROPS BELOW 40 DEGREES FAHRENHEIT AND NOT ABOVE 50 DEGREES FAHRENHEIT FOR MORE THAN HALF OF ANY ONE OF THOSE THREE DAYS.

COLD WEATHER CONCRETE WORK SHALL CONFORM TO ACI 306.

ALL MATERIALS AND EQUIPMENT REQUIRED FOR PROTECTION SHALL BE AVAILABLE AT THE PROJECT SITE BEFORE COLD WEATHER CONCRETING BEGINS.

THE CONCRETE MIX DESIGN PROVIDED BY THE SUPPLIER SHALL AT A MINIMUM REACH THE AVERAGE 28 DAY MIX DESIGN COMPRESSIVE STRENGTH IN MINIMUM 72 HOURS OR 2000 PSI – WHICHEVER IS GREATER.

THE TEMPERATURE OF CONCRETE AT PLACEMENT SHALL BE A MINIMUM OF 55 DEGREES FAHRENHEIT .

THE MINIMUM CONCRETE TEMPERATURE AT THE TIME OF MIXING SHALL NOT BE BELOW 65 DEGREES FAHRENHEIT.

ALL SNOW, ICE AND FROST MUST BE REMOVED PRIOR TO PLACING CONCRETE.

THE CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION FOR CONCRETE AGAINST FREEZING AND MAINTAIN A CONCRETE TEMPERATURE OF 55 DEGREES FAHRENHEIT FOR A 72 HOUR PERIOD AFTER CONCRETE PLACEMENT. THIS MAY BE ACHIEVED WITH THE USE OF INSULATING BLANKETS AND/OR THE USE OF TEMPORARY HEATERS.

GROUND TEMPERATURE AT THE TIME OF PLACEMENT OF SLAB OR FOOTINGS SHALL NOT BE LESS THAN 35 DEGREES FAHRENHEIT .

INSULATION, FORMS AND HEATERS MAY BE REMOVED AFTER 72 HOURS .

MAINTAIN ADEQUATE PROTECTION OF SUB GRADE AND ADEQUATE DRAINAGE AWAY FROM EXPOSED CONCRETE ELEMENT TO PREVENT FREEZING.

C.8

FOOTNOTES

VERTICAL REINFORCEMENT FOR CONCRETE WALLS THAT ARE NOT FULL HEIGHT AND FOR REINFORCEMENT SPACED 24" O.C. MAY BE PLACED IN THE MIDDLE OF THE WALL. OTHER WALLS SHALL HAVE VERTICAL REINFORCEMENT PLACED AS FOLLOWS:

8" WALL – MINIMUM 2" FROM TENSION FACE

10" WALL – MINIMUM 6-3/4" FROM THE OUTSIDE FACE

EXTEND BARS TO WITHIN 8" OF THE TOP OF THE WALL

HORIZONTAL REINFORCEMENT:

ONE BAR SHALL BE PLACED WITHIN 12" OF THE TOP OF THE WALL

OTHER BARS SHALL BE EQUALLY SPACED WITH SPACING NOT TO EXCEED 24" O.C.

HORIZONTAL BARS SHOULD BE AS CLOSE TO THE TENSION FACE AS POSSIBLE (INTERIOR), AND BEHIND THE VERTICAL REINFORCEMENT (I.E. 2" FROM INSIDE FACE)

SUPPLEMENTAL REINFORCEMENT AT CORNERS – PLACE 1 #4 REBAR 48" LONG AT 45 DEGREE ANGLE AT CORNERS OF OPENINGS. PLACE REINFORCEMENT WITHIN 6" OF THE EDGE OF INSIDE CORNERS.

AT MASONRY LEDGES THE MINIMUM WALL THICKNESS SHALL BE 3-1/2". LEDGES SHALL NOT EXCEED A DEPTH OF MORE THAN 24" BELOW THE TOP OF THE WALL FOR WALL THICKNESS LESS THAN 4". PROVIDE #4 BARS AT MAXIMUM 24" O.C. TO WITHIN 8" OF THE TOP OF THE WALL.

STRAIGHT WALLS MORE THAN 5'-0" TALL AND MORE THAN 16'-0" LONG SHALL BE PROVIDED WITH EXTERIOR BRACED RETURN WALLS. WALL LENGTH SHALL BE MEASURED USING INSIDE THE SHORTEST DIMENSION BETWEEN INTERSECTING WALLS (SEE TYPICAL DEAD MAN SECTION).

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MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE PER TABLE R402.2		
TYPE OR LOCATION OF CONCRETE CONSTRUCTION	MINIMUM SPECIFIED COMPRESSIVE STRENGTH (F'c) FOR SEVER WEATHERING POTENTIAL	
BASEMENT WALLS, FOUNDATIONS AND OTHER CONCRETE NOT EXPOSED TO THE WEATHER	2,500	
BASEMENT SLABS AND INTERIOR SLABS ON GRADE, EXCEPT GARAGE FLOOR SLABS	2,500	
BASEMENT WALLS, FOUNDATION WALLS, EXTERIOR WALLS AND OTHER VERTICAL CONCRETE WORK EXPOSED TO THE WEATHER	3,000	
PORCHES, CARPORT SLABS AND STEPS EXPOSED TO THE WEATHER,AND GARAGE FLOOR SLABS	3,500	
SUSPENDED SLABS	4,000	

D.

FRAMING/STRUCTURE

D.1

FRAMING NOTES

ALL LUMBER SIZES ARE DOUGLAS FIR-LARCH #2 UNLESS OTHERWISE NOTED.

ALL UNMARKED HEADERS SHALL BE A MINIMUM #2 DOUGLAS FIR-LARCH (2) 2X10 ON LOAD BEARING WALLS.

ALL HEADERS/BEAMS TO BEAR ON A MINIMUM OF (2) 2X4 JACK STUDS UNO. KING STUDS SHALL BE PROVIDED AT ALL HEADERS IN ACCORDANCE WITH IRC TABLE R602.7.5.

DOUBLE JOIST UNDER PARALLEL INTERIOR NON-LOAD BEARING WALLS.

CANTILEVERS, OVER BEAMS AND DOOR JAMBS SHALL BE BLOCKED.

ANY WOOD MEMBER IN CONTACT WITH CONCRETE OR MASONRY (OR THE FURRING THEY ARE ATTACHED TO) SHALL BE OF DECAY RESISTANT MATERIAL.

IN BEARING WALLS, STUDS WHICH ARE NOT MORE THAN 10'-0" FEET IN LENGTH SHALL BE SPACED NOT MORE THAN IS SPECIFIED IN IRC TABLE R602.3(5) FOR THE CORRESPONDING STUD SIZE. THOSE STUDS GREATER THAN 10'-0" FEET IN LENGTH SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER OR REGISTERED ARCHITECT.

ALL WOOD STRUCTURAL PANELS SHALL CONFORM TO THE MOST CURRENT APPLICABLE SPECIFICATION AND SUPPLEMENTS OF THE APA OR EQUIVALENT. ALL PANEL END JOINTS SHALL OCCUR OVER SUPPORTS AND SHALL BE STAGGERED ONE HALF PANEL LENGTH FROM ADJACENT PANELS. PROVIDE 1/8" INCH SPACE AT PANEL ENDS. WOOD STRUCTURAL PANEL MOISTURE CONTENT SHALL BE LESS THEN OR EQUAL TO 16%.

ALL STRUCTURAL FRAMING MEMBERS SHALL BE AS FOLLOWS UNO:

2X4 OR 2X6 EXTERIOR WALLS AS PERMITTED BY CODE: DOUGLAS FIR-LARCH #2 (DF-L #2) OR BETTER.

EXTERIOR WALLS TO BE CONTINUOUSLY SHEATHED WITH MIN. 7/16" OSB

EXTERIOR OSB SHEATHING TO BE FASTENED WITH 8D COMMON NAILS; 6" O. C. AT PANEL EDGES, 12" O. C. IN THE FIELD

2X4 OR 2X6 INTERIOR LOAD BEARING WALLS DF-L #2 OR BETTER.

LOAD BEARING, BRACED, AND SHEAR WALLS, REQUIRE A DOUBLE TOP PLATE. THE TOP PLY BEING FIELD APPLIED WITH A MIN. 24" LAP SPlice

FIELD APPLIED LAP SPICED TOP PLATE: DF-L #2 OR BETTER

LOAD BEARING HEADERS PER HEADER SCHEDULE OR AS SHOWN ON FRAMING PLANS.

LOAD BEARING HEADERS TO BE FABRICATED WITH THE HEADER AT THE UNDER SIDE OF THE TOP PLATE WITH CRIPPLE FRAMING BELOW AS NEEDED UNO.

INTERIOR NON LOAD BEARING WALLS: DF-L #2 STUD GRADE OR BETTER

DOUBLE TOP PLATE IS NOT REQUIRED FOR INTERIOR NON LOAD BEARING WALLS

HEADER CRIPPLE SPACING CAN BE 24" O. C. REGARDLESS OF WALL STUD SPACING FOR NON LOAD BEARING WALLS

CRIPPLE FRAMING NOT REQUIRED ABOVE OR BELOW OPENINGS WHERE THE VERTICAL CLEAR HEIGHT IS 22" OR LESS FOR NON-LOAD BEARING WALLS.

ALL LUMBER IN CONTACT WITH MASONRY OR OTHERWISE EXPOSED TO WEATHERING TO BE PRESSURE TREATED (PT).

FIELD APPLIED SILL PLATE: PT DF-L #2

BOTTOM (SOLE) PLATE IN CONTACT WITH MASONRY: PT DF-L #2

ALL PRESSURE TREATED WOOD SHALL BE PRESSURE TREATED WITH WATER-BORNE PRESERVATIVES. PRESSURE TREATMENT SHALL COMPLY WITH THE REQUIREMENTS OF AWPB, C2, LP-22, AND IRC SECTION R317. ALL LUMBER < 8" ABOVE THE FINISHED GRADE SHALL BE PRESSURE TREATED.

FASTENERS, INCLUDING NUTS AND WASHERS, FOR PRESSURE TREATED WOOD SHALL BE HOT-DIPPED, ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER. COATING TYPES AND WEIGHTS FOR CONNECTORS IN CONTACT WITH PRESSURE TREATED WOOD SHALL BE IN ACCORDANCE WITH THE CONNECTOR MANUFACTURER'S RECOMMENDATIONS. IN THE ABSENCE OF MANUFACTURER'S RECOMMENDATIONS, A MIN. OF ASTM A653 TYPE G185 ZINC-COATED GALVANIZED STEEL, OR EQUIVALENT, SHALL BE USED. FOR EXCEPTIONS, REFER TO R317.3.1.

ENGINEERED LUMBER MINIMUM DESIGN REQUIREMENTS			
	F _b (PSI)	E (PSI)	F _v (PSI)
LVL	3100	1.9X10 ⁶	285
DOUGLAS FIR-LARCH	900	1.6X10 ⁶	180
GLU-LAM	2400	1.8X10 ⁶	230

D.2

STRUCTURAL STEEL

STEEL DESIGN, FABRICATION, AND ERECTION SHALL CONFORM WITH AMERICAN INSTITUTE OF STEEL CONSTRUCTION.

STEEL PIPE COLUMNS SHALL BE A MINIMUM OF SCHEDULE 40.

STEEL GRADE AND SPECIFICATION SHALL BE AS FOLLOWS:

HOLLOW STRUCTURAL SECTION

CHANNELS, PLATES, ANGLES, AND COLUMNS:

WIDE FLANGES:

STEEL PIPE COLUMN

ANCHOR RODS:

ASTM A500 (F_y = 46 KSI)

ASTM A36 (F_y = 36 KSI)

ASTM A992 (F_y = 50 KSI)

ASTM A53 GR.B (F_y = 35 KSI)

ASTM F1554 (F_y = 36 KSI)

BOLTS SHALL CONFORM TO ASTM A307

WELDING SHALL CONFORM TO THE AWS CODES FOR BUILDING CONSTRUCTION. WELDING SHALL BE PERFORMED IN ACCORDANCE TO WELDING PROCEDURE SPECIFICATIONS (WPS) AS REQUIRED IN AWS D1.1. THE WPS VARIABLES SHALL BE WITHIN THE PARAMETERS ESTABLISHED BY THE FILLER-METAL MANUFACTURER.

WELDS SHALL USE E70XX ELECTRODES AND A MINIMUM OF 3/16" SIZE UNLESS NOTED OTHERWISE.

ALL WELDS SPECIFIED AS FIELD WELDS MAY BE SHOP WELDED AT THE CONTRACTOR'S OPTION IF ERECTION CAN STILL BE EXECUTED.

E.

GLAZING

GLAZING IN HAZARDOUS LOCATIONS AS IDENTIFIED IN IRC 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 OF THE GLAZING IS WITHIN A 24" ARC OF EITHER VERTICAL EDGE OF THE DOOR IN A CLOSED POSITION AND WHERE THE BOTTOM EDGE OF THE GLAZING IS LESS THAN 60" ABOVE THE FLOOR.

GLAZING ADJACENT TO THE LANDING AT THE BOTTOM OF THE STAIRWAY WHERE THE GLAZING IS LESS THAN 36 INCHES ABOVE THE LANDING AND WITHIN A 60 IN HORIZONTAL ARC LESS THAN 180 DEGREES FROM THE BOTTOM TREAD NOSING SHALL BE CONSIDERED A HAZARDOUS LOCATION.

GLAZING IN WALLS, ENCLOSURES OR FENCES CONTAINING OR FACING HOT TUBS, SPAS, WHIRLPOOLS, SAUNAS, STEAM ROOMS, BATHTUBS, SHOWERS, AND INDOOR OR OUTDOOR SWIMMING POOLS WHERE THE BOTTOM EXPOSED EDGE OF THE GLAZING IS LESS THAN 60" MEASURED VERTICALLY ABOVE ANY STANDING OR WALKING SURFACE.

WINDOW FALL PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH IRC R312.2.

F.

STAIRWAYS

STAIRWAYS SHALL PROVIDE A MAXIMUM 7-3/4" RISE AND A MINIMUM 10" RUN.

REQUIRED GUARD RAILS AT OPEN-SIDED WALKING SURFACES, INCLUDING STAIRS, PORCHES, BALCONIES, OR LANDINGS, SHALL NOT BE LESS THAN 36" HIGH MEASURED VERTICALLY ABOVE THE ADJACENT WALKING SURFACE.

EXCEPTION (1): GUARD RAILS ON THE OPEN SIDES OF STAIRS SHALL HAVE A HEIGHT NOT LESS THAN 34" MEASURED VERTICALLY FROM A LINE CONNECTING THE LEADING EDGES OF THE TREADS.

EXCEPTION (2): WHERE THE TOP OF THE GUARD ALSO SERVES AS A HANDRAIL ON THE OPEN SIDES OF STAIRS, THE TOP OF THE GUARD SHALL NOT BE LESS THAN 34" AND NOT MORE THAN 38" MEASURED VERTICALLY FROM A LINE CONNECTING THE LEADING EDGES OF THE TREADS.

GUARD RAIL ENCLOSURES SHALL HAVE INTERMEDIATE RAILS OF ORNAMENTAL PATTERNS THAT DO NOT ALLOW PASSAGE OF A SPHERE 4" IN DIAMETER.

EACH STAIRWAY OF FOUR OR MORE RISERS SHALL PROVIDE A CONTINUOUS HANDRAIL ON AT LEAST ONE SIDE BETWEEN 34" AND 38" ABOVE THE NOSING OF THE TREADS.

HANDRAILS SHALL HAVE A CIRCULAR CROSS SECTION OF 1-1/4" TO 2" OR OTHER APPROVED GRASPABLE SHAPE PER IRC R311.7.8.5.

MINIMUM 6'-8" OF HEADROOM CLEARANCE IS REQUIRED IN STAIRWAYS.

ENCLOSED ACCESSIBLE SPACE UNDER STAIRWAYS SHALL HAVE WALLS AND THE UNDERSIDE OF THE STAIR AND LANDING PROTECTED WITH 1/2" GYPSUM BOARD ON ENCLOSURE PER IRC R302.7.

G.

GARAGES

THE GARAGE FLOOR SHALL SLOPE 1/8" PER 12" TO DRAIN OR VEHICLE ENTRY DOORWAYS.

DOORS BETWEEN THE GARAGE AND THE DWELLING TO BE: SELF CLOSING, MINIMUM 1-3/8" SOLID CORE OR HONEYCOMBED STEEL DOOR, AND AT LEAST 20 MINUTE FIRE RATED.

THE GARAGE SHALL BE SEPARATED FROM THE DWELLING AND ITS ATTIC AREAS BY A MINIMUM 1/2" GYPSUM BOARD APPLIED TO THE GARAGE SIDE WHERE A FLOOR/CEILING SPACE IS PROVIDED ABOVE.

THE GARAGE COLUMNS AND BEAMS SUPPORTING THE SEPARATION SHALL ALSO BE PROTECTED WITH 1/2" GYPSUM BOARD OR EQUIVALENT.

WHERE HABITABLE SPACE OCCURS ABOVE THE GARAGE FLOOR/CEILING ASSEMBLY SHALL BE PROTECTED WITH A MINIMUM 5/8" TYPE "X" GYPSUM BOARD ON THE GARAGE CEILING.

GARAGE DOOR AND FRAME – THE "I" FRAME FOR THE ATTACHMENT OF THE TRACK AND COUNTER BALANCE SHALL CONSIST OF THE FOLLOWING: 2X6 VERTICAL JAMBS RUNNING FROM THE FLOOR TO CEILINGS, ATTACHED WITH 1-3/4" X 0.120" NAILS AT 7" O.C. STAGGERED WITH (7) 3-1/4" X 0.120" NAILS THROUGH THE JAMB INTO THE HEADER, 2X8 HEADER (MINIMUM) FOR ATTACHMENT OF COUNTER BALANCE SYSTEM.

GARAGE VEHICLE DOORS AND FRAMES SHALL BE DESIGNED AND INSTALLED TO MEET THE 115 MPH WIND LOAD REQUIREMENT OF DASMA 108 AND ASTM E330-96 (IRC R301.2.1).

H.

ROOF

THE ROOF IS DESIGNED FOR 20 PSF GROUND SNOW LOAD (MINIMUM).

PROVIDE 2X SOLID BLOCKING SUPPORT BELOW ALL POINT LOADS CONTINUOUS TO BEARING STRUCTURE AND/OR FOUNDATION BELOW.

ROOF IS ENGINEERED TO COMPLY WITH IRC R802.

ROOF TO BE ASPHALT SHINGLES UNO AND SHALL COMPLY WITH IRC 2018 SECT. R905.2

MINIMUM ROOF SLOPE FOR ASPHALT SHINGLES SHALL BE 2:12.

ROOF SLOPES IN BETWEEN 2:12 AND 4:12 SHALL REQUIRE DOUBLE UNDERLAYMENT IN ACCORDANCE WITH IRC 2018 SECTION R905.2.2:

"APPLY A 19-INCH (483MM) STRIP OF UNDERLAYMENT FELT PARALLEL TO AND STARTING AT THE EAVES, FASTENED SUFFICIENTLY TO HOLD IN PLACE. STARTING AT THE EAVE, APPLY 36-INCH-WIDE (914 MM) SHEETS OF UNDERLAYMENT, OVERLAPPING SUCCESSIVE SHEETS 3 INCHES (483MM), AND FASTENED SUFFICIENTLY TO HOLD IN PLACE. END LAPS SHALL BE 4-INCH (102MM) AND SHALL BE OFFSET BY 6 FEET (1829 MM). DISTORTIONS IN THE UNDERLAYMENT SHALL NOT INTERFERE WITH THE ABILITY OF THE SHINGLES TO SEAL."

I.

SAFETY REQUIREMENTS

EMERGENCY EGRESS AND RESCUE

PROVIDE ONE WINDOW FROM EACH BEDROOM THAT HAS A MINIMUM OPENABLE AREA OF 5.7 SQ. FT. WITH A MINIMUM OPENABLE HEIGHT OF 24" AND WIDTH OF 20".

BASEMENT EGRESS TO MEET THE REQUIREMENTS OF IRC R310.

SMOKE AND CARBON MONOXIDE SAFETY (PER IRC R314)

PROVIDE SMOKE ALARMS IN EACH SLEEPING ROOM, OUTSIDE OF EACH SLEEPING AREA AND ON EACH FLOOR INCLUDING BASEMENTS.

SMOKE ALARMS SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTUATION OF ONE ALARM WILL ACTIVATE ALL OF THE ALARMS IN THE DWELLING.

CARBON MONOXIDE DETECTORS SHALL BE INSTALLED AS REQUIRED PER IRC R315.

J.

ENERGY REQUIREMENTS

LIGHTING FIXTURES PENETRATING THE THERMAL ENVELOPE SHALL BE IC-RATED, LEAKAGE RATED AND SEALED TO THE GYPSUM WALLBOARD AS REQUIRED PER IRC N1102.4.5.

PROGRAMMABLE THERMOSTATS SHALL BE INSTALLED AS REQUIRED PER IRC N1103.1.1.

AIR HANDLERS SHALL BE RATED FOR MAXIMUM 2% AIR LEAKAGE RATE PER IRC N1103.3.2.1.

BUILDING FRAMING CAVITIES SHALL NOT BE USED AS DUCTS OR PLENUMS.

HOT WATER PIPES SHALL BE INSULATED AS REQUIRED PER IRC N1103.4.

ALL EXHAUST FANS SHALL TERMINATE TO THE BUILDING EXTERIOR AS REQUIRED PER IRC M1504.3.

MAKEUP AIR SYSTEMS SHALL BE INSTALLED FOR KITCHEN EXHAUST HOODS THAT EXCEED 400 CFM AS REQUIRED PER IRC M1503.6.

AN AIR HANDLING SYSTEM SHALL NOT SERVE BOTH THE LIVING SPACE AND THE GARAGE PER IRC M1601.6 ENERGY CONSERVATION.

K.

ABBREVIATIONS

AFF: ABOVE FINISHED FLOOR

CLR: CLEAR

EFF: EFFECTIVE

EFP: EQUIV FLUID PRESSURE

EOR: ENGINEER OF RECORD

EQUIV: EQUIVALENT

MAX: MAXIMUM

MIN: MINIMUM

NTS: NOT TO SCALE

O.C.: ON CENTER

PCF: POUNDS PER CUBIC FOOT

PLF: POUNDS PER LINER FOOT

PSF: POUNDS PER SQUARE FOOT

PSI: POUNDS PER SQUARE INCH

UNO: UNLESS NOTED OTHERWISE

FV: FIELD VERIFY

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STATE OF MISSOURI

BRIAN HANSEN

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REVISIONS

GENERAL NOTES

S000

DATE

1/24/2022 3:15:07 PM

SCALE

1/4" = 1'-0"

RELEASE FOR CONSTRUCTION
AS NOTED FOR PLAN REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
06/07/2022

GENERAL PLAN NOTES

- ALL CONSTRUCTION SHALL CONFORM TO 2018 INTERNATIONAL RESIDENTIAL CODE OR ATTACHED ENGINEER SPECIFICATIONS WHERE APPLICABLE.
- THE PLANS WERE DESIGNED AND REVIEWED IN ACCORDANCE WITH THE IRC.
- SECURITY SHALL CONFORM TO IRC R326.
- SMOKE DETECTORS WILL BE PROVIDED IN ACCORDANCE WITH IRC R314.
- CARBON MONOXIDE DETECTORS WILL BE PROVIDED IN ACCORDANCE WITH IRC R315.
- BUILDING THERMAL ENVELOPE SHALL BE IN ACCORDANCE WITH IRC N1102.4.1 AND TABLE N1102.4.1.1.
- GARAGE DOORS AND FRAMES SHALL BE DESIGNED AND INSTALLED TO MEET 115 MPH WIND LOAD RESISTANCE REQUIREMENTS PER DASHA 108-05, ASTM E330-02, AND IRC R612.4.
- SELF CLOSING DEVICES ARE REQUIRED FOR GARAGE TO DWELLING SEPARATION DOORS.
- ALL EMERGENCY EGRESS WINDOWS SHALL HAVE A MINIMUM OPENABLE AREA OF 5.7 SQUARE FEET WITH A MINIMUM OPENABLE HEIGHT OF 24 INCHES AND WIDTH OF 20 INCHES. THE SILL HEIGHT OF THE WINDOW SHALL NOT EXCEED 44 INCHES.

CONSTRUCTION NOTES

- ALL LUMBER SIZES ARE DOUGLAS FIR-LARCH #2 UNO.
- ALL DIMENSIONS ARE FROM FACE OF STUD U.N.O.
- ALL UNMARKED HEADERS SHALL BE A MINIMUM OF #2 DOUGLAS FIR-LARCH (2) 2x10 ON LOAD BEARING WALLS.
- ALL HEADER BEAMS TO BEAR ON A MINIMUM OF (2) 2x4 POSTS UNO.
- MINIMUM DOUBLE JOIST UNDER INTERIOR NON-LOAD BEARING WALLS.
- CANTILEVERS, OVER BEAMS, AND DOOR JAMBS SHALL BE BLOCKED.
- CEILING JOISTS SHALL BE 2x6 @ 16" O.C. U.N.O.
- GARAGE AND LIVING SPACE SHALL COMPLY WITH FIRE SEPARATION STANDARDS IN ACCORDANCE WITH IRC R302.6.
- ADJACENT LIVING SPACE WALLS, GARAGE CEILINGS WITH LIVING SPACE ABOVE, AND BEAMS SHALL HAVE GYPSUM BOARD NO LESS THAN 5/8" TYPE X, REF. SHT. 1-S303-5.
- WALL CONSTRUCTION SHALL BE CAPABLE OF ACCOMMODATING ALL LOADS IMPOSED ACCORDING TO IRC R301.
- EXTERIOR WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH IRC R602.3(1) AND R602.3(2).
- ANY WOOD MEMBERS IN CONTACT WITH CONCRETE OR MASONRY (OR THE FURRING THEY ARE ATTACHED TO) SHALL BE OF DECAY RESISTANT MATERIAL.
- INTERIOR NON-LOAD BEARING WALLS SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE UNLESS THE INTERIOR NON-LOAD BEARING WALL RESTS DIRECTLY ON A FOOTING.
- DUCTS, AIR HANDLERS, FILTER BOXES, AND BUILDING CAVITIES USED AS DUCTS SHALL BE SEALED (IRC N1103.3.2).
- ALL WALLS OVER 10' SHALL BE DOUGLAS FIR-LARCH 2x4 STUDS FULL HEIGHT CONTINUOUS UNO.
- ALL WALLS OVER 12' SHALL BE DOUGLAS FIR-LARCH #2 (M-12) LUMBER 2x6 STUDS FULL HEIGHT CONTINUOUS.
- WINDOW FALL PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH SECTIONS R312.2.1 AND R312.2.2.

FOUNDATION NOTES:

- ALL CONSTRUCTION SHALL CONFORM TO 2018 INTERNATIONAL RESIDENTIAL CODE (IRC).
- FOOTING ELEVATION TO BE DETERMINED BASED ON FINAL GRADE. ALL FOOTINGS MEET OR EXCEED MINIMUM FROST DEPTH OF 36".
- SOIL BEARING CAPACITY SHALL BE MINIMUM 1500 PSF.
- REFER TO SHEET S000 FOR MINIMUM SPECIFIED COMPRESSIVE STRENGTH OF CONCRETE.
- REQUIRED AIR ENTRAINMENT SHALL BE 5-7% AS SPECIFIED IN IRC TABLE R402.2.
- FOUNDATION WALLS SHALL BE DAMPPROOFED PER IRC R406.
- FOUNDATION DRAINAGE WILL BE IN ACCORDANCE WITH IRC R405.
- ALL INTERIOR FOOTINGS OF LOAD BEARING WALLS AND COLUMNS SHALL BE ISOLATED FROM THE BASEMENT FLOOR SLAB.
- STEEL COLUMNS SHALL BE A MINIMUM OF SCHEDULE 40.
- ALL ANCHOR BOLTS SHALL NOT BE SPACED MORE THAN 3' O.C. AND BE EMBEDDED INTO THE CONCRETE A MINIMUM OF 7".
- BASEMENT EGRESS SHALL COMPLY WITH IRC R310.
- FOR NEW CONSTRUCTION, AN ACCESSIBLE CONNECTION POINT TO BE PROVIDED TO A 20 FOOT CONCRETE ENCASED ELECTRODE (FOOTING REBAR) FOR THE ELECTRICAL SERVICE GROUNDING ELECTRODE CONDUCTOR (UFER GROUND).
- ALL ANCHORS TO BE HOT DIP GALVANIZED HEAVY HEX HEAD CAST-IN-PLACE.

IRC TABLE N1102.1.2 (R402.1.2) INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT (PARTIAL) AND ENERGY CONSERVATION CODE COMPLIANCE											
CLIMATE ZONE	FENESTRATION U-FACTOR	SKYLIGHT U-FACTOR	GLAZED FENESTRATION SHGC	CEILING AND ATTICS R-VALUE	VAULTS R-VALUE	WOOD FRAME WALL R-VALUE	FLOOR R-VALUE	BASEMENT WALL R-VALUE	SLAB R-VALUE & DEPTH	CRAWL SPACE WALL R-VALUE	DUCTWORK R-VALUE
4 EXCEPT MARINE	.32	.55	.40	49	49	20 OR 13+5H	19	10/13	10, 2 FT	10/13	8

ISOLATED FOOTINGS AND COLUMN PADS			
SYM	PIER PAD SIZE	DEPTH	MINIMUM REINFORCEMENT GRADE 40 KSI STEEL
A	42"x42"	1'-2"	(7) #4 BAR E.W.
B	60"x60"	1'-6"	(10) #4 BAR E.W.

NOTE:
ALL CONSTRUCTION SHALL CONFORM TO 2018 INTERNATIONAL RESIDENTIAL CODE OR ATTACHED ENGINEER SPECIFICATIONS WHERE APPLICABLE.

ROOF NOTES:

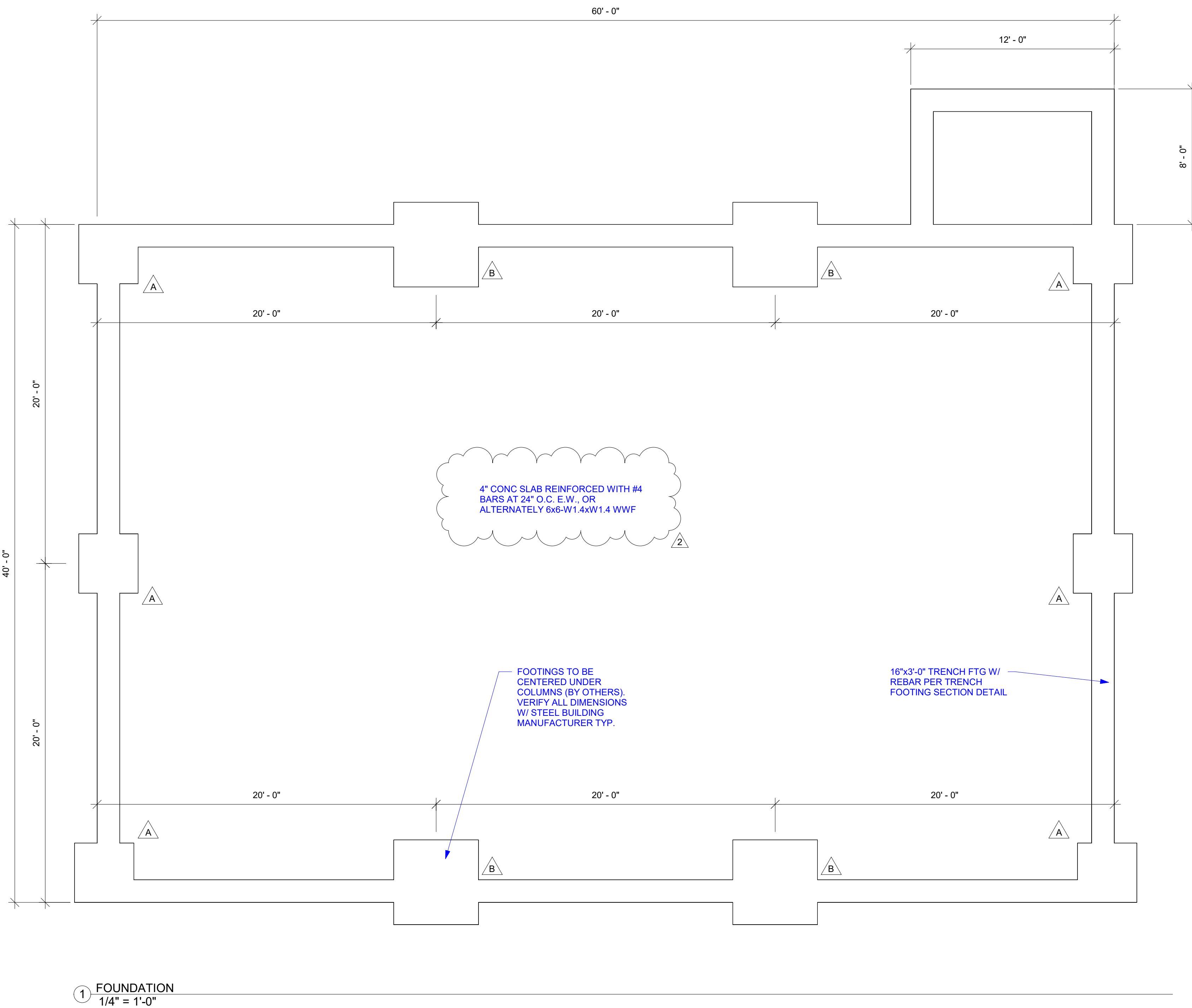
- DESIGNED FOR LIGHT ROOF COVERING
- LIVE LOAD/SNOW LOAD (PSF): 20
- DEAD LOAD (PSF): 15
- ALL EXTERIOR HEADERS SHALL BE MIN. (2) 2x10 UNLESS OTHERWISE NOTED.
- PROVIDE 2x SOLID BLOCKING SUPPORT BELOW ALL POINT LOADS CONTINUOUS TO BEARING STRUCTURE AND/OR FOUNDATION BELOW.
- ROOF IS ENGINEERED TO COMPLY WITH IRC 802.
- WHERE CEILING JOISTS RUN PARALLEL TO RAFTERS, THEY SHALL BE CONNECTED TO RAFTERS AT THE TOP WALL PLATE IN ACCORDANCE WITH IRC 2018 TABLE R802.4.5 AND R802.5.2.
- WHERE THE CEILING JOISTS ARE INSTALLED ABOVE THE BOTTOM THIRD OF THE RAFTER HEIGHT, THE RIDGE SHALL BE DESIGNED AS A BEAM. WHERE CEILING JOISTS DO NOT RUN PARALLEL TO RAFTERS, THE CEILING JOISTS SHALL BE CONNECTED TO TOP PLATES IN ACCORDANCE R802.3(1).
- EACH RAFTER SHALL BE TIED ACROSS THE STRUCTURE WITH A RAFTER TIE OR A 2x4 KICKER CONNECTED TO THE CEILING DIAPHRAGM WITH NAILS EQUIVALENT IN CAPACITY TO IRC R802.5.2.

WALL BRACING NOTES:

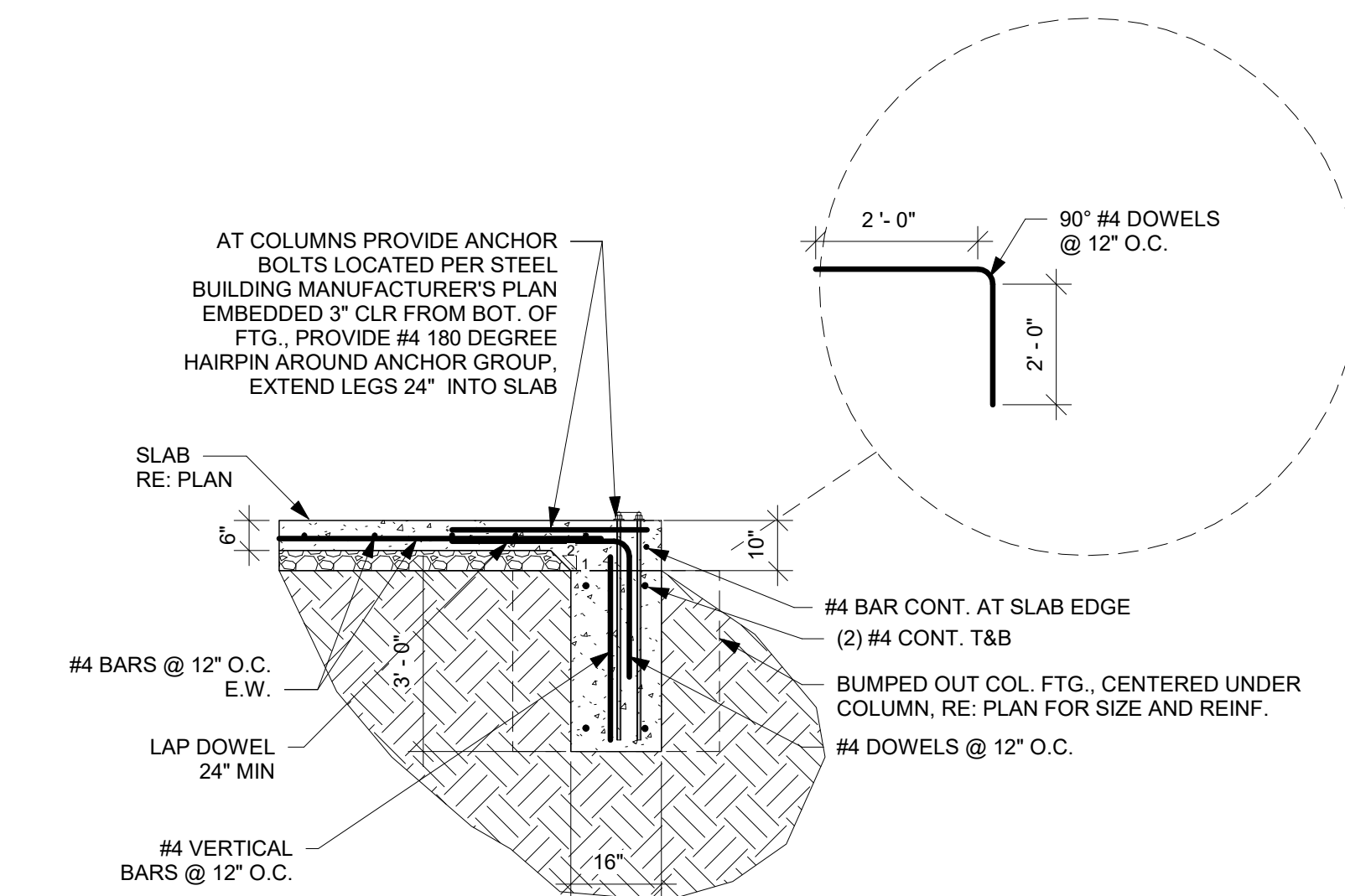
- BRACING METHODS SHALL BE PER PLAN AND SHALL BE INSTALLED PER IRC 2018 SET. R602.10.4
- FOR METHOD CS-WSP ALL SHEATHING SHALL BE INSTALLED OVER ALL AREAS EXCLUDING WINDOW AND DOORS AND INCLUDING GABLE ENDS.
- ALL HORIZONTAL PANEL JOINTS SHALL OCCUR OVER AND BE NAILED TO COMMON FRAMING OR BLOCKING WITH AN APPROPRIATE PANEL EDGE-NAILING SCHEDULE IN ACCORDANCE WITH IRC R602.10.4.4
- INTERIOR FINISH OF EXTERIOR WALLS SHALL BE MINIMUM 1/2" GYPSUM BOARD INSTALLED ON THE INTERIOR SIDE.
- FASTENED IN ACCORDANCE WITH IRC TABLE R702.3.5 (NOT REQUIRED ON CS-WSP PANELS ADJACENT TO CS-G OR CS-PF PANELS)

BRACING KEYNOTES:

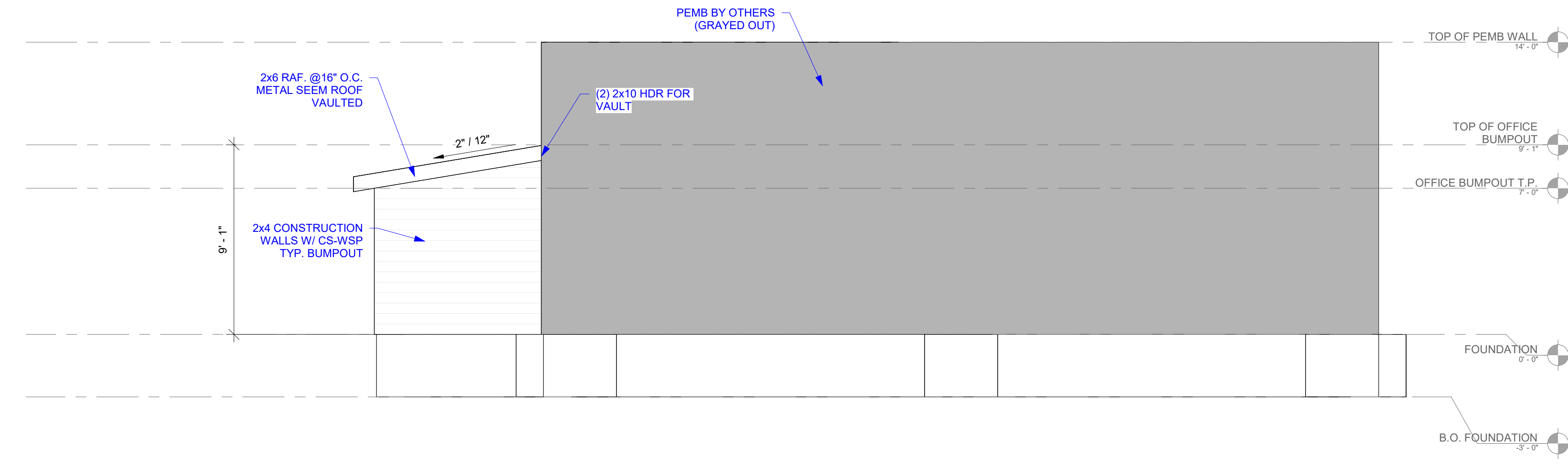
CS-WSP EXTERIOR BRACING METHOD CONT.
SHEATHED-WOOD
STRUCTURAL PANEL PER IRC R602.10.6.4



① FOUNDATION
1/4" = 1'-0"



② TRENCH FOOTING SECTION
N.T.S.



③ LEFT
1/4" = 1'-0"



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REVISIONS

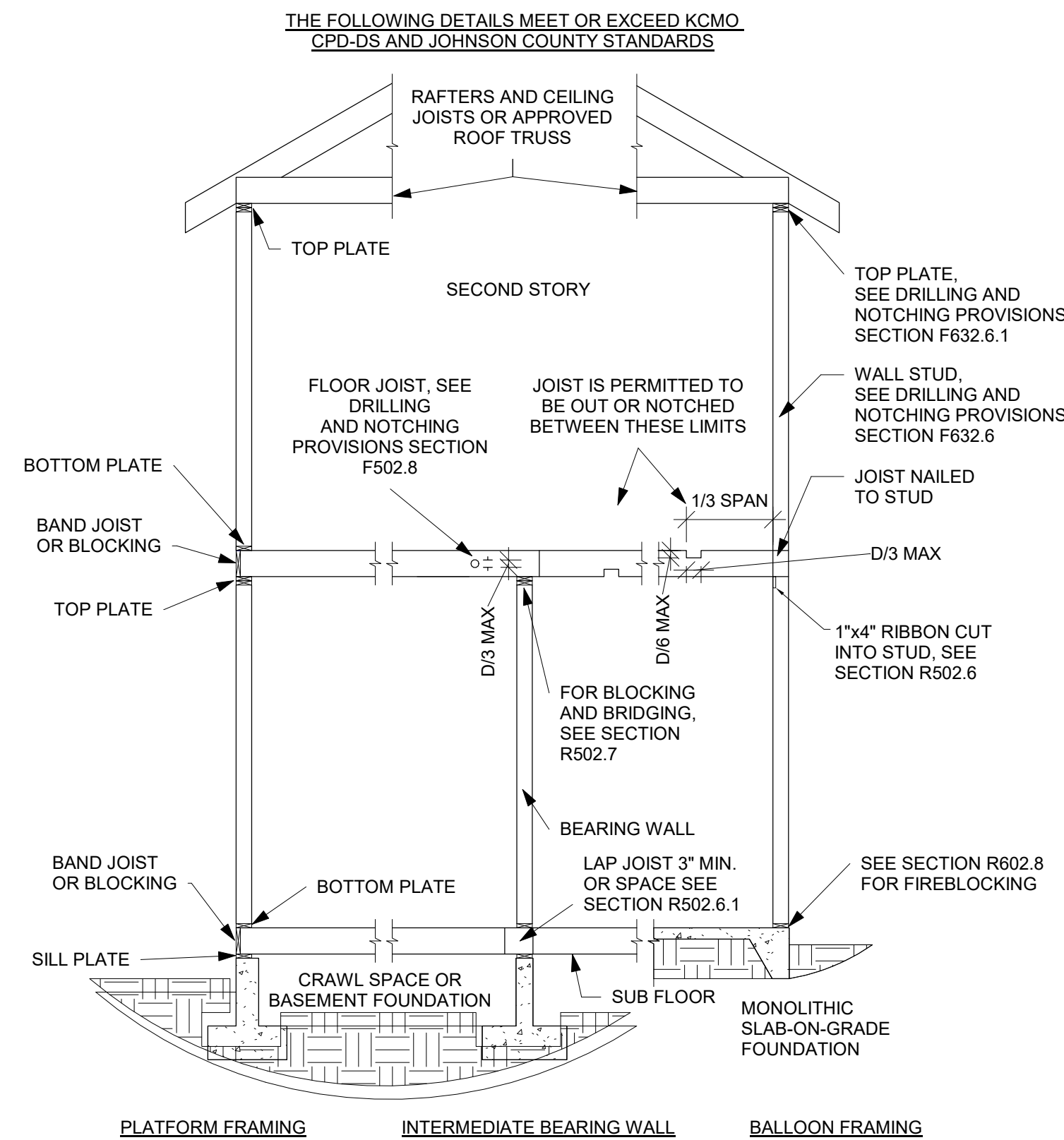
2 - 03/25/2022

FOUNDATION
PLAN

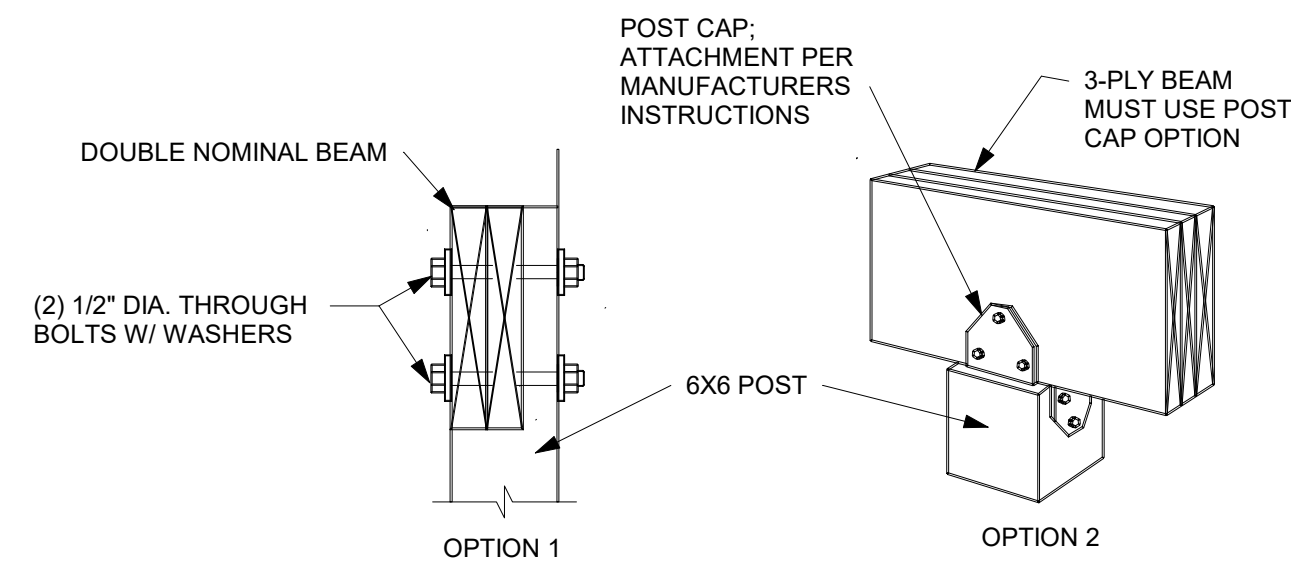
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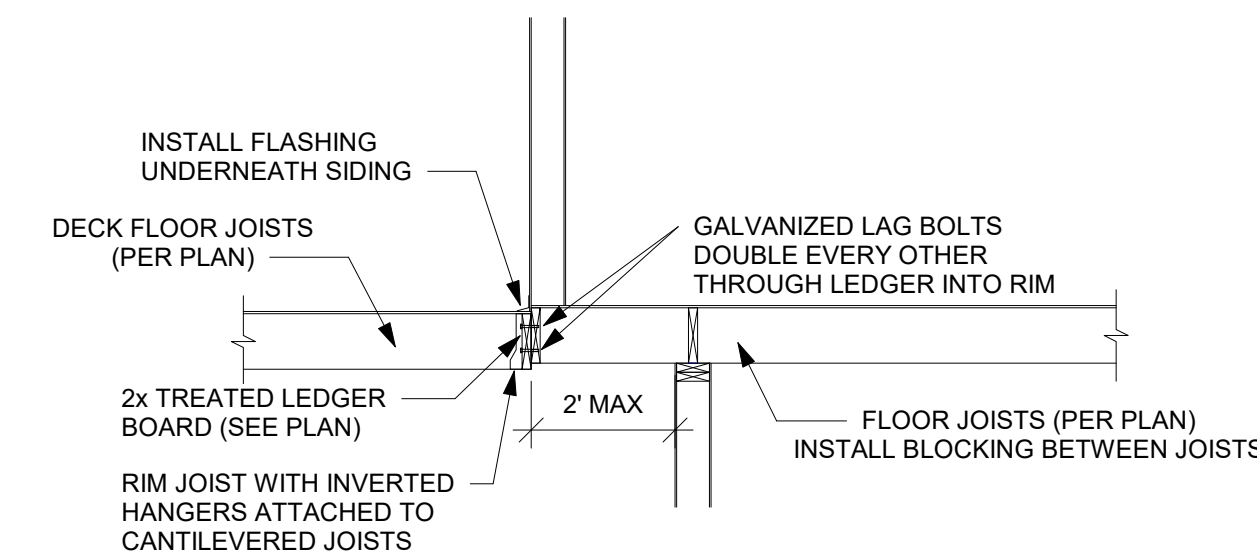
06/07/2022



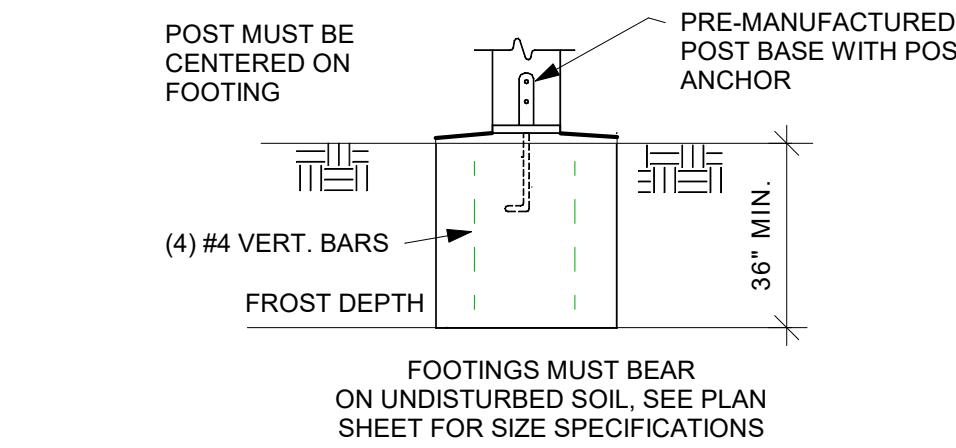
7 TYPICAL WALL, FLOOR, AND ROOF FRAMING DETAIL
NTS



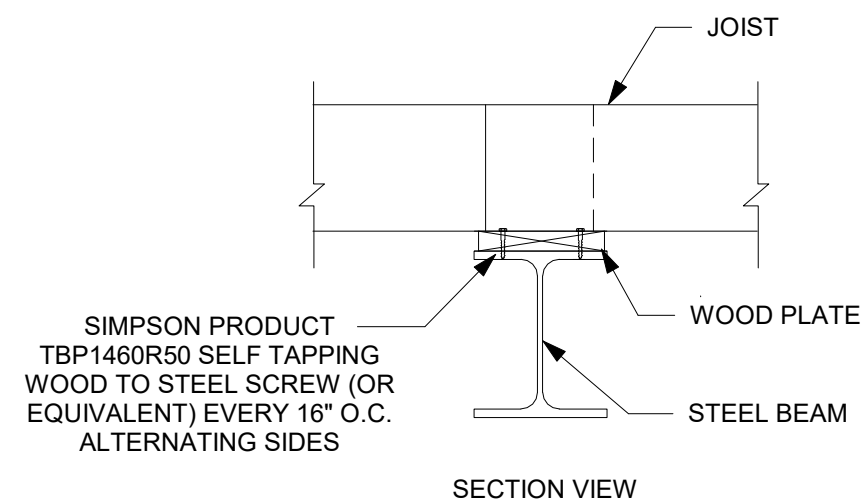
5 TYPICAL POST TO BEAM ATTACHMENTS DETAIL
NTS



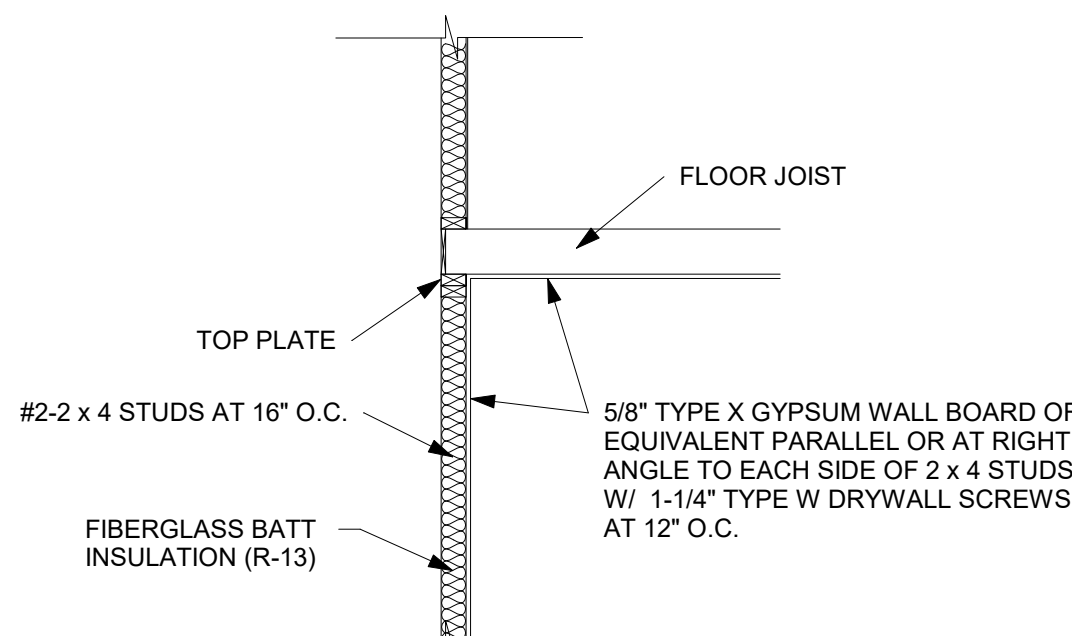
1 CANTILEVERED LEDGER DETAIL
NTS



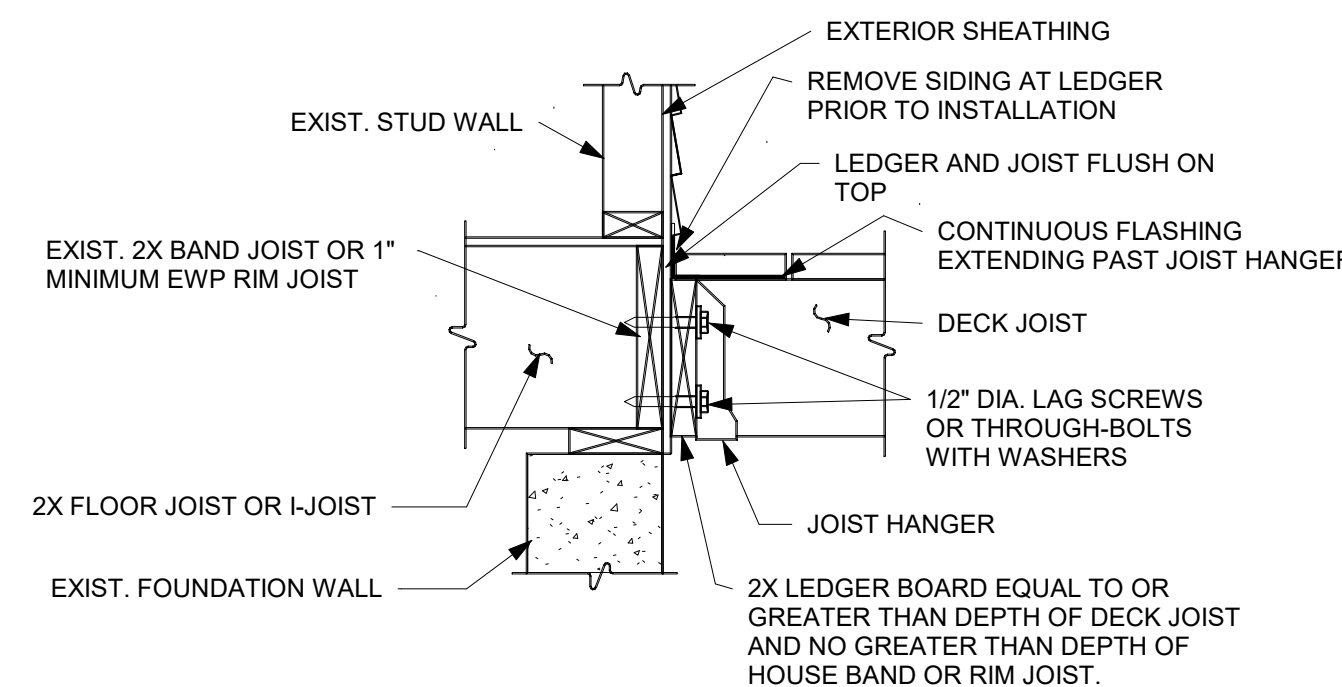
2 DECK PIER FOOTING DETAIL
NTS



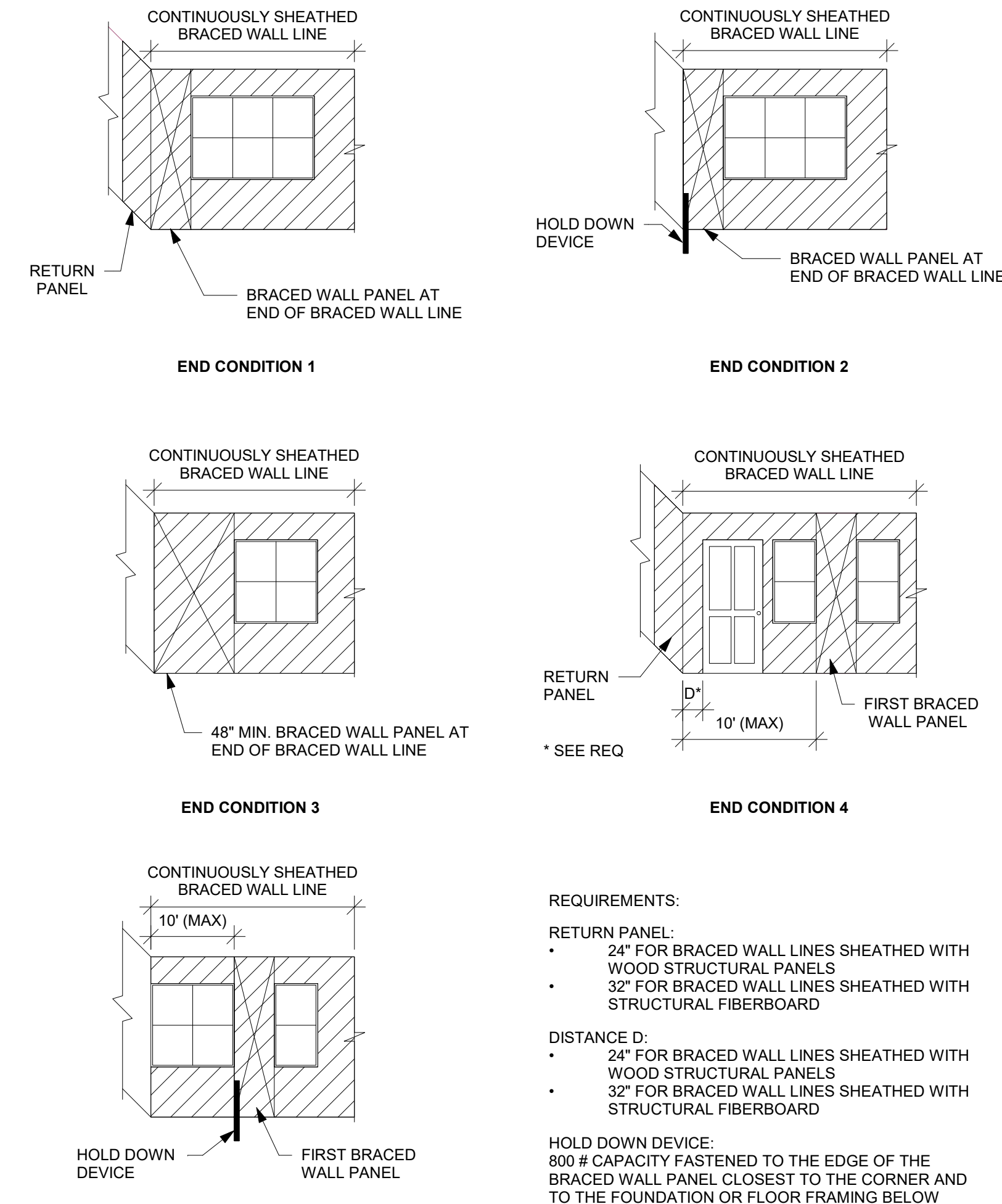
8 WOOD PLATE TO STEEL BEAM CONNECTION DETAIL
NTS



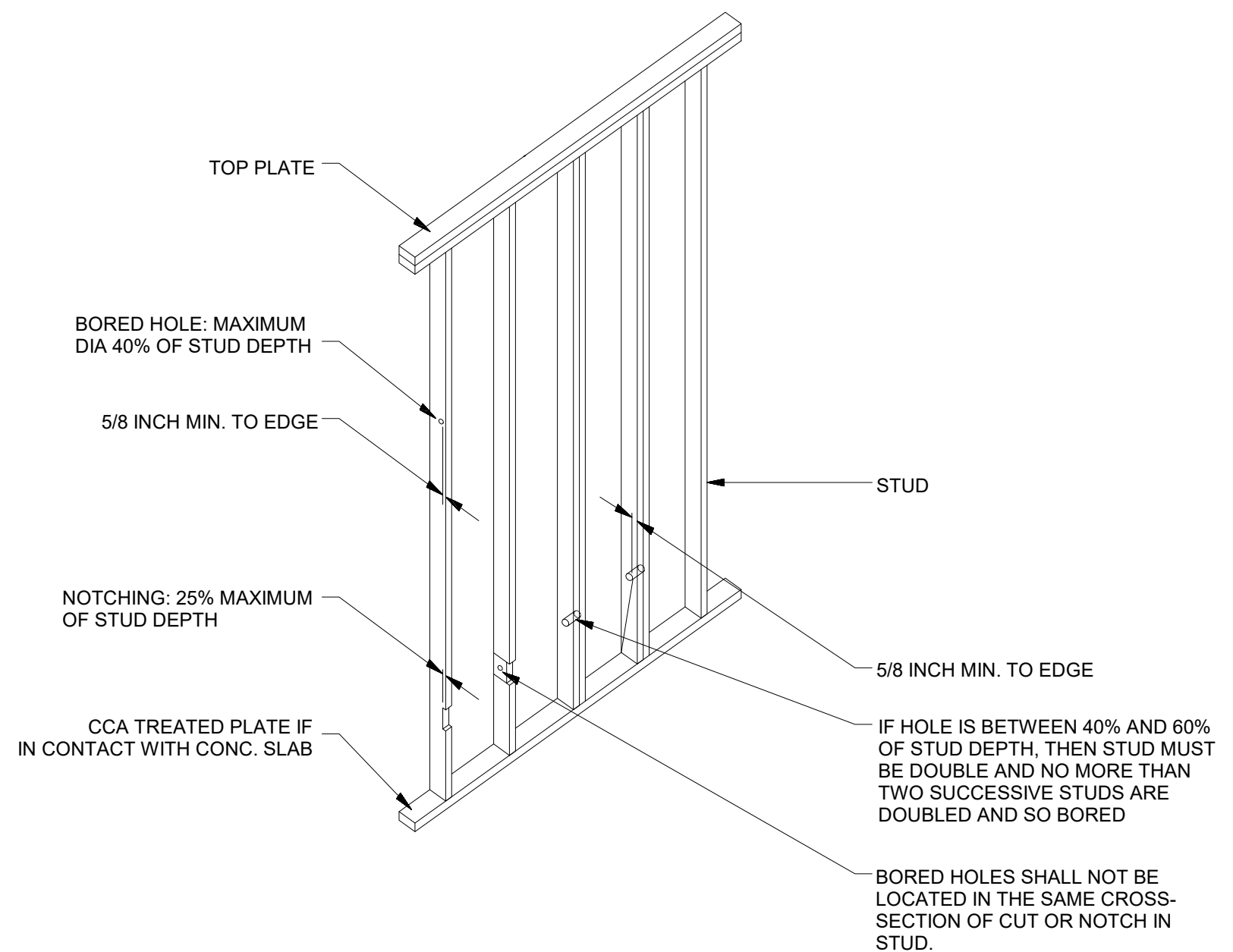
3 GARAGE FIRE SEPERATION DETAIL
NTS



4 LEDGER BOARD TO BAND BOARD DETAIL
NTS



6 CONTINUOUSLY SHEATHED END CONDITIONS
NTS

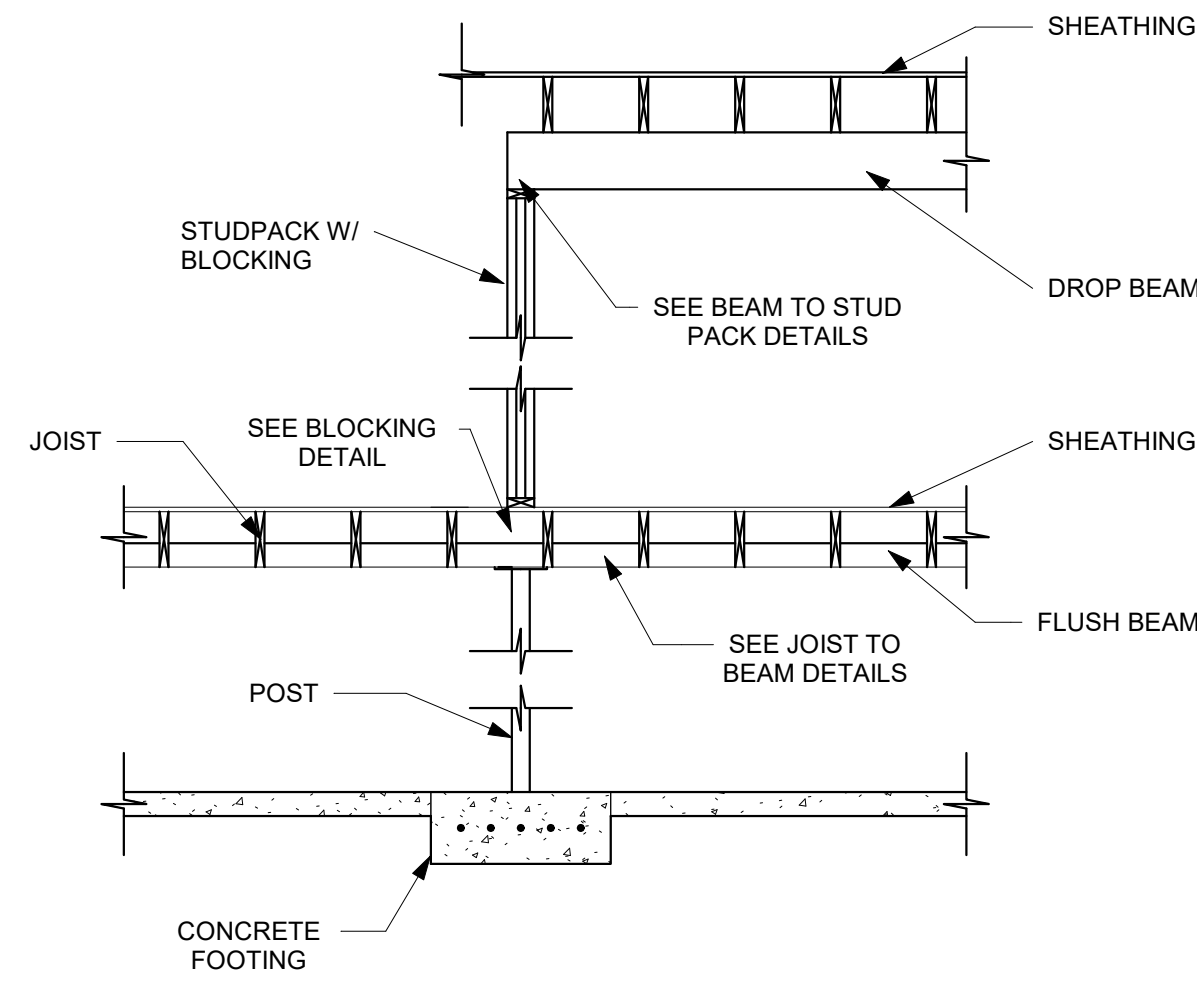


6 TYPICAL WALL NOTCHING DETAIL
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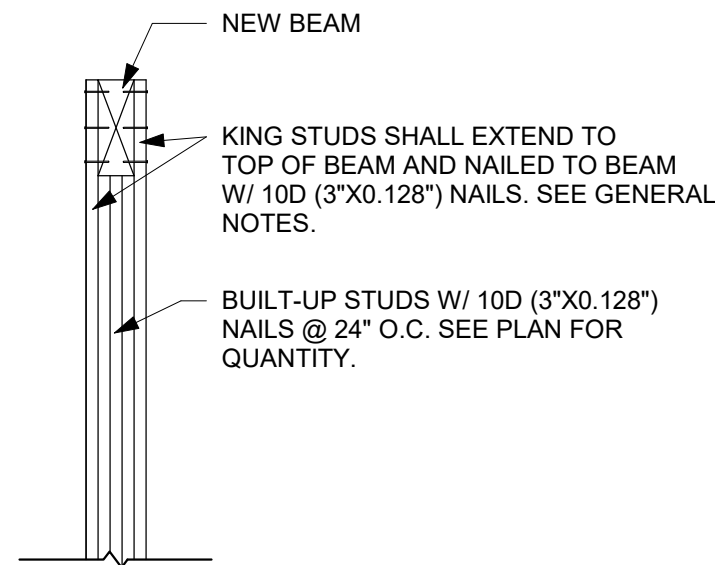
REVISIONS

**FRAMING
STANDARDS**

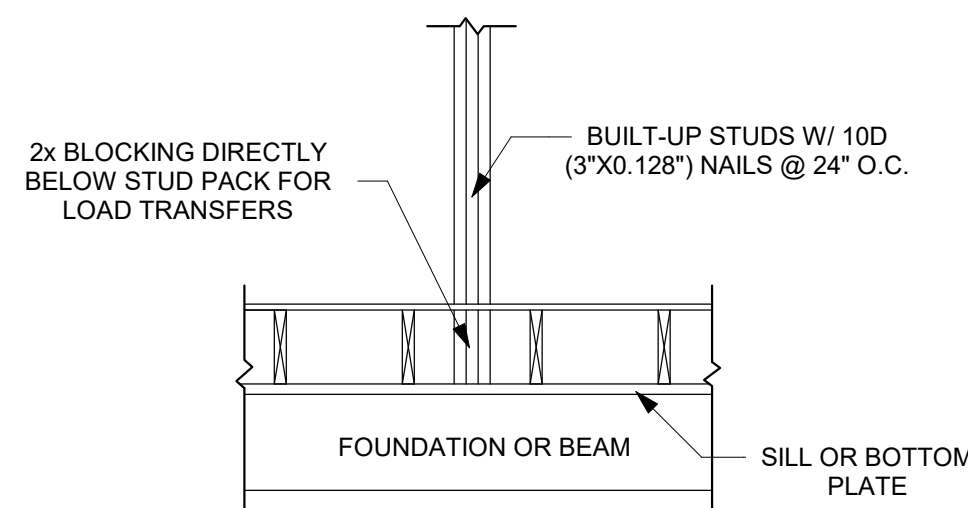
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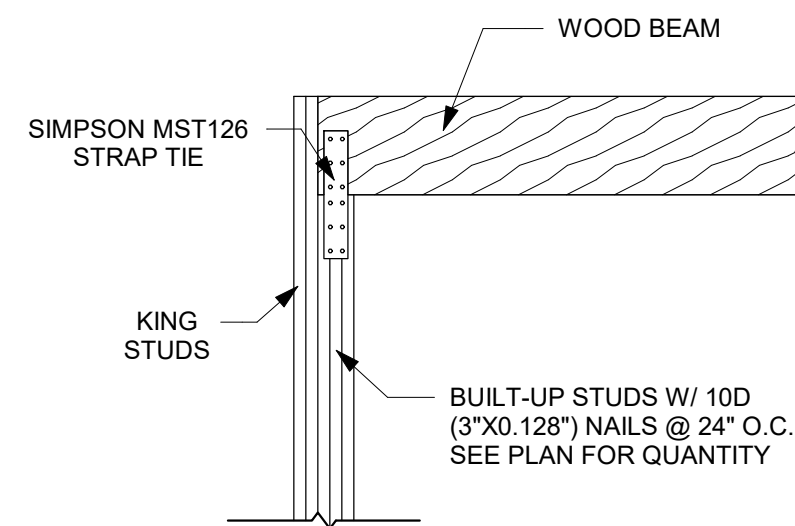
1 POST TO BEAM DETAIL
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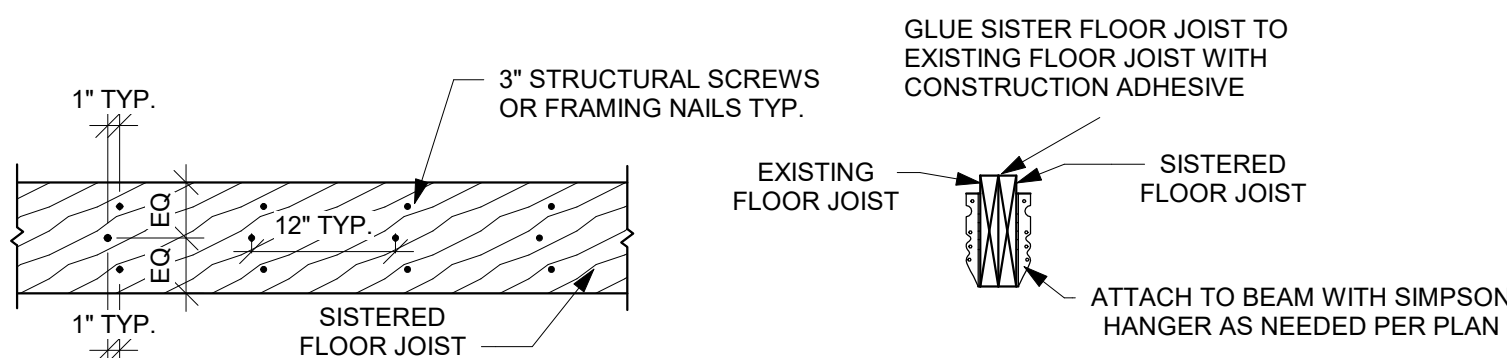
2 BEAM TO STUD PACK PERPENDICULAR
TO WALL DETAIL
NTS



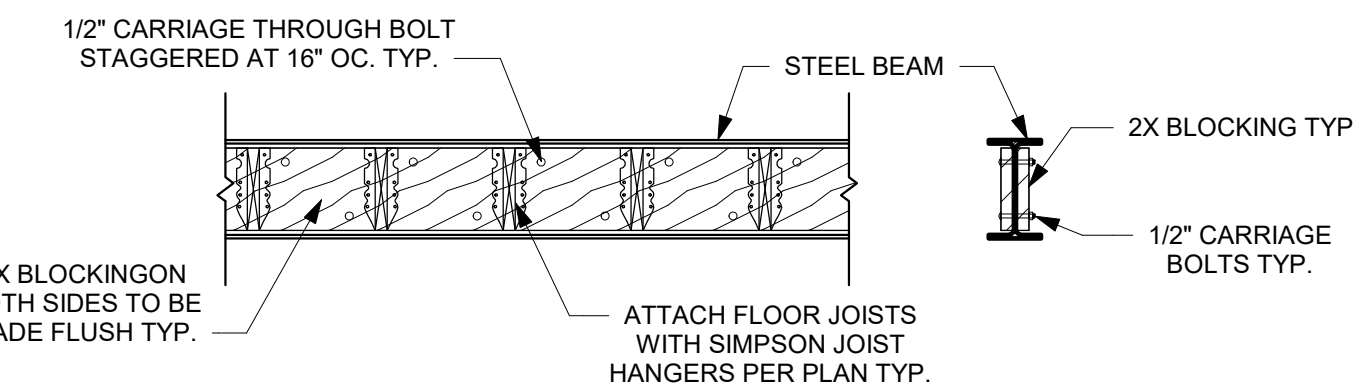
3 BLOCKING DETAIL
NTS



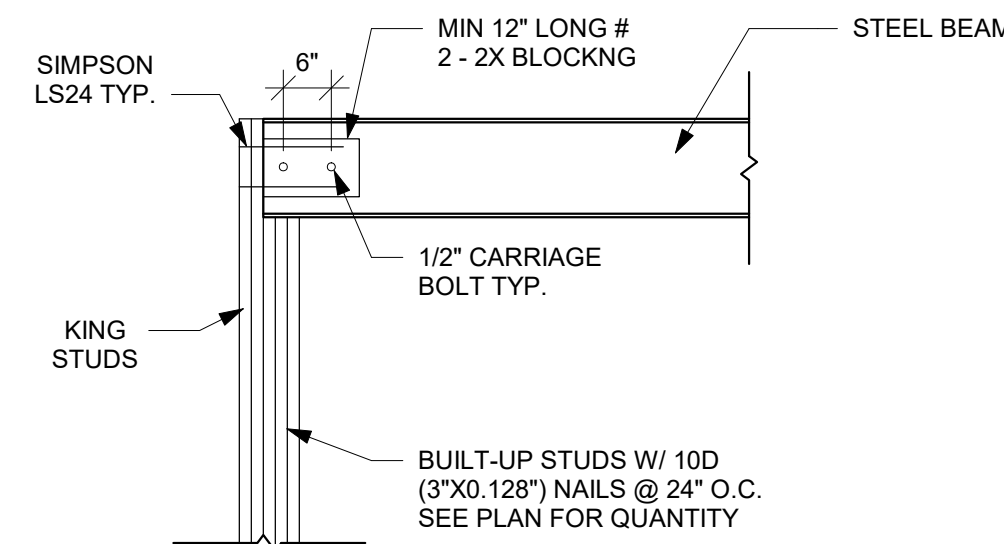
4 BEAM TO STUD PACK PARALLEL TO
WALL DETAIL
NTS



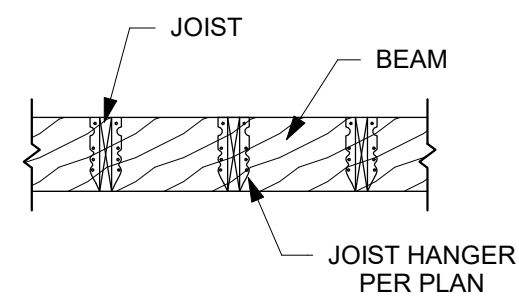
5 SISTERED FLOOR JOISTS DETAIL
NTS



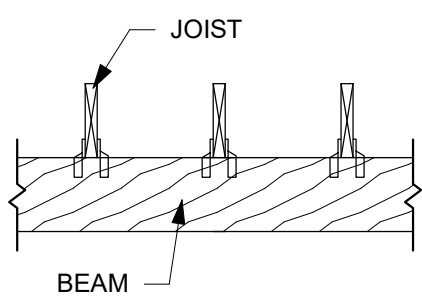
6 FLOOR JOIST TO STEEL BEAM DETAIL
NTS



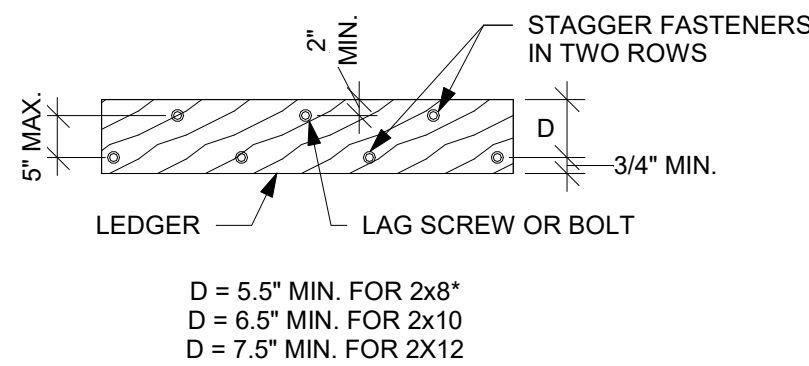
7 STEEL BEAM TO STUD PACK DETAIL
NTS



8 UPSET BEAM DETAIL
NTS



9 DROPPED BEAM DETAIL
NTS



10 LEDGER DIMENSION DETAIL
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**FRAMING
STANDARDS
CONTINUED**

S402

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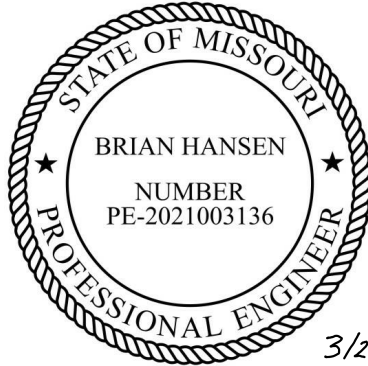
06/07/2022

BRACING METHODS TABLE R602.10.4 (PARTIAL)			
METHODS, MATERIAL	MINIMUM THICKNESS	CONNECTION CRITERIA	
		FASTENERS	SPACING
WSP - WOOD STRUCTURAL PANEL AND CS-WSP CONTINUOUSLY SHEATHED WOOD STRUCTURAL PANEL	3/8" PANEL W/ MINIMUM 24/0 STRUCTURAL PANEL SPAN RATING	6d COMMON NAILS (2.0" x .131") W/ MINIMUM 1.5" PENETRATION	6" EDGES, 12" FIELD
	7/16" PANEL W/ MINIMUM 24/16 STRUCTURAL PANEL SPAN RATING	8d COMMON NAILS (2.5" x .131") W/ MINIMUM 1.75" PENETRATION	6" EDGES, 12" FIELD
PFH - PORTAL FRAME WITH HOLD-DOWNS	3/8"	SEE DETAIL ON THIS PAGE	SEE DETAIL ON THIS PAGE
PFG - PORTAL FRAME AT GARAGE	3/8"	SEE IRC SECTION R602.10.6.3	SEE IRC SECTION R602.10.6.3
LIB LET-IN-BRACING	1x4 WOOD OR APPROVED METAL STRAPS AT 45 TO 60 DEGREE ANGLES FOR MAX 16" STUD SPACING	WOOD: 2-8d COMMON NAILS OR 3-8d (2-1/2" LONG x .113" DIA.) NAILS SIMPSON WB/WBC INSTALLED IN "X" PAIRS OR IN OPPOSING "V" FASHION AND FASTENED W/ (2) 16d COMMON NAILS FOR PLATE AND (1) 8d COMMON NAIL FOR STUDS	WOOD: PER STUD AND TOP AND BOTTOM PLATES METAL: PER STUD AND TOP AND BOTTOM PLATES
GB-GYPSUM BOARD	1/2"	1/2" INTERIOR SHEATHING W/ STUDS AT 16" O.C.: 13 GAGE, 1-3/8" LONG, 19/64" HEAD; .098" DIA., 1-1/4" LONG, ANNULAR-RINGED; 5d COOLER NAIL, .086" DIA., 1-5/8" LONG, 15/64" HEAD; OR GYPSUM BOARD NAIL, .086" DIA. 1-5/8" LONG, 9/32" HEAD PER TABLE R702.3.5 (SEE TABLE FOR OTHER PANEL THICKNESS OPTIONS)	FOR ALL BRACED WALL PANEL LOCATIONS: 7" EDGES (INCLUDING TOP AND BOTTOM PLATES) 7" FIELD
		EXTERIOR 1/2" SHEATHING: 1-1/2" GALVANIZED ROOFING NAIL; STAPLE GALVANIZED, 1-5/8" LONG; 1-1/4" SCREWS, TYPE W OR S PER TABLE R602.3(1)	
		EXTERIOR 5/8" SHEATHING: 1-3/4" GALVANIZED ROOFING NAIL; STAPLE GALVANIZED, 1-5/8" LONG; 1-5/8" SCREWS, TYPE W OR S PER TABLE R602.3(1)	

TABLE R507.9.1.3(2) PLACEMENT OF LAG SCREWS AND BOLTS IN DECK LEDGERS AND BAND JOISTS				
MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS (INCHES)				
	TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING
LEDGER	2	3/4	2	1-5/8 MIN. 5 MAX
BAND JOIST	3/4	2	2	1-5/8 MIN 5 MAX

DESCRIPTION OF BUILDING MATERIALS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION OF FASTENERS
ROOF		
BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	4-8d BOX (2-1/2"x0.113") OR 3-8d COMMON (2-1/2"x0.131") OR 3-10d BOX (3"x0.128") OR 3-3"x0.131" NAILS	TOE NAIL
CEILING JOISTS TO PLATE	4-8d BOX (2-1/2"x0.131") OR 3-8d COMMON (2-1/2"x0.131") OR 3-10 BOX (3"x0.128") OR 3-3"x0.131" NAILS	TOE NAIL
CEILING JOISTS NOT ATTACHED TO PARALLEL RAFTER LAPS OVER PARTITIONS	4-10d BOX (3"x0.128") OR 3-16d COMMON (3-1/2"x0.162") OR 4-3"x0.131" NAILS	FACE NAIL
COLLAR TIE TO RAFTER, FACE NAIL OR 1-1/4"x20 GAGE RIDGE STRAP	4-10d BOX (3"x0.128") OR 3-10d COMMON (3"x0.148") OR 4-3"x0.131" NAILS	FACE NAIL EACH RAFTER
RAFTER OR ROOF TRUSS TO TOP PLATE, TOE NAIL	4-16d BOX (3-1/2"x0.135") OR 3-10d COMMON (3"x0.148") OR 4-10d BOX (3"x0.128") OR 4-3"x0.131" NAILS	2 TOE NAILS ON ONE SIDE AND 1 TOE NAIL ON OPPOSITE SIDE OF EACH RAFTER OR TRUSS
ROOF RAFTERS TO RIDGE, VALLEY OR HIP RAFTERS	4-16d BOX (3-1/2"x0.135") OR 3-10d COMMON (3"x0.148") OR 4-10d BOX (3"x0.128") OR 4-3"x0.131" NAILS	TOE NAIL
	3-16d BOX (3-1/2"x0.135") OR 2-16d COMMON (3-1/2"x0.162") OR 3-10d BOX (3"x0.128") OR 3-3"x0.131" NAILS	END NAIL
WALL		
STUD TO STUD (NOT AT BRACED WALL PANELS)	16d COMMON (3-1/2"x0.162")	24" O.C. FACE NAIL
	10d BOX (3"x0.128") OR 3"x0.131" NAIL	16" O.C. FACE NAIL
STUD TO STUD AND ABUTTING STUDS AT INTERSECTION WALL CORNERS (AT BRACED WALL PANELS)	16d BOX (3-1/2"x0.135") OR 3"x0.131" NAIL	12" O.C. FACE NAIL
	16d COMMON (3-1/2"x0.162")	16" O.C. FACE NAIL
BUILT-UP HEADER, TWO PIECES WITH 1/2" SPACER	16d COMMON (3-1/2"x0.162")	16" O.C. EACH EDGE FACE NAIL
	16d BOX (3-1/2"x0.135")	12" O.C. EACH EDGE FACE NAIL
CONTINUOUS HEADER TO STUD	5-8d BOX (2-1/2"x0.113") OR 4-8d COMMON (2-1/2"x0.131") OR 4-10d BOX (3"x0.128")	TOE NAIL
TOP PLATE TO TOP PLATE	16d COMMON (3-1/2"x0.162")	16" O.C. FACE NAIL
	10d BOX (3"x0.128") OR 3"x0.131" NAIL	12" O.C. FACE NAIL
DOUBLE TOP PLATE SPLICE	8-16d COMMON (3-1/2"x0.162") OR 12-16d BOX (3-1/2"x0.135") OR 12-10d BOX (3"x0.128") OR 12-3"x0.131" NAILS	FACE NAIL ON EACH SIDE OF END JOINT (MINIMUM 24" LAP SPLICE LENGTH EACH SIDE OF END JOINT)
	16d COMMON (3-1/2"x0.162")	16" O.C. FACE NAIL
BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST, OR BLOCKING (NOT BRACED WALL PANELS)	-16d BOX (3-1/2"x0.135") OR 3"x0.131" NAIL	12" O.C. FACE NAIL
	3-16d BOX (3-1/2"x0.135") OR 2-16d COMMON (3-1/2"x0.162") OR 4-3"x0.131" NAILS	3 EACH 16" O.C. FACE NAIL 2 EACH 16" O.C. FACE NAIL 4 EACH 16" O.C. FACE NAIL
TOP OR BOTTOM PLATE TO STUD	4-8d BOX (2-1/2"x0.113") OR 3-16d BOX (3-1/2"x0.135") OR 4-8d COMMON (2-1/2"x0.131") OR 4-10d BOX (3"x0.128") OR 4-3"x0.131" NAILS	TOE NAIL
	3-16d BOX (3-1/2"x0.135") OR 2-16d COMMON (3-1/2"x0.162") OR 3-10d BOX (3"x0.128") OR 3-3"x0.131" NAILS	END NAIL
TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	3-10d BOX (3"x0.128") OR 2-16d COMMON (3-1/2"x0.162") OR 3-3"x0.131" NAILS	FACE NAIL
1" BRACE TO EACH STUD AND PLATE	3-8d BOX (2-1/2"x0.113") OR 2-8d COMMON (2-1/2"x0.131") OR 2-10d BOX (3"x0.128") OR 2 STAPLES 1-3/4"	FACE NAIL
1"x6" SHEATHING TO EACH BEARING	3-8d BOX (2-1/2"x0.113") OR 2-8d COMMON (2-1/2"x0.131") OR 2-10d BOX (3"x0.128") OR 2 STAPLES, 1" CROWN, 16 GA., 1-3/4" LONG	FACE NAIL
1"x8" AND WIDER SHEATHINGTO EACH BEARING	3-8d BOX (2-1/2"x0.113") OR 3-8d COMMON (2-1/2"x0.131") OR 3-10d BOX (3"x0.128") OR 3 STAPLES, 1" CROWN, 16 GA., 1-3/4" LONG	FACE NAIL
	WIDER THAN 1"x8"- 4-8d BOX (2-1/2"x0.113") OR 3-8d COMMON (2-1/2"x0.131") OR 3-10d BOX (3"x0.128") OR 4 STAPLES, 1" CROWN, 16 GA., 1-3/4" LONG	

DESCRIPTION OF BUILDING MATERIALS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION OF FASTENERS	
FLOOR			
JOIST TO SILL, TOP PLATE, OR GIRDER	4-8d BOX (2-1/2"x0.113") OR 3-8d COMMON (2-1/2"x0.131") OR 3-10d BOX (3"x0.128") OR 3-3"x0.131" NAILS	TOE NAIL	
RIM JOIST, BAND JOIST OR BLOCKING TO SILL OR TOP PLATE (ROOF APPLICATIONS ALSO)	8d BOX (2-1/2"x0.113")	4" O.C. TOE NAIL	
	8d COMMON (2-1/2"x0.131") OR 10d BOX (3"x0.128") OR 3"x0.131" NAIL	6" O.C. TOE NAIL	
1"x6" SUBFLOOR OR LESS TO EACH JOIST	3-8d BOX (2-1/2"x0.113") OR 2-8d COMMON (2-1/2"x0.131") OR 3-10d BOX (3"x0.128") OR 2 STAPLES, 1" CROWN, 16 GA., 1-3/4" LONG	FACE NAIL	
2" SUBFLOOR TO JOIST OR GIRDER	3-16d BOX (3-1/2"x0.135") OR 2-16d COMMON (3-1/2"x0.162")	BLIND AND FACE NAIL	
2" PLANKS (PLANK & BEAM-FLOOR & ROOF)	3-16d BOX (3-1/2"x0.135") OR 2-16d COMMON (3-1/2"x0.162")	AT EACH BEARING FACE NAIL	
BAND OR RIM JOIST TO JOIST	3-16d COMMON (3-1/2"x0.162") OR 4-10d BOX (3"x0.128") OR 4-3"x0.131" NAILS OR 4 3"x14 GA. STAPLES, 7/16" CROWN	END NAIL	
BUILT-UP GIRDERS AND BEAMS, 2" LUMBER LAYERS	20d COMMON (3"x0.128")	NAIL EACH LAYER AS FOLLOWS: 32" O.C. AT TOP END AND BOTTOM AND STAGGERED.	
	10d BOX (3"x0.128") OR 3"x0.131" NAIL	24" O.C. FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES	
	AND: 2-20d COMMON (4"x0.192") OR 3-10d BOX (3"x0.128") OR 3-3"x0.131" NAILS	FACE NAIL AT ENDS AND AT EACH SPLICE	
LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	4-16d BOX (3-1/2"x0.135") OR 3-16d COMMON (3-1/2"x0.162") OR 4-10d BOX (3"x0.128") OR 4-3"x0.131" NAILS	AT EACH JOIST OR RAFTER, FACE NAIL	
BRIDGING OR BLOCKING TO JOIST	2-10d BOX (3"x0.128") OR 2-8d COMMON (2-1/2"x0.131") OR 2-3"x0.131" NAILS	EACH END, TOE NAIL	
DESCRIPTION OF BUILDING MATERIALS	NUMBER AND TYPE OF FASTENER	EDGES (IN)	INTERMEDIATE SUPPORTS (IN)
WOOD STRUCTURAL PANELS, SUBFLOOR, ROOF AND INTERIOR WALL SHEATHING TO FRAMING AND [SEE TABLE R602.3(3) FOR WOOD STRUCTURAL PANEL EXTERIOR WALL SHEATHING TO WALL FRAMING]			
3/8" - 1/2"	6d COMMON (2"x0.113") NAIL (SUBFLOOR, WALL) OR 8d COMMON (2-1/2"x0.131") NAILS (ROOF) OR RSRS-01 (2-3/8"x0.113") NAIL (ROOF)	6	12
19/32" - 1"	8d COMMON NAIL (2-1/2"x0.131") OR RSRS-01 (2-3/8"x0.113") NAIL (ROOF)	6	12
1-1/8" - 1-1/4"	10d COMMON (3"x0.148") NAIL OR 8d (2-1/2"x0.131") DEFORMED NAIL	6	12
OTHER WALL SHEATHING			
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
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
1/2" GYPSUM INTERIOR COVERING (R702.3.5)	1-1/2" GALVANIZED ROOFING NAIL: STAPLE GALVANIZED, 1-1/2" LONG; 1-1/4" SCREWS, TYPE "W" OR "S"	7	7
5/8" GYPSUM INTERIOR COVERING (R702.3.5)	1-3/4" GALVANIZED ROOFING NAIL: STAPLE GALVANIZED, 1-5/8" LONG; 1-5/8" SCREWS, TYPE "W" OR "S"	7	7
WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING			
3/4" AND LESS	6d DEFORMED (2"x0.120") NAIL OR 8d COMMON (2-1/2"x0.131") NAIL	6	12
7/8" - 1"	8d COMMON (2-1/2"x0.131") NAIL OR 8d DEFORMED (2-1/2"x0.120") NAIL	6	12
1-1/8" - 1-1/4"	10d COMMON (3"x0.148") NAIL OR 8d DEFORMED (2-1/2"x0.120") NAIL	6	12



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REVISIONS

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