

GENERAL NOTES & DESIGN CRITERIA

DESIGN LOADS:

- * Floor: 40 psf. live Roof: 30 psf. live Ceiling: 10 psf. live
15 psf. dead 10 psf. dead 10 psf. dead
- * Soil bearing Capacity - 2000 PSF
- * Live loads, dead loads, wind loads, snow loads, lateral loads, seismic zoning and any specialty loading conditions will need to be confirmed before construction and adjustments to plans made accordingly. See your local building officials for verification of your specific load data, zoning restrictions and site conditions.

CONCRETE AND FOUNDATIONS:

- * All foundation walls and slabs on grade shall be 3000 PSI (28-day compressive strength concrete), unless noted otherwise.
- * All interior slabs on grade shall bear on 4" compacted granular fill with 6 mil. polyethylene vapor barrier underneath.
- * Provide proper expansion and control joints as per local requirements.
- * All 36" x 36" x 18" concrete pads to have (3) #5 rods each way.
- * All 48" x 48" x 18" concrete pads to have (4) #5 rods each way.
- * Foundation walls are not to be backfilled until properly braced.
- * Verify depth of frost footings with your local codes.
- * Provide termite protection as required by HUD minimum property standards.
- * Foundation bolts must be anchored to sill plate with 1/2" bolts embedded 15" in concrete walls.

REBAR & BOLT SCHEDULE:

BAR SIZE AND SPACING	VERTICAL	HORIZONTAL
8" Wall thickness	#5 @ 16" o.c.	#5 @ 16" o.c.
10" Wall thickness (w-brick)	#5 @ 12" o.c.	#5 @ 16" o.c.

EXTERIOR FILL	BOLT SPACING
0" to 3'-6"	72" o.c.
3'-7" to 6'-0"	48" o.c.
6'-1" to 7'-0"	32" o.c.
Over 7'-0"	Additional engineering may be required

STEEL:

- * All structural steel for beams and plates shall comply with ASTM specification A-36.
- * All structural steel for steel columns shall comply with ASTM specification A-53 Grade B or A-501.
- * All reinforcing steel for concrete shall comply with ASTM specification A-615 Grade 60.
- * Provide steel shims in all beam pockets.
- * Steel columns are to be 3" I.D. (inside diameter) unless noted otherwise.

FRAMING MEMBERS:

- * Unless noted otherwise, all framing lumber shall have the following characteristics:
Fb = 1,000 psi Fv = 75 psi E = 1,400,000 psi
- * Unless noted otherwise, all engineered wood shall have the following characteristics:
Fb = 2,400 psi Fv = 195 psi E = 2,800,000 psi
- * Contractor to confirm the size, spacing and stress characteristics of all framing and structural members to meet your local code requirements.
- * Hole sizes and locations in GluLam or Laminated Veneered Lumber members are to be confirmed by a professional engineer.
- * Any structural or framing members not indicated on the plan are to be sized by contractor.
- * Double floor joists under all partition walls, unless noted otherwise.
- * All subflooring is assumed to be 3/4" thick - Glued&Nailed
- * All exterior walls are dimensioned to outside of 1/2" sheathing.
- * All exterior walls are 4" (3 1/2" stud plus 7/16" minimum or 1/2" APA rated sheathing).
- * All interior walls are 3 1/2" unless otherwise shown.
- * Calculated dimensions take precedence over scaled dimensions.
- * All walls are 8'-1 1/8" high unless otherwise noted or implied.
- * All angled walls on floor plans are at 45 degree angle, unless otherwise noted.

FRAMING MEMBERS (continued):

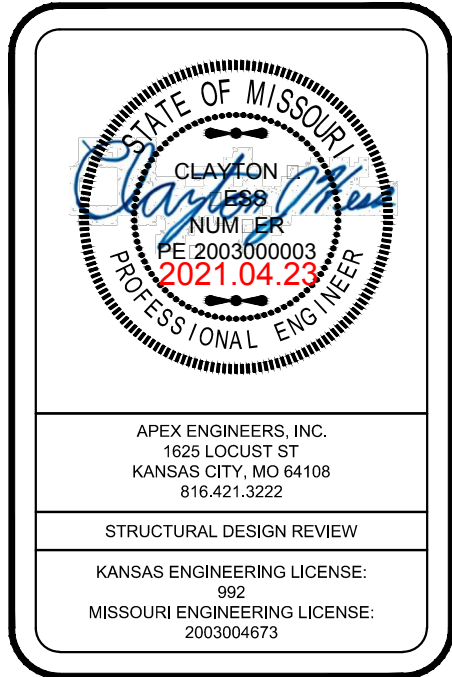
- * Any wall 12'-0" high or higher shall be 2x6 and balloon framed. Unless noted otherwise, above all openings that are:
(1) Load bearing and less than or equal to 3 ft. use 4x6 Doug. Fir or 3 1/2"x6" EWS glulam.
(2) Load bearing and more than 3 ft. use (2) 1 3/4" x 9 1/4" LVL or 3 1/2"x10 1/2" EWS glulam.
(3) Non-load bearing and less than or equal to 6 ft. use 4x6 Doug. Fir or 3 1/2"x6" EWS glulam.
(4) Non-load bearing and more than 6 ft. use (2) 1 3/4" x 9 1/4" LVL or 3 1/2"x10 1/2" EWS glulam.
(5) All exterior openings use (2) 1 3/4" x 9 1/4" LVL. or 3 1/2"x7 1/2" minimum unless noted otherwise
- * All trusses to be engineered by truss manufacturer according to the loading indicated on this plan.
- * Place (1) row of 1" x 3" cross-bridging on all spans over 8'-0" and (2) rows of 1" x 3" cross-bridging on all spans over 16'-0".
- * Collar ties are to be spaced 4'-0" o.c.
- * All purlins and kickers are to be 2x6's, unless noted otherwise.
- * Any hip or valley rafters over a 28'-0" span are to be Laminated Veneer Lumber (L.V.L.).
- * Do not mix dimension lumber with engineered wood in floor systems
- * Provide LVL or I-joist blocking between joists and cantilevers
- * Provide squash blocks at I-joists under brick faced fireplaces

MISC. NOTES:

- * Prefabricated fireplaces and flues are to be U.L. approved and installed as per manufacturer's specifications.
- * All materials, supplies and equipment to be installed as per manufacturer's specifications and as per local codes and requirements.
- * Note: Provide proper insulation for all plumbing.
- * 1/2" water-resistant drywall around showers, tubs and whirlpools.
- * 1/2" drywall on interior walls and ceilings.
- * 5/8" type "X" fire code drywall on garage walls and ceilings.
- * Windows are called out by glass size only.
- * Windows, if not noted, are assumed to be casements.
- * Header heights are labeled to bottom of arched transoms
- * Confirm window openings for your local egress requirements and minimum light and ventilation requirements.
- * Headroom at stairs shall have a minimum clearance of 6'-8" high.
- * Provide proper handrails at stairs as per local code.
- * The mechanical and electrical layouts are suggested only. Consult your mechanical and electrical contractors for exact specifications, locations and sizes.
- * Jog flue to rear of ridge as necessary.
- * Note: Provide proper wiring for all electrical appliances, mechanical equipment and whirlpools as per manufacturer's specifications.
- * All air conditioner locations may vary depending on restrictive covenants and codes.
- * Typical overhang sizes unless noted otherwise on drawing are as follows:

On pitches of 4/12 - 5/12 - 6/12 = 24" overhang
7/12 = 20" overhang
8/12 = 16" overhang
9/12 = 16" overhang
10/12 - 11/12 - 12/12 = 12" overhang

- * Note: Adjust overhangs to provide clearance for windows to open. Adjust overhangs to maintain a consistent level when the plans call for (2) different pitches at a hip.
- * Minor alterations to this plan can be made by builder. Please contact our drafting department for information and price quotes if major changes are required.
- * Plan Pros, Inc. determines finished square footage by measuring to the outside of all walls. We include: interior fireplaces and every location in which the floor joists project from the foundation. We do not include: window boxes where the floor joists do not project from the foundation; 2-story entries; exterior fireplaces; garage; decks; patios; porches; unfinished storage areas; basements or any other unfinished areas.



ABBREVIATIONS

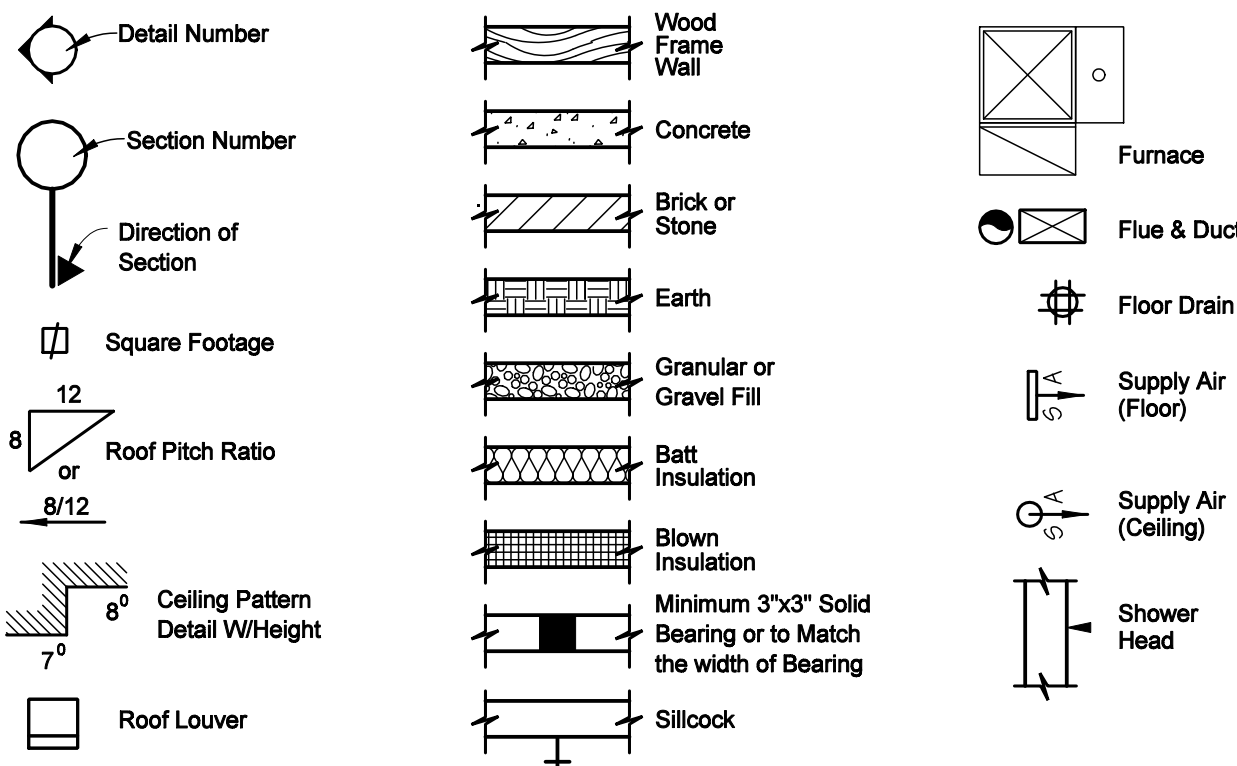
A/C ADJ AWN BLDG BSMT BTM CANT C.J. CLG CEIL CMU C.O. CNC DBL DH	Air Conditioner Adjustable Awning Building Basement Bottom Between Cantilever Ceiling Joist Ceiling Concrete Masonry Unit Cased Opening Concrete Double Double Hung	DISH DN DRY EA ENT EXP EXT FIN F.J. FLUOR FTG GALV GARB G & N G.L. HDR	Dishwasher Down Dryer Each Entertainment Exposure Exterior Finished Floor Joist Fluorescent Footing Galvanized Garbage Disposal Glued & Nailed GluLam Header Header	INSUL INT JST LVL LIN LIN MAX MBR MICRO MIN MISC O.C. O.H.D. OPNG PC PICT POLY	Insulation Interior Joist Laminated Veneer Lumber Linen Maximum Master Bedroom Microwave Minimum Miscellaneous On Center Overhead Door Opening Pul Chord Picture Polyethylene	PROJ RAD RAFT'S REFRIG RM SEC SHWR S.L. SFP STA STD STL STRUCT T.C. T & G TRANS	Projection Radius Rafters Refrigerator Room Second Shower Side Lite Sump Pump Pit Stationary Standard Steel Structural Trash Compactor Tongue & Groove Transom	TRAP U.L. UNEX WASH WD WH W.W.M. @ 2W 4W W/ At Line Two Wide Three Wide Four Wide Center Line With Diameter	Trapezoid Underlayment Unexcavated Washer Wood Water Heater Welded Wire Mesh
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ARTIST CONCEPTION ONLY

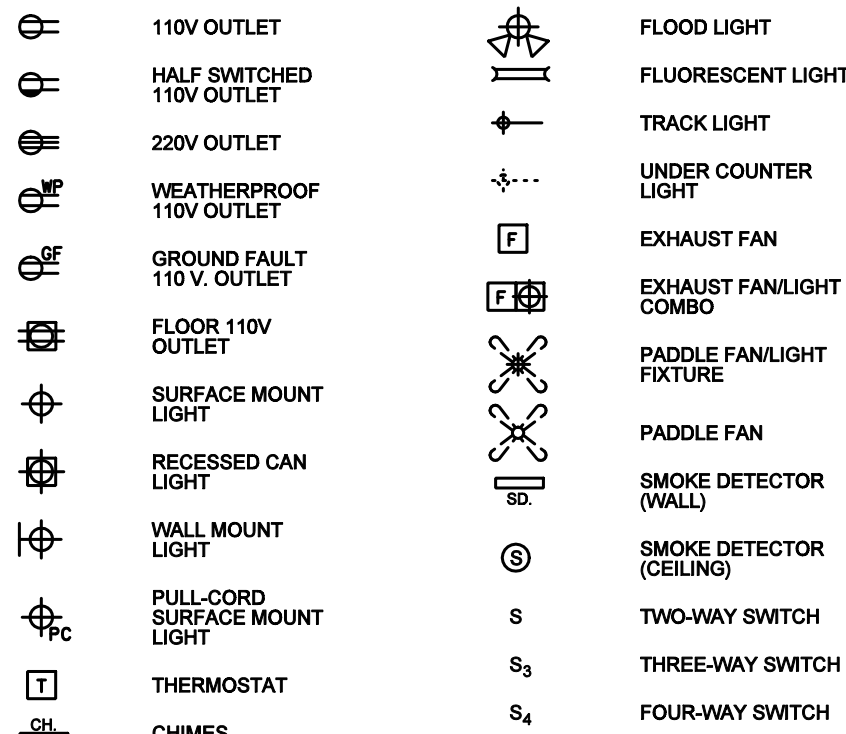
ARTWORK NOT TO SCALE



SYMBOLS



ELECTRICAL LEGEND



NOTE: WIRE SMOKE DETECTORS IN SERIES

517 SE Carter Road Lees Summit MO

RELEASE FOR
CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
09/11/2021

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2X6

209383

Plan No.

Sheet No.

1

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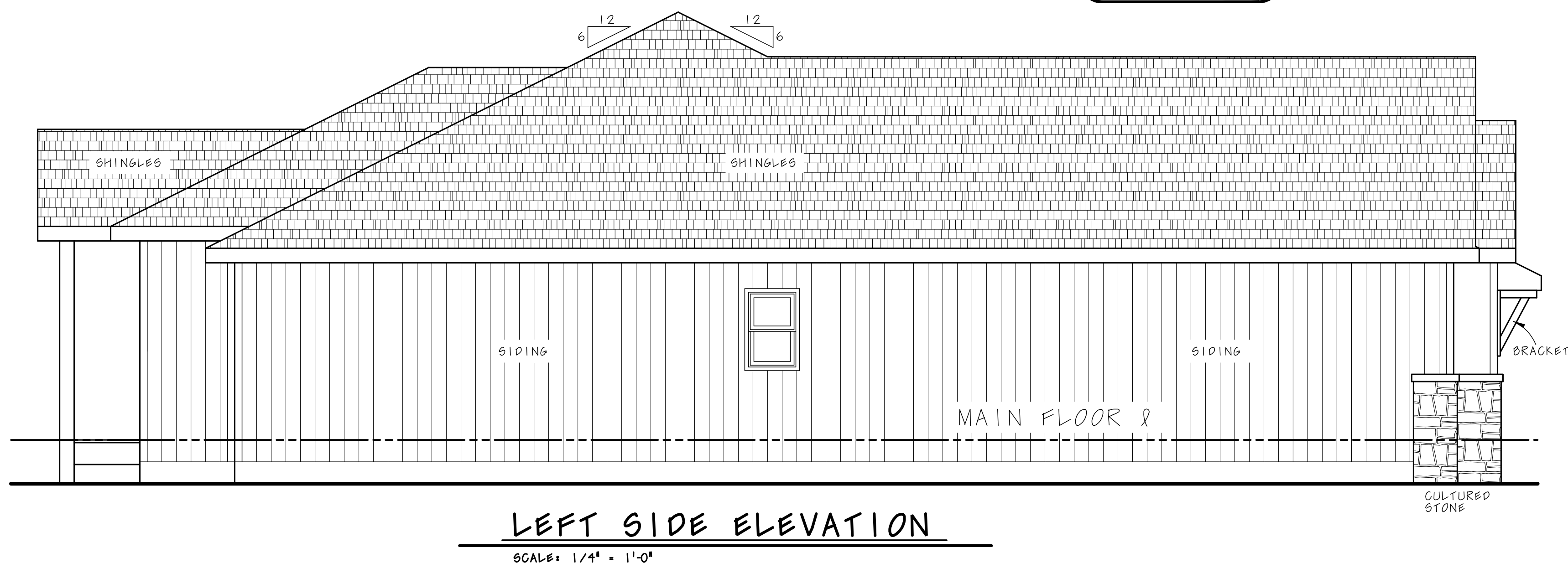
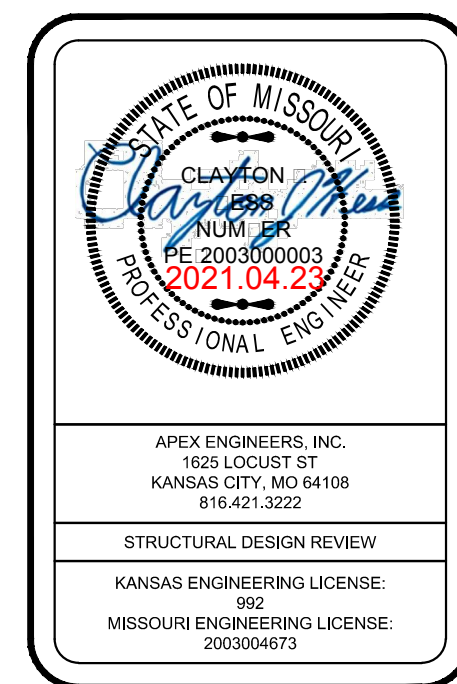
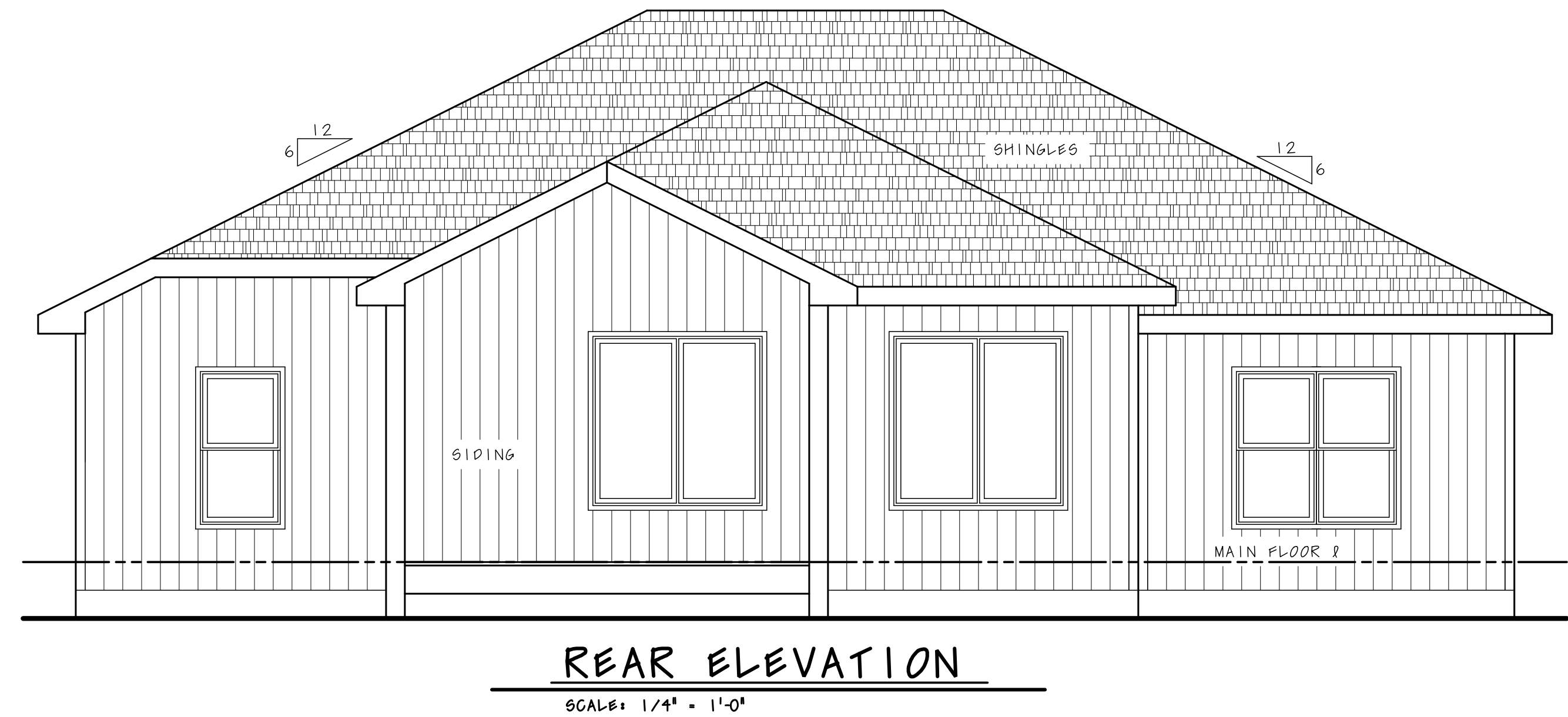
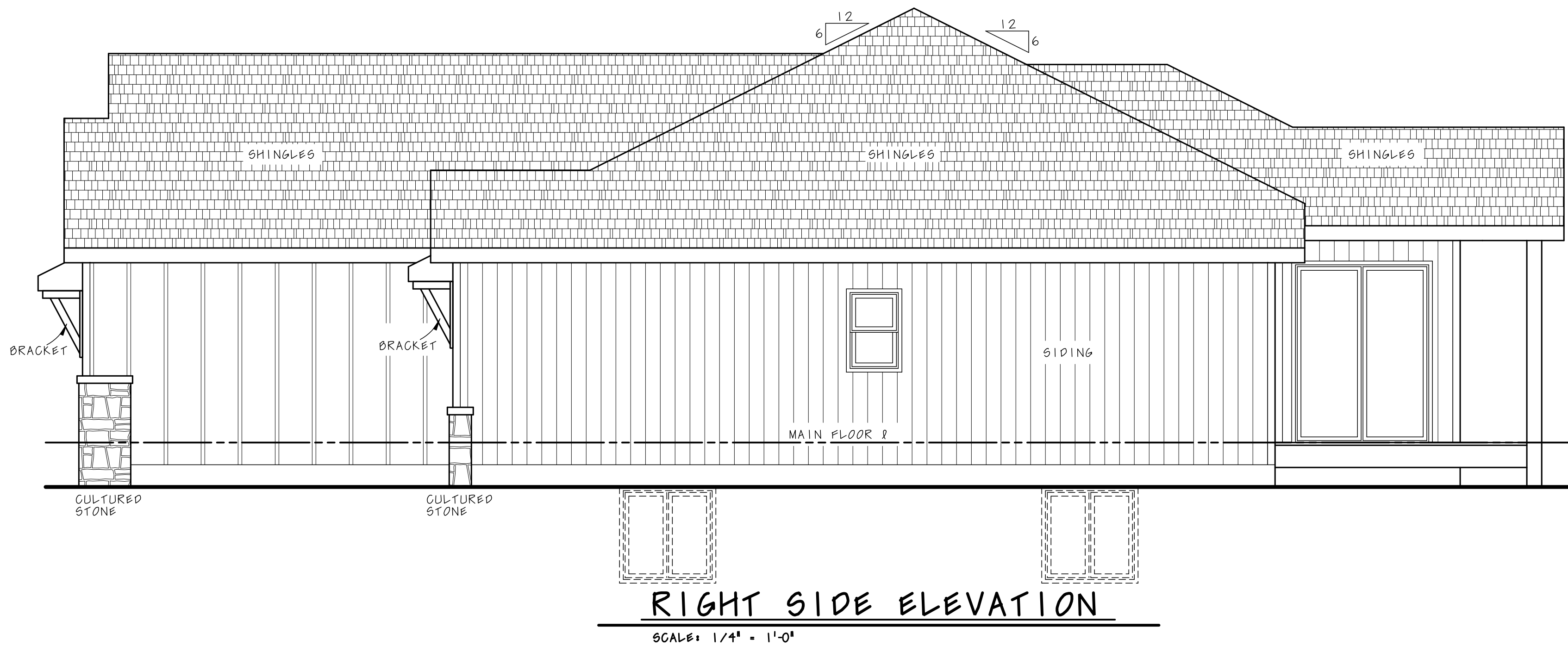
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Lot 28- Cobey Creek
388392
Revised: 4-23-21

2X6 Plan
Plan No.

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RELEASE FOR
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DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
06/11/2021



ROOF FRAMING NOTES

ROOF DESIGNED FOR LIGHT ROOF COVERING
30psf TOTAL LOAD [10psf DL, 20psf LL (SL)]

ROOF SYSTEM IS DESIGNED TO MEET REQUIREMENTS
OF IRC 802

*RAFTERS (HEM-FIR, DOUG-FIR, OR EQUAL):
SEE SPAN CHARTS BELOW

CODE MINIMUM			
RAFTERS	SPACING		MAX HORIZONTAL CLEARSPAN
#2-2x6	AT 24" OC		11'-7"
#2-2x6	AT 16" OC		14'-2"
#2-2x8	AT 24" OC		14'-8"
#2-2x8	AT 16" OC		17'-11"
#2-2x10	AT 24" OC		17'-10"
#2-2x10	AT 16" OC		21'-11"

NOTE: CODE MINIMUM ALLOWS FOR A RAFTER DEFLECTION OF L/180 TOTAL LOAD

HIGHER PERFORMANCE

RAFTERS	SPACING		MAX HORIZONTAL CLEARSPAN
#2-2x6	AT 24" OC		8'-6"
#2-2x6	AT 16" OC		9'-9"
#2-2x8	AT 24" OC		11'-3"
#2-2x8	AT 16" OC		12'-9"
#2-2x10	AT 24" OC		14'-3"
#2-2x10	AT 16" OC		16'-3"

APEX ENGINEERS, INC. RECOMMENDED
DEFLECTION = L/360 LIVE LOAD, L/240 TOTAL LOAD

*RIDGE BOARDS ARE (UNLESS OTHERWISE NOTED)

#2-2x10 UP TO 9:12 PITCH

#2-2x12 OVER 9:12 PITCH

*ALL HIP AND VALLEYS ARE (UNLESS OTHERWISE NOTED)

#2-2x10 UP TO 9:12 PITCH

#2-2x12 OVER 9:12 PITCH

*PURLINS ARE 2x6 MIN

- PURLIN STRUTS ARE AT 4'-0" OC

- PURLIN STRUTS SHALL BE INSTALLED AT NOT LESS
THAN A 45 DEGREE ANGLE WITH THE HORIZONTAL

- ALL PURLIN STRUTS SHALL HAVE A MAX UNBRACED
LENGTH OF 8'-0"

- PURLIN STRUTS SHALL BE CONSTRUCTED IN A "T"
CONFIGURATION AND PER THE FOLLOWING CHART:

PURLIN STRUT	MAX PURLIN STRUT LENGTH
(2)2x4	8'-0"
(1)2x4 AND (1)2x6	12'-0"
(1)2x6 AND (1)2x8	20'-0"
(2)2x6 AND (1)2x8	30'-0"
CONSULT ARCH ENGR	>30'-0"

*EACH END OF STRUT SHALL BE FASTENED WITH MIN (3)8d
OR (2)16d NAILS

*RIDGE BRACERS ARE SAME AS PURLIN BRACES-SPACING,
SIZE, CONFIGURATION, AND INSTALLATION (SEE PURLIN
BRACE NOTES ABOVE)

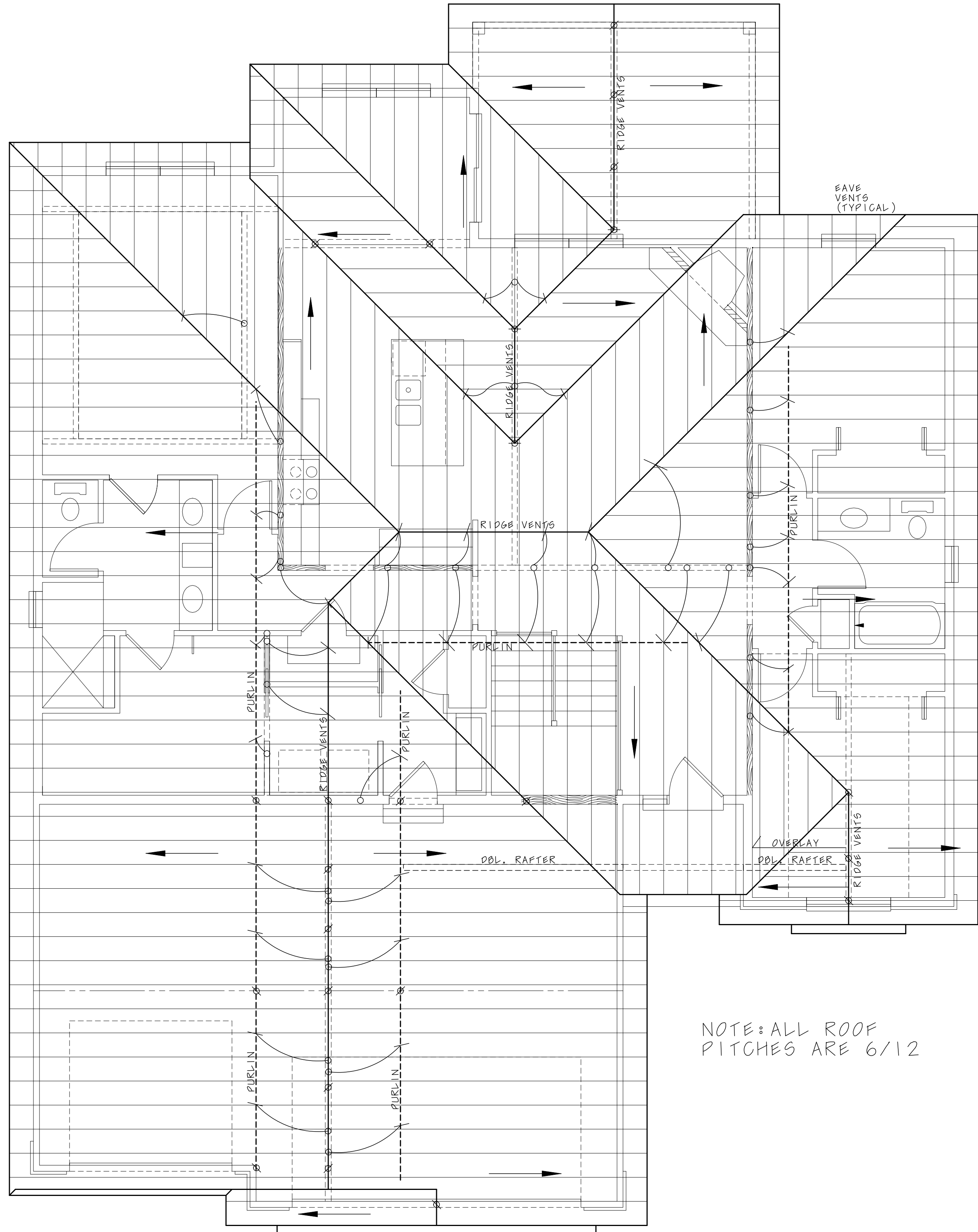
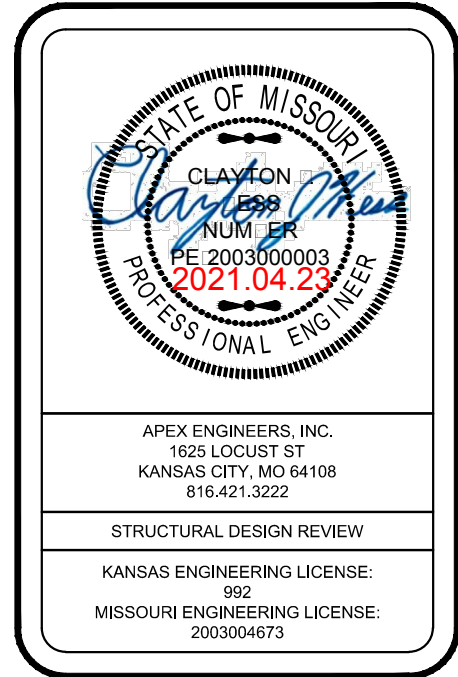
*HIP AND VALLEY BRACES ARE THE SAME AS PURLINS SIZE,
CONFIGURATION, AND INSTALLATION (SEE PURLIN BRACE
NOTES ABOVE)

= ROOF BRACE/STRUT (PER CHART)
-SLASH IS TOP END OF BRACE
-CIRCLE IS BOTTOM END OF BRACE

= PURLIN STRUTS AT 48" OC (PER CHART) U.N.O.
-SLASH IS TOP END OF BRACE
-ARROW IS BEARING LOCATION

██████ DENOTES BEARING WALL
===== DENOTES PURLIN
===== DENOTES BEARING STRUCTURE

- THIS IS AN ENGINEERED ROOF
STRUCTURE DESIGNED FOR
COMPLIANCE WITH IRC 802.3, BUILD
AS SHOWN WITH NO DEVIATIONS.
- ALL HIP AND VALLEYS ARE DESIGNED TO BE
CONTROLLED BY BENDING.
- SHEAR AT BEARING WITH MIN 5 1/2"
DEPTH DOES NOT CONTROL
DESIGN. FOR VALLEYS REF 4/S3.2



NOTE: ALL ROOF
PITCHES ARE 6/12

ROOF PLAN

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

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Lot 28- Cobey Creek
383692
Revised: 4-23-21

2X6 Plan
Plan No.

Sheet No.

RELEASE FOR
CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
06/11/2021

BRACED WALL METHODOLOGY

XXXX EXTERIOR BRACED WALLS:

WSP METHOD: WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN $\frac{3}{8}$ " WITH MINIMUM SPAN RATING OF 24/0 FOR 16" O.C. STUD SPACING WITH 6d COMMON NAILS AT 6" O.C. EDGES AND 12" O.C. FIELD OR SHEATHING THICKNESS NOT LESS THAN $\frac{1}{4}$ " WITH MINIMUM SPAN RATING OF 24/8 FOR 24" O.C. SPACING WITH 8d COMMON NAILS AT 6" O.C. EDGES AND 12" O.C. IN FIELD. (NOTE: FRAMING MEMBERS 18" O.C. MAX. UNLOCKED, AND W/ SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS)

//// INTERIOR BRACED WALLS (REF 2/S4.0):

GB METHOD: $\frac{1}{2}$ " MIN. GYPSUM BOARD OVER STUDS SPACED 24" MAX. FASTENED WITH No 6 - 1 $\frac{1}{4}$ " TYPE 'W' OR 'S' DRYWALL SCREWS AT 7" O.C. EDGES AND FIELD (MIN. 4'-0" SECTION FOR BOTH SIDES.)

OR

LIB METHOD: 1x4 WOOD FASTENED WITH (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA. TYPE WB (OR EQUAL) STL. X-BRACE(S) AT 45° TO 60° ANGLES, MAXIMUM 16" O.C. STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS.

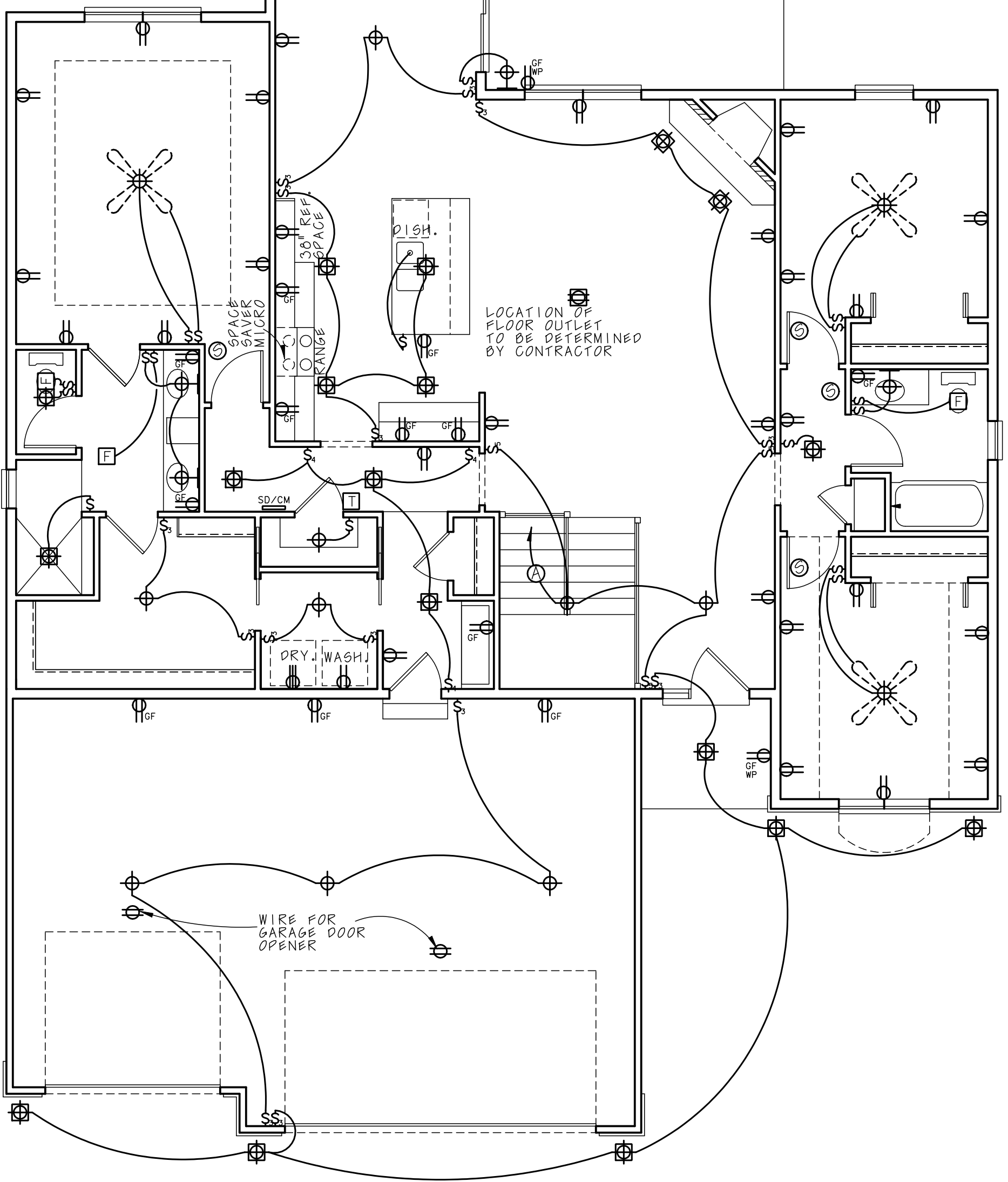
XXXX = EXTERIOR BRACED WALLS, MIN 4'-0" PANEL, UNLESS NOTED OTHERWISE

//// = INTERIOR BRACED WALLS (REF 2/S4.0)

EC = END CONDITION (REF 2/S4.1 FOR CONTINUOUS SHEATHED BRACED WALL END CONDITIONS)

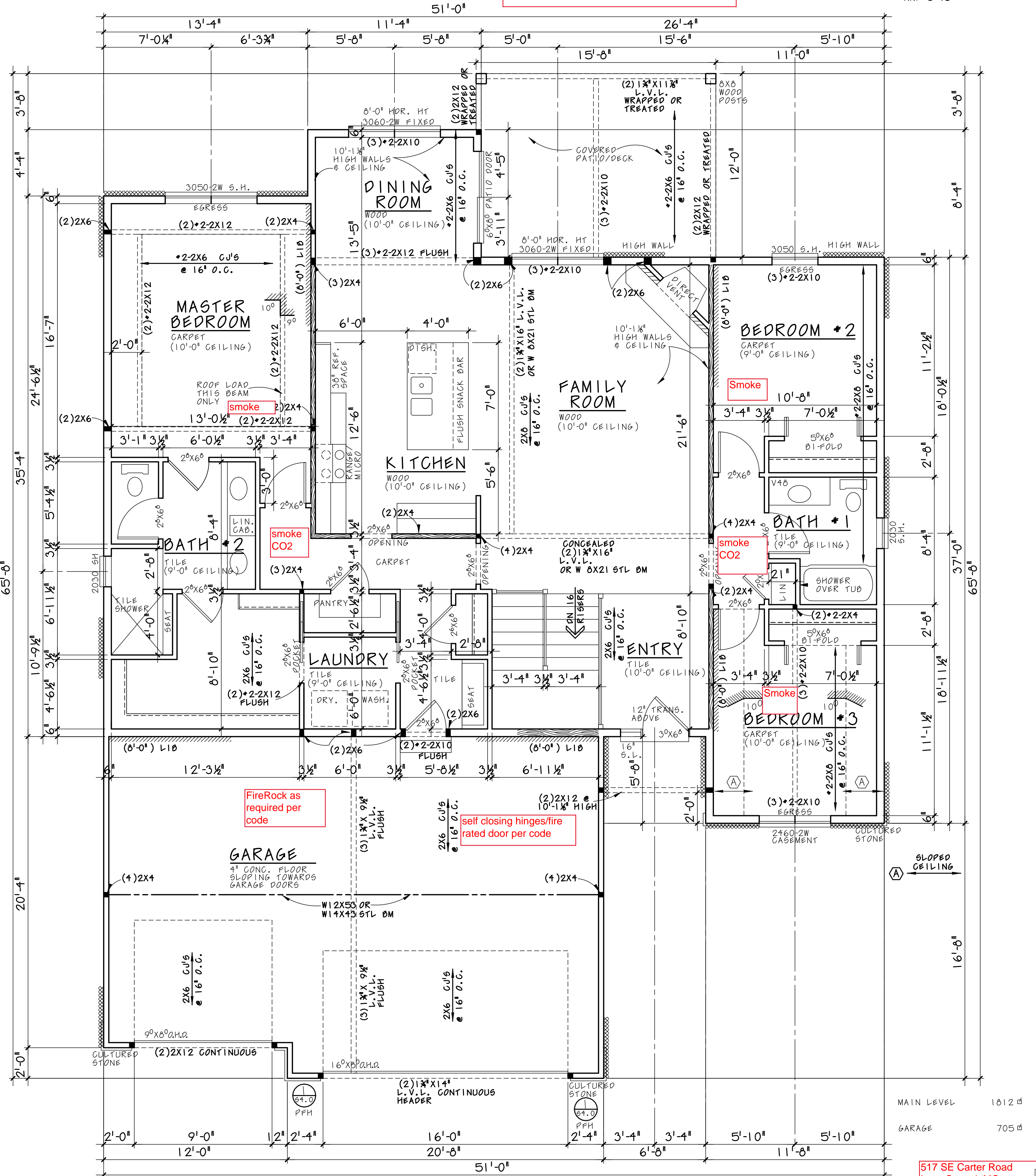
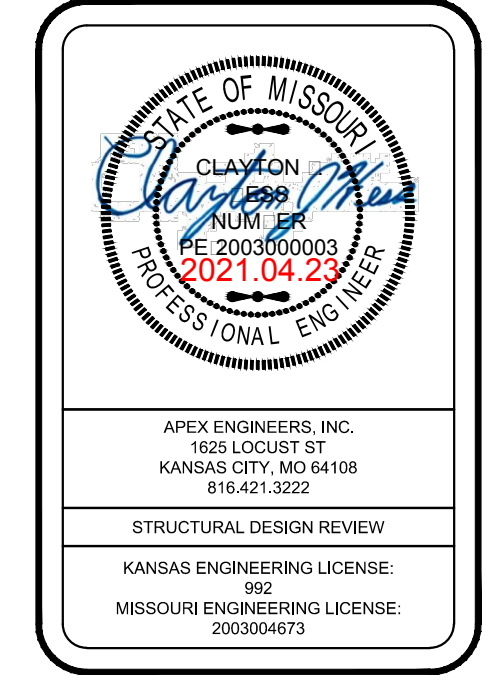
STRUCTURAL NOTES:

- ALL UNMARKED HEADERS MIN (2) #2-2X10
- ALL HEADERS AND BEAMS MIN #2 GRADE DF/L (OR EQ.)
- INSTALL SIMPSON H2.5A OR CS16, TYP. BOTH FACES OF EACH END OF ALL BEAMS SUPPORTING ROOF, PER IRC R802.11 (UNLESS NOTED OTHERWISE) REF SHEET S3.1
- SHIPLAP SIDING MUST BE FASTENED AT BOTH UNDERLAP AND OVERLAP



MAIN LEVEL ELECTRICAL

SCALE: 3/16" = 1'-0"



MAIN LEVEL FLOOR PLAN

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

FARMHOUSE

NOTE: ALL EXTERIOR WALLS ARE CONTINUOUSLY SHEATHED WITH O.S.B. SHEETING. BRACED WALL PANELS AS PER 2010 IRC R601.2 AND TABLE R602.10.5

NOTE: ALL MAIN FLOOR WALLS ARE 9'-1 1/2" HIGH UNLESS NOTED OTHERWISE

NOTE: ALL EXTERIOR WALLS ARE 6" (5 1/2" STUD - 1/2" SHEATHING) ALL INTERIOR WALLS ARE 3 1/2" UNLESS OTHERWISE SHOWN

NOTE: ALL ANGLED WALLS ARE @ 45°

Covered Patio 180 sq.ft.

517 SE Carter Road
Lees Summit MO

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SHEATHING AND FRAMING FASTENING SCHEDULE		
BUILDING COMPONENT	MATERIAL	FASTENING
ROOF SHEATHING¹	7/16" PLYWOOD 1x4 #3 FURRING	16 GA x 1-3/4" STAPLES AT 3" OC EDGES AND 6" OC IN FIELD 1/2" CROWN STAPLES
FLOOR SHEATHING¹	3/4" T&G YELLOW PINE PLYWOOD TO JOISTS AND ENDS STAGGERED	8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN THE FIELD 14 GA x 2" STAPLES AT 4" OC EDGES AND 8" OC IN THE FIELD 12.5 GA x 1-1/2" RING OR SCREW SHANK NAILS AT 6" OC EDGES AND 8" OC IN THE FIELD
CEILING COVERING¹	1/2" GYPSUM SHEATHING	7" OC NAILED / 12" OC SCREWED WITH 13 GA, 1-3/8" LONG, 19/64" HEAD; 0.098 DIA, 1-1/4" LONG, 1/8" DIA, RINGED; 5d COOLER NAIL, 0.086 DIA, 1-5/8" LONG, 15/64" HEAD; OR GYP BD NAIL, 0.086 DIA, 1-5/8" LONG, 9/32" HEAD 8d COMMON NAILS: 1-5/8" GALVANIZED STAPLES: 1-1/4" SCREWS, TYPE W OR S: AT 4" OC EDGES AND 8" OC IN THE FIELD
INTERIOR WALL COVERING¹	1/2" GYPSUM SHEATHING	8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN THE FIELD
EXTERIOR WALL SHEATHING	MIN 3/8" APA RATED SHEATHING	
CONVENTIONAL WOOD FRAMED WALLS	*SUPPORTING 2 FLOORS, ROOF, AND CEILING OR LESS *HEIGHT: 10'-0" OR LESS SIZE: NOM 2x4 (NOM 2x6 WHEN SUPPORTING 2 FLOORS, CEILING, AND ROOF) *SPECIES: DOUG-FIR, HEM-FIR, SOUTH PINE, SPRUCE-PINE-FIR *MAXIMUM SPACING 16" OC *STUDS 10' LENGTH OR LESS SHALL BE #3 STANDARD, OR STUD GRADE *STUDS OVER 10' LENGTH SHALL BE MIN #2 GRADE	*TOE NAIL RIM JOIST TO SILL OR TOP PLATE *TOE NAIL STUD TO TOP AND SOLE PLATE *END NAIL TOP AND SOLE PLATE TO STUD *FACE NAIL BUILT-UP CORNER STUDS *FACE NAIL BUILT-UP CORNER STUDS (AT BRACED WALL PANELS) *FACE NAIL JACK STUDS/STRIMMERS SUPPORTING HEADERS WITH: "FACE NAIL DBL TOP PLATE: "NAIL TOP PLATES WITH 48" OFFSET OF EACH FACE NAIL LAPPED AREA WITH "FACE NAIL DBL TOP PLATES AT LAPPED CORNERS AND INTERSECTIONS WITH "FACE NAIL SOLE PLATE TO FRAMING SYSTEM WITH: "GOSNAIL BRIDGING TO JOIST: EACH END "FACE NAIL LEDGER STRIPS SUPPORTING JOISTS OR RAFTERS WITH: 8d COMMON AT 6" OC: 3"x6: 13"11; AT 6" OC: 3"x6: 13"11 (1) 8d COMMON; (4) 3"x6: 13"11 (2) 16d COMMON; (3) 3"x6: 13"11 16d AT 24" OC: 3"x6: 13"11 AT 16" 16d COMMON NAILS AT 16" OC: 3"x6: 13"11 AT 12" OC 10d NAILS AT 6" OC: 3"x6: 12"12 AT 12" OC: 3"x6: 12"12 AT 12" OC: 3"x6: 13"11; (12) 3"x6: 12"12 (8) 16d COMMON; (12) 3"x6: 13"11; (12) 3"x6: 12"12 (2) 16d COMMON; (3) 3"x6: 13"11; (3) 3"x6: 12"12 16d COMMON AT 16" OC: 3"x6: 13"11 AT 12" OC: (2) 8d COMMON; (2) 3"x6: 13"11; (3) 3"x6: 12"12 (3) 16d COMMON; (4) 3"x6: 13"11; (4) 3"x6: 12"12
CONVENTIONAL WOOD HEADER FRAMING	PER PLAN	*TOE NAIL HEADERS TO WALL STUDS WITH (4) 8d NAILS AT EACH END. *FACE NAIL DOUBLE PIECE HEADERS WITH 16d NAILS AT 16" CENTERS ALONG EACH EDGE.
RAFTER TIES²	MIN 2x4 MEMBERS AT EACH RAFTER	REF TABLE R802.5.2
COLLAR TIES	MIN 1x4 MEMBERS AT 48" OC	FACE NAIL TO RAFTERS IN UPPER 1/3 OF ATTIC SPACE WITH (3) 10d NAILS AT EACH
1. NOTE: ALL SHEATHING MATERIALS TO BE APPLIED PERPENDICULAR TO JOISTS AND ENDS STAGGERED. 2. RAFTER TIES SHALL NOT BE REQUIRED WHEN A STRUCTURAL RIDGE HAS BEEN PROVIDED AND ADEQUATELY DESIGNED (AS IN A FULLY VAULTED ROOM). SUCH SHALL BE NOTED AS "STRUCTURAL" ON THE PLAN.		
BUILDING COMPONENT	FASTEN TO	FASTEN WITH
RAFTERS	TO RIDGE/VALLEY/HIP RAFTERS	TOENAIL WITH (4) 16d ENDNAIL WITH (3) 16d
	TO PLATE	TOENAIL WITH (2) 16d
CEILING JOISTS	TO TOP PLATE WHERE CEILING JOISTS RUN PARALLEL TO RAFTERS FACE NAIL TO RAFTERS WITH (3) 10d MIN	TOENAIL WITH (3) 8d AT EACH END
FLOOR JOISTS	TO SILL OR GIRDER TO RIM JOIST	TOENAIL WITH: (3) 8d COMMON; (3) 3"x6: 13"11; (4) 3"x6: 12"12 ENDNAIL WITH: (3) 16d COMMON; (4) 3"x6: 13"11; (4) 3"x6: 12"12
BRACED WALL PANELS PERP TO FRAMING: MEMBERS ABOVE/BELOW: PARALLEL TO FRAMING MEMBERS ABOVE/BELOW:	TO FRAMING MEMBER TO FRAMING AND BLOCKING AT 16" OC	SOLE PL, 16" OC WITH: (3) 16d COMMON; (4) 3"x6: 13"11 TOP PL, 6" OC WITH: 8d COMMON; (3) 3"x6: 13"11 SOLE PL, 16" OC WITH: (3) 16d COMMON; (4) 3"x6: 13"11 AND AT EACH BLOCK: (3) 16d COMMON; (4) 3"x6: 13"11 TOP PL, 6" OC WITH: 8d COMMON; (3) 3"x6: 13"11 AND AT EACH BLOCK: (3) 8d COMMON; (3) 3"x6: 13"11

NOTE: MEMBER THICKNESS AND FASTENING LISTED IN THIS SCHEDULE ARE MINIMUM IRC REQUIREMENTS. SPECIFIC PROJECT REQUIREMENTS NOTED WITHIN THE STRUCTURAL OR ARCHITECTURAL DRAWINGS, IF REQUIRED BY APEX ENGINEERS DESIGN NEEDING TO BE MORE STRINGENT, SHALL BE FOLLOWED.

BUILDING COMPONENT	MATERIAL	FASTENING
ROOF SHEATHING ¹	3/4" PLYWOOD 1x4 #3 FURRING	16 GA x 1-3/4" STAPLES AT 3" OC EDGES AND 6" OC IN FIELD 1/2" CROWN STAPLES
FLOOR SHEATHING ¹	3/4" T&G YELLOW PINE PLYWOOD APPLIED PERPENDICULAR TO JOISTS AND ENDS STAGGERED	8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN THE FIELD 14 GA x 2" STAPLES AT 4" OC EDGES AND 8" OC IN THE FIELD 12.5 GA x 1/2" RING OR SCREW SHANK NAILS AT 6" OC EDGES AND 8" OC IN THE FIELD
CEILING COVERING ¹	1/2" GYPSUM SHEATHING	7" OC NAILED / 12" OC SCREWED WITH 13 GA, 1-3/8" LONG, 19/64" HEAD, 0.098 DIA, 1-1/4" LONG, ANG-RINGED; 5d COOLER NAIL, 0.086 DIA, 1-5/8" LONG, 15/64" HEAD, OR GYP BD NAIL, 0.086 DIA, 1-5/8" LONG, 9/32" HEAD
INTERIOR WALL COVERING ¹	1/2" GYPSUM SHEATHING	8d COMMON NAILS: 1-5/8" GALVANIZED STAPLES: 1-1/4" SCREWS, TYPE W OR S: AT 4" OC EDGES AND 8" OC IN THE FIELD
EXTERIOR WALL SHEATHING	MIN 3/8" APA RATED SHEATHING	8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN THE FIELD
CONVENTIONAL WOOD FRAMED WALLS	*SUPPORTING 2 FLOORS, ROOF, AND CEILING OR LESS. *HEIGHT: 10'-0" OR LESS SIZING: NOM 2x4 (NOM 2x6 WHEN SUPPORTING 2 FLOORS, CEILING, AND ROOF) *SPECIES: DOUG-FIR, HEM-FIR, SOUTH PINE, SPRUCE-PINE-FIR *MAXIMUM SPACING 16" OC *STUDS 10' LENGTH OR LESS SHALL BE #3 STANDARD, OR STUD GRADE *STUDS OVER 10' LENGTH SHALL BE MIN #2 GRADE	*TOE NAIL RIM JOIST TO SILL OR TOP PLATE. *TOE NAIL STUD TO TOP AND SOLE PLATE. *TOE NAIL TOP AND SOLE PLATE TO STUD. *FACE NAIL BUILT-UP CORNER STUDS. *FACE NAIL BUILT-UP CORNER STUDS (AT BRACED WALL PANELS). *FACE NAIL JOIST STUD/STIMMERS SUPPORTING HEADERS WITH: *FACE NAIL DBL TOP PLATE. *DBL TOP PLATES WITH MIN 4" OFFSET OF EACH FACE NAIL LAPPED AREA. *FACE NAIL DBL TOP PLATES AT LAPPED CORNERS AND INTERSECTIONS WITH: *FACE NAIL SOLE PLATE TO FRAMING SYSTEM WITH: *TOENAIL BRIDGING TO JOIST, EACH END. *FACE NAIL LEDGER STRIPS SUPPORTING JOISTS OR RAFTERS WITH:
CONVENTIONAL WOOD HEADER FRAMING	PER PLAN	*TOE NAIL HEADERS TO WALL STUDS WITH (4) 8d NAILS AT EACH END. *FACE NAIL DOUBLE PIECE HEADERS WITH 16d NAILS AT 16" CENTERS ALONG EACH EDGE.
RAFTER TIES ²	MIN 2x4 MEMBERS AT EACH RAFTER	REF TABLE R802.5.2
COLLAR TIES	MIN 1x4 MEMBERS AT 48" OC	FACE NAIL TO RAFTERS IN UPPER 1/3 OF ATTIC SPACE WITH (3) 10d NAILS AT EACH
1. NOTE: ALL SHEATHING MATERIALS TO BE APPLIED PERPENDICULAR TO JOISTS AND ENDS STAGGERED. 2. RAFTER TIES SHALL NOT BE REQUIRED WHEN A STRUCTURAL RIDGE HAS BEEN PROVIDED AND ADEQUATELY DESIGNED (AS IN A FULLY VAULTED ROOM). SUCH SHALL BE NOTED AS "STRUCTURAL" ON THE PLAN.		
BUILDING COMPONENT	FASTEN TO	FASTEN WITH
RAFTERS	TO RIDGE/VALLEY/HIP RAFTERS	TOENAIL WITH (4) 16d ENDNAIL WITH (3) 16d
	TO PLATE	TOENAIL WITH (2) 16d
CEILING JOISTS	TO TOP PLATE	TOENAIL WITH (3) 8d AT EACH END
FLOOR JOISTS	WHERE CEILING JOISTS RUN PARALLEL TO RAFTERS FACE NAIL TO RAFTERS WITH (3) 10d MIN	TOENAIL WITH: (3) 8d COMMON; (3) 3"x0.131"; (4) 3"x0.128"
	TO SILL OR GIRDER	TOENAIL WITH: (3) 16d COMMON; (4) 3"x0.131"; (4) 3"x0.128"
	TO RIM JOIST	ENDNAIL WITH: (3) 16d COMMON; (4) 3"x0.131"; (4) 3"x0.128"
BRACED WALL PANELS PERP TO FRAMING MEMBERS ABOVE/BELOW: PARALLEL TO FRAMING MEMBERS ABOVE/BELOW:	TO FRAMING MEMBER	SOLE PL, 16" OC WITH: (4) 16d COMMON; (4) 3"x0.131" TOP PL, 8" OC WITH: 8d COMMON; 3"x0.131" SOLE PL, 16" OC WITH: (4) 16d COMMON; (4) 3"x0.131" AND AT EACH BLOCK: (3) 16d COMMON; (4) 3"x0.131" TOP PL, 6" OC WITH: 8d COMMON; 3"x0.131" AND AT EACH BLOCK: (3) 8d COMMON; 3"x0.131"

ENERGY REQUIREMENTS

1. LIGHTING FIXTURES PENETRATING THE THERMAL ENVELOPE SHALL BE IC-RATED, LEAKAGE RATED, AND SEALED TO THE GYPSUM WALLBOARD AS REQUIRED PER N1102.4.5.
2. PROGRAMMABLE THERMOSTATS SHALL BE INSTALLED AS REQUIRED PER N1103.1.
3. AIR HANDLERS SHALL BE RATED FOR MAXIMUM 2% AIR LEAKAGE RATE PER N1103.3.2.1.
4. BUILDING FRAMING CAVITIES SHALL NOT BE USED AS DUCTS OR PLENUMS PER N1103.3.5
5. HOT WATER PIPES SHALL BE INSULATED AS REQUIRED PER N1103.4.
6. ALL EXHAUST FANS SHALL TERMINATE TO THE BUILDING EXTERIOR AS REQUIRED PER N1103.4.1.
7. MAKEUP AIR SYSTEMS SHALL BE INSTALLED FOR KITCHEN EXHAUST HOODS THAT EXCEED 40 CFM AS REQUIRED PER M1503.6.
8. AN AIR HANDLING SYSTEM SHALL NOT SERVE BOTH THE LIVING SPACE AND THE GARAGE PER M1601.6.

ENERGY CONSERVATION

THE ENERGY EFFICIENCY OF THE DWELLING SHALL COMPLY WITH THE FOLLOWING TABLE(S) (WHERE THERE ARE DISCREPANCIES BETWEEN THIS TABLE AND THE PLANS, THE MOST RESTRICTIVE SHALL APPLY). IF TABLE 1 IS NOT COMPLETED AND ACCOMPANIED BY RESCHECK CALCULATIONS, THEN TABLE 2 SHALL BE APPLIED.

[illegible]

NOTE: FOR USE OF TABLE 1 A ResCheck COMPLIANCE FORM MUST BE SUBMITTED WITH PLANS.

BUILDING ELEMENT	MIN VALUE
CEILING - FLAT	R-49
CEILING - CATHEDRAL**	R-30
CEILING - CATHEDRAL	R-38
FLOORS - UNCONDITIONED SPACED	R-19
FLOORS - OVER OUTSIDE AIR	R-30
WALLS - BASEMENT	R-10 (CONT) OR R-13 (CAVITY)
CONCRETE SLAB ON GRADE	R-10 (FOR 2FT)
SKYLIGHT	U=0.55
WALLS - EXTERIOR (2x4)	R-13 (CAVITY) + R-5 (CONT)
WALLS - EXTERIOR (2x6)	R-20
WALLS - CRAWL SPACE	R-19
GLAZING*	U<=0.32
GLAZING*	SHGF<=0.40

NOTE:
TABLE 2 PER IRC TABLE N1102.1.2
*DEFAULT U-FACTOR FOR DOUBLE PANE, ARGON FILLED LOW-E
TREATMENT IS U=0.35
**LIMITED TO AREAS LESS THAN 500 SQ-FT OR 20% OF CEILING AREA.

DEFERRED SUBMITTALS

1. THE ARCHITECT OR ENGINEER OF RECORD SHALL LIST THE DEFERRED SUBMITTALS ON THE PLANS FOR REVIEW BY THE BUILDING OFFICIAL. DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT OR ENGINEER OF RECORD WHO SHALL REVIEW THEM AND FORWARD THEM TO THE BUILDING OFFICIAL WITH A NOTATION INDICATING THAT THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN THE GENERAL CONFORMANCE TO THE DESIGN OF THE BUILDING. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE DEFERRED SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL. DEFERRED SUBMITTALS ARE DEFINED AS THOSE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF THE APPLICATION AND THAT ARE TO BE SUBMITTED TO THE BUILDING OFFICIAL WITH A SPECIFIED PERIOD. DEFERRAL OF ANY SUBMITTAL ITEMS SHALL HAVE THE PRIOR APPROVAL OF THE BUILDING OFFICIAL.
2. DEFERRED SUBMITTAL ITEMS (WHEN APPLICABLE):
- A. TRUSSES
 - B. I-JOISTS
 - C. GUARDRAILS AND HANDRAILS
 - D. STEEL FABRICATED STAIRS
 - E. PRE-MANUFACTURED CANOPIES AND AWNINGS
 - F. PRECAST HOLLOW CORE SLABS
 - G. GROUND IMPROVEMENT AND/OR STRUCTURAL FOUNDATION SOLUTIONS (SUCH AS DRILLED PIERS)

CONCRETE

CONCRETE SHALL BE AIR ENTRAINED WITH A MINIMUM COMPRESSIVE STRENGTH OF 28 DAYS OF 2,500 PSI FOR BASEMENT AND INTERIOR FLOOR SLABS, 3,000 PSI FOR BASEMENT AND FOUNDATION WALLS, AND 3,500 FOR PORCHES, CARPORTS, AND GARAGE FLOOR SLABS.

GLAZING

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 OPENABLE 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 WHIRLPOLLS; GLAZING IN FIXED OR OPENABLE PANELS EXCEEDING 9 SQUARE FEET AND WHOSE BOTTOM EDGE IS LESS THAN 18" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 36".

EMERGENCY EGRESS AND RESCUE

1. PROVIDE ONE WINDOW FROM EACH BEDROOM THAT HAS A MINIMUM OPENABLE AREA OF 5.7 SQUARE FEET WITH A MINIMUM OPENABLE HEIGHT OF 24 INCHES AND WIDTH OF 20 INCHES.
2. BASEMENT EGRESS TO MEET THE REQUIREMENTS OF IRC SECTION 310.
3. SMOKE ALARMS SHALL BE INSTALLED AS REQUIRED PER IRC SECTION 310.6.
4. PROVIDE SMOKE ALARMS IN EACH SLEEPING ROOM, OUTSIDE OF EACH SLEEPING AREA, ON EACH FLOOR INCLUDING BASEMENTS AND HABITABLE ATTICS, AND NOT LESS THAN 3'-0" HORIZONTALLY FROM DOOR OR OPENING OF A BATHROOM THAT CONTAINS A BATHTUB OR SHOWER. ALARMS SHALL BE LOCATED IN SUCH A MANNER AS TO AVOID THE ACTIVATION OF ONE ALARM WILL ACTIVATE TWO OF THE ALARMS IN THE DWELLING.
5. CARBON MONOXIDE ALARMS SHALL BE INSTALLED AS REQUIRED PER IRC 2018 SECTION R315.
6. CARBON MONOXIDE ALARMS SHALL BE INSTALLED OUTSIDE OF EACH SEPARATE SLEEPING AREA, WHERE A FUEL-BURNING APPLIANCE IS LOCATED WITHIN A BEDROOM OR ITS ATTACHED BATHROOM. A CARBON MONOXIDE ALARM SHALL BE INSTALLED WITHIN THE BEDROOM.

FRAMING GENERAL

1. ALL LUMBER SIZES ARE FOR DOUGLAS FIR-LARCH UNLESS NOTED OTHERWISE
2. ALL HEADERS TO BE MIN (2) #2-2x10 UNLESS NOTED OTHERWISE.
3. BLOCK CANTILEVERS, DOORJAMBS, AND OVER BEAMS.
4. ALL HEADERS TO BEAR ON A MINIMUM OF (2) 2x4 STUD SPOTS UNLESS NOTED OTHERWISE.
5. ALL NON-BEARING WALLS, OTHER THAN THOSE RESTING DIRECTLY ON THE FOOTING SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE.
6. WHERE JOISTS RUN PARALLEL TO FOUNDATION WALLS, SOLID BLOCKING FOR A MINIMUM OF (2) JOIST SPACES BE PROVIDED TO A MAXIMUM OF 2'-0" CENTERS TO TRANSFER LATERAL LOADS ON THE WALL TO THE FLOOR DIAPHRAGM. THE BLOCKING SHALL BE SECURELY NAILED TO THE JOISTS AND FLOORING. NAIL TO JOIST: 16D (10) AND TO FLOORING: 16D (10) (R502.3.4.1)
7. IF DUCTS ARE INSTALLED IN THE FIRST JOIST SPACE(S), NAIL 2x4s PLAT AT 2'-0" CENTERS WITHIN THE JOIST SPACE(S) AND THEN PROVIDE SOLID BLOCKING, INSTALLED UPRIGHT, IN THE NEXT TWO JOIST SPACES. SECURE THE 2x4s TO THE SILL PLATE WITH (4) 10d NAILS.
8. ALL SILL AND SLABERS SUPPORTED ON CONCRETE OR MASONRY AND EXCURRING ANCHORS TO CONCRETE OR MASONRY SHALL BE OF DECAY RESISTANT MATERIALS.
9. JOISTS UNDER BEARING PARTITIONS SHALL BE DOUBLED AND COMPLY WITH IRC SECTION R502.4.
10. JOISTS FRAMING FROM OPPOSITE SIDES OVER BEARING SUPPORTS SHALL LAP AND BE NAILED TOGETHER WITH A MINIMUM 10d NAIL. NAIL: 16D (10)
11. JOISTS FRAMING INTO A WOOD GIRDER OR BEAM SHALL BE SUPPORTED BY APPROVED FRAMING ANCHORS OR MINIMUM 2"x2" LEDGER STRIPS.
12. FRAMING OF OPENINGS - HEADERS AND TRIMMERS SHALL BE OF SUFFICIENT CROSS SECTION TO SUPPORT THE FLOOR FRAMING. TRIMMER JOISTS SHALL BE DOUBLED WHEN THE HEADER IS SUPPORTED MORE THAN 3'-0" FROM THE END OF THE BEARING JOIST. THE TRIMMER SHALL PROVIDE A RATCHET SPAN EXCEEDS 4'-0", THE HEADER AND TRIMMER SHALL BE DOUBLED.
13. JOISTS AT SUPPORTS SHALL BE SUPPORTED Laterally AT THE ENDS BY FULL-DEPTH SOLID BLOCKING NOT LESS THAN 2" NOMINAL THICKNESS OR BY ATTACHMENT TO A HEADER, BAND OR RIM JOIST OR TO AN ADJOINING STUD OR OTHERWISE PROVIDED WITH LATERAL SUPPORT TO PREVENT ROTATION. THE BLOCKING SHALL BE BARRIERS TO THE WALLS PROVIDED FOR ALL EXTERIOR WALLS. ONE LAYER OF No 15 ASPHALT FELT OR ANY OTHER BARRIER THAT MEETS ASTM D226 Type 1 FELT, (R703.2)
15. WHERE CEILING JOISTS ARE NOT INSTALLED CONNECTED TO THE RAFTERS AT THE TOP PLATE AND/OR WHERE CEILING JOISTS ARE NOT INSTALLED PARALLEL TO THE RAFTERS, RAFTER TIES SHALL BE INSTALLED IN THE LOWER PORTION OF THE RAFTER. THE TIES SHALL BE 1/2" DIA. GALV. STEEL.
16. COLLAR TIES SHALL BE PROVIDED IN THE UPPER 1/3 OF THE ATTIC SPACE IN ACCORDANCE WITH TABLE 1-S1.0.

GENERAL

1. PLANS SHALL COMPLY WITH THE 2018 INTERNATIONAL RESIDENTIAL CODE WITH AMENDMENTS AS ADOPTED BY THE GOVERNING JURISDICTION. IF ANY CHANGES OR DEVIATIONS FROM THE PLANS ARE MADE DURING CONSTRUCTION, CONTRACTOR SHALL NOTIFY THE APPROPRIATE AUTHORITY AND RANGER OF RECORD, EITHER ORALLY OR (BOTH) OF WHOM MAY REQUIRE REVISED DRAWINGS OR CALCULATIONS AT ITS DISCRETION.
2. REPRODUCTION, ALTERATION, OR RE-USE BY ANY METHOD OF ALL OR PORTIONS OF THESE STRUCTURAL PLANS OR VARIATIONS THEREOF WITHOUT WRITTEN PERMISSION FROM APEX ENGINEERS, INC. IS STRICTLY PROHIBITED. THE DRAWINGS AND DETAILS OF THIS SHEET SET, BEING INSTRUMENTS OF SERVICE, ARE THE PROPERTY OF APEX ENGINEERS, INC. AND ARE NOT TO BE REPRODUCED, COPIED, RE-USED, OR ALTERED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF APEX ENGINEERS, INC. ANY UNAUTHORIZED REPRODUCTION, OR A VERSION VOID OF APEX ENGINEERS LOGO AND/OR TITLE BLOCK, SHALL BE CONSIDERED AN UNAUTHORIZED REPRODUCTION.
3. WHERE DISCREPANCIES EXIST BETWEEN THE STANDARD COMMENTS, NOTES FROM THE DESIGN PROFESSIONAL, OR THE CODE, THE MOST RESTRICTIVE SHALL APPLY. THE DWELLING SHALL COMPLY WITH THE FOLLOWING LOAD CONDITIONS:

AREA	MIN DEAD LOAD	MIN LIVE LOAD
EXTERIOR BALCONIES	10 PSF	60 PSF
DECKS	10 PSF	40 PSF
CEILING JOISTS/ATICS NO STORAGE - SCUTTLE ACCESS ONLY ROOF SLOPE 3:12 OR LESS	5 PSF	10 PSF
CEILING JOISTS/ATICS WITHOUT STORAGE - SCUTTLE ACCESS ONLY ROOF SLOPE OVER 3:12 OR LESS	10 PSF	10 PSF
CEILING JOISTS/ATICS WITH STORAGE - DOOR/PULL DOWN LADDER ACCESS	10 PSF	20 PSF
ROOMS - NON-SLEEPING	10 PSF	40 PSF
ROOMS - SLEEPING	10 PSF	30 PSF
ROOF - LIGHT ROOF COVERING	10 PSF	20 PSF
ROOF - HEAVY ROOF COVERING CONCRETE/SLATE	20 PSF	20 PSF

NOTE: HEAVY ROOF COVERING WILL NOT BE INSTALLED OR USED IN THE DESIGN CALCULATIONS UNLESS IT IS SPECIFICALLY NOTED ON THE PLANS THAT THE DESIGN IS FOR HEAVY ROOF COVERINGS.

FOUNDATIONS

1. THE FOUNDATION DESIGN SHALL BE BASED ON A MINIMUM SOIL BEARING CAPACITY OF 2000 PSF, UNLESS OTHERWISE INDICATED ON THE PLANS OR IF OTHERWISE SPECIFIED BY THE ENGINEER. PROVIDE THE FOLLOWING CONDITIONS.
2. CONCRETE SHALL MEET THE FOLLOWING SPECIFIED DESIGN STRENGTH CRITERIA:
 - 2500 PSI FOR BASEMENT FLOOR SLABS ON UNDISTURBED SOIL
 - 3000 PSI FOR FOOTINGS AND FOUNDATION WALLS
 - 3500 PSI FOR GARAGE FLOOR SLABS
3. FOOTINGS SHALL EXTEND BELOW THE FROST LINE; MINIMUM DEPTH 36 INCHES BELOW GRADE.
4. UNLESS OTHERWISE NOTED ON THE PLANS OR IF SITE CONDITIONS REQUIRE OTHERWISE, FOOTINGS SHALL BE A MINIMUM OF 16" WIDE AND 8" DEEP WITH (2) #4 BARS CONTINUOUS.
5. COLUMN DOWELS SHALL BE A MINIMUM 30"x30"x12" WITH (4) #4 BARS EACH WAY. UNLESS OTHERWISE NOTED ON THE PLANS.
6. UNLESS NOTED OTHERWISE ON THE PLANS, FOUNDATION WALLS SHALL BE MINIMUM 8" THICK X 8'-0" (OR 9'-0") TALL AND REINFORCED PER DETAIL 1-S-2.0 (AND 2-S-2.0 WHERE APPLICABLE). FOUNDATION WALLS GREATER THAN 10'-0" TALL REQUIRE A SEPARATE ENGINEERED DESIGN. PROVIDE A 2' LONG INTERIOR OR EXTERIOR REINFORCED CONCRETE OR ANY STRAIGHT WALL PANELS EXCEEDING 20'-0" IN LENGTH (REF 3-S-2.0).
7. REINFORCEMENT SHALL BE MINIMUM GRADE 40 UNLESS NOT OTHERWISE SPECIFIED. REINFORCEMENT SHALL LAP A MINIMUM OF 24" AT ENDS, SPICES, AND AROUND CORNERS.
8. FOUNDATION WALLS SHALL BE BACKFILLED WITH A CLEAN LEAN CLAY (OR BETTER) LOW VOLUME CHANGE MATERIAL, ON-SITE MATERIAL MAY BE USED IF DEEMED ACCEPTABLE BY THE GEOTECHNICAL ENGINEER OF RECORD.
9. FOUNDATION WALLS WILL NOT ACHIEVE FULL STRENGTH UNTIL THE BASEMENT FLOOR SLAB AND THE FIRST FLOOR DECK HAVE BEEN PROPERLY PLACED. IF BACKFILLING THE INTERIOR OF THE FOUNDATION WALL WITH GREATER THAN 8" OF EARTHEN FILL OR 24" OF GRANULAR FILL, A STRUCTURAL BASEMENT SLAB (TO BE DESIGNED OR DESIGN REVIEWED BY APEX ENGINEERS), OR ALTERNATE ENGINEERED SOLUTION (I.e. ENGINEERED FILL) WILL BE REQUIRED.
10. FOUNDATION WALLS SHALL BE REINFORCED PER DETAIL 1-S-2.0 WALLS AND FOOTINGS SHALL BE FORMED CONTINUOUS AND POURED PER DETAIL 4-S-2.0.
11. CONCRETE FLOOR SLABS SHALL BE A MINIMUM 4" THICK OVER A MINIMUM 4" BASE OF 1/2" OR 3/4" CLEAN GRADED ROCK, UNLESS NOTED OTHERWISE OR IF SITE CONDITIONS REQUIRE OTHERWISE.
12. PROVIDE A MINIMUM 1/2" THICK 24-GAUGE POLYETHYLENE MOISTURE BARRIER OVER POROUS GRAVEL BASE UNDER BASEMENT FLOOR SLAB PER R406.2. LAP JOINTS MINIMUM 6" (NOT REQUIRED FOR GARAGE SLABS OR DETACHED ACCESSORY BUILDINGS).
13. FOR A STRUCTURAL REINFORCED CONCRETE FLOOR OVER A USABLE AREA, SUCH AS A GARAGE FLOOR LOCATED OVER A STORAGE AREA, SUBMIT SEALED ENGINEERED DETAILS AND CALCULATIONS.
14. FOUNDATION WALLS AND BASEMENT FOOTINGS SUPPORTED BY FILL CONSISTING OF MORE THAN 24" OF GRANULAR FILL OR 8" OF EARTH SHALL BE REINFORCED PER DETAILS 1-S-2.1 AND 6-S-2.1 RESPECTIVELY, WHERE THE LIMITATIONS OF DETAILS 1-S-2.1 AND 6-S-2.1 ARE NOTE MET, A SEPARATE ENGINEERED DESIGN SHALL BE REQUIRED.
15. BASEMENT FOUNDATION WALLS SHALL BE BOLTED TO THE FOUNDATION WITH A MINIMUM OF 1/2" ANCHOR BOLTS EMBEDDED AT LEAST 7" INTO THE CONCRETE AND SPACED NOT MORE THAN 3'-0" ON CENTER AND WITHIN 12" OF EACH END PIECE.
16. FLOOR WALLS SHALL BE DAMP-PROOFED PER IRC SECTION R406.2.
17. PROVIDE A MINIMUM 4" PERFORATED DRAIN AROUND USABLE SECTION BELOW GRADE OR OTHER EQUIVALENT MATERIALS PER IRC SECTION A05.1. THE PIPE SHALL BE PLACED ON A MINIMUM OF 2" OF WASHED GRAVEL OR CRUSHED ROCK AND COVERED WITH NOT LESS THAN 6" DR. THE DRAIN SHALL DAYLIGHT TO THE EXTERIOR BELOW THE FLOOR LEVEL OR TERMINATE IN A MINIMUM 20 GALLON PER HOUR PUMP.
18. INTERIOR BEARING WALLS AND COLUMNS SHALL BE ISOLATED FROM THE BASEMENT FLOOR SLAB.
19. INTERIOR NON-BEARING WALLS, OTHER THAN THOSE RESTING DIRECTLY ON THE FLOOR, SHALL BE ISOLATED FROM THE FLOOR FRAMING ABOVE.
20. ALL RETAINING STRUCTURES ON SITE GREATER THAN 4'-0" TALL (EXCLUDING CONCRETE FOUNDATION WALLS RESTRAINED AT BOTH TOP AND BOTTOM) SHALL REQUIRE A SEPARATE ENGINEERED DESIGN AS REQUIRED BY THE CODE AUTHORITY.
21. ANY GEOTECHNICAL IMPROVEMENT METHODS AND/OR STRUCTURAL ANALYSIS SUCH AS DRILL PILES SHALL BE REQUIRED TO ADDRESS ANY UNACCEPTABLE SUBGRADE CONDITIONS SHALL BE SUBMITTED TO EOR AS ENGINEERED SHOP DRAWINGS FOR REVIEW AND APPROVAL.

GARAGE

1. THE GARAGE FLOOR SHALL SLOPE TOWARDS THE GARAGE DOORWAYS.
2. DOORS BETWEEN THE GARAGE AND THE DWELLING - MINIMUM 1-3/8" SOLID CORE OR HONEY COMBED STEEL DOOR OR 20-MINUTE FIRE RATED.
3. THE GARAGE SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC BY A MINIMUM 2x8 GYPSPUM BOARD, OR EQUIVALENT MATERIALS APPROVED FOR ONE-HOUR FIRE-RESISTIVE CONSTRUCTION, APPLIED TO GARAGE SIDE WHERE THE SEPARATION IS A FLOOR-CEILING ASSEMBLY. THE STRUCTURE SUPPORTING THE SEPARATION SHALL ALSO BE PROTECTED BY 5/8", TYPE X GYPSPUM BOARD, OR MATERIALS APPROVED FOR ONE-HOUR FIRE-RESISTIVE CONSTRUCTION OR EQUIVALENT, APPLIED TO THE GARAGE SIDE. PULL DOWN STAIRS LOCATED WITHIN GARAGE SHALL BE RATED TO BE ADEQUATELY PROTECTED BY SUCH MATERIALS.
4. ATTIC ACCESS PANELS LOCATED WITHIN GARAGE SHALL BE OF 5/8", TYPE X GYPSPUM BOARD, OR MATERIALS FOR ONE-HOUR FIRE-RESISTIVE CONSTRUCTION.
4. GARAGE DOOR AND FRAME- THE H-FRAME FOR THE ATTACHMENT OF THE TRACK AND COUNTER BALANCE SHALL CONSIST OF THE FOLLOWING: 2x6 VERTICAL MEMBER RUNNING FROM THE FLOOR TO CEILING ATTACHED WITH 1-3/4" x 120" NAILS AT 7" OC STAGGERED WITH (3-7-140" x 0.120" NAILS THRU THE JAMB INTO THE HEADER, MINIMUM 2x8 HEADER FOR ATTACHMENT OF COUNTER BALANCE SYSTEM.

STAIRWAYS

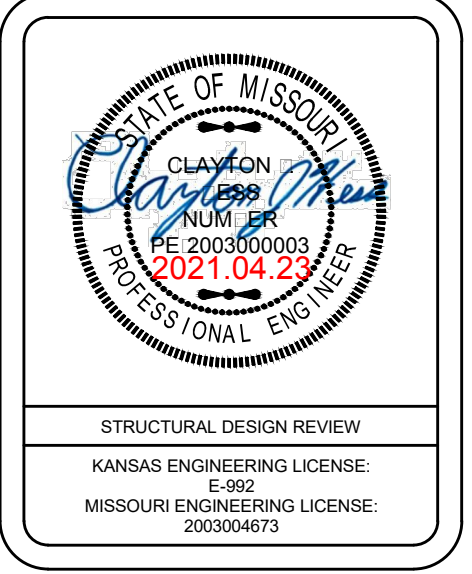
1. STAIRWAYS SHALL PROVIDE A MAXIMUM 7/34" RISE AND MINIMUM 10" RUN.
2. PROVIDE MINIMUM 36" GUARDRAILS ON THE OPEN SIDES OF RAISED FLOORS, PORCHES, AND BALCONIES; MINIMUM 34" GUARDRAILS ON THE OPEN SIDES OF STAIRWAYS LOCATED MORE THAN 30" ABOVE THE FLOOR OR GRADE BELOW. GUARDRAIL ENCLOSURES SHALL HAVE INTERMEDIATE RAILS OR ORNAMENTAL BALUSTRADES THAT DO NOT ALLOW PASSAGE OF A SPHERE 4" IN DIAMETER.
3. EACH STAIRWAY OF THREE OR MORE RISERS SHALL PROVIDE A CONTINUOUS HANDRAIL ON AT LEAST ONE SIDE BETWEEN 34" AND 38" ABOVE THE NOSING OF THE TREADS.
4. HANDRAILS SHALL HAVE A CIRCULAR CROSS SECTION OF 1-1/4" MINIMUM TO 2" MAXIMUM OR OTHER APPROVED GRASPABLE SHAPE PER IRC SECTION 311.7.6.5.
5. PROVIDE A MINIMUM 6'-8" OF HEADROOM CLEARANCE IN STAIRWAYS.
6. ENCLOSED ACCESSIBLE SPACE UNDER STAIRWAYS SHALL HAVE WALLS AND THE UNDERSIDE OF THE STAIR AND LANDING PROTECTED WITH 1/2" GYPSUM BOARD ON ENCLOSURE SIDE PER IRC SECTION 302.7.
7. SPIRAL STAIRS TO BE CONSTRUCTED PER IRC SECTION 311.7.10.1.
8. SPACE STRINGERS AT 16" OC MAX.

EXPANSIVE SOILS DISCLAIMER:

THESE PLANS HAVE BEEN PREPARED BASED ON A PRESUMPTIVE ALLOWABLE BEARING CAPACITY AS ALLOWED BY IRC CODE AND THE LOCAL ENFORCING JURISDICTION.

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STRUCTURAL DESIGN REVIEW
KANSAS ENGINEERING LICENSE
E-992
MISSOURI ENGINEERING LICENSE
2003004673

PROJECT:
LOT 28 COBEY CREEK
LEE'S SUMMIT, MO

CLIENT:
HOUSE & RENNER CONSTRUCTION

PROJECT #:	41100
DRAWN BY:	QTJ
CHECKED BY:	BDC
SUBMITTAL DATE:	2021.04.23

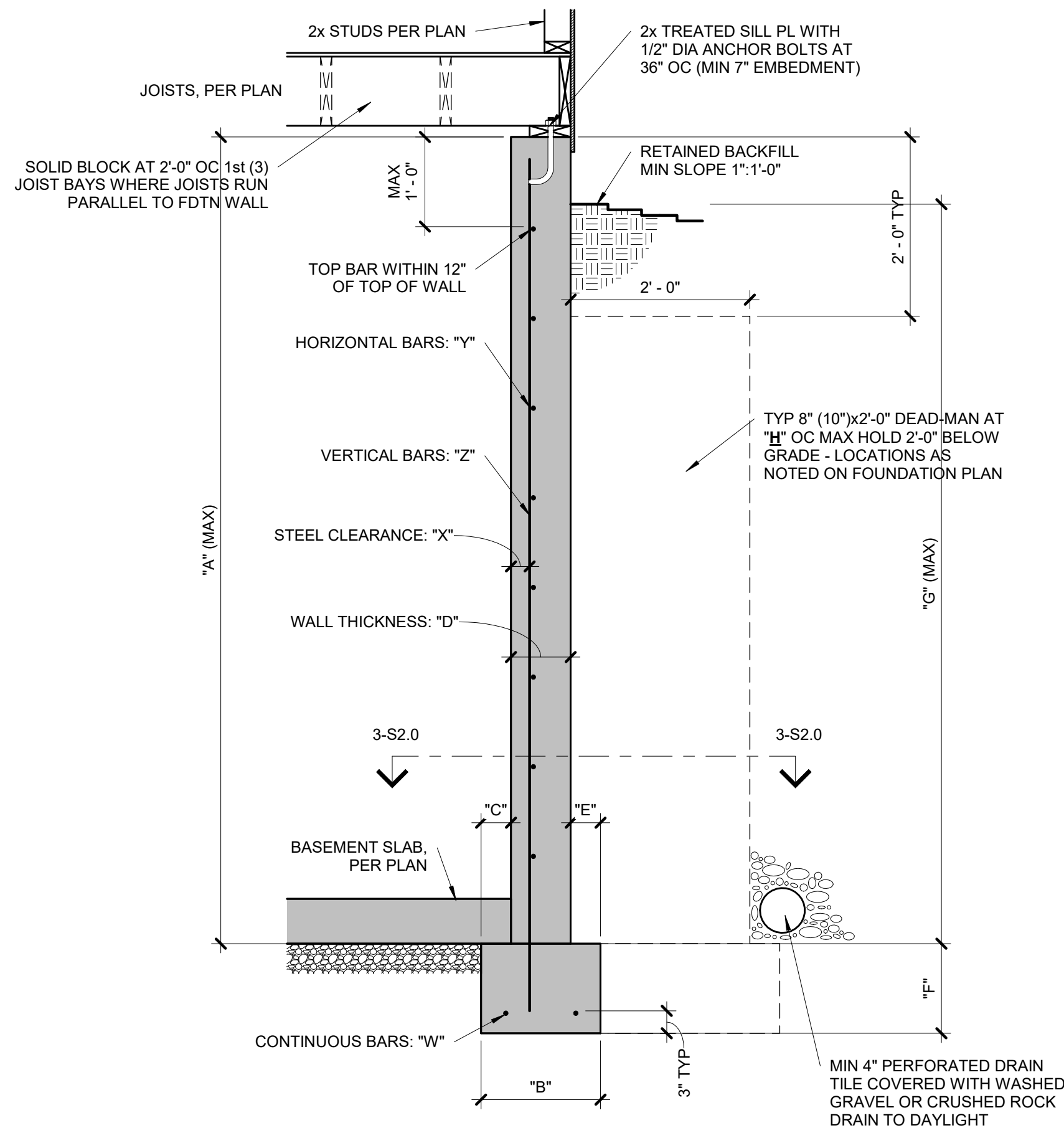
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SHEET:

GENERAL NOTES

**RELEASE FOR
CONSTRUCTION
AS NOTED ON PLANS REVI
DEVELOPMENT SERVICE
LEE'S SUMMIT, MISSOUR**

06/11/202



CONCRETE DIMENSIONS

"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
8'-0"	1'-4"	4"	8"	4"	8"	7'-6"	20'-0"
9'-0"	1'-4"	4"	8"	4"	8"	8'-6"	20'-0"
10'-0"	1'-8"	5"	10"	5"	10"	9'-6"	20'-0"

REINFORCING BARS (GRADE 40 BARS)

"W"	"X"	"Y"	"Z"
(2) #4	2 1/2"	#4 BARS AT 24" OC	#4 BARS AT 24" OC
(2) #4	2 1/2"	#4 BARS AT 24" OC	#4 BARS AT 24" OC
(2) #4	2 1/2"	#4 BARS AT 18" OC	#4 BARS AT 18" OC

- NOTES:
- DIMENSION SHOWN IS FOR MAXIMUM UNINTERRUPTED WALL PANEL LENGTH BEFORE A DEAD-MAN SHALL BE INSTALLED. NOTE, A MINIMUM 2'-0" RETURN OR OFFSET IN THE FOUNDATION WALL SHALL SUBSTITUTE AS A DEAD-MAN AND/OR BREAK IN THE WALL PANEL LENGTH.
 - VERTICAL REINFORCING STEEL TO EXTEND TO WITHIN 8" OF TOP WALL. MINIMUM (1) #4 HORIZONTAL BAR WITHIN 12" OF TOP AND BOTTOM OF WALL.
 - BURIED CONCRETE FOUNDATION WALLS UP TO 9'-0" TALL MAY BE 8" NOMINAL THICKNESS WITH #4 BARS AT 24" OC BOTH WAYS OVER 16"x8" CONCRETE FOOTINGS WITH (2) #4 BARS CONTINUOUS, UNLESS OTHERWISE REQUIRED BY ENGINEERING REPORT BASED ON ACTUAL SITE CONDITIONS.
 - WALL WILL NOT ACHIEVE FULL STRENGTH UNTIL FIRST FLOOR DECK AND BASEMENT SLAB HAVE BEEN PLACED.

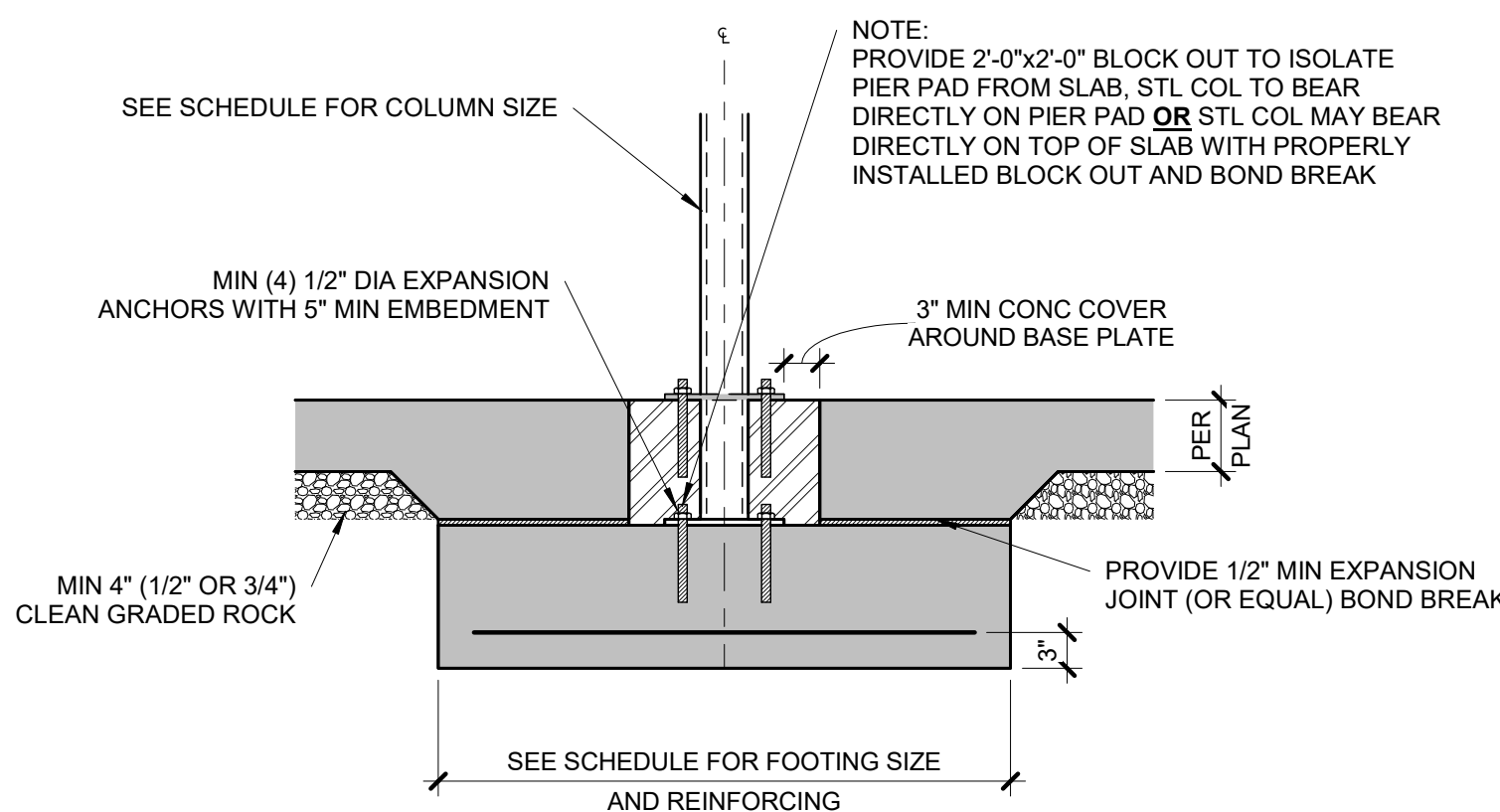
1 TYPICAL FOUNDATION WALL DETAIL

S2.0 3/4" = 1'-0"

COLUMN AND PIER PAD SCHEDULE

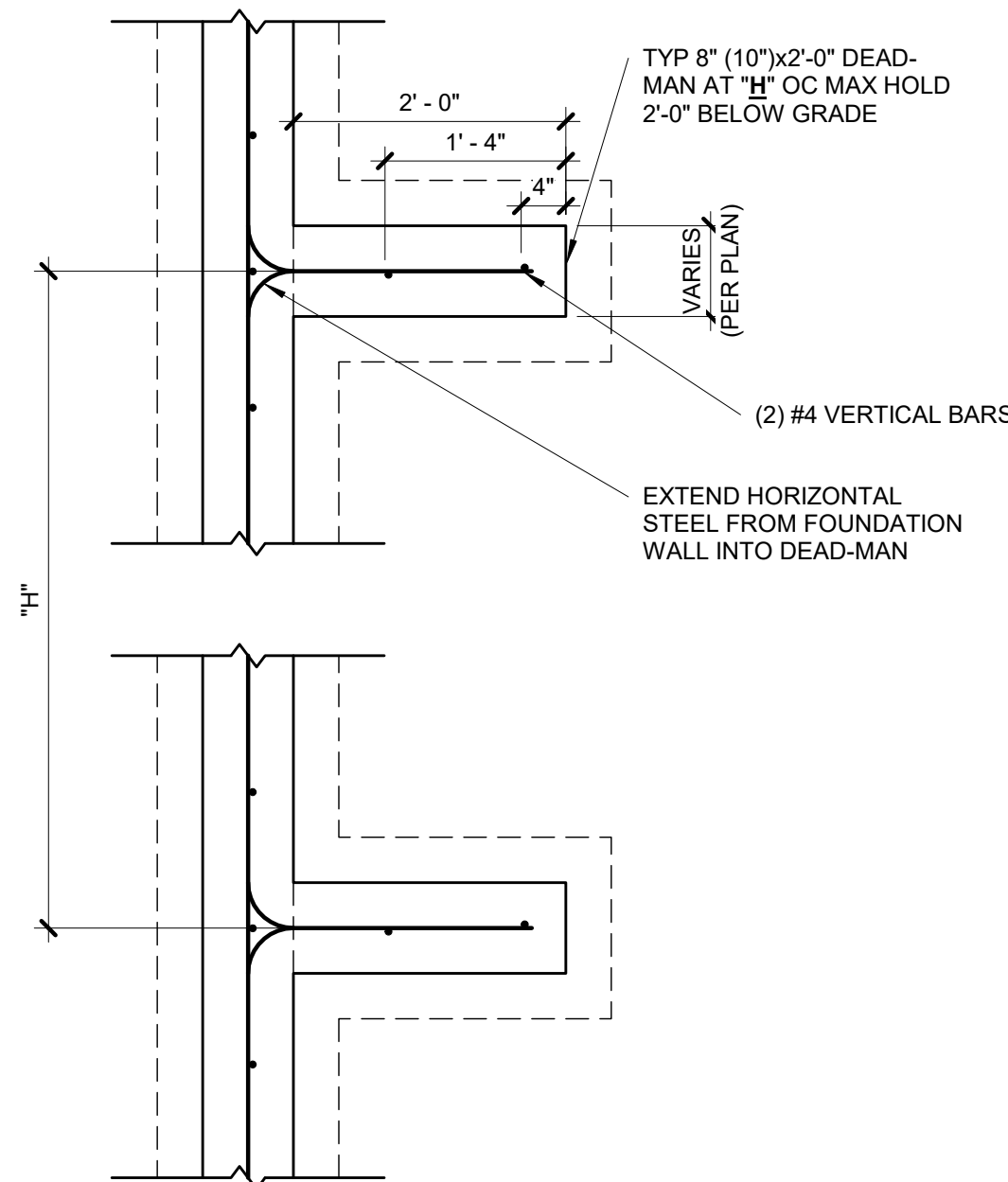
COLUMN MARK	PAD SIZE	REINFORCING	COL SIZE	COL TYPE
A	30"x30"x12"	(4) #4 BARS E-W	3" NOMINAL	SCHEDULE 40 STEEL COLUMN (FY = 58 ksi MIN)
B	36"x36"x12"	(4) #4 BARS E-W	3" NOMINAL	
C	42"x42"x12"	(5) #4 BARS E-W	3" NOMINAL	
D	48"x48"x12"	(6) #4 BARS E-W	3" NOMINAL	
E	54"x54"x16"	(8) #4 BARS E-W	3 1/2" NOMINAL (4" OD)	
F	60"x60"x16"	(10) #4 BARS E-W	3 1/2" NOMINAL (4" OD)	

- NOTES:
- COLUMN AND PIER PAD SIZES SHOWN ARE FOR MAXIMUM COLUMN HEIGHT OF 10'-0". REQUIRES SEPERATE ENGINEERED DESIGN IF GREATER THAN 10'-0"
 - COLUMN AND PIER PAD SIZES SHOWN ARE BASED ON AN ASSUMED MINIMUM ALLOWABLE SOIL BEARING CAPACITY OF 2,000 PSF.



5 COLUMN PAD DETAIL

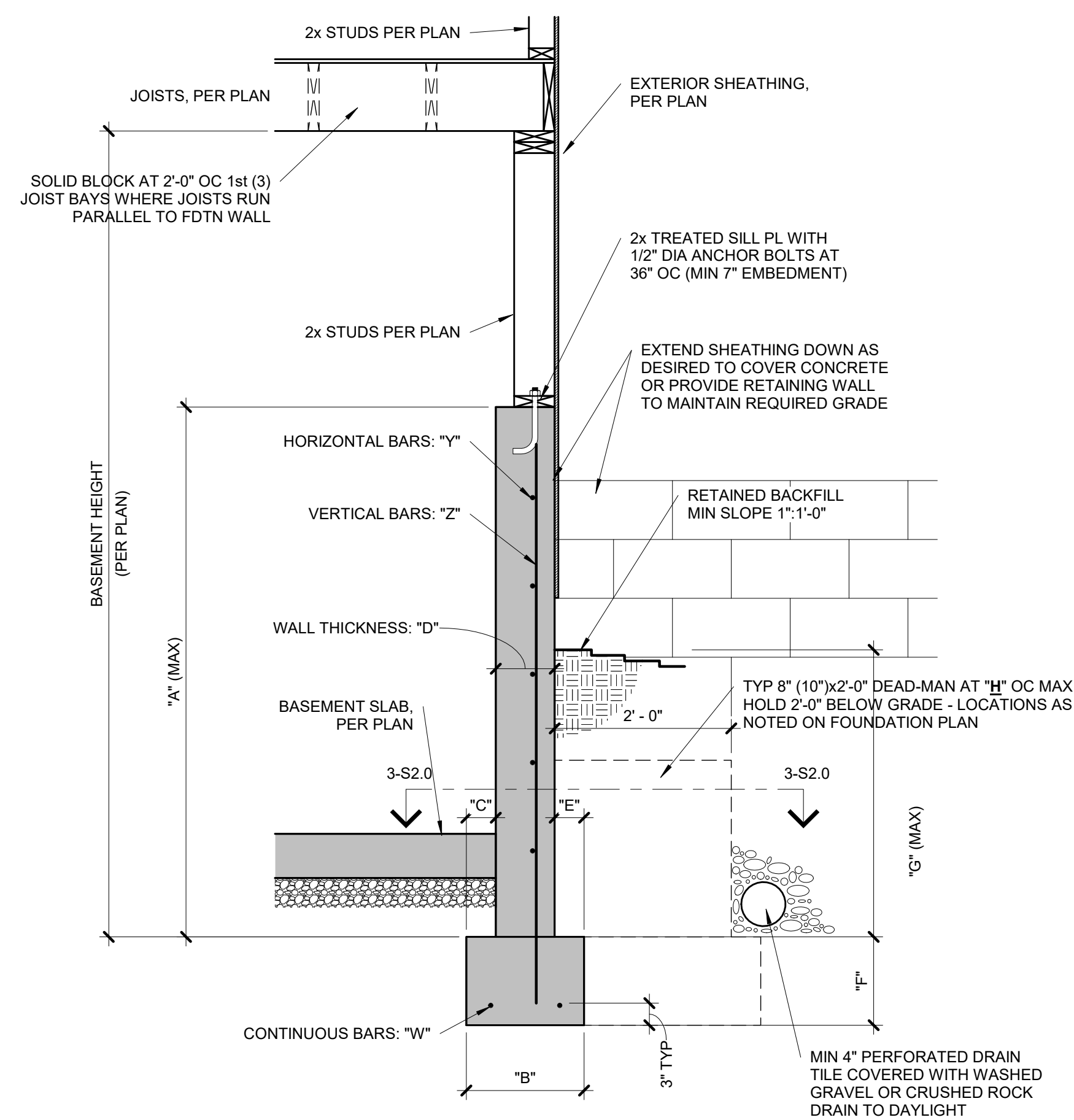
S2.0 3/4" = 1'-0"



- NOTES:
- MIN 3000 PSI FOOTING COMPRESSIVE CONCRETE STRENGTH.
 - MIN 3000 PSI WALL COMPRESSIVE CONCRETE STRENGTH.
 - AIR ENTRAINED BETWEEN 5% & 7% OF CONCRETE VOLUME.
 - GRADE 40 REINFORCING STEEL UNLESS OTHERWISE NOTED.
 - LAP SPLICES 24" MIN.
 - WALL SHALL BE BACK-FILLED WITH CLEAN, LEAN CLAY (OR BETTER) LOW VOLUME CHANGE MATERIAL. ON-SITE MATERIAL MAY BE USED IF DEEMED ACCEPTABLE BY THE GEOTECHNICAL ENGINEER.
 - ASSUMED 2,000 PSF BEARING (TO BE VERIFIED BY GEOTECHNICAL ENGINEER).

3 TYPICAL DEAD-MAN SECTION

S2.0 3/4" = 1'-0"



CONCRETE DIMENSIONS

"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
4'-0"	1'-4"	4"	8"	4"	8"	3'-4"	20'-0"
6'-0"	1'-4"	4"	8"	4"	8"	4'-4"	20'-0"
9'-0"	1'-8"	5"	8"	4"	8"	4'-4"	20'-0"

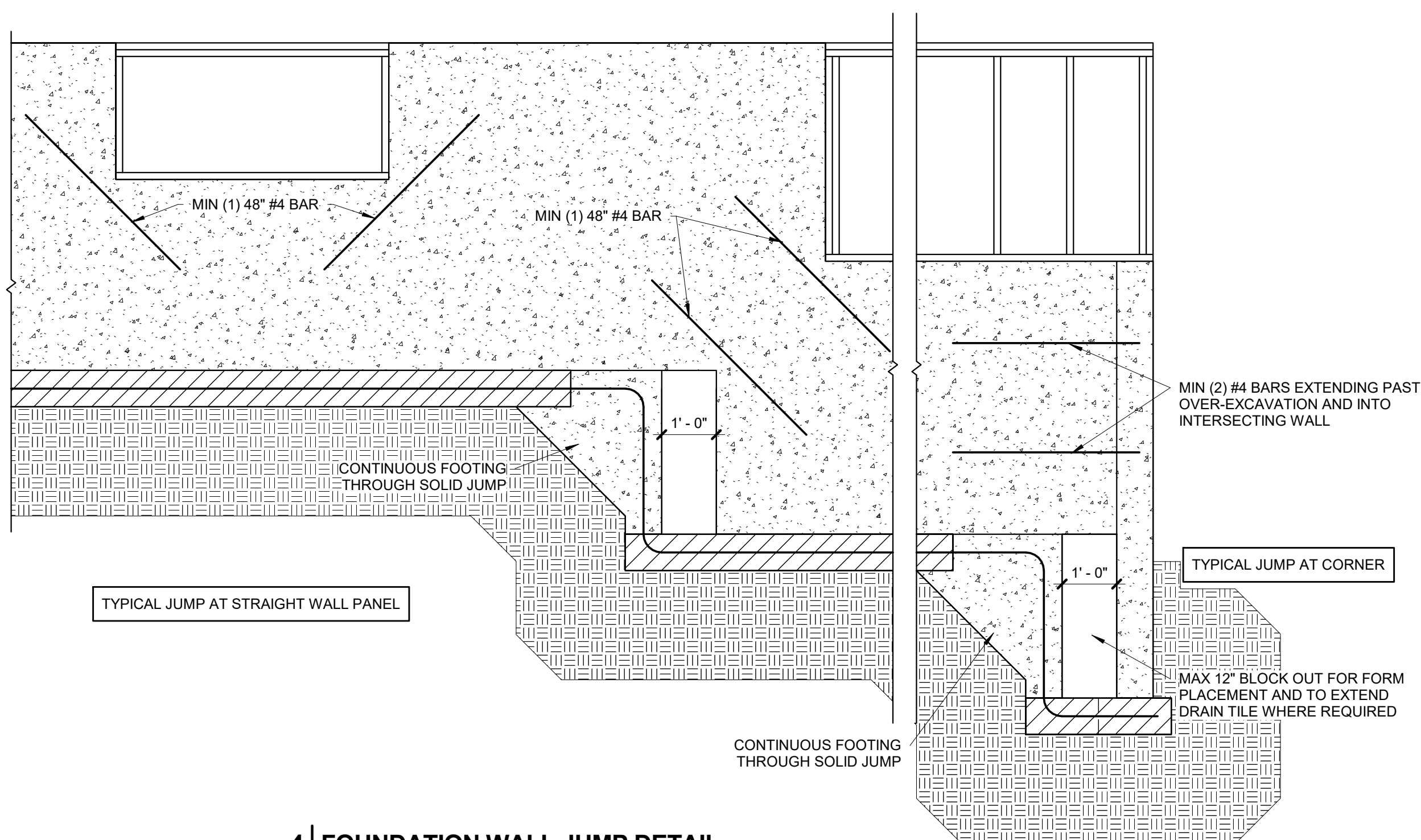
REINFORCING BARS (GRADE 40 BARS)

"W"	"X"	"Y"	"Z"
(2) #4	N/A	#4 BARS AT 24" OC	#4 BARS AT 24" OC
(2) #4	N/A	#4 BARS AT 24" OC	#4 BARS AT 24" OC
(2) #4	N/A	#4 BARS AT 24" OC	#4 BARS AT 24" OC

- NOTES:
- DIMENSION SHOWN IS FOR MAXIMUM UNINTERRUPTED WALL PANEL LENGTH BEFORE A DEAD-MAN SHALL BE INSTALLED. NOTE, A MINIMUM 2'-0" RETURN OR OFFSET IN THE FOUNDATION WALL SHALL SUBSTITUTE AS A DEAD-MAN AND/OR BREAK IN THE WALL PANEL LENGTH.
 - VERTICAL REINFORCING STEEL TO EXTEND TO WITHIN 8" OF TOP WALL. MINIMUM (1) #4 HORIZONTAL BAR WITHIN 12" OF TOP AND BOTTOM OF WALL.
 - THE BASEMENT SLAB IS AN INTEGRAL PART OF THE 'UNRESTRAINED' FOUNDATION WALL DESIGN THEREFORE, IF THE WALL IS BACKFILLED PRIOR TO PLACEMENT OF THE BASEMENT SLAB, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY BRACING THE WALL UNTIL THE BASEMENT SLAB HAS BEEN PLACED.

2 TYPICAL 'UNRESTRAINED' FOUNDATION WALL DETAIL

S2.0 3/4" = 1'-0"



4 FOUNDATION WALL JUMP DETAIL

S2.0 1/2" = 1'-0"

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PROJECT:

LOT 28 COBEY CREEK
LEE'S SUMMIT, MO

CLIENT:

HOUSE & RENNER CONSTRUCTION

PROJECT #: 41100
DRAWN BY: QTJ
CHECKED BY: BDC
SUBMITTAL DATE: 2021.04.23

COMMENTS

DATE

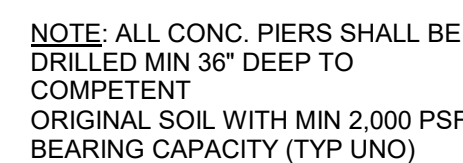
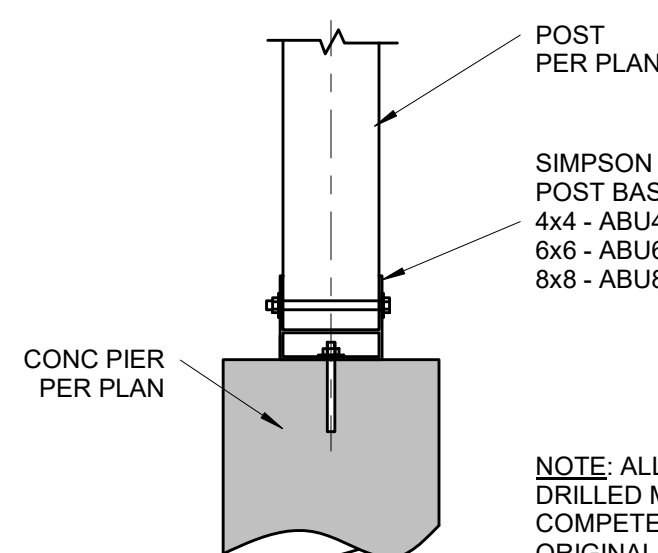
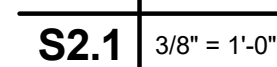
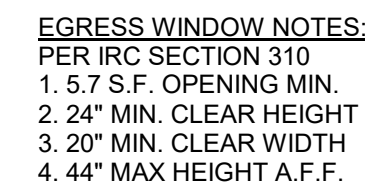
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SHEET:

FOUNDATION DETAILS

RELEASE FOR
CONSTRUCTION
BASED ON PLANS REVIEW
DEVELOPER SERVICES
LEE'S SUMMIT, MISSOURI

06/11/2021



TYPICAL SUSPENDED SLAB DETAIL

STEEL DECKING NOTES:

- MINIMUM 1-1/2" BEARING
- FASTEN TO SUPPORT STEEL WITH 5/8" VISIBLE PUDDLE WELDS AT EDGE RIBS AND 12" CENTERS ALONG END BEARING
- FASTEN SIDE LAPS AND PERIMETER EDGES AT 36" CENTERS WITH #10 TEK SCREWS OR 5/8" PUDDLE WELDS
- MAX UNSUPPORTED CONSTRUCTION SPAN 6'-0". UNO ON PLANS BY APEX

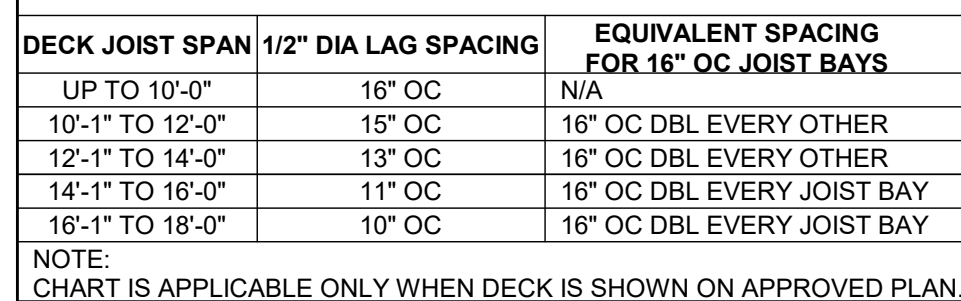


A. LISTED HEIGHTS ARE DISTANCES BETWEEN POINTS OF LATERAL SUPPORT PLACED PERPENDICULAR TO THE PLANE OF THE WALL. BEARING WALLS SHALL BE SHEATHED ON NOT LESS THAN ONE SIDE OR BRIDGING SHALL BE INSTALLED NOT GREATER THAN 4 FEET APART MEASURED VERTICALLY FROM EITHER END OF THE BEARING WALL. THE BEARING WALLS SHALL BE REINFORCED WHERE IN COMPLIANCE WITH EXCEPTION 2 OF SECTION R602.3.1 OR DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.

B. A HABITABLE ATTIC ASSEMBLY SUPPORTED BY 2x4 STUDS IS LIMITED TO A ROOF SPAN OF 32 FEET. WHERE THE ROOF SPAN EXCEEDS 32 FEET, THE WALL STUDS SHALL BE INCREASED TO 2x6 OR THE STUDS SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE.

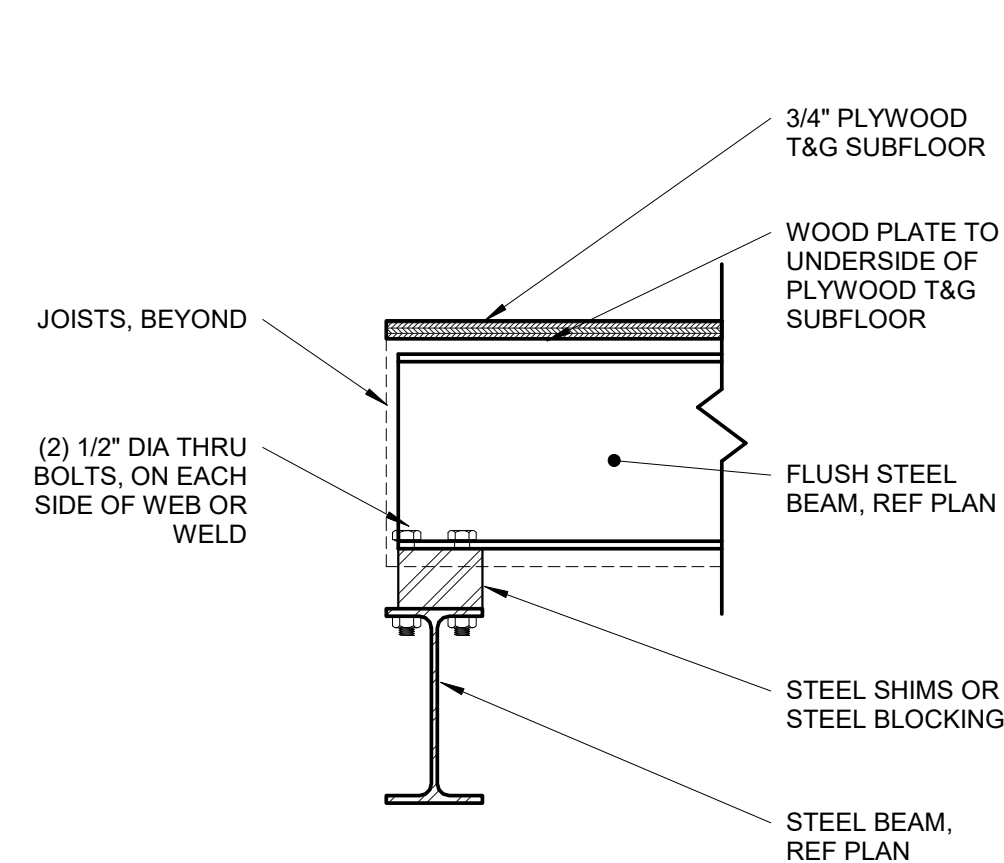
A. WALL STUDS NOT EXCEEDING 16" OC SHALL BE SHEATHED WITH MINIMUM 1/2" GYPSUM BOARD ON THE INTERIOR AND 3/8" WOOD STRUCTURAL PANEL SHEATHING ON THE EXTERIOR. WOOD STRUCTURAL PANEL SHEATHING SHALL BE ATTACHED WITH 8d (2.5" x 0.131") NAILS NOT GREATER THAN 6" OC ALONG PANEL EDGES AND 12" OC AT INTERMEDIATE SUPPORTS, AND ALL PANEL JOINTS SHALL OCCUR OVER STUDS OR BLOCKING.

B. THE MAXIMUM SPAN IS APPLICABLE TO BOTH SINGLE AND MULTIPLE SPAN ROOF AND FLOOR CONDITIONS. THE ROOF ASSEMBLY SHALL NOT CONTAIN A HABITABLE ATTIC.



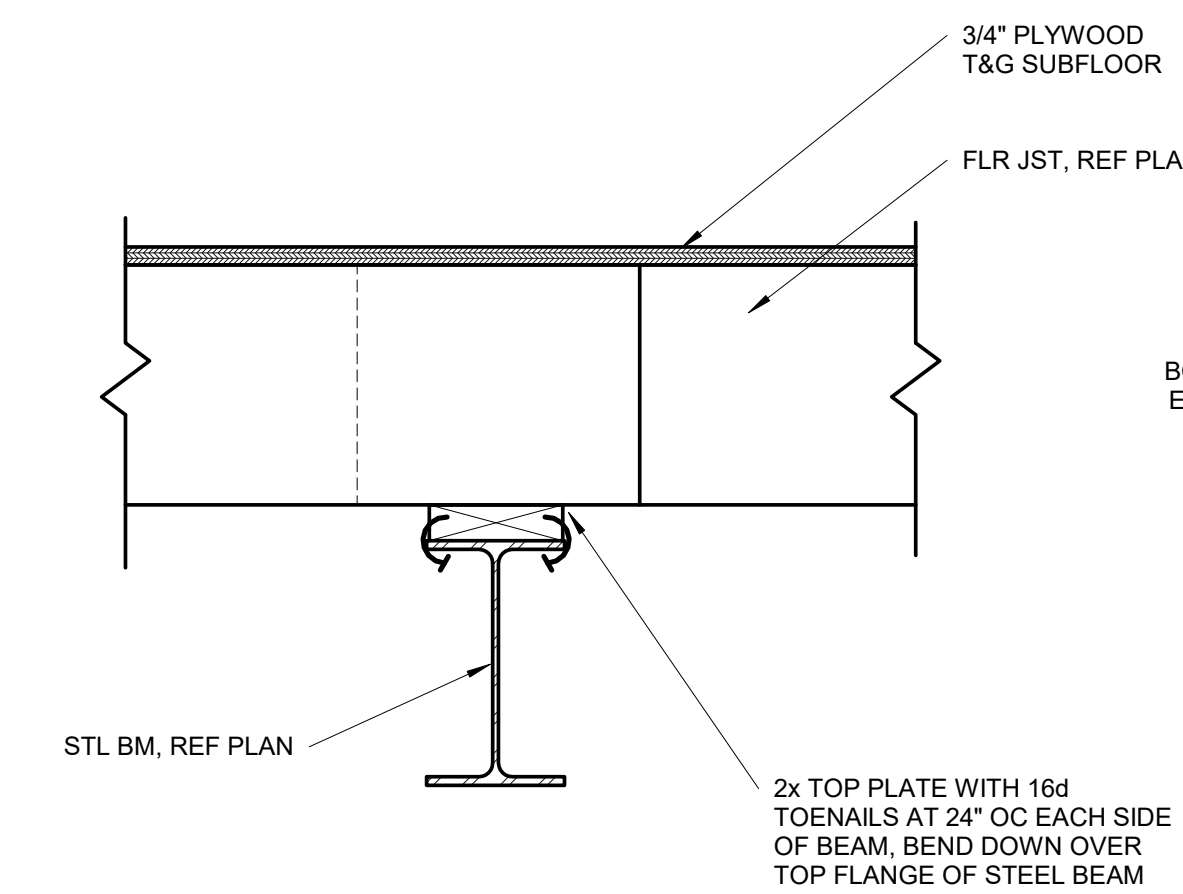
6	TYPICAL LEDGER ATTACHMENT
3.0	3/4" = 1'-0"





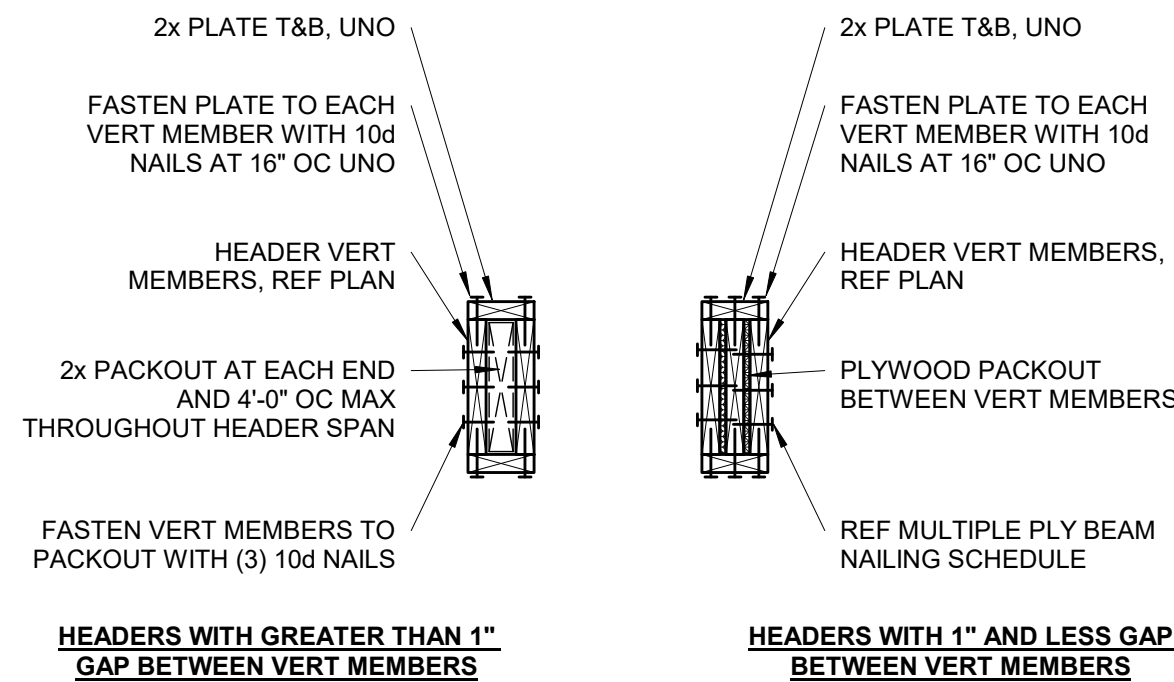
9 FLUSH STEEL BEAM TO STEEL BEAM

S3.1 1 1/2" = 1'-0"



8 WOOD PLATE TO STEEL BEAM CONNECTION

S3.1 1 1/2" = 1'-0"



11 TYPICAL WOOD HEADER DETAIL

S3.1 NOT TO SCALE

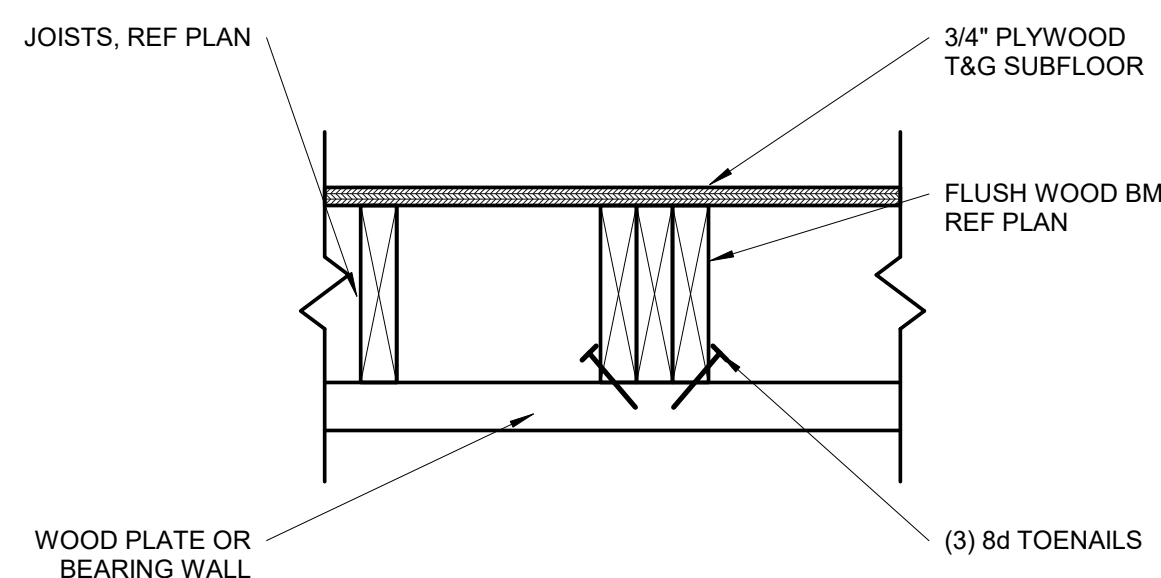
2 - PLY	3 - PLY	4 - PLY
(3) ROWS OF 16d x 3-1/2" NAILS AT 6" OC	(3) ROWS OF 16d x 3-1/2" NAILS AT 4" OC	(2) ROWS OF 1/2" DIA. A307 THRU-BOLTS AT 12" OC STAGGERED
NOTES: 1. NAILING SHOWN APPLIES UNLESS SPECIFICALLY NOTED IN DETAILS. 2. SPACE NAILS EVENLY THROUGHOUT DEPTH OF BEAM.		

10 MULTIPLE PLY BEAM NAILING SCHEDULE

S3.1 NOT TO SCALE

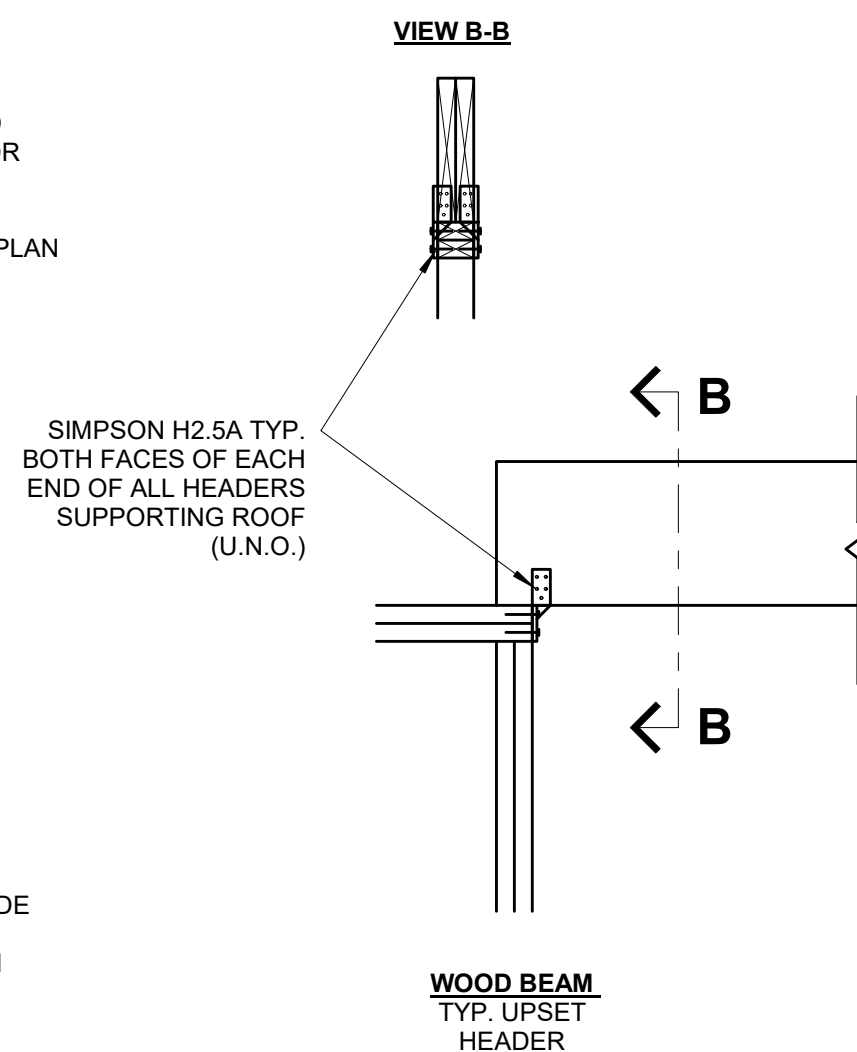
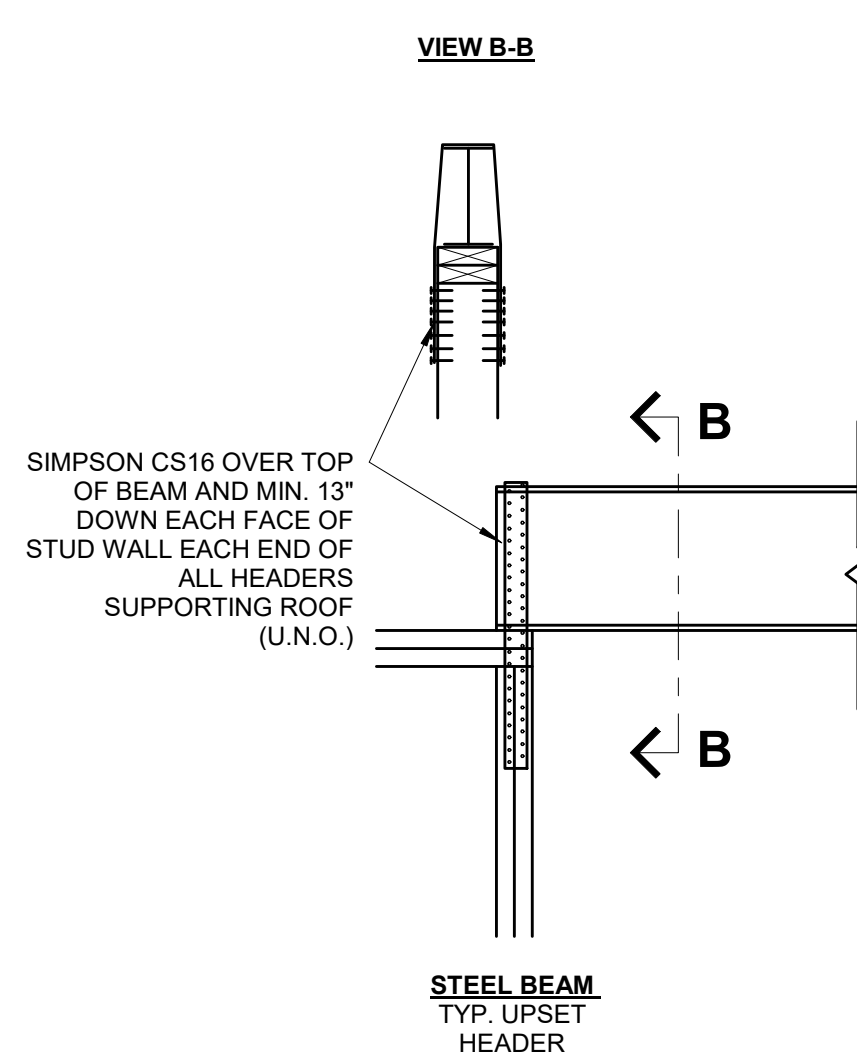
7 FLUSH STEEL BEAM CONNECTION

S3.1 1 1/2" = 1'-0"



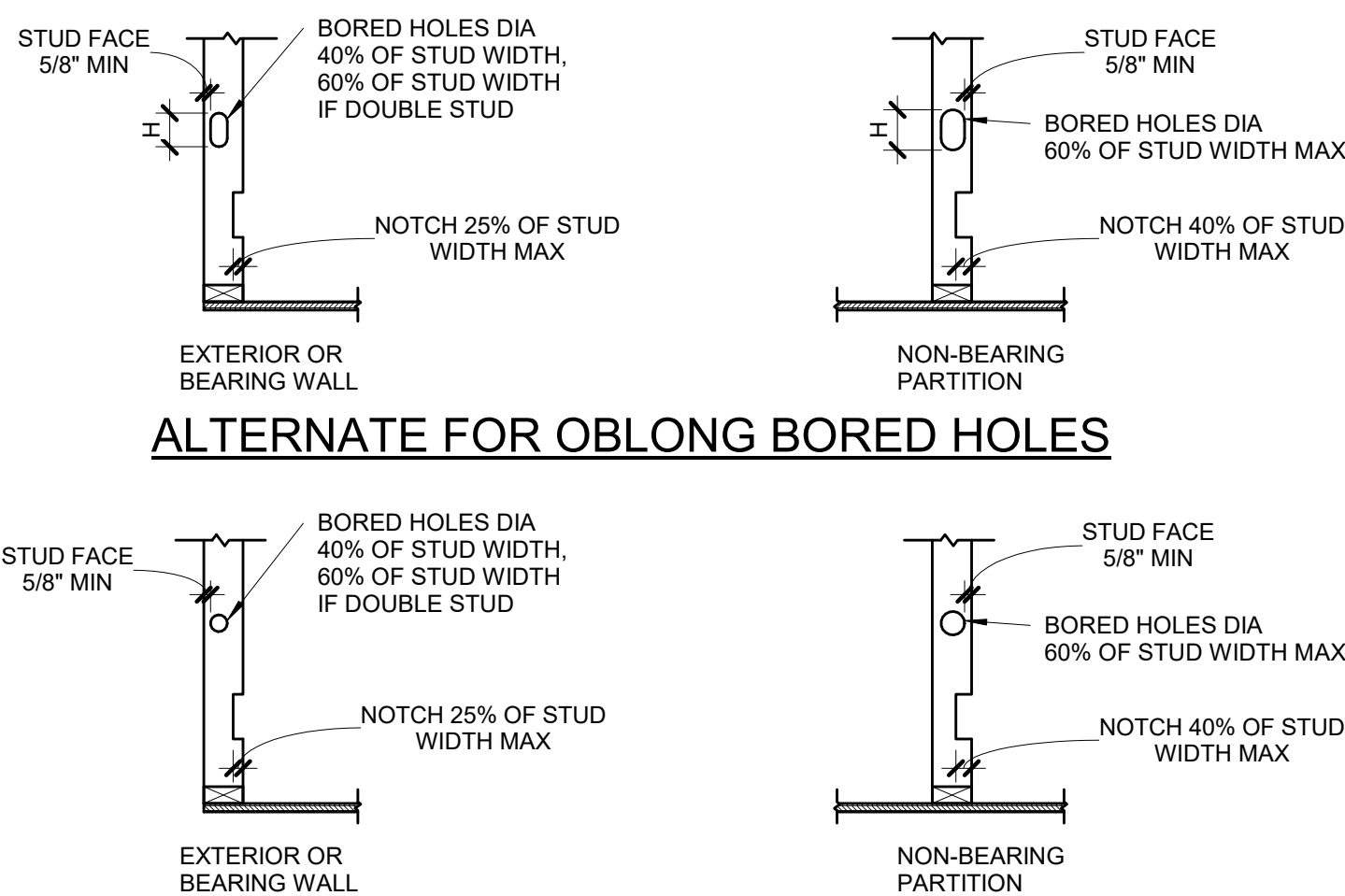
6 FLUSH WOOD BEAM CONNECTION

S3.1 1 1/2" = 1'-0"



5 ROOF SUPPORTING BEAM HOLD DOWN

S3.1 3/4" = 1'-0" (COMPLIANCE WITH IRC R802.11)



PENETRATIONS THRU STUDS

WALL SIZE	BORED HOLE SIZE		WALL NOTCH	
	STUDS LOAD BEARING OR EXTERIOR WALL	NON LOAD BEARING WALL	LOAD BEARING WALL	NON LOAD BEARING WALL
2x4	1 3/8"	60%	2 1/8"	25%
(2) 2x4	-	60%	2 1/8"	60%
2x6	2 1/4"	2 1/8"	3 15/16"	7/8"
(2) 2x6	-	60%	3 15/16"	1 3/8"
2x8	2 7/8"	3 5/16"	4 3/8"	1 3/8"
(2) 2x8	-	60%	4 3/8"	1 3/16"

PLATES:
TOP AND BOTTOM PLATE HOLE, CUT OR NOTCH THAT IS 50% MORE OF WIDTH MUST BE REPAIRED USING 16 GA (MIN) METAL TIE THAT IS AT LEAST 1-1/2" WIDE IF WALL IS A SHEAR WALL IT MUST BE REPAIRED USING HARDY FRAME SADDLE (HFS).

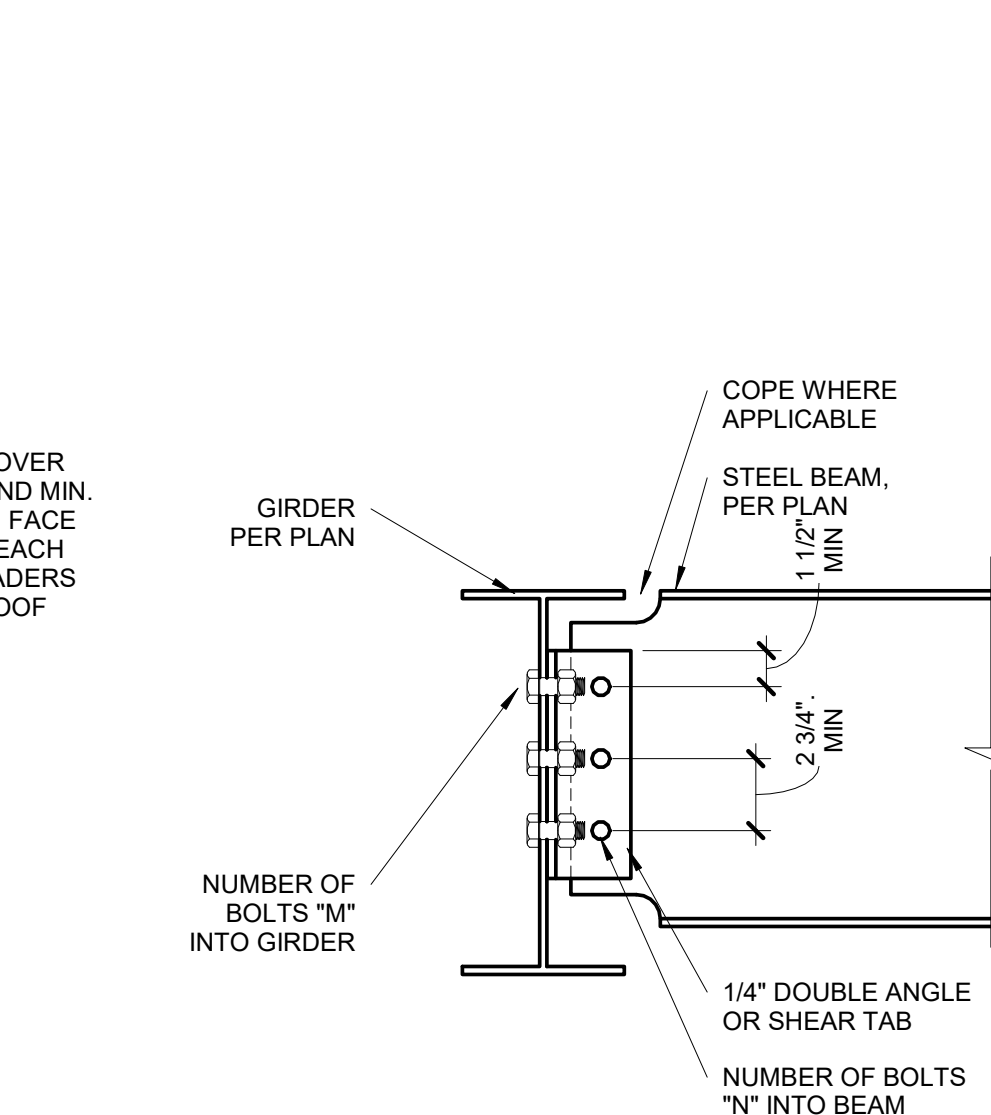
NOTE:
SEE SECTION R602.6 AND FIGURES R602.6.1 AND R602.6.2

4 DRILLING & NOTCHING DETAIL

S3.1 3/4" = 1'-0"

WALL SIZE	HOLE SIZE
2x4	1 3/4"
2x6	2 3/4"
2x8	3 5/8"

VERTICAL HOLE SIZE (H)
D+1/2" AT Lvl 1&2
D+1" AT Lvl 3
D+1 1/4" AT Lvl 4
D+1 1/2" AT Lvl 5



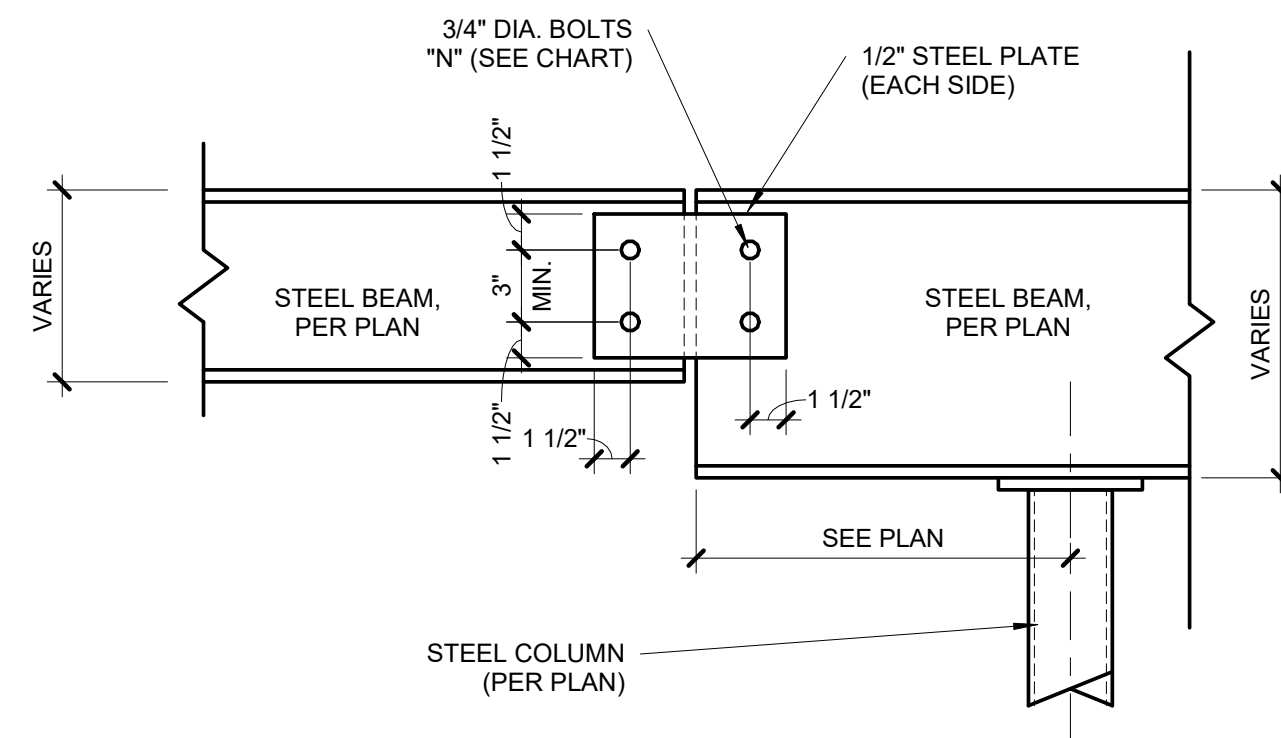
3 BEAM TO GIRDER CONNECTION

S3.1 1 1/2" = 1'-0"

BEAM CONNECTION SCHEDULE

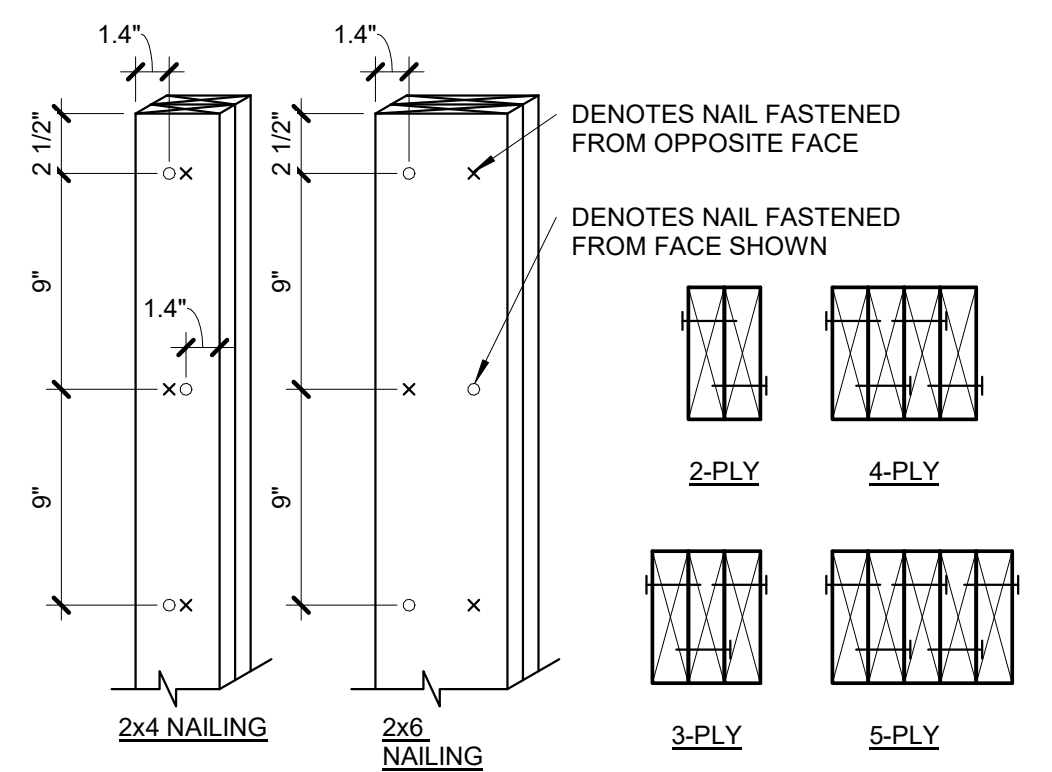
BEAM SIZE	# OF BOLTS "N"	# OF BOLTS "M"
W8, W10	2	4
W12, W14	3	6
W16, W18	4	8

NOTES:
1. THESE CONNECTIONS ARE TYPICAL, UNO.
2. NUMBER OF BOLTS IN UPSET BEAM CONNECTIONS DETERMINED BY SMALLER OF TWO BEAMS AT CONNECTION.
3. ALL AROUND 1/4" FILLET WELD MAY BE SUBSTITUTED FOR EITHER BOLTED CONNECTION.
4. ALL BOLTS, 3/4" DIAMETER, A325-N, UNO.



2 BEAM SPLICE DETAIL

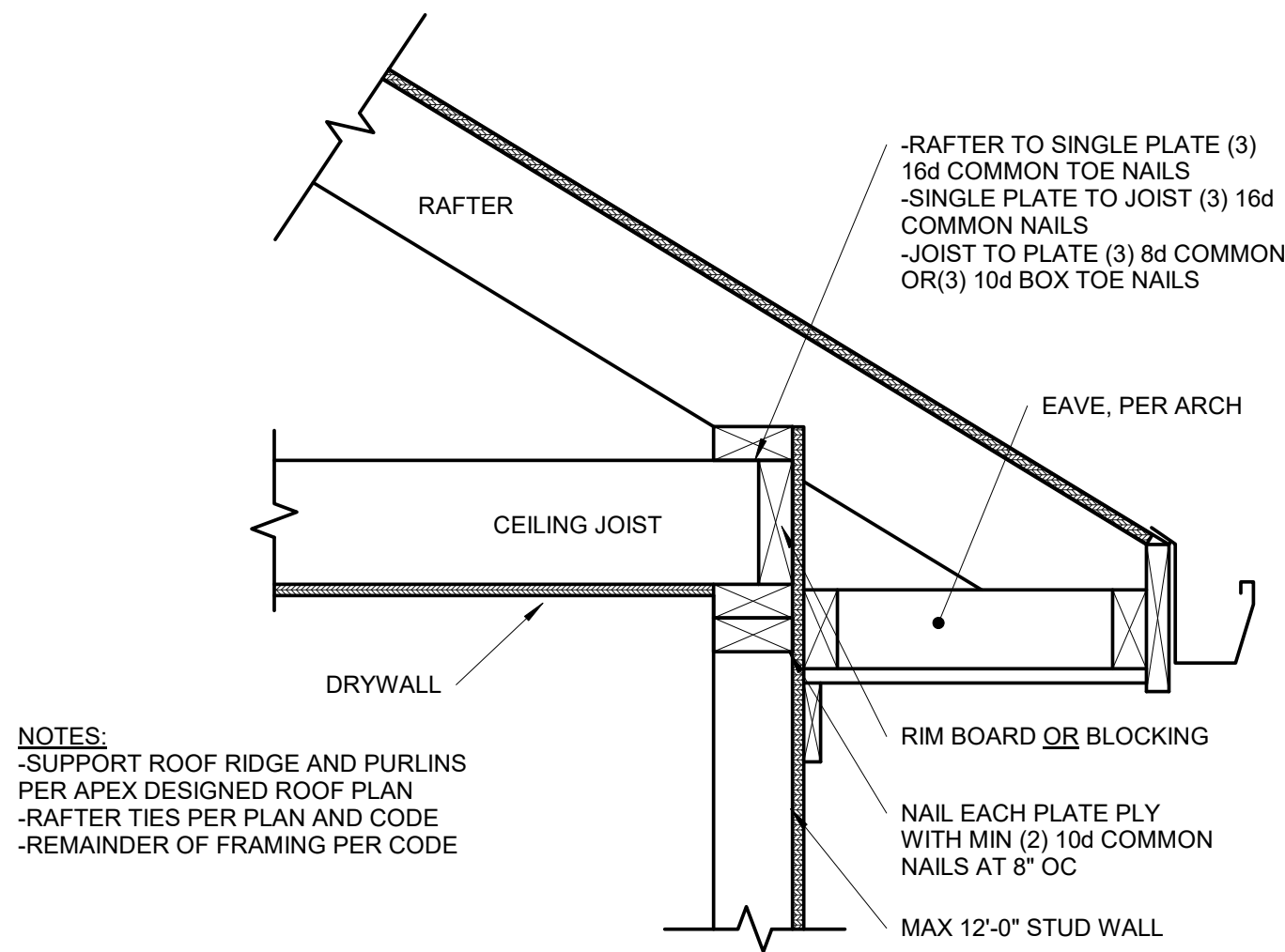
S3.1 1 1/2" = 1'-0"



NOTES:
1. EACH 2x PLY SHALL BE FASTENED WITH (1) ROW OF 10d NAILS AT 9" OC, ALTERNATING SIDE TO SIDE.
2. 1 1/2" MIN EDGE DISTANCE, AND STARTING 2 1/2" FROM EACH END.
3. EXTEND FULL AREA OF COLUMN AS SOLID BLOCKING THROUGH JOIST BAYS AND WALLS TO LOAD-BEARING BEAM/WALL BELOW

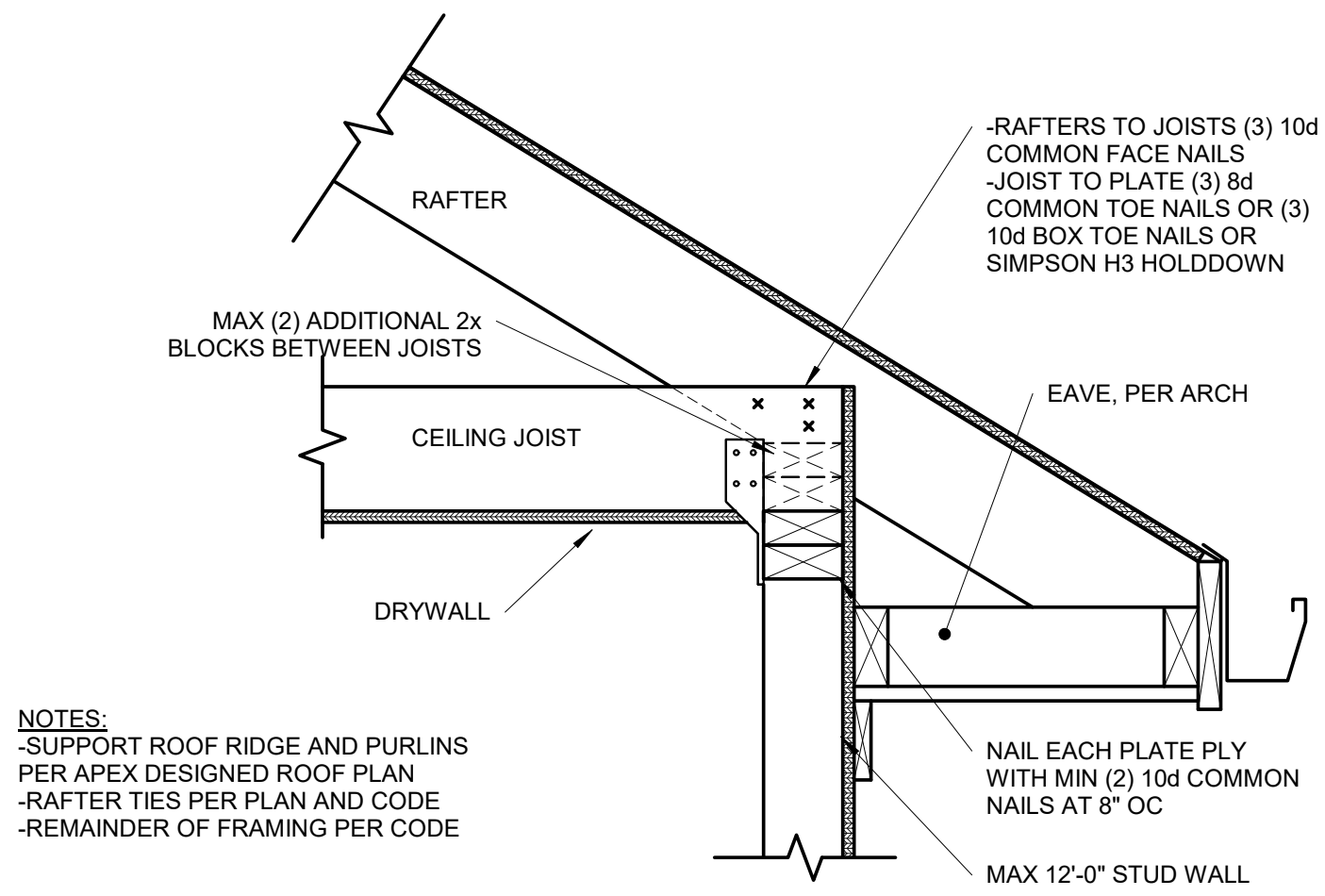
1 BUILT-UP STUD COLUMN

S3.1 1 1/2" = 1'-0"



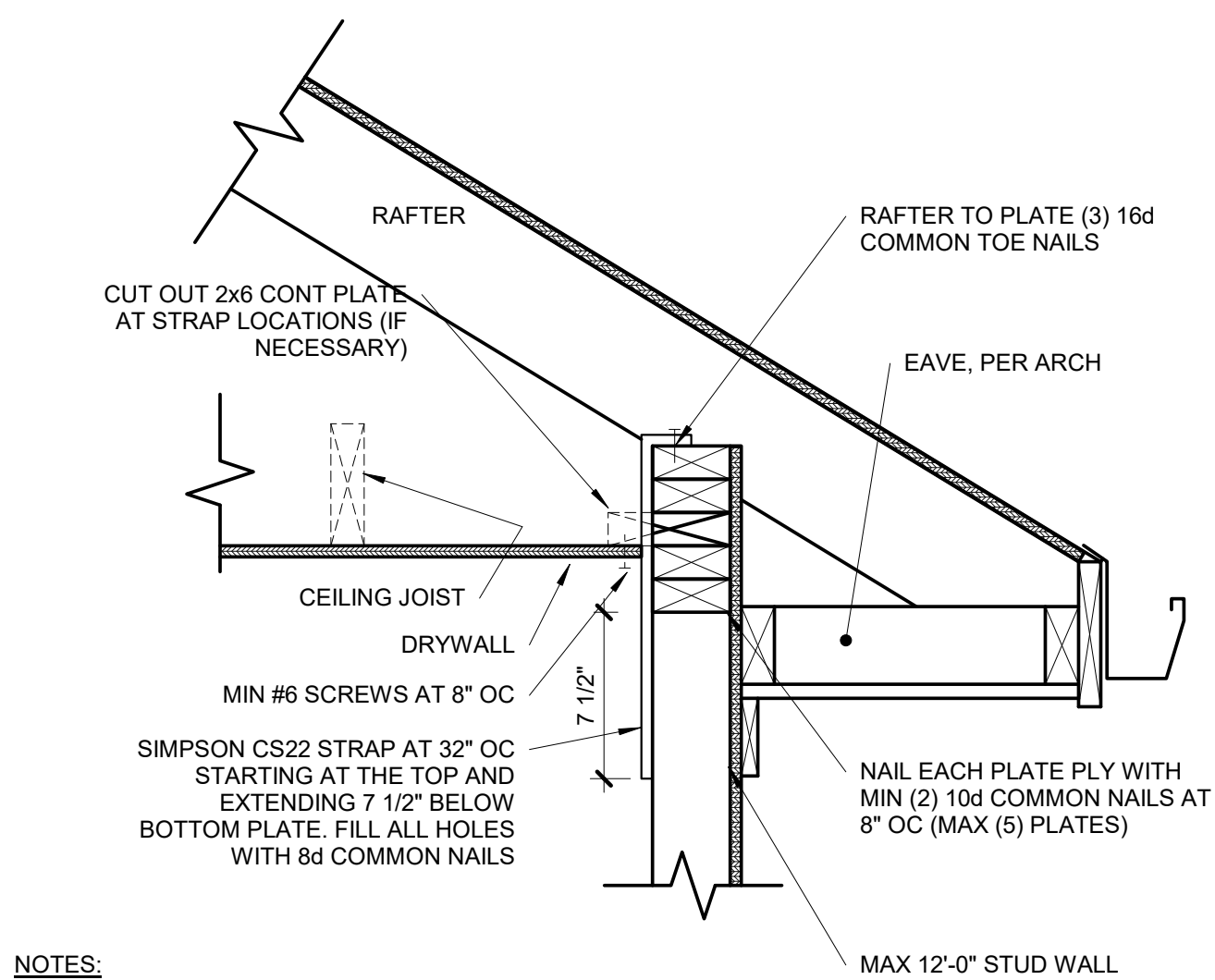
8 | OPTIONAL RAFTER BEARING

S3.2 1 1/2" = 1'-0"



7 | OPTIONAL RAFTER BEARING

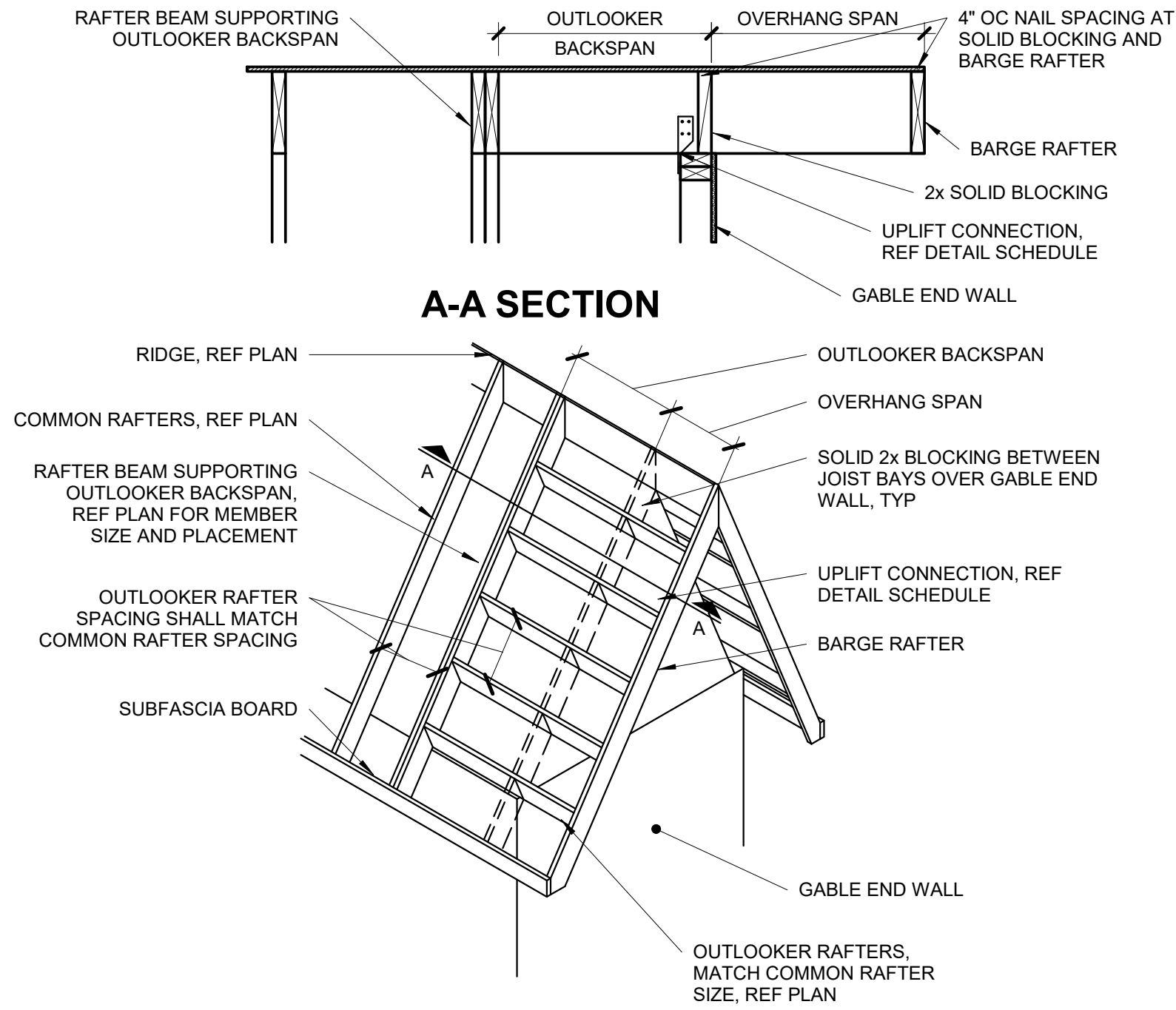
S3.2 1 1/2" = 1'-0"



6 | OPTIONAL RAFTER BEARING

S3.2 1 1/2" = 1'-0"

UPLIFT CONNECTION SCHEDULE			
OVERHANG SPAN: 1'-1" TO 1'-9"			
RAFTER SPACING	UPLIFT CONNECTOR	EXPOSURE B	EXPOSURE C
12" OC	SIMPSON H2.5A	(1) AT 24" OC	(1) AT 24" OC
16" OC	SIMPSON H2.5A	(1) AT 32" OC	(1) AT 16" OC
24" OC	SIMPSON H2.5A	(1) AT 24" OC	(1) AT 24" OC
OVERHANG SPAN: 1'-10" TO 2'-6"			
RAFTER SPACING	UPLIFT CONNECTOR	EXPOSURE B	EXPOSURE C
12" OC	SIMPSON H2.5A	(1) AT 12" OC	(1) AT 12" OC
16" OC	SIMPSON H2.5A	(1) AT 16" OC	(2) AT 16" OC
24" OC	SIMPSON H2.5A	(2) AT 24" OC	(2) AT 24" OC
OVERHANG SPAN: 2'-7" TO 3'-9"			
RAFTER SPACING	UPLIFT CONNECTOR	EXPOSURE B	EXPOSURE C
12" OC	SIMPSON H2.5A	(2) AT 12" OC	(2) AT 12" OC
16" OC	SIMPSON H2.5A	(2) AT 16" OC	(2) AT 16" OC
24" OC	SIMPSON H2.5A	(2) AT 24" OC	N/A

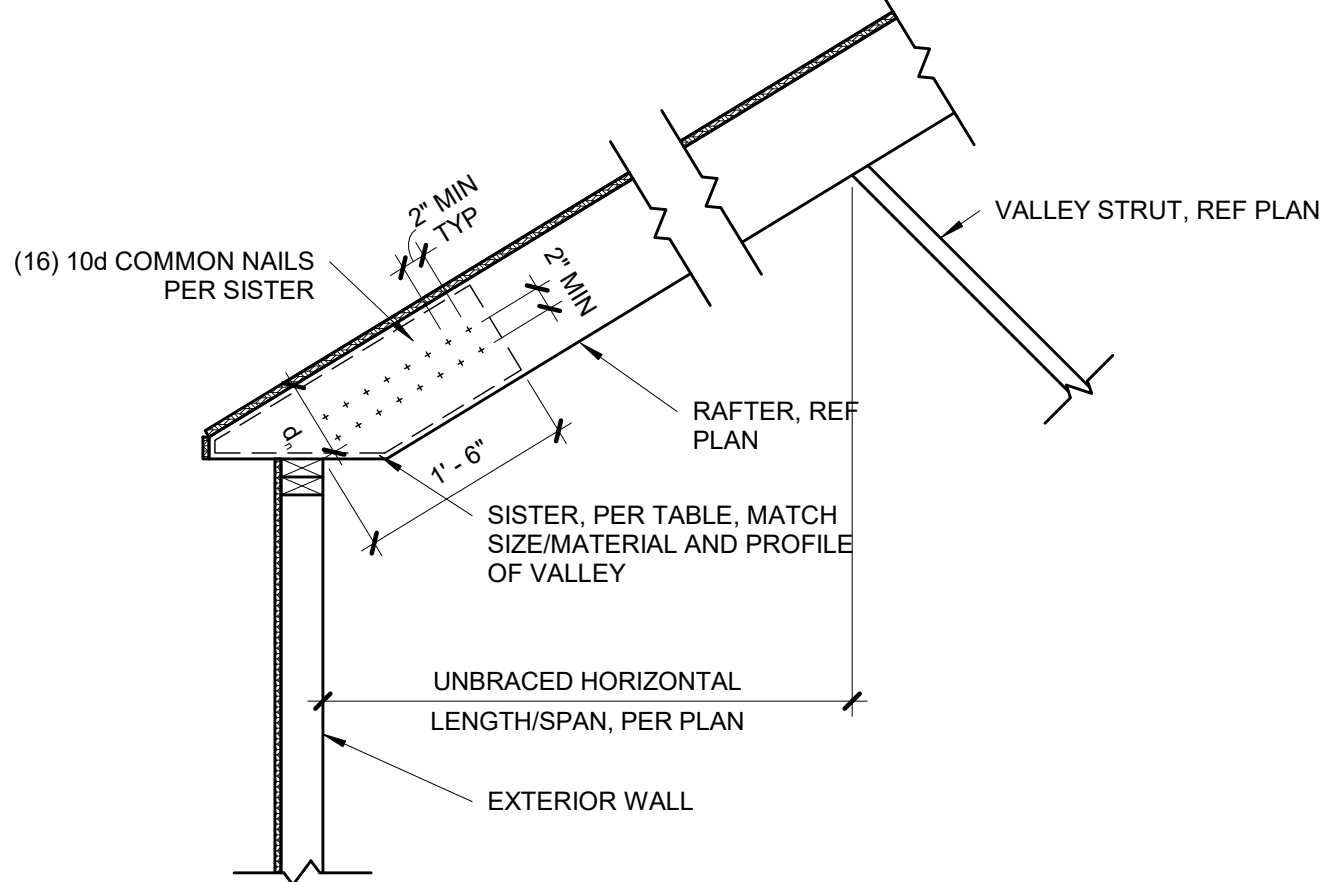


5 | OUTLOOKER RAFTERS ROOF FRAMING

S3.2 NOT TO SCALE

REQUIRED NUMBER OF SISTER PLIES							
LIGHT ROOF							
# OF SISTER PLIES	2x VALLEY			# OF SISTER PLIES	LVL VALLEY		
	RAFTER SIZE				RAFTER SIZE		
	2x6	2x8	2x10		2x6	2x8	2x10
0	4'-8"	6'-2"	7'-11"	0	8'-8"	11'-5"	14'-7"
1	9'-5"	*	*	1	*	*	*
2	*	N/A	N/A	2	N/A	N/A	N/A
HEAVY ROOF							
# OF SISTER PLIES	2x VALLEY			# OF SISTER PLIES	LVL VALLEY		
	RAFTER SIZE				RAFTER SIZE		
	2x6	2x8	2x10		2x6	2x8	2x10
0	3'-6"	4'-7"	5'-11"	0	6'-6"	8'-7"	10'-11"
1	7'-1"	9'-3"	*	1	13'-1"	*	*
2	*	*	N/A	2	*	N/A	N/A

- *VALLEYS OF A LENGTH GREATER THAN THAT FOUND IN THE CELL ABOVE ARE CONTROLLED BY BENDING. APPLY THE NUMBER OF SISTER PLIES CORRESPONDING TO THIS ROW.
- THIS TABLE IS INTENDED TO BE USED IN CONJUNCTION WITH THE STAMPED, ENGINEERED PLANS AS THEY ARE DRAWN BY APEX. BRACING LOCATIONS SHALL DETERMINE HORIZONTAL UNSUPPORTED SPAN FROM VALLEY BEARING AND BE USED TO DETERMINE THE NUMBER OF SISTERS REQUIRED. BRACING LOCATIONS ARE **NOT** TO BE INFERRED USING THIS TABLE.
 - TABLE VALUES ARE BASED ON A DEPTH OF MEMBER REMAINING, d, EQUAL TO THE DEPTH OF THE RAFTERS. IF d IS OBSERVED TO BE LESS THAN THE DEPTH OF THE RAFTER, THE VALLEY WILL NEED TO BE EITHER REPLACED OR ANALYZED BY APEX. TABLE VALUES ARE VALID FOR TAPERED CUTS ONLY, REF DETAIL 4/S3.2.
 - IF MULTI-PLY VALLEY IS SPECIFIED ON PLAN TREAT EACH ADDITIONAL PLY AS A SISTER PLY WHEN LOOKING UP MAX SPAN.
 - MAX 14'-0" HORIZONTAL RAFTER SPAN IN BOTH DIRECTIONS FROM VALLEY.
 - ALL HIPs ARE DESIGNED TO BE CONTROLLED BY BENDING. SHEAR AT BEARING WITH MIN 5 1/2" DEPTH DOES NOT CONTROL DESIGN.

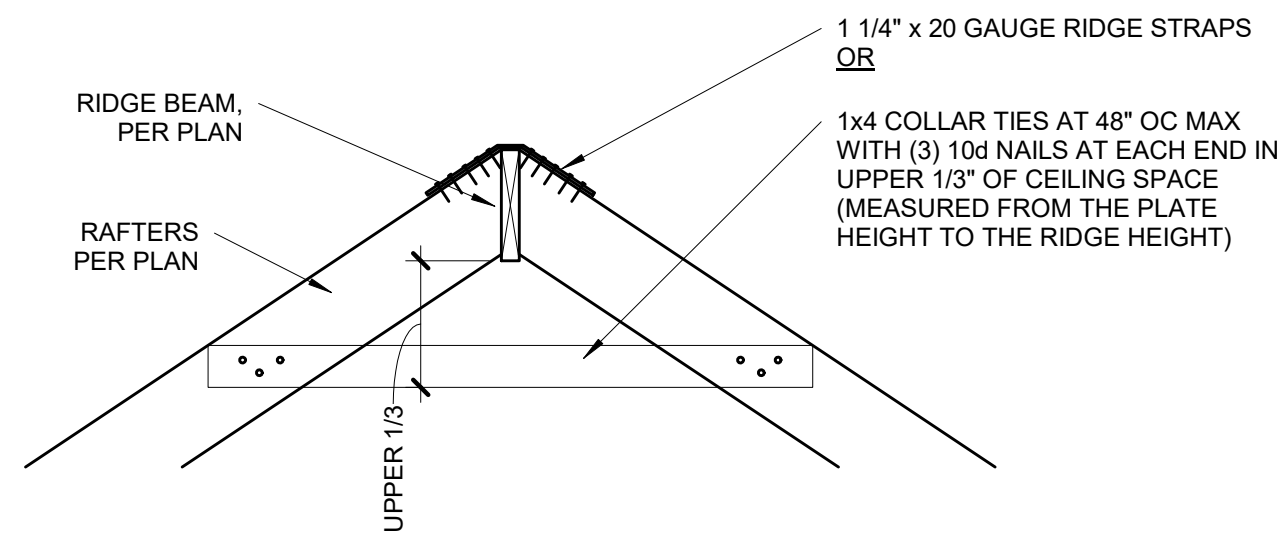


4 | TAPERED VALLEY

S3.2 3/4" = 1'-0"

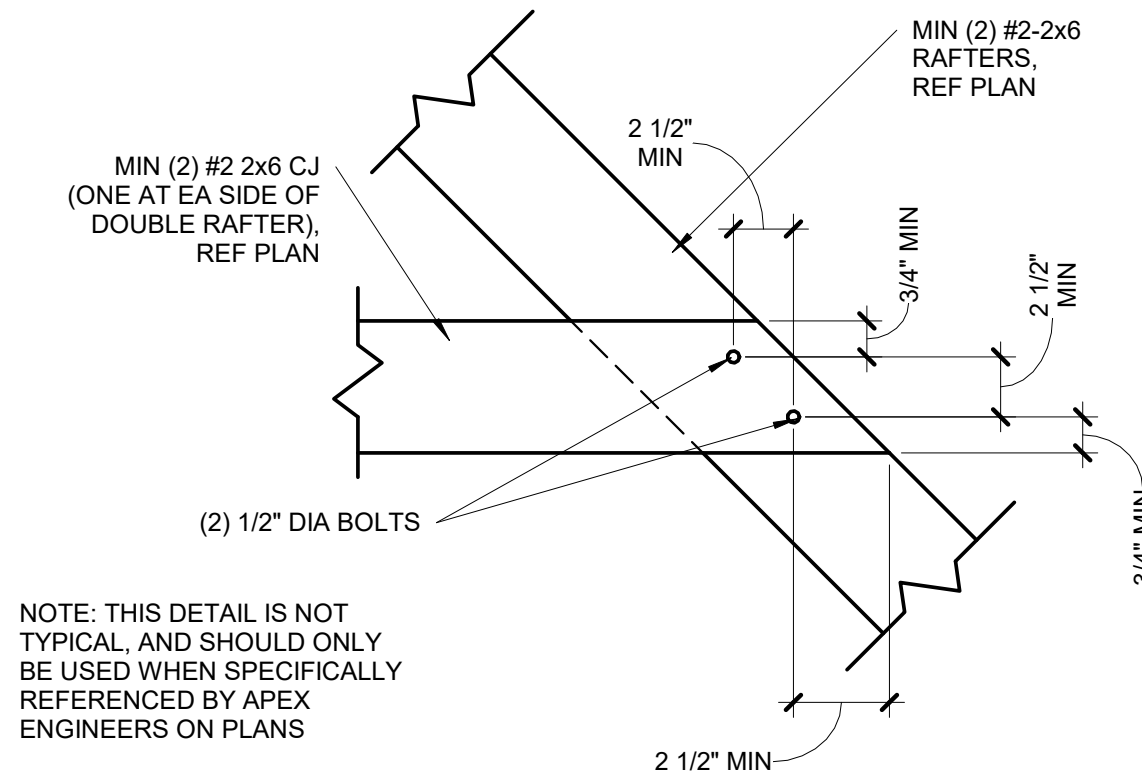
OVERHANG SPAN	MIN BACKSPAN LENGTH
≤1'-0"	1'-0"
1'-1" to 2'-0"	EQUALS OVERHANG SPAN
≥2'-1"	OVERHANG SPAN x2

NOTES:
-CHART IS ONLY APPLICABLE IF NO RAFTER BEAM SHOWN ON PLAN.
-CONTACT EOR IF OVERHANG LENGTH EXCEEDS CHART OPTIONS.



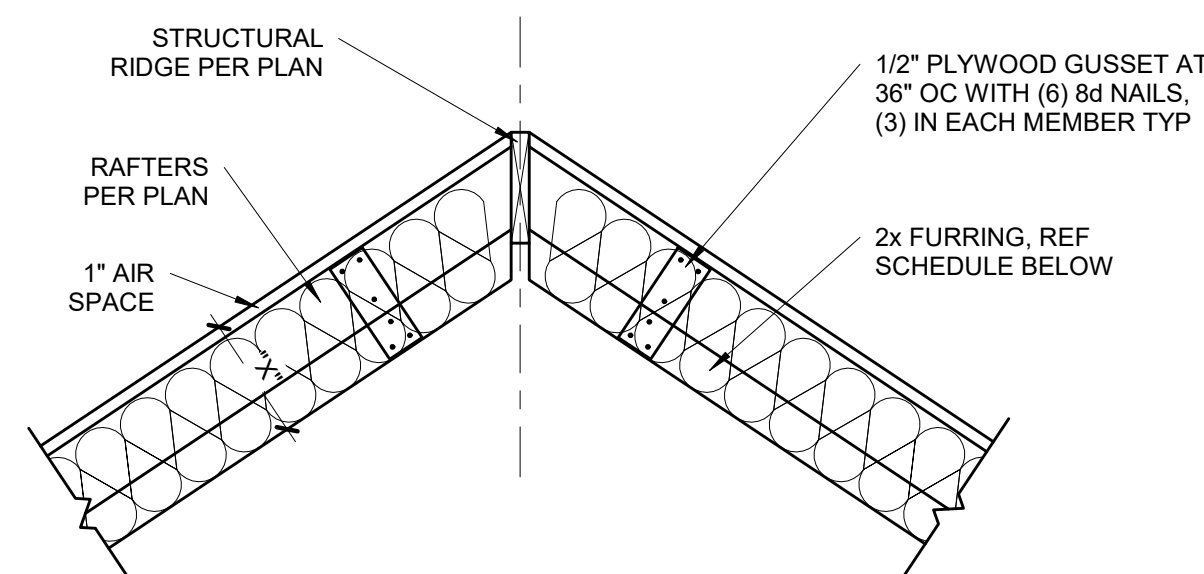
3 | RIDGE BEAM DETAIL

S3.2 3/4" = 1'-0"



2 | BOLTED RAFTER HIP CONNECTION

S3.2 1 1/2" = 1'-0"

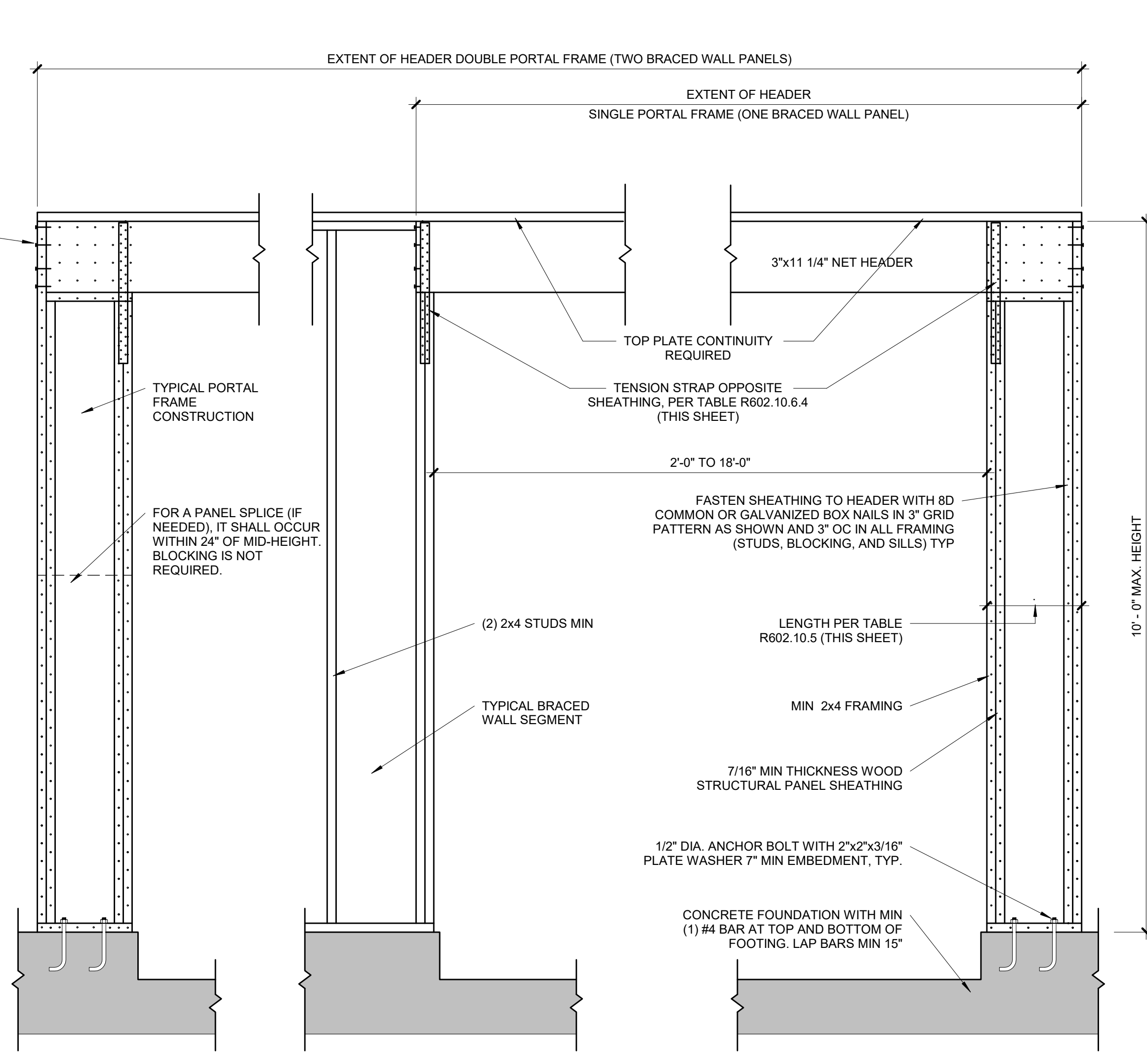
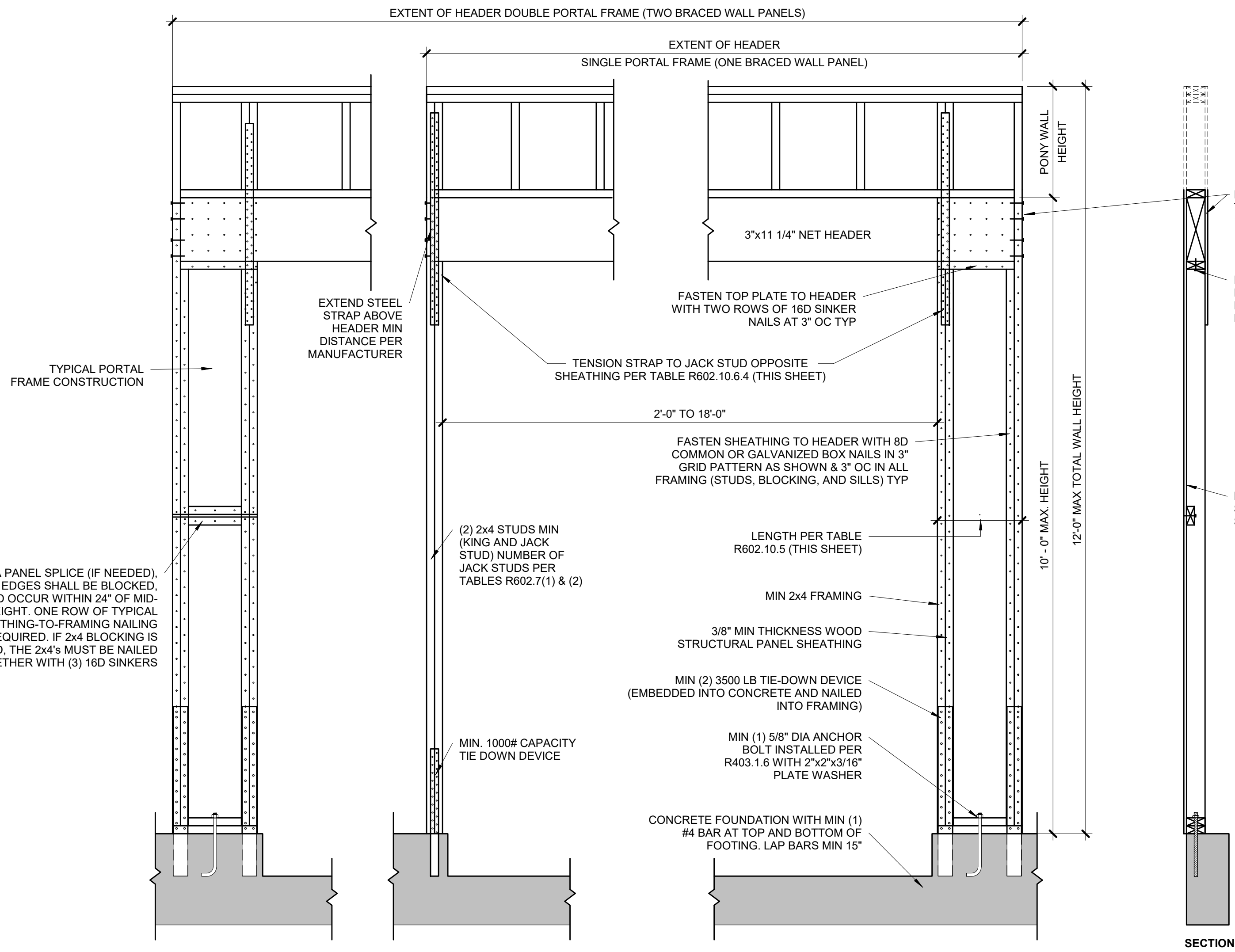


FURR OUT SCHEDULE		
RAFTER SIZE	R-30C INSULATION (X=9 1/4")	R-38C INSULATION (X=11 1/4")
2x6	2x6	2x8
2x8	2x4	2x6
2x10	NOT REQUIRED	2x4
2x12	NOT REQUIRED	REQUIRED

NOTES:
1. ALL VAULTED RAFTERS SHALL BE #2-2x6 DF-L, MINIMUM, AT 16" OC, PER SPAN CHART, UNLESS NOTED OTHERWISE.
2. ALL VAULTS SHALL BE FURRED DOWN WITH 2x FRAMING TO THE REQUIRED DEPTH OF INSULATION, PLUS 1" AIR SPACE.
3. R-30C INSULATION = 8 1/4" THICK
4. R-38C INSULATION = 10 1/4" THICK
5. INSULATION REQUIREMENTS MAY BE REDUCED TO R30 IF ROOF/CEILING ASSEMBLY DOES NOT ALLOW SUFFICIENT SPACE BUT IS LIMITED TO VAULTED CEILING AREAS THAT ARE LESS THAN 500 SQUARE FEET OR 20 PERCENT OF THE TOTAL INSULATED CEILING AREA, WHICHEVER IS LESS. (PER N1102.2.2)

1 | VAULTED RAFTER INSULATION FURR OUT

S3.2 3/4" = 1'-0"



PORTAL FRAME AT GARAGE DOOR WITHOUT HOLD DOWNS (METHOD PFG)

1
S4.0
ALT 3/4" = 1'-0" (ALT ALLOWED AT GARAGE DOOR ONLY) (PER IRC R602.10.6.3)

TABLE R602.10.5 (PARTIAL)						
MINIMUM LENGTH OF BRACED WALL PANELS						
METHOD	MIN LENGTH (INCHES)					
	WALL HEIGHT					
	8 FEET	9 FEET	10 FEET	11 FEET	12 FEET	
1. SUPPORTING ROOF ONLY	16	16	16	16	16	
2. ONE STORY AND ROOF	24	24	24	24	24	
PFG	24	27	30	30	30	

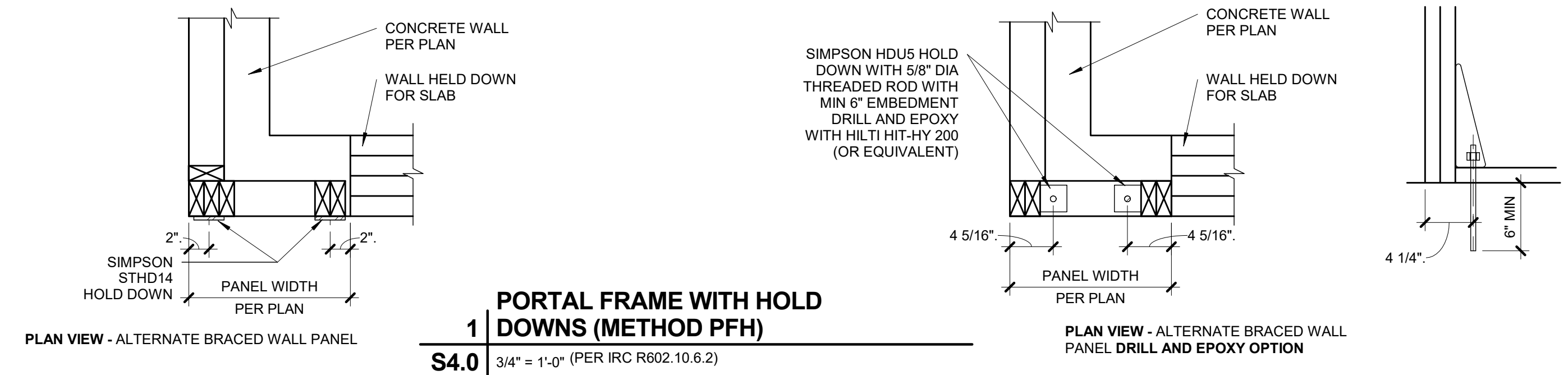
NOTE: MAX HEADER HEIGHT IS 10'-0", BUT WALL HEIGHT SHALL BE PERMITTED TO BE INCREASED TO 12'-0" WITH PONY WALL.

TABLE R602.10.6.4				
TENSION CAPACITY STRAP TABLE				
MIN WALL STUD FRAMING NOMINAL SIZE AND GRADE	MAX PONY WALL HEIGHT (FEET)	MAX TOTAL WALL HEIGHT (FEET)	MAX OPENING WIDTH (FEET)	TENSION STRAP CAPACITY REQ (LBS)
2x4 #2 GRADE	0	10	18	1,000
			9	1,000
			16	1,025
			18	1,275
	1	10	9	1,000
			16	2,175
			18	2,500
			9	1,500
	2	12	16	3,375
			18	3,975
			9	2,750
			16	3,775
2x6 STUD GRADE	2	12	9	1,000
			16	2,150
			18	2,550
			9	1,750
4	12	12	16	2,400
			18	3,800

BRACED WALL METHODOLOGY
CONTINUOUS EXTERIOR SHEATHING (CS-WSP) PER WSP METHOD (BELOW) UNLESS OTHERWISE NOTED ON THE PLAN

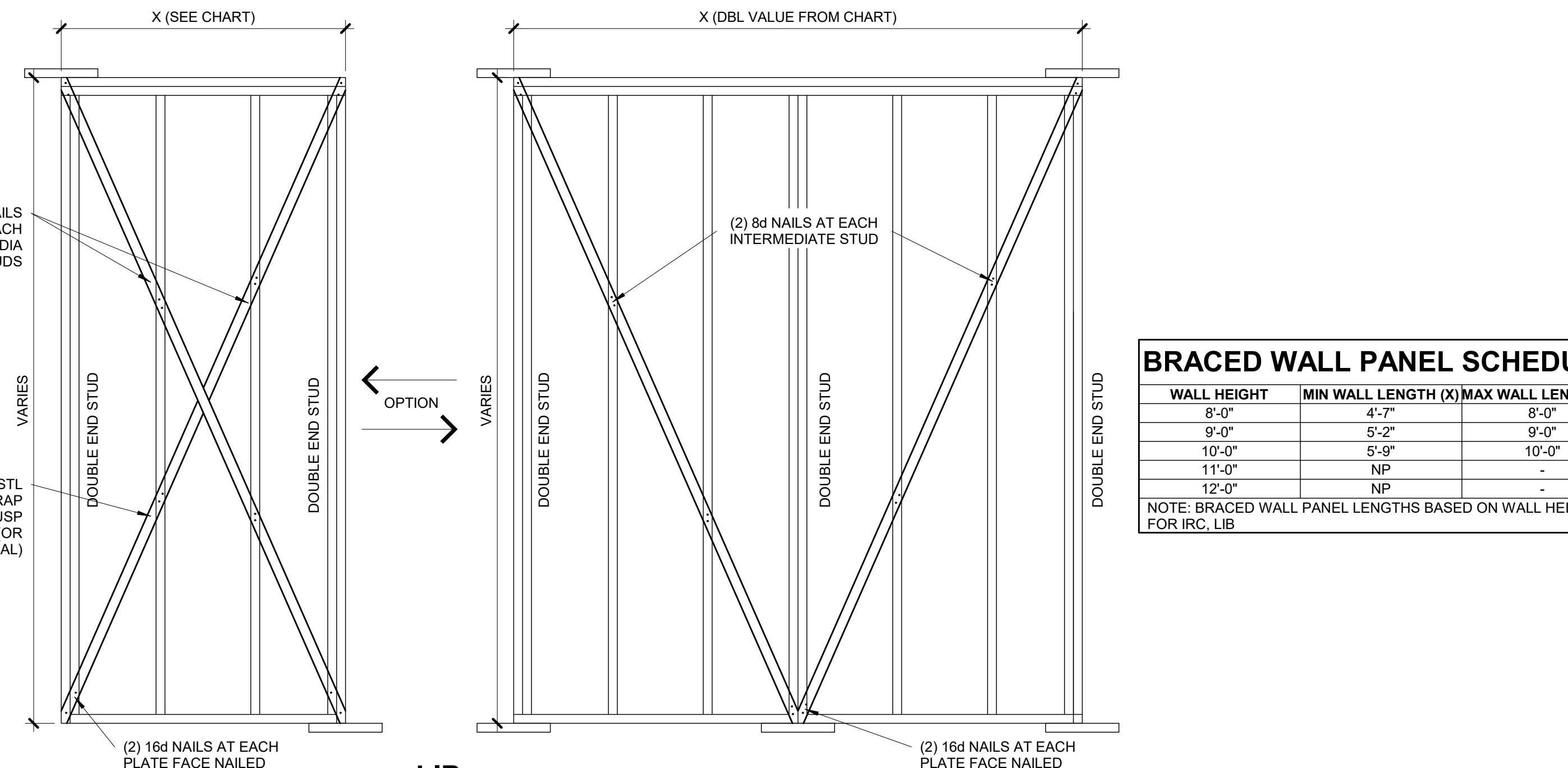
XXXX EXTERIOR BRACED WALLS:
WSP METHOD:
WOOD STRUCTURAL PANEL SHEATHING WITH A THICKNESS NOT LESS THAN 3/8" WITH MINIMUM SPAN RATING OF 24/0 FOR 16" OC STUD SPACING WITH 6d COMMON NAILS AT 6" OC EDGES AND 12" OC FIELD OR SHEATHING THICKNESS NOT LESS THAN 7/16" WITH MINIMUM SPAN RATING OF 24/16 FOR 24" OC SPACING WITH 8d COMMON NAILS AT 6" OC EDGES AND 12" OC IN FIELD.
(NOTE: FRAMING MEMBERS 16" OC MAX UNBLOCKED, AND WITH SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS)

///// INTERIOR BRACED WALLS (REF 2/S4.0):
GB METHOD:
1/2" MIN GYPSUM BOARD OVER STUDS SPACED 24" MAX FASTENED WITH #6 - 1 1/4" TYPE "W" OR "S" DRYWALL SCREWS AT 7" OC EDGES AND FIELD (MIN. 4'-0" SECTION FOR BOTH SIDES).
OR
LIB METHOD:
1/4" WOOD FASTENED WITH (3) 8d COMMON NAILS OR SIMPSON / USP 16 GA TYPE WB (OR EQUAL) STL X-BRACE(S) AT 45° TO 60° ANGLES, MAXIMUM 16" OC STUD FASTENED PER MANUFACTURER'S SPECIFICATIONS.



PORTAL FRAME WITH HOLD DOWNS (METHOD PFH)

1
S4.0
3/4" = 1'-0" (PER IRC R602.10.6.2)

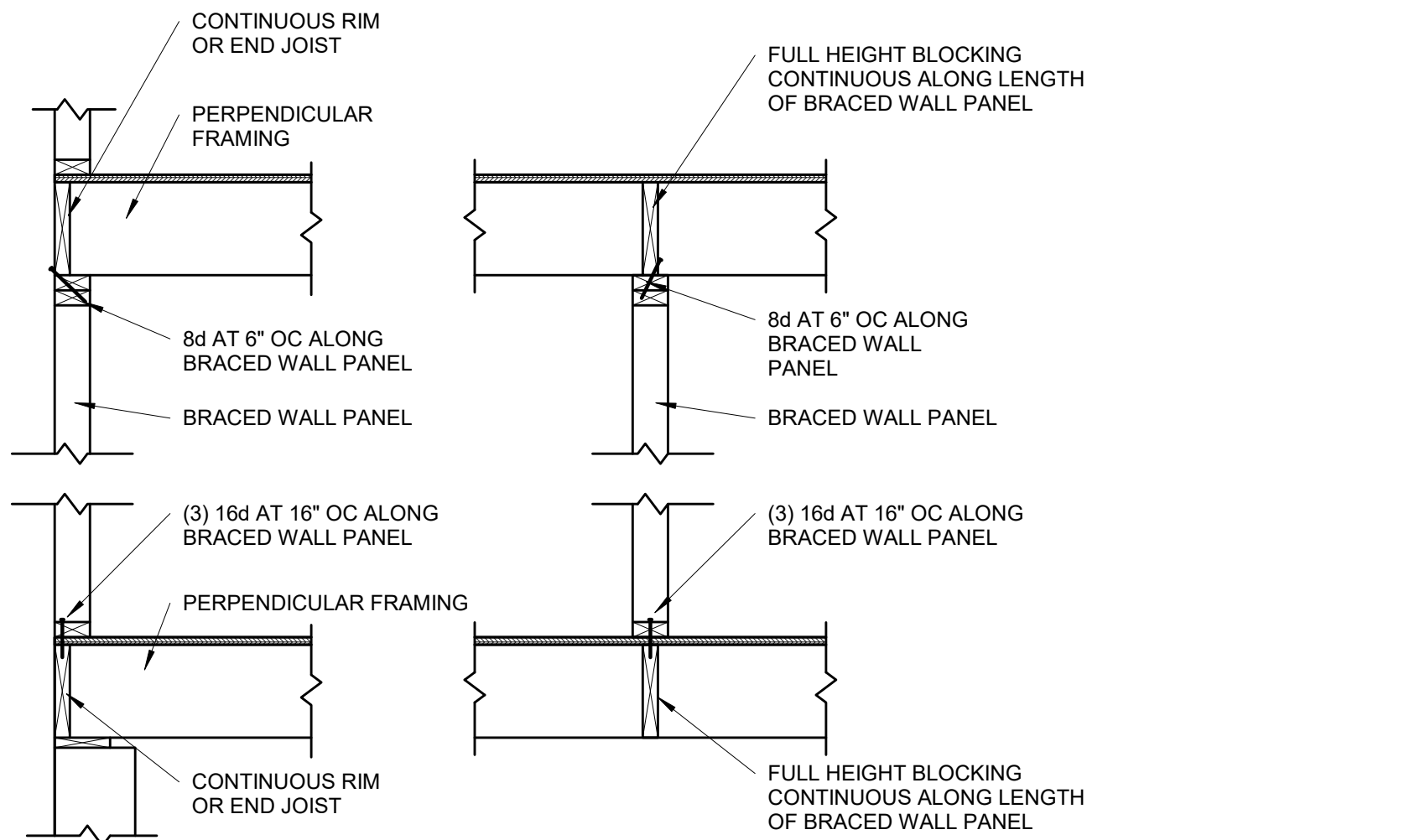


BRACED WALL PANEL SCHEDULE		
WALL HEIGHT	MIN WALL LENGTH (X)	MAX WALL LENGTH (X)
8'-0"	4'-7"	8'-0"
9'-0"	5'-2"	9'-0"
10'-0"	5'-9"	10'-0"
11'-0"	NP	-
12'-0"	NP	-

NOTE: BRACED WALL PANEL LENGTHS BASED ON WALL HEIGHT FOR IRC, LIB

BRACED WALL PANEL-IRC 2 METHODS LIB AND GB

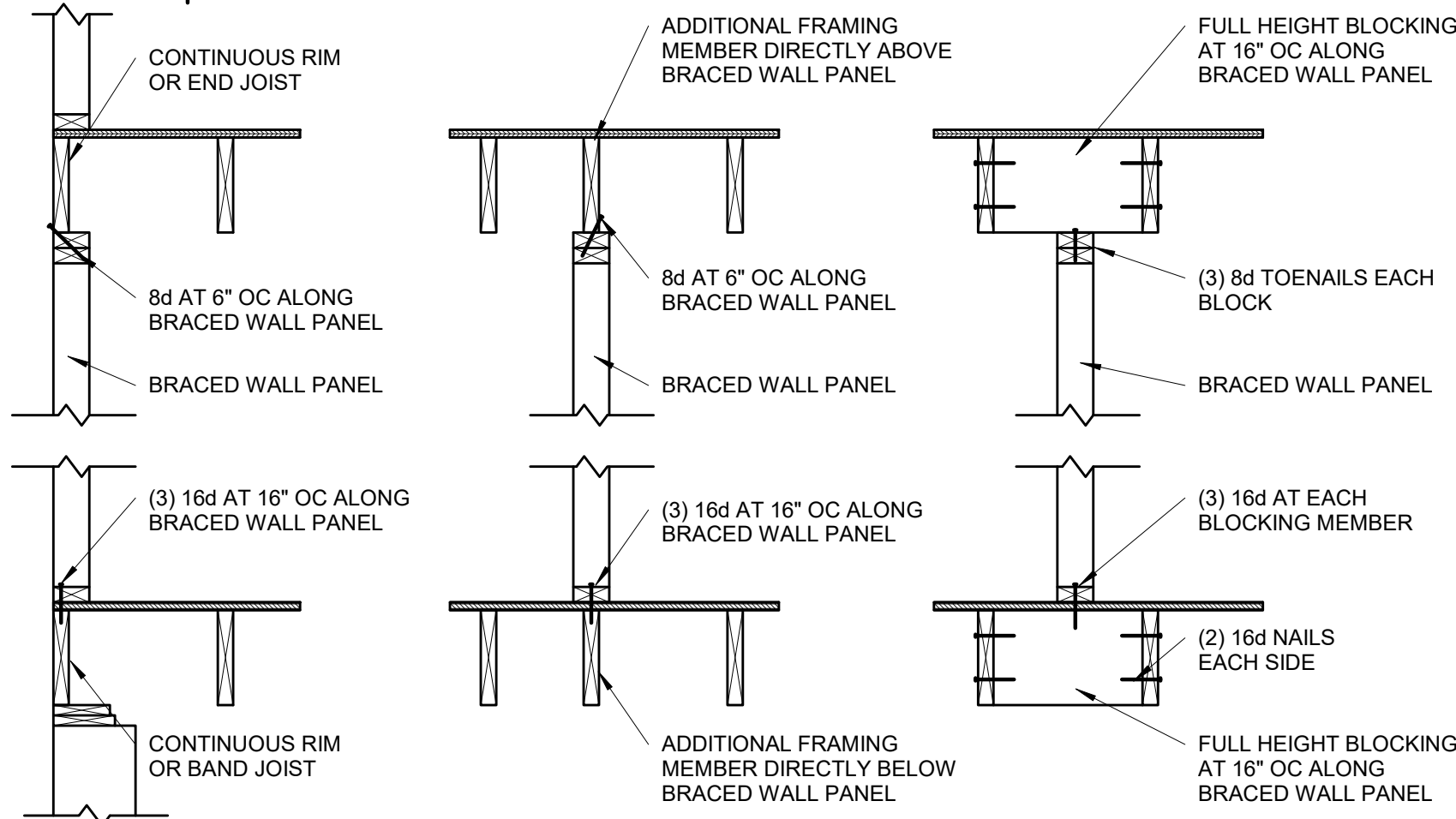
S4.0
3/4" = 1'-0"



**BRACED WALL PANEL
CONNECTION WHEN
PERPENDICULAR TO
FLOOR/CEILING FRAMING**

S4.1

3/4" = 1'-0"

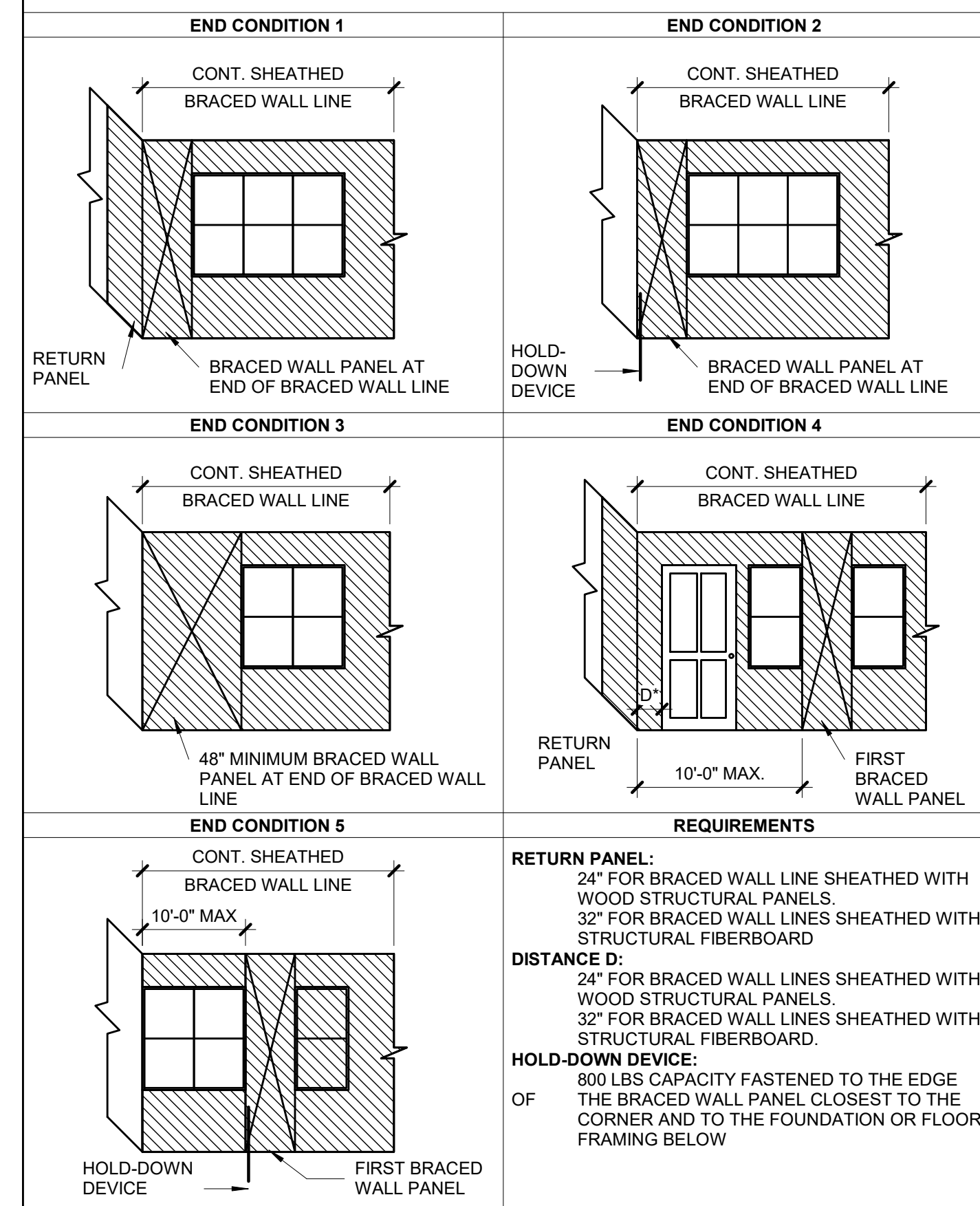


**BRACED WALL PANEL
CONNECTION WHEN PARALLEL
TO FLOOR/CEILING FRAMING**

S4.1

3/4" = 1'-0"

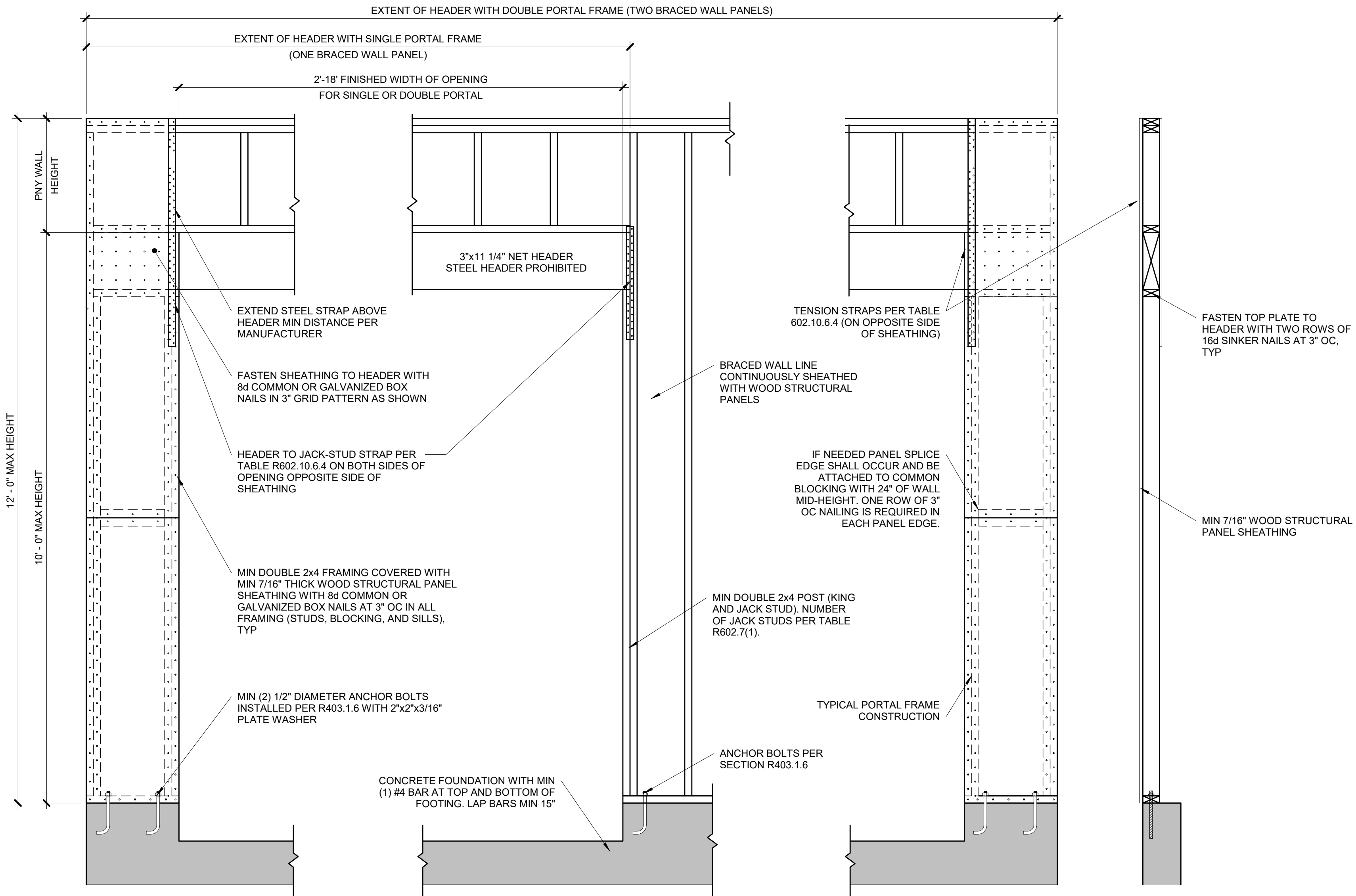
CONT. SHEATHED BRACED WALL END CONDITIONS



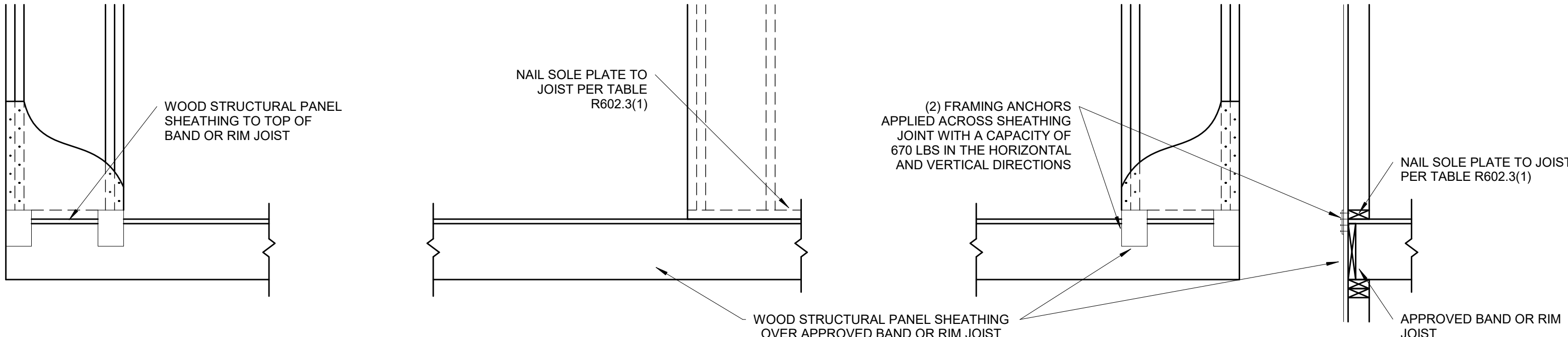
**CONTINUOUS SHEATHED BRACED
WALL END CONDITIONS**

S4.1

NOT TO SCALE (COMPLIANCE WITH IRC R602.10.7)

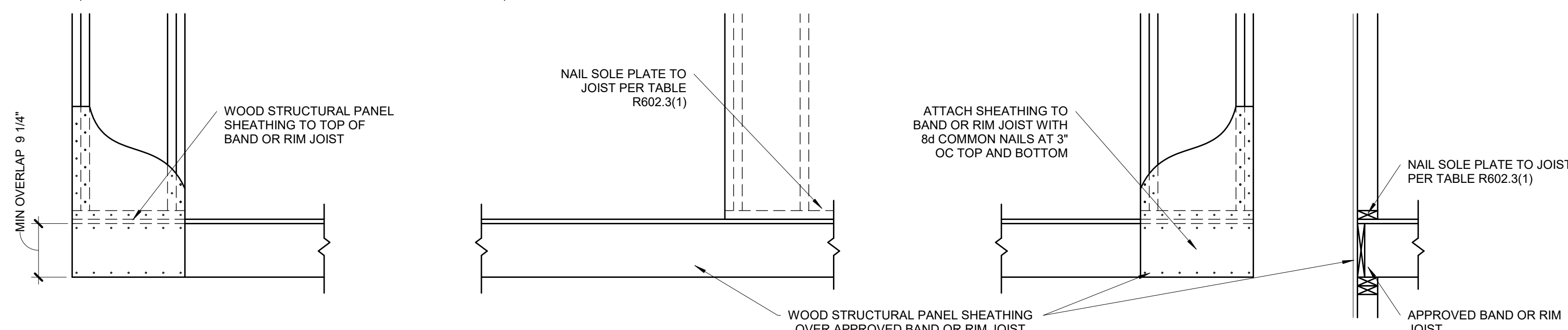


OVER CONCRETE OR MASONRY BLOCK FOUNDATION



OVER RAISE WOOD FLOOR - FRAMING ANCHOR OPTION

(WHEN PORTAL SHEATHING DOES NOT LAP OVER BAND OR RIM JOIST)



OVER RAISE WOOD FLOOR - OVERLAP OPTION

(WHEN PORTAL SHEATHING LAPS OVER BAND OR RIMBOARD)

**BRACED WALL PANEL-IRC
METHOD CS-PF CONTINUOUSLY
SHEATHED PORTAL FRAME
PANEL CONSTRUCTION**

S4.1

3/4" = 1'-0"

(PER IRC R602.10.6.4)