

# ROOF

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

ALL RAFTERS SHALL BE 2" X 6" R2 @ 16" OC, UNLESS NOTED OTHERWISE.  
 SEE DETAIL 7/532 FOR ALTERNATE RAFTER BEARING DETAIL. WHEN RAFTERS ARE REQUIRED TO BEAR HIGHER THAN THE WALL DOUBLE TOP PLATE.  
 FLASHING NOTE:  
 DRIP EDGE, VALLEYS AND FLASHINGS TO BE METAL CLAD.  
 ROOF NOTES:  
 ROOF DESIGNED FOR LIGHT ROOF COVERING  
 30psf TOTAL LOAD (10psf DL, 20psf LL (SL))  
 \* RAFTERS (HEM-FIR, DOUG-FIR, OR EXAM.)  
 SEE SPAN CHARTS BELOW

CODE MINIMUM	RAFTERS	SPACING	MAX HORIZONTAL CLEARSPAN
R2-2x6	R24" OC	11'-7"	
R2-2x6	R18" OC	14'-2"	
R2-2x6	R14" OC	14'-0"	
R2-2x6	R12" OC	12'-11"	
R2-2x10	R24" OC	17'-10"	
R2-2x10	R18" OC	21'-11"	

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

HIGHER PERFORMANCE (RECOMMENDED)	RAFTERS	SPACING	MAX HORIZONTAL CLEARSPAN
R2-2x6	R24" OC	8'-6"	
R2-2x6	R18" OC	9'-9"	
R2-2x6	R12" OC	11'-3"	
R2-2x8	R18" OC	12'-9"	
R2-2x10	R14" OC	14'-3"	
R2-2x10	R12" OC	16'-3"	

REFLECTION = L/360 LIVE LOAD, L/240 TOTAL LOAD

- \* VAULTS TO BE 2x10 DEPTH
- \* RIDGE BRACES ARE (UNLESS OTHERWISE NOTED)
  - R2-2x8 UP TO 10/12 PITCH
  - R2-2x10 OVER 10/12 PITCH
- \* ALL HIPS & VALLEYS ARE (UNLESS OTHERWISE NOTED)
  - R2-2x8 UP TO 10/12 PITCH
  - R2-2x10 OVER 10/12 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 MAXIMUM 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 & (1) 2x6	12'-0"
(1) 2x6 & (1) 2x8	20'-0"
(1) 2x6 & (1) 2x8	30'-0"
(CONSULT AISC/CAN/CEN. )	30'-0"

- \* RIDGE BRACES ARE SAME AS PURLIN BRACES - SPACING, SIZE, CONFIGURATION, & INSTALLATION (SEE PURLIN BRACE NOTES ABOVE)
- \* HIP & VALLEY BRACES ARE SAME AS PURLIN SIZE, CONFIGURATION, & INSTALLATION (SEE PURLIN BRACE NOTES ABOVE)
- \* VERTICAL BRACE IF DOT IS UNDER HIP OR VALLEY
- \* SLASH IS TOP END OF BRACE ( / ), DOT IS BOTTOM OF BRACE ( o )
- \* --- DENOTES BEARING WALL
- \* --- DENOTES ROOF BRACE
- \* --- DENOTES PURLIN
- \* --- DENOTES BEARING STRUCTURE

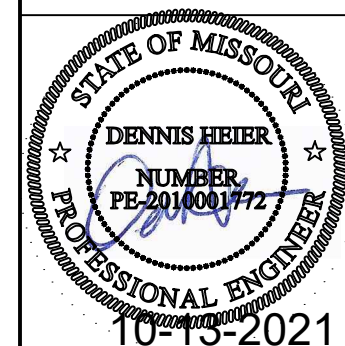
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"For God so loved the world, that he gave his only begotten Son, that whosoever believeth in him should not perish, but have everlasting life." (John 3:16)

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Site Description:  
**Lot 86, The Retreat at Hook Farms - 1st Plat**  
 Street Address:  
**2104 SW Harvest Moon Ln., Lee's Summit, Missouri**

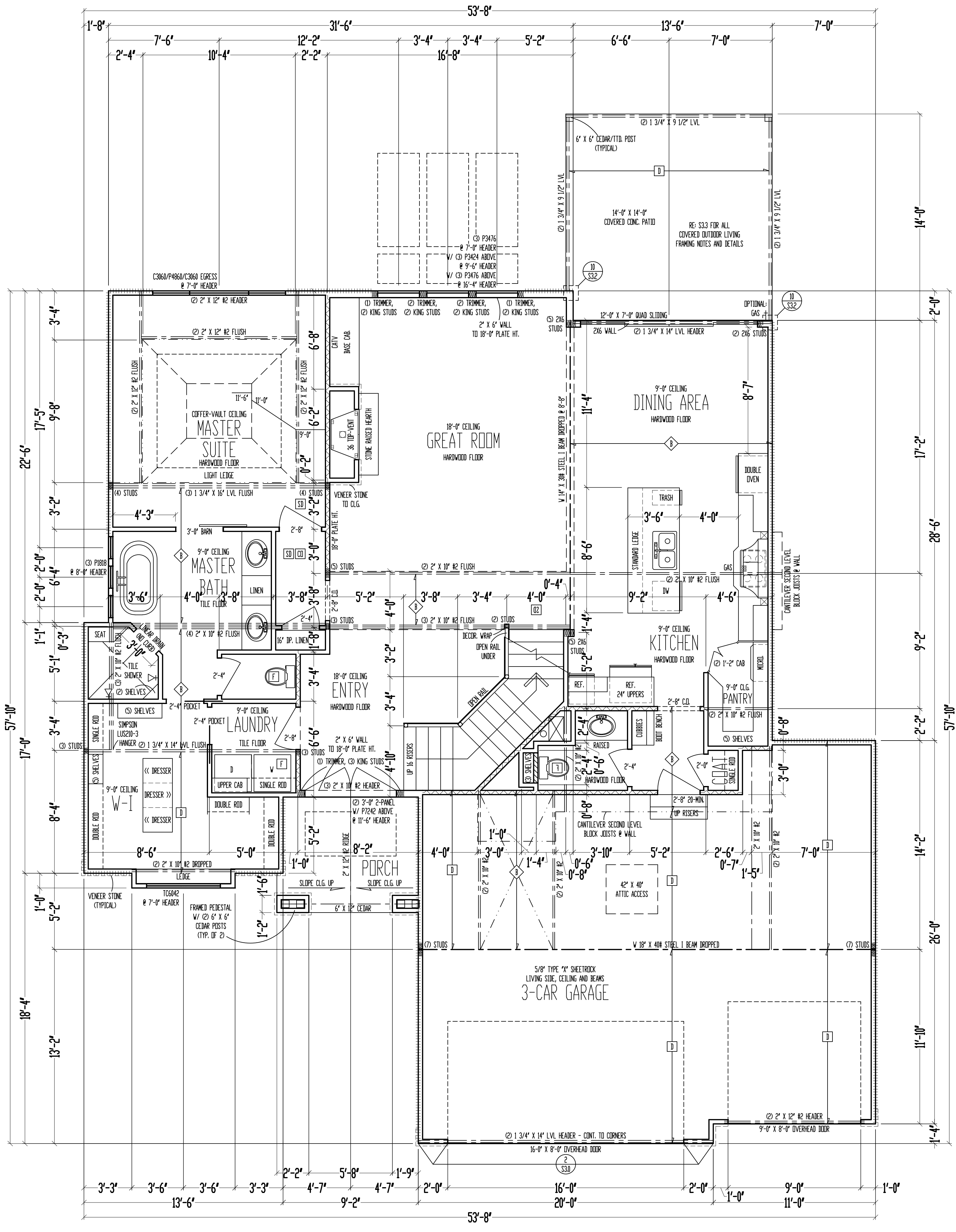
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**Walker Custom Homes, LLC**



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Sheet Title:  
**ROOF PLAN**

Sheet No.:  
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9'-0" CEILING  
 2" X 10" FLOOR SYSTEM ABOVE  
**MAIN LEVEL**  
 SCALE: 1/4" = 1'-0"

MAIN LEVEL: 1673 SQ. FT.  
 SECOND LEVEL: 827 SQ. FT.  
 TOTAL: 2500 SQ. FT.

GARAGE: 751 SQ. FT.  
 COV. OUT/LIV: 196 SQ. FT.  
 UNFIN. BASEMENT: 1426 SQ. FT.

- \*\*\*\*\* = WALL BRACING PER FRAMING NOTE #1 AND PER CALCULATIONS ON SHEET S11.
- FRAMING NOTES:
1. MAIN LEVEL EXTERIOR WALLS SHALL BE SHEATHED W/ 7/16" OSB. APA PANELS W/ 8@ COMMON WALLS @ 6" O.C. AT EDGES & @ 12" O.C. IN THE FIELD. SMART PANEL, OR EQUAL, INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
  2. [Symbol] = 6@ 1/2" MIN. GIPSUM BOARD OVER STUDS SPACED 24" MAX FASTENED W/ NO. 6 - 1 1/4" TYPE W OR S DRYWALL SCREWS @ 7" O.C. EDGES & FIELD. MIN. 8'-0" SECTIONS ONE SIDE OF WALL (OR MIN. 4'-0" SECTION FOR BOTH SIDES).
  3. [Symbol] = LOAD BEARING INTERIOR WALL.
  4. [Symbol] 2" X 10" #2 HEADER AT ALL EXTERIOR AND LOAD BEARING WALLS, UNLESS NOTED OTHERWISE.
  5. LOW TIES @ 4'-0" O.C. (TYPICAL).
  6. R/O STUDS THE FULL HEIGHT OF RAISED PLATE WALLS.
  7. BLOCK JOISTS ABOVE BEAMS, CANTILEVERS AND LOAD BEARING WALLS WITH JOIST MATERIAL NOT REQUIRED WITH F-BESTED.
  8. PROVIDE MULTIPLE STUDS FOR SOLID BEARING BELOW ALL BEAMS.
  9. ALL DESIGNATED 2" X 6" WALLS SHALL HAVE DOUBLE KING STUDS AT BEER AND WINDOW OPENINGS.
  10. ALL UNSQUARE WALLS SHALL BE 45°, UNLESS NOTED OTHERWISE.
  11. ALL WALLS TO BE FRAMED W/ MIN. STUD GRADE 2" X 4" @ 16" O.C. UNLESS NOTED OTHERWISE.
  12. EXTERIOR WALL BOTTOM PLATES SHALL BE NAIL TO FRAMING BELOW WITH 16@ COMMON WALLS @ 8" O.C. MAX. (WHERE APPLICABLE.)
  13. LVL'S SHOWN ON PLANS MAY BE REPLACED WITH 8@/12" GRADE 24F-V4 GLULAM BEAMS OF THE SAME DEPTH, AND THE FOLLOWING WIDTHS:  
 [Symbol] 1 3/4" LVL PLIES = 3 1/2" GLULAM  
 [Symbol] 1 3/4" LVL PLIES = 3 1/2" GLULAM
  14. CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD BEFORE CONSTRUCTION OF ANY DEFLECTION LIMITATIONS MORE STRINGENT THAN CODE MINIMUMS ABOVE ANY OPENINGS.

JOIST SCHEDULE	
[Symbol]	2" X 10" #2 TTL FLOOR JOIST @ 16" O.C.
[Symbol]	2" X 10" #2 FLOOR JOIST @ 16" O.C.
[Symbol]	2" X 10" #2 FLOOR JOIST @ 16" O.C. - DOUBLE EVERY OTHER
[Symbol]	2" X 6" #2 CEILING JOIST @ 16" O.C.

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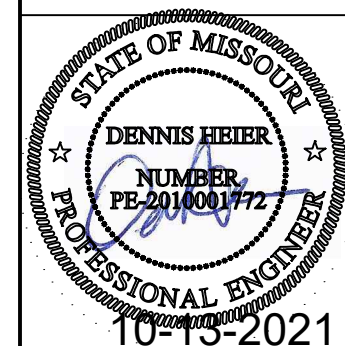
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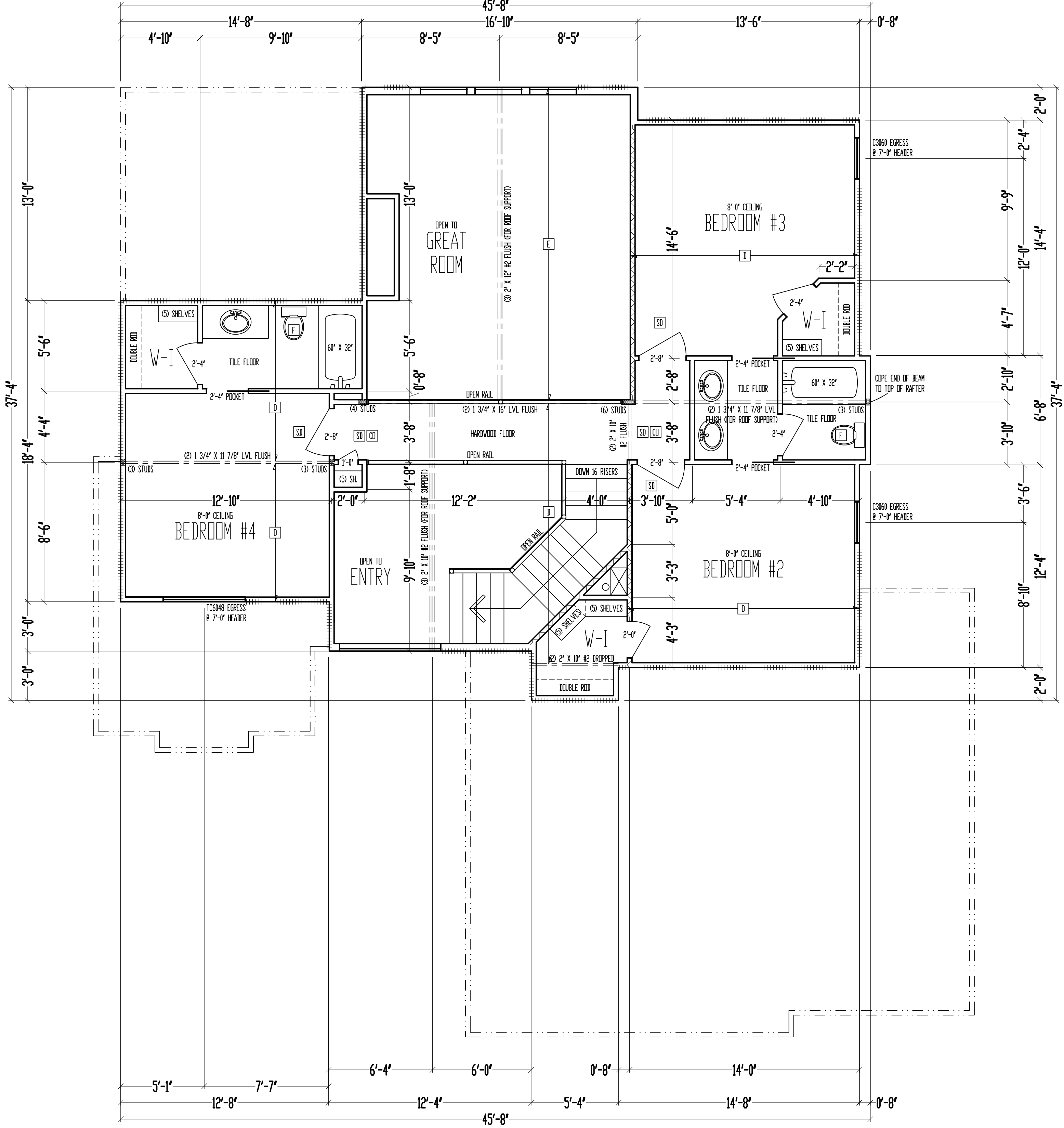
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**MAIN LEVEL PLAN**

Sheet No.:  
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8'-0" CEILING  
 SECOND LEVEL  
 SCALE: 1/4" = 1'-0"

- \*\*\*\*\* = WALL BRACING PER FRAMING NOTE #1 AND PER CALCULATIONS ON SHEET S11.
- FRAMING NOTES:
- SECOND LEVEL EXTERIOR WALLS SHALL BE SHEATHED W/ 7/16" OSB APA PANELS W/ 6# COMMON NAILS @ 6" O.C. AT EDGES & @ 12" O.C. IN THE FIELD. SMART PANEL, OR EQUAL, INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
  - ===== = G& 1/2" MIN. GYPSUM BOARD OVER STUDS SPACED 24" MAX. FASTENED W/ NO. 6 - 1 1/4" TYPE W OR S BRIVALL SCREWS @ 7" O.C. EDGES & FIELD. (MIN. 8'-0" SECTIONS ONE SIDE OF WALL (OR MIN. 4'-0" SECTION FOR BOTH SIDES))
  - ////////// = LOAD BEARING INTERIOR WALL.
  - ② 2" X 10" R2 HEADER AT ALL EXTERIOR AND LOAD BEARING WALLS, UNLESS NOTED OTHERWISE.
  - LOW TIES @ 4'-0" O.C. (TYPICAL)
  - RUN STUDS THE FULL HEIGHT OF RAISED PLATE WALLS.
  - BLOCK JOISTS ABOVE BEAMS, CANTILEVERS AND LOAD BEARING WALLS WITH JOIST MATERIAL (NOT REQUIRED WITH I-JOISTS).
  - PROVIDE MULTIPLE STUDS FOR SOLID BEARING BELOW ALL BEAMS.
  - ALL DESIGNATED 2" X 6" WALLS SHALL HAVE DOUBLE KING STUDS AT DOOR AND WINDOW OPENINGS.
  - ALL UNSHORE WALLS SHALL BE 45°, UNLESS NOTED OTHERWISE.
  - ALL WALLS TO BE FRAMED W/ MIN. STUD GRADE 2" X 4S @ 16" O.C., UNLESS NOTED OTHERWISE.
  - EXTERIOR WALL BOTTOM PLATES SHALL BE NAILED TO FRAMING BELOW WITH 16# COMMON NAILS @ 16" O.C. MAX. (WHERE APPLICABLE.)
  - LVL'S SHOWN ON PLANS MAY BE REPLACED WITH DF/DX GRADE 2#-V4 GULAM BEAMS OF THE SAME DEPTH, AND THE FOLLOWING WIDTHS:  
 ② 1 3/4" LVL PILES = 3 1/2" GULAM  
 ② 1 3/4" LVL PILES = 3 1/2" GULAM
  - CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD BEFORE CONSTRUCTION OF ANY DEFLECTION LIMITATIONS MORE STRINGENT THAN CODE MINIMUMS ABOVE ANY OPENINGS.

JOIST SCHEDULE	
D	2" X 6" R2 CEILING JOIST @ 16" O.C.
E	2" X 8" R2 CEILING JOIST @ 16" O.C.

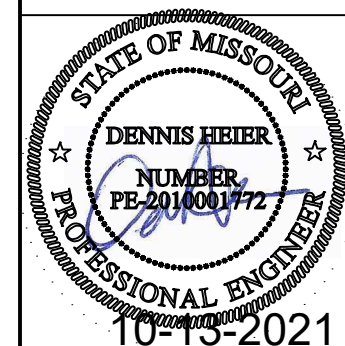
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**SECOND LEVEL PLAN**

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FASTENER SCHEDULE FOR STRUCTURAL MEMBERS. Table with columns: DESCRIPTION OF BUILDING ELEMENTS, NUMBER AND TYPE OF FASTENER, SPACING AND LOCATION. Rows include ROOF (Blocking, Ceiling Joists, Rafters), WALL (Stud, Header, Top Plate), and FLOOR (Joist, RIM Joist, Subfloor, Plank).

FASTNER SCHEDULE FOR STRUCTURAL MEMBERS. Table with columns: DESCRIPTION OF BUILDING MATERIALS, DESCRIPTION OF FASTENER, EDGE SPACING (INCHES), INTERMEDIATE SUPPORTS (INCHES). Rows include Wood Structural Panels, Other Wall Sheathing, and Wood Structural Panels, Combination Subfloor Underlayment to Framing.

1. IF INFORMATION LISTED ON PLAN SHEETS CONTRADICTS INFORMATION IN THIS TABLE, INFORMATION ON PLANS TAKES PRECEDENCE OVER INFORMATION

FOUNDATION NOTES

- 1. CONCRETE SHALL BE AIR-ENTRAINED BETWEEN 5%-7% WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2500 PSI FOR BASEMENT AND INTERIOR FLOOR SLABS-ON-GRADE. 3000 PSI FOR FOUNDATION WALLS, AND 3500 PSI FOR PORCHES AND GARAGE FLOOR SLABS
2. THE FOUNDATION DESIGN SHALL COMPLY WITH THE ENFORCING JURISDICTION'S RESIDENTIAL FOUNDATION STANDARDS
3. PROVIDE A MINIMUM 4"-DIAMETER PERFORATED DRAIN PIPE ALONG PERIMETER OF USABLE SPACE AT FOOTING LEVEL OR OTHER EQUIVALENT MATERIALS PER IRC SECTION R405.1. THE PIPE SHALL BE COVERED WITH A MINIMUM OF 6" OF GRAVEL OR CRUSHED ROCK. THE DRAIN SHALL DAYLIGHT BELOW FOOTING LEVEL OR TERMINATE IN A MINIMUM 20 GALLON SUMP PIT.
4. FOUNDATION SHALL BE DESIGNED FOR A BEARING CAPACITY OF 1500 PSF AND FOUNDED ON COMPETENT ORIGINAL SOIL AS DETERMINED AND CONFIRMED BY A LICENSED GEOTECHNICAL ENGINEER OR ENGINEERING GEOLOGIST. ENGINEER OF RECORD ASSUMES NO RESPONSIBILITY FOR CONSTRUCTION NOT VERIFIED TO BE FOUNDED ON ANY SOIL WITH THE AFOREMENTIONED MINIMUM PROPERTIES.
5. FOOTINGS SHALL BE A MINIMUM OF 16" WIDE X 8" DEEP AND SHALL HAVE A MINIMUM OF (2) CONTINUOUS GRADE 40 #4 BARS WITH 3" BOTTOM CLEARANCE. BOTTOM OF FOOTING SHALL BE LOCATED A MINIMUM OF 3'-0" BELOW GRADE FOR FROST PROTECTION.
6. CONCRETE PADS SUPPORTING COLUMN LOADS SHALL BE NO SMALLER THAN 2'-0" X 2'-0" X 1'-0" DEEP WITH A MINIMUM OF (4) GRADE 40 #4 BARS EACH WAY WITH 3" BOTTOM CLEARANCE
7. FOUNDATION WALLS SHALL BE A MINIMUM OF 8" NOMINAL WIDTH AND SHALL HAVE HORIZONTAL GRADE 40 #4 BARS AT 2'-0" O.C. MAX. WITH VERTICAL #4 BARS AS REQUIRED ON FOUNDATION CROSS SECTION ON SHEET S2.0 REINFORCEMENT SHALL LAP A MINIMUM OF 2'-0" (CLASS B SPLICE)
8. INTERIOR BEARING WALLS AND COLUMNS SHALL BE ISOLATED FROM THE BASEMENT FLOOR SLAB
9. BASEMENT FLOOR SLAB SHALL BE A MINIMUM OF 4" THICK ON A MINIMUM BASE COURSE OF 4" TO 6" OF SAND, GRAVEL OR CRUSHED ROCK. BETWEEN THE BASE COURSE AND FLOOR SLAB SHALL BE PLACED A 6-MIL POLY VAPOR RETARDER WITH MINIMUM OVERLAP OF 6" AT DISCONTINUITIES
11. IF A FLOOR IS TO BE SUPPORTED BY A MINIMUM OF 2'-0" OF GRANULAR FILL OR 8" OF EARTH, BASEMENT SLAB SHALL BE DESIGNED BY A LICENSED ENGINEER
12. SILL PLATES SHALL BE ANCHORED TO THE FOUNDATION WALL WITH 1/2" Ø ANCHOR BOLTS EMBEDDED A MINIMUM OF 7" INTO CENTER OF WALL STEM AND SHALL BE INSTALLED AT A MAXIMUM OF 6'-0" O.C. (OR AS NOTED ON PLANS) AND SHALL BE INSTALLED WITHIN 6" TO 12" OF EACH END OF EACH SILL PLATE LENGTH, PER IRC SECTION R403.1.6 FOUNDATION WINDOW WELLS SHALL BE PROVIDED WITH MINIMUM DIMENSIONS AS SHOWN IN DETAIL ON SHEET S2.0
14. THE GARAGE FLOOR SHALL SLOPE TOWARD THE VEHICLE DOORS OR TO A TRENCH OR UNTRAPPED DRAIN THAT DISCHARGES TO THE EXTERIOR, ABOVE GRADE

FRAMING NOTES

- 15. ALL DIMENSIONAL LUMBER SHALL BE DOUGLAS-FIR-LARCH GRADE #2, UNLESS NOTED OTHERWISE ON PLANS
16. ALL INTERIOR LOAD-BEARING AND EXTERIOR WALL HEADERS SHALL BE (2) #2 - 2x10's, UNLESS NOTED OTHERWISE ON PLANS
17. BLOCK OVER BEAMS AND AT CANTILEVERS AND DOOR JAMBS
18. INTERIOR NON-BEARING WALLS RESTING ON BASEMENT SLAB SHALL BE ISOLATED FROM ABOVE FRAMING BY A MINIMUM OF 1/2"
19. ALL HEADERS/BEAMS SHALL BEAR ON A MINIMUM OF (2) 2x4 POSTS (KING AND JACK STUDS), UNLESS NOTED OTHERWISE
20. WHERE JOISTS SPAN PARALLEL TO FOUNDATION, BLOCKING SHALL BE PROVIDED IN THE TWO SPACES MOST ADJACENT TO THE FOUNDATION WALL AT 4'-0" O.C. FOR THE PURPOSE OF TRANSFERRING LATERAL FOUNDATION WALL LOAD TO THE FLOOR DIAPHRAGM. FASTEN JOISTS AND BLOCKING TO SILL PLATE WITH (4) 10d NAILS. IF MECHANICAL DUCTWORK IS INSTALLED IN ONE OF THESE FIRST TWO BAYS, FASTEN 2x4's FLAT AT 4'-0" O.C. BETWEEN JOIST(S) AND/OR SILL AND PROVIDE BLOCKING AS PRESCRIBED ABOVE IN THE NEXT TWO JOIST BAYS. SECURE 2x4's TO JOIST(S)/SILL PLATE WITH (4) 10d NAILS.
21. ALL WOOD MATERIAL SUPPORTED ON CONCRETE OR MASONRY SHALL BE TREATED OR OF DECAY-RESISTANT MATERIAL
22. JOISTS UNDER BEARING PARTITIONS ON PLANS HAVE BEEN SIZED TO SUPPORT THE DESIGN LOAD
23. JOISTS FRAMING INTO THE FACE OF A STEEL OR WOOD BEAM SHALL BE SUPPORTED WITH APPROPRIATE COLD-FORMED STEEL JOIST HANGERS
24. JOISTS FRAMED ON TOP OF STRUCTURAL MEMBER SHALL BE SUPPORTED AT EN DS BY FULL-DEPTH SOLID BLOCKING MIN. 1/4" IN THICKNESS OR BY FASTENING RIM TO JOISTS PER FASTENING TABLE TO LEFT
25. ALL WALL COVERINGS SHALL COMPLY WITH IRC SECTION R702.3
26. ALL RAFTERS AND COLLAR TIES SHALL COMPLY WITH IRC SECTION R802.3.
27. ALL RAFTERS SHALL HAVE 2x4 COLLAR TIES @ 4'-0" O.C. IN UPPER 1/2 OF VERTICAL DISTANCE BETWEEN CEILING AND ROOF
28. BLOCKING BETWEEN JOISTS UNDER A LOAD-BEARING WALL IS NOT REQUIRED
29. PER IRC SECTION 501.3, BOTTOM OF ALL FLOOR ASSEMBLIES ABOVE UNFINISHED AREAS SHALL BE PROVIDED WITH A 1/2" GYPSUM BOARD MEMBRANE OR RESIDENTIAL FIRE SPRINKLER SYSTEM WHEN FLOOR SYSTEM IS CONSTRUCTED OF OTHER THAN DIMENSION LUMBER OR STRUCTURAL COMPOSITE LUMBER EQUAL TO OR GREATER THAN 2x10 NOMINAL DIMENSION(WHERE REQUIRED BY ENFORCING JURISDICTION)
30. ENGINEERED LVL'S SHALL HAVE MINIMUM PROPERTIES OF Fb = 2600 psi, E=1900 ksi, AND Fv=285 psi
31. ENGINEERED PARALLAMS SHALL HAVE MINIMUM PROPERTIES OF Fb = 2600 psi, E = 2000 ksi, AND Fv = 290 psi
32. COLUMN CONNECTION TO STEEL BEAMS SHALL BE WITH A CLIP POST CAP WITH ALL FOUR TAB EARS BENT AROUND THE BOTTOM FLANGE OF THE BEAM. FOR A BEARING PLATE, FOUR HOLES SHALL BE DRILLED IN THE BOTTOM FLANGE OF THE STEEL BEAM TO MATCH THE HOLE PATTERN OF THE PLATE. 1/2" X 2" BOLTS SHALL THEN BE INSTALLED WITH A FLAT WASHER, LOCK WASHER, AND A NUT IN EACH OF THE HOLES. THE POST CAP MAY BE WELDED TO THE STEEL BEAM IN ACCORDANCE WITH AWS D1.1-92 AS AN ALTERNATIVE, AND WOULD NEED TO BE INSPECTED BY AN AWS-CERTIFIED INSPECTOR.
33. WHEN MECHANICAL EQUIPMENT IS LOCATED IN AN ENCLOSED ROOM, THERE SHALL BE (2) 14"x12" VENTS LOCATED IN A WALL COMMON WITH ADDITIONAL LIVING AREA. ONE VENT SHALL BE LOCATED SUCH THAT THE BOTTOM OF THE VENT BEGINS 12" FROM THE FLOOR AND THE OTHER VENT SHALL BE LOCATED SUCH THAT THE TOP OF THE VENT BEGINS 12" FROM THE CEILING.
34. ALL ROOF SHEATHING SHALL BE 1/2" OSB WITH 8d COMMON NAILS @ 6" O.C. AT PANEL EDGES AND @ 12" O.C. IN FIELD

GLAZING NOTES

- 35. 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 2'-0" ARC OF THE DOOR IN A CLOSED POSITION AND FOR WHICH THE BOTTOM EDGE IS WITHIN 5'-0" OF THE FLOOR, WALLS OR ENCLOSING STAIRWAYS AND LANDINGS WHERE THE GLAZING IS WITHIN 5'-0" OF THE TOP OR BOTTOM OF THE STAIR, ENCLOSURES FOR SPAS, TUBS, SHOWERS, AND WHIRLPOOLS. GLAZING IN FIXED OR OPENABLE PANELS EXCEEDING NINE SQUARE FEET AND FOR WHICH THE BOTTOM EDGE IS LESS THAN 1'-6" ABOVE THE FLOOR OR WALKING SURFACE WITHIN 3'-0" ALL OPERABLE WINDOWS SHALL HAVE FALL PROTECTION PER IRC SECTION R612.2

ATTIC VENTILATION

- 37. ENCLOSED ATTICS SHALL HAVE CROSS VENTILATION FOR EACH SEPARATE SPACE BY VENTILATING OPENINGS PROTECTED AGAINST THE ENTRANCE OF RAIN OR SNOW. VENTILATING OPENINGS SHALL BE PROVIDED WITH CORROSION-RESISTANT WIRE MESH, WITH 1/8" TO 1/2" OPENINGS. THE TOTAL FREE VENTILATING AREA SHALL NOT BE LESS THAN 1/60 OF THE AREA OF SPACE VENTILATED, EXCEPT WHERE THE VENTILATORS ARE LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED - THE REQUIRED AREA MAY BE REDUCED TO 1/300.

EMERGENCY EGRESS

- 38. PROVIDE A MINIMUM OF ONE WINDOW FOR EACH BEDROOM THAT HAS A MINIMUM OPENABLE AREA OF 5.7 SQUARE FEET WITH A MINIMUM OPENABLE HEIGHT OF 2'-0" AND A MINIMUM WIDTH OF 1'-9". IN ADDITION, THE OPENABLE PORTION OF EGRESS WINDOWS SHALL NOT EXCEED 3'-8" ABOVE THE ADJOINING FLOOR OR PERMANENT STEP.
39. PROVIDE SMOKE ALARMS IN EACH SLEEPING ROOM, OUTSIDE OF EACH SLEEPING AREA AND ON EACH FLOOR, INCLUDING BASEMENT (IF APPLICABLE). ALARMS SHALL BE HARDWIRED TOGETHER SO THAT THE ACTIVATION OF ONE SMOKE ALARM WILL ACTIVATE ALL SMOKE ALARMS IN THE DWELLING. PROVIDE CARBON MONOXIDE DETECTORS OUTSIDE EACH SLEEPING AREA.

MASONRY VENEER

- 40. MASONRY VENEER SHALL BE ANCHORED TO THE SUPPORTING WALL STUDS WITH CORROSION-RESISTANT METAL TIES EMBEDDED IN MORTAR OR GROUT AND EXTENDING INTO THE VENEER A MINIMUM OF 1 1/2". WITH NOT LESS THAN 1/2" MORTAR OR GROUT COVER TO OUTSIDE FACE.
41. VENEER TIES, IF STRAND WIRE, SHALL NOT BE LESS IN THICKNESS THAN NO. 9 U.S. GAGE WIRE AND SHALL HAVE A HOOK EMBEDDED IN THE MORTAR JOINT, OR IF SHEET METAL, SHALL BE NOT LESS THAN NO. 22 U.S. GAGE BY 1/2" CORRUGATED.
42. EACH TIE SHALL SUPPORT NOT MORE THAN 2.67 SQUARE FEET OF WALL AREA AND SHALL BE SPACED NOT MORE THAN 32 INCHES ON CENTER HORIZONTALLY AND 24 INCHES ON CENTER VERTICALLY.
43. VENEER TIES AROUND WALL OPENINGS: ADDITIONAL METAL TIES SHALL BE PROVIDED AROUND ALL WALL OPENINGS GREATER THAN 16 INCHES IN EITHER DIMENSION. METAL TIES AROUND THE PERIMETER OF OPENINGS SHALL BE SPACED NOT MORE THAN 3 FEET ON CENTER AND PLACED WITHIN 12 INCHES OF THE WALL OPENING.

GARAGE NOTES

- 44. DOOR(S) BETWEEN THE GARAGE AND DWELLING SHALL BE MINIMUM 1 1/2" SOLID CORE OR HONEY-COMBED STEEL DOOR WITH 20-MINUTE FIRE RATING EQUIPPED WITH A SELF-CLOSING DEVICE
45. VEHICLE DOORS AND FRAMES SHALL BE DESIGNED AND INSTALLED TO MEET THE 115-MPH 3-SECOND GUST LOADING PER DASMA 108 AND ASTM E 330-96 PER IRC 2018

GARAGE NOTES (CONTINUED)

- 44. THE GARAGE SHALL BE SEPARATED FROM THE DWELLING AND ITS ATTIC AREAS BY MINIMUM 3/8" GYP. BOARD APPLIED TO THE GARAGE SIDE OF FRAMING. WHERE HABITABLE SPACE OCCURS ABOVE THE GARAGE, THE GARAGE CEILING ASSEMBLY SHALL BE PROTECTED WITH A MINIMUM 3/8" TYPE X GYP. BOARD. WHERE A FLOOR/CEILING SPACE IS PROVIDED ABOVE THE GARAGE COLUMNS AND BEAMS SUPPORTING THE SEPARATION SHALL ALSO BE PROTECTED WITH 3/8" GYP. BOARD. GARAGE DOOR FRAME FOR THE ATTACHMENT OF THE TRACK AND COUNTER BALANCE SHALL CONSIST OF THE FOLLOWING: 2x6 VERTICAL JAMBS RUNNING FROM FLOOR TO CEILING AND SHALL BE FASTENED WITH 2 1/2" X 0.120" NAILS AT 7" O.C. STAGGERED WITH (7) 3/4" X 0.120" NAILS THROUGH THE JAMB INTO THE HEADER. MINIMUM 2x8 HEADER FOR ATTACHMENT OF COUNTER BALANCE SYSTEM.

DESIGN LOADING (PER TABLE R301.5)

Table with columns: USE, MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS (PSF), LIVE LOAD, DEAD LOAD. Rows include UNINHABITABLE ATTICS WITHOUT STORAGE, UNINHABITABLE ATTICS WITH LIMITED STORAGE, HABITABLE ATTICS AND ATTICS SERVED WITH FIXED STAIRS, BALCONIES (EXTERIOR) AND DECKS, FIRE ESCAPES, GUARDRAILS AND HANDRAILS, GUARDRAIL IN-FILL COMPONENTS, PASSENGER VEHICLE GARAGES, ROOMS OTHER THAN SLEEPING ROOM, SLEEPING ROOM, STAIRS.

- a. A single concentrated load applied in any direction at any point along the top.
b. Guard in-fill components (all those except the handrail), ballusters and panel fillers shall be designed to withstand a horizontally applied normal load of 50 pounds on an area equal to one square foot. This load need not be assumed to act concurrently with any other live load requirement.
c. Glazing used in handrail assemblies and guards shall be designed with a safety factor of 4. The safety factor shall be applied to each of the concentrated loads applied to the top of the rail, and to the load on the infill components. These loads shall be determined independently of one another, and loads are assumed not to occur with any other live load.
d. An additional dead loading of 10 psf shall be applied where thinsed tile floor is to be installed. An additional dead loading of 50 psf shall be applied where mudset tile floor is to be installed.

INSULATION/EFFICIENCY

- 1. BUILDING ENVELOPE INSULATION SHALL COMPLY WITH IRC TABLE N1102.1.1 OR THE 2012 IECC (SEE SHEET S3.1 FOR FRAMING DETAILS AND TABLES ON THIS SHEET FOR MORE INFORMATION)
2. CATHEDRAL -VAULTED CEILING FRAMING SHALL BE FRAMED WITH A MINIMUM INSULATION VALUE OF R-38. IF VAULTED RAFTERS DO NOT PROVIDE REQUIRED DEPTH TO ACHIEVE R-38 INSULATION BUILDER SHALL FUR DOWN RAFTERS PER DETAILS PROVIDED ON SHEET S3.1.

INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT (TABLE N1102.1.1). Table with columns: CLIMATE ZONE, U-FACTOR, R-VALUE. Rows include FENESTRATION U-FACTOR, SKYLIGHT U-FACTOR, GLAZED FENESTRATION SHGC, CEILING R-VALUE, WOOD FRAME WALL R-VALUE, MASS WALL R-VALUE, FLOOR R-VALUE, BASEMENT WALL R-VALUE, SLAB R-VALUE AND DEPTH, CRAWL SPACE WALL R-VALUE, DUCTWORK EXPOSED TO OUTSIDE AIR R-VALUE, DUCTWORK NOT EXPOSED TO OUTSIDE AIR R-VALUE, CATHEDRAL VAULTED CEILING R-VALUE.

DUCT SEALING

- N1103.2.2 (R403.2) SEALING (MANDATORY). DUCTS, AIR HANDLERS, AND FILTER BOXES SHALL BE SEALED. JOINTS AND SEAMS SHALL COMPLY WITH SECTION M1601.4.1 OF 2018 IRC.
EXCEPTIONS:
1. AIR-IMPERMEABLE SPRAY FOAM PRODUCTS SHALL BE PERMITTED TO BE APPLIED WITHOUT ADDITIONAL JOINT SEALS.
2. WHERE A DUCT CONNECTION IS MADE THAT IS PARTIALLY INACCESSIBLE, THREE SCREWS OR RIVETS SHALL BE EQUALLY SPACED ON THE EXPOSED PORTION OF THE JOINT SO AS TO PREVENT A HINGE EFFECT.
3. CONTINUOUSLY WELDED AND LOCKING-TYPE LONGITUDINAL JOINTS AND SEAMS IN DUCTS OPERATING AT STATIC PRESSURES LESS THAN 2 INCHES OF WATER COLUMN PRESSURE CLASSIFICATION SHALL NOT REQUIRE ADDITIONAL CLOSURE SYSTEMS.

- DUCT TIGHTNESS SHALL BE VERIFIED BY EITHER OF THE FOLLOWING:
1. POST-CONSTRUCTION TEST: TOTAL LEAKAGE SHALL BE LESS THAN OR EQUAL TO 4 CFM PER 100 SQUARE FEET OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1 INCHES W.G. ACROSS THE ENTIRE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE. ALL REGISTER BOOTS SHALL BE TAPED OR OTHERWISE SEALED DURING THE TEST.
2. ROUGH-IN TEST: TOTAL LEAKAGE SHALL BE LESS THAN OR EQUAL TO 4 CFM PER 100 SQUARE FEET OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1 INCHES W.G. ACROSS THE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE. ALL REGISTERS SHALL BE TAPED OR OTHERWISE SEALED DURING THE TEST. IF THE AIR HANDLER IS NOT INSTALLED AT THE TIME OF THE TEST, TOTAL LEAKAGE SHALL BE LESS THAN OR EQUAL TO 3 CFM PER 100 SQUARE FEET OF CONDITIONED FLOOR AREA.
EXCEPTION: THE TOTAL LEAKAGE TEST IS NOT REQUIRED FOR DUCTS AND AIR HANDLERS LOCATED ENTIRELY WITHIN THE BUILDING THERMAL ENVELOPE.

MECHANICAL VENTILATION SYSTEM FAN EFFICACY. Table with columns: FAN LOCATION, AIR FLOW RATE MINIMUM (CFM), MINIMUM EFFICACY (CFM/WATT), AIR FLOW RATE MAXIMUM (CFM). Rows include FAN LOCATION, RANGE HOODS, IN-LINE FAN, BATHROOM, UTILITY ROOM, BATHROOM, UTILITY ROOM.

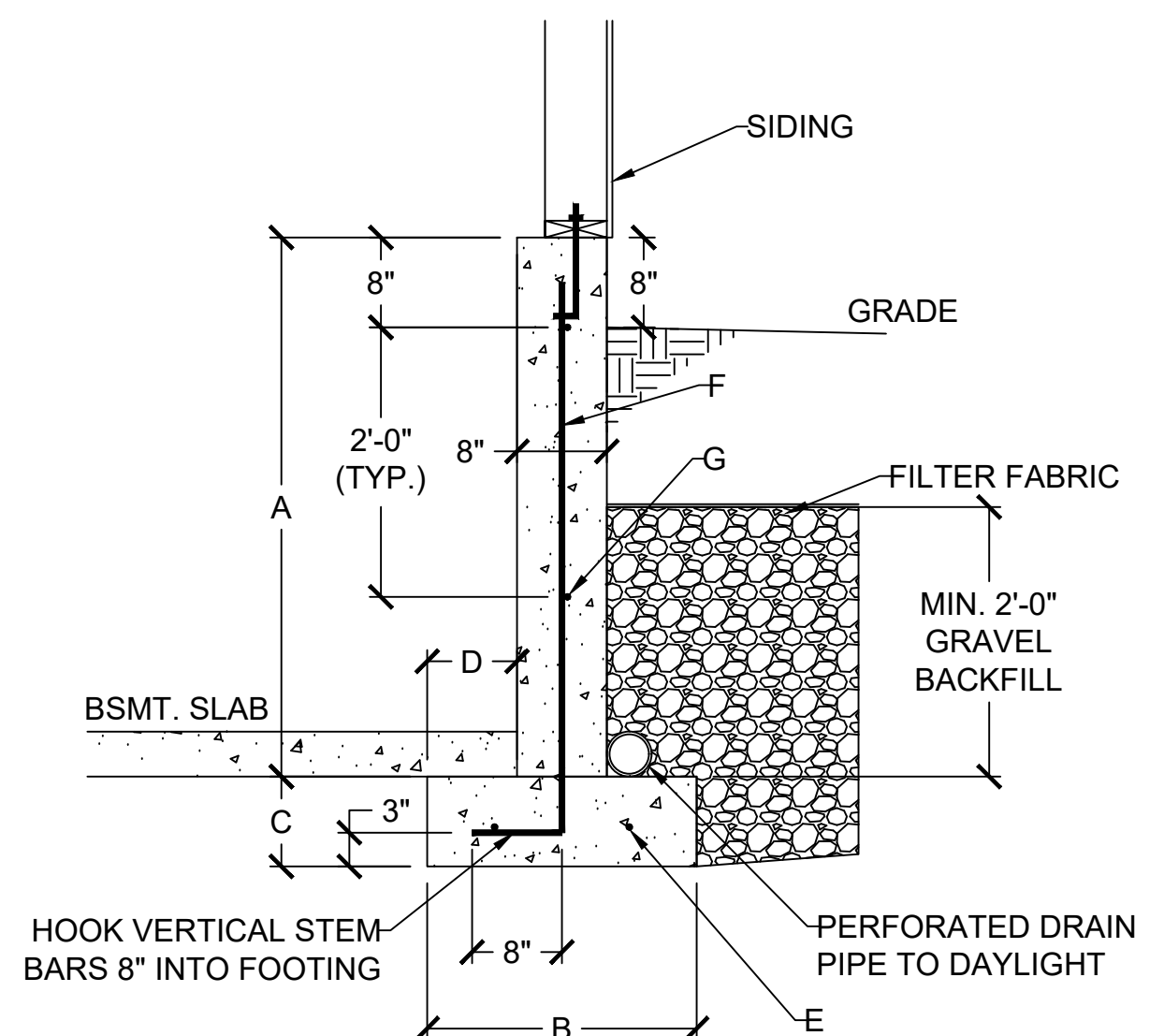
VISTA STRUCTURAL-ENGINEERING, LLC logo and contact information: 14718 NW DELIA STREET \* PORTLAND, OREGON 971229 OFFICE: 971.255.6099 \* MOBILE: 971.255.6099 \* DENNIS@VISTASTRUCTURAL.COM \* VISTASTRUCTURAL.COM

CLIENT: WALKER CUSTOM HOMES, LLC
JOB TITLE: RHFO86 SPEC
LOT 86, THE RETREAT AT HOOK FARMS
1ST PLAT
LOCATION: 2104 SW HARVEST MOON LN.
LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI PROFESSIONAL ENGINEER DENNIS HEIER NUMBER PE-2018001772 10-13-2021

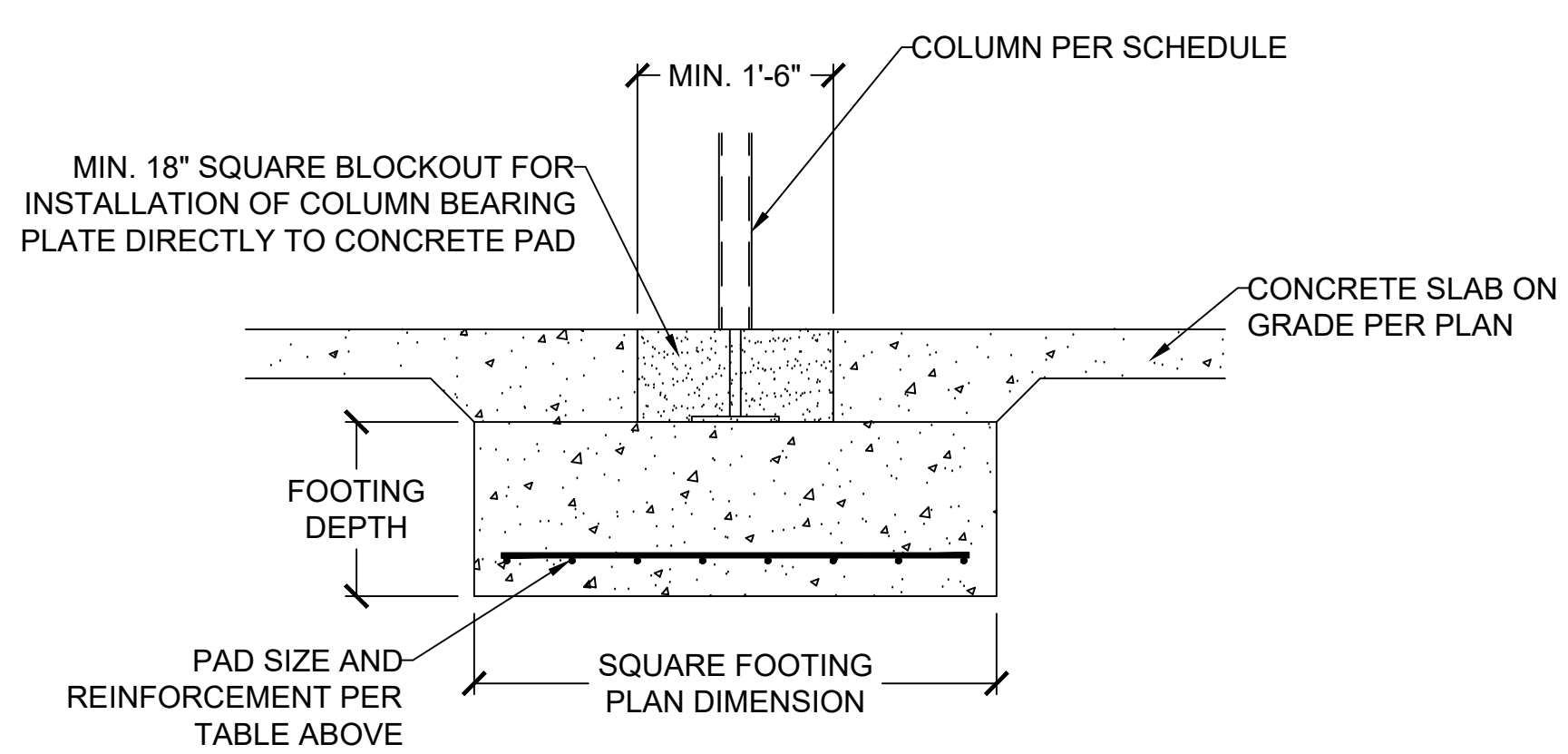
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ENGINEER: DMH CHECKED BY: DMH
JOB NO. 3958 DRAWN BY: DMH
DATE: 10-13-21
SHEET NUMBER S1.0



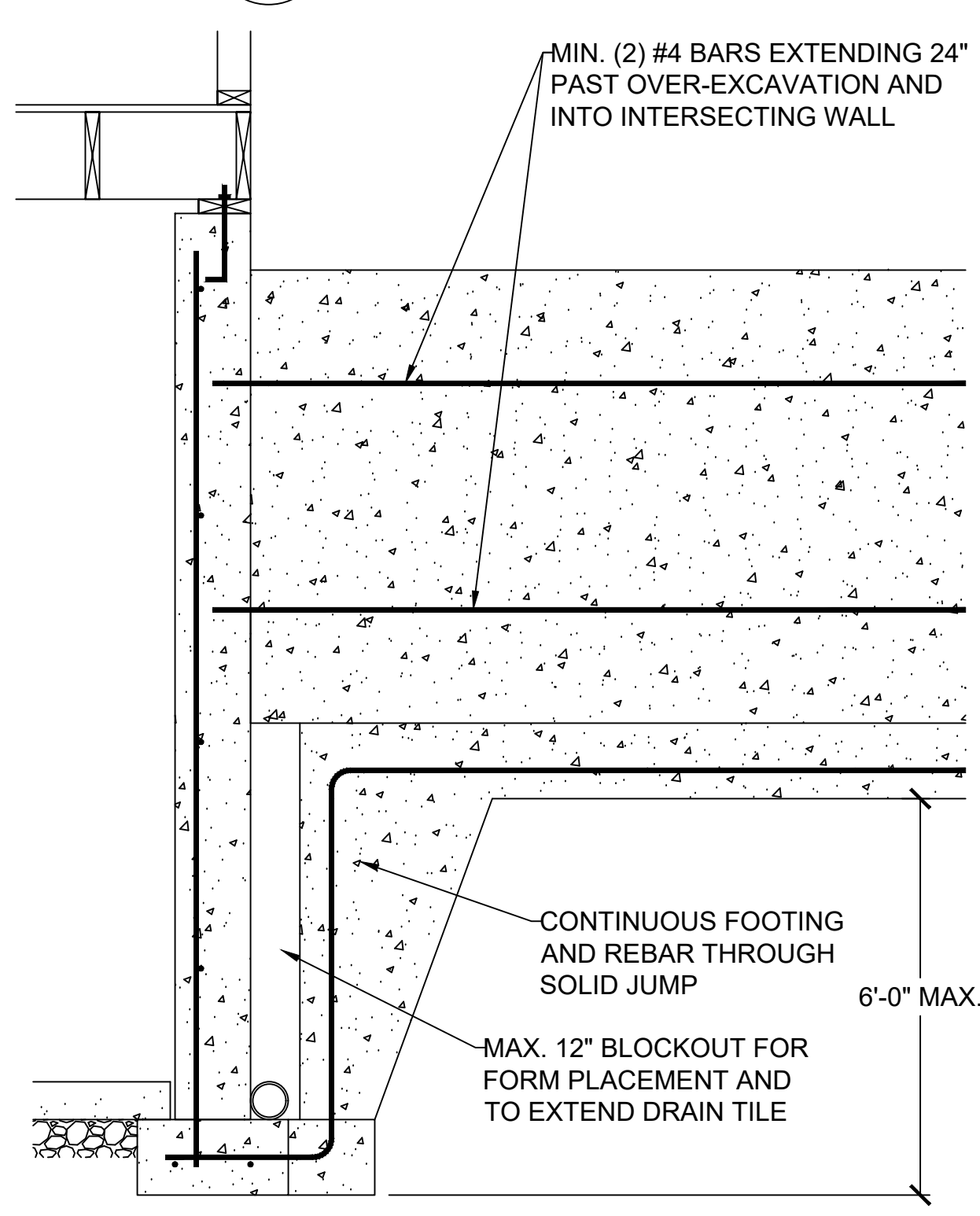


DAYLIGHT BASEMENT WALL SCHEDULE						
A	B	C	D	E	F	G
4'-0"	1'-6"	0'-8"	0'-5"	(2) #4	#4 VERT. @ 12" O.C.	(2) #4 HORIZ.
5'-0"	2'-0"	0'-8"	0'-7"	(2) #4	#4 VERT. @ 12" O.C.	(3) #4 HORIZ.
6'-0"	2'-6"	0'-8"	0'-10"	(3) #4	#4 VERT. @ 12" O.C.	(3) #4 HORIZ.

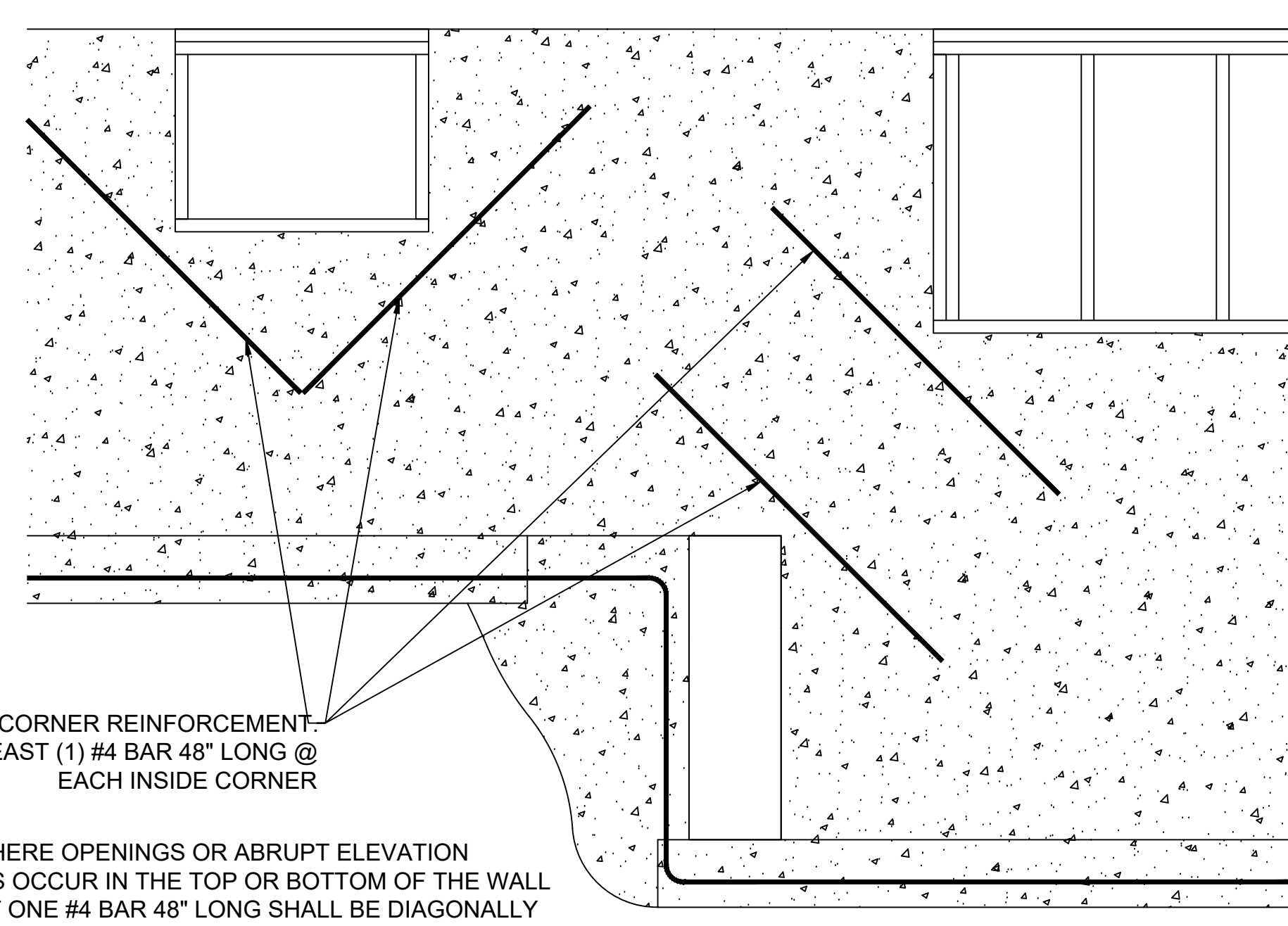
**1 DAYLIGHT WALL CONSTRUCTION**  
S2.0 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)



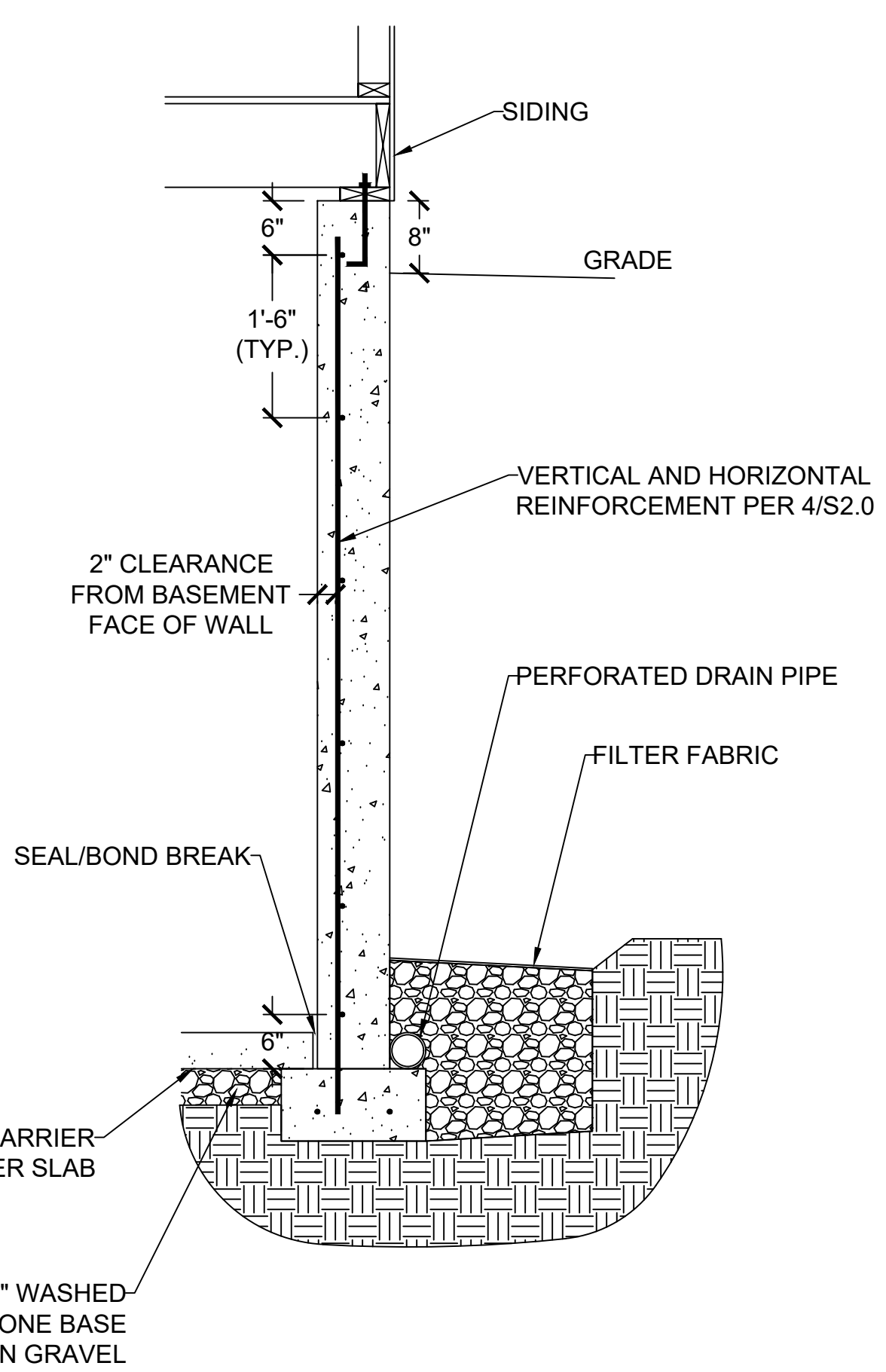
**2 COLUMN AND BEARING PAD SCHEDULE**  
S2.0 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)



**5 SOLID JUMP**  
S2.0 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)

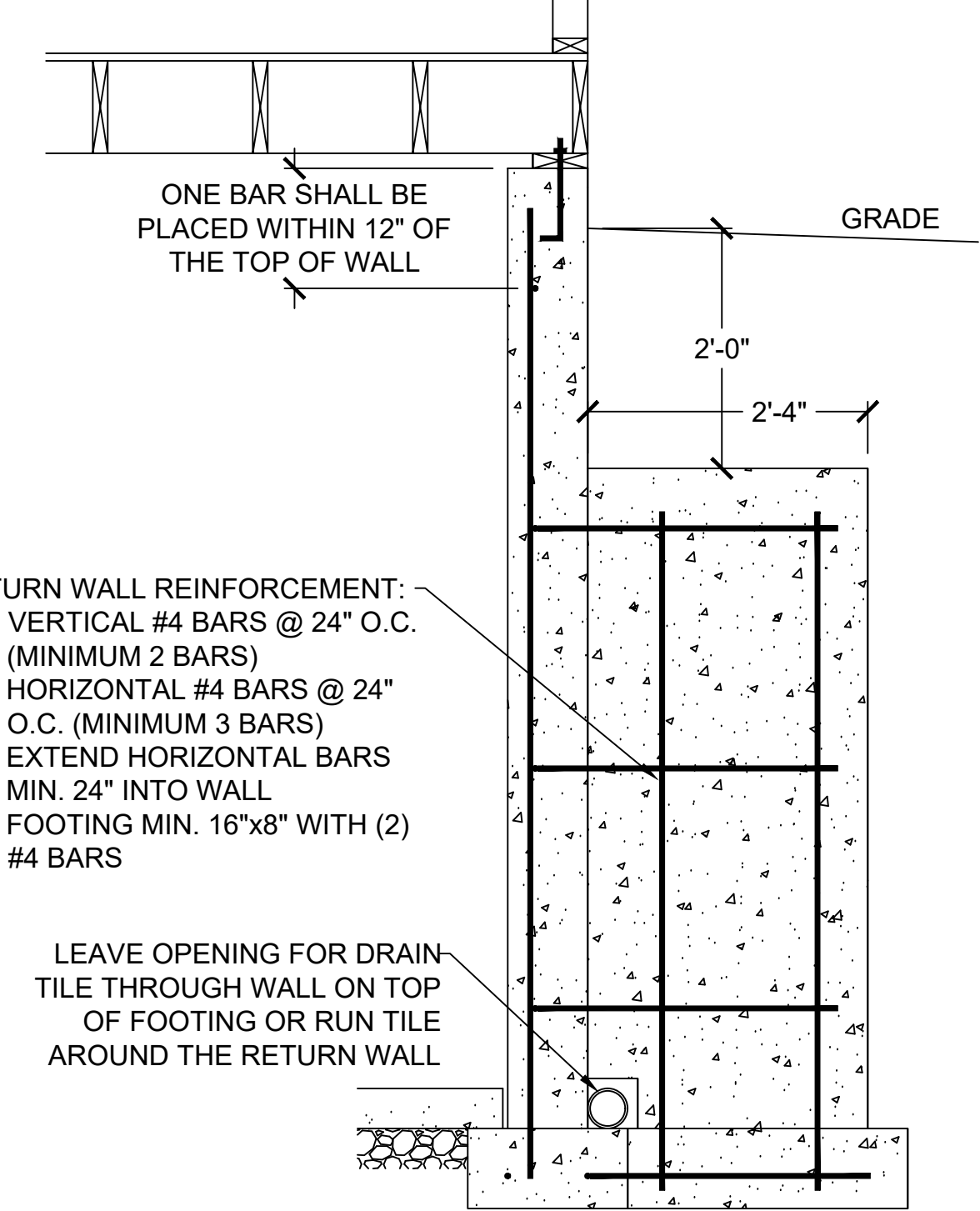


**6 REINFORCEMENT AT OPENING CORNERS AND STEP CORNERS @ INSIDE CORNERS**  
S2.0 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)



**3 CONCRETE WALL SECTION**  
S2.0 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)

NOTE: WHERE FLOOR JOIST RUNS PARALLEL TO FDN WALL, SOLID BLOCK OUTSIDE 3 JOIST SPACES @ 36" OC ALIGNING BLOCKING WITH THE ANCHOR BOLT



- RETURN WALL REINFORCEMENT:
- VERTICAL #4 BARS @ 24" O.C. (MINIMUM 2 BARS)
  - HORIZONTAL #4 BARS @ 24" O.C. (MINIMUM 3 BARS)
  - EXTEND HORIZONTAL BARS MIN. 24" INTO WALL
  - FOOTING MIN. 16"x8" WITH (2) #4 BARS

LEAVE OPENING FOR DRAIN TILE THROUGH WALL ON TOP OF FOOTING OR RUN TILE AROUND THE RETURN WALL

**7 RETURN WALL DETAIL**  
S2.0 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)

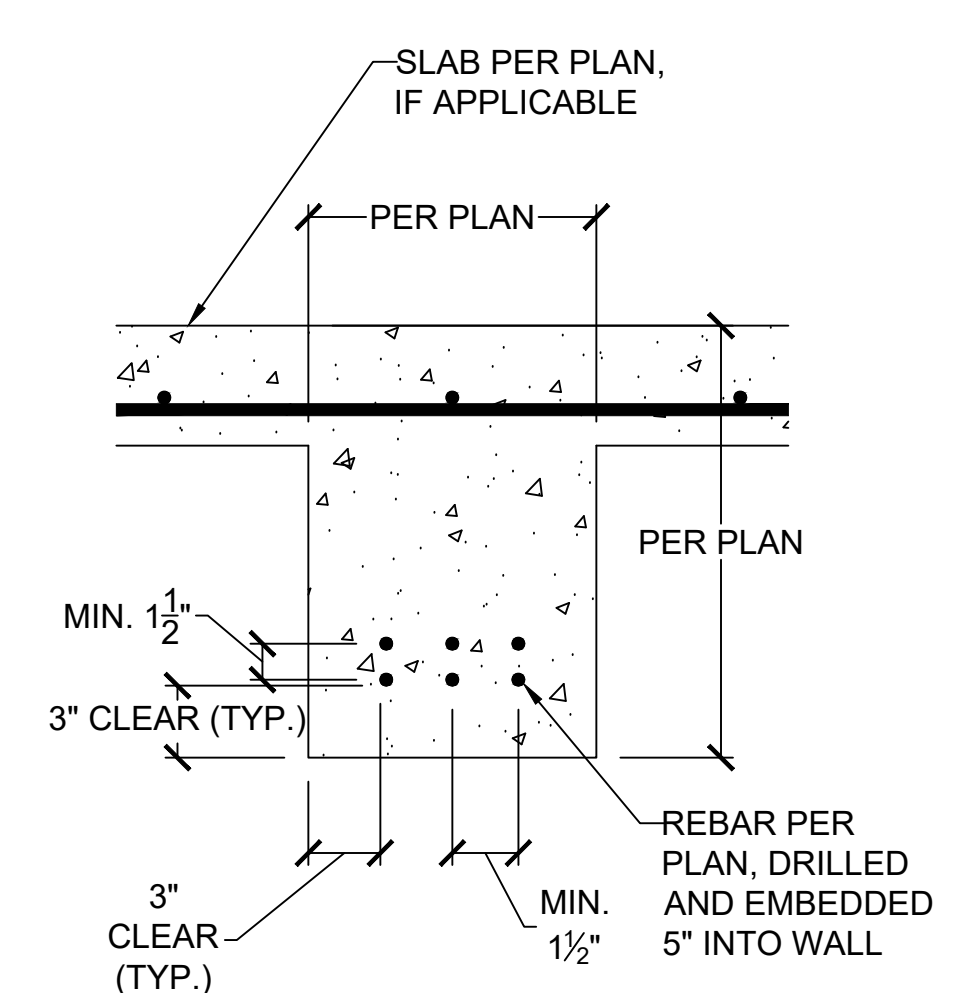
CONCRETE STRENGTH/GRADE REINFORCEMENT (#4 BARS)	8" THICK WALL			10" THICK WALL		
	8'	9'	10'	8'	9'	10'
3,000 PSI/ GRADE 40	24	24	16	24	24	18
3,500 PSI/ GRADE 40	24	24	16	24	24	18
3,000 PSI/ GRADE 60	24	24	16	24	24	18
3,500 PSI/ GRADE 60	24	24	16	24	24	18

HORIZONTAL REINFORCEMENT - MINIMUM GRADE 40 STEEL						
ONE BAR 12" FROM TOP OF WALL; MAX. SPACING 24" OC	6-#4	7-#4	7-#4	6-#4	7-#4	7-#4

- FOOTNOTES:
- 1) WALL HEIGHT IS MEASURED FROM THE TOP OF THE WALL TO THE TOP OF THE FLOOR SLAB
  - 2) VERTICAL REINFORCEMENT FOR CONCRETE WALLS THAT ARE NOT FULL HEIGHT, AND FOR REINFORCEMENT SPACING 24" OC, REINFORCEMENT MAY BE PLACED IN THE MIDDLE OF THE WALL. OTHER WALLS SHALL HAVE VERTICAL REINFORCEMENT AS FOLLOWS:
    - A) 8" WALL - MINIMUM 5" FROM THE OUTSIDE FACE
    - B) 10" WALL - MINIMUM 6 3/4" FROM THE OUTSIDE FACE
    - C) EXTEND BARS TO WITHIN 8" OF THE TOP OF THE WALL
  - 3) REINFORCEMENT CLEARANCES:
    - A) CONCRETE EXPOSED TO EARTH - MINIMUM 1 1/2"
    - B) NOT EXPOSED TO WEATHER (INTERIOR SIDE OF WALLS) - 3/4"
    - C) CONCRETE EXPOSED TO WEATHER (TOP CLEARANCE IN GARAGE AND DRIVEWAY SLABS) - 1 1/2"
  - 4) HORIZONTAL REINFORCEMENT:
    - A) ONE BAR SHALL BE PLACED WITHIN 12" OF THE TOP OF THE WALL
    - B) OTHER BARS SHALL BE EQUALLY SPACED WITH SPACING NOT TO EXCEED 24" OC
    - C) HORIZONTAL BARS SHOULD BE AS CLOSE TO THE TENSION FACE AS POSSIBLE (INTERIOR) AND BEHIND THE VERTICAL REINFORCEMENT (I.E. 2" TOWARD THE INSIDE)
    - D) SUPPLEMENTAL REINFORCEMENT AT CORNERS - PLACE (1) #4 BAR 48" LONG AT 45 DEGREE ANGLE AT CORNERS OF OPENINGS. PLACE REINFORCEMENT WITHIN 6" OF THE EDGE OF INSIDE CORNERS.
  - 5) REINFORCEMENT SHALL BE LAPPED A MINIMUM 24" AT ENDS, SPLICES, AND AROUND CORNERS.
  - 6) 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 THICKNESSES LESS THAN 4" PROVIDE #4 BARS AT MAX. 24" OC TO WITHIN 8" OF THE TOP OF THE WALL.
  - 7) STRAIGHT WALLS MORE THAN 5' TALL AND MORE THAN 16 FEET LONG SHALL BE PROVIDED WITH EXTERIOR BRACED RETURN WALLS. WALL LENGTH SHALL BE MEASURED USING INSIDE THE SHORTEST DIMENSION BETWEEN INTERSECTING WALLS
  - 8) WALL SHALL NOT BE BACKFILLED UNTIL FLOOR SYSTEM AND DIAPHRAGM ARE IN PLACE

**4 FOUNDATION WALL REINFORCEMENT TABLE**  
S2.0 NO SCALE



**8 CONCRETE GRADE BEAM**  
S2.0 SCALE: 1" = 1'-0" (18x24) OR 1 1/2" = 1'-0" (24x36)

**VISTA**  
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CLIENT: WALKER CUSTOM HOMES, LLC  
JOB TITLE: RHF086 SPEC LOT 86, THE RETREAT AT HOOK FARMS 1ST PLAT  
LOCATION: 2104 SW HARVEST MOON LN. LEE'S SUMMIT, MISSOURI

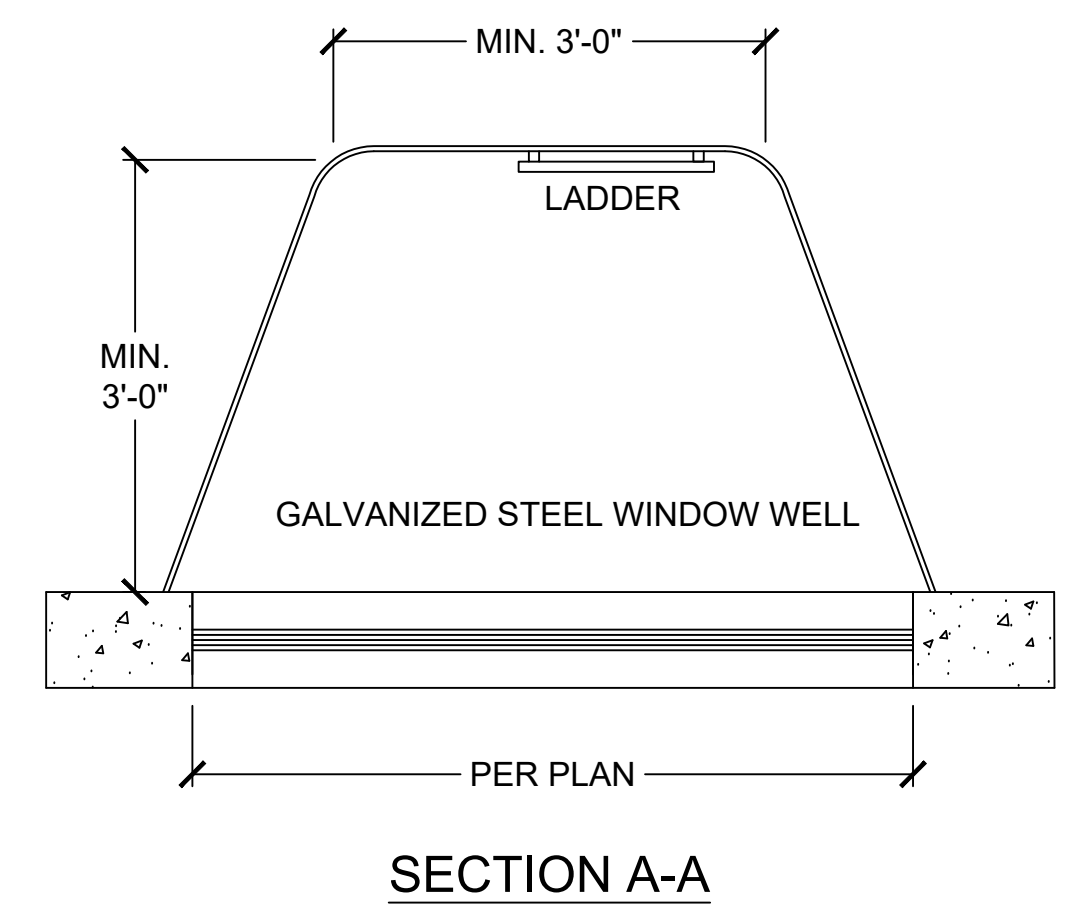
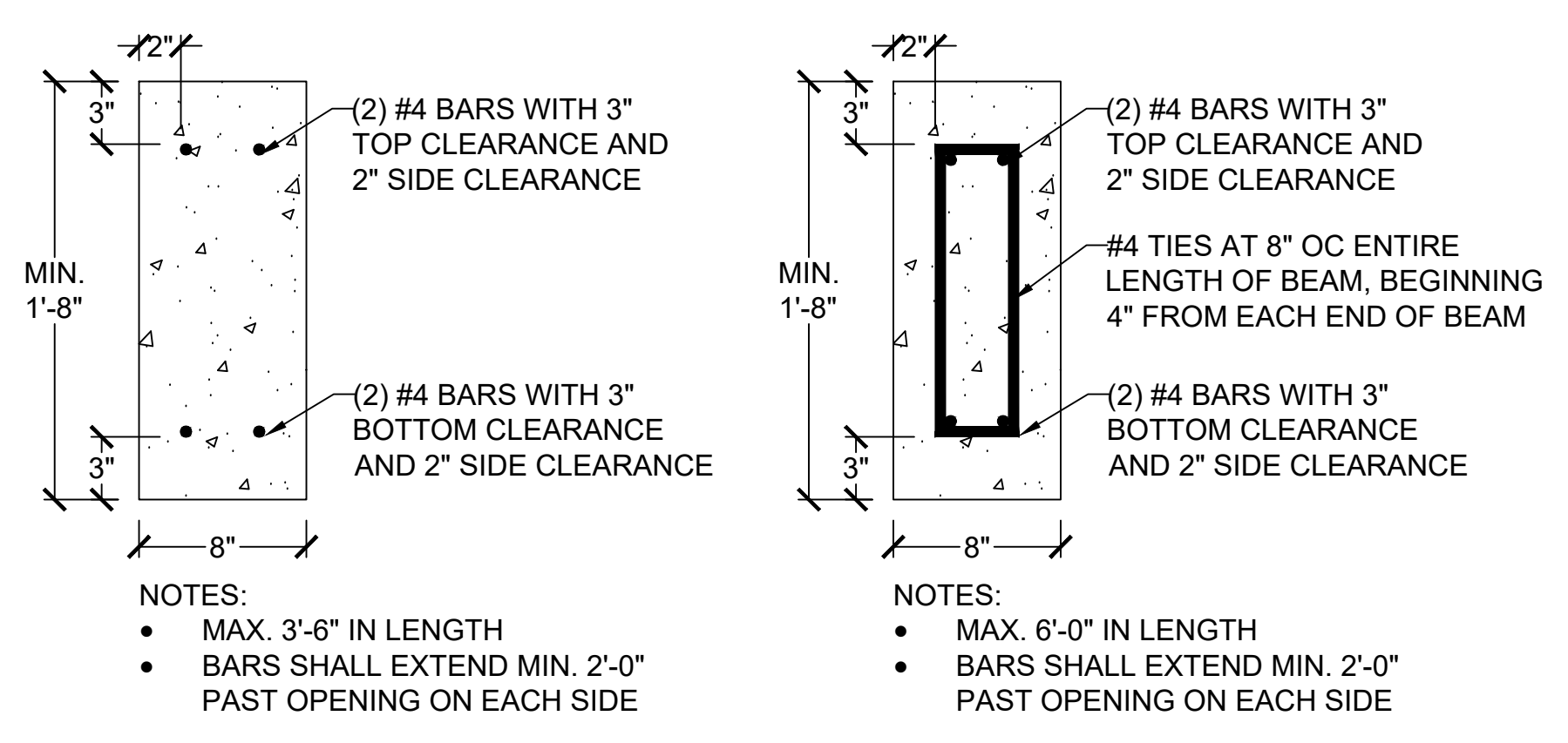
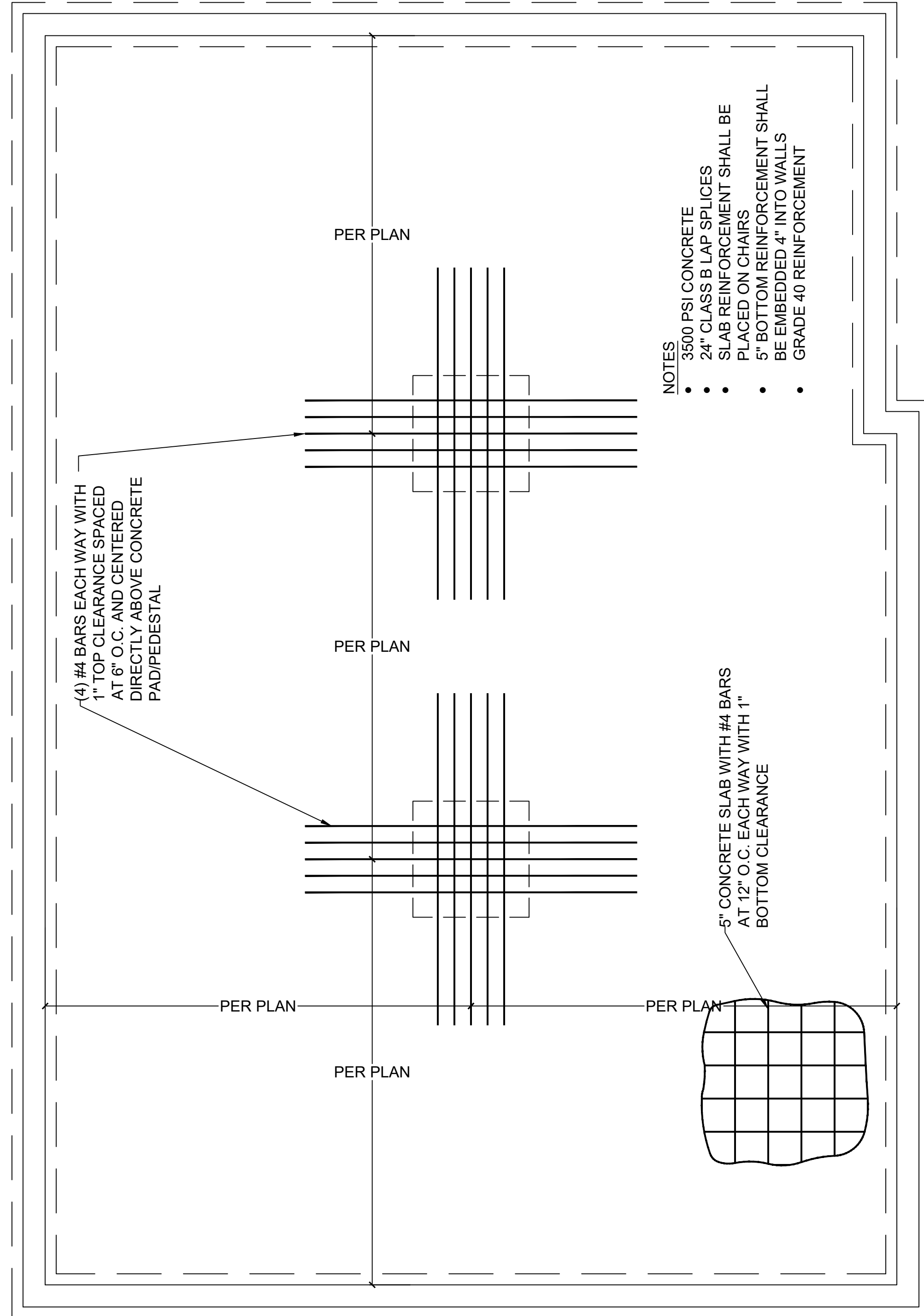
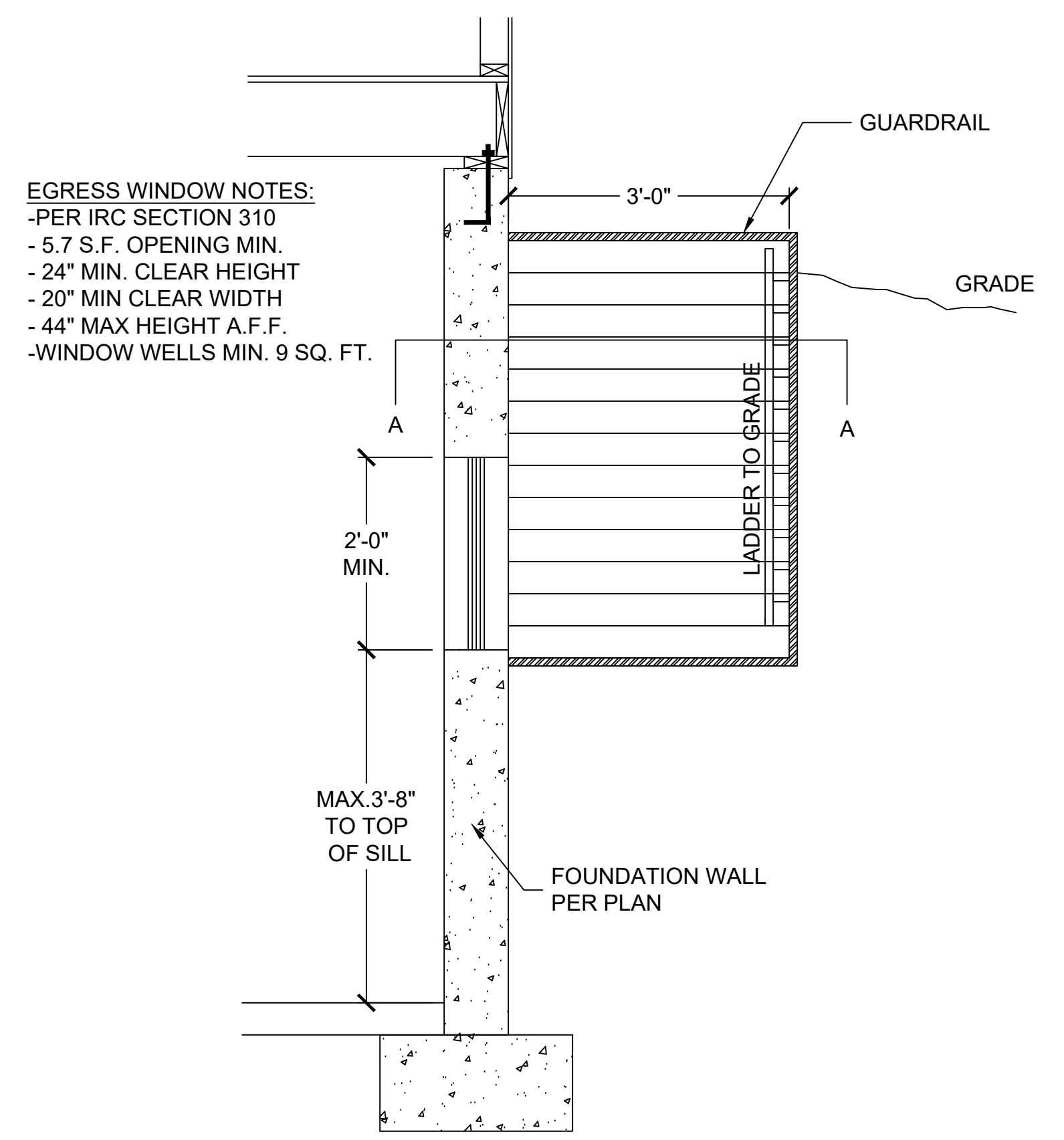
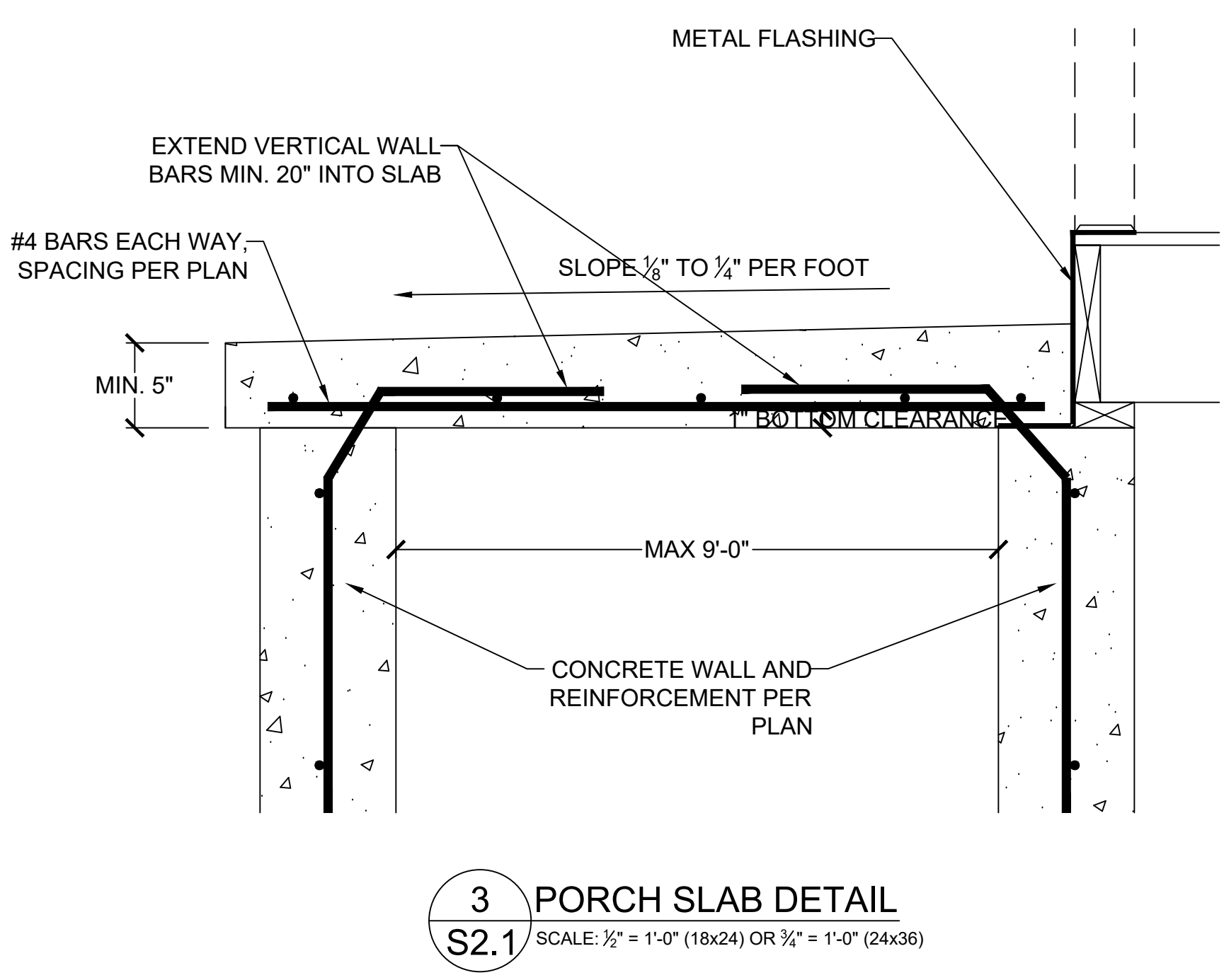
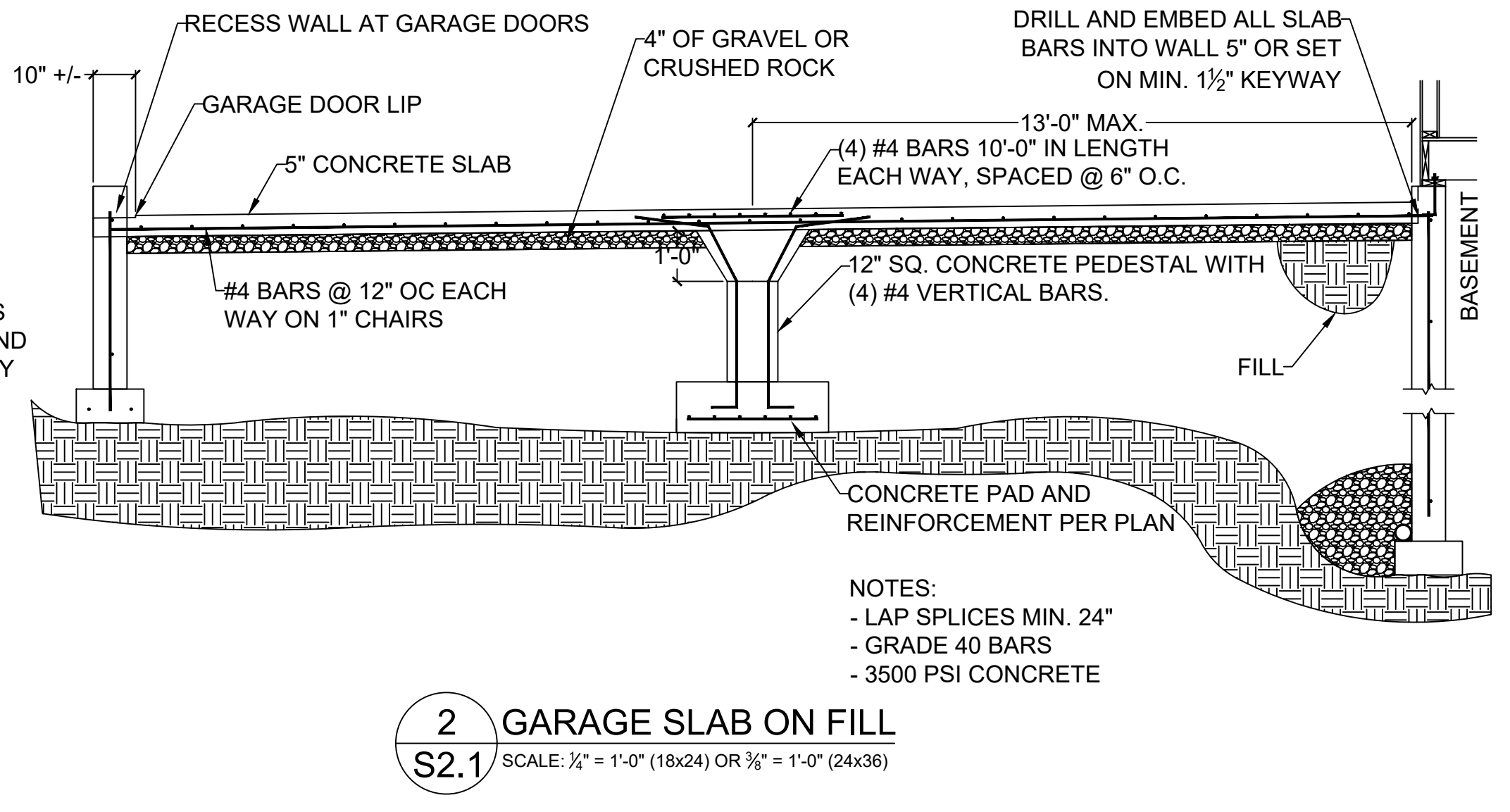
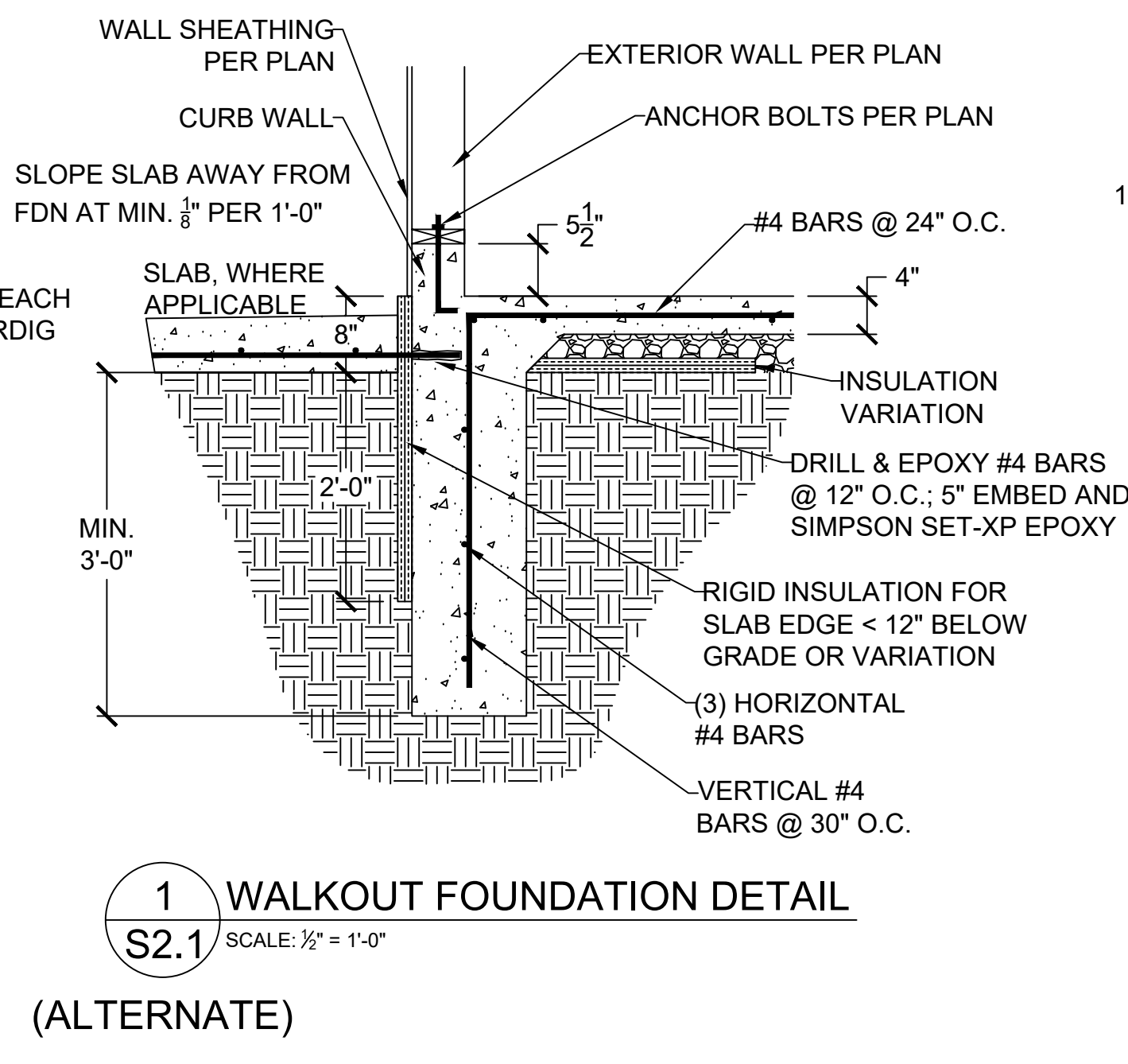
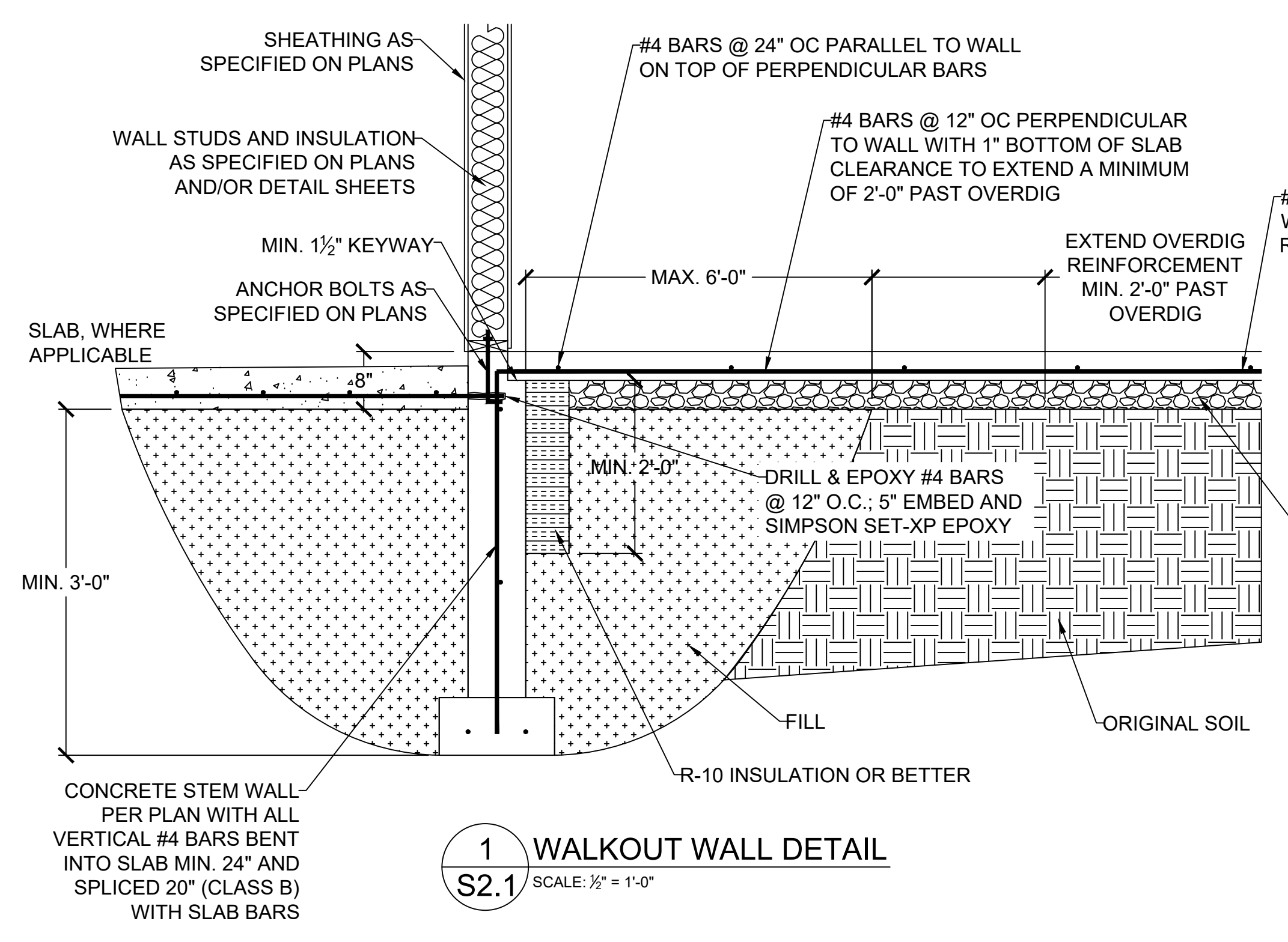
STATE OF MISSOURI  
DENNIS HEIER  
NUMBER: PE-2018001772  
PROFESSIONAL ENGINEER  
10-13-2021

NO.	DATE	REVISION	BY

DRAWING TITLE  
**FOUNDATION DETAILS**

ENGINEER: DMH CHECKED BY: DMH  
JOB NO: 3958 DRAWN BY: DMH  
DATE: 10-13-21  
SHEET NUMBER  
**S2.0**





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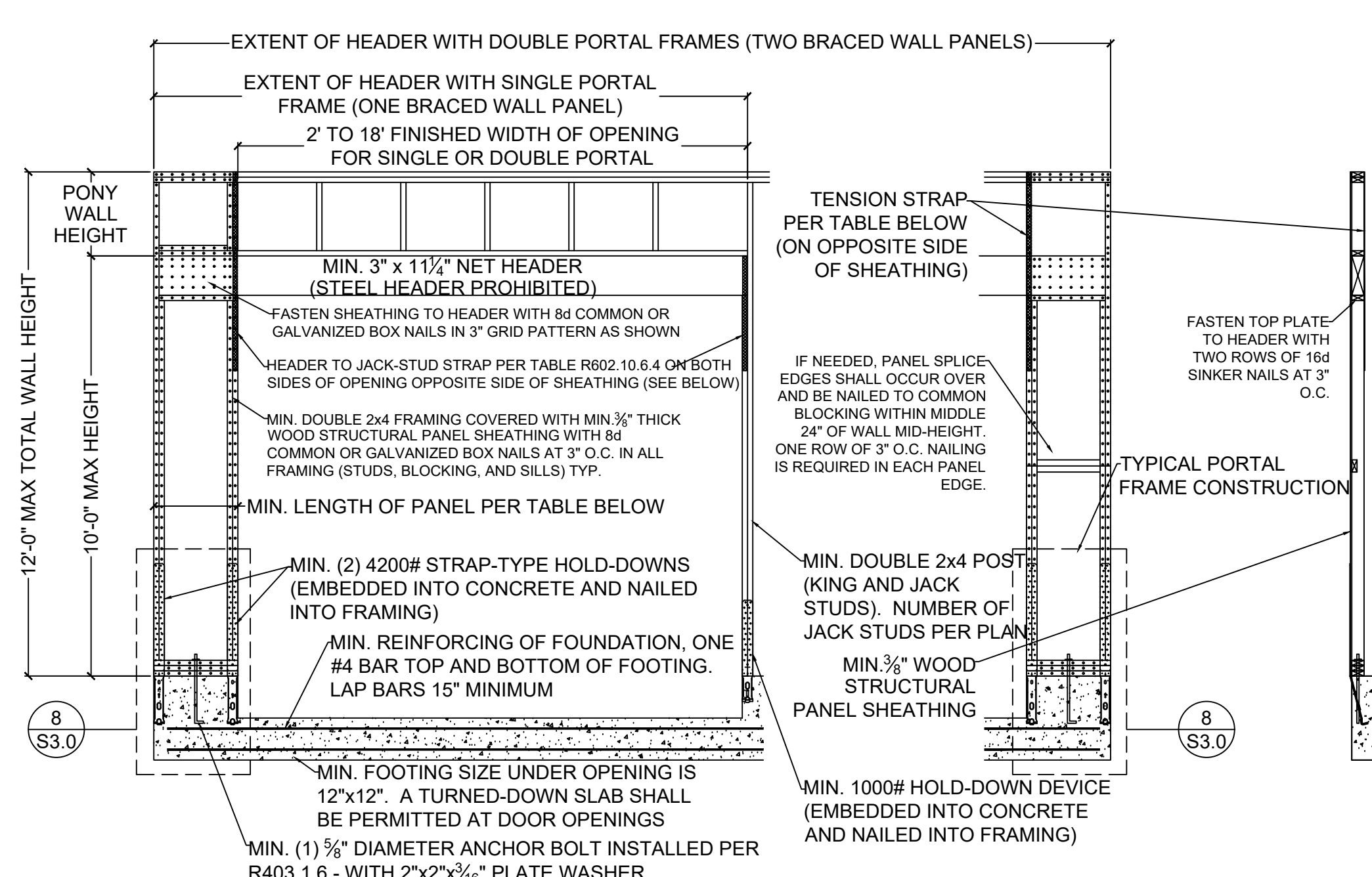
CLIENT: WALKER CUSTOM HOMES, LLC  
 JOB TITLE: RHF086 SPEC LOT 86, THE RETREAT AT HOOK FARMS 1ST PLAT  
 LOCATION: 2104 SW HARVEST MOON LN. LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI  
 DENNIS HEIER  
 NUMBER: PE-2018011772  
 PROFESSIONAL ENGINEER  
 10-13-2021

NO.	DATE	REVISION	BY

DRAWING TITLE  
**FOUNDATION DETAILS**

ENGINEER: DMH CHECKED BY: DMH  
 JOB NO: 3958 DRAWN BY: DMH  
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 SHEET NUMBER  
**S2.1**



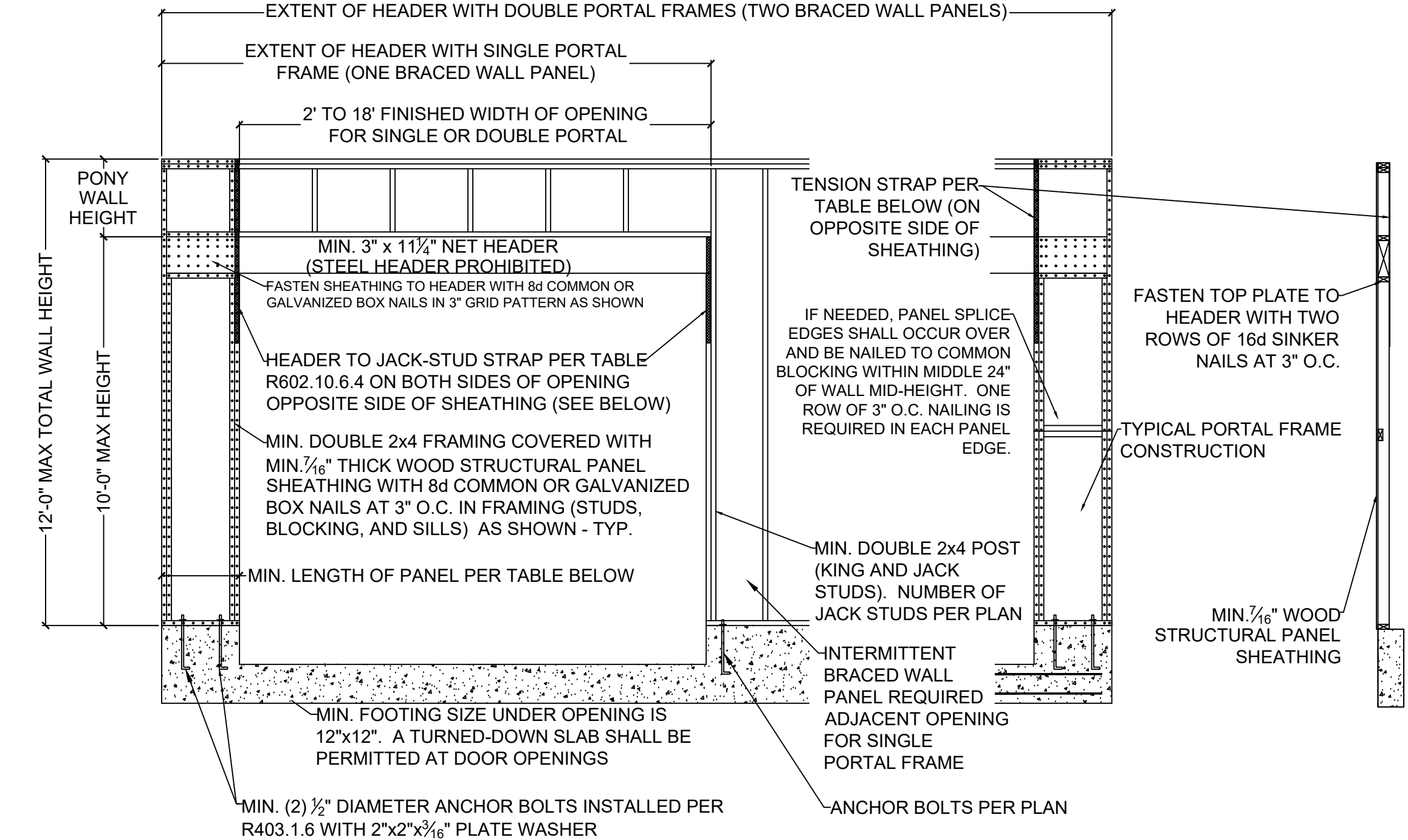
**1 METHOD PFG (PORTAL FRAME WITH S3.0 HOLD-DOWNS) - PER FIGURE IRC R602.10.6.2**  
SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)

MINIMUM PANEL LENGTH FOR DETAIL 1/S3.0 (INCHES)

	WALL HEIGHT				
	8 FEET	9 FEET	10 FEET	11 FEET	12 FEET
SUPPORTING ROOF ONLY	16	16	16	18	20
SUPPORTING ONE STORY AND ROOF	24	24	24	27	29

TENSION STRAP REQUIRED FOR HEADER TO JACK STUD FOR DETAILS 1/S3.0 AND 2/S3.0 (FROM TABLE R602.10.6.4)

MAX GARAGE OPENING (FT.)	PONY WALL WALL HT. (FT.)	REQUIRED SIMPSON STRAP	MIN. STRAP END LENGTH	NAILS REQUIRED IN EACH STRAP END LENGTH
18'-0"	0'-0"	CS20	0'-9"	(7) 8d
9'-0"	1'-0"	CS20	0'-9"	(7) 8d
18'-0"	1'-0"	CS14	1'-4"	(15) 8d
9'-0"	2'-0"	CS18	0'-11"	(9) 8d
18'-0"	2'-0"	CMSTC16	1'-8"	(25) 16d SINKER
9'-0"	4'-0"	CMSTC16	1'-8"	(25) 16d SINKER
16'-0"	4'-0"	CMST14	2'-6"	(33) 10d

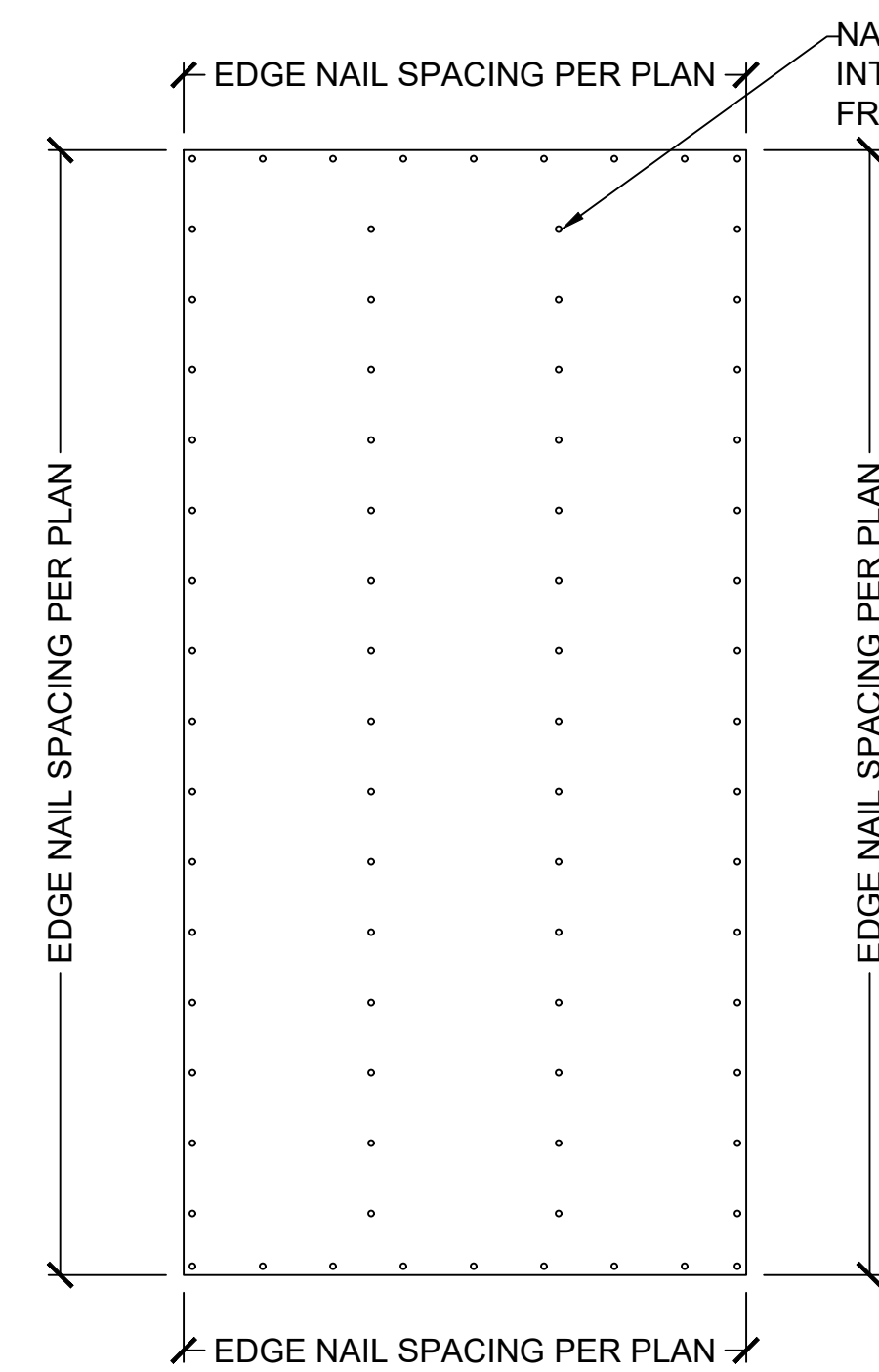


**2 METHOD PFG (PORTAL FRAME AT GARAGE S3.0 DOOR) - PER FIGURE IRC R602.10.6.3**  
SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)

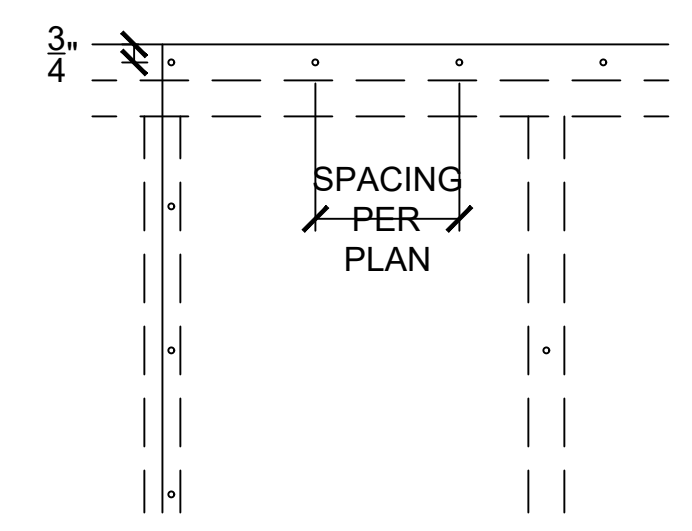
MINIMUM PANEL LENGTH FOR DETAIL 2/S3.0 (INCHES)

WALL HEIGHT				
8 FEET	9 FEET	10 FEET	11 FEET	12 FEET
24	27	30	33 <sup>a</sup>	36 <sup>a</sup>

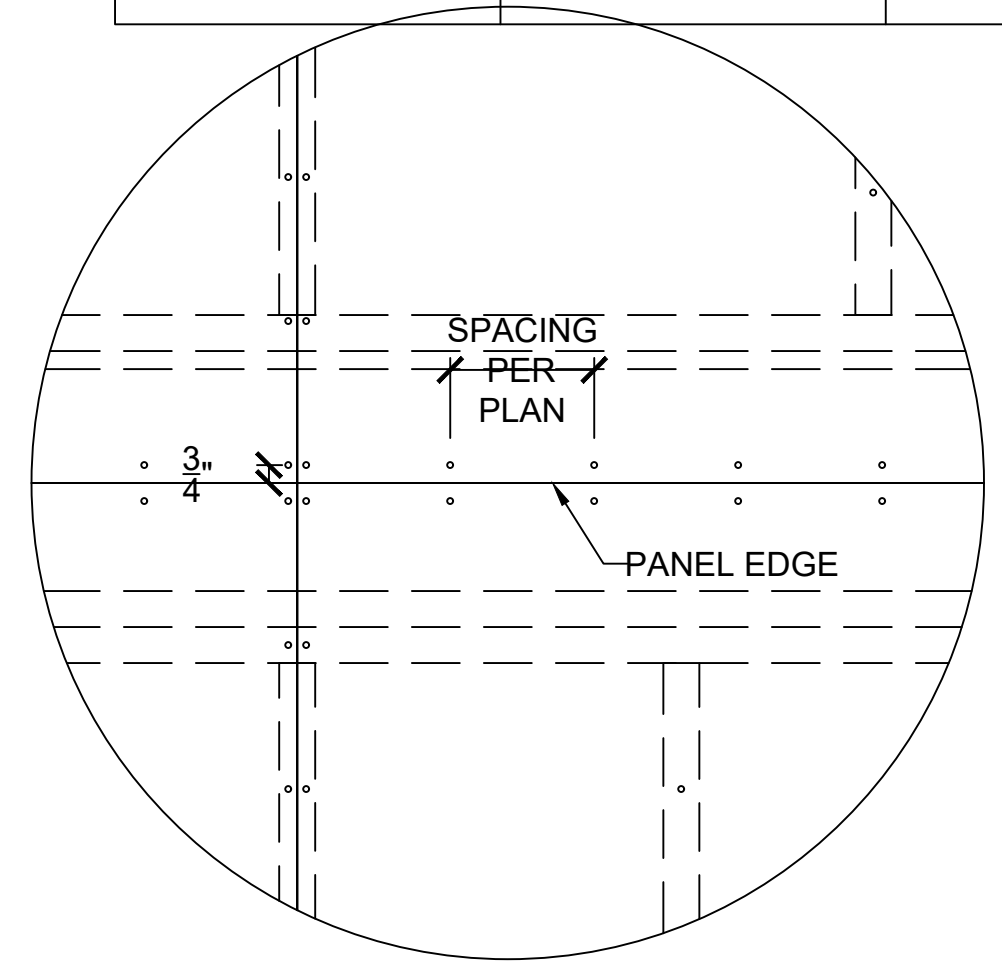
a. Maximum opening height for PFG is 10 feet in accordance with Figure R602.10.6.3, but wall height may be increased to 12 feet with pony wall



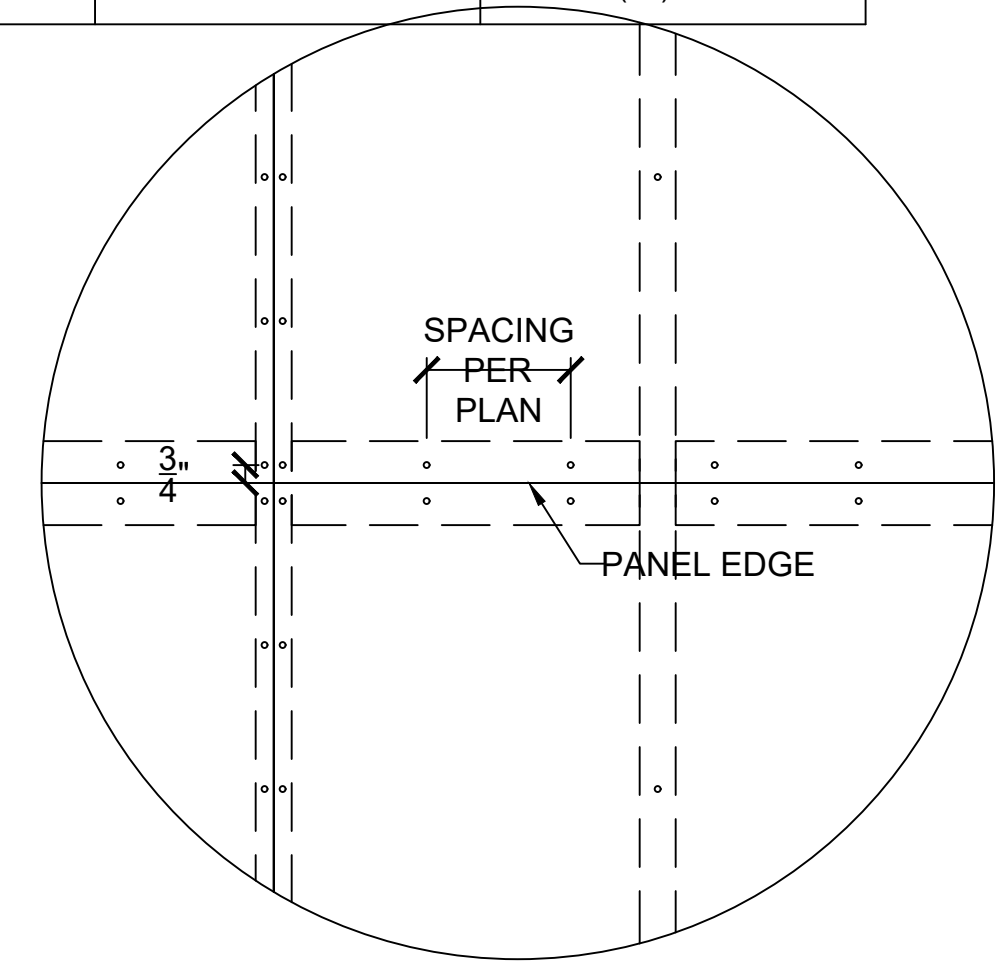
**3 EXTERIOR WALL SHEATHING PANEL ATTACHMENT**  
SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)



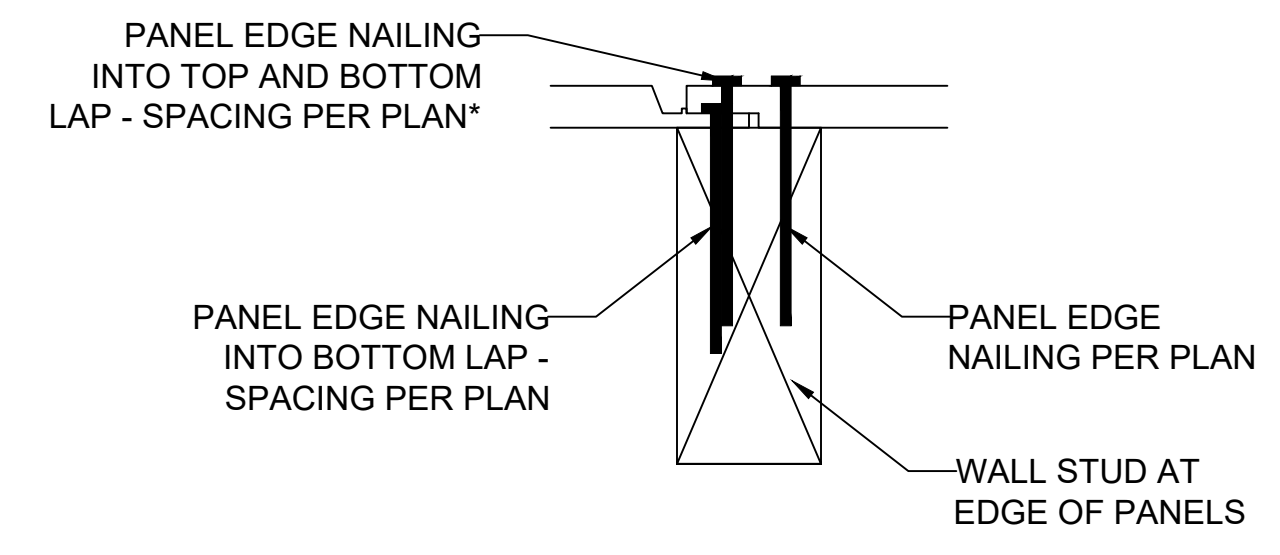
**4 SHEATHING EDGE AT TOP AND BOTTOM PLATES**  
SCALE: 1" = 1'-0" (18x24) OR 1 1/2" = 1'-0" (24x36)



**5 SHEATHING EDGE AT HORIZONTAL S3.0 FRAMING MEMBER**  
SCALE: 1" = 1'-0" (18x24) OR 1 1/2" = 1'-0" (24x36)

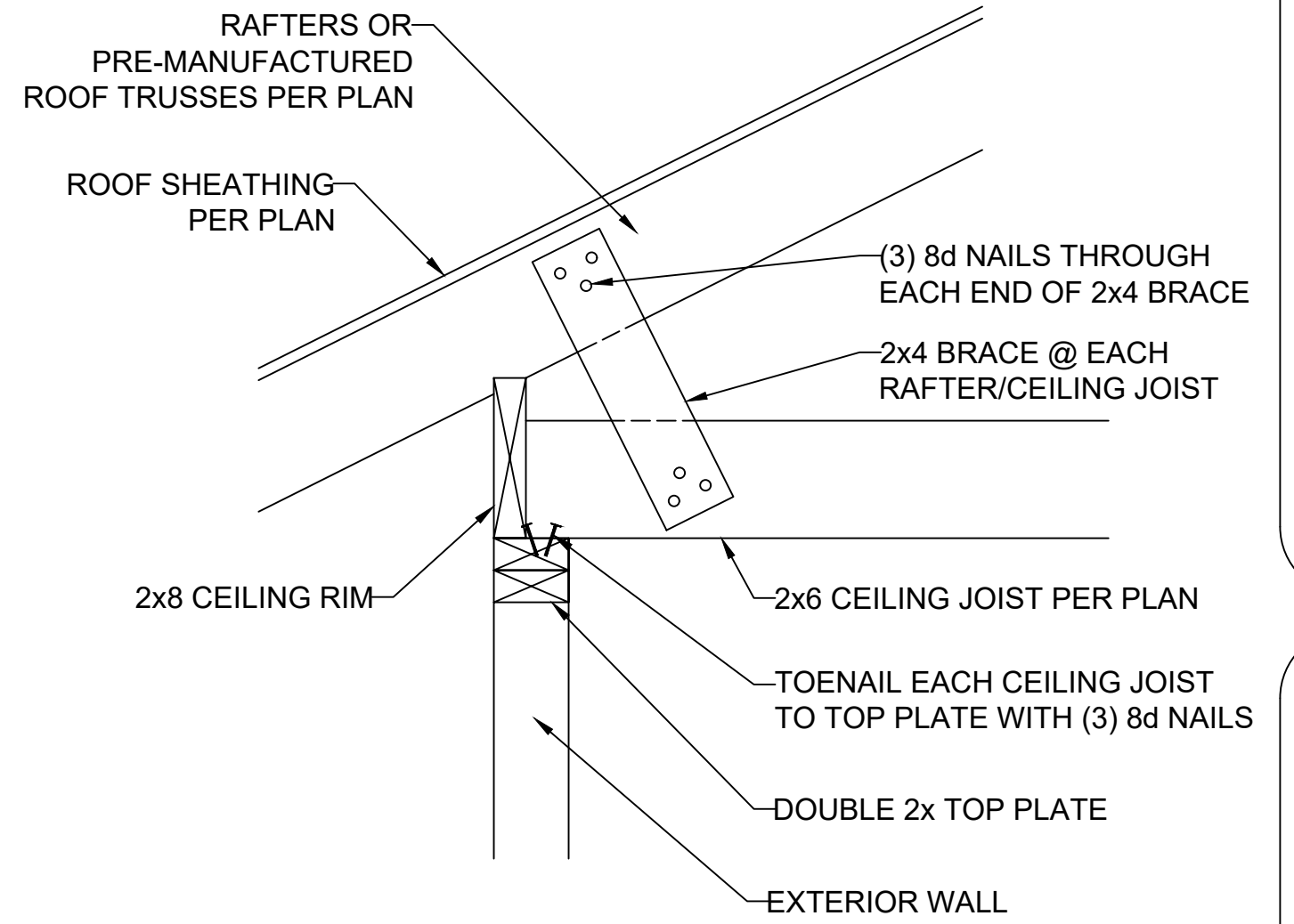


**6 SHEATHING EDGE AT PANEL S3.0 SPLICE ACROSS STUDS**  
SCALE: 1" = 1'-0" (18x24) OR 1 1/2" = 1'-0" (24x36)

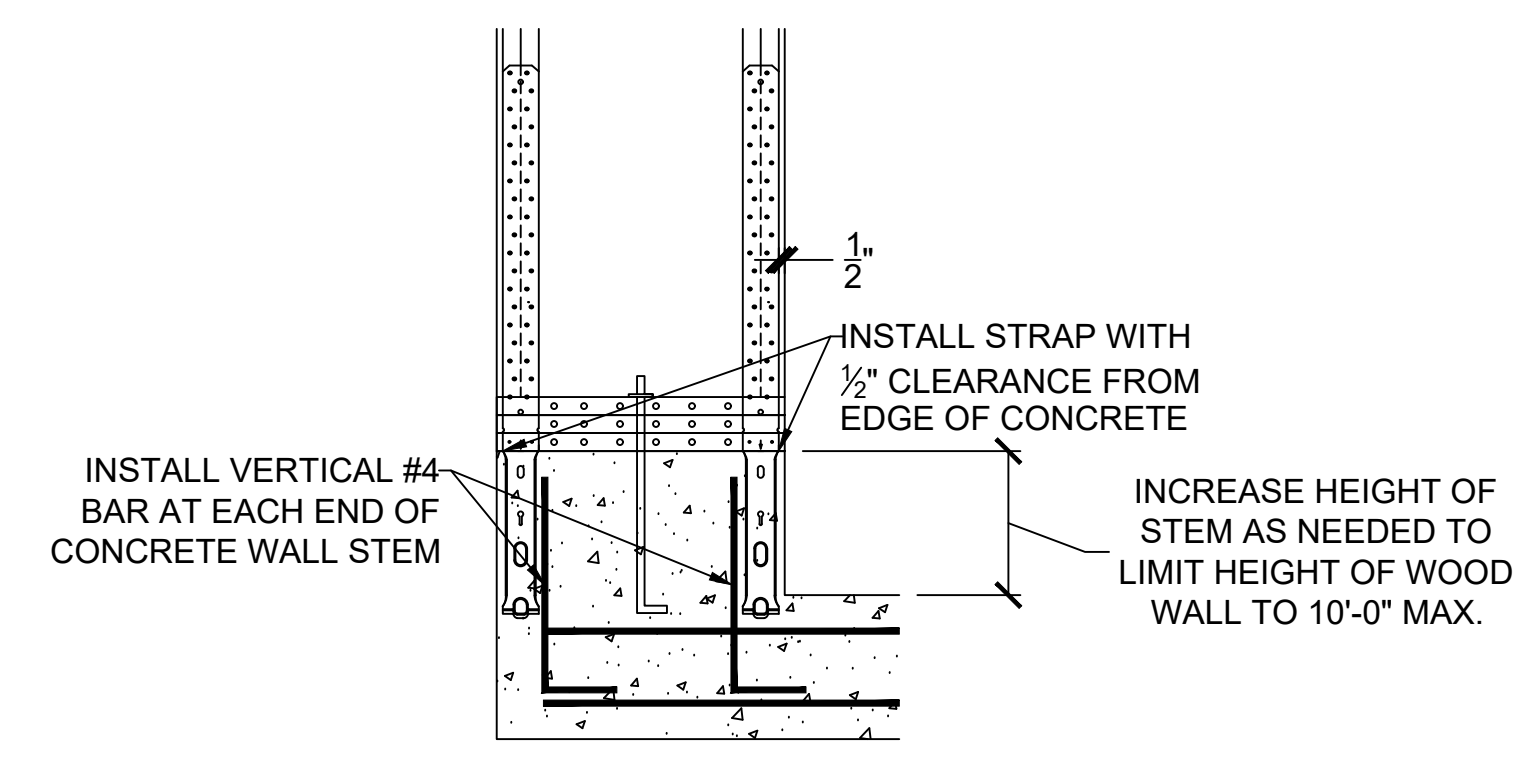


\*NOTE: NAILING INTO TOP AND BOTTOM LAP IS IN ADDITION TO NAILING REQUIRED INTO BOTTOM LAP. FOR EXAMPLE, IF PLAN CALLS FOR NAILS @ 6" O.C. AT EDGES, BOTTOM LAP SHALL BE FASTENED AT 6" O.C. AND, IN ADDITION, NAILING SHALL ALSO BE INSTALLED THROUGH TOP AND BOTTOM LAP @ 6" O.C. STAGGERED 3" FROM BOTTOM LAP NAILING

**8 FASTENING INSTRUCTIONS FOR S3.0 SHIPLAP PANEL SHEATHING**  
SCALE: 4" = 1'-0" (18x24) OR 6" = 1'-0" (24x36)



**7 RAFTER BEARING OPTION DETAIL**  
SCALE: 1" = 1'-0" (18x24) OR 1 1/2" = 1'-0" (24x36)



**9 GARAGE HOLD-DOWN S3.0 STRAP INSTALLATION**  
SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)

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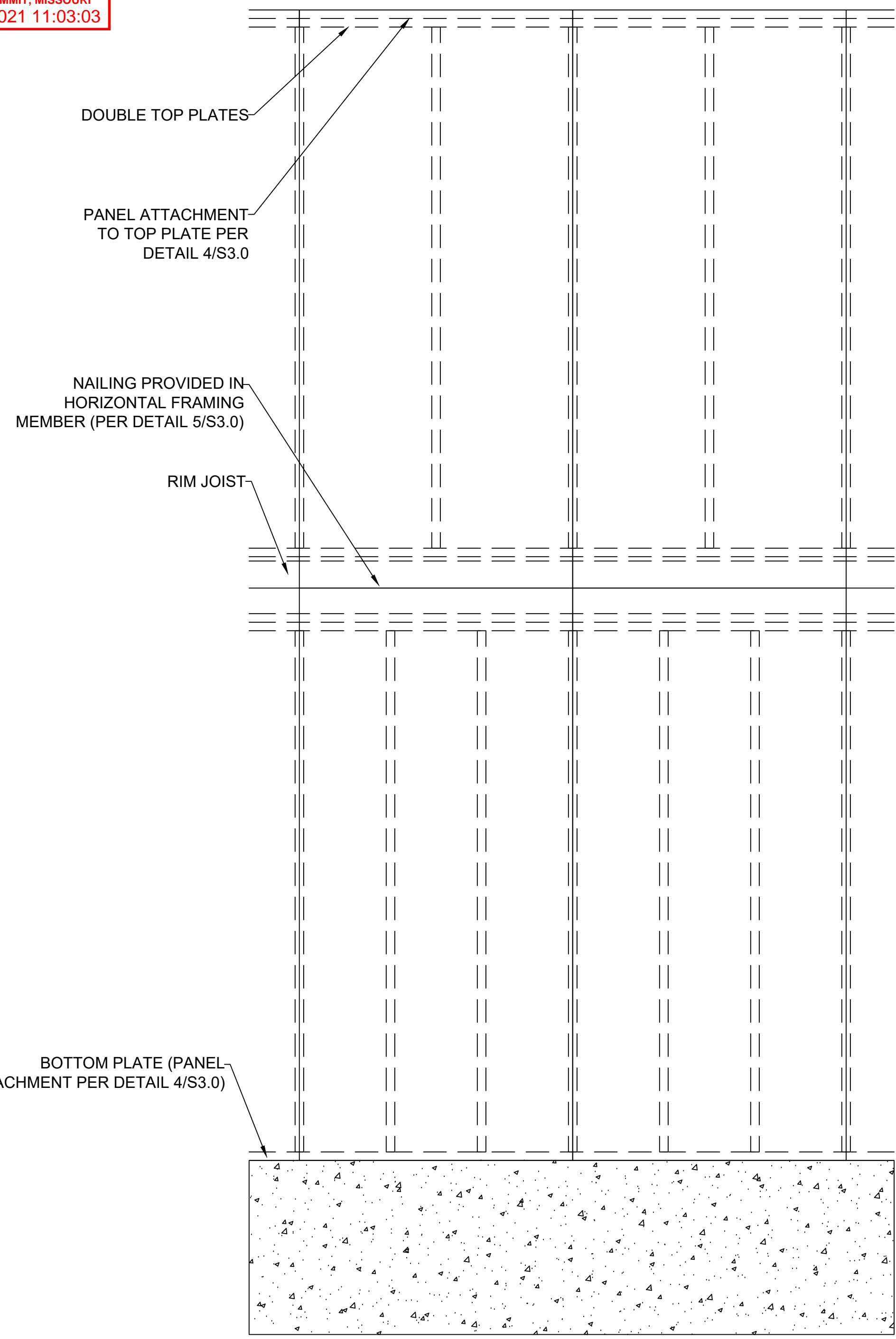
CLIENT: WALKER CUSTOM HOMES, LLC  
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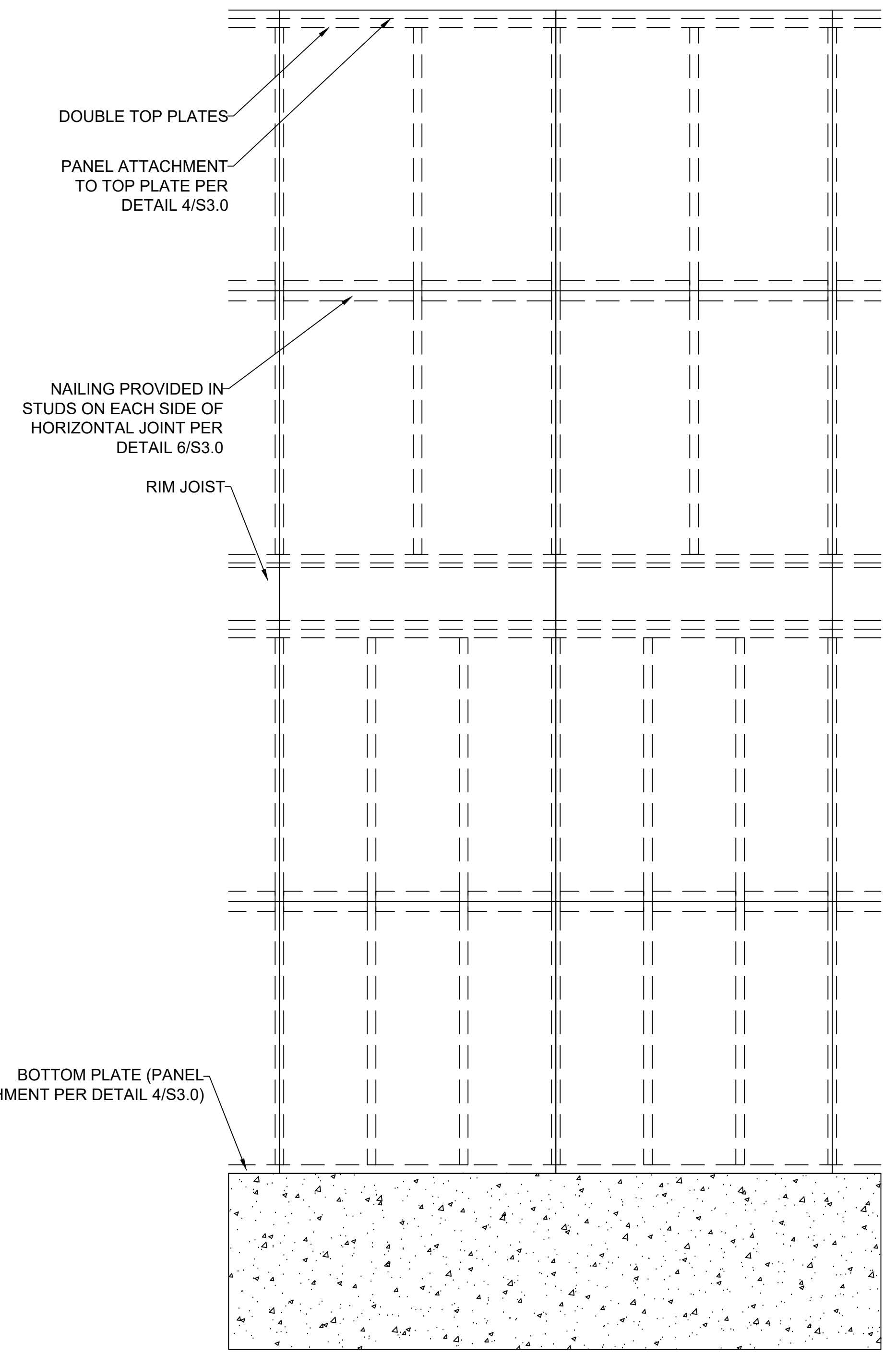
NO.	DATE	REVISION	BY

DRAWING TITLE  
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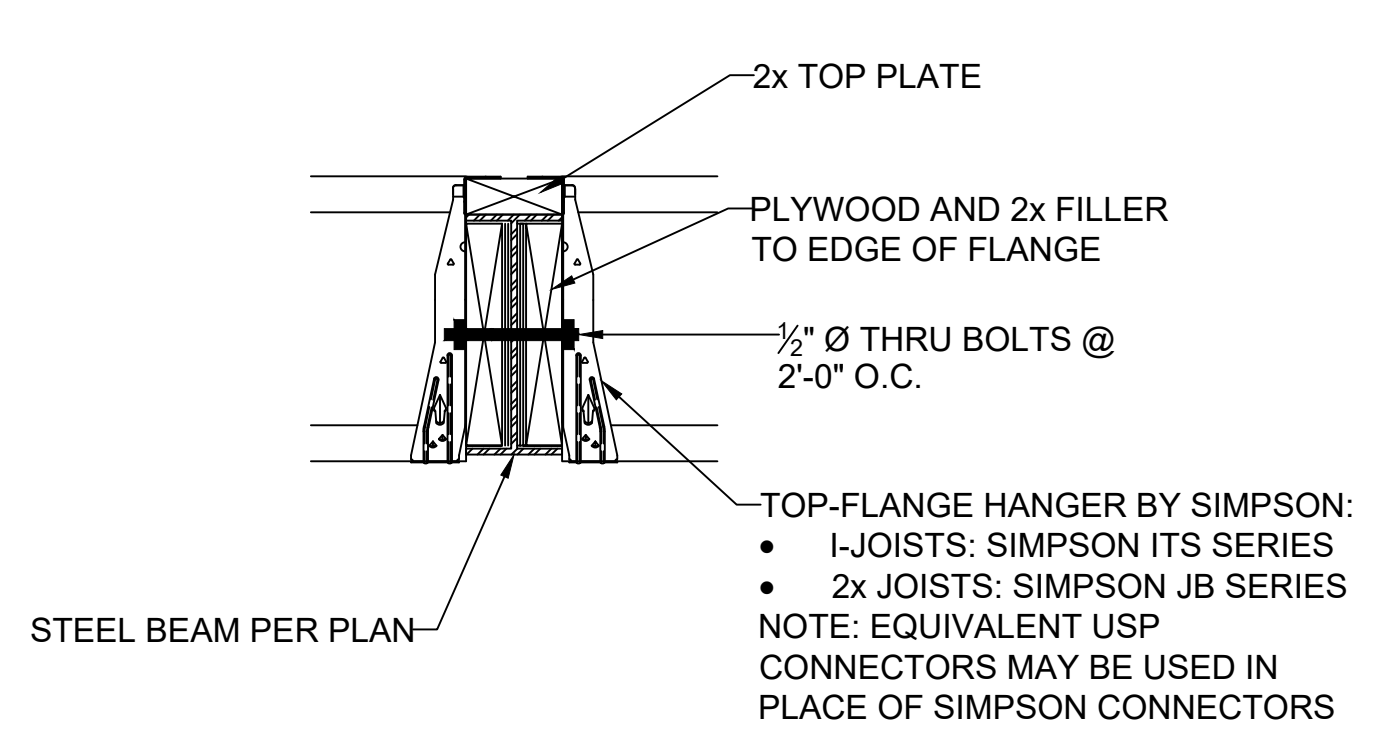
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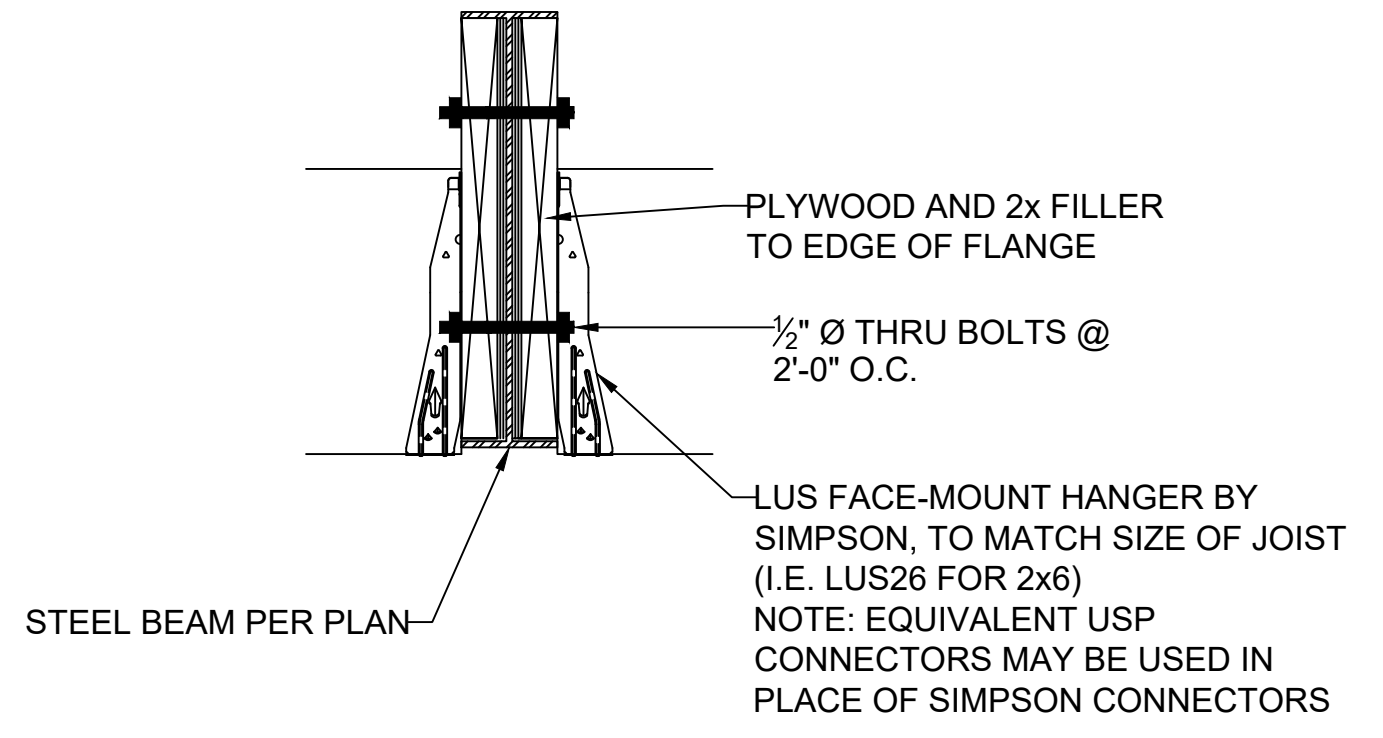
**1** EXTERIOR WALL SHEATHING PANEL ATTACHMENT  
**S3.1** PANEL SPLICE OVER HORIZONTAL FRAMING MEMBER  
 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)



**2** EXTERIOR WALL SHEATHING PANEL ATTACHMENT  
**S3.1** PANEL SPLICE OCCURRING ACROSS STUDS  
 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)

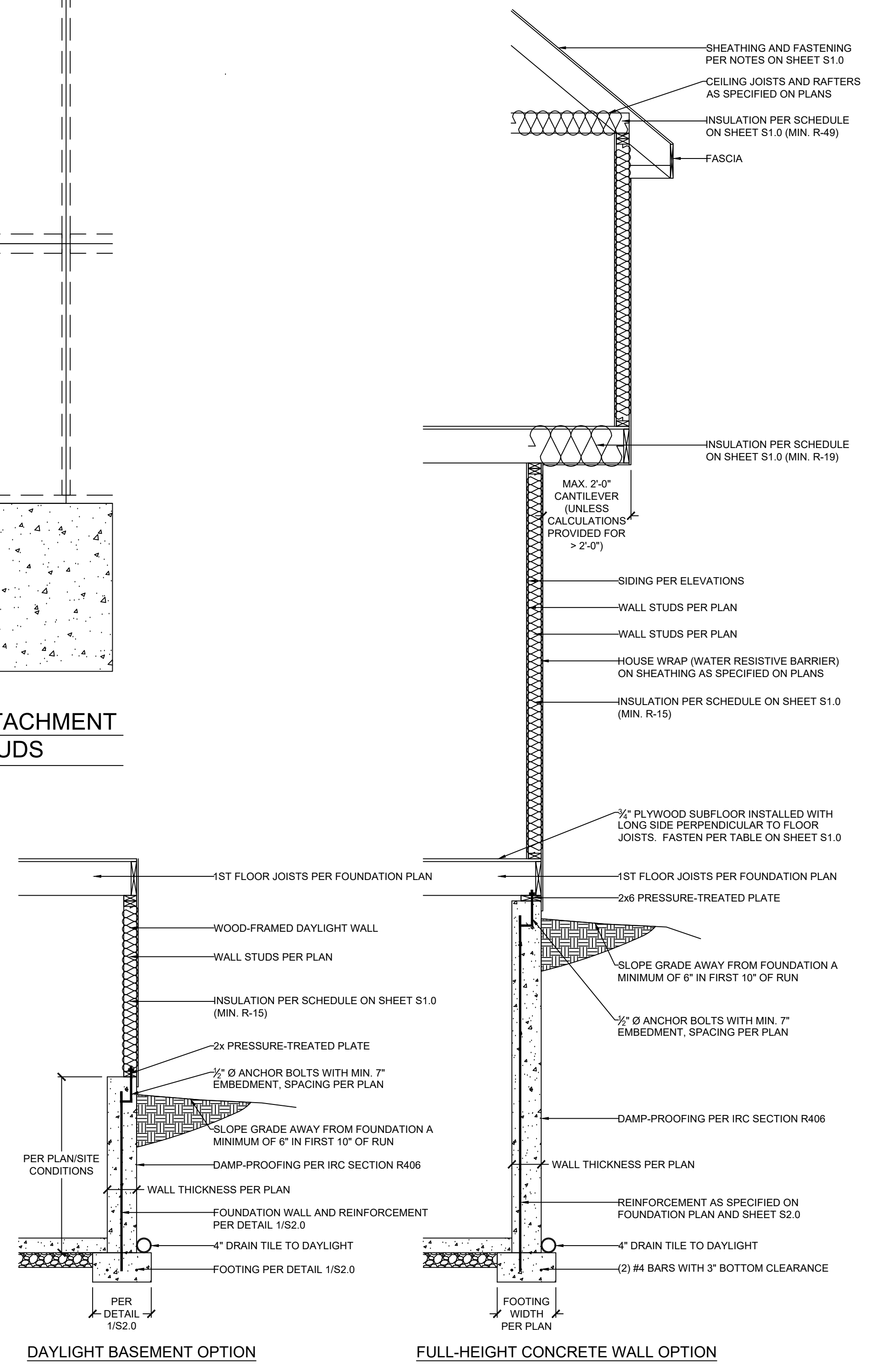


**4** FLOOR JOIST TO FLUSH STEEL BEAM DETAIL  
**S3.1** SCALE: 1" = 1'-0" (18x24) OR 1 1/2" = 1'-0" (24x36)



**5** CEILING JOIST TO FLUSH STEEL BEAM DETAIL  
**S3.1** SCALE: 1" = 1'-0" (18x24) OR 1 1/2" = 1'-0" (24x36)

**3** EXTERIOR WALL SECTION  
**S3.1** SCALE: 3/4" = 1'-0"



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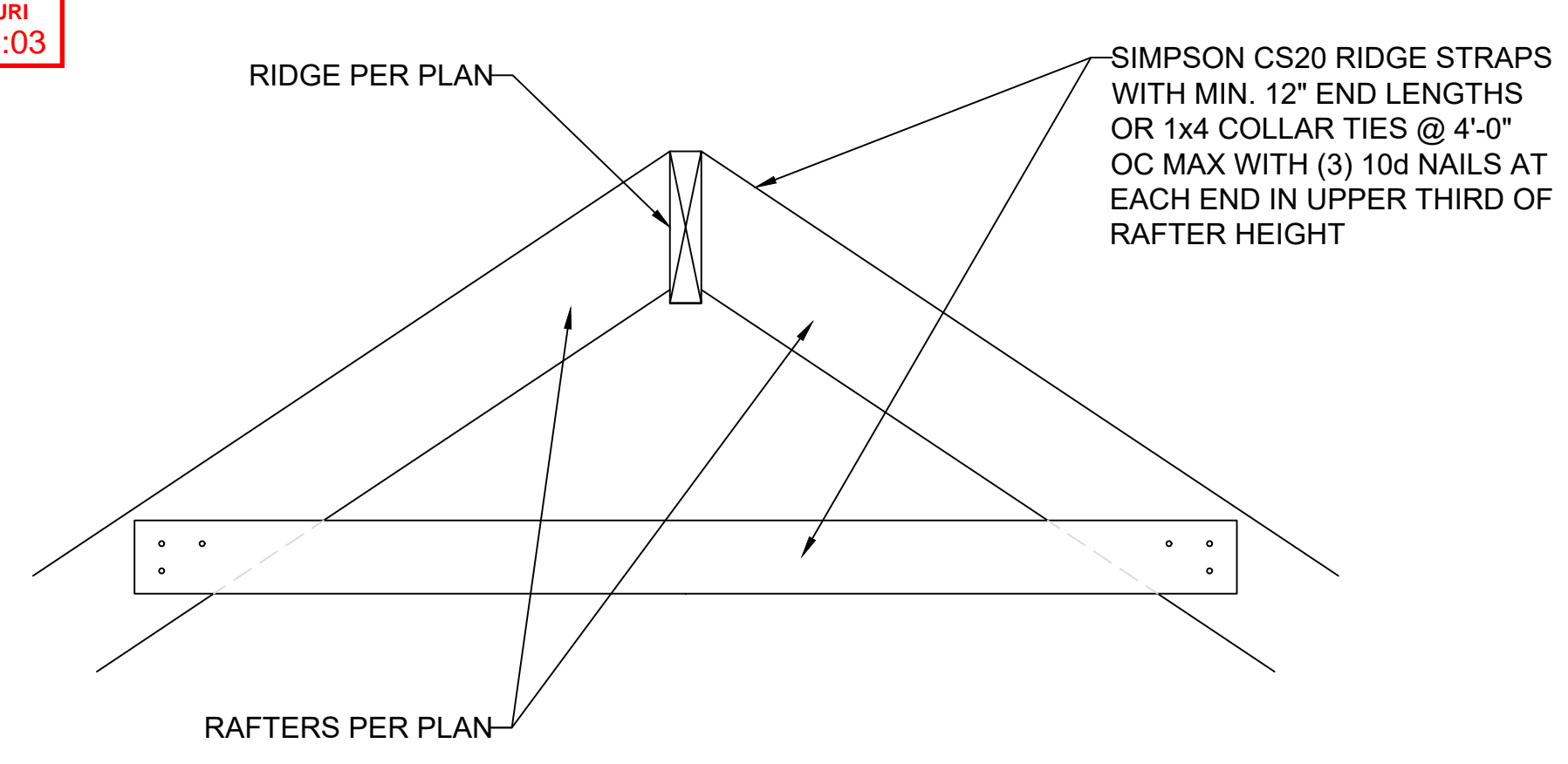
CLIENT: WALKER CUSTOM HOMES, LLC  
 JOB TITLE: RHF086 SPEC  
 LOT 86, THE RETREAT AT HOOK FARMS  
 1ST PLAT  
 LOCATION: 2104 SW HARVEST MOON LN.  
 LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI  
 DENNIS HEIER  
 NUMBER: PE-2018001772  
 PROFESSIONAL ENGINEER  
 10-13-2021

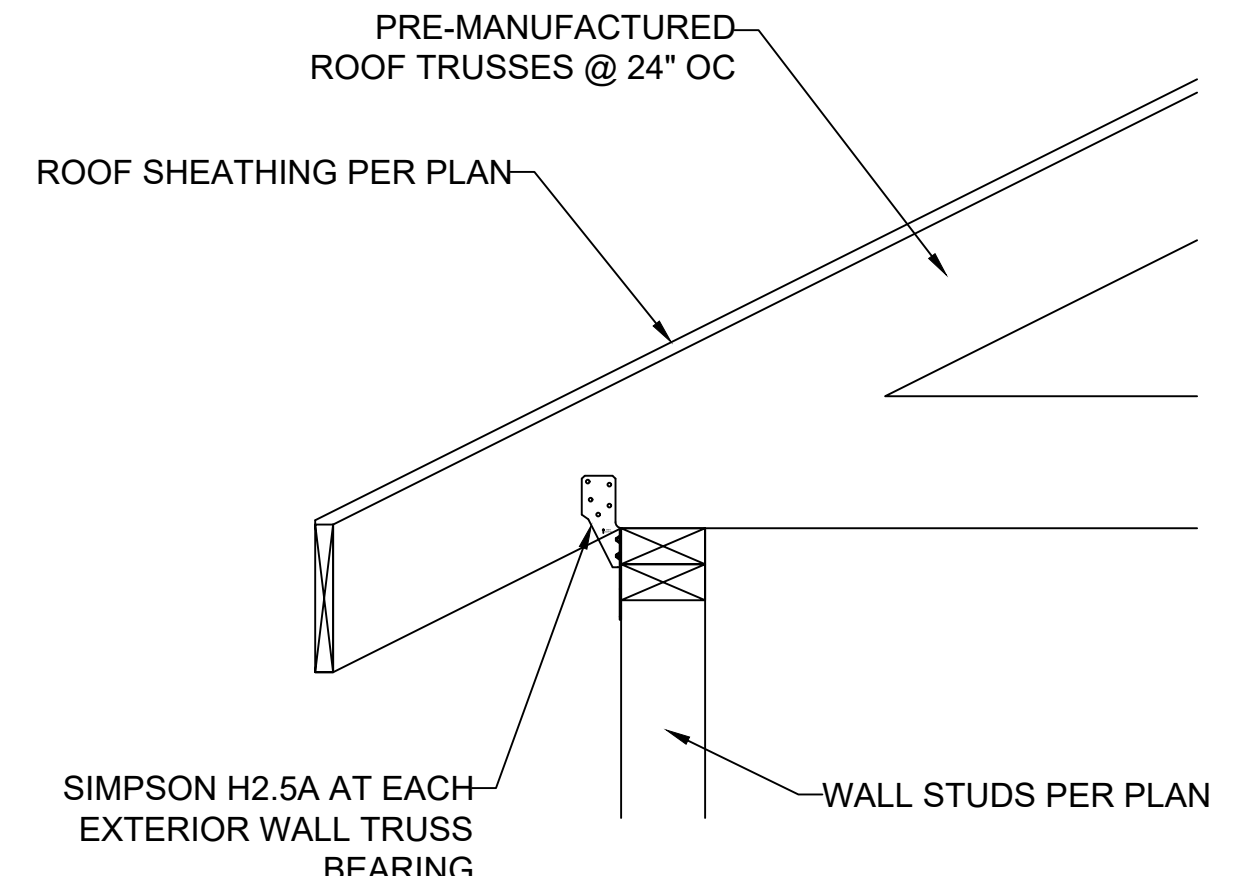
NO.	DATE	REVISION	BY

DRAWING TITLE  
**FRAMING DETAILS**

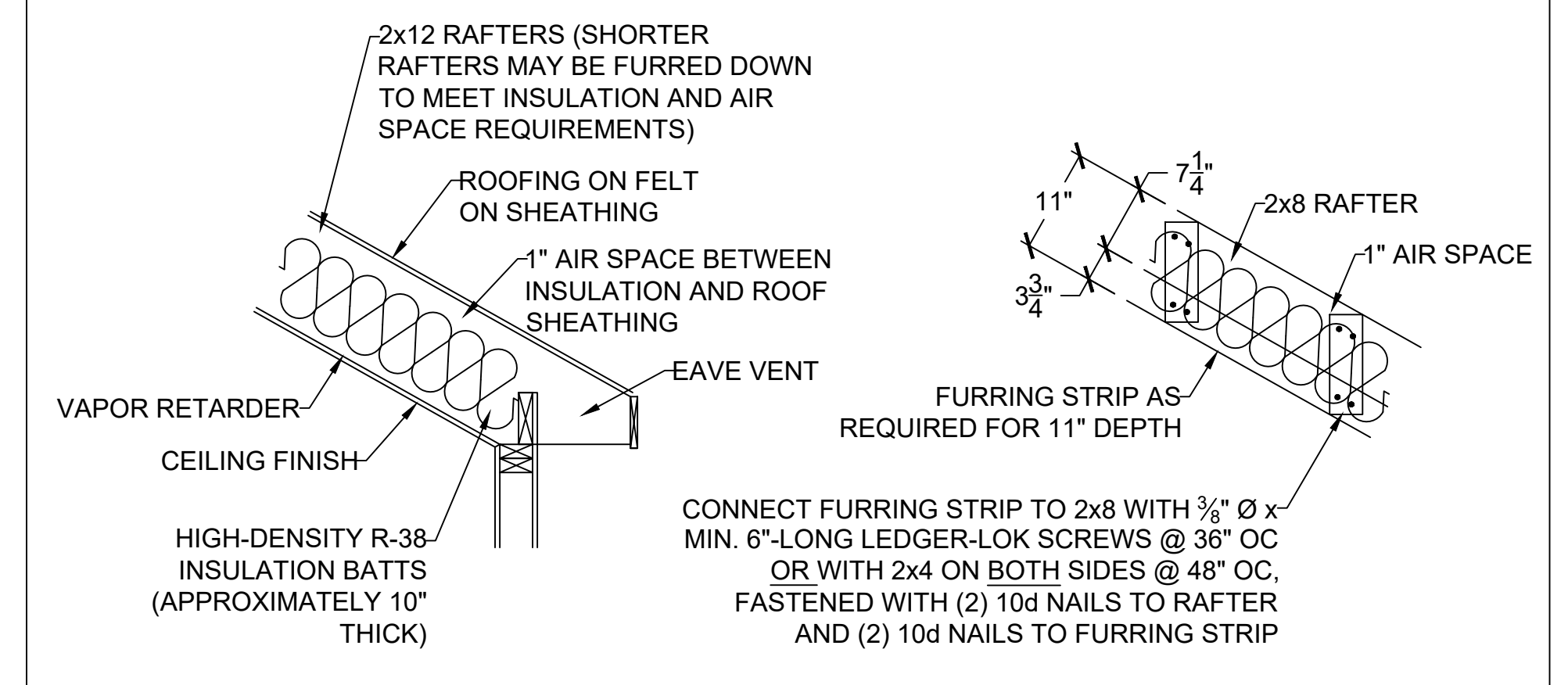
ENGINEER: DMH CHECKED BY: DMH  
 JOB NO.: 3958 DRAWN BY: DMH  
 DATE: 10-13-21  
 SHEET NUMBER  
**S3.1**



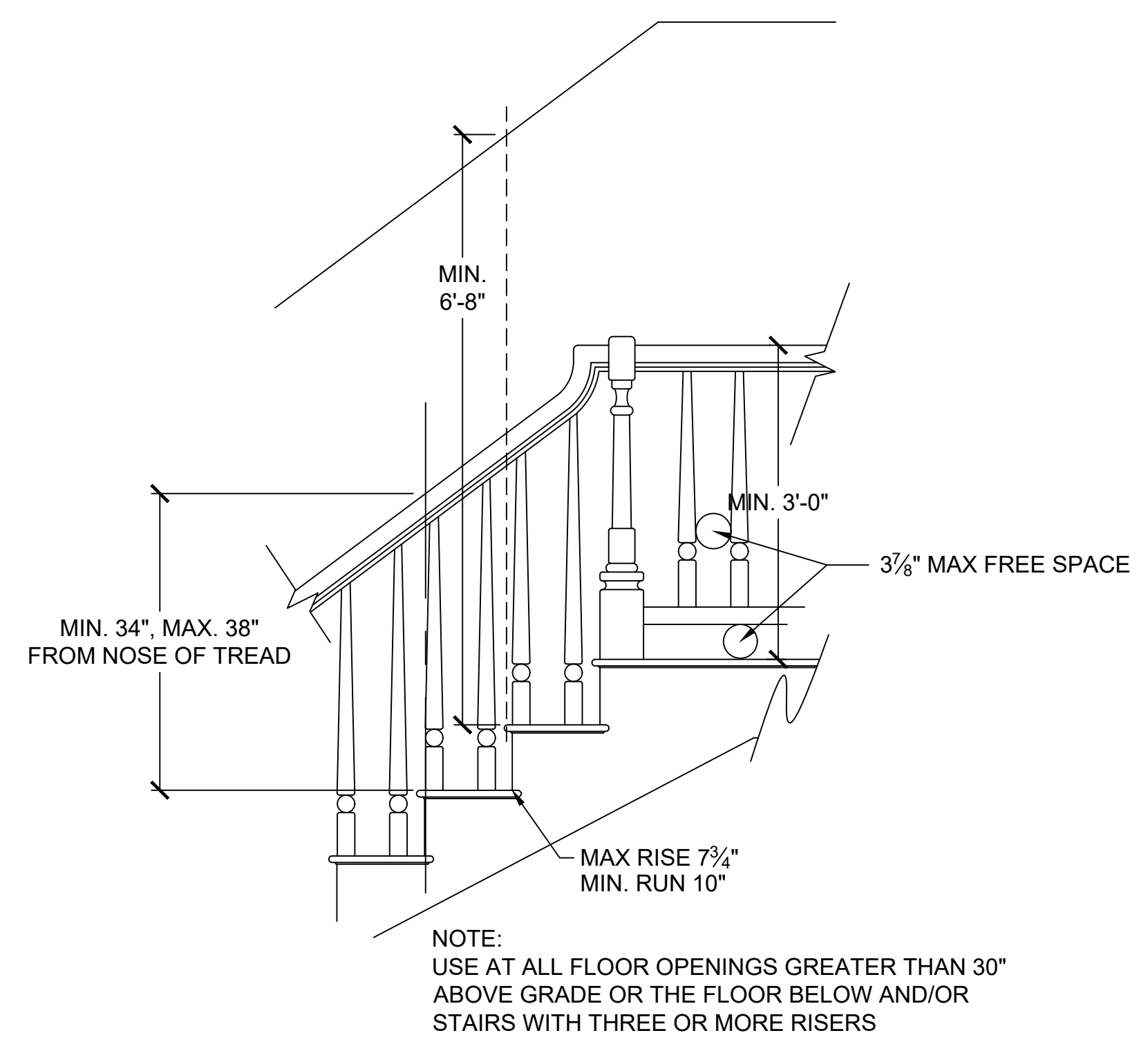
**1** RIDGE FRAMING DETAIL  
**S3.2** SCALE: 1" = 1'-0" (18x24) OR 1/2" = 1'-0" (24x36)



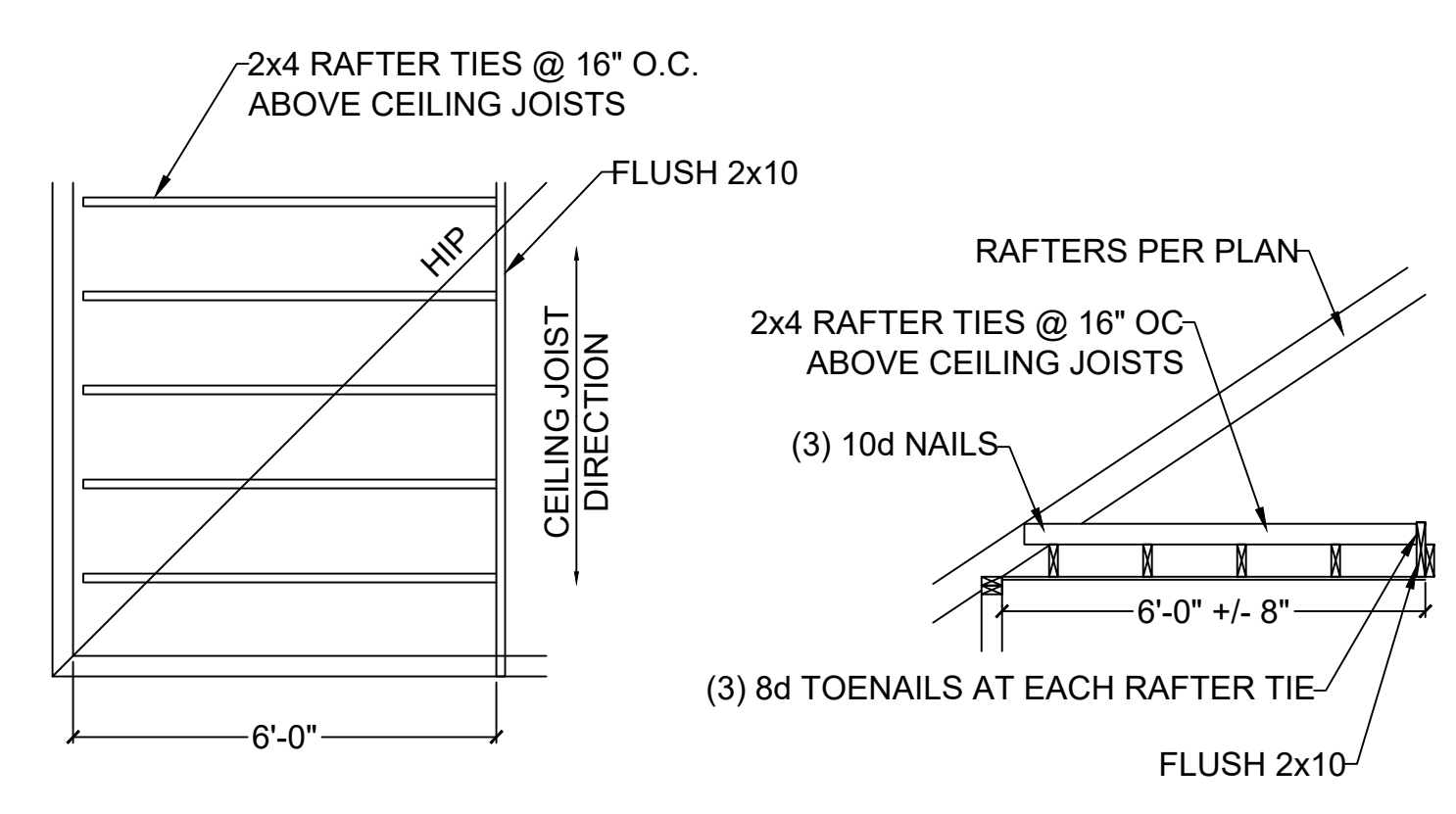
**2** TRUSS CONNECTION TO EXT. WALL BEARING  
**S3.2** SCALE: 1" = 1'-0" (18x24) OR 1/2" = 1'-0" (24x36)



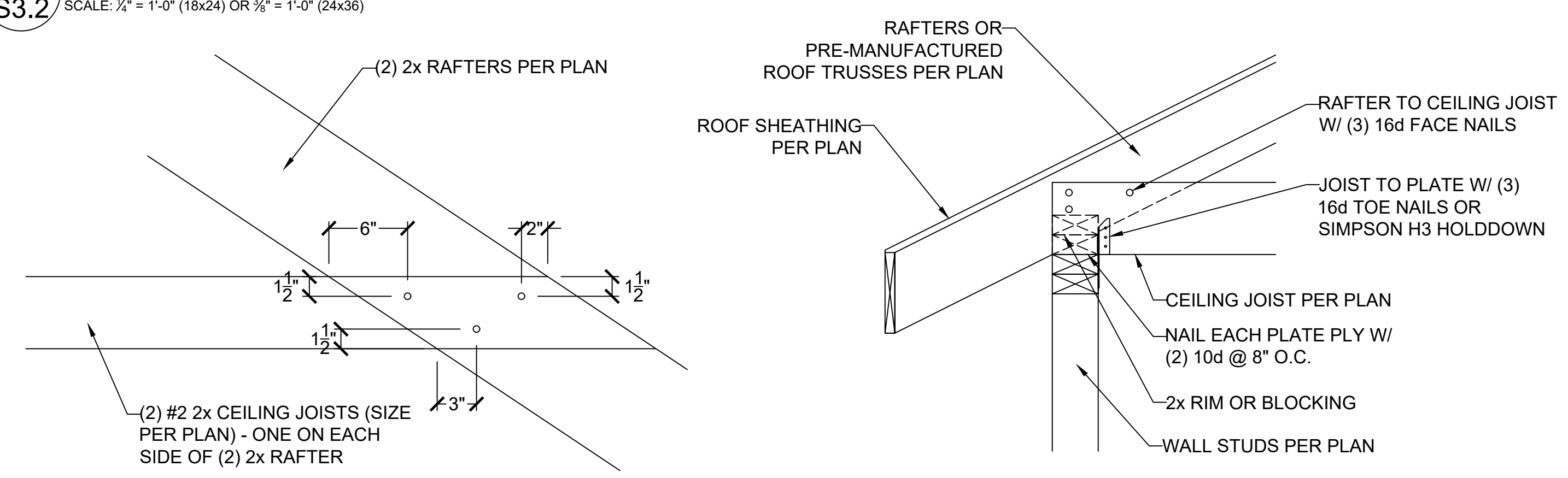
**3** VAULTED RAFTER INSULATION DETAILS  
**S3.2** SCALE: 3/4" = 1'-0"



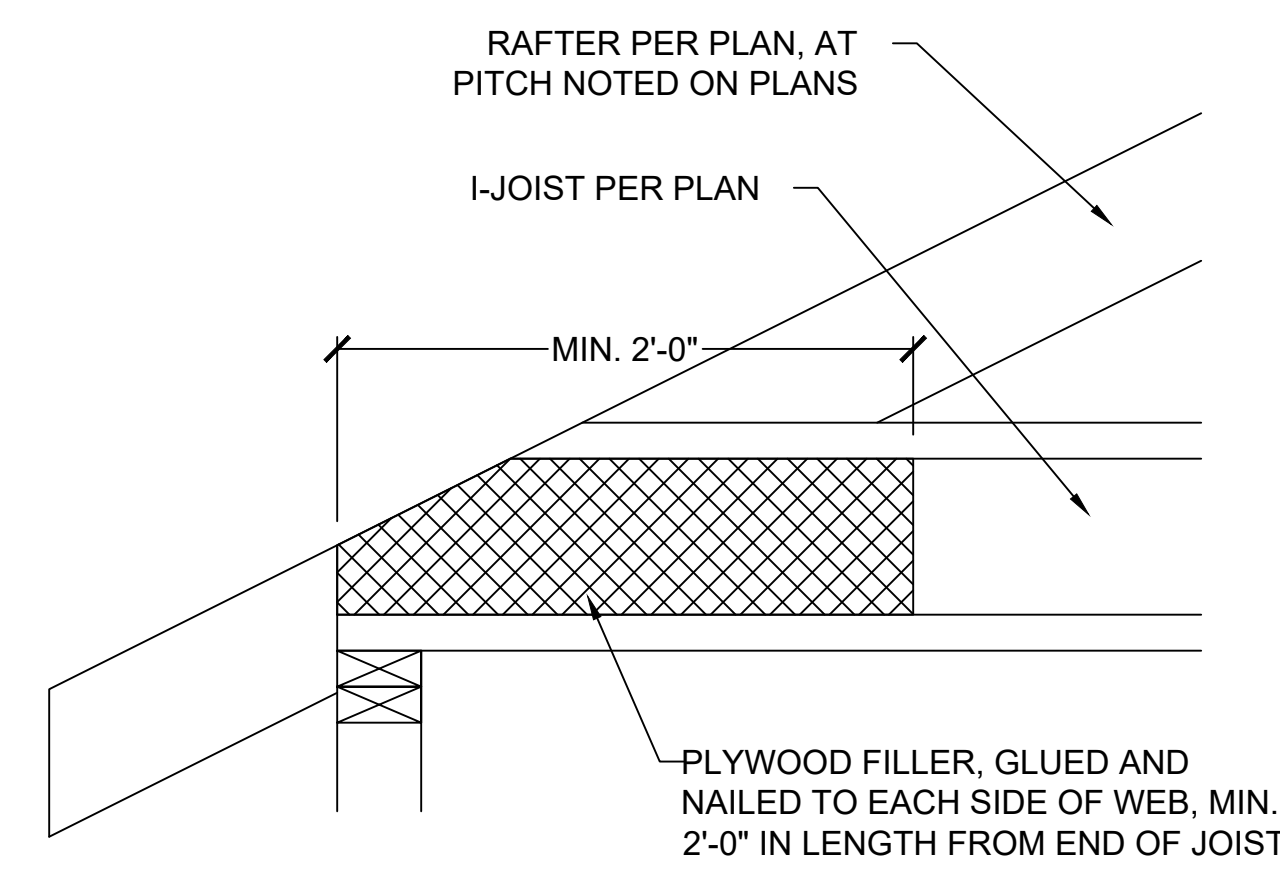
**4** STAIR AND HANDRAIL/GUARDRAIL DETAIL  
**S3.2** SCALE: 1/2" = 1'-0" (18x24) OR 3/8" = 1'-0" (24x36)



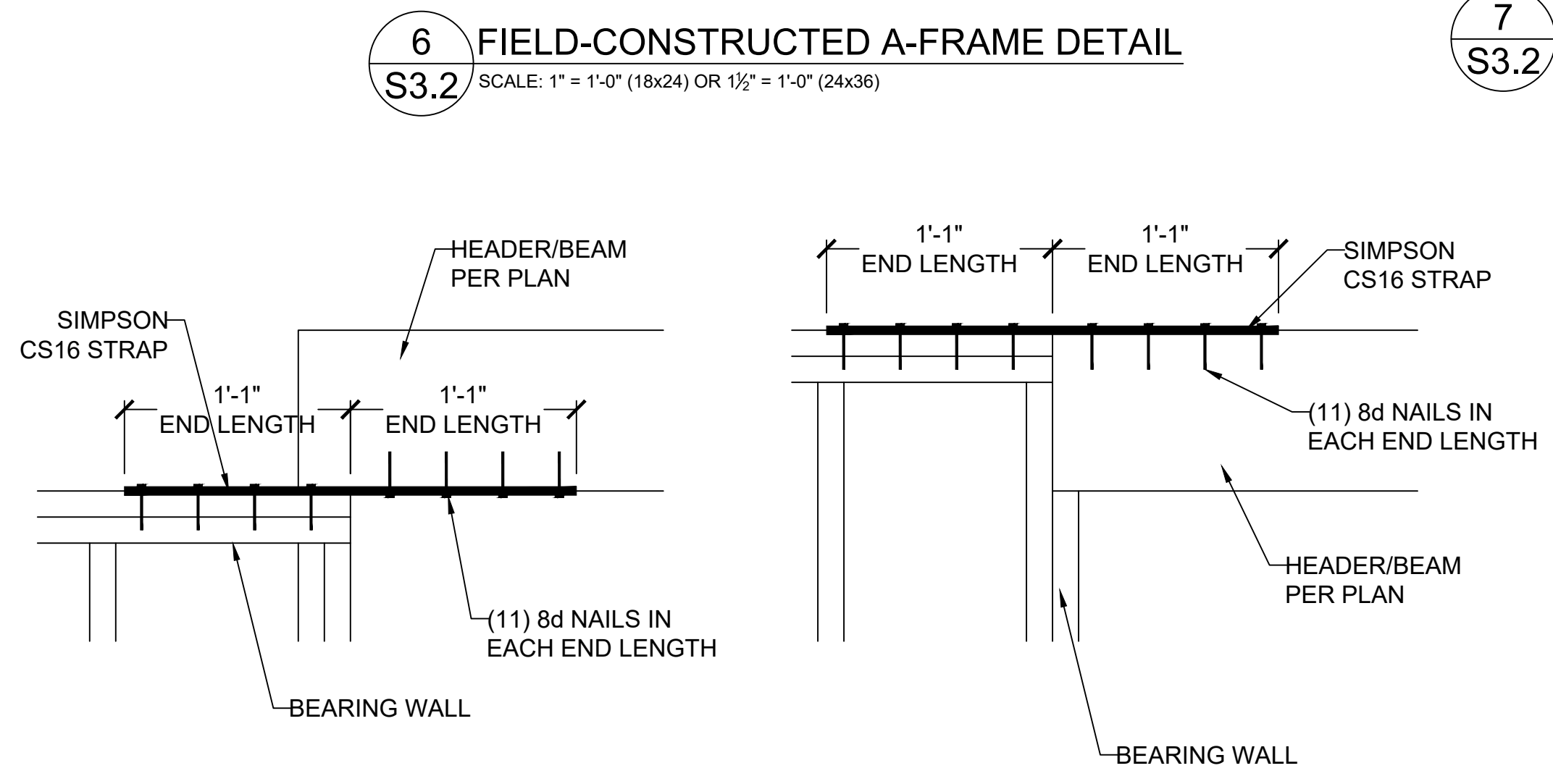
**5** RAFTER TIES AT CEILING JOISTS PERP. TO RAFTERS  
**S3.2** SCALE: 1/2" = 1'-0" (18x24) OR 3/8" = 1'-0" (24x36)



**7** RAFTER BEARING OPTION DETAIL  
**S3.2** SCALE: 1" = 1'-0" (18x24) OR 1/2" = 1'-0" (24x36)



**9** COPED I-JOIST REINFORCEMENT  
**S3.2** SCALE: 1" = 1'-0" (18x24) OR 1/2" = 1'-0" (24x36)



**10** HEADER/BEAM CONNECTION OPTIONS AT OUTDOOR/OPEN SPACE  
**S3.2** SCALE: 1" = 1'-0" (18x24) OR 1/2" = 1'-0" (24x36)

HEIGHT (FT.)	SPACING (INCHES O.C.)			
	24	16	12	8
SUPPORTING A ROOF ONLY				
10 OR LESS	2x4	2x4	2x4	2x4
12	2x6	2x4	2x4	2x4
14	2x6	2x6	2x6	2x4
16	2x6	2x6	2x6	2x4
18	DR	2x6	2x6	2x6
20	DR	DR	2x6	2x6
SUPPORTING ONE FLOOR AND A ROOF				
10 OR LESS	2x6	2x4	2x4	2x4
12	2x6	2x6	2x6	2x4
14	2x6	2x6	2x6	2x6
16	DR	2x6	2x6	2x6
18	DR	2x6	2x6	2x6
20	DR	DR	2x6	2x6
SUPPORTING TWO FLOORS AND A ROOF				
10 OR LESS	2x6	2x6	2x4	2x4
12	2x6	2x6	2x6	2x6
14	2x6	2x6	2x6	2x6
16	DR	2x6	2x6	2x6
18	DR	DR	2x6	2x6
20	DR	DR	DR	2x6

NOTES:  
 1) DR = DESIGN REQUIRED  
 2) UTILITY, STANDARD, STUD AND #3 GRADE LUMBER OF ANY SPECIES ARE NOT PERMITTED  
 3) THIS TABLE DOES NOT APPLY FOR STUDS SUPPORTING MEMBERS WITH A TRIB. LENGTH GREATER THAN 6'-0"

**8** MAXIMUM ALLOWABLE LENGTH OF WOOD WALL STUDS (IRC TABLE 602.3.1)  
**S3.2**

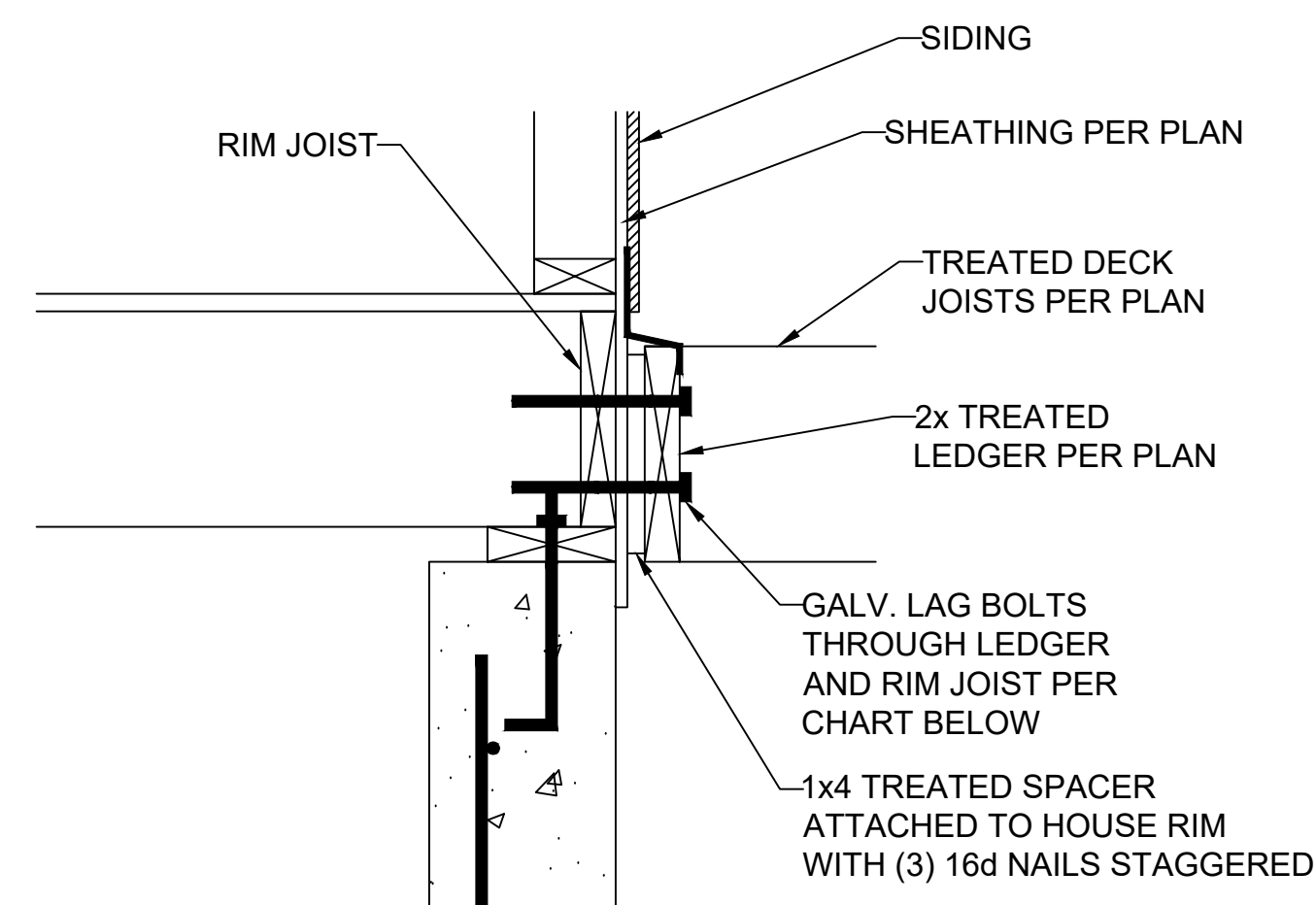
**VISTA**  
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CLIENT: WALKER CUSTOM HOMES, LLC  
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STATE OF MISSOURI  
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 PROFESSIONAL ENGINEER  
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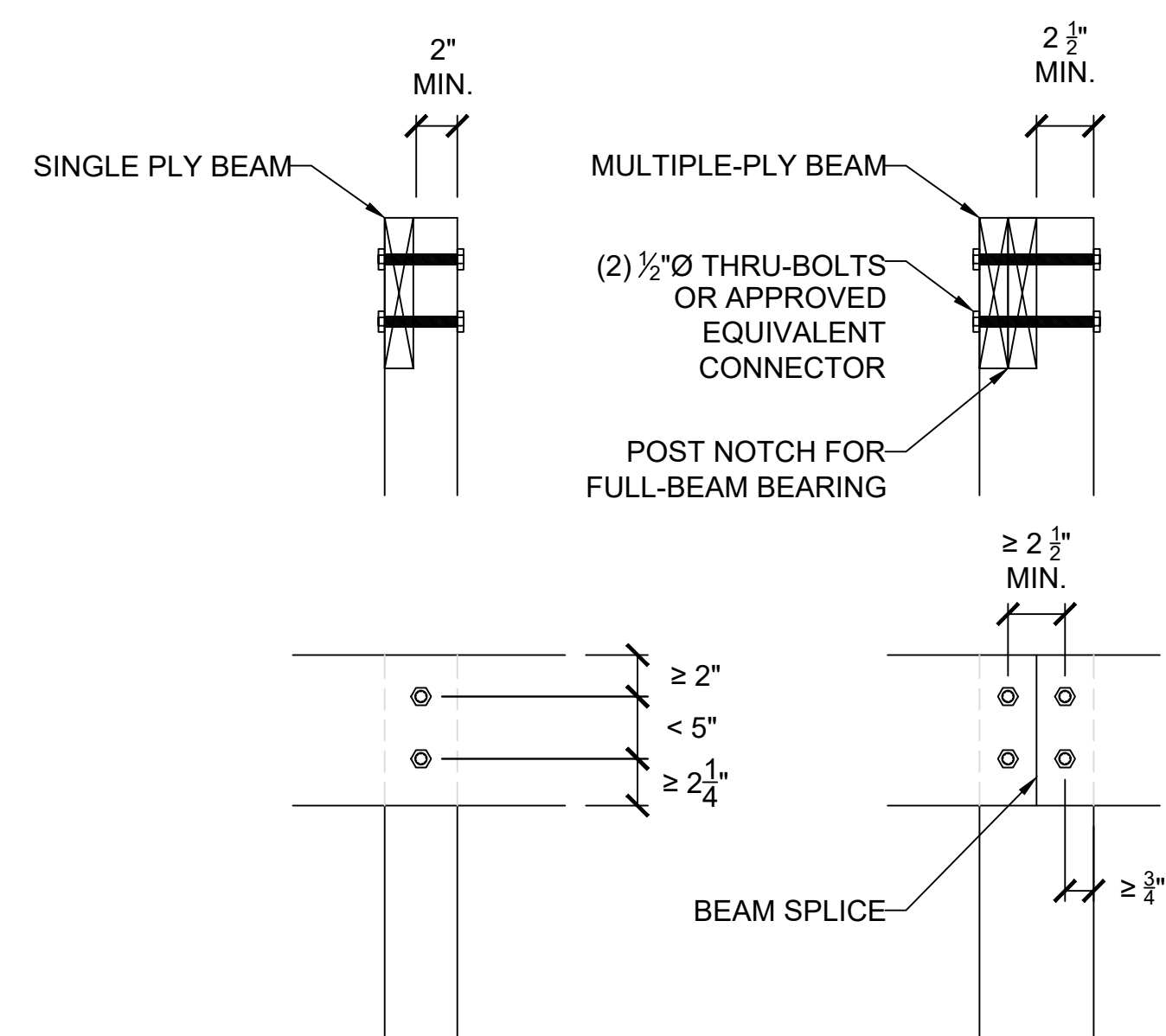
DRAWING TITLE  
**FRAMING DETAILS**  
 ENGINEER: DMH CHECKED BY: DMH  
 JOB NO.: 3958 DRAWN BY: DMH  
 DATE: 10-13-21  
 SHEET NUMBER  
**S3.2**



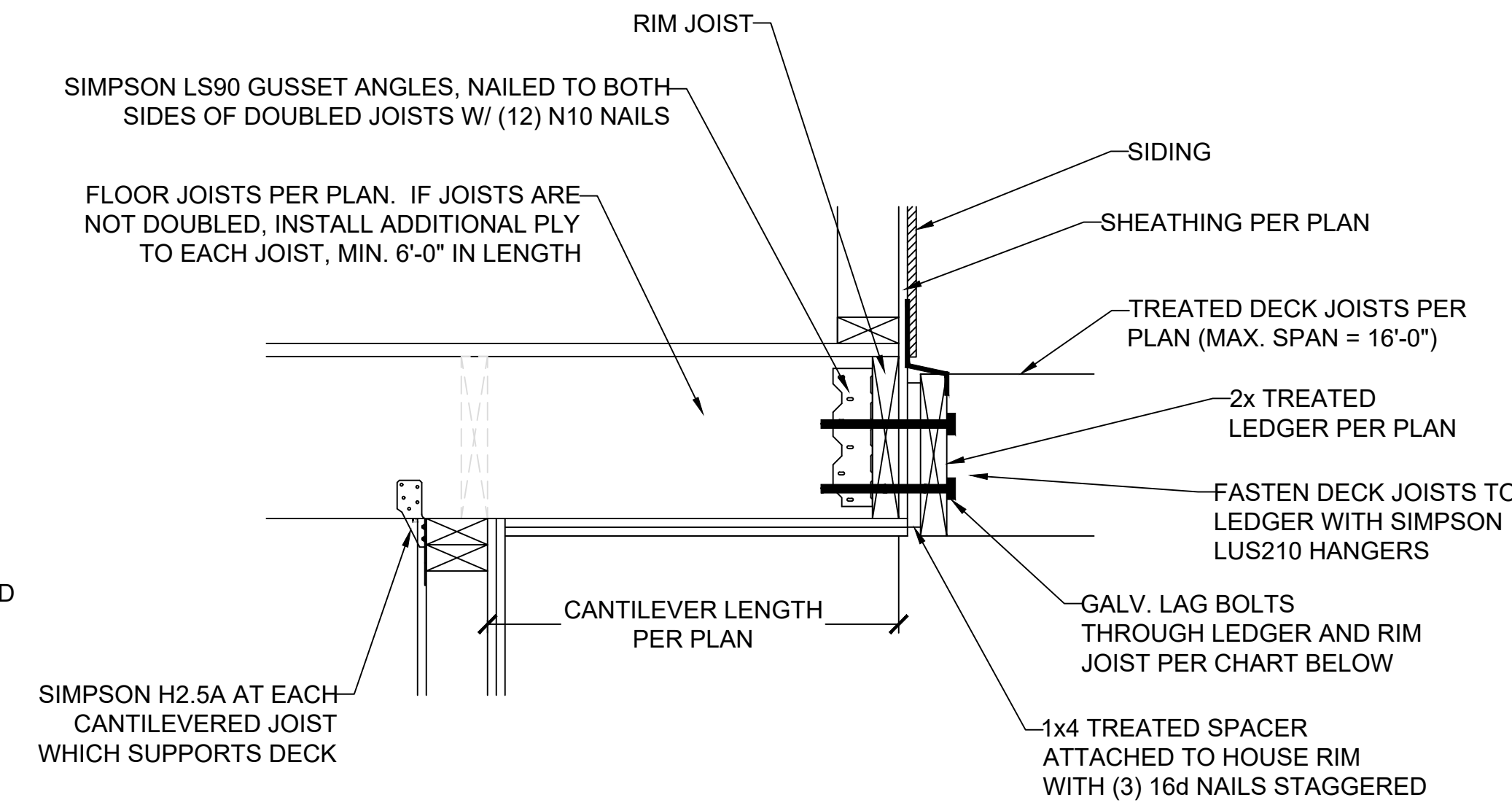
DECK LEDGER ATTACHMENT GUIDE

DECK JOIST SPAN	1/2" Ø GALV. LAG OR 3/8" Ø LEDGER-LOK SPACING
10'-0" OR LESS	16" OC
10'-0" - 13'-11"	12" OC OR @ 16" OC DOUBLED EVERY OTHER
14'-0" - 18'-0"	8" OC OR @ 16" OC DOUBLED

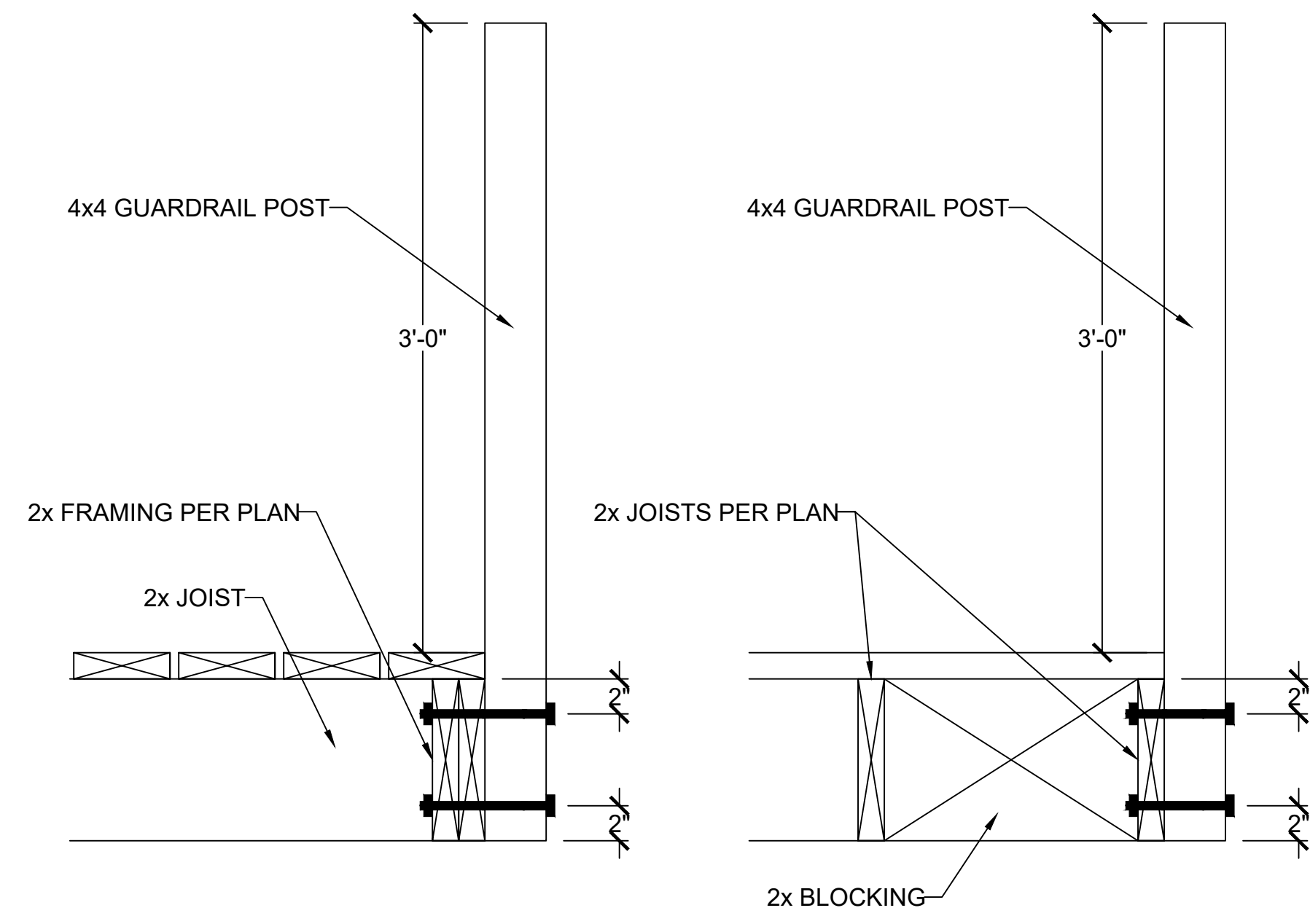
**1** LEDGER ATTACHMENT  
S3.3 SCALE: 1" = 1'-0" (18x24) OR 1/2" = 1'-0" (24x36)



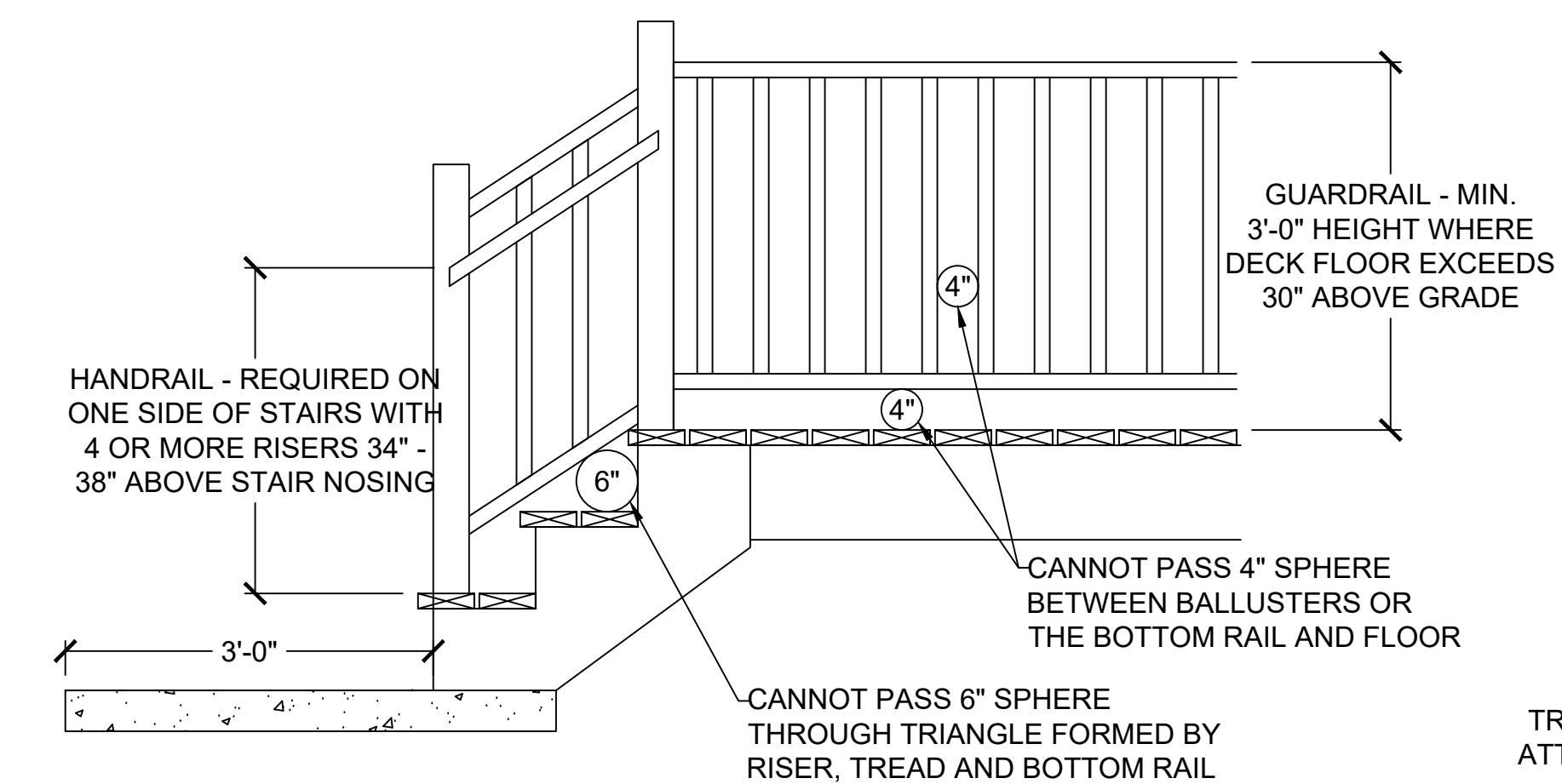
**5** LET-IN (COVERED) DECK BEAM CONNECTION  
S3.3 SCALE: 1" = 1'-0" (18x24) OR 1/2" = 1'-0" (24x36)



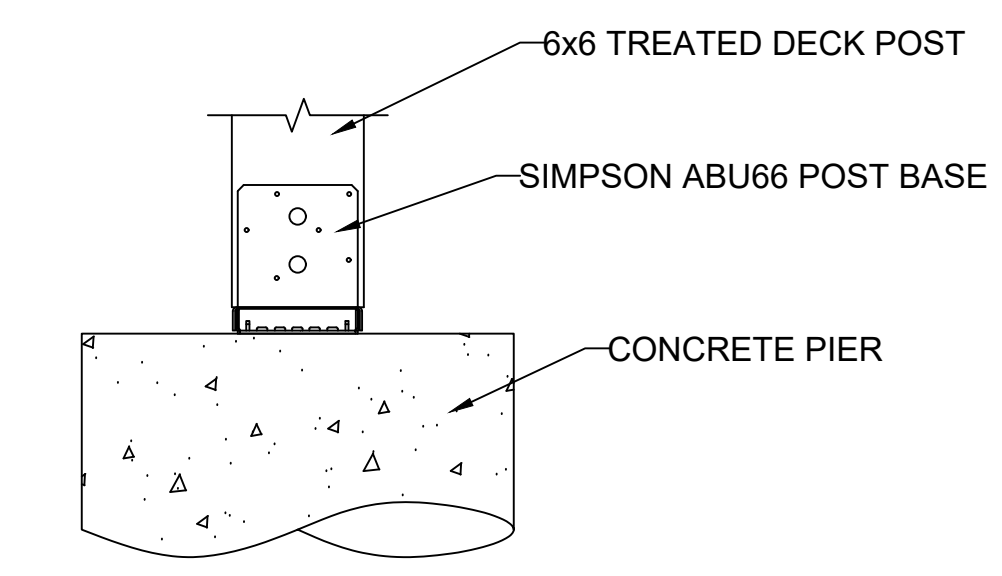
**2** CANTILEVER WITH DECK ATTACHMENT  
S3.3 SCALE: 1" = 1'-0" (18x24) OR 1/2" = 1'-0" (24x36)



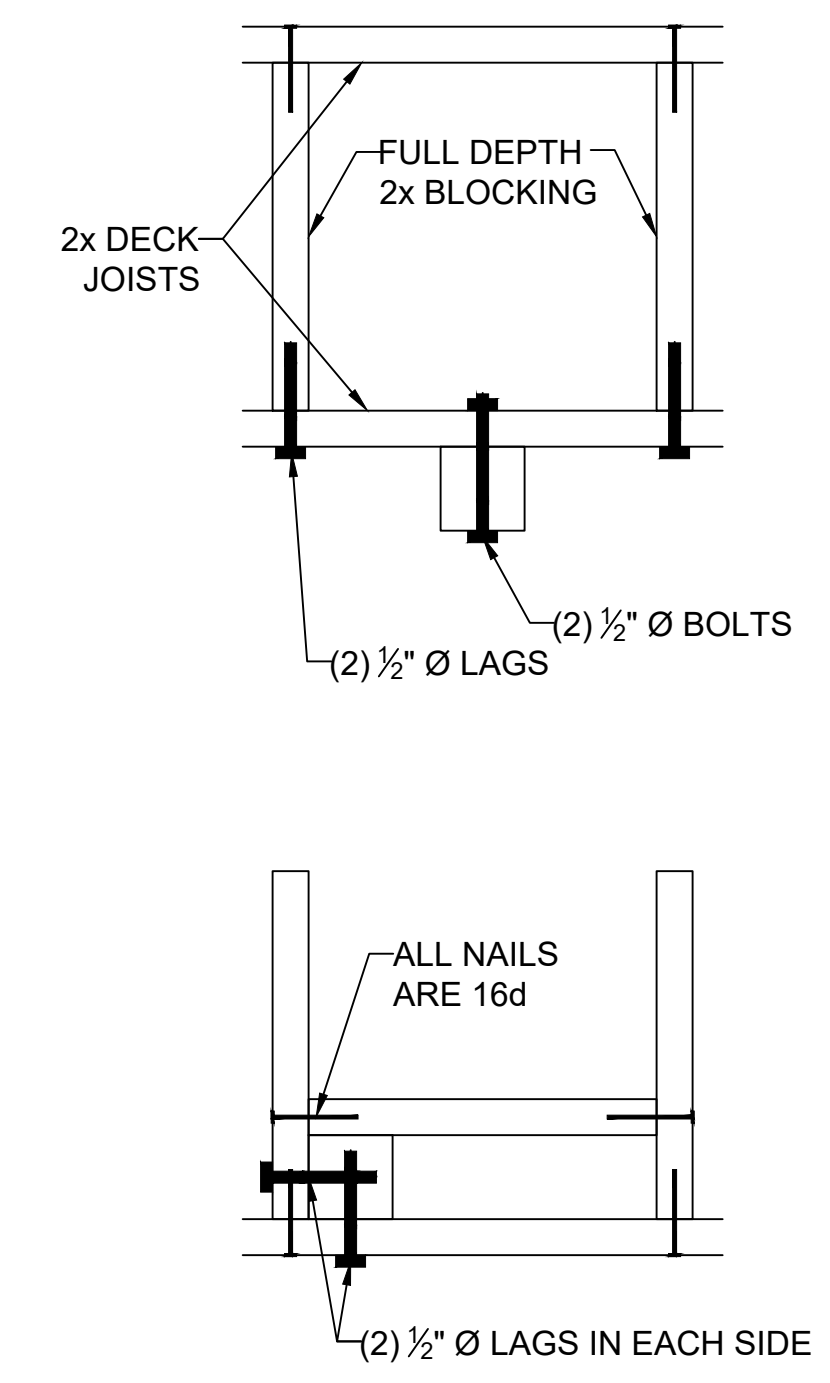
**6** GUARDRAIL CONNECTION  
S3.3 SCALE: 1" = 1'-0" (18x24) OR 1/2" = 1'-0" (24x36)



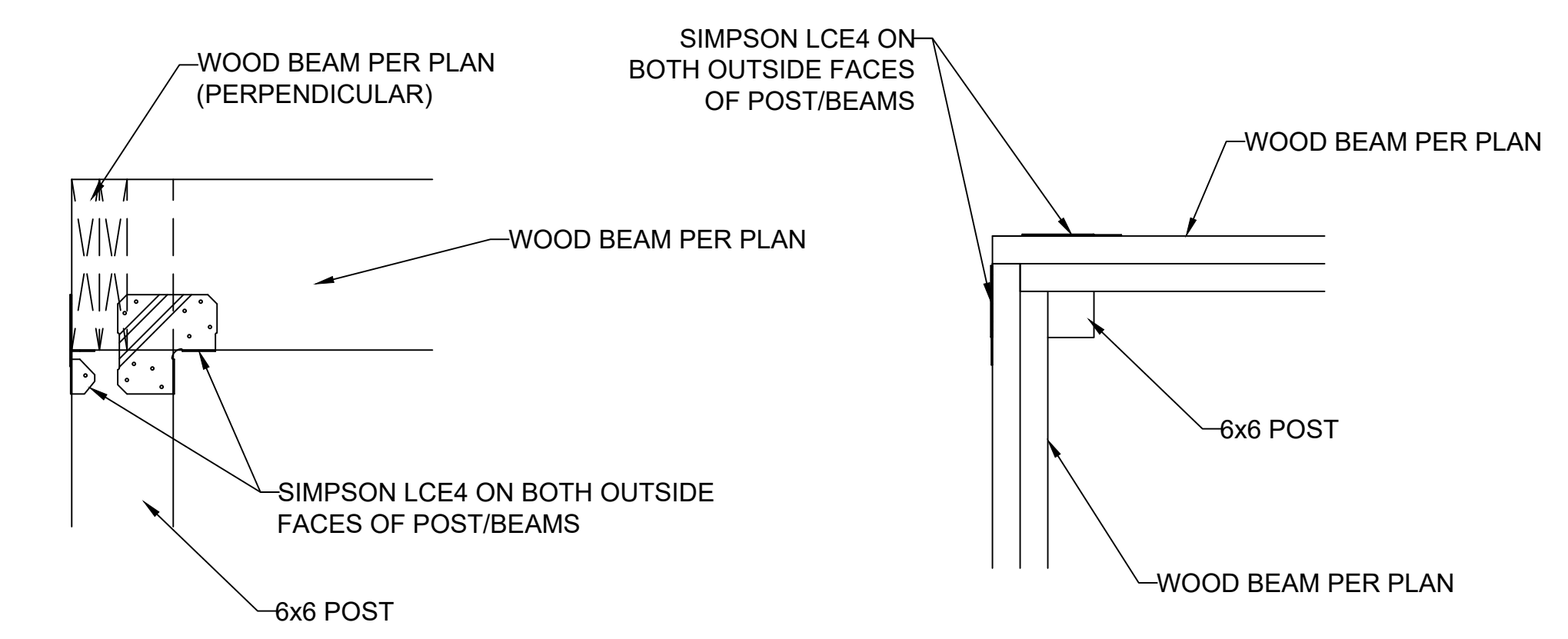
**8** GUARDRAIL DETAIL  
S3.3 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)



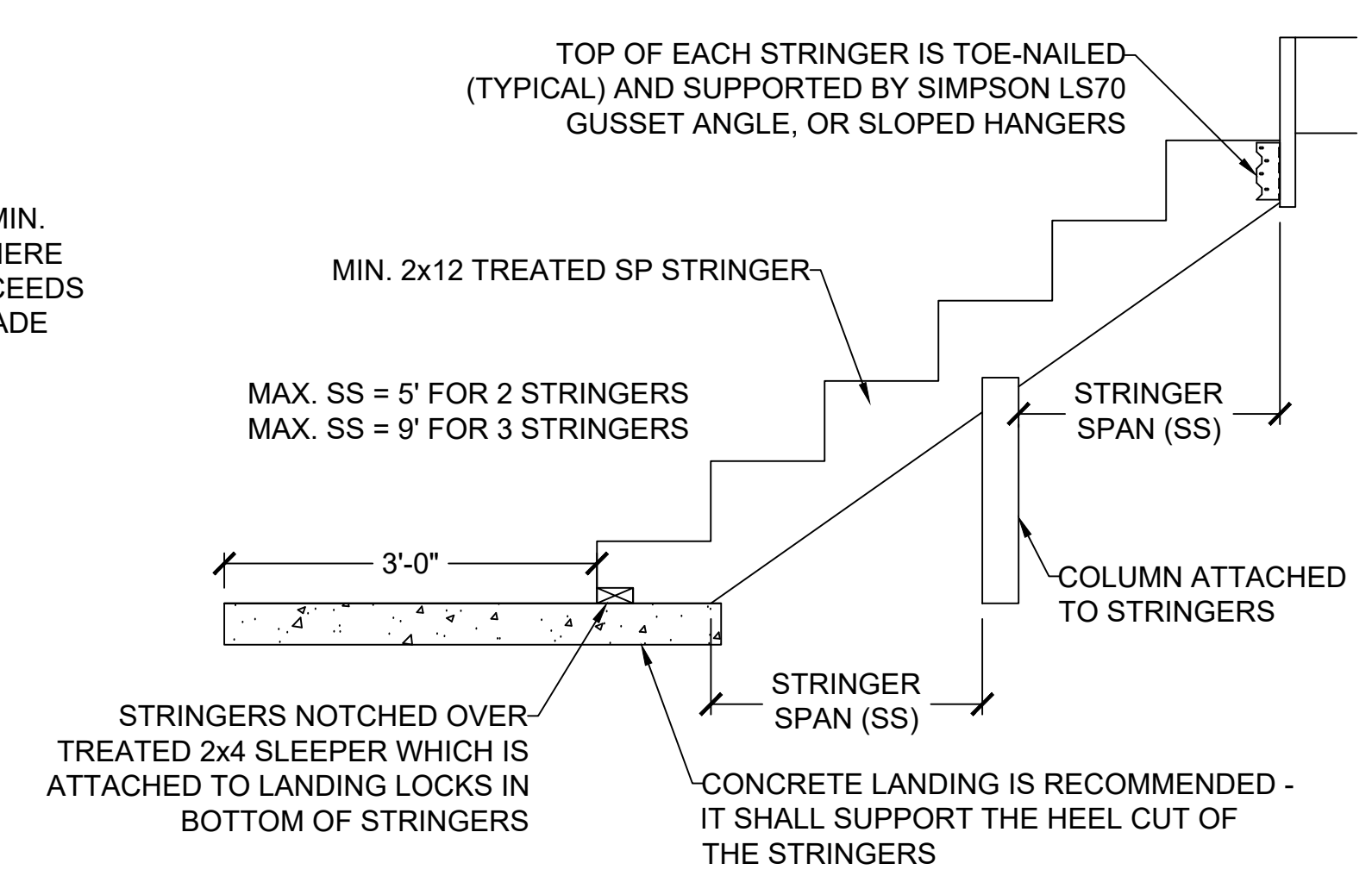
**3** DECK POST BASE  
S3.3 SCALE: 1" = 1'-0" (18x24) OR 1/2" = 1'-0" (24x36)



**4** REINF. POST CONNECTIONS  
S3.3 SCALE: 1" = 1'-0" (18x24) OR 1/2" = 1'-0" (24x36)



**7** ALTERNATE COVERED DECK/PORCH INTERSECTION  
S3.3 SCALE: 1" = 1'-0" (18x24) OR 1/2" = 1'-0" (24x36)



**9** STAIR STRINGER DETAIL (MAX. 5' STAIR WIDTH)  
S3.3 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)

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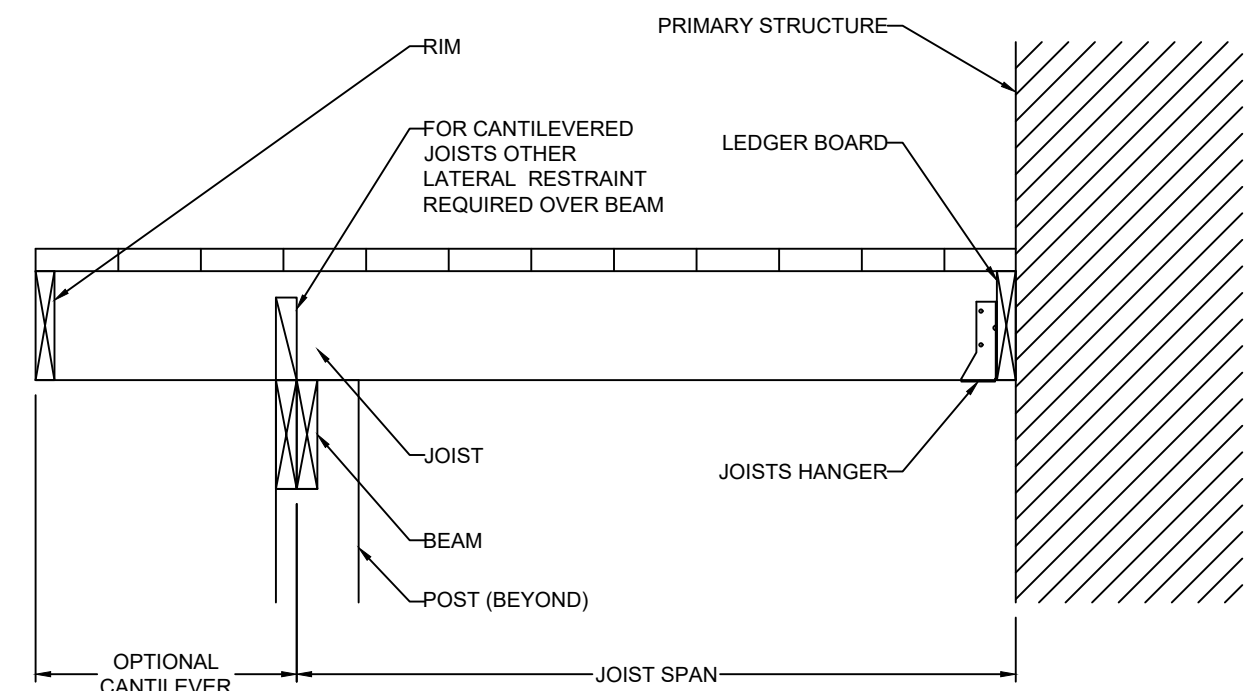
CLIENT: WALKER CUSTOM HOMES, LLC  
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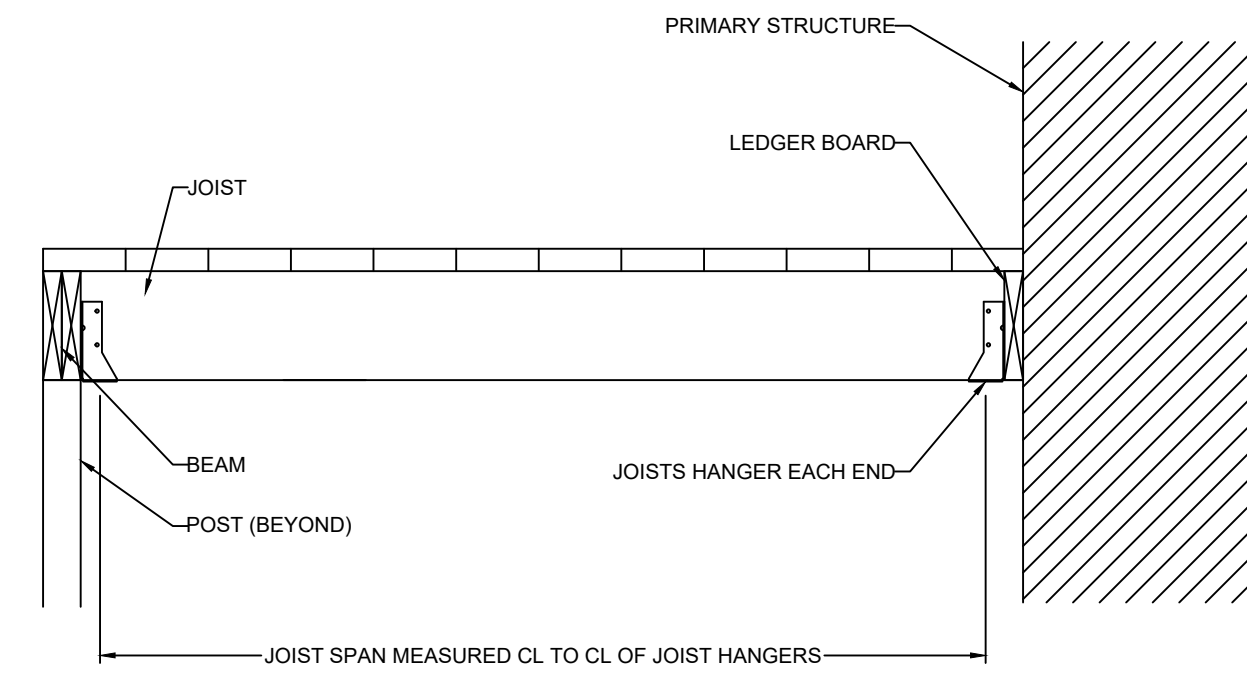
NO.	DATE	REVISION	BY

DRAWING TITLE  
**FRAMING DETAILS**

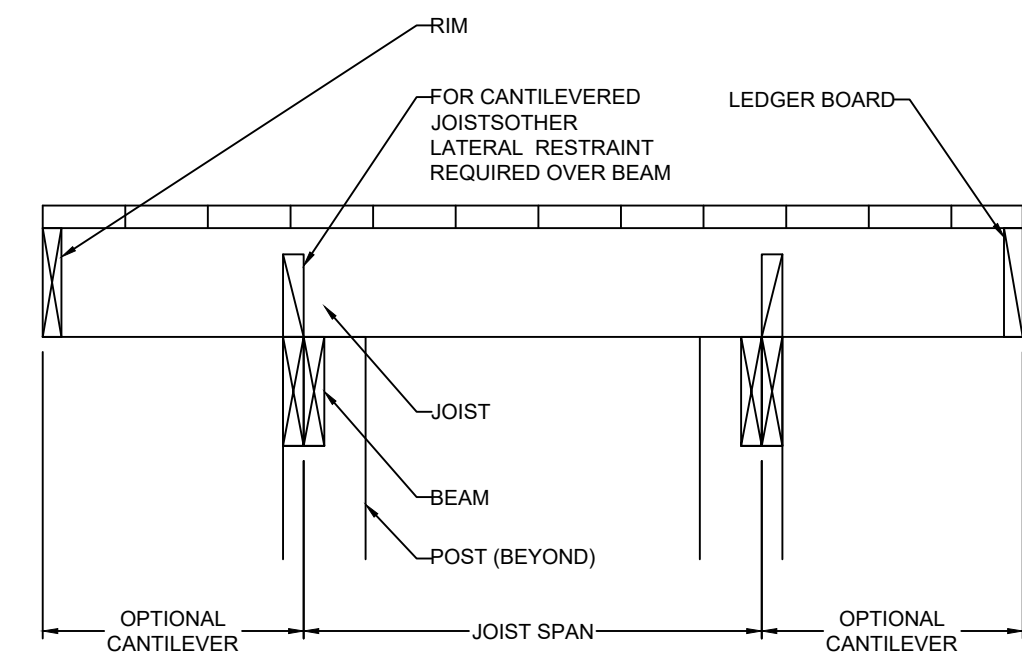
ENGINEER: DMH CHECKED BY: DMH  
JOB NO.: 3958 DRAWN BY: DMH  
DATE: 10-13-21  
SHEET NUMBER  
**S3.3a**



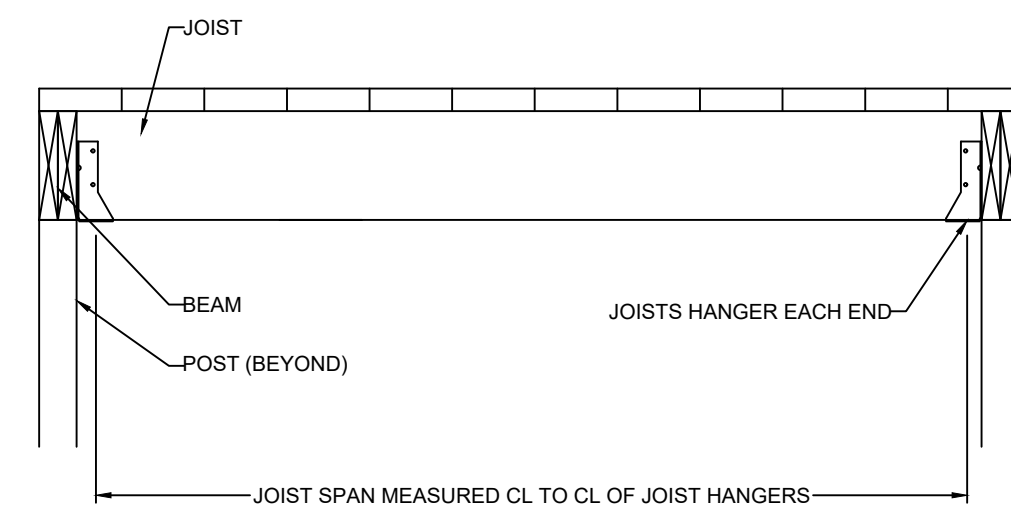
CANTILEVERED JOISTS WITH DROPPED BEAM



JOISTS WITH FLUSH BEAM

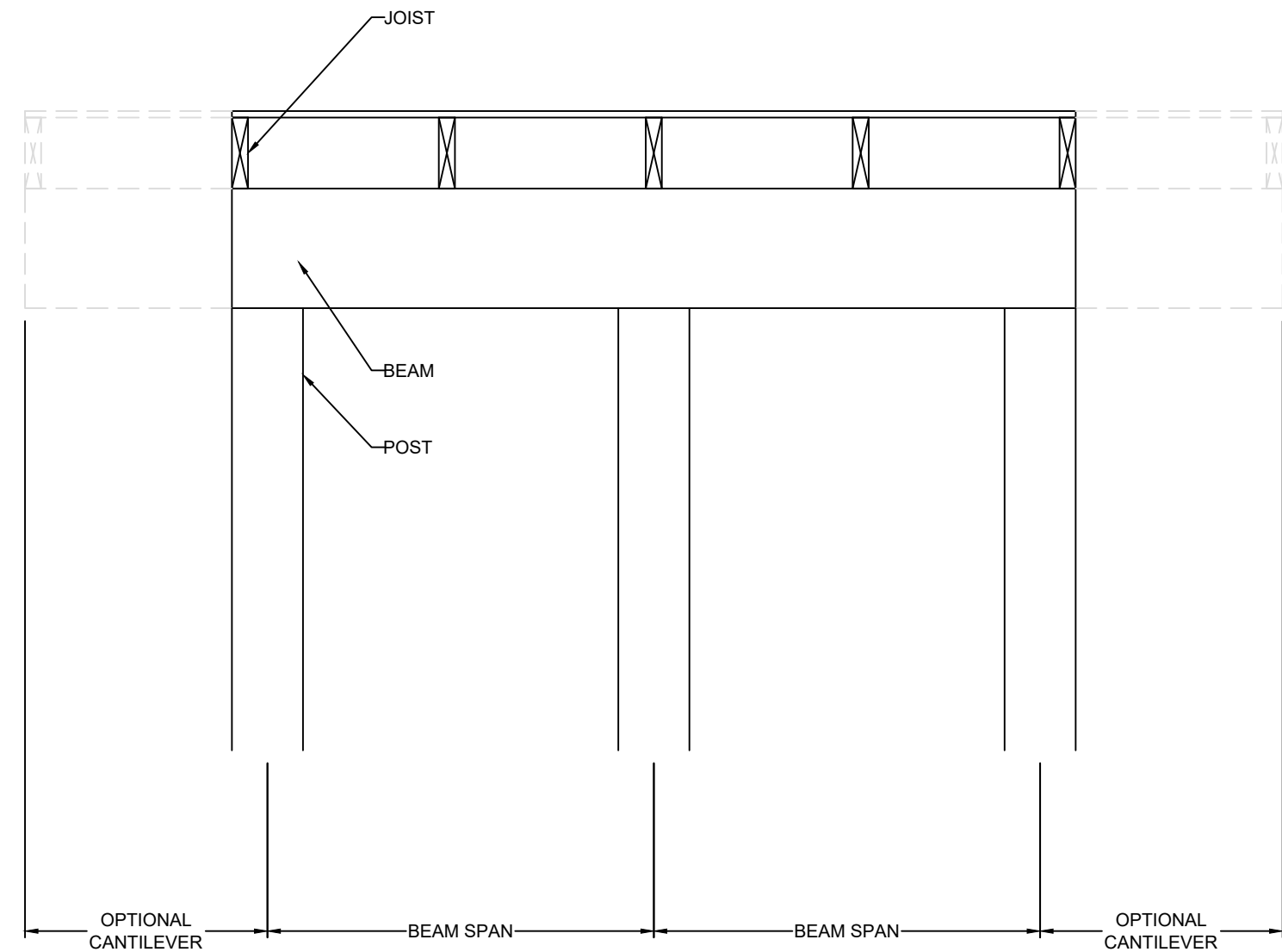


JOISTS ON FREE-STANDING DECK WITH DROPPED BEAM

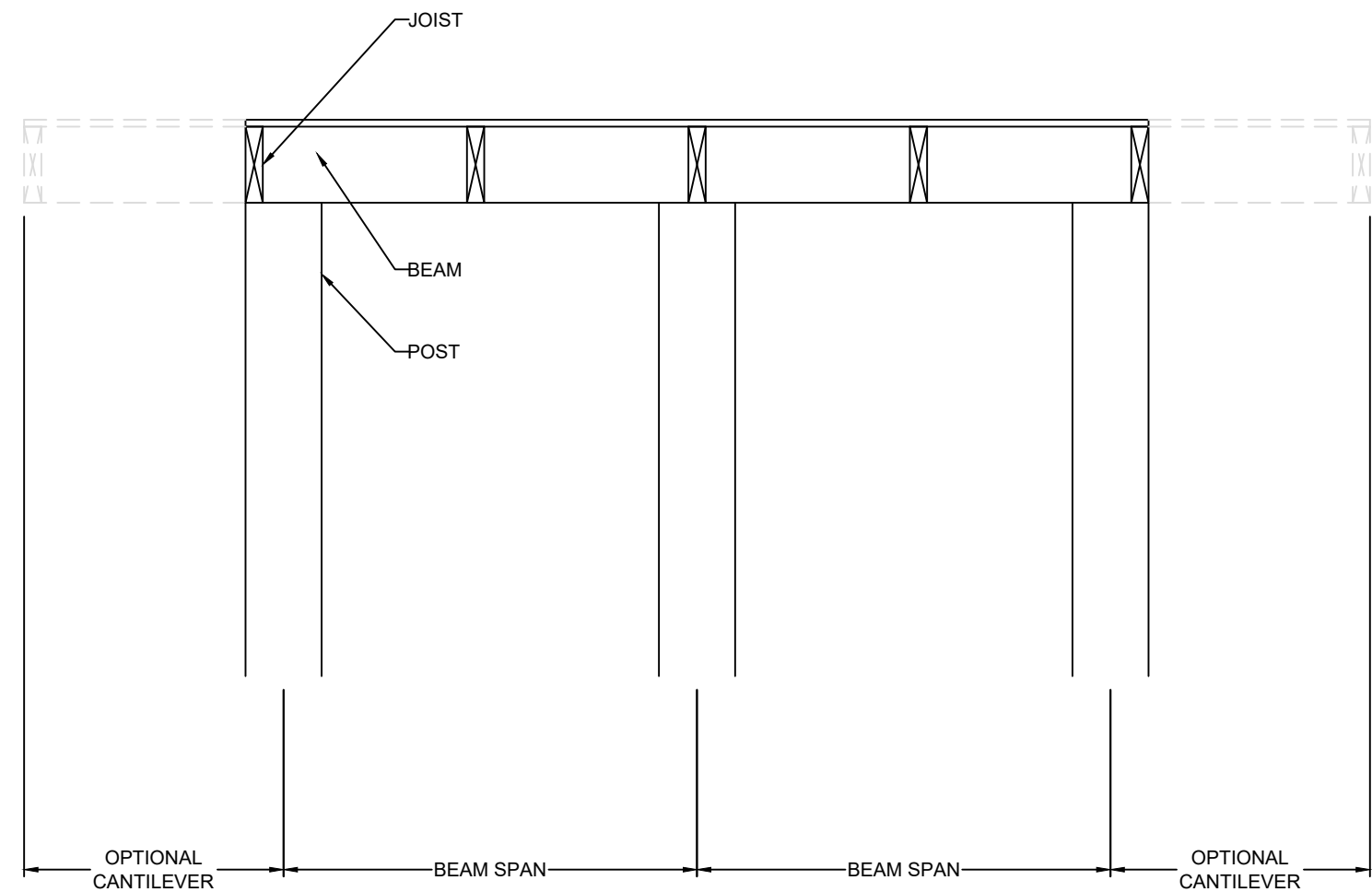


JOISTS WITH FLUSH BEAM

10 TYP. DECK JOIST SPANS  
 S3.3 SCALE: 1" = 1'-0" (18x24) OR 1/2" = 1'-0" (24x36)



DROPPED BEAM



FLUSH BEAM

11 TYP. DECK JOIST SPANS  
 S3.3 SCALE: 1" = 1'-0" (18x24) OR 1/2" = 1'-0" (24x36)

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 LOCATION: 2104 SW HARVEST MOON LN.  
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STATE OF MISSOURI  
 DENNIS HEIER  
 NUMBER: PE-201801772  
 PROFESSIONAL ENGINEER  
 10-13-2021

NO.	DATE	REVISION	BY

DRAWING TITLE  
**FRAMING DETAILS**

ENGINEER: DMH CHECKED BY: DMH  
 JOB NO: 3958 DRAWN BY: DMH  
 DATE: 10-13-21  
 SHEET NUMBER

**S3.3b**