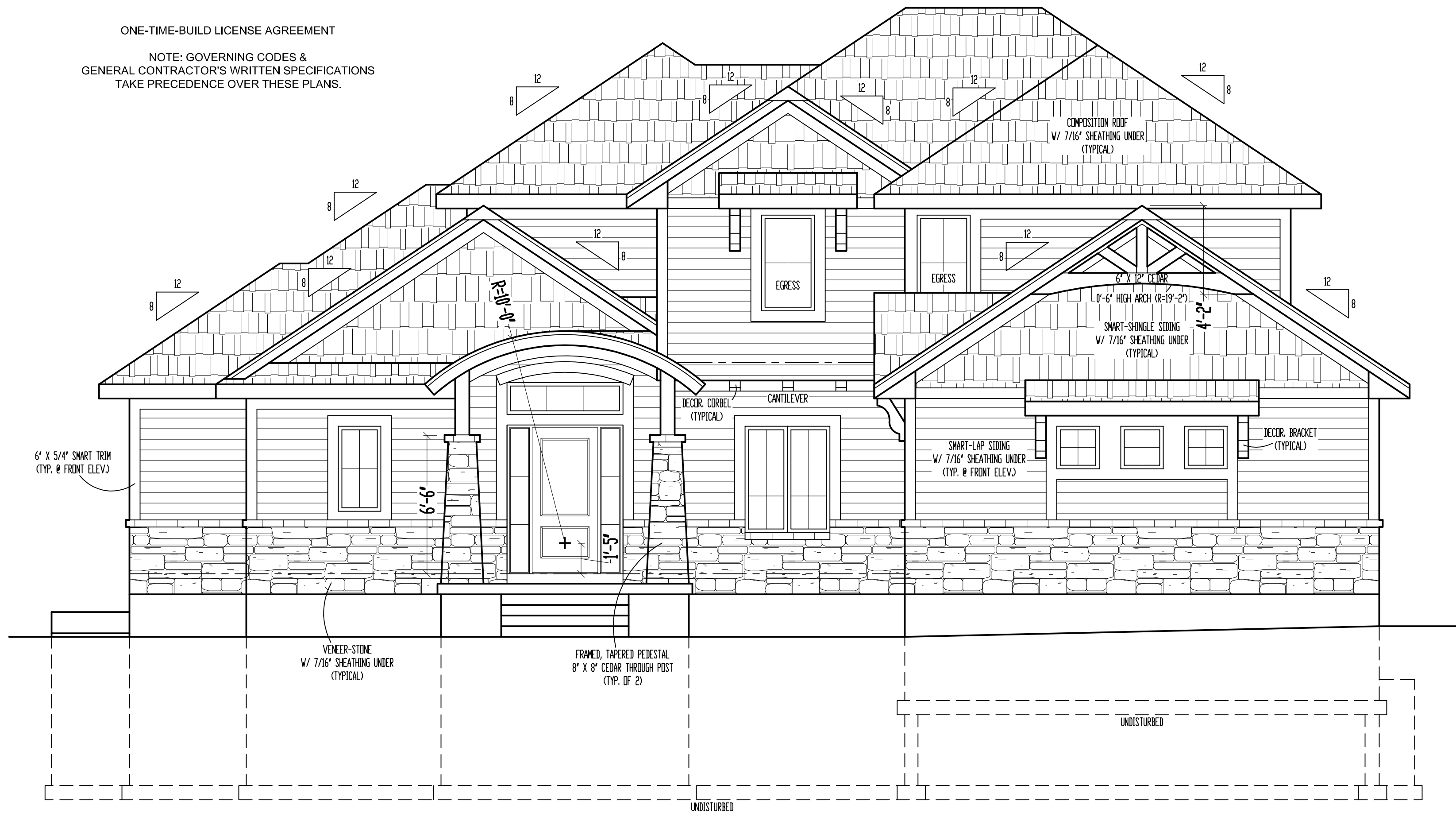
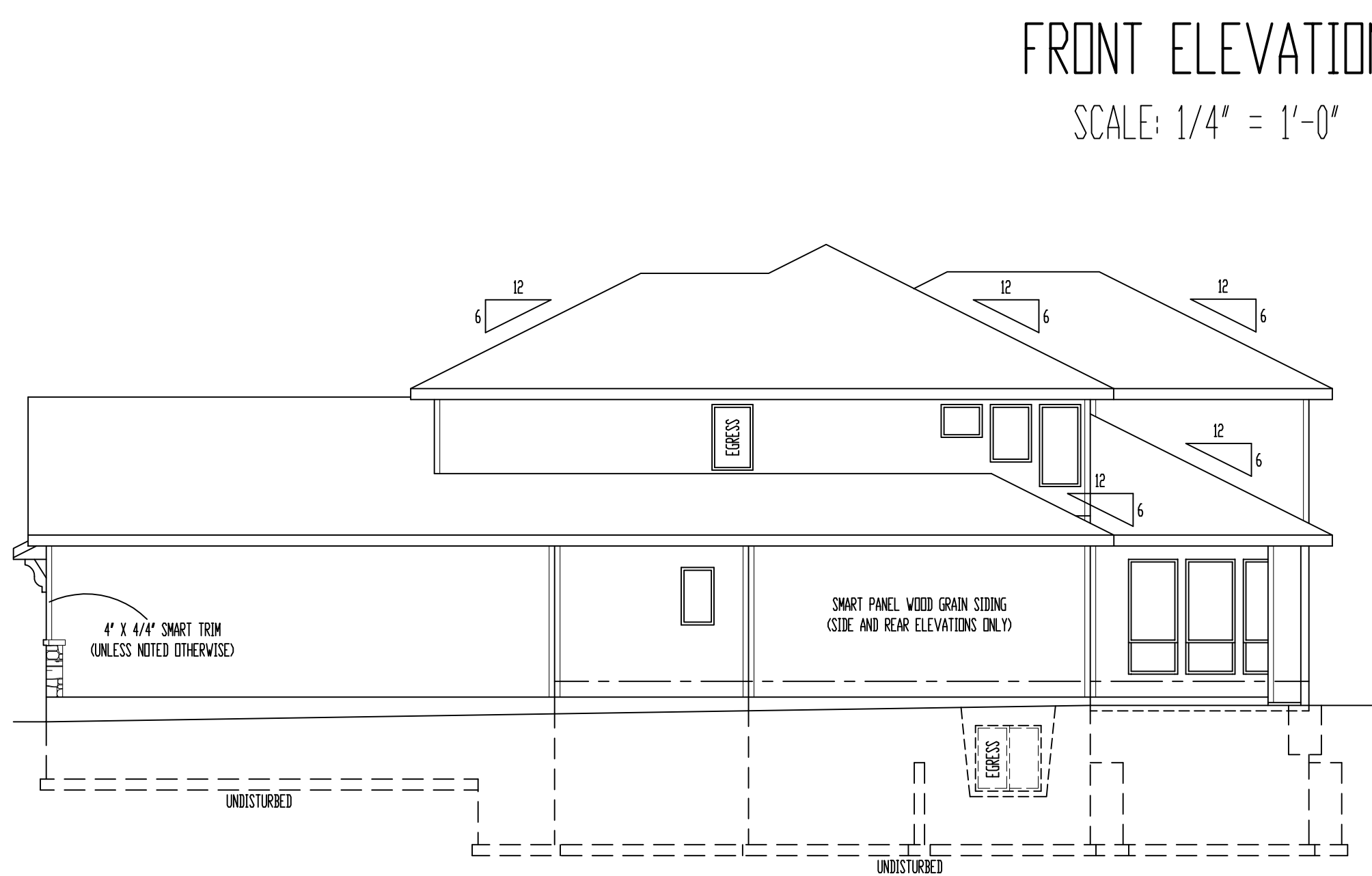


ONE-TIME-BUILD LICENSE AGREEMENT

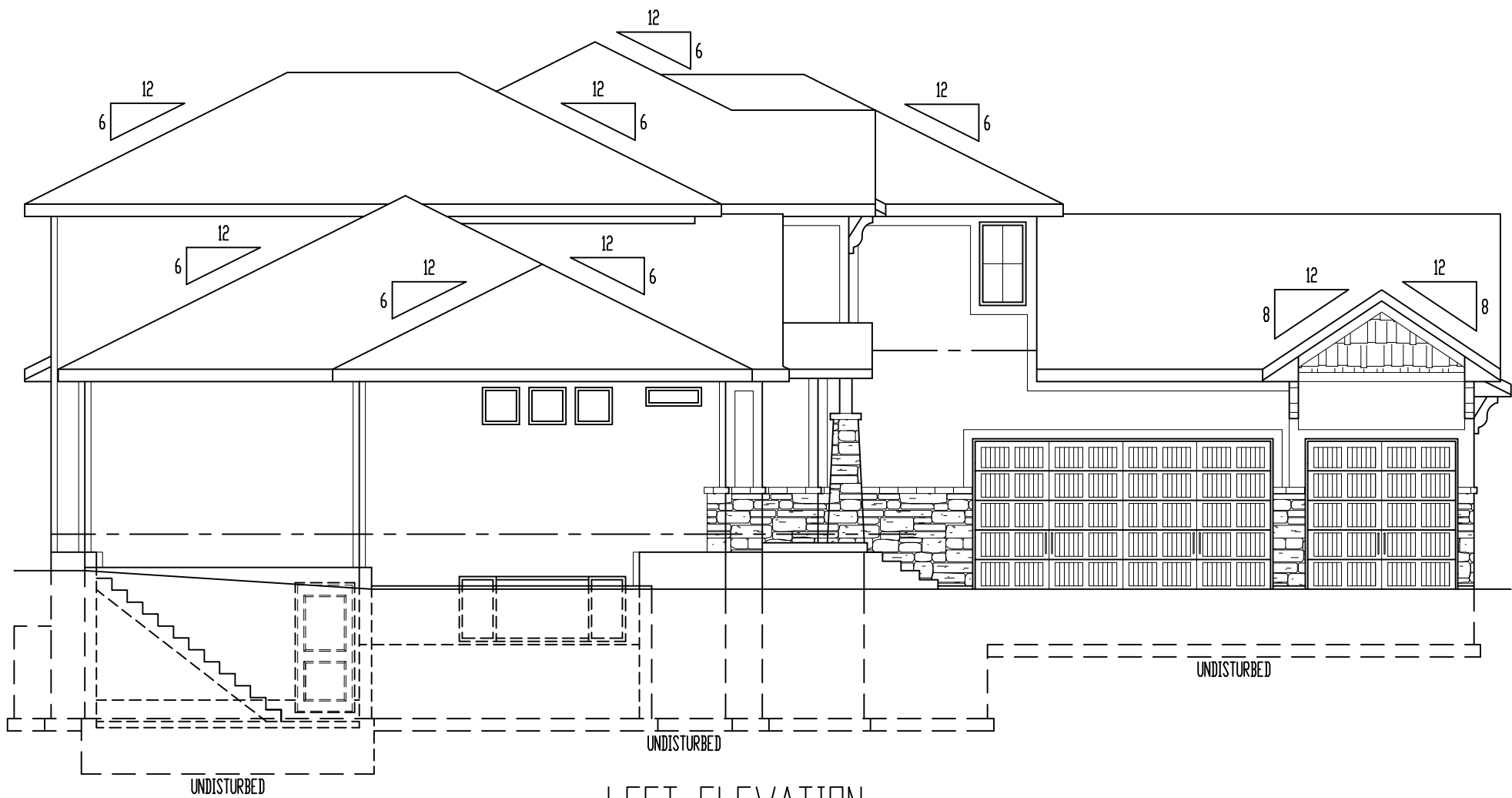
NOTE: GOVERNING CODES &  
GENERAL CONTRACTORS' WRITTEN SPECIFICATIONS  
TAKE PRECEDENCE OVER THESE PLANS.



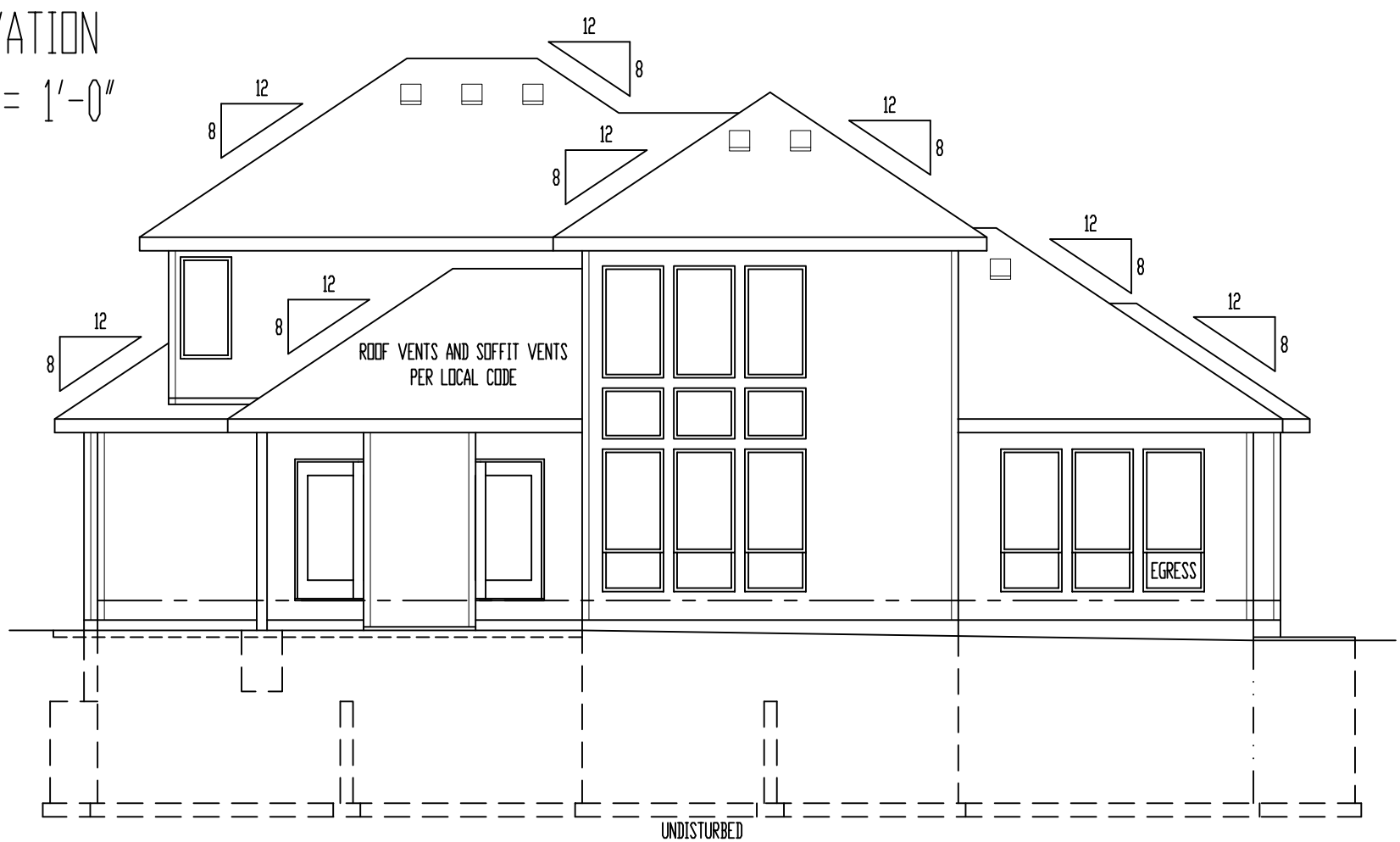
FRONT ELEVATION  
SCALE: 1/4" = 1'-0"



RIGHT ELEVATION  
SCALE: 1/8" = 1'-0"



LEFT ELEVATION  
SCALE: 1/8" = 1'-0"



REAR ELEVATION  
SCALE: 1/8" = 1'-0"

ELEVATIONS:  
SMART PANEL WOOD GRAIN SIDING ON SIDE AND REAR ELEVATIONS  
COMPOSITION ROOF SHINGLES  
LOCATE ROOF AND SOFFIT VENTS PER CODE  
ADJUST FOUNDATION TO GRADE

OPTIONAL DECK:  
DECK CONSTRUCTION TO COMPLY WITH MUNICIPALITY'S  
RESIDENTIAL DECK STANDARDS  
2" X 10" R2 TTD @ 16" O.C. FLOOR JOISTS (MAX SPAN 14'-0")  
2" X 6" CEDAR DECKING  
6" X 6" CEDAR/TTA POSTS  
2" X 2" CEDAR SPINDLES  
2" X 6" CEDAR TOP RAIL  
DETERMINE OPTIONAL STAIRS ON SITE

RELEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
02/17/2021

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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)

**VIEWPOINT**  
RESIDENTIAL DESIGN LLC

MT: (616) 547-4437  
E: Plans@ViewpointDesign.net

Site Description:  
**Lot 1485, Winterset Valley**  
Street Address:  
**3065 NE Thoreau Ln.,**  
**Lee's Summit, Missouri**

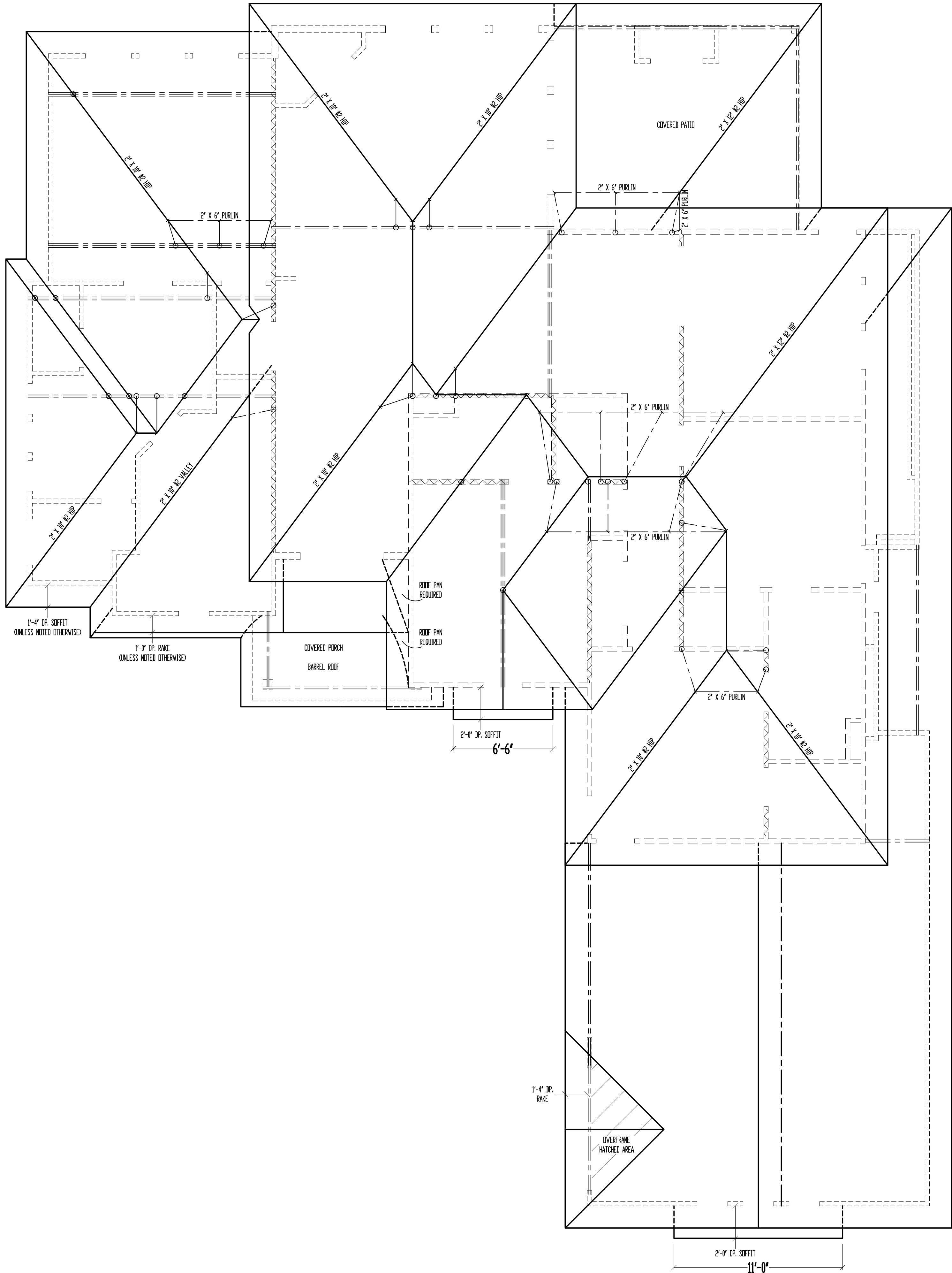
Designed for:  
**Devin & Rashawn**  
**CARUTHERS**  
General Contractor:  
**Pfeifer Homes, Inc.**



Date: 2-2-AD 2021  
Rev. 1:  
Rev. 2:  
Rev. 3:

Sheet Title:  
**ELEVATIONS**

Sheet No.:  
**A-1** of 5



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

ROOF AREA	
PITCH	SQ.
8/12	2755
6/12	1528
CURVED ROOF	0.64 (FLAT)

\*ALL RAFTERS SHALL BE 2" X 6" #2 @ 16" O.C., UNLESS NOTED OTHERWISE.

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 (GEM-FIR, DOUG-FIR, OR EQUAL)  
SEE SPAN CHARTS BELOW

CODE MINIMUM	
RAFTERS	SPACING
R2-2x6	R24" O.C.
R2-2x6	R18" O.C.
R2-2x6	R16" O.C.
R2-2x6	R14" O.C.
R2-2x6	R12" O.C.
R2-2x10	R24" O.C.
R2-2x10	R18" O.C.

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

HIGHER PERFORMANCE (RECOMMENDED)	
RAFTERS	SPACING
R2-2x6	R24" O.C.
R2-2x6	R18" O.C.
R2-2x6	R16" O.C.
R2-2x6	R14" O.C.
R2-2x6	R12" O.C.
R2-2x10	R24" O.C.
R2-2x10	R18" O.C.

DEFLECTION = 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" O.C.
  - 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:

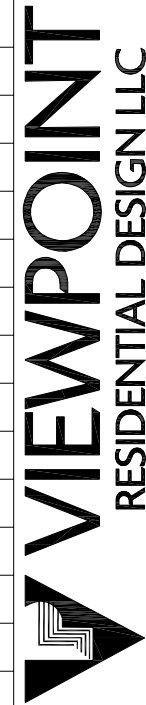
PURLIN STRUT	MAX PURLIN STRUT LENGTH
(T) 2x4	8'-0"
(T) 2x4 & (T) 2x6	12'-0"
(T) 2x6 & (T) 2x8	20'-0"
(T) 2x6 & (T) 2x8	30'-0"
(CONSULT AISC/ENGR. >)	30'-0"

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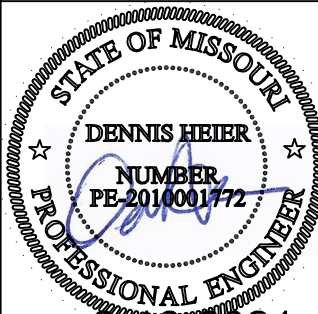
"For God so loved the world, that he gave his only begotten Son, that whosoever believeth in him should not perish, but have everlasting life." (John 3:16)



E. Plans@ViewpointDesign.net  
MT: (616) 547-4437

Site Description:  
**Lot 1485, Winterset Valley**  
Street Address:  
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Lee's Summit, Missouri**

Designed for:  
**Devin & Rashawn CARUTHERS**  
General Contractor:  
**Pfeifer Homes, Inc.**

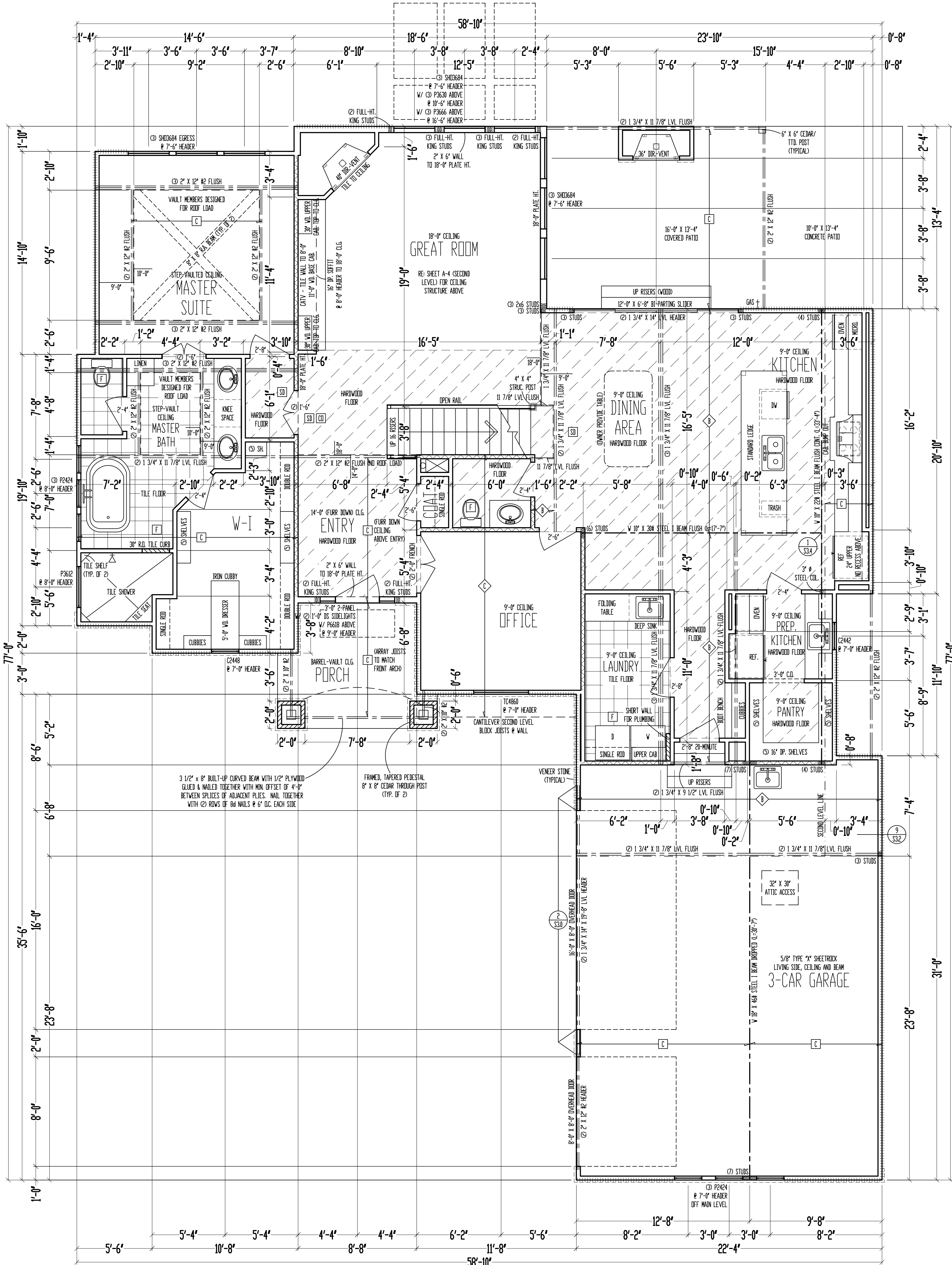


Date: 2-2-AD 2021  
Rev. 1:  
Rev. 2:  
Rev. 3:

Sheet Title:  
**ROOF PLAN**

Sheet No.:  
**A-2** of 5





9'-0" CEILING  
11 7/8" I-JOIST FLOOR SYSTEM ABOVE  
**MAIN LEVEL**  
SCALE: 1/4" = 1'-0"  
  
MAIN LEVEL: 2063 SQ. FT.  
SECOND LEVEL: 974 SQ. FT.  
TOTAL: 3037 SQ. FT.  
  
GARAGE: 686 SQ. FT.  
COV. OUT/LIV: 214 SQ. FT.  
UNFIN. BASEMENT: 1815 SQ. FT.

TILE FLOOR AREA		WOOD FLOOR AREA	
LOCATION	SQ. FT.	LOCATION	SQ. FT.
MASTER BATH	120	HARDWOOD FLOOR	842
LAUNDRY	70		
SL 3/4 BATH	29		
SL FULL BATH	43		

- \*\*\*\*\* = WALL BRACING PER FRAMING NOTE #1 AND PER CALCULATIONS ON SHEET S11
- FRAMING NOTES:**
- MAIN LEVEL EXTERIOR WALLS SHALL BE SHEATHED W/ 7/16" OSB. APA PANELS W/ 8d COMMON NAILS @ 6" O.C. AT EDGES & 12" O.C. IN THE FIELD. SHIRT PANEL OR EQUAL, INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
  - ===== = GB: 1/2" MIN. GYPSUM 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" SECTIONS ONE SIDE OF WALL (OR MIN. 4" SECTION FOR BOTH SIDES).
  - ===== = LEAD BEARING INTERIOR WALL.
  - (2) 2" X 10" #2 HEADER AT ALL EXTERIOR AND LEAD BEARING WALLS, UNLESS NOTED OTHERWISE.
  - LOW TIES @ 4'-0" O.C. (TYPICAL).
  - RIM STUDS THE FULL HEIGHT OF RAISED PLATE WALLS.
  - BLOCK JOISTS ABOVE BEAMS, CANTILEVERS AND LEAD BEARING WALLS WITH JOIST MATERIAL, NOT REQUIRED WITH I-JOISTS.
  - PROVIDE MULTIPLE STUDS FOR SOLID BEAMS BELOW WALL BEAMS.
  - ALL DESIGNATED 2" X 6" WALLS SHALL HAVE DOUBLE KING STUDS AT DOOR AND WINDOW OPENINGS.
  - ALL UNSQUARE WALLS SHALL BE 45°, UNLESS NOTED OTHERWISE.
  - ALL WALLS TO BE FRAMED W/ MIN. STUD GRADE 2" X 4" S @ 16" O.C., UNLESS NOTED OTHERWISE.
  - EXTERIOR WALL BOTTOM PLATES SHALL BE NAIL TO FRAMING BELOW WITH 16d COMMON NAILS @ 8" O.C. MAX. (WHERE APPLICABLE).
  - CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD BEFORE CONSTRUCTION OF ANY DEFLECTION LIMITATIONS MORE STRINGENT THAN CODE MINIMUMS ABOVE ANY OPENINGS.

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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).

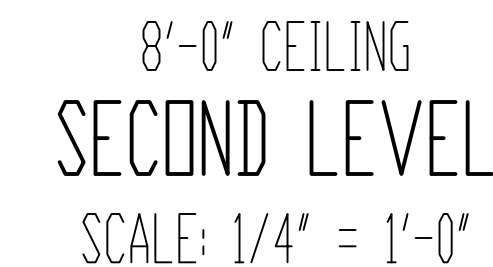
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Designed for:  
**Devin & Rashawn CARUTHERS**  
General Contractor:  
**Pfeifer Homes, Inc.**

STATE OF MISSOURI  
DENNIS HIEBER  
NUMBER PE-201400177  
PROFESSIONAL ENGINEER  
2-16-2021  
Date: 2 - 2 - AD 2021  
Rev. 1:  
Rev. 2:  
Rev. 3:

Sheet Title:  
**MAIN LEVEL PLAN**

Sheet No.:  
**A-3** of 5



+++++ = WALL BRACING PER FRAMING  
NOTE #1 AND PER CALCULATIONS ON SHEET S1.1.

2. SECOND LEVEL EXTERIOR WALLS SHALL BE SHEATHED W/ 7/16" OSB OR PANELS W/ 8" COMMON NAILS @ 8" OC AT CORNERS & 12" OC IN FIELD. SHIRT PANELS, 18" @ 12" MAXIMUM SPACINGS.

3. ~~~~~ = G-1/2" 1/4" MIN GYPSUM BOARD OVER STUDS SPACED 24" MAX FASTENED W/ 16" x 1-1/4" TYPE W OR S SHAPED SCREWS @ 12" OC CORNERS & FIELD. 10" @ 8" SECTION SIDE OF WALL. 10" @ 12" @ 8" SECTION FOR

4. ~~~~~ = LOAD BEARING INTERIOR WALL.

5. @ 2" x 4" MIN HEADER AT ALL EXTERIOR AND LOAD BEARING WALLS, UNLESS NOTED OTHERWISE.

6. LOW TIES 1/2" @ 4" OC (TYPICAL).

7. DON'T USE THE FULL LENGTH OF RASSED PANELS.

7. BLOCK JESTS ABOVE BEAMS, CANTILEVERS AND LOAD BEARING WALLS WITH JOIST MATERIAL, NOT REQUIRED WITH F-JOISTS.

8. PROVIDE MULTIPLE STUDS FOR SILL BEARING BELOW ALL BEAMS.

9. ALL DESIGNATED 2" X 6" WALLS SHALL HAVE DOUBLE KING STUDS AT READER AND WINDOW OPENINGS.

10. ALL UNSHORE WALLS SHALL BE 4" UNLESS NOTED OTHERWISE.

11. EXTERIOR WALL TO BE FRAMED W/ MIN STUD GRADE 2" X 4" S OR 1" ALL UNLESS NOTED OTHERWISE.

12. EXTERIOR WALL, BOTTOM PLATES SHALL BE NAIL TO FRAMING BELOW WITH 16d COMMON NAILS @ 12" OC MAX. (WHERE APPLICABLE)

13. CONTRACTOR SHALL MAINTAIN RECORD OF RECORD BEFORE REMOVAL AND DEFLECTION LOADINGS. MORE STRINGENT THAN CODE. MEMPHIS AREA, ALL OPENINGS.

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

[illegible]

*"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).*

**VIEWPOINT**  
RESIDENTIAL DESIGN LLC

[illegible]

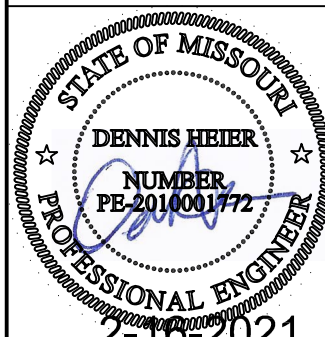
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**Devin & Rashawn  
CARUTHERS**

---

General Contractor:  
**Pfeifer Homes, Inc.**



Date: 2 - 2 - AD 2021  
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Rev. 3:

Sheet Title:  
**SECOND LEVEL  
PLAN**

Sheet No.:

**A-4** of 5

**RELEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI**

02/17/202







Actual materials and quantities may vary due to jobsite conditions, design changes and installation variations. It is the responsibility of the Builder for this Layout to be reviewed and Approved by an appropriate Design Professional as required by the permitting authority.

ALL ROOF LOADS ASSUMED TO BE SUPPORTED AT EXTERIOR WALLS AND BEAMS BY OTHERS, IF APPLICABLE, UNLESS OTHERWISE NOTED. NO ROOF LOADS APPLIED TO FLOOR MEMBERS.

1-1/2" X 11 7/8" LSL @ 16" O.C. UNLESS OTHERWISE NOTED

**HANGER NAILING FOR UNIFORMLY LOADED BEAMS**  
Joint & Beam Hanger Fastenings: Use 10d (0.148") x 3" nails.  
For IUS or THF Hangers - Use 10d (0.148") x 3" nails.  
For U, MIU, HU, HHUS, HGUS or HD, THD, THDH Hangers - Use 16d (0.162") x 3 1/2" nails.

\*For hangers that have joint fasteners/connections, fill all holes with the manufacturer's recommended fasteners.

**MULTIPLE PLY CONNECTION NAILING FOR UNIFORMLY LOADED BEAMS**

2&3 PLY BEAMS	NAILED CONNECTION
9 1/2" - 11 1/2" Depth	(3) Rows of 10d (0.128") x 3" Box Nails at 12" o.c.
14" - 24" Depth	(4) Rows of 10d (0.128") x 3" Box Nails at 12" o.c.

**4 PLY BEAM**  
9 1/2" - 24" Depth (4) Rows of 10d (0.128") x 3" Box Nails at 12" o.c.

- 16d (0.131") pneumatic nails may be substituted for 10d (0.128") Box Nails.  
- Stagger nails by 6" per ply.  
- All plies must be same material, grade, and 1 1/2" in thickness.  
- Joint hangers connecting into the side of the beam must be installed with minimum 3" long nails.

**MULTIPLE PLY CONNECTION NAILING FOR POINT LOADS**  
Hanger shown for reference. Install screws from side opposite of hanger. Install 1/2 the required screws on each side of hanger.

1 1/2" (TYP)  
EQUAL SPACING  
(4) ROWS 14" & DEEPER  
(3) ROWS 11 1/2" & LESS  
3 1/2" (TYP)

	SIMPSON STRONG-TIE® HANGERS				USP HANGERS		
	U	HU	HHUS	HGUS	HD	THD	THDH
3 PLY SUPPORT BEAM TOTAL # OF 3 1/2" TRUSSLOCK® SCREWS	4	6	8	14	6	12	16
4 PLY SUPPORT BEAM TOTAL # OF 3 1/2" TRUSSLOCK® SCREWS	4	4	6	12	6	10	12
4 PLY SUPPORT BEAM TOTAL # OF 6 3/4" TRUSSLOCK® SCREWS	4	6	10	20	8	16	20
4 PLY SUPPORT BEAM TOTAL # OF 6" SIMPSON SDS SCREWS	6	8	12	24	10	20	26

- Connections based on FastenMaster TrussLock® and Simpson Strong-Tie® code reports.  
- All plies assumed to be the same material, grade, and 1 1/2" in thickness.  
- Connections based on given hangers maximum capacity at 100% Load Duration Factor. Adequate for 115% and 125% Load Duration Factor as well.  
- Connection assumes the use of 16d nails and max nailing in hangers.  
- See TB-300 for alternate connector types and loading.

Plate nail: 16d (0.135" x 3 1/2") at 16" on-center.  
Blocking panel: 1 1/2" T&F Rim Board, 1 1/2" or 1 1/2" TimberStrand® LSL, or T&F joist.  
Web stiffener required on both sides at A1W ONLY.

Attach blocking per Rim Board Details and Installation in Weyerhaeuser Installation Guide for Floor and Roof Framing, TJ-9001.

When sheathing thickness exceeds 1/4", trim sheathing tongue at rim board.  
Plate nail: 16d (0.135" x 3 1/2") at 16" on-center.  
Floor panel nail: 8d (0.131" x 2 1/2") at 6" on-center.  
Web Stiffeners required each side at A3, W.  
1 1/2" T&F Rim Board, (A3 1/4A3, 1W only).  
Toe nail: 10d (0.131" x 3") at 6" on-center.

\* For A3.1-A3.3 installation specifications see Rim Board Details and Installation in Weyerhaeuser Installation Guide for Floor and Roof Framing, TJ-9001.

Load bearing or braced/shear wall above (must stack over wall below).  
Blocking panel: 1 1/2" T&F Rim Board, 1 1/2" or 1 1/2" TimberStrand® LSL, or T&F joist.  
2nd minimum squash blocks.  
Web stiffeners required on both sides at B1W and B2W ONLY.

Blocking panels may be required with braced/shear walls above or below — see detail B1.

No load bearing wall above.

Web stiffeners required each side at B3W ONLY.

Blocking panels may be required with braced/shear walls above or below — see detail B1.

Load from above.  
2x4 minimum squash blocks.

Use 2x4 minimum squash blocks to transfer load around TJ® joist.

Web stiffeners required on both sides at E1W ONLY.

8" diameter maximum hole for 1 1/2" - 16" deep blocking panels; 6" diameter maximum for blocking panels 9 1/2" deep or shorter than 12" long. Do not cut flanges.

SCAN WITH YOUR SMARTPHONE  
INSTALLATION GUIDE FOR FLOOR AND ROOF FRAMING

SCAN WITH YOUR SMARTPHONE  
DAMAGE REPORTING MOBILE TOOL

E1 E1W

**WARNING**  
Joists are unstable until braced laterally.

**Bracing Includes:**

- Blocking
- Hangers
- Sheathing
- Rim Board
- Stud Lines
- Rim Joist

**DO NOT walk on joists until braced. INJURY MAY RESULT.**

**DO NOT walk on joists that are lying flat.**

**DO NOT stack building materials on unsheathed joists. Stack only over beams or walls.**

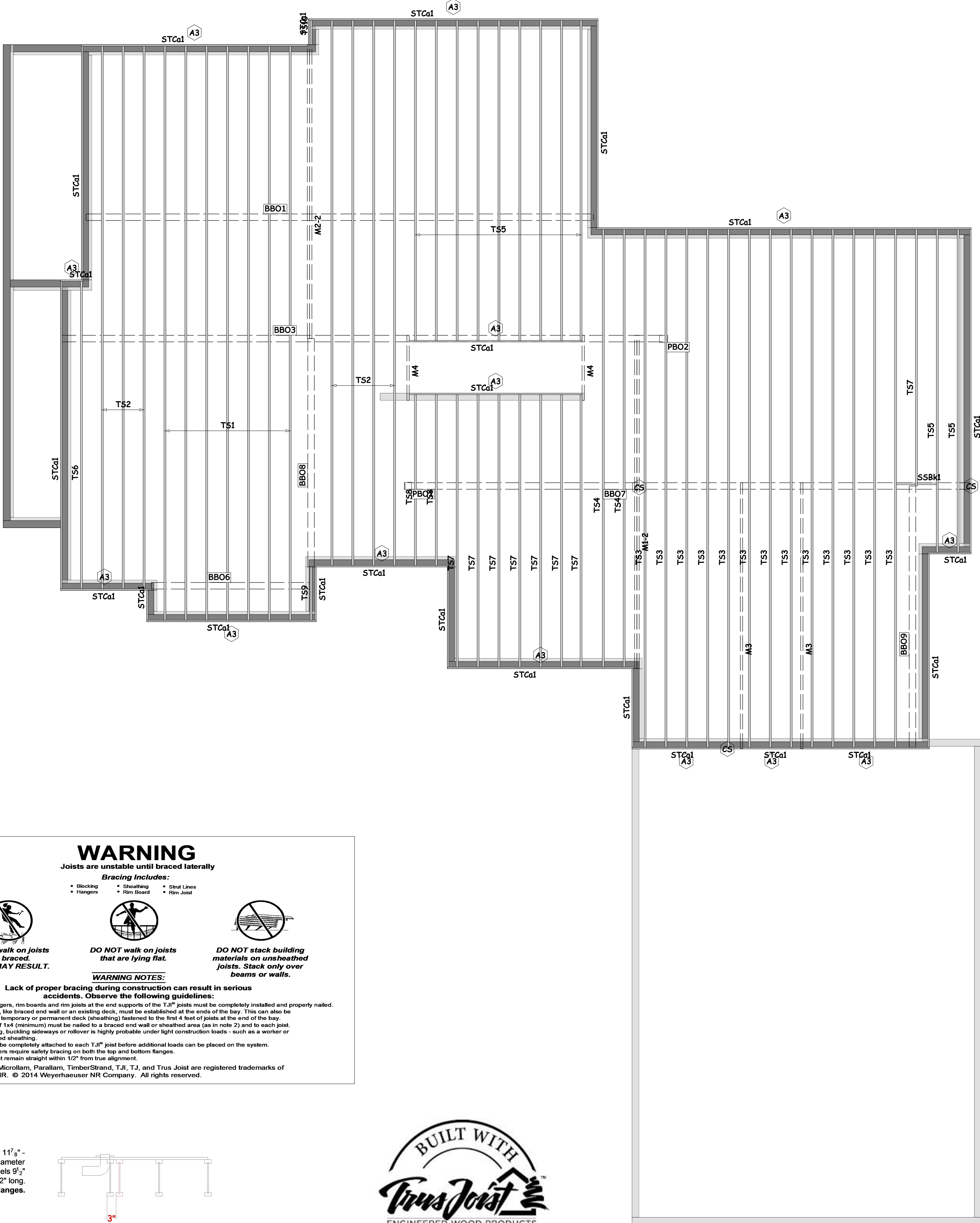
**WARNING NOTES:**  
Lack of proper bracing during construction can result in serious accidents. Observe the following guidelines:

1. All blocking, hangers, rim boards and rim joists at the end supports of the TJ® joists must be completely installed and properly nailed.
2. Lateral strength, like braced end wall or an existing deck, must be established at the ends of the bay. This can also be accomplished by a temporary or permanent deck (sheathing) fastened to the first 4 feet of joists at the end of the bay.
3. Safety bracing of 1x4 (minimum) must be nailed to a braced end wall or sheathed area (as in note 2) and to each joist. Without this bracing, buckling sideways or rollover is highly probable under light construction loads — such as a worker or one layer of unnailed sheathing.
4. Sheathing must be completely attached to each TJ® joist before additional loads can be placed on the system.
5. Ends of cantilevers require safety bracing on both the top and bottom flanges.
6. The flanges must remain straight within 1/2" from true alignment.

▲ Weyerhaeuser, Microlam, Parallam, TimberStrand, TJ, TJ, and Trus Joist are registered trademarks of Weyerhaeuser NR. © 2014 Weyerhaeuser NR Company. All rights reserved.



Adjust joist up to 3" to allow for Plumbing and Mechanical installation. Max clear span at L/480 and max 24" o.c. spacing. 9 1/2" 210 16" o.c. 15' 9" 11 7/8" 210 16" o.c. 18' 8"



Total Lengths	
Length	Product
132' 0"	1 3/4" x 11 7/8" 2.0E Microlam LVL
1492' 0"	1 1/2" x 11 7/8" 1.5E TimberStrand LSL
278' 0"	1 1/2" x 5 1/2" 1.3E Strandguard TimberStrand LSL
240' 0"	1 1/8" x 11 7/8" TJ Rim Board
4' 0"	2x8 blocking (11 7/8" joist depth)

Blocking		Plies	Net Qty
PlotID	Length	Product	
SSBkl	2' 0"	2x8 blocking (11 7/8" joist depth)	1 2

Products		Plies	Net Qty
PlotID	Length	Product	
M1-2	22' 0"	1 3/4" x 11 7/8" 2.0E Microlam LVL	2 2
M2-2	20' 0"	1 3/4" x 11 7/8" 2.0E Microlam LVL	2 2
M3	18' 0"	1 3/4" x 11 7/8" 2.0E Microlam LVL	1 2
M4	6' 0"	1 3/4" x 11 7/8" 2.0E Microlam LVL	1 2
TS1	38' 0"	1 1/2" x 11 7/8" 1.5E TimberStrand LSL	1 7
TS2	36' 0"	1 1/2" x 11 7/8" 1.5E TimberStrand LSL	1 7
TS3	34' 0"	1 1/2" x 11 7/8" 1.5E TimberStrand LSL	1 13
TS4	28' 0"	1 1/2" x 11 7/8" 1.5E TimberStrand LSL	1 2
TS5	22' 0"	1 1/2" x 11 7/8" 1.5E TimberStrand LSL	1 11
TS6	20' 0"	1 1/2" x 11 7/8" 1.5E TimberStrand LSL	1 1
TS7	18' 0"	1 1/2" x 11 7/8" 1.5E TimberStrand LSL	1 8
TS8	12' 0"	1 1/2" x 11 7/8" 1.5E TimberStrand LSL	1 2
TS9	4' 0"	1 1/2" x 11 7/8" 1.5E TimberStrand LSL	1 1
TS10	2' 0"	1 1/2" x 11 7/8" 1.5E TimberStrand LSL	1 1
STCa1	16' 0"	1 1/8" x 11 7/8" TJ Rim Board	1 15

Accessories		Plies	Net Qty
PlotID	Length	Product	
23/32"x48"x96" Weyerhaeuser Edge Panel (0/24) T&G FF			
		1	63

LEVEL NOTES	
Current Date:	2/9/2021
File Name:	fps21-0226_84 lumber_1485 caruthers.jvl
Level Name:	Foundation
Building Code - Design Methodology:	IBC 2015
Members with Design Overridden:	
TJ-Pro Rating (Weighted Average):	Unable to Calculate
Minimum Level TJ - Pro Rating & Joist:	Unable to Calculate
Maximum Level TJ - Pro Rating & Joist:	Unable to Calculate

FLOOR	
Floor Container:	FC1
Use/Occupancy:	ResidentialLivingAreas
Floor Area Loading is:	40.0 lb/ft² Live Load & 12.0 lb/ft² Dead Load
Floor Maximum Allowed Deflection	L/480 Live Load & L/240 Total Load
TJ-Pro Rating Information:	
Weighted Average:	Unable to Calculate
Directly Applied Ceiling:	None
Decking Attachment:	Glue and Nail
Decking Material:	23/32"x48"x96" Weyerhaeuser Edge Panel (0/24) T&G FF
Perpendicular Partition:	No
Strapping at max 8' o.c.:	None
Blocking at max 8' o.c.:	No
Poured Flooring:	No

**SHOP DRAWING SUBMITTAL REVIEW**

This review is for general conformance with plans and specifications only. Approvals are subject to contractor's performance within the confines of the contract documents. Review of dimensions will not serve to relieve the contractor of contractual responsibility for any deviation from the contract requirements.

Approved as noted

Field measurements or templates required prior to fabrication

By: Dennis Heier

Note markings

Not approved - revise and resubmit

VISTA STRUCTURAL ENGINEERING, LLC  
www.vistastructural.com  
Date: 02/16/2021

**NAILING AT BEARING (FLOOR)**

**TJR® Joist to Bearing Plate**  
1 1/2" TJ® Rim Board or 1 1/2" x 1 1/2" TimberStrand® LSL.  
One 8d (0.113" x 2 1/2") nail each side. Drive nails at an angle at least 1 1/2" from end.  
1 1/2" minimum end bearing angle-limb applications.  
Shear transfer: Connections equivalent to floor panel nailing schedule.

**Squash Blocks to TJ® Joist (Load bearing wall above)**  
One 10d (0.131" x 3") nail into each flange.  
Also see detail B2.

**Rim to TJ® Joist**  
1 1/2" TJ® Rim Board, 1 1/2" or 1 1/2" TimberStrand® LSL, nail with 10d (0.128" x 3") or T&F 16d rim joist.  
One 10d (0.131" x 3") nail into each flange.  
T&F 210, 230, and 360 rim joist: One 16d (0.135" x 3 1/2") nail into each flange.  
With depths > 16", use T&F 360 rim joist. Locate rim board joint between joists.

**T&F 360 rim joist:** Toe nail with 10d (0.128" x 3") nails, one each side of TJ® joist flange.

**T&F 360 floor joist**

Top View

This layout is intended for product application assurance and is not intended to circumvent the need for a design professional as determined by the Building Codes. The designer of record and/ or builder/ framer is responsible to assure these drawings are compatible with the overall project.

**Trus Joist**  
ENGINEERED WOOD PRODUCTS

**Weyerhaeuser**

Symbol Legend

- ◇ User Defined Point Load
- ▬ User Defined Line Load
- ▨ User Defined Area Load
- BBO Beam By Others
- PBO Post By Others
- Layout Start Location
- Construction Detail Callout (See Framers' Pocket Guide)
- ⚠ Excessive Point Load (WARNING: Member design did not include this load. Special consideration is required by the designer of record.)
- Required Bearing Length (Only placed at insufficient bearing locations.)

PREPARED BY  
MIKE CARIOSCIA  
FOREST PRODUCTS SUPPLY  
913-441-7000

84 LUMBER  
1485 CARUTHERS  
CHRIS FORD

STRUCTURAL DATE:

ARCHITECTURAL DATE:

SCALE  
1/4" = 1'-0"

PROJECT #: FPS 21-0226

2/9/2021

SHEET

10 RELEASED FOR CONSTRUCTION AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI 02/17/2021



Actual materials and quantities may vary due to jobsite conditions, design changes and installation variations. It is the responsibility of the Builder for this Layout to be reviewed and Approved by an appropriate Design Professional as required by the permitting authority.

ALL ROOF LOADS ASSUMED TO BE SUPPORTED AT EXTERIOR WALLS AND BEAMS BY OTHERS, IF APPLICABLE, UNLESS OTHERWISE NOTED. NO ROOF LOADS APPLIED TO FLOOR MEMBERS.

11 7/8" TJI  
110'S 16" O.C.  
UNLESS OTHERWISE NOTED

Total Lengths	
Length	Product
829' 0"	11 7/8" TJI 110 joist
342' 0"	1 3/4" x 11 7/8" 2.0E Microllam LVL
64' 0"	1 1/8" x 11 7/8" TJ Rim Board
4' 6 3/4"	5/8" x 2 5/16" Web Stiffeners

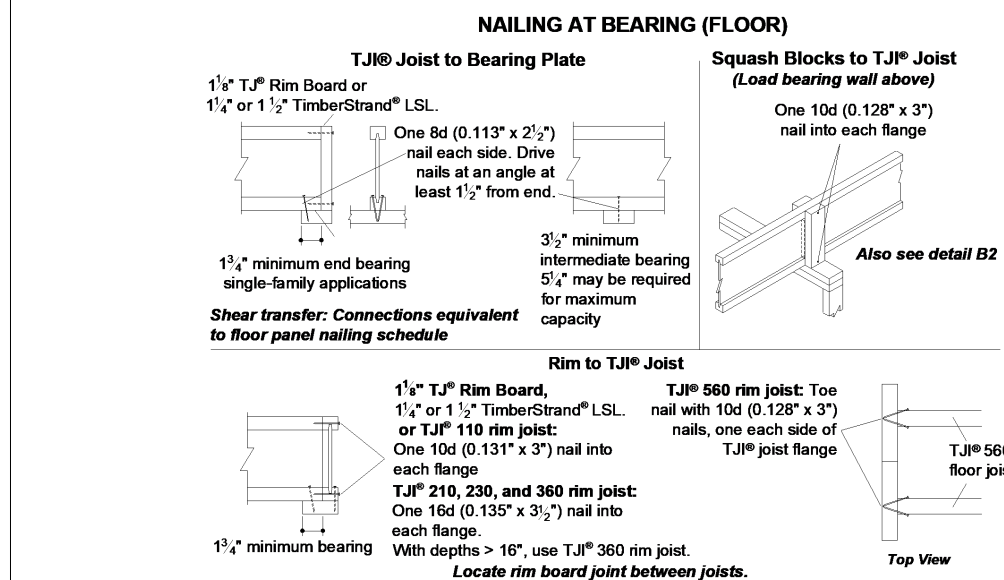
Framing Connector Summary												
PlotID	Qty	Manuf	Product	Design Method	Face Nails	Top Nails	Member Nails	Skew	Slope	Backer Blks	Filler	Web Stiff
H1	2	Simpson	HGU55.50/10	Designed	46- 10d	-	16- 10d	-	-	No	No	No
H2	4	Simpson	ITS1.81/11.88	Designed	2- 10dx1.5	4- 10dx1.5	2- 10dx1.5	-	-	No	No	No
H3	54	Simpson	ITS1.81/11.88	Designed	2- 10dx1.5	4- 10dx1.5	2- Strong-Grip	-	-	No	No	No
H4	2	Simpson	MIT411.88	Designed	4- 10dx1.5	4- 10dx1.5	2- 10dx1.5	-	-	No	No	No
H5	1	Simpson	MIT411.88	Designed	4- 10dx1.5	4- 10dx1.5	4- 10dx1.5	-	-	No	No	Yes
H6	1	Simpson	ITS1.81/11.88	Designed	4- 10dx1.5	4- 10dx1.5	4- 10dx1.5	-	-	No	No	Yes

Accessories				
PlotID	Length	Product	Plies	Net Qty
9 1/8"		5/8" x 2 5/16" Web Stiffeners	1	6
		23/32"x48"x96" Weyerhaeuser Edge Panel (0/24) T&G FF	1	30

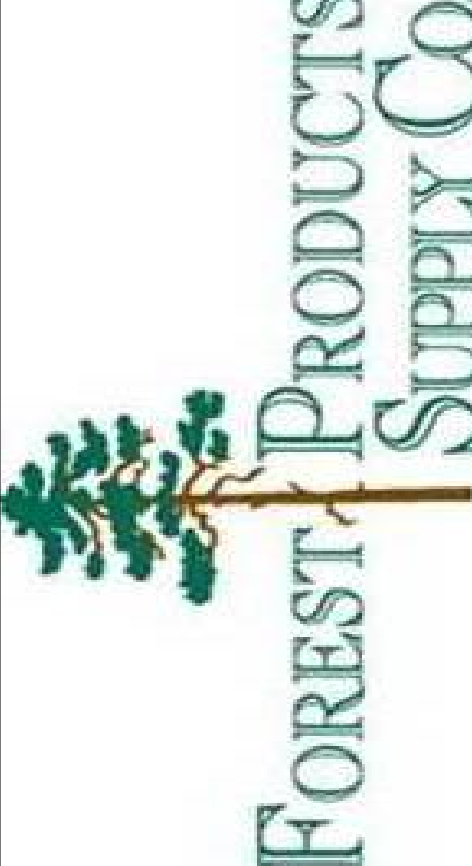
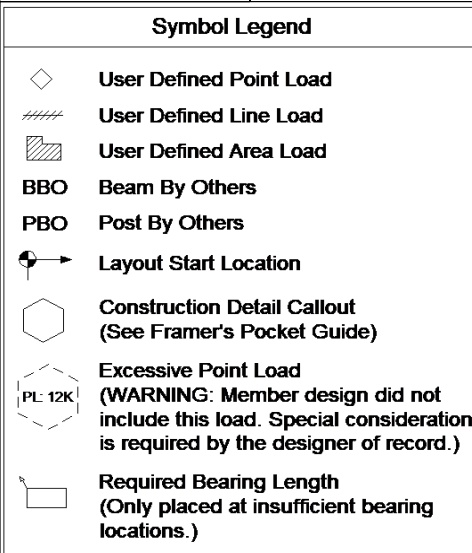
Products				
PlotID	Length	Product	Plies	Net Qty
B22'-2	22' 0"	11 7/8" TJI 110 joist	2	2
B22'	22' 0"	11 7/8" TJI 110 joist	1	1
B18'	18' 0"	11 7/8" TJI 110 joist	1	26
B12'	12' 0"	11 7/8" TJI 110 joist	1	2
B10'	10' 0"	11 7/8" TJI 110 joist	1	8
B8'	8' 0"	11 7/8" TJI 110 joist	1	14
B6'	6' 0"	11 7/8" TJI 110 joist	1	6
M1-2	24' 0"	1 3/4" x 11 7/8" 2.0E Microllam LVL	2	2
M3-3	18' 0"	1 3/4" x 11 7/8" 2.0E Microllam LVL	3	6
M2-2	18' 0"	1 3/4" x 11 7/8" 2.0E Microllam LVL	2	4
M4-2	14' 0"	1 3/4" x 11 7/8" 2.0E Microllam LVL	2	2
M5-2	10' 0"	1 3/4" x 11 7/8" 2.0E Microllam LVL	2	2
M7-2	8' 0"	1 3/4" x 11 7/8" 2.0E Microllam LVL	2	2
M6	8' 0"	1 3/4" x 11 7/8" 2.0E Microllam LVL	1	2
M8-3	6' 0"	1 3/4" x 11 7/8" 2.0E Microllam LVL	3	3
M10-2	4' 0"	1 3/4" x 11 7/8" 2.0E Microllam LVL	2	2
M9	4' 0"	1 3/4" x 11 7/8" 2.0E Microllam LVL	1	1
M11	2' 0"	1 3/4" x 11 7/8" 2.0E Microllam LVL	1	2
STC01	16' 0"	1 1/8" x 11 7/8" TJ Rim Board	1	4

Blocking				
PlotID	Length	Product	Plies	Net Qty
BBk1	2' 0"	11 7/8" TJI 110 joist	1	19
BBk1	1' 0"	11 7/8" TJI 110 joist	1	5

LEVEL NOTES	
Current Date:	2/9/2021
File Name:	fps21-0226_84 lumber_1485 caruthers.jvl
Level Name:	1st Floor
Building Code - Design Methodology:	IBC 2015
Members with Design Overrides:	
TJ-Pro Rating (Weighted Average):	46
Minimum Level TJ - Pro Rating & Joist:	TJ-Pro rating = 38, joist = B18' (3938)
Maximum Level TJ - Pro Rating & Joist:	TJ-Pro rating = 70, joist = B12' (3892)
FLOOR	
Floor Container:	FC4
Use/Occupancy:	ResidentialLivingAreas
Floor Area Loading is:	40.0 lb/ft² Live Load & 12.0 lb/ft² Dead Load
Maximum Allowed Deflection:	L/480 Live Load & L/240 Total Load
TJ-Pro Rating Information:	
Weighted Average:	46
Directly Applied Ceiling:	None
Decking Attachment:	Glue and Nail
Decking Material:	23/32"x48"x96" Weyerhaeuser Edge Panel (0/24) T&G FF
Perpendicular Partition:	No
Strapping at max 8' o.c.:	None
Blocking at max 8' o.c.:	No
Poured Flooring:	No



This layout is intended for product application assurance and is not intended to circumvent the need for a design professional as determined by the Building Codes. The designer of record and/ or builder/ framer is responsible to assure these drawings are compatible with the overall project.



PREPARED BY  
MIKE CAROSCIA  
FOREST PRODUCTS SUPPLY  
913-441-7000

84 LUMBER	1485 CARUTHERS	CHRIS FORD	STRUCTURAL DATE:
			ARCHITECTURAL DATE:

SCALE  
1/4"=1'-0"

PROJECT #: FPS 21-0226

2/9/2021

SHEET

2021 RELEASED FOR CONSTRUCTION AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI  
02/17/2021

**HANGER NAILING FOR UNIFORMLY LOADED BEAMS**  
Joint & Beam Hanger Fastenings: Use 10d (0.148") x 3" nails.  
For IUS or THF Hangers - Use 10d (0.148") x 3" nails.  
For U, MIU, HU, HHUS, HGUS or HD, THD, THDH Hangers - Use 16d (0.162") x 3 1/2" nails.  
\*For hangers that have joint fasteners/connections, fill all holes with the manufacturer's recommended fasteners.

**MULTIPLE PLY CONNECTION NAILING FOR UNIFORMLY LOADED BEAMS**

2&3 PLY BEAMS	NAILED CONNECTION
9 1/2" - 11 1/2" Depth	(3) Rows of 10d (0.128") x 3" Box Nails at 12" o.c.
14" - 24" Depth	(4) Rows of 10d (0.128") x 3" Box Nails at 12" o.c.

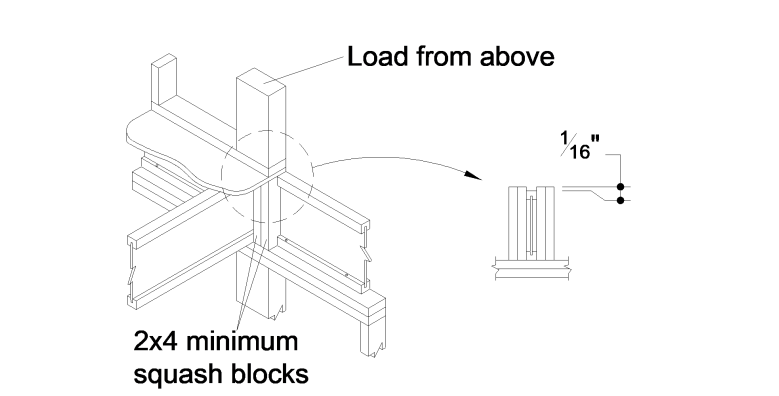
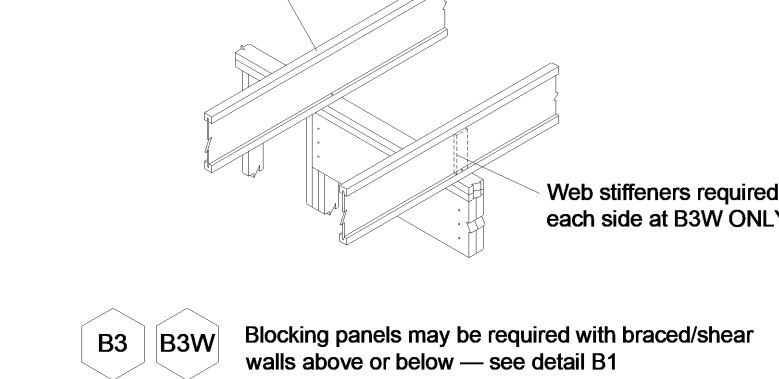
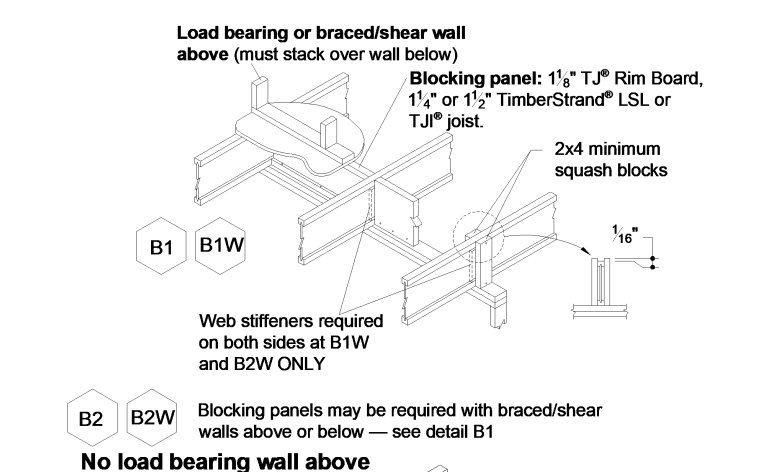
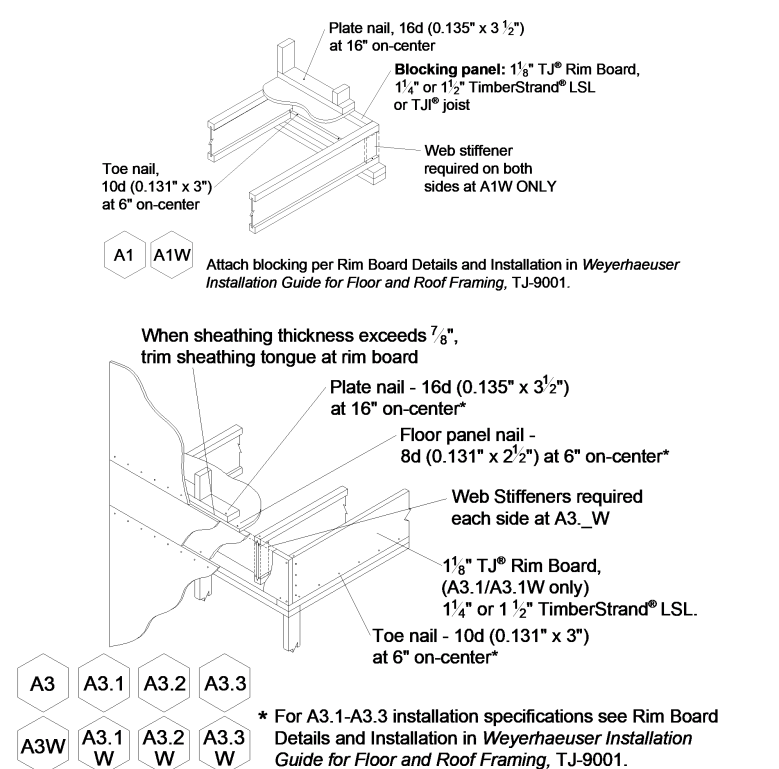
**4 PLY BEAM**  
9 1/2" - 24" Depth  
(4) Rows of 10d (0.128") x 3" Box Nails at 12" o.c.

- 16d (0.131") pneumatic nails may be substituted for 10d (0.128") Box nails.  
- Stagger nails by 6" per ply.  
- All plies must be same material, grade, and 1 1/2" in thickness.  
- Joint hangers connecting into the side of the beam must be installed with minimum 3" long nails.

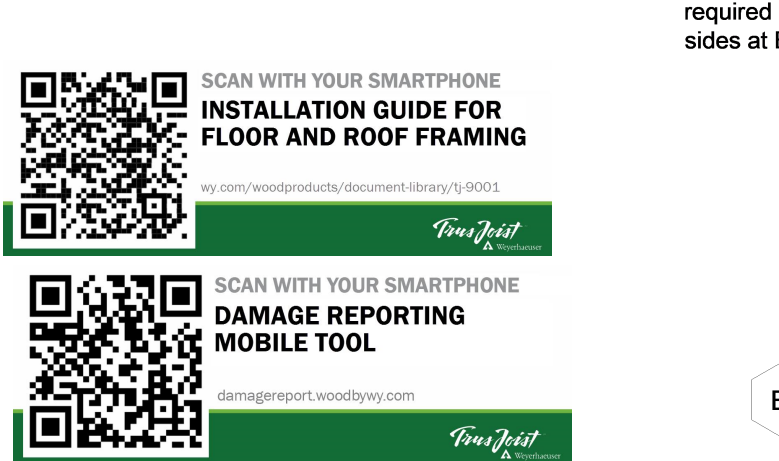
**MULTIPLE PLY CONNECTION NAILING FOR POINT LOADS**  
Hanger shown for reference. Install screws from side opposite of hanger. Install 1/2 the required screws on each side of hanger.  
1 1/2" (TYP)  
EQUAL SPACING  
(4) ROWS 14" & DEEPER  
(3) ROWS 11 1/2" & LESS  
2" (TYP) 3 1/2" (TYP)

	SIMPSON STRONG-TIE® HANGERS			USP HANGERS		
	U	HU	HHUS	HGUS	HD	THD
3 PLY SUPPORT BEAM						
TOTAL # OF 3 1/2" TRUSSLOK® SCREWS	4	6	8	14	6	12
TOTAL # OF 3 1/2" SIMPSON SDS SCREWS	4	4	6	12	6	10
4 PLY SUPPORT BEAM						
TOTAL # OF 3 1/2" TRUSSLOK® SCREWS	4	6	10	20	8	16
TOTAL # OF 6" SIMPSON SDS SCREWS	6	8	12	24	10	20

- Connections based on FastenMaster TrussLok® and Simpson Strong-Tie® code reports.  
- All plies assumed to be the same material, grade, and 1 1/2" in thickness.  
- Connections based on given hangers maximum capacity at 100% Load Duration Factor. Adequate for 115% and 125% Load Duration Factor as well.  
- Connection assumes the use of 16d nails and max nailing in hangers.  
- See TB-300 for alternate connector types and loading.



Use 2x4 minimum squash blocks to transfer load around TJI® joist



**WARNING**  
Joists are unstable until braced laterally  
Bracing Includes:

- Blocking
- Hangers
- Sheathing
- Rim Board
- Strut Lines
- Rim Joist

**DO NOT walk on joists until braced. INJURY MAY RESULT.**

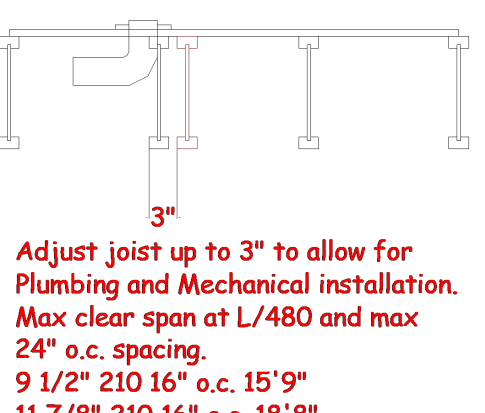
**DO NOT walk on joists that are lying flat.**

**DO NOT stack building materials on unsheathed joists. Stack only over beams or walls.**

**WARNING NOTES:**  
Lack of proper bracing during construction can result in serious accidents. Observe the following guidelines:

- All blocking, hangers, rim boards and rim joists at the end supports of the TJI® joists must be completely installed and properly nailed.
- Lateral strength, like braced wall or an existing deck, must be established at the ends of the bay. This can also be accomplished by a temporary or permanent deck (sheathing) fastened to the first 4 feet of joists at the end of the bay.
- Safety bracing of 1x4 (minimum) must be nailed to a braced end wall or sheathed area (see in note 2) and to each joist. Without this bracing, buckling sideways or rollover is highly probable under light construction loads - such as a worker or one layer of unnailed sheathing.
- Sheathing must be completely attached to each TJI® joist before additional loads can be placed on the system.
- Ends of cantilevers require safety bracing on both the top and bottom flanges.
- The flanges must remain straight within 1/2" from true alignment.

▲ Weyerhaeuser, Microllam, Parallam, TimberStrand, TJI, TJ, and Trus Joist are registered trademarks of Weyerhaeuser NR. © 2014 Weyerhaeuser NR Company. All rights reserved.



Adjust joist up to 3" to allow for Plumbing and Mechanical installation. Max clear span at L/480 and max 24" o.c. spacing. 9 1/2" 210 16" o.c. 15 9" 11 7/8" 210 16" o.c. 18 8"



FASTENER SCHEDULE FOR STRUCTURAL MEMBERS		
DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION
ROOF <sup>1</sup>		
BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE, TOE NAIL	4-8d (2½" x 0.113")	TOENAIL
CEILING JOISTS TO PLATE, TOE NAIL	4-8d (2½" x 0.113")	PER JOIST, TOENAIL
CEILING JOISTS NOT ATTACHED TO PARALLEL RAFTER, LAPS OVER PARTITIONS, FACE NAIL	4-10d (3" x 0.128")	FACE NAIL
CEILING JOIST TO PARALLEL RAFTER (HEEL JOINT)	TBLE R802.5.2	FACE NAIL
COLLAR TIE TO RAFTER, FACE NAIL OR 1 ½" x 20 GA. RIDGE STRAP TO RAFTER	4-10d (3" x 0.128")	FACE NAIL, EACH RAFTER
RAFTER OR ROOF TRUSS TO PLATE	3-16d BOX NAILS (¾" x 0.135") OR 3-10d COMMON NAILS (3" x 0.148")	2 TOE NAILS ON ONE SIDE AND 1 TOE NAIL ON OPPOSITE SIDE OF EACH RAFTER OR TRUSS
ROOF RAFTERS TO RIDGE, VALLEY, OR HIP RAFTERS OR ROOF RAFTER TO MINIMUM 2" RIDGE BEAM	4-16d (3 ½" x 0.135") - TOENAIL; 3-16d BOX (3 ½" x 0.135") - END NAIL	TOENAIL, END NAIL
WALL		
STUD TO STUD (NOT AT BRACED WALL PANELS)	10d (3" x 0.128")	16" O.C. FACE NAIL
STUD TO STUD AND ABUTTING STUDS AT INTERSECTING WALL CORNERS (AT BRACED WALL PANELS)	16d (3½" x 0.135")	12" O.C. FACE NAIL
BUILT-UP HEADER, TWO PIECES WITH ½" SPACER	16d (3½" x 0.135")	12" O.C. EACH EDGE FACE NAIL
CONTINUOUS HEADER TO STUD	4-8d (2½" x 0.131")	TOENAIL
TOP PLATE TO TOP PLATE	10d (3" x 0.128")	12" O.C. FACE NAIL
DOUBLE TOP PLATE SPLICE	8-16d COMMON (3 ½" x 0.162")	FACE NAIL ON EACH SIDE OF END JOINT (MIN. 24" LAP SPLICE LENGTH EACH SIDE OF END JOINT)
BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST, OR BLOCKING (NOT AT BRACED WALL PANELS)	16d COMMON (3 ½" x 0.162")	16" O.C. FACE NAIL
BOTTOM PLATE TO JOIST, RIM JOIST, BAND JOIST, OR BLOCKING (AT BRACED WALL PANEL)	3-16d BOX (3 ½" x 0.135")	3 EACH 16" O.C. FACE NAIL
TOP OR SOLE PLATE TO STUD, END NAIL	4-8d BOX (2 ½" x 0.113") - TOENAIL; 3-16d BOX (3 ½" x 0.135") - END NAIL	TOENAIL, END NAIL (SEE LEFT)
TOP PLATES, LAPS AT CORNERS AND INTERSECTIONS	3-10d BOX (3" x 0.128")	FACE NAIL
1" BRACE TO EACH STUD AND PLATE	3-8d BOX (2 ½" x 0.113")	FACE NAIL
1"x6" SHEATHING TO EACH BEARING	3-8d BOX (2 ½" x 0.113")	FACE NAIL
1"x8" SHEATHING TO EACH BEARING	3-8d BOX (2 ½" x 0.113") - FACE NAIL; WIDER THAN 1"x8" - 4-8d BOX (2 ½" x 0.113")	FACE NAIL
FLOOR		
JOIST TO SILL, TOP PLATE, OR GIRDER	4-8d BOX (2 ½" x 0.113")	TOE NAIL
RIM JOIST, BAND JOIST, OR BLOCKING TO SILL OR TOP PLATE (ROOF APPLICATIONS ALSO)	8d BOX (2 ½" x 0.113")	4" O.C. TOE NAIL
1" x 6" SUBFLOOR OR LESS TO EACH JOIST	3-8d BOX (2 ½" x 0.113")	FACE NAIL
2" SUBFLOOR TO JOIST OR GIRDER	3-16d BOX (3 ½" x 0.135")	BLIND AND FACE NAIL
2" PLANKS (PLAN & BEAM - FLOOR AND ROOF)	3-16d BOX (3 ½" x 0.135")	AT EACH BEARING, FACE NAIL
BAND OR RIM JOIST TO JOIST	3-16d COMMON (3 ½" x 0.162")	END NAIL
BUILT-UP GIRDERS AND BEAMS, 2-INCH LUMBER LAYERS	10d BOX (3" x 0.128")	24" O.C. FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES
LEDGER STRIP SUPPORTING JOISTS OR RAFTERS	4-16d BOX (3 ½" x 0.135")	AT EACH JOIST OR RAFTER, FACE NAIL
BRIDGING OR BLOCKING TO JOIST	2-10d BOX (3" x 0.128")	EACH END, TOENAIL

FASTNER SCHEDULE FOR STRUCTURAL MEMBERS			
DESCRIPTION OF BUILDING MATERIALS	DESCRIPTION OF FASTENER	EDGE SPACING (INCHES)	INTERMEDIATE SUPPORTS (INCHES)
<b>WOOD STRUCTURAL PANELS, SUBFLOOR, ROOF AND INTERIOR WALL SHEATHING TO FRAMING AND PARTICLEBOARD WALL SHEATHING TO FRAMING</b>			
¾" - ½"	8d COMMON (2" x 0.113") NAIL (SUBFLOOR, WALL) 8d COMMON NAIL (ROOF)	6	12
⅝" - 1"	8d COMMON NAIL (2½" x 0.131")	6	12
1½" - 1¼"	10d COMMON (3" x 0.148") NAIL OR 8d (2½" x 0.131") DEFORMED NAIL	6	12
<b>OTHER WALL SHEATHING</b>			
½" STRUCTURAL CELLULOSIC FIBERBOARD SHEATHING	1 ½" GALVANIZED ROOFING NAIL, ⅝" HEAD DIAMETER, OR 1 ½" LONG 16 GA. STAPLE WITH ⅝" OR 1" CROWN	3	6
⅝" STRUCTURAL CELLULOSIC FIBERBOARD SHEATHING	1 ½" GALVANIZED ROOFING NAIL, ⅝" HEAD DIAMETER, OR 1 ½" LONG 16 GA. STAPLE WITH ⅝" OR 1" CROWN	3	6
½" GYPSUM SHEATHING	1½" GALVANIZED ROOFING NAIL; STAPLE GALVANIZED, 1½" LONG; 1½" SCREWS, TYPE W OR S	7	7
¾" GYPSUM SHEATHING	1¾" GALVANIZED ROOFING NAIL; STAPLE GALVANIZED, 1¾" LONG; 1¾" SCREWS, TYPE W OR S	7	7
<b>WOOD STRUCTURAL PANELS, COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING</b>			
¾" AND LESS	6d DEFORMED (2" x 0.120") NAIL OR 8d COMMON (2½" x 0.131") NAIL	6	12
⅝" - 1"	8d COMMON (2½" x 0.131") NAIL OR 8d DEFORMED (2½" x 0.120") NAIL	6	12
1½" - 1¼"	10d COMMON (3" x 0.148") NAIL OR 8d DEFORMED (2½" x 0.120") NAIL	6	12

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

#### FOUNDATION NOTES

- 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
- THE FOUNDATION DESIGN SHALL COMPLY WITH THE ENFORCING JURISDICTION'S RESIDENTIAL FOUNDATION STANDARDS
- 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.
- 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.
- 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.
- 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
- 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)
- INTERIOR BEARING WALLS AND COLUMNS SHALL BE ISOLATED FROM THE BASEMENT FLOOR SLAB
- 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
- 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
- SILL PLATES SHALL BE ANCHORED TO THE FOUNDATION WALL WITH ½" 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
- 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

- ALL DIMENSIONAL LUMBER SHALL BE DOUGLAS-FIR-LARCH GRADE #2, UNLESS NOTED OTHERWISE ON PLANS
- ALL INTERIOR LOAD-BEARING AND EXTERIOR WALL HEADERS SHALL BE (2) #2 - 2x10's, UNLESS NOTED OTHERWISE ON PLANS
- BLOCK OVER BEAMS AND AT CANTILEVERS AND DOOR JAMBS
- INTERIOR NON-BEARING WALLS RESTING ON BASEMENT SLAB SHALL BE ISOLATED FROM ABOVE FRAMING BY A MINIMUM OF ½"
- ALL HEADERS/BEAMS SHALL BEAR ON A MINIMUM OF (2) 2x4 POSTS (KING AND JACK STUDS), UNLESS NOTED OTHERWISE
- 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.
- ALL WOOD MATERIAL SUPPORTED ON CONCRETE OR MASONRY SHALL BE TREATED OR OF DECAY-RESISTANT MATERIAL
- JOISTS UNDER BEARING PARTITIONS ON PLANS HAVE BEEN SIZED TO SUPPORT THE DESIGN LOAD.
- JOISTS FRAMING INTO THE FACE OF A STEEL OR WOOD BEAM SHALL BE SUPPORTED WITH APPROPRIATE COLD-FORMED STEEL JOIST HANGERS
- JOISTS FRAMED ON TOP OF STRUCTURAL MEMBER SHALL BE SUPPORTED AT EN DS BY FULL-DEPTH SOLID BLOCKING MIN. 1½" IN THICKNESS OR BY FASTENING RIM TO JOISTS PER FASTENING TABLE TO LEFT
- ALL WALL COVERINGS SHALL COMPLY WITH IRC SECTION R702.3
- ALL RAFTERS AND COLLAR TIES SHALL COMPLY WITH IRC SECTION R802.3.
- ALL RAFTERS SHALL HAVE 2x4 COLLAR TIES @ 4'-0" O.C. IN UPPER ⅓ OF VERTICAL DISTANCE BETWEEN CEILING AND ROOF
- BLOCKING BETWEEN JOISTS UNDER A LOAD-BEARING WALL IS NOT REQUIRED
- PER IRC SECTION 501.3, BOTTOM OF ALL FLOOR ASSEMBLIES ABOVE UNFINISHED AREAS SHALL BE PROVIDED WITH A ½" 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)
- ENGINEERED LVL's SHALL HAVE MINIMUM PROPERTIES OF Fb = 2600 psi, E=1900 ksi, AND Fv=285 psi
- ENGINEERED PARALLAMS SHALL HAVE MINIMUM PROPERTIES OF Fb = 2600 psi, E = 2000 ksi, AND Fv = 290 psi
- 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. ½" 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.
- 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.
- ALL ROOF SHEATHING SHALL BE ⅝" OSB WITH 8d COMMON NAILS @ 6" O.C. AT PANEL EDGES AND @ 12" O.C. IN FIELD

#### GLAZING NOTES

- 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 3'-0" OF THE FLOOR, WALLS ENCLOSEING STAIRWAYS AND LANDINGS WHERE THE GLAZING IS WITHIN 5'-0" OF THE TOP OR BOTTOM OF THE STAIR, ENCLOSURES FOR SPAS, TUBS, SHOWERS, AND WHIRLPOLS, 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

- 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 ¾" TO ½" OPENINGS. THE TOTAL FREE VENTILATING AREA SHALL NOT BE LESS THAN ⅓ 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

- 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.
- 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

- 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 1½", WITH NOT LESS THAN ¾" MORTAR OR GROUT COVER TO OUTSIDE FACE.
- 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 ⅞" CORRUGATED.
- 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.
- 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

- DOOR(S) BETWEEN THE GARAGE AND DWELLING SHALL BE MINIMUM 1½" SOLID CORE OR HONEY-COMBED STEEL DOOR WITH 20-MINUTE FIRE RATING EQUIPPED WITH A SELF-CLOSING DEVICE
- VEHICLE DOORS AND FRAMES SHALL BE DESIGNED AND INSTALLED TO MEET THE 115-MPH 3-SECOND GUST LOADING PER DASHA 108 AND ASTM E 330-96 PER IRC 2018

#### GARAGE NOTES (CONTINUED)

- THE GARAGE SHALL BE SEPARATED FROM THE DWELLING AND ITS ATTIC AREAS BY MINIMUM ¾" 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 ¾" 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 ¾" 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 2½" x 0.120" NAILS AT 7" O.C. STAGGERED WITH (7) 3½" 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)

USE	MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS (PSF)	
	LIVE LOAD	DEAD LOAD
UNINHABITABLE ATTICS WITHOUT STORAGE	10	10
UNINHABITABLE ATTICS WITH LIMITED STORAGE	20	10
HABITABLE ATTICS AND ATTICS SERVED WITH FIXED STAIRS	30	10
BALCONIES (EXTERIOR) AND DECKS	40	10 <sup>d</sup>
FIRE ESCAPES	40	10
GUARDRAILS AND HANDRAILS <sup>a</sup>	200 <sup>c</sup>	-
GUARDRAIL IN-FILL COMPONENTS <sup>b</sup>	50 <sup>c</sup>	-
PASSENGER VEHICLE GARAGES	50	DEPENDENT UPON SLAB CONSTRUCTION
ROOMS OTHER THAN SLEEPING ROOM	40	10 <sup>d</sup>
SLEEPING ROOM	30	10 <sup>d</sup>
STAIRS	40	10 <sup>d</sup>

- A single concentrated load applied in any direction at any point along the top.
- 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.
- 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 in-fill components. These loads shall be determined independently of one another, and loads are assumed not to occur with any other live load.
- An additional dead loading of 10 psf shall be applied where thinset 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

- 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)
- 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)	
CLIMATE ZONE	4-A
FENESTRATION U-FACTOR	0.35
SKYLIGHT U-FACTOR	0.55
GLAZED FENSTRATION SHGC	0.40
CEILING R-VALUE	49
WOOD FRAME WALL R-VALUE	15
MASS WALL R-VALUE	8 / 13
FLOOR R-VALUE	19
BASEMENT WALL R-VALUE	10-CONTINUOUS OR 13-CAVITY
SLAB R-VALUE AND DEPTH	10 AT 2'-0"
CRAWL SPACE WALL R-VALUE	10-CONTINUOUS OR 13-CAVITY
DUCTWORK EXPOSED TO OUTSIDE AIR R-VALUE	8
DUCTWORK NOT EXPOSED TO OUTSIDE AIR R-VALUE	6
CATHEDRAL VAULTED CEILING R-VALUE	38

#### DUCT SEALING

**N1103.2.2 (R403.2.2) 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:

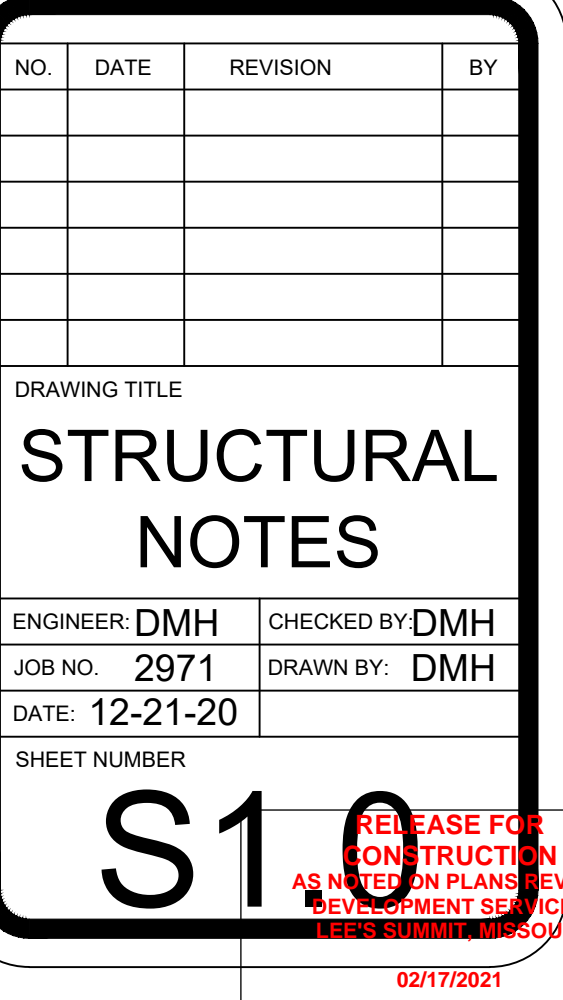
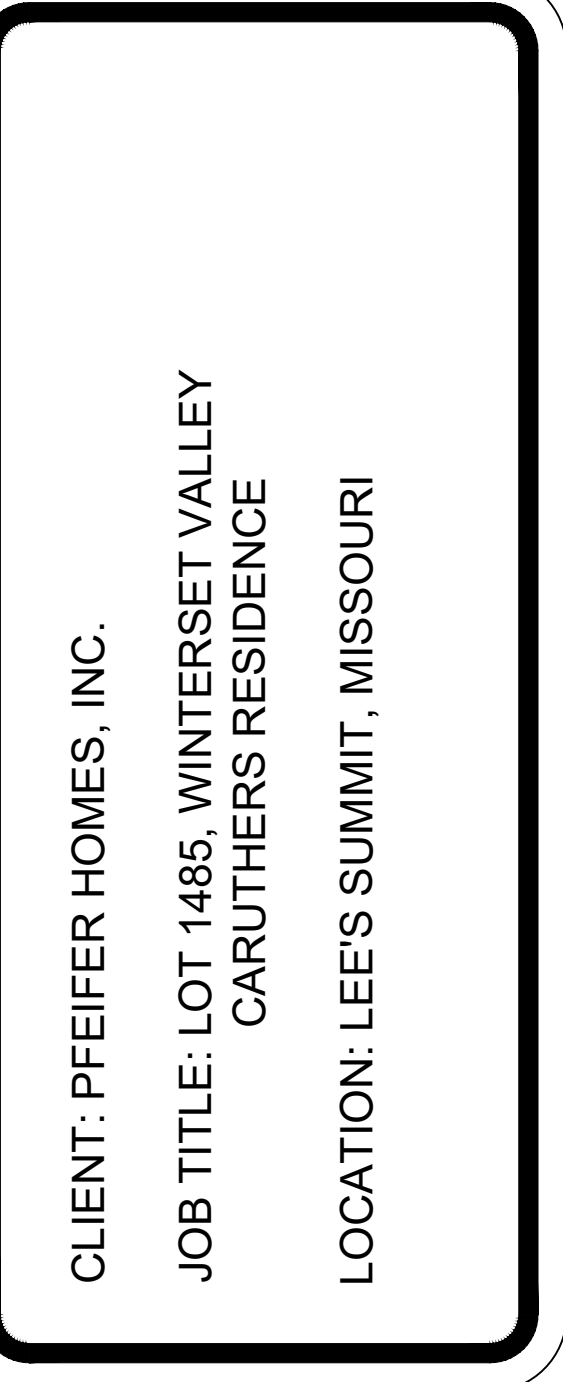
- AIR-IMPERMEABLE SPRAY FOAM PRODUCTS SHALL BE PERMITTED TO BE APPLIED WITHOUT ADDITIONAL JOINT SEALS.
- WHERE A DUCT CONNECTION IS MADE THAT IS PARTIALLY INACCESSIBLE, THREE SCREWS OR RIVETS SHALL BE EQUALLY SPACED ON THE EXPOSED PORTION OF THE JOINT SO AS TO PREVENT A HINGE EFFECT.
- CONTINUOUSLY WELDED 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:

- 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.
- 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			
FAN LOCATION	AIR FLOW RATE MINIMUM (CFM)	MINIMUM EFFICACY (CFM/WATT)	AIR FLOW RATE MAXIMUM (CFM)
RANGE HOODS	ANY	2.8	ANY
IN-LINE FAN	ANY	2.8	ANY
BATHROOM, UTILITY ROOM	10	1.4	90
BATHROOM, UTILITY ROOM	90	2.8	ANY



RELEASE FOR CONSTRUCTION  
AS NOTED ON PLANS PER NEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
02/17/2021



## RESIDENTIAL SEISMIC & WIND ANALYSIS

DETERMINE WEIGHT OF HOUSE:						INPUT	
LOCATION		DEAD LOAD (psf)		AREA (ft <sup>2</sup> )		CALCULATED VALUE	
						WEIGHT (lbs.)	
ROOF		10		2869		28690	
CEILING		10		2969		29690	
SECOND FLOOR		10		974		9740	
FIRST FLOOR		10		2969		29690	
		WALL LENGTH (ft)		WALL HEIGHT (ft)		WALL UNIT WT. (psf)	
SECOND FLOOR EXT. WALL DL		184.32		9		149232	
FIRST FLOOR EXT. WALL DL		271.66		10		27168	
				DEAD LOAD (psf)		AREA (ft <sup>2</sup> )	
SECOND FLOOR INT. PARTITION WALL DL				6		974	
FIRST FLOOR INT. PARTITION WALL DL				6		2969	
						WEIGHT (lbs)	
						149232	
						5844	
						17814	

PROJECTED AREAS (WIND DESIGN PER 115 MPH 3-SECOND GUST, EXPOSURE C AND MEAN ROOF HEIGHT <= 30 FT ASSUMED)						
FRONT-TO-BACK				SIDE-TO-SIDE		
	AREA	LOAD		SLOPED ROOF	AREA	LOAD
SLOPED ROOF	234	1991		SLOPED ROOF	482	4014
VERT. ROOF	97	1206	CUMULATIVE	VERT. ROOF	28	340
2ND	388.3	5058	8255	2ND	533.3	6693
1ST	647.13	8045	16300	1ST	847	10300
				PRESSURE (PSF) - PER ASCE CH. 6		
SLOPED ROOF		ZONE B	9.7	ZONE C		11.3
WALL/VERT. ROOF		ZONE A	14.2	ZONE D		7.7
MEAN ROOF HT., h			26			2a (FIG. 28.6-1, ASCE7)
						11.768

a) If there is a walkout wall to be sheathed, determine tributary wind area and enter here. If no walkout, enter 0 for area.  
 $q_{z10} = 0.00256 K_z K_{zt} K_d V^2$  (ASCE7-10 Velocity Pressure)       $q_{z10, ASD} = 0.6 q_{z10}$  (Design Velocity Pressure for ASD analysis under ASCE7-10 and IRC/IBC 2012)

2ND FLOOR TRIBUTARY WEIGHT  
1ST FLOOR TRIBUTARY WEIGHT  
 $S_S$  (SITE GROUND MOTION - %g - FROM ASCE7 SEISMIC MAP)  
 $F_a$  (from ASCE7 Table 11.4-1)  
 $S_{DS} (= 2/3 * S_S * F_a)$   
R (from ASCE7 Table 12.2-1)

66844.96  
103476.92  
12.0%  
1.6  
0.128  
6.5

SEISMIC SHEAR		
LOCATION	From ASCE7 (Eq. 12.8-1):	V (= 1.2 * S <sub>DS</sub> * W / R) (lbs.)
2ND FLOOR		1580
1ST FLOOR		2445

Sheathing Location	Min. Sheathing Schedule	Fastening Schedule	Allowable Shear (#/LF)	Code Reference
Exterior ( <a href="#">Option #3</a> )	7/16" APA Rated Plywood/OSB	1-1/2" 16gs. Staples w/ 1" penetration @ 4" O.C. Edges, 6" O.C. Field For 24" stud spacing, 12" O.C. Field for 16" stud spacing	155	per IRC, Table 2306.3(1)
Exterior ( <a href="#">Option #3</a> )	7/16" APA Rated Plywood/OSB	1-1/2" 16gs. Staples w/ 1" penetration @ 4" O.C. Edges, 6" O.C. Field For 24" stud spacing, 12" O.C. Field for 16" stud spacing	230	per IRC, Table 2306.3(1)
Exterior ( <a href="#">Option #3</a> )	7/16" APA Rated Plywood/OSB	1-1/2" 16gs. Staples w/ 1" penetration @ 3" O.C. Edges, 6" O.C. Field For 24" stud spacing, 12" O.C. Field for 16" stud spacing	310	per IRC, Table 2306.3(1)
Exterior ( <a href="#">Option #4</a> )	7/16" APA Rated Plywood/OSB or shiplap panel sheathing, or 3/8" shiplap panel sheathing with tighter nail spacing	8d Common Nails w/ 1-3/8" penetration @ 6" O.C. Edges, 12" O.C. Field for 7/16" APA-rated plywood/OSB or shiplap panel sheathing OR @ 4" O.C. Edges, 12" O.C. Field for 3/8" shiplap panel sheathing	220	AF&PA SDPWS Table 4.3A
Exterior ( <a href="#">Option #5</a> )	7/16" APA Rated Plywood/OSB or shiplap panel sheathing, or 3/8" shiplap panel sheathing with tighter nail spacing	8d Common Nails w/ 1-3/8" penetration @ 4" O.C. Edges, 12" O.C. Field for 7/16" APA-rated plywood/OSB or shiplap panel sheathing OR @ 3" O.C. Edges, 12" O.C. Field for 3/8" shiplap panel sheathing	320	AF&PA SDPWS Table 4.3A
Exterior ( <a href="#">Option #6</a> )	7/16" APA Rated Plywood/OSB or shiplap panel sheathing, or 3/8" shiplap panel sheathing with tighter nail spacing and double studs at each panel edge	8d Common Nails w/ 1-3/8" penetration @ 3" O.C. Edges, 12" O.C. Field	410	AF&PA SDPWS Table 4.3A
Interior	1/2" Gypsum Board	No. 6 - 1 1/4" Type W or S Screws @ 8" O.C. Edges, 12" O.C. Field	60	per IRC, Table 2306.4.4
Interior	16 Ga. Simpson/USP Type WB Steel X-Brace (or equal)	(3) 16d @ end studs & (1) 8d @ intermediate studs (per manufacturer specifications - see detail on sheet S3)	325	

EXTERIOR SHEATHING OPTION FOR SECOND FLOOR	4
EXTERIOR SHEATHING OPTION FOR FIRST FLOOR	4

WIDTH OF 1ST STORY (FT.)	58.83	WIDTH OF 2ND STORY (FT.)	38.83
DEPTH OF 1ST STORY (FT.)	77	DEPTH OF 2ND STORY (FT.)	53.33
BACK WALL OF GARAGE (FT.)	0		
GAR. WALL: 1=F-B, 2=S-S	2		

	EXTERIOR STRUCTURAL WALL LENGTHS (ft.) & RESISTANCES							
	SEISMIC				WIND			
	FRONT-TO-BACK	RESISTANCE (lbs.)	SIDE-TO-SIDE	RESISTANCE (lbs.)	FRONT-TO-BACK	RESISTANCE (lbs.)	SIDE-TO-SIDE	RESISTANCE (lbs.)
2ND FLOOR	42	11760	41	11480	42	16464	41	16072
1ST FLOOR	77	21560	55	15400	77	30184	55	21560

	ADDITIONAL RESISTANCE REQUIRED		Anchor Bolt Spacing (in.)		16d Nail Spacing req'd at bottom plate (in.)	
	SEISMIC	WIND	diameter (in.)		2nd Floor F-B	
2ND FLOOR FRONT-TO-BACK	0	0	Shear value (per NDS)	944	2nd Floor S-S	29
2ND FLOOR SIDE-TO-SIDE	0	0	Spacing F-B (inches)	171.2	1st Floor F-B	26
1ST FLOOR FRONT-TO-BACK	0	0	spacing S-S (inches)	99.9	1st Floor S-S	15
1ST FLOOR SIDE-TO-SIDE	0	0				

RESISTANCE REQUIRED IN ADDITION TO RESISTANCE PROVIDED BY EXTERIOR WALLS**							
	ADDITIONAL RESISTANCE REQUIRED (POUNDS)	PORTAL FRAMES OR PERF. SHEAR WALL RESISTANCE	INTERIOR X-BRACES (325#/BRACE)	INTERIOR WALL LENGTH W/ 1/2" GYPSUM BOARD PER TABLE (FT.)	INT. WALL LENGTH SHEATHED W/ OSB (TOTAL LENGTH, ONE SIDE, FT.)	RESISTANCE PROVIDED BY ADDITIONAL METHODS (POUNDS)	OK?
2ND FLOOR FRONT-TO-BACK	0					0	YES
2ND FLOOR SIDE-TO-SIDE	0					0	YES
1ST FLOOR FRONT-TO-BACK	0					0	YES
1ST FLOOR SIDE-TO-SIDE	0					0	YES

\*NOTES: 1) SEE ATTACHED CALCULATIONS FOR PORTAL FRAME OR PERFORATED SHEAR WALL RESISTANCE CAPACITIES (IF APPLICABLE),  
2) SEE SHEET S1 FOR INTERIOR STEEL X-BRACE INSTALLATION, 3) INTERIOR WALLS SHEATHED WITH OSB SHALL BE ATTACHED WITH SAME STAPLE/NAILING  
PATTERN AS EXTERIOR OSB ON SAME FLOOR (SEE TABLE ABOVE) AND ARE ONLY APPLICABLE FOR FULL-HEIGHT SECTIONS OF 2'-8" OR LONGER

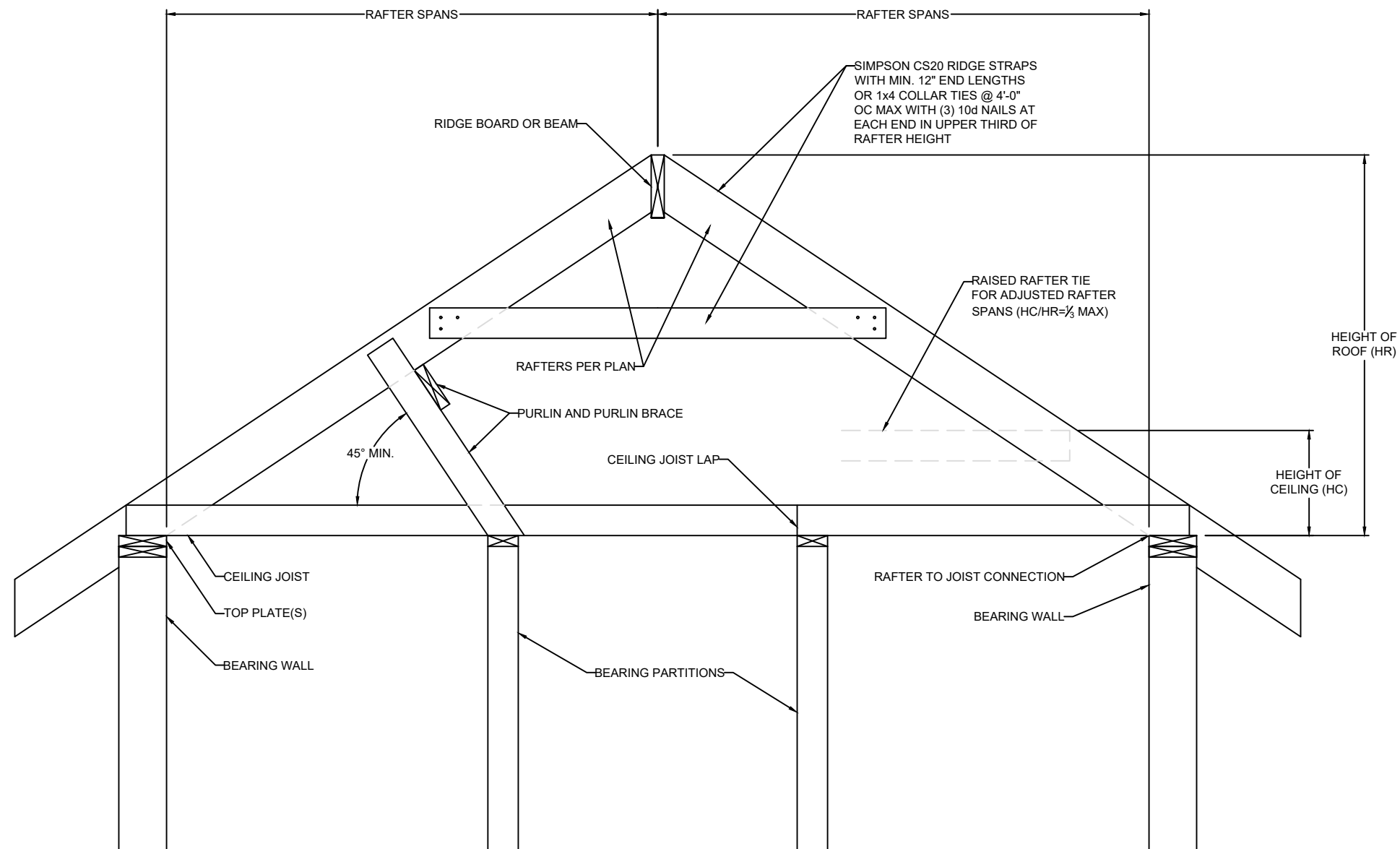
ALL LATERAL BRACING ACHIEVED AT EXTERIOR WALLS AND WALLS DIRECTLY ON FOUNDATIONS; THEREFORE, NO INTERIOR BRACING PER 2012 IRC SECTION R502.2.1 IS REQUIRED

WIND UPLIFT ANALYSIS									
	X/12	DEGREES							
ROOF PITCH (MAX)	8	33.7	PITCH OF 6 OR LESS: EOH -13.3, E- 7.2, G- 5.2						
	ASCE 7								
	LENGTH (FT.)	PRESSURE (PSF)	LINEAL FT. OF OH	UPLIFT PER FT* (LBS)					
OVERHANG		-1.08	273.66	-1.08					
	TOTAL AREA (FT²)	ZONE A AREA (FT²)	ZONE G AREA (FT²)	PRESSURE ZN E (PSF)	PRESSURE ZN G (PSF)	TOTAL FORCE (LBS)	FORCE PER LINEAL FT. @ PERIMETER (LBS)		
MAIN ROOF**	4529.91	1614.954096	2914.959904	-1.08	-0.36	-2794	-10.3		
*ALONG PERIMETER		TOTAL UPLIFT PER LINEAL FOOT ALONG EDGES (POUNDS)				-11.4	UPLIFT OK		
**INSIDE EXTERIOR WALLS		RESISTANCE DUE TO DEAD WEIGHT & (3) 19d TOENAILS				251.6			

**NOTE FOR CONSTRUCTION:**  
THE CONTINUOUS STRUCTURAL PANEL SHEATHING BRACING METHOD REQUIRES USE OF THE ABOVE TABLE FOR SHEATHING OF THE ENTIRE STRUCTURE. IN ADDITION, FRAMING MEMBERS SHALL BE @ 16" O.C. MAX., UNBLOCKED, AND W/ SHEATHING APPLIED DIRECTLY TO FRAMING MEMBERS

**NOTE FOR DESIGN:**  
ALL WALLS USED IN THE CALCULATION OF THE RESISTANCE FOR THIS STRUCTURE SHALL HAVE A MINIMUM UNINTERRUPTED HEIGHT OF 8'-0" AND LENGTH OF 2'-8". ALLOWABLE RESISTANCES HAVE BEEN #/FT AND INCREASED BY 40% FOR WIND LOADS, PER VALUES IN 2012 IBC SECTION 2306 AND AF&PA SDPWS TABLE 4.3A. FOR EXAMPLE, 7/16" APA-RATED SHEATHING WITH 84 @ 6" & 12" HAS A SEISMIC SHEAR VALUE OF 240 A WIND SHEAR VALUE OF 335#/FT - 40% GREATER THAN THAT OF SEISMIC)

**NOTE: SOIL SITE CLASS ASSUMED TO BE CLASS D. IF SITE CONDITIONS ARE DETERMINED TO BE CLASS E OR F, CONSULT ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION**



1 BRACED RAFTER CONSTRUCTION  
S1.1 SCALE: 1" = 1'-0" (18x24) OR 1/2" = 1'-0" (24x36)

### Combustion Air Calculation

Per 2012 IRC Section G2407.5

Appliance #1	Furnace	100000 BTU/h
Appliance #2		BTU/h
Appliance #3	Water Heater	50000 BTU/h

Total BTU/hr 150000 BTU/h

Area of Combined Space (floor where appliances are located)	1227 ft <sup>2</sup>
Ceiling Height in Usable Space	8.5 ft

Note: Per 2012 IRC Section G2407.5.3.2, The volumes of spaces in different stories shall be considered as communicating spaces where such spaces are connected by one or more openings in doors or floors having a total minimum free area of 2 square inches per 1,000 BTU/h of total input rating of all appliances

Is floor where appliances are located open to adjacent level?	Yes
If Yes, what is the area of open space adjacent to appliance area?	0

Per 2012 IRC Section G2407.5.1 (Standard Method), the minimum required volume shall be 50 cubic feet per 1,000 BTU/hr  
(Total BTU/hr / 1,000 BTU/hr x 50 ft<sup>3</sup>)

Required air space in combined areas:	7500 ft <sup>3</sup>
---------------------------------------	----------------------

Required combined area:	882 ft <sup>2</sup>
-------------------------	---------------------

Area of Combined Space > Required combined area? OK

Per Section G2407.5.3.1, each opening shall have a minimum free area of 1 square inch per 1,000 BTU/hr of the total input rating of all appliances in the space, but not less than 100 square inches. One opening shall commence within 12 inches of the top and one opening shall commence within 12 inches of the bottom of the enclosure. The minimum dimension of air openings shall be not less than 3 inches.

Minimum required opening area: 150 in<sup>2</sup>  
 Minimum grill size: 14 x 11 (inches)  
 Note: two grills required - one within 12" of floor, one within 12" of clg.

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CLIENT: PFEIFER HOMES, INC.  
JOB TITLE: LOT 1485, WINTERSET VALLEY  
CARUTHERS RESIDENCE  
LOCATION: LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI  
DENNIS HEIER  
NUMBER  
PE-201000177  
PROFESSIONAL ENGINEER  
12-2-2020

NO.	DATE	REVISION	BY

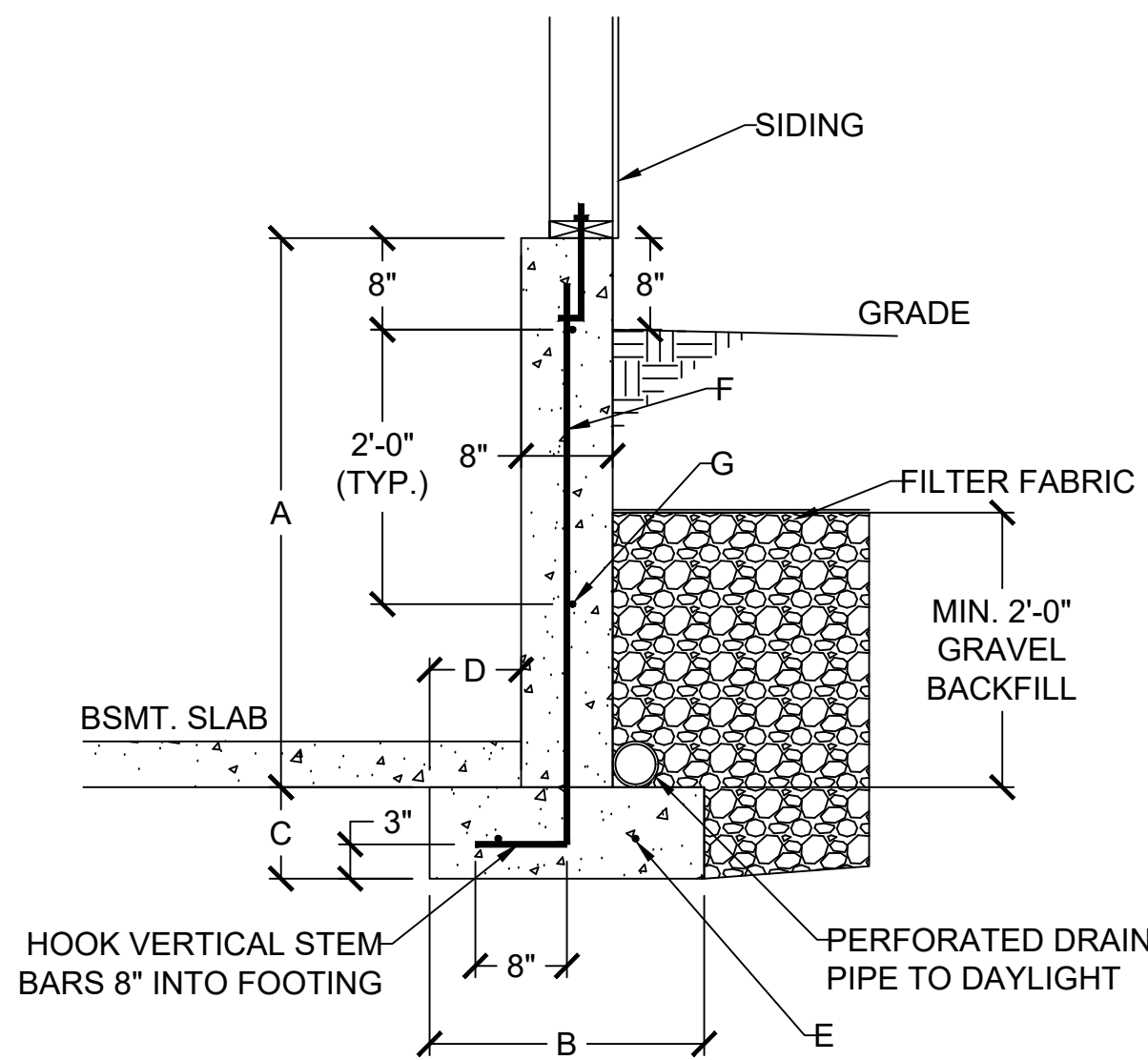
DRAWING TITLE  
**STRUCTURAL CALCULATIONS**

ENGINEER: DMH	CHECKED BY: DMH
JOB NO.: 2971	DRAWN BY: DMH
DATE: 12-21-20	

SHEET NUMBER  
S1

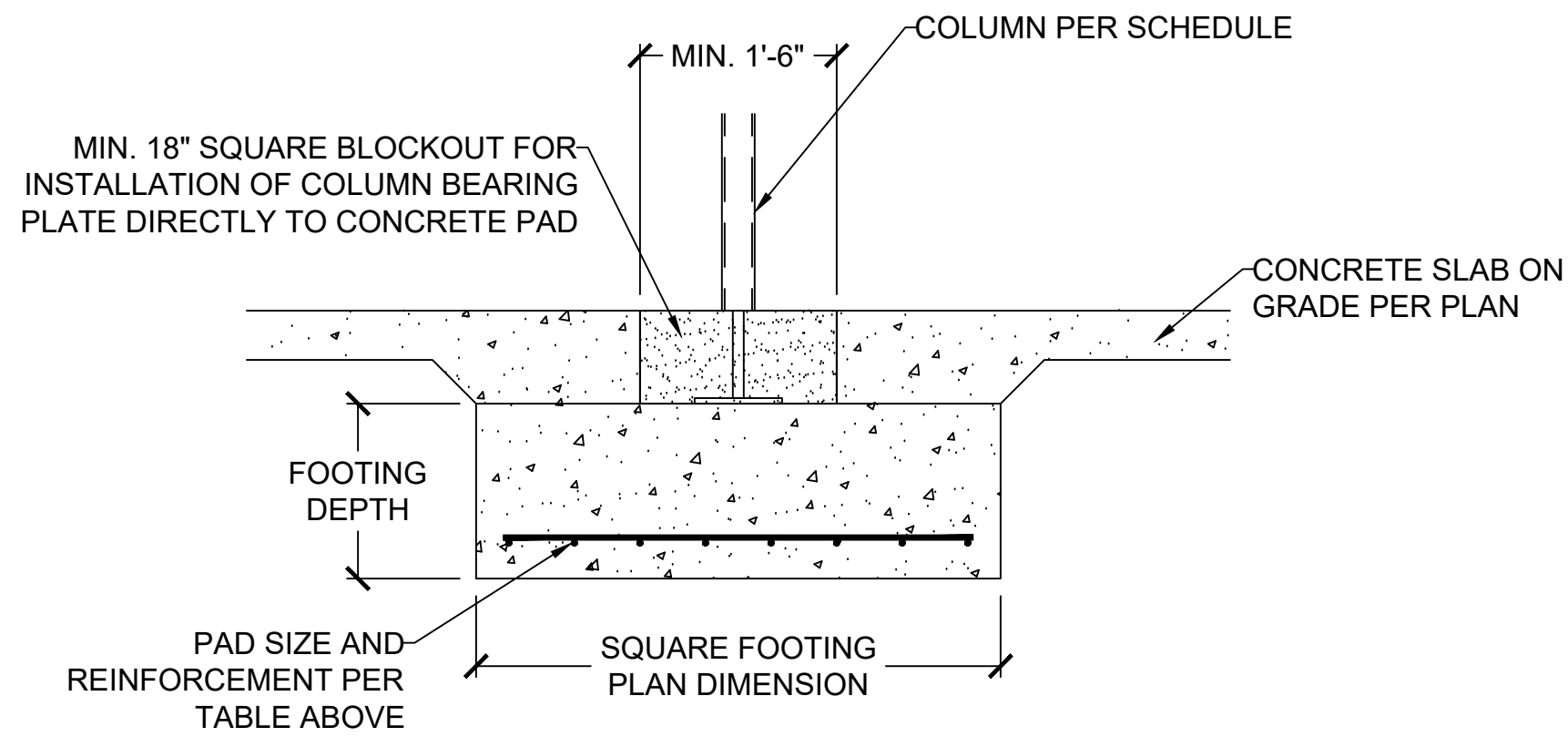
**PLEASE FOR CONSTRUCTION AS NOTED ON PLANS DEVELOPMENT SERVICE DELIVER SHOWN TO SOW**



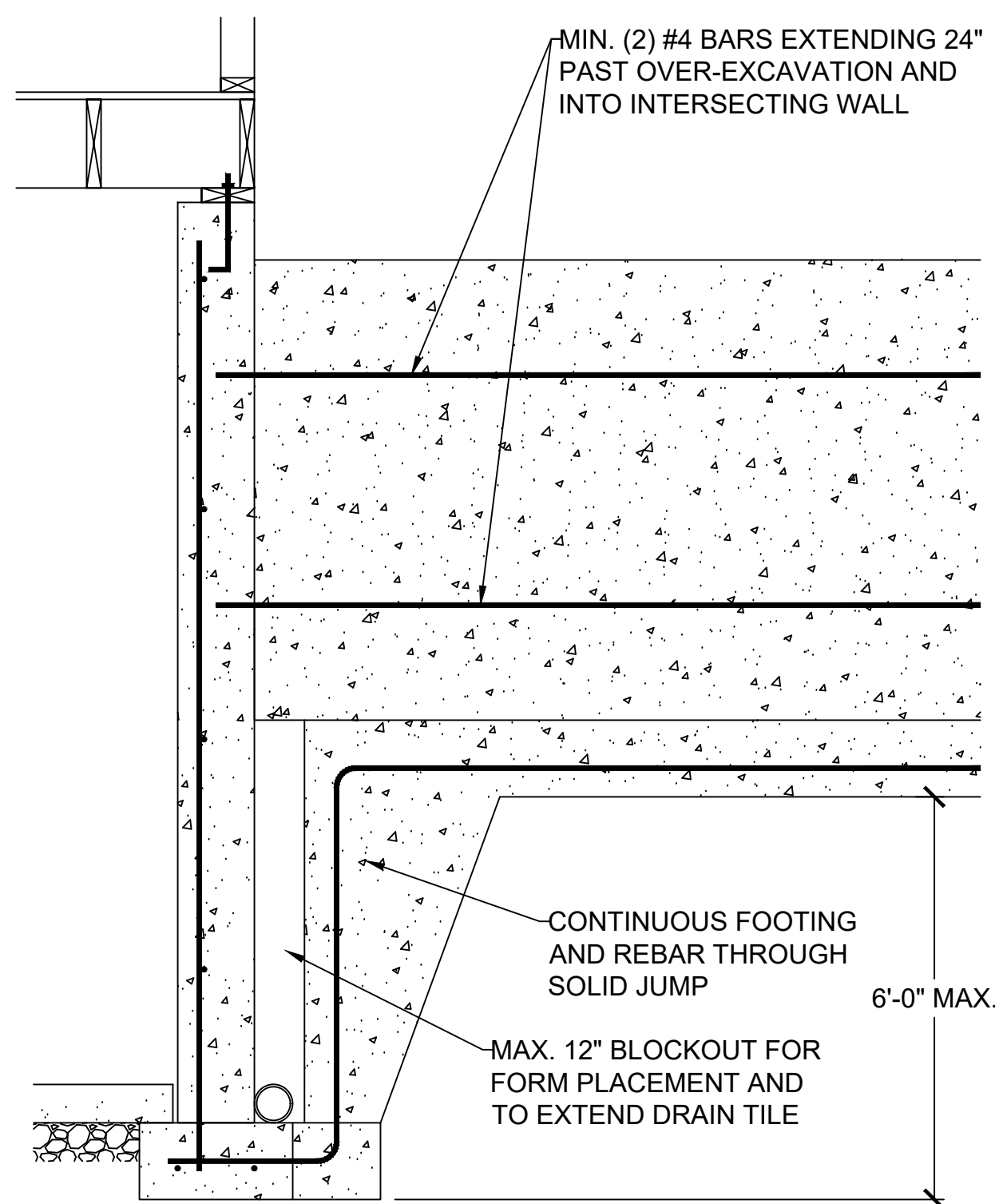


DAYLIGHT BASEMENT WALL SCHEDULE						
A	B	C	D	E	F	G
4'-0"	1'-6"	0'-8"	0'-5"	(2) #4	#4 VERT. @ 12" O.C.	(2) #4 HORIZ.
5'-0"	2'-0"	0'-8"	0'-7"	(2) #4	#4 VERT. @ 12" O.C.	(3) #4 HORIZ.
6'-0"	2'-6"	0'-8"	0'-10"	(3) #4	#4 VERT. @ 12" O.C.	(3) #4 HORIZ.

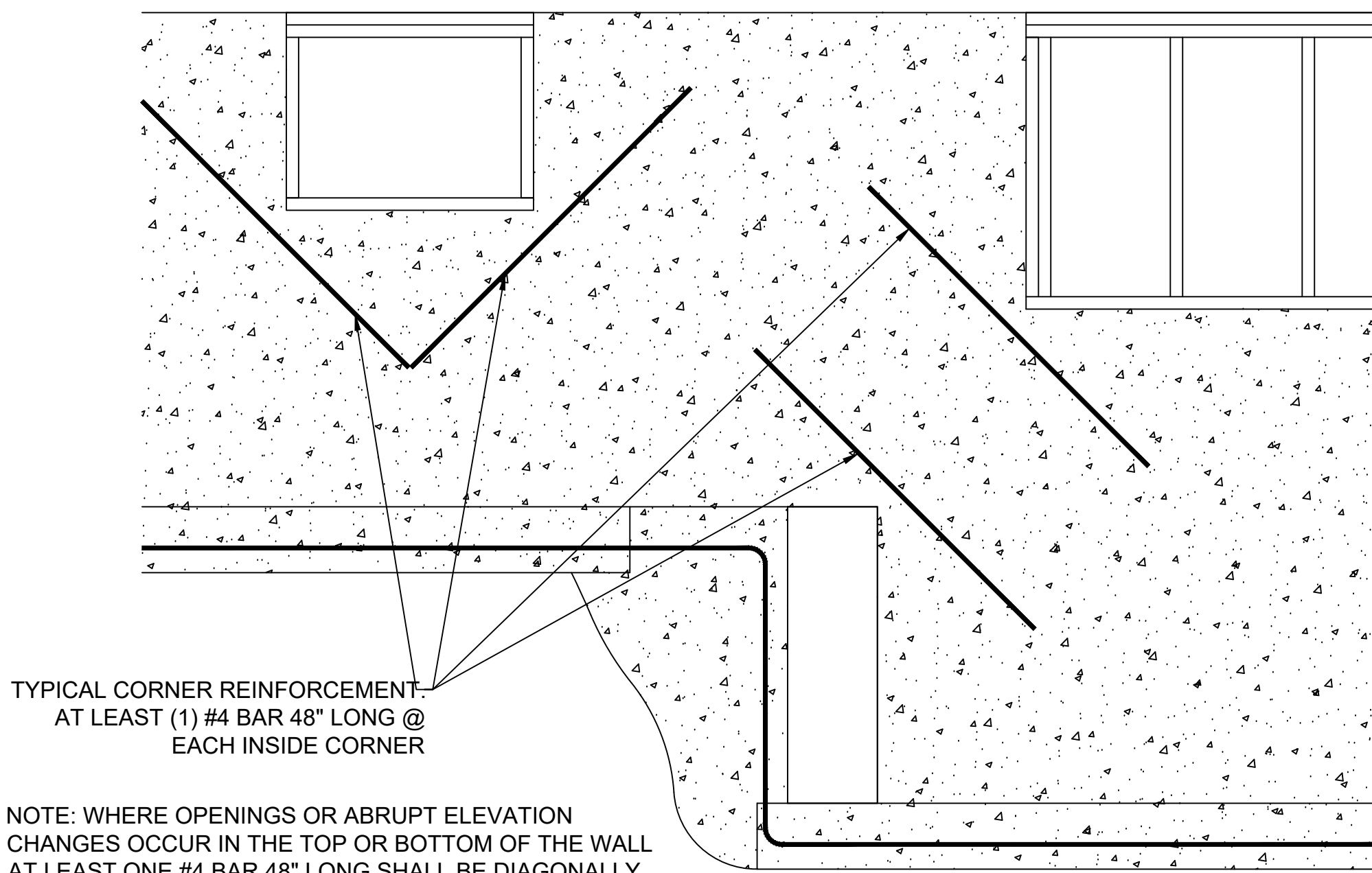
1 DAYLIGHT WALL CONSTRUCTION  
S2.0 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)



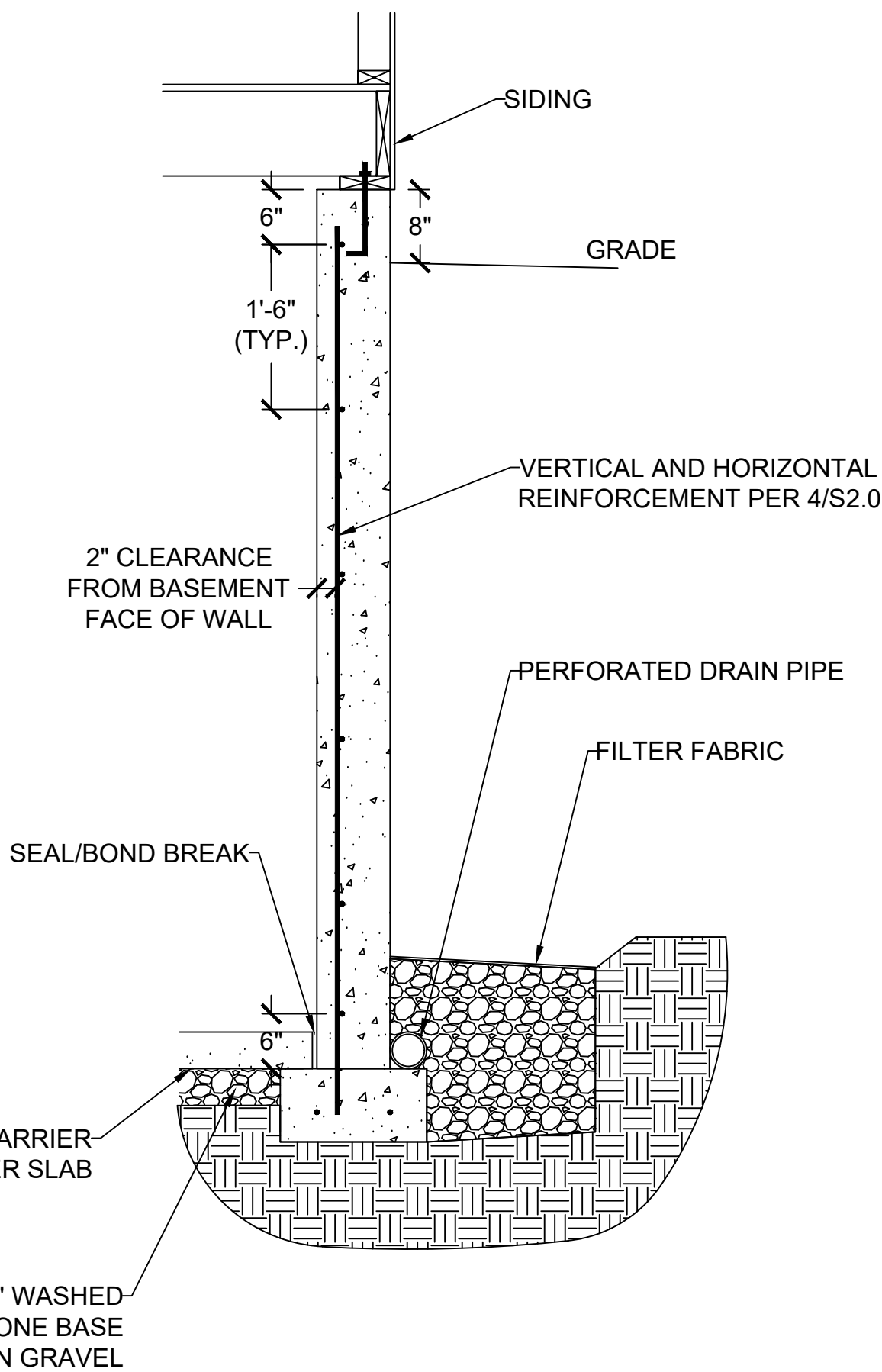
2 COLUMN AND BEARING PAD SCHEDULE  
S2.0 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)



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)



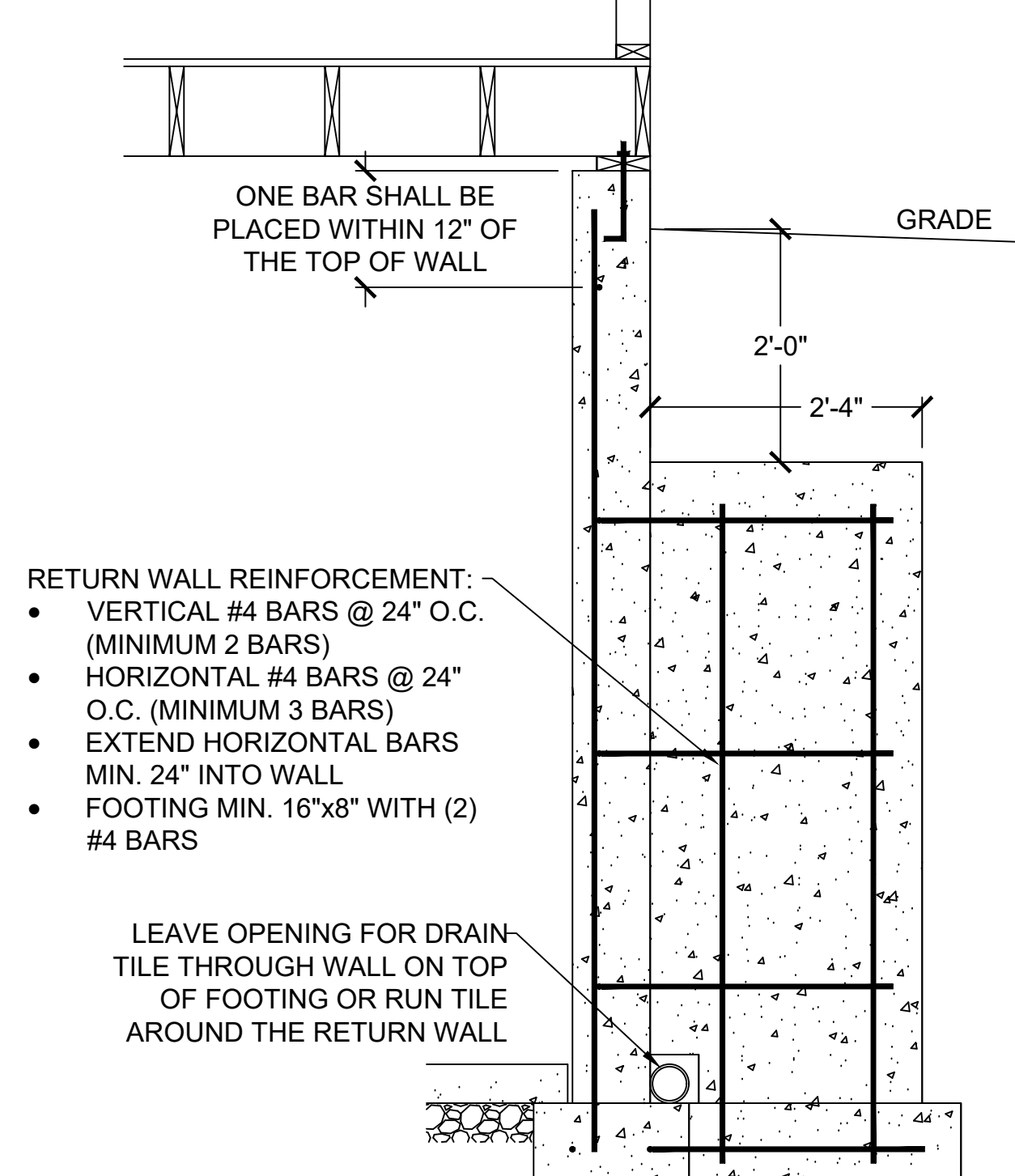
3 CONCRETE WALL SECTION  
S2.0 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)

VERTICAL REINFORCEMENT SPACING						
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

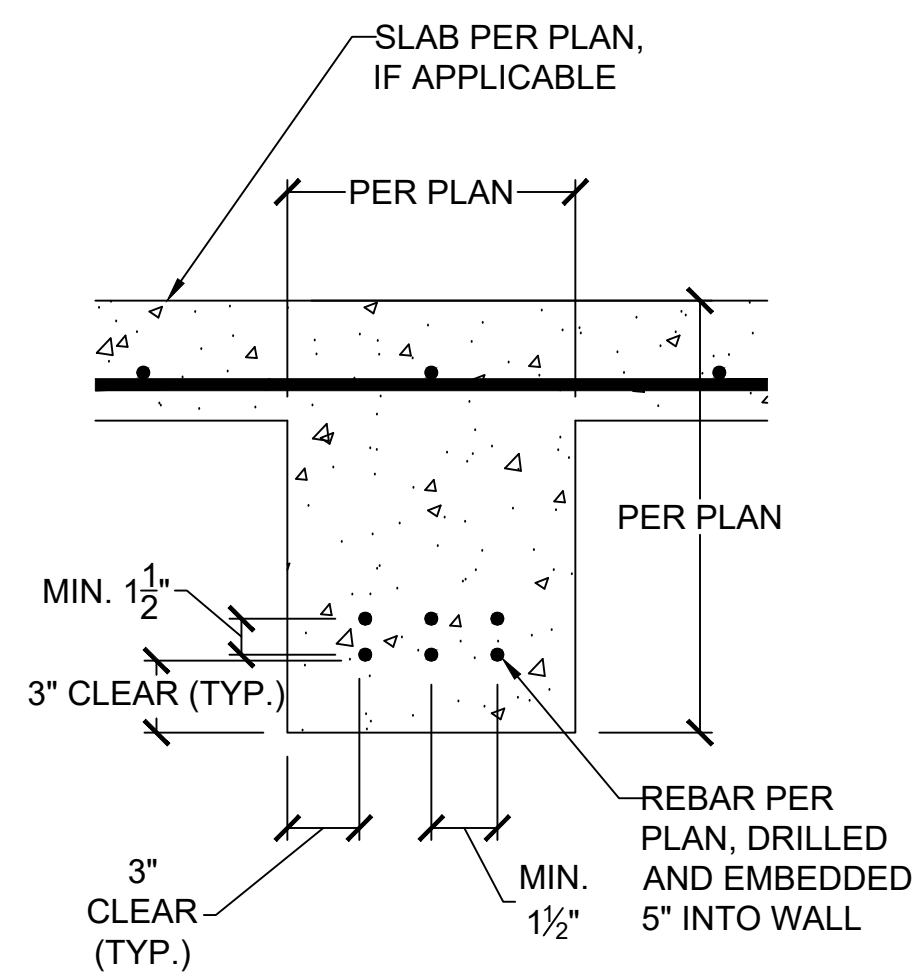
- FOOTNOTES:
- WALL HEIGHT IS MEASURED FROM THE TOP OF THE WALL TO THE TOP OF THE FLOOR SLAB
  - VERTICAL REINFORCEMENT FOR CONCRETE WALLS THAT ARE NOT FULL HEIGHT, AND FOR REINFORCEMENT SPACING 24" OC, REINFORCEMENT MAY BE PLACED IN THE MIDDLE OF THE WALL. OTHER WALLS SHALL HAVE VERTICAL REINFORCEMENT AS FOLLOWS:
    - 8" WALL - MINIMUM 5" FROM THE OUTSIDE FACE
    - 10" WALL - MINIMUM 6 1/4" FROM THE OUTSIDE FACE
    - EXTEND BARS TO WITHIN 8" OF THE TOP OF THE WALL
  - REINFORCEMENT CLEARANCES:
    - CONCRETE EXPOSED TO EARTH - MINIMUM 1 1/2"
    - NOT EXPOSED TO WEATHER (INTERIOR SIDE OF WALLS) - 3/4"
    - CONCRETE EXPOSED TO WEATHER (TOP CLEARANCE IN GARAGE AND DRIVEWAY SLABS) - 1 1/2"
  - HORIZONTAL REINFORCEMENT:
    - ONE BAR SHALL BE PLACED WITHIN 12" OF THE TOP OF THE WALL
    - OTHER BARS SHALL BE EQUALLY SPACED WITH SPACING NOT TO EXCEED 24" OC
    - HORIZONTAL BARS SHOULD BE AS CLOSE TO THE TENSION FACE AS POSSIBLE (INTERIOR) AND BEHIND THE VERTICAL REINFORCEMENT (I.E. 2" TOWARD THE INSIDE)
    - 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.
  - REINFORCEMENT SHALL BE LAPPED A MINIMUM 24" AT ENDS, SPLICES, AND AROUND CORNERS.
  - AT MASONRY LEDGES THE MINIMUM WALL THICKNESS SHALL BE 3 1/2". LEDGES SHALL NOT EXCEED A DEPTH OF MORE THAN 24" BELOW THE TOP OF THE WALL. FOR WALL THICKNESSES LESS THAN 4" PROVIDE #4 BARS AT MAX. 24" OC TO WITHIN 8" OF THE TOP OF THE WALL.
  - 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
  - WALL SHALL NOT BE BACKFILLED UNTIL FLOOR SYSTEM AND DIAPHRAGM ARE IN PLACE

4 FOUNDATION WALL REINFORCEMENT TABLE  
S2.0 NO SCALE

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



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



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



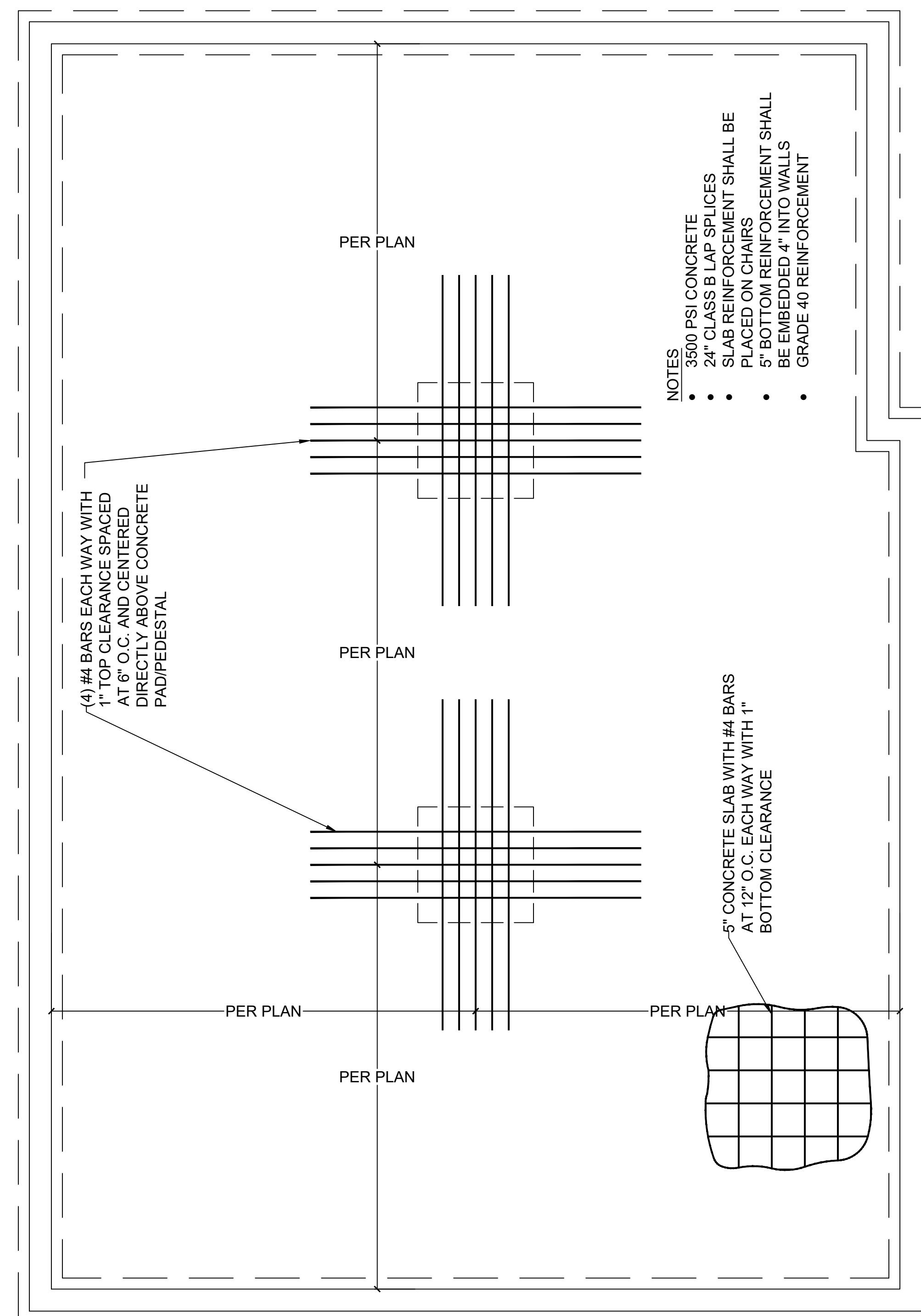
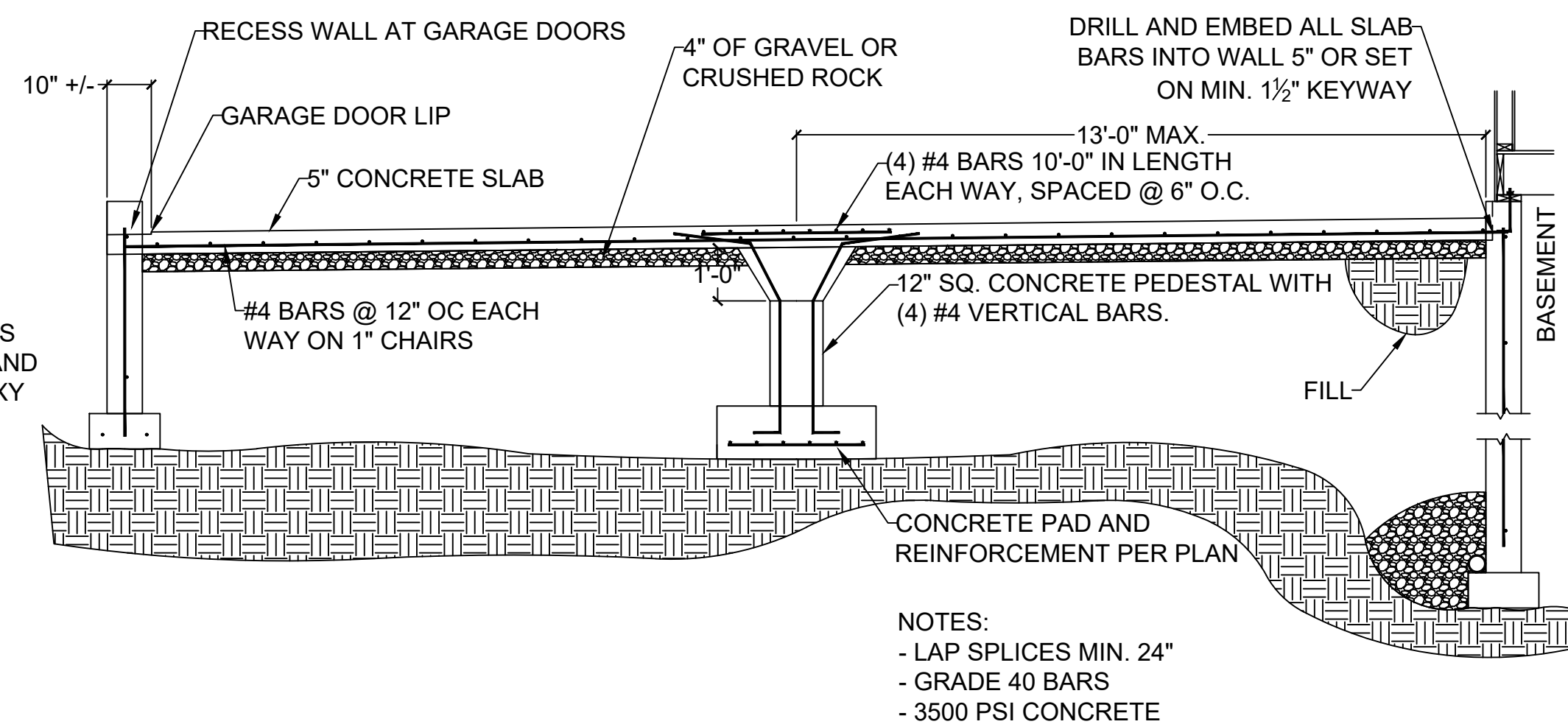
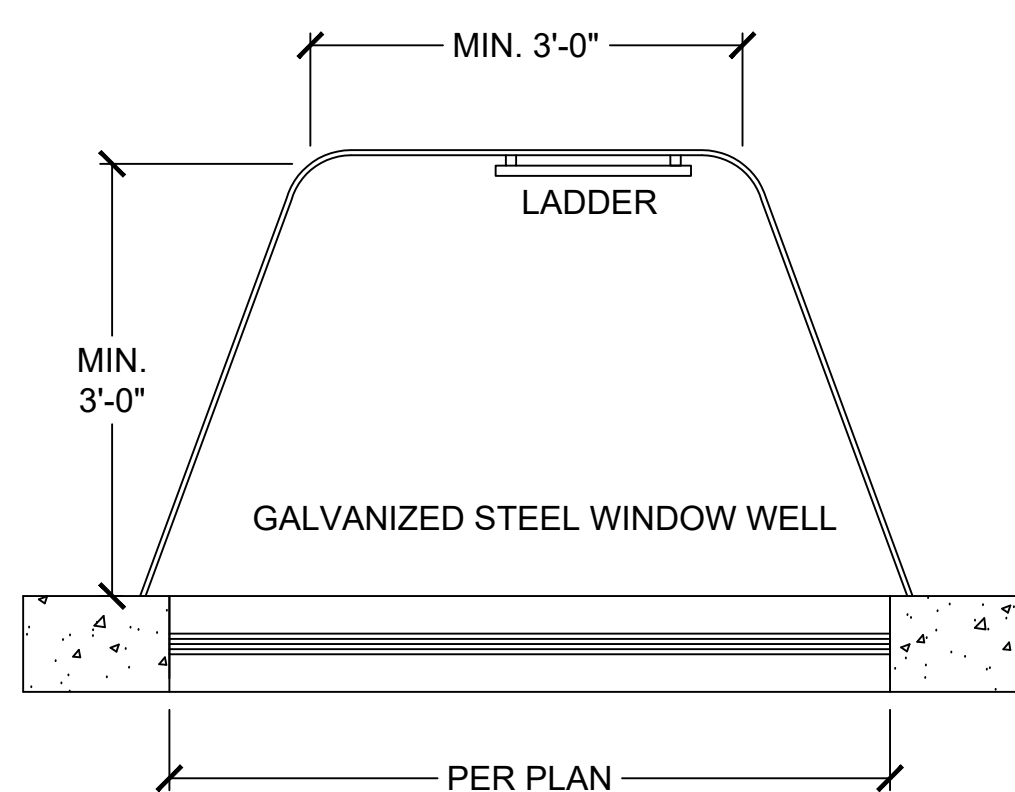
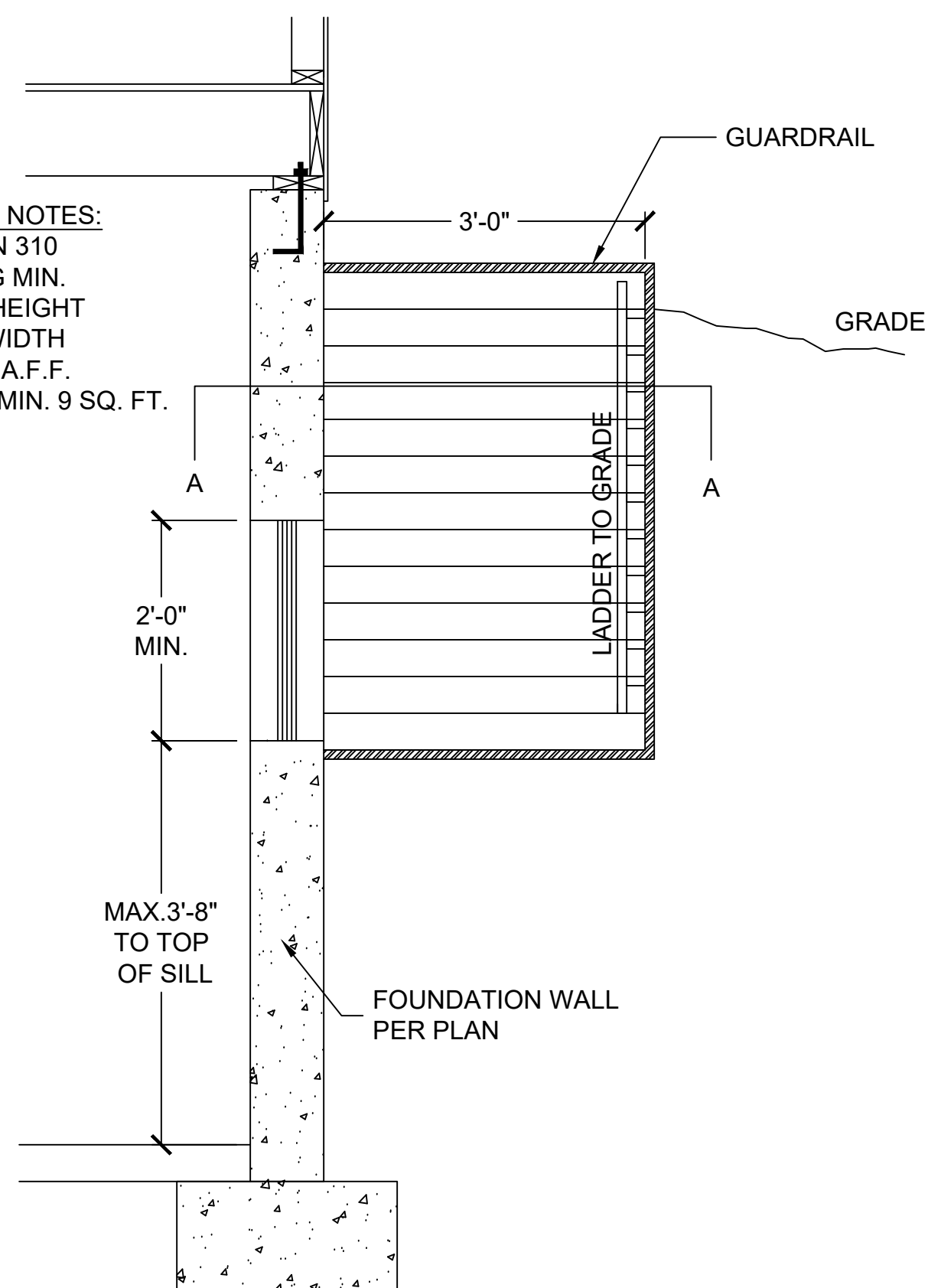
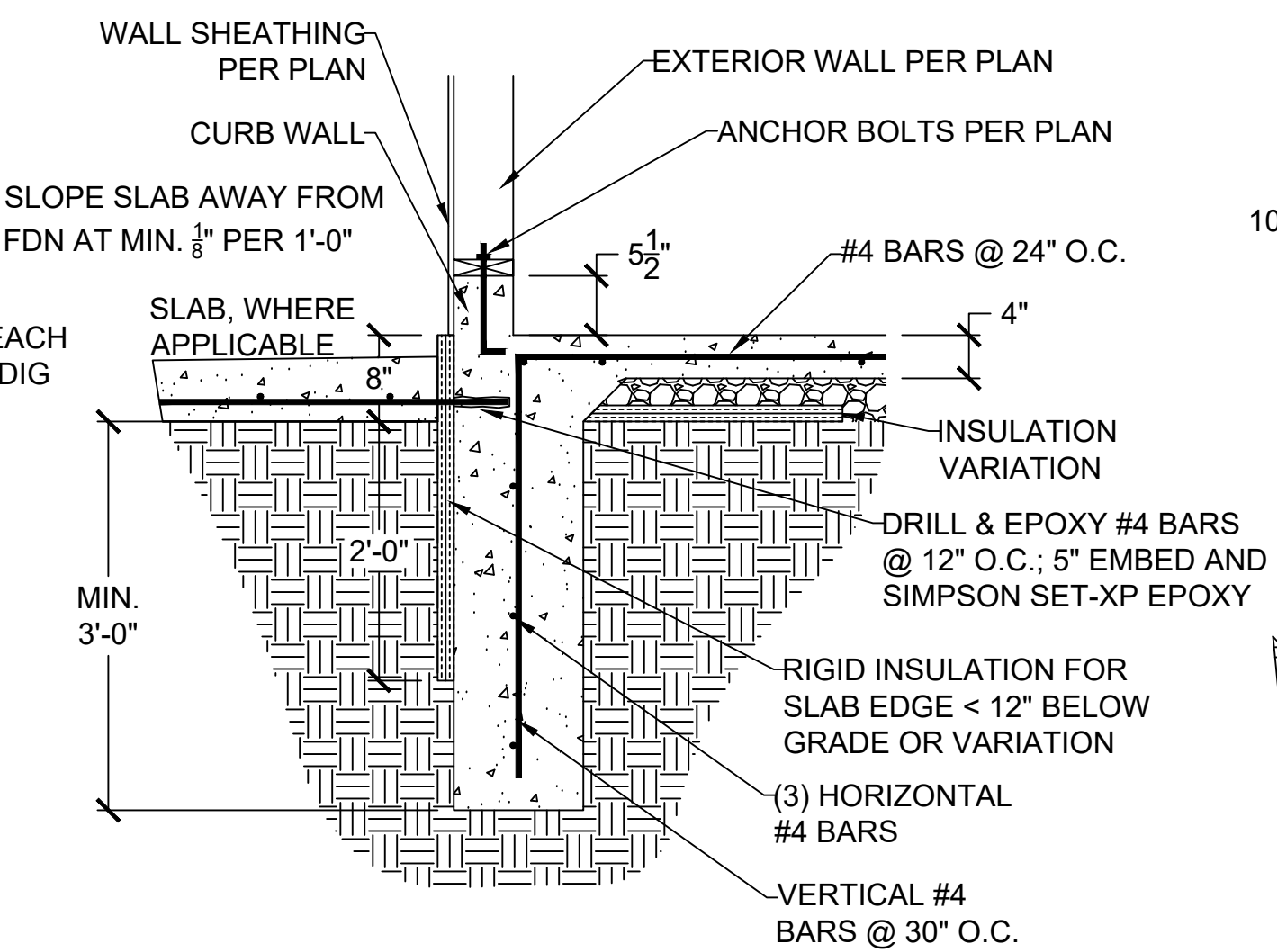
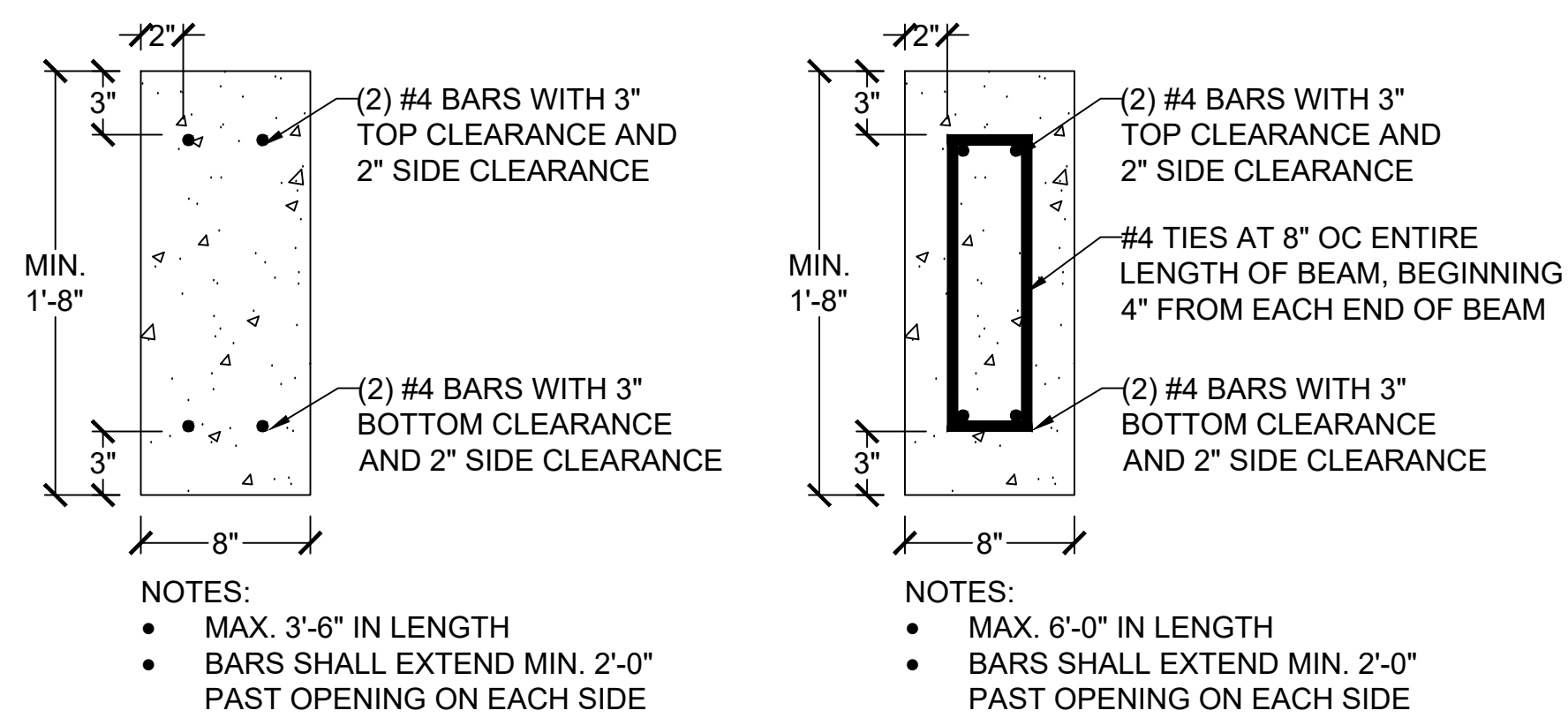
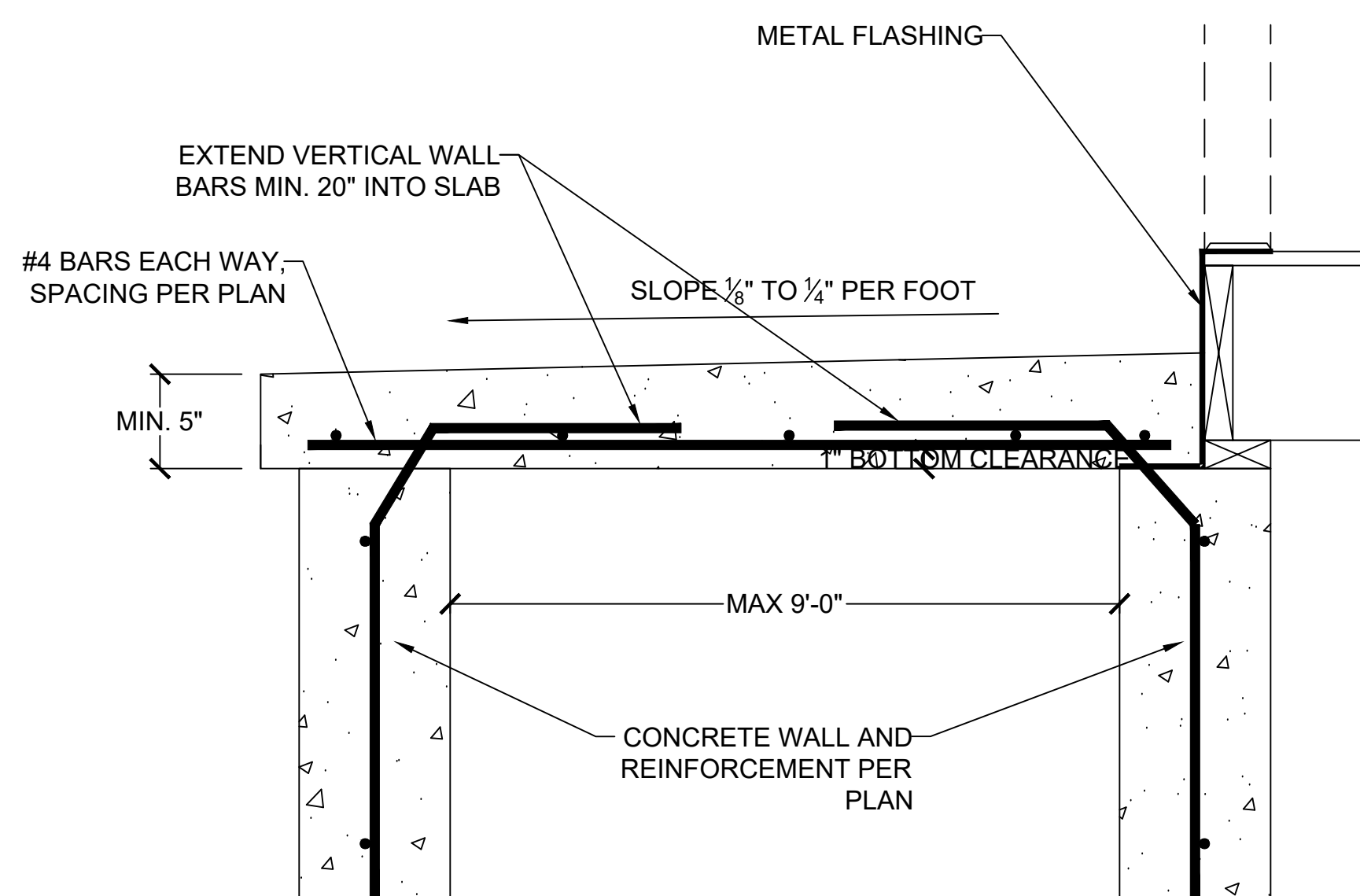
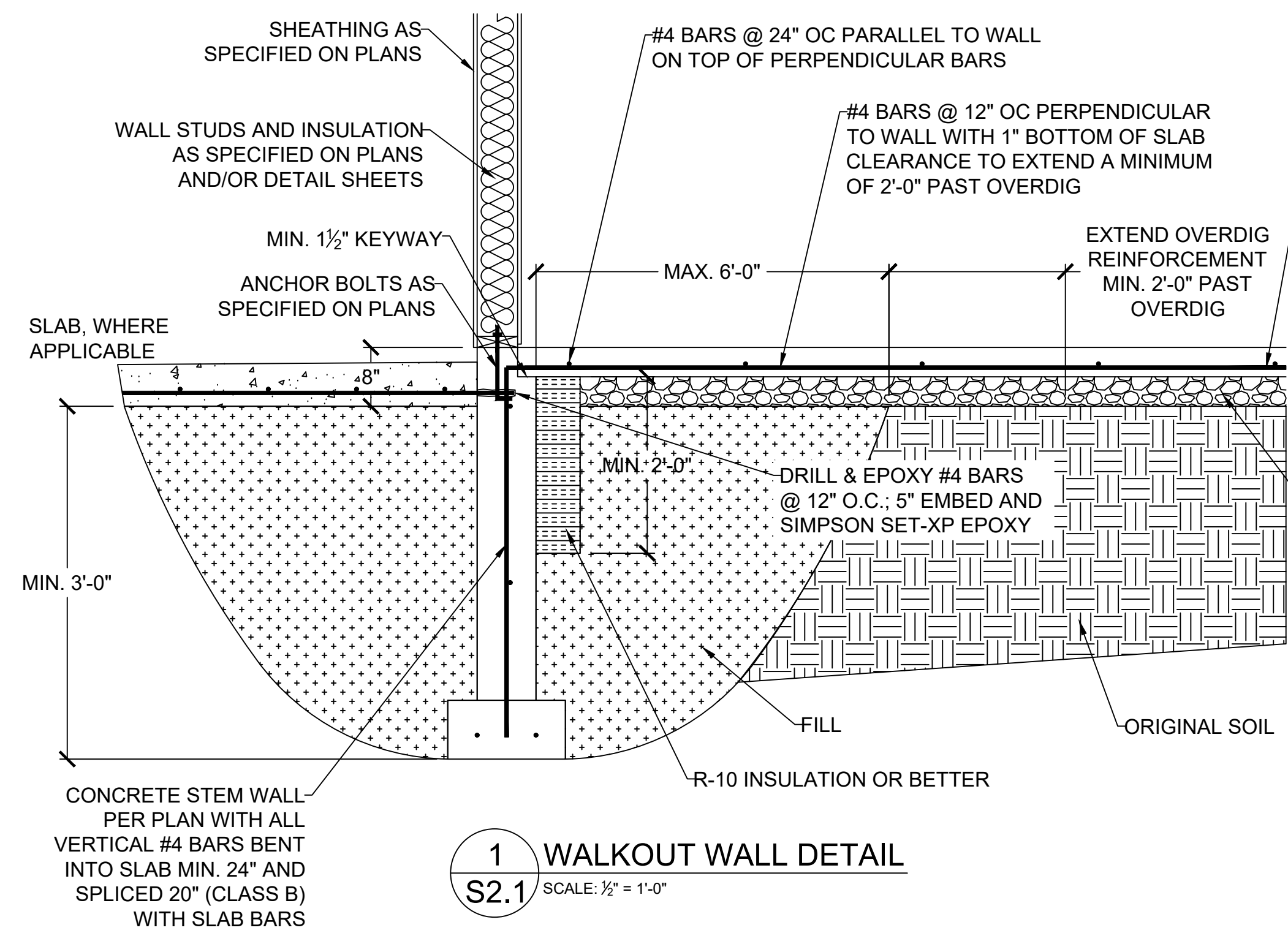
CLIENT: PFEIFER HOMES, INC.  
JOB TITLE: LOT 1485, WINTERSET VALLEY  
CARUTHERS RESIDENCE  
LOCATION: LEE'S SUMMIT, MISSOURI



NO.	DATE	REVISION	BY
DRAWING TITLE			
FOUNDATION DETAILS			
ENGINEER: DMH		CHECKED BY: DMH	
JOB NO. 2971		DRAWN BY: DMH	
DATE: 12-21-20			
SHEET NUMBER			

S2.0 RELEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI 02/17/2021

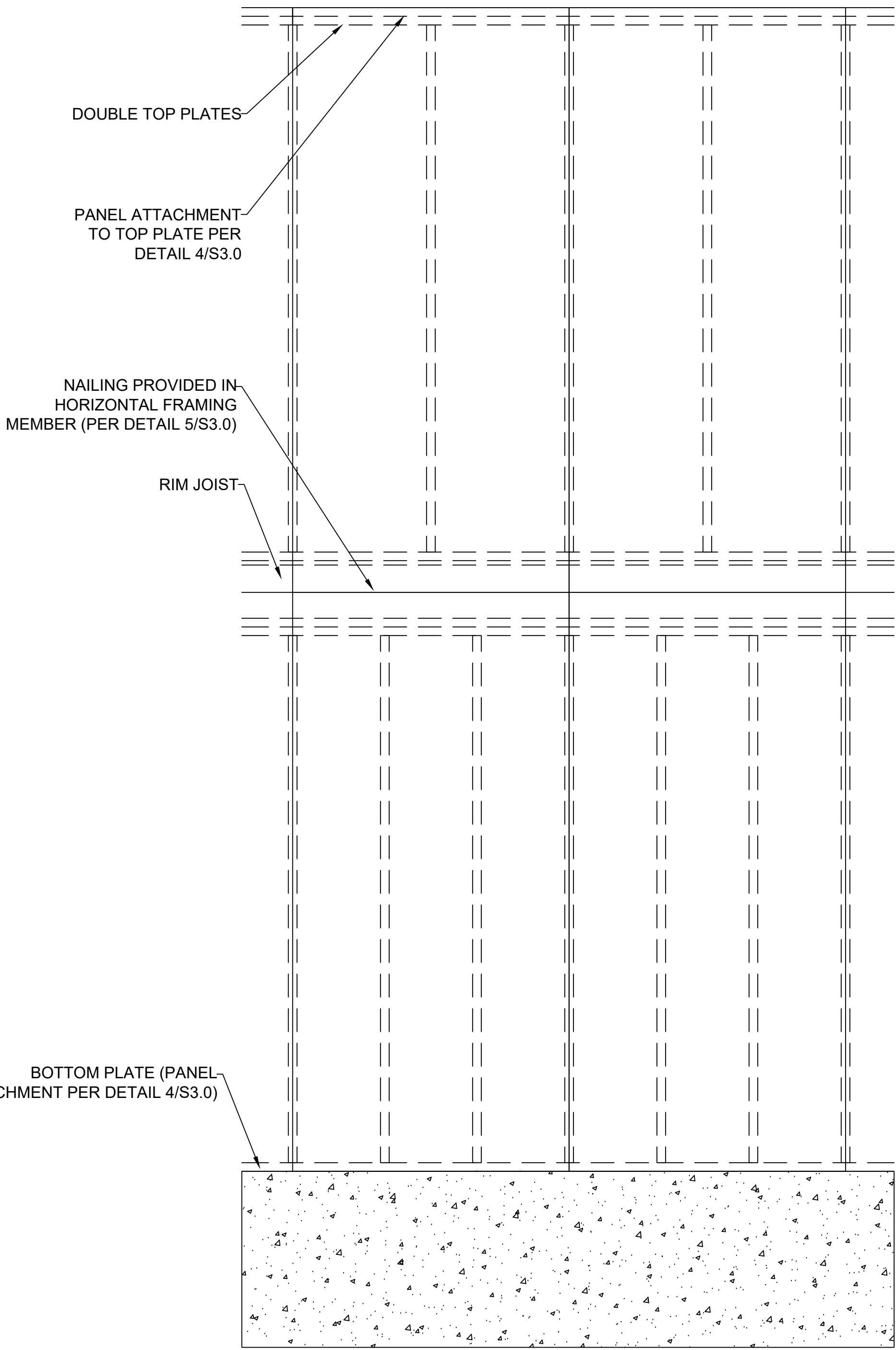






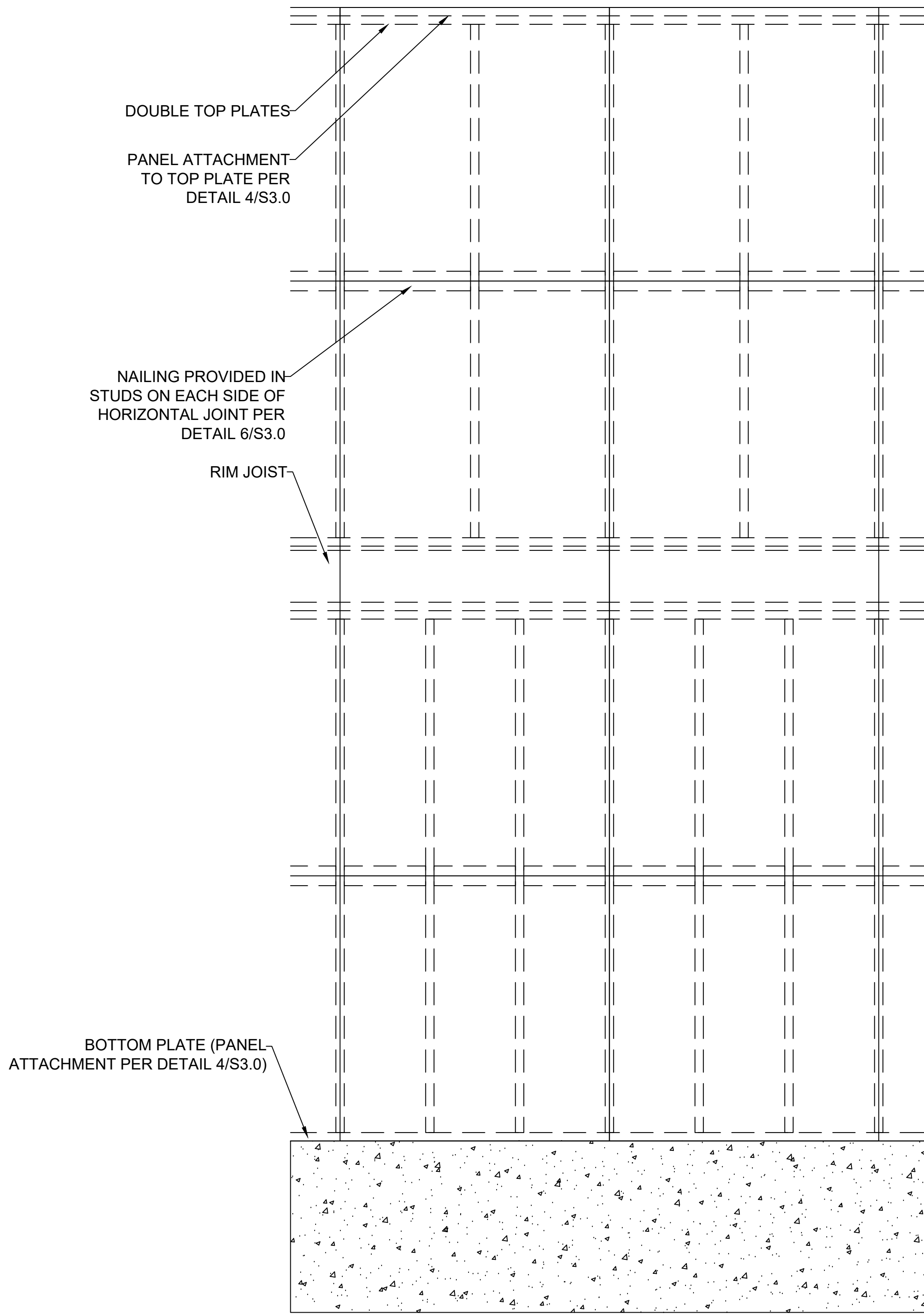






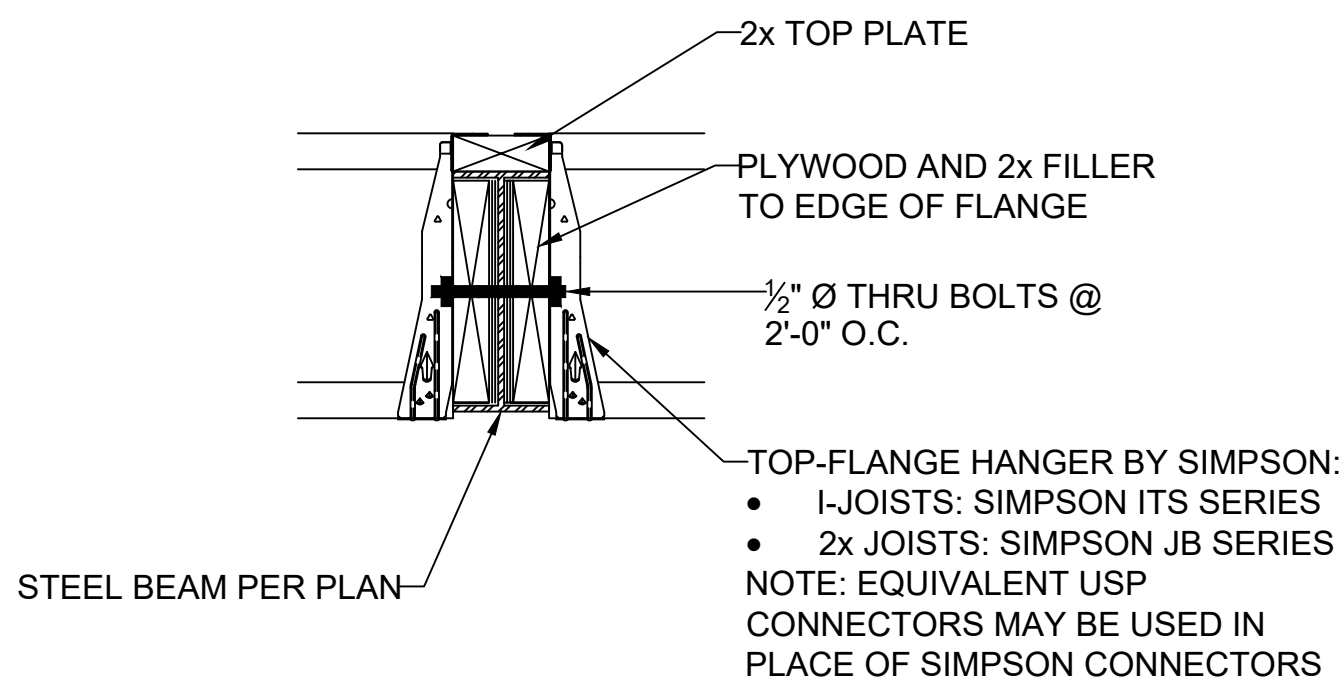
1 EXTERIOR WALL SHEATHING PANEL ATTACHMENT  
S3.1 PANEL SPLICE OVER HORIZONTAL FRAMING MEMBER

SCALE:  $\frac{1}{2}" = 1'-0"$  (18x24) OR  $\frac{3}{4}" = 1'-0"$  (24x36)



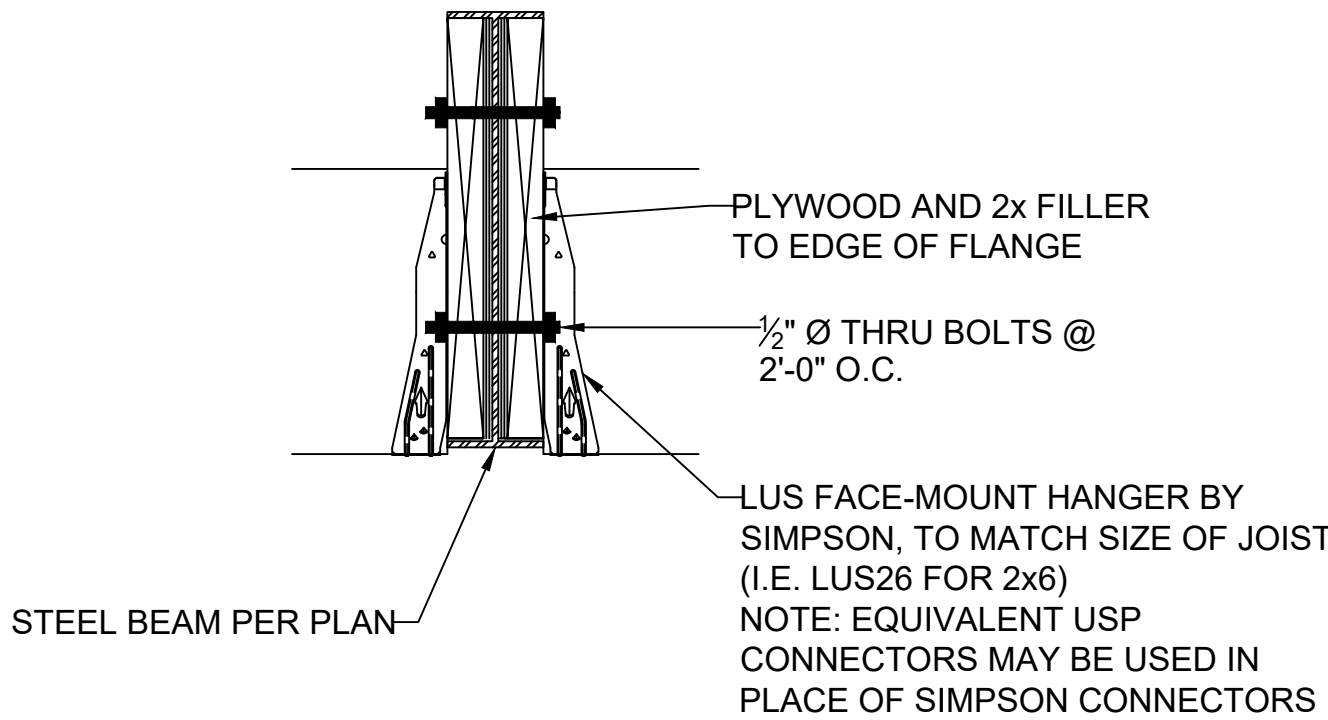
2 EXTERIOR WALL SHEATHING PANEL ATTACHMENT  
S3.1 PANEL SPLICE OCCURRING ACROSS STUDS

SCALE:  $\frac{1}{2}" = 1'-0"$  (18x24) OR  $\frac{3}{4}" = 1'-0"$  (24x36)



4 FLOOR JOIST TO FLUSH STEEL BEAM DETAIL  
S3.1

SCALE:  $1" = 1'-0"$  (18x24) OR  $1\frac{1}{2}" = 1'-0"$  (24x36)

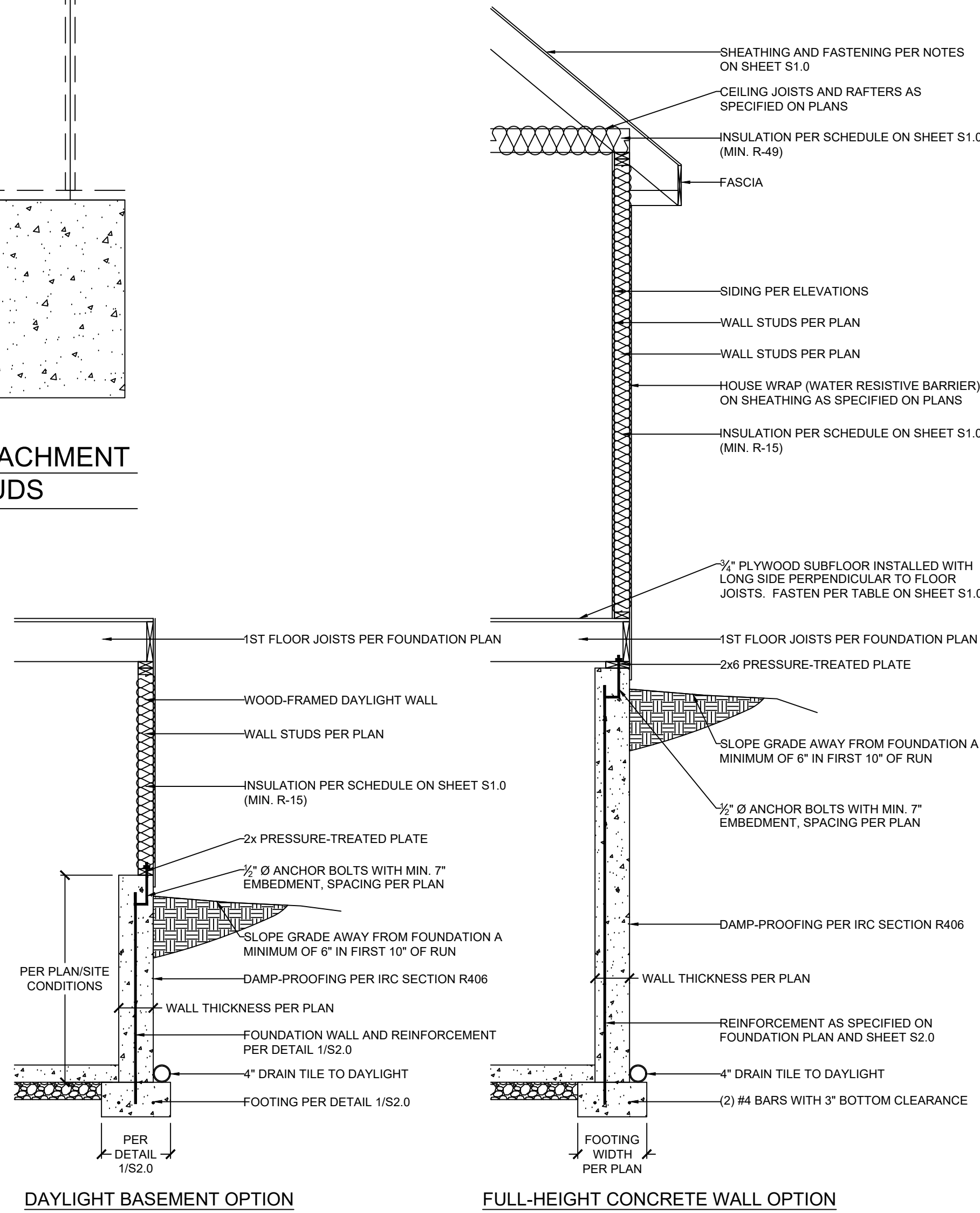


5 CEILING JOIST TO FLUSH STEEL BEAM DETAIL  
S3.1

SCALE:  $1" = 1'-0"$  (18x24) OR  $1\frac{1}{2}" = 1'-0"$  (24x36)

3 EXTERIOR WALL SECTION  
S3.1

SCALE:  $\frac{1}{2}" = 1'-0"$



CLIENT: PFEIFER HOMES, INC.

JOB TITLE: LOT 1485, WINTERSET VALLEY  
CARUTHERS RESIDENCE

LOCATION: LEE'S SUMMIT, MISSOURI



NO.	DATE	REVISION	BY
DRAWING TITLE			
FRAMING DETAILS			
ENGINEER: DMH		CHECKED BY: DMH	
JOB NO. 2971		DRAWN BY: DMH	
DATE: 12-21-20			
SHEET NUMBER			

S3.1

PLEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI

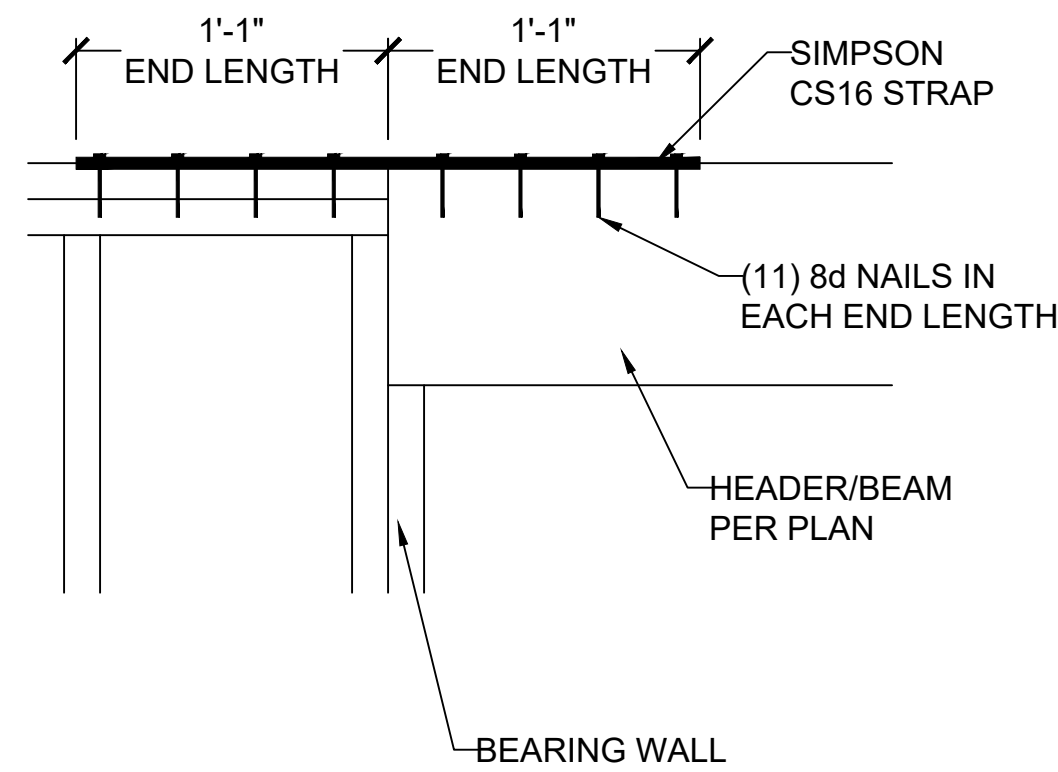
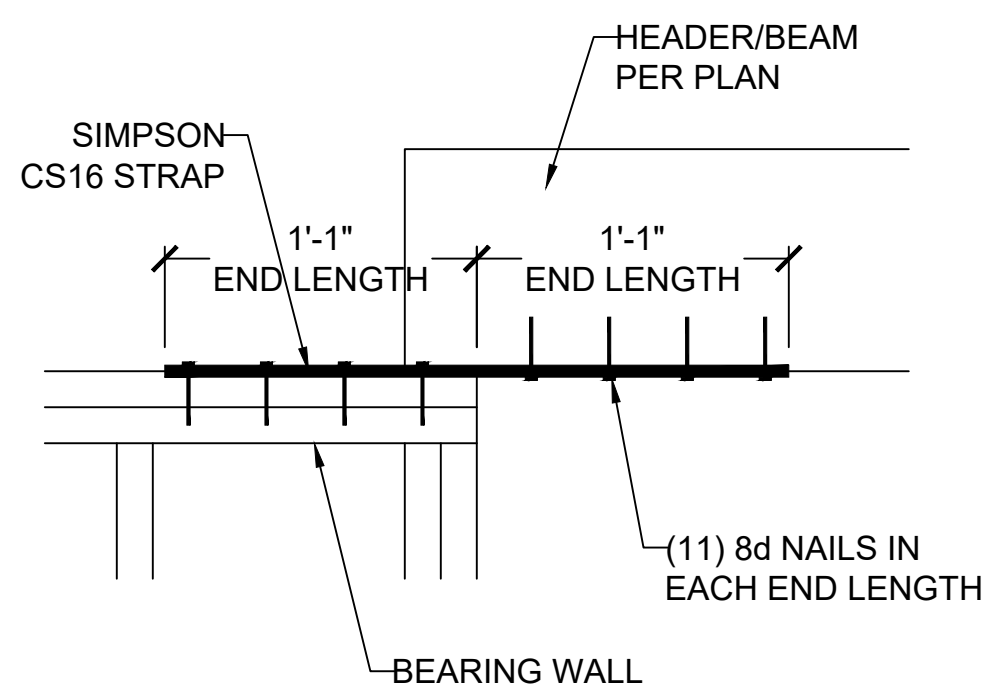
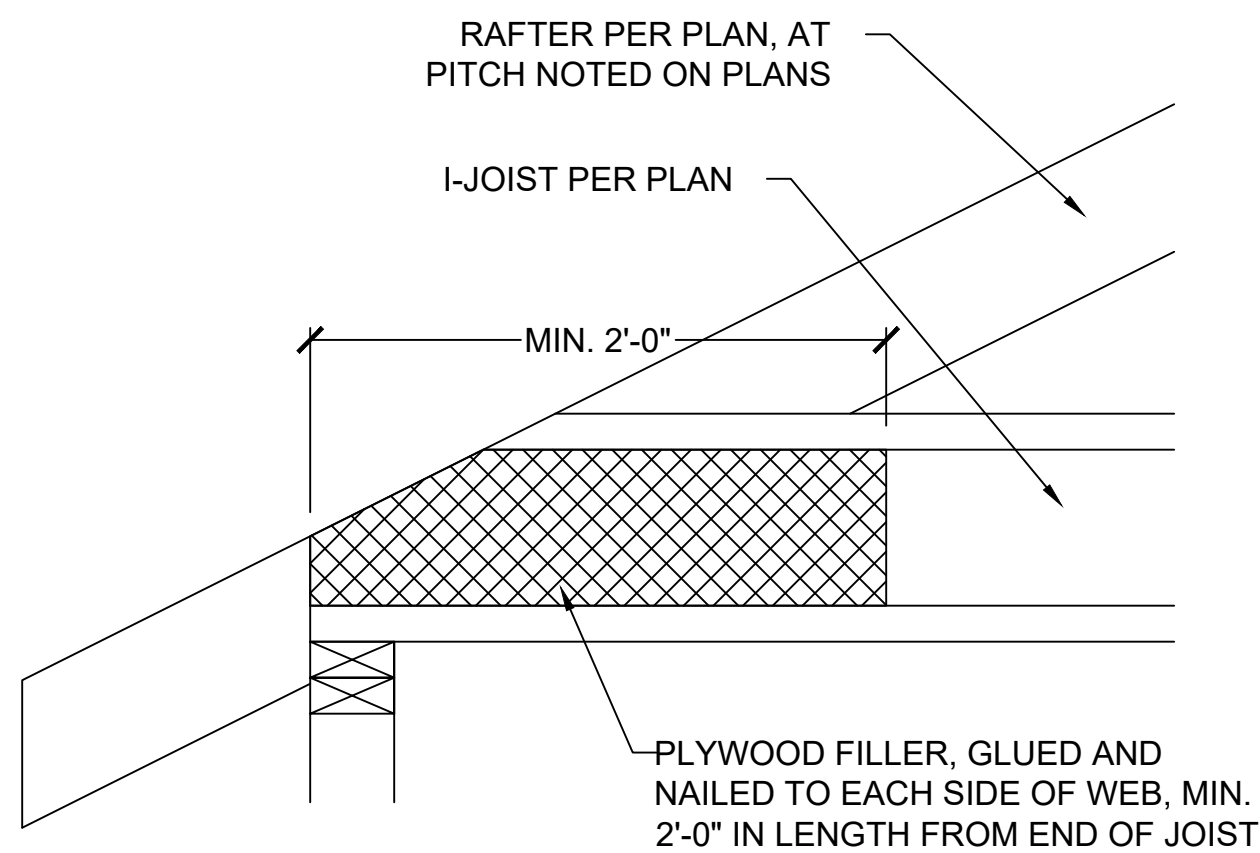
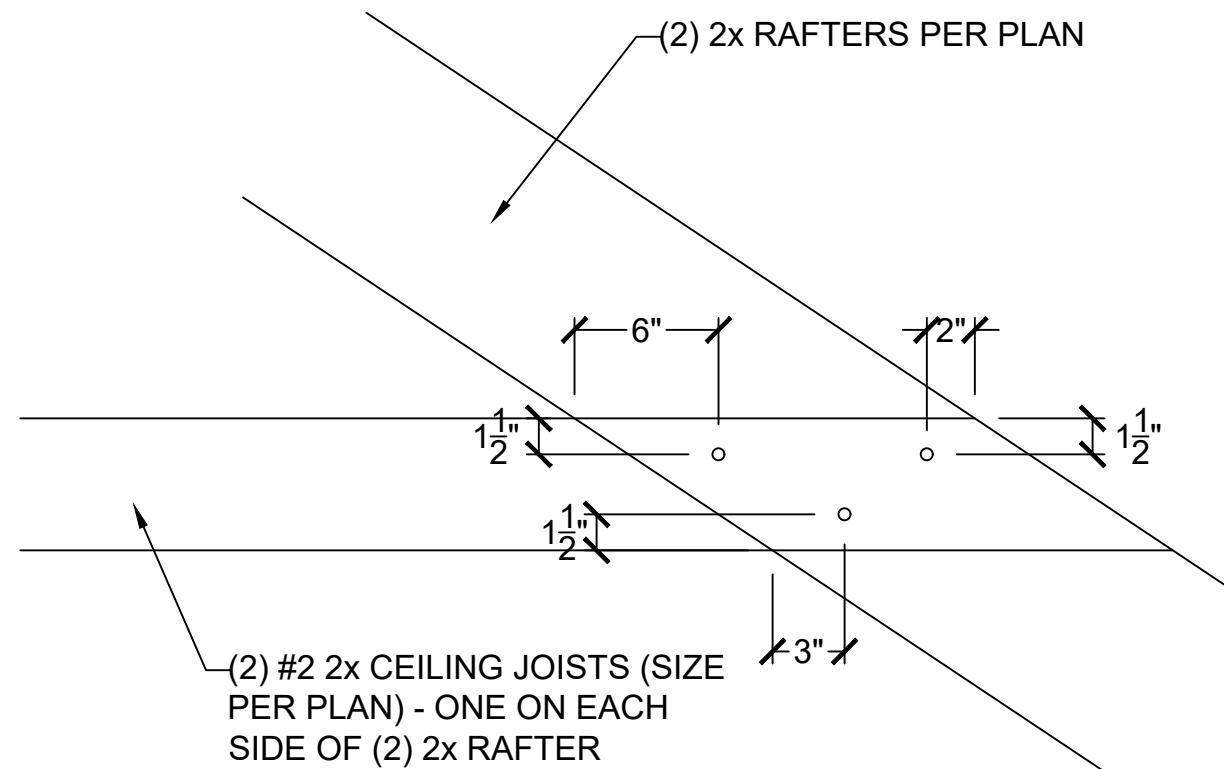
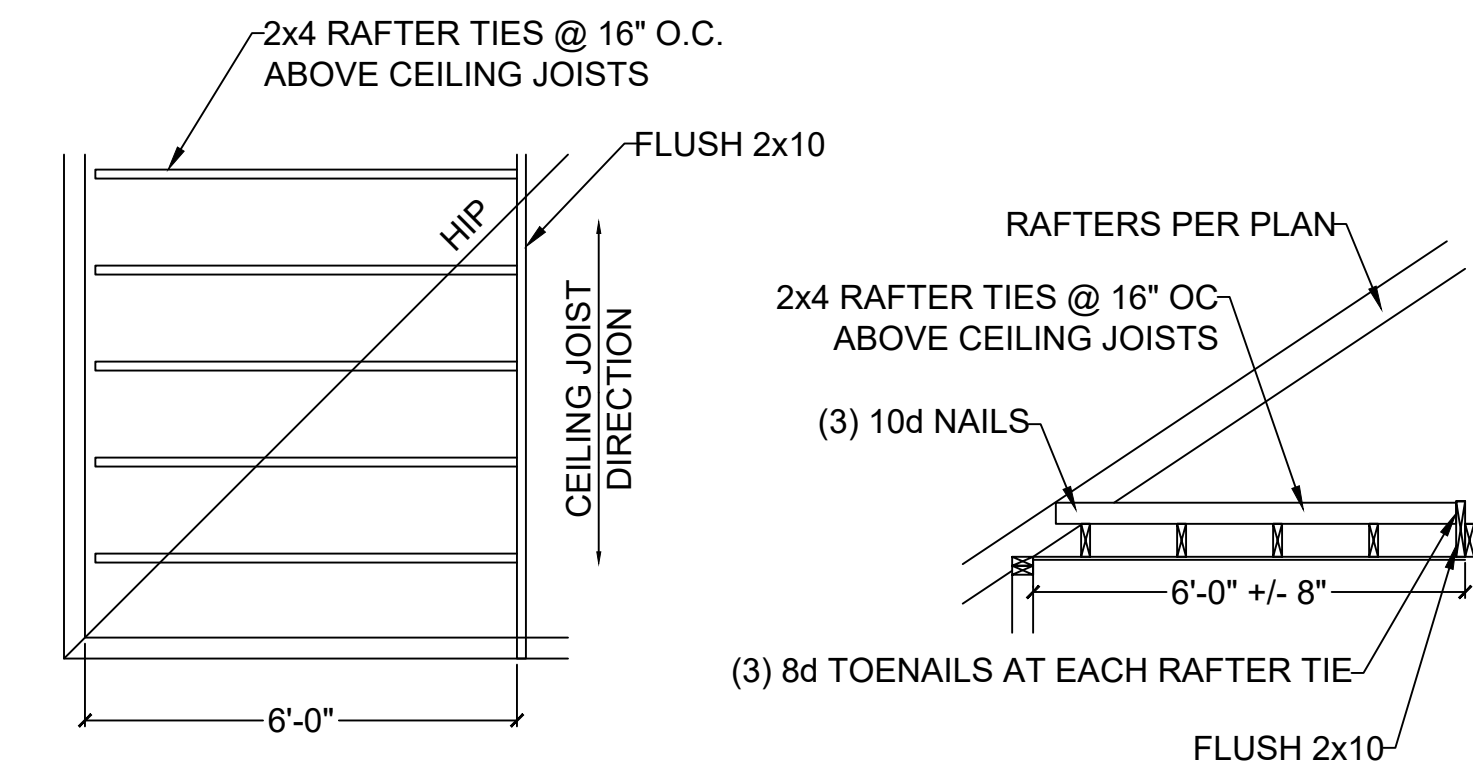
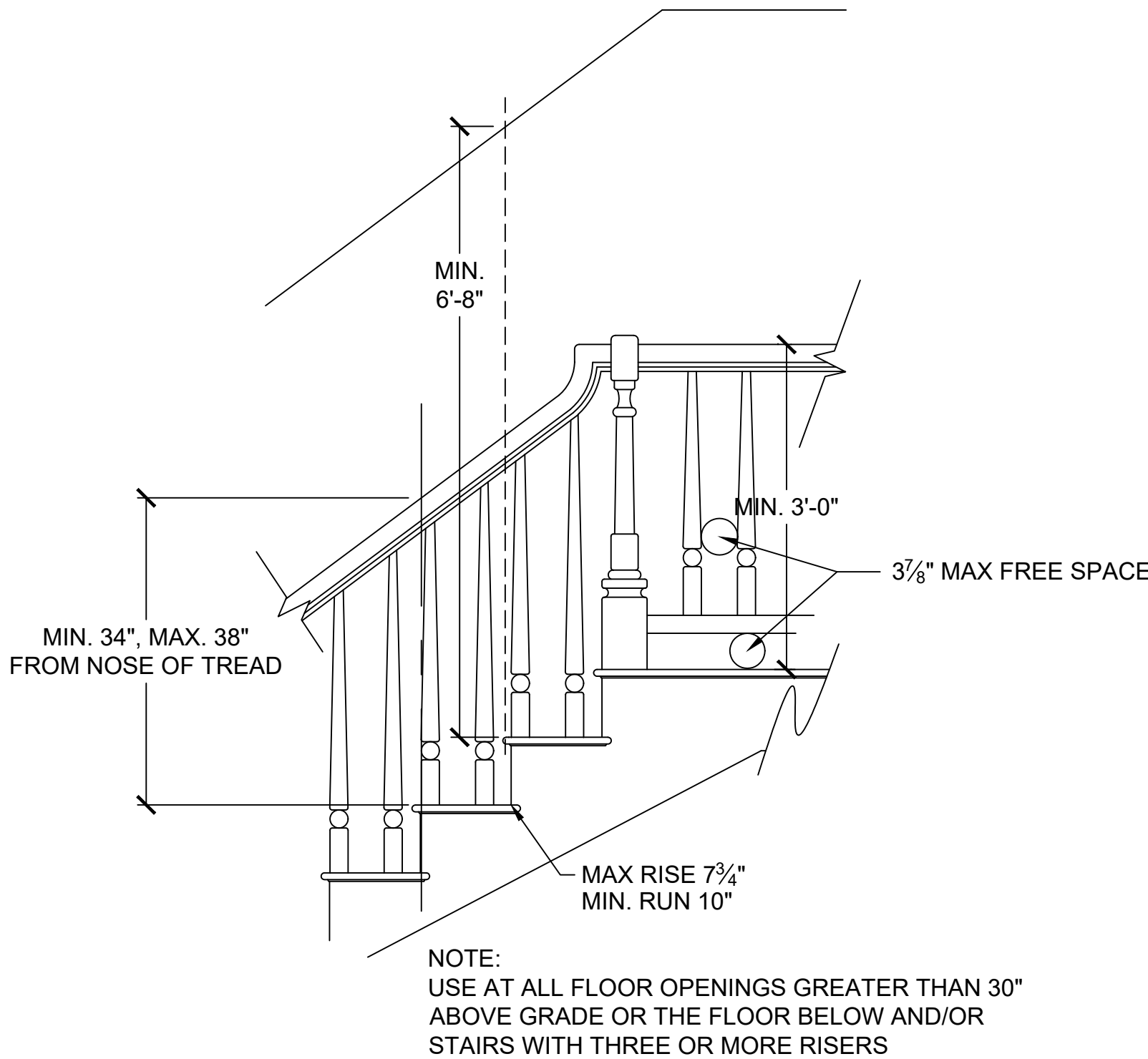
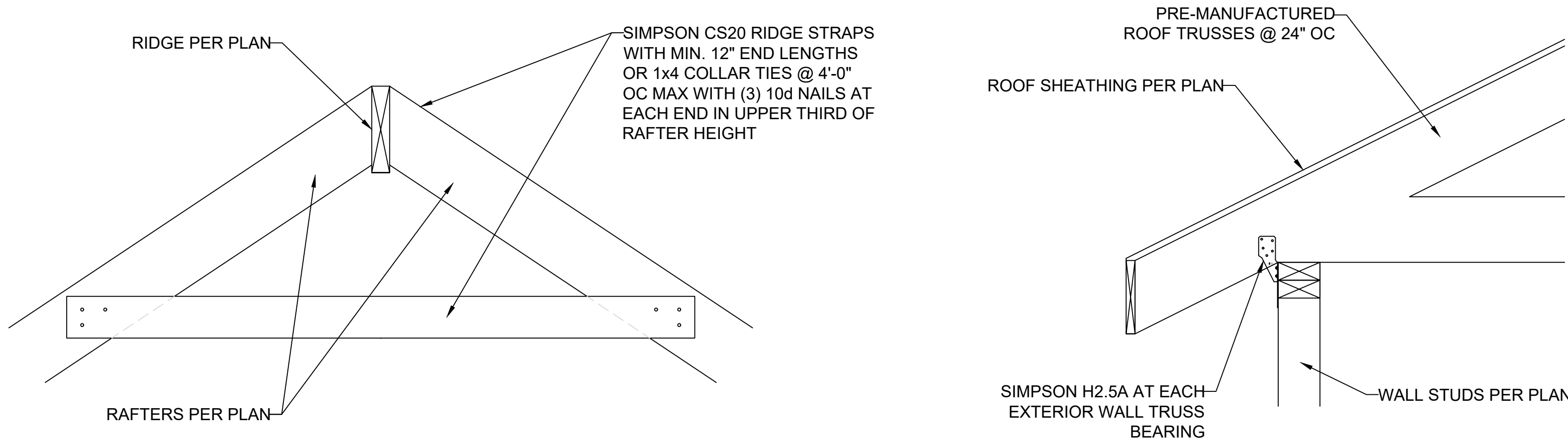
02/17/2021

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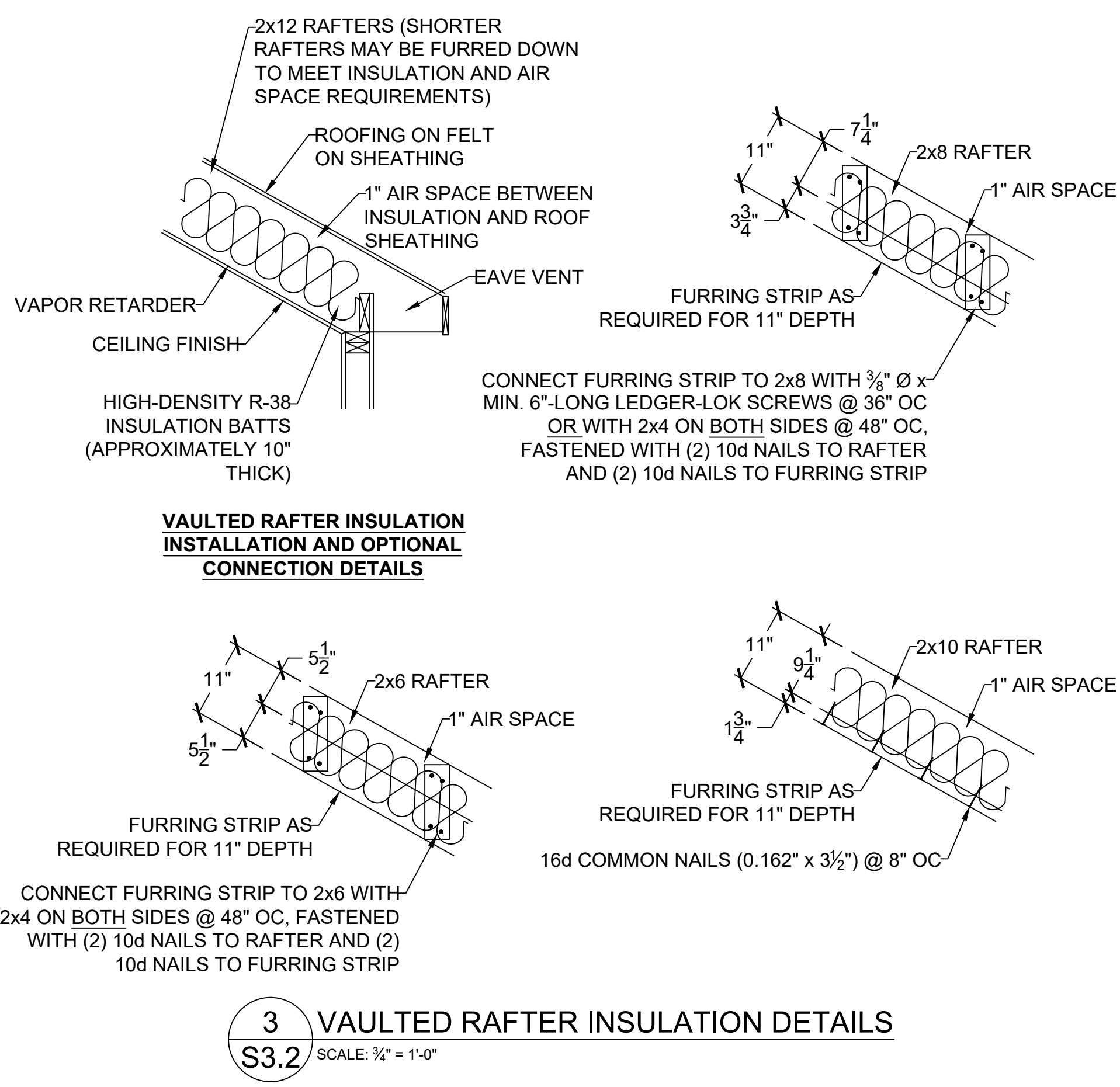
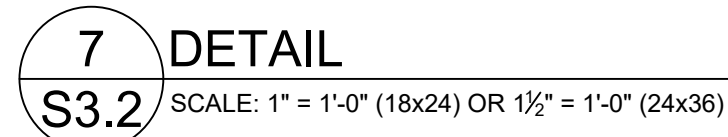
STRUCTURAL-ENGINEERING, LLC

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\* DENNIS@VISTASTRUCTURAL.COM \* VISTASTRUCTURAL.COM





NOT USED



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

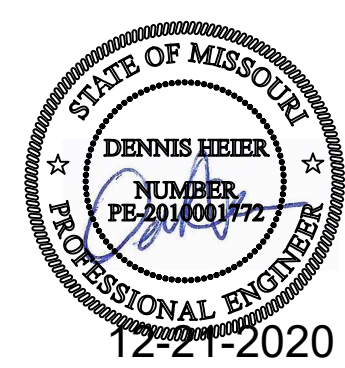
NOTES:  
1) DR = DESIGN REQUIRED  
2) UTILITY, STANDARD, STUD AND #3 GRADE LUMBER OF ANY SPECIES ARE NOT PERMITTED  
3) THIS TABLE DOES NOT APPLY FOR STUDS SUPPORTING MEMBERS WITH A TRIB. LENGTH GREATER THAN 6'-0"

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

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NO.	DATE	REVISION	BY

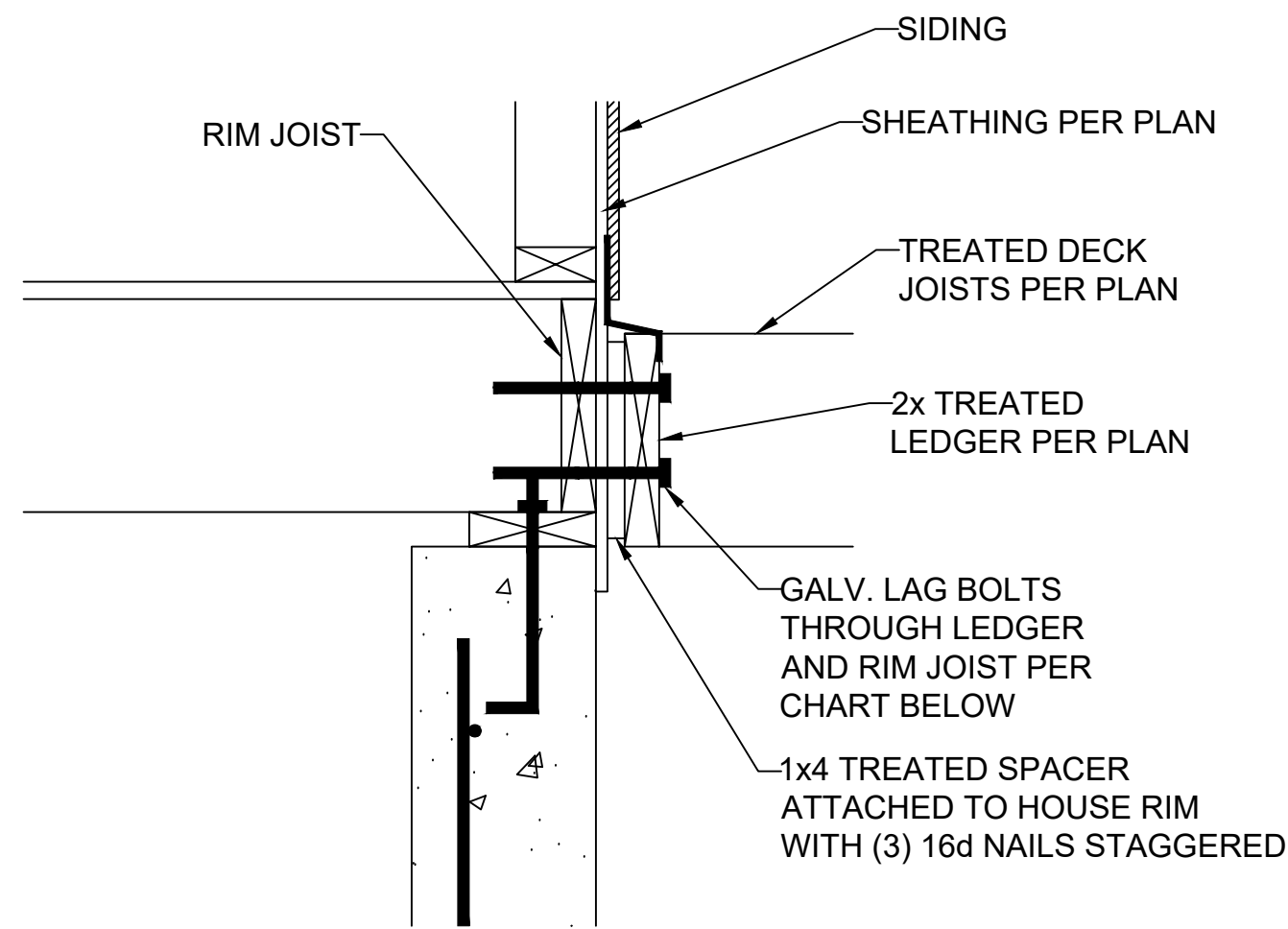
DRAWING TITLE  
**FRAMING DETAILS**

ENGINEER: DMH	CHECKED BY: DMH
JOB NO.: 2971	DRAWN BY: DMH
DATE: 12-21-20	
SHEET NUMBER	

**S3.2**

PLEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI 02/17/2021

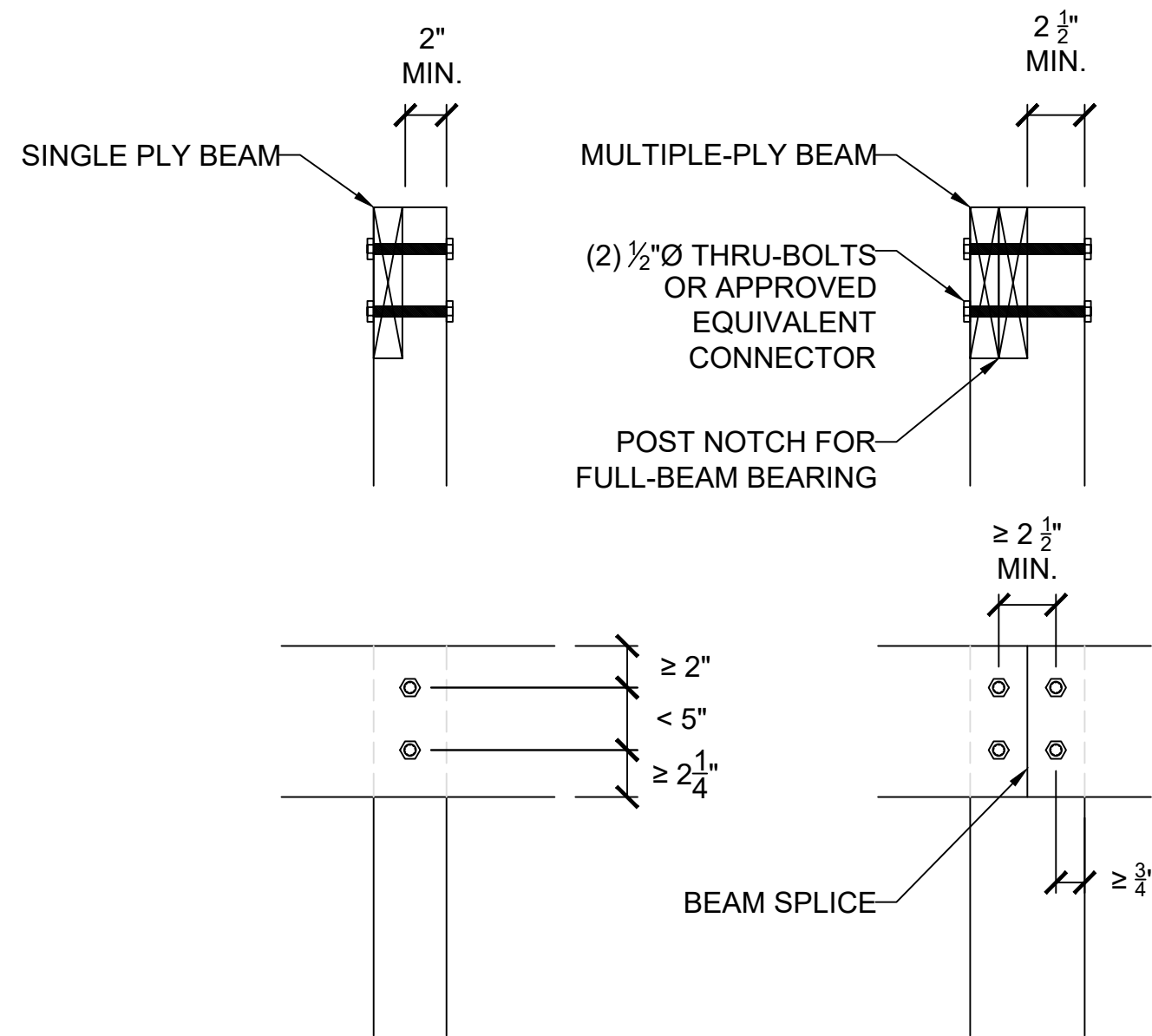




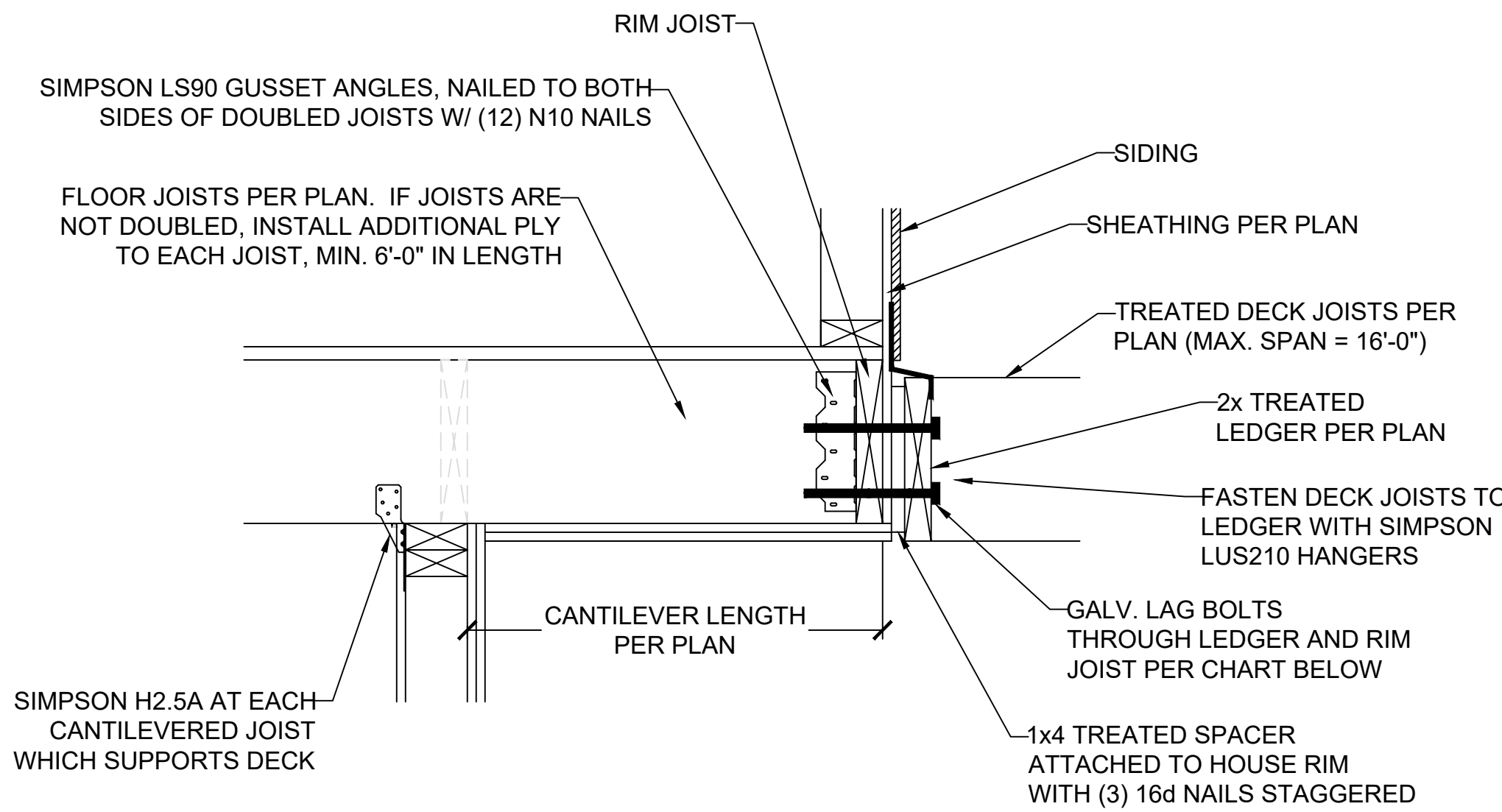
DECK LEDGER ATTACHMENT GUIDE

DECK JOIST SPAN	$\frac{1}{2}$ " Ø GALV. LAG OR $\frac{3}{8}$ " 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

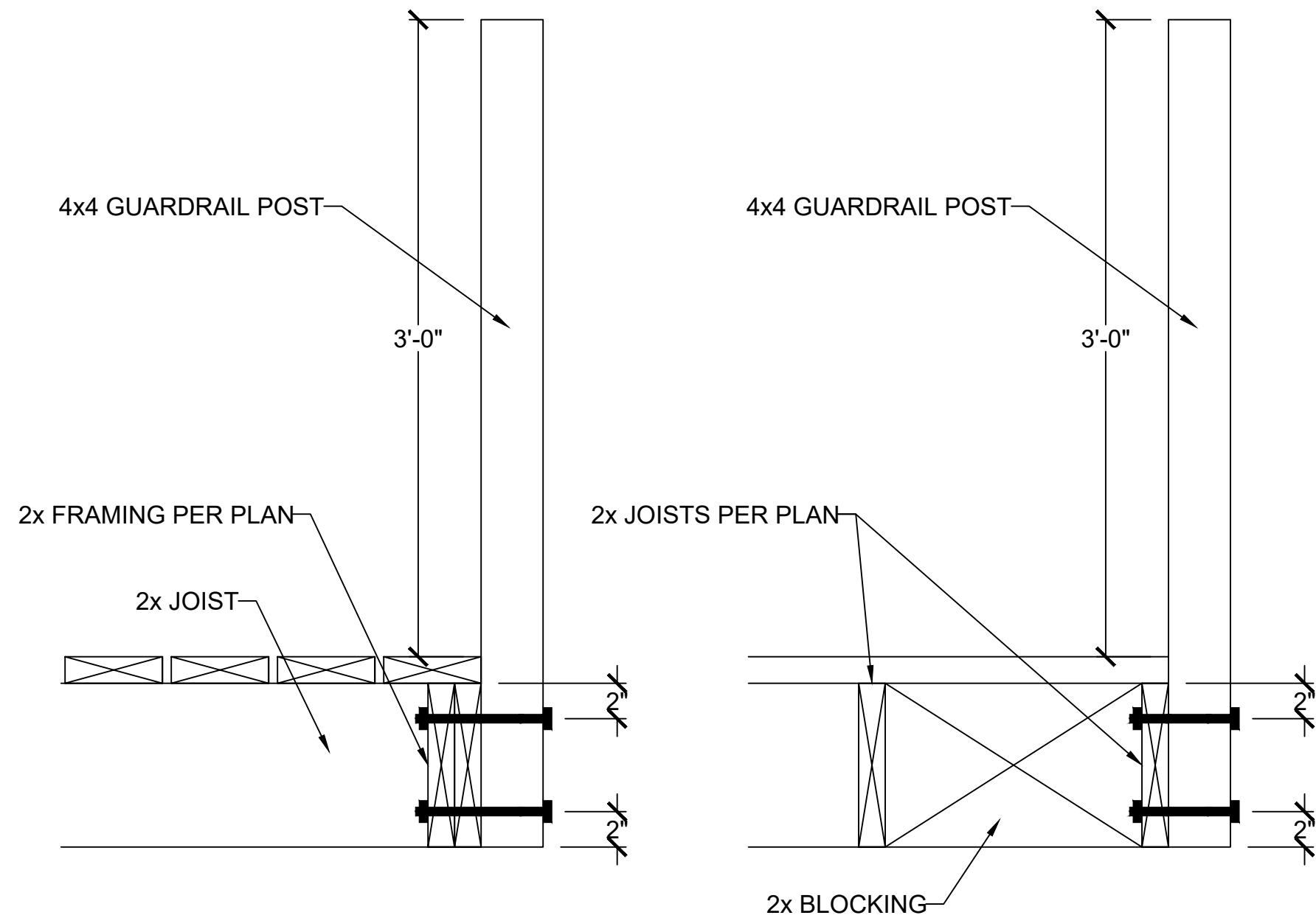
1 LEDGER ATTACHMENT  
S3.3 SCALE: 1" = 1'-0" (18x24) OR 1½" = 1'-0" (24x36)



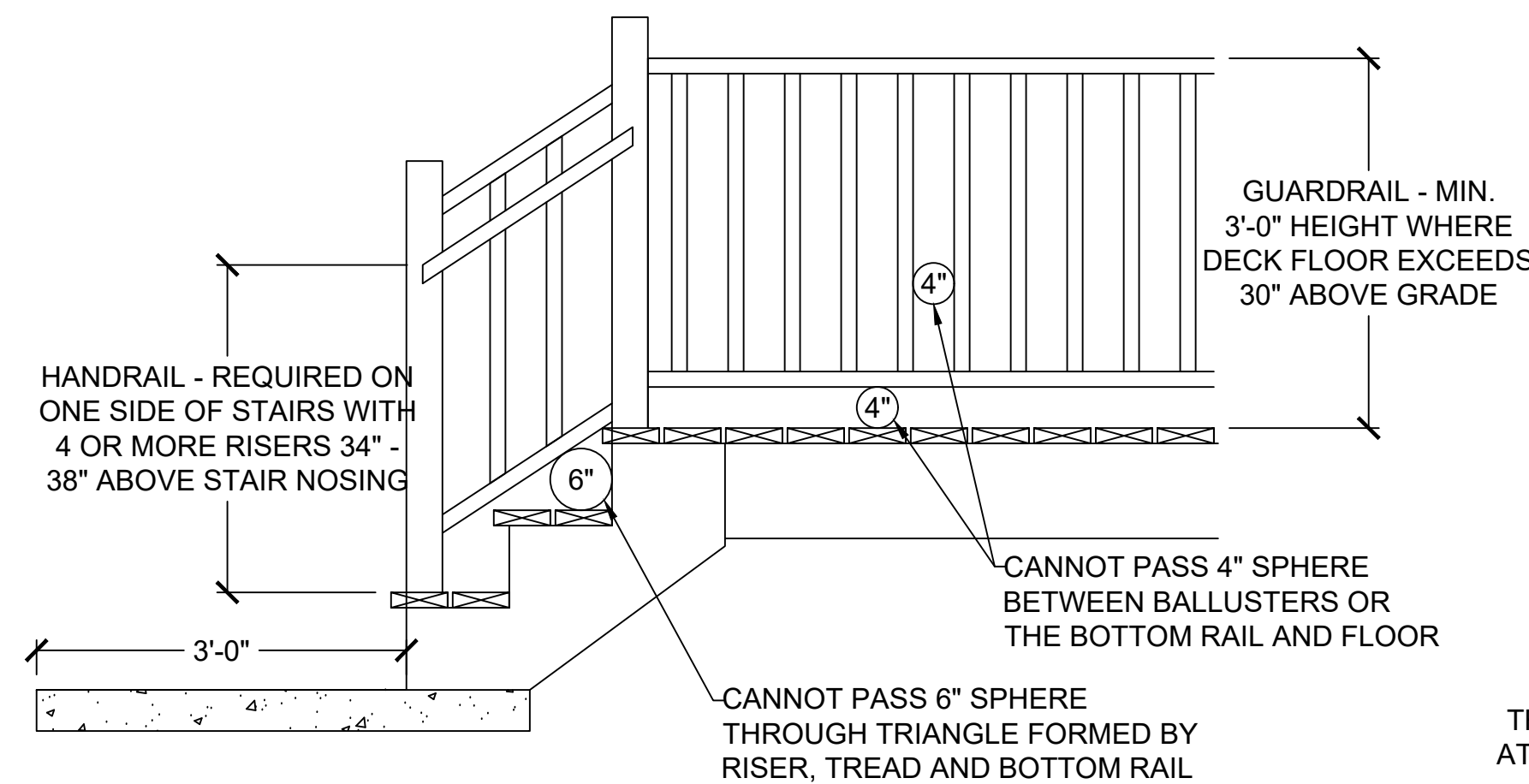
5 LET-IN (COVERED) DECK BEAM CONNECTION  
S3.3 SCALE: 1" = 1'-0" (18x24) OR 1½" = 1'-0" (24x36)



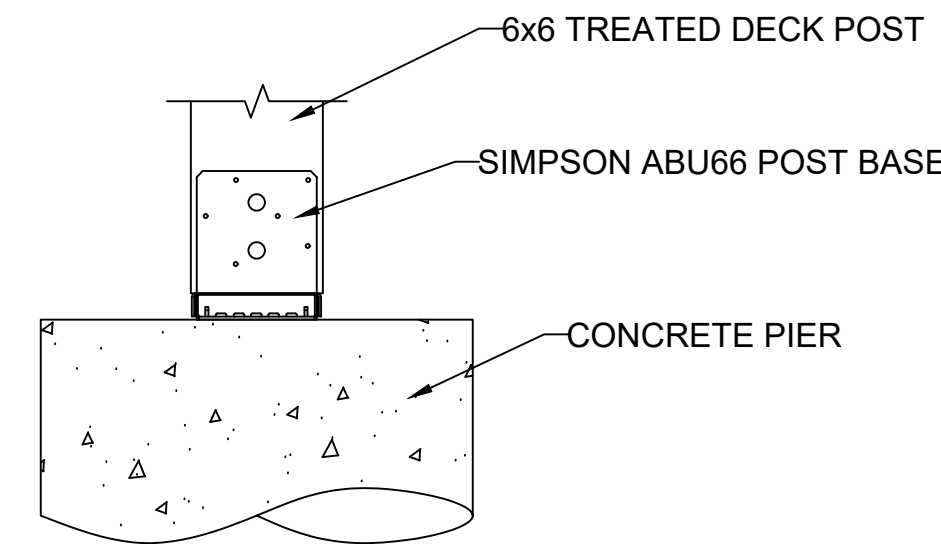
2 CANTILEVER WITH DECK ATTACHMENT  
S3.3 SCALE: 1" = 1'-0" (18x24) OR 1½" = 1'-0" (24x36)



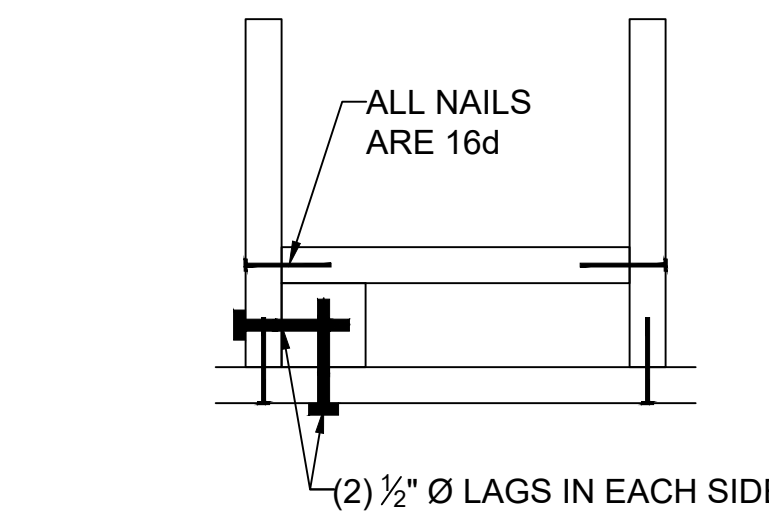
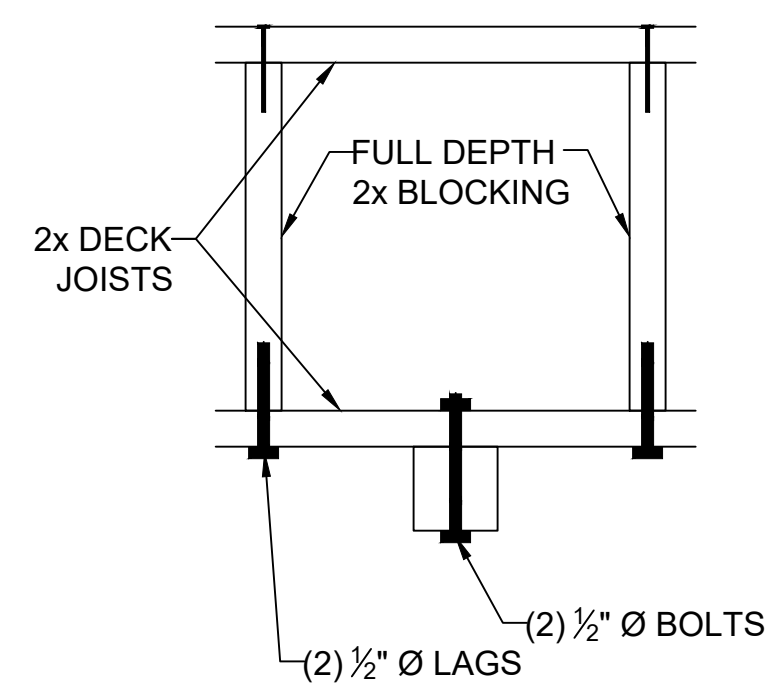
6 GUARDRAIL CONNECTION  
S3.3 SCALE: 1" = 1'-0" (18x24) OR 1½" = 1'-0" (24x36)



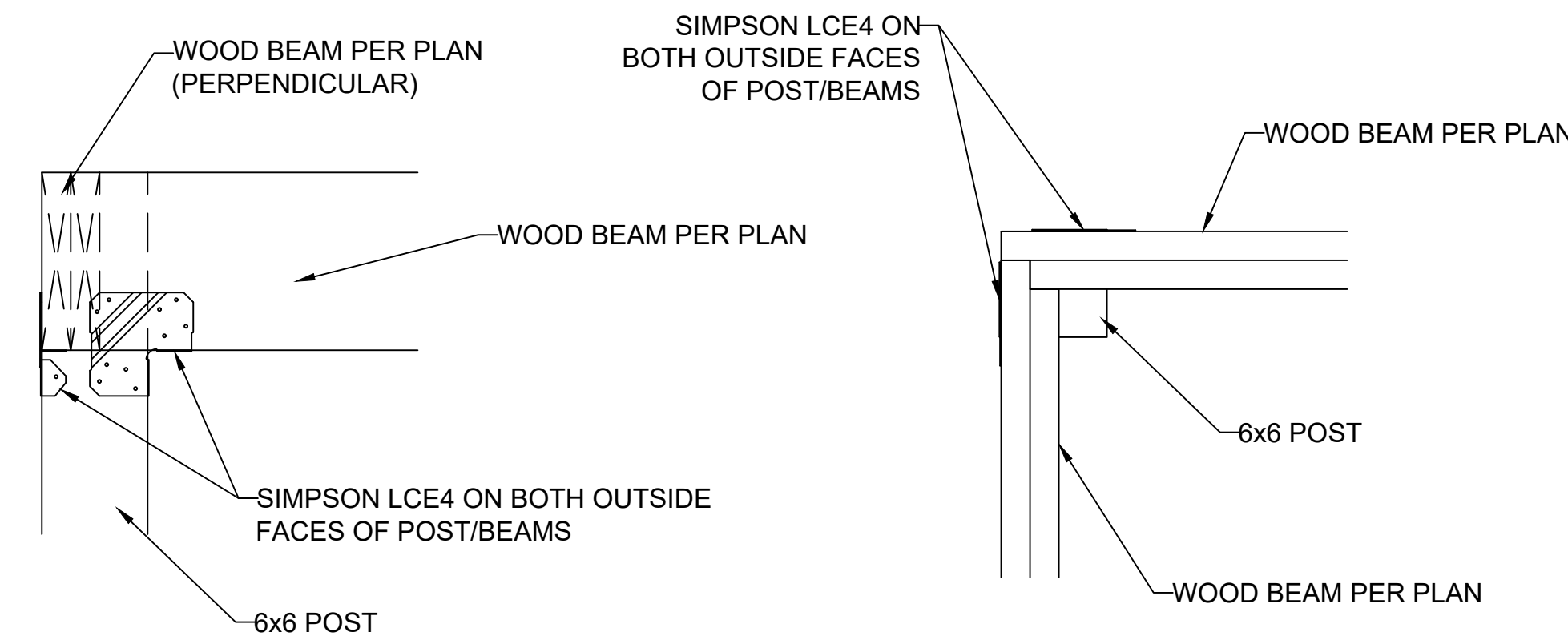
8 GUARDRAIL DETAIL  
S3.3 SCALE: ½" = 1'-0" (18x24) OR ¾" = 1'-0" (24x36)



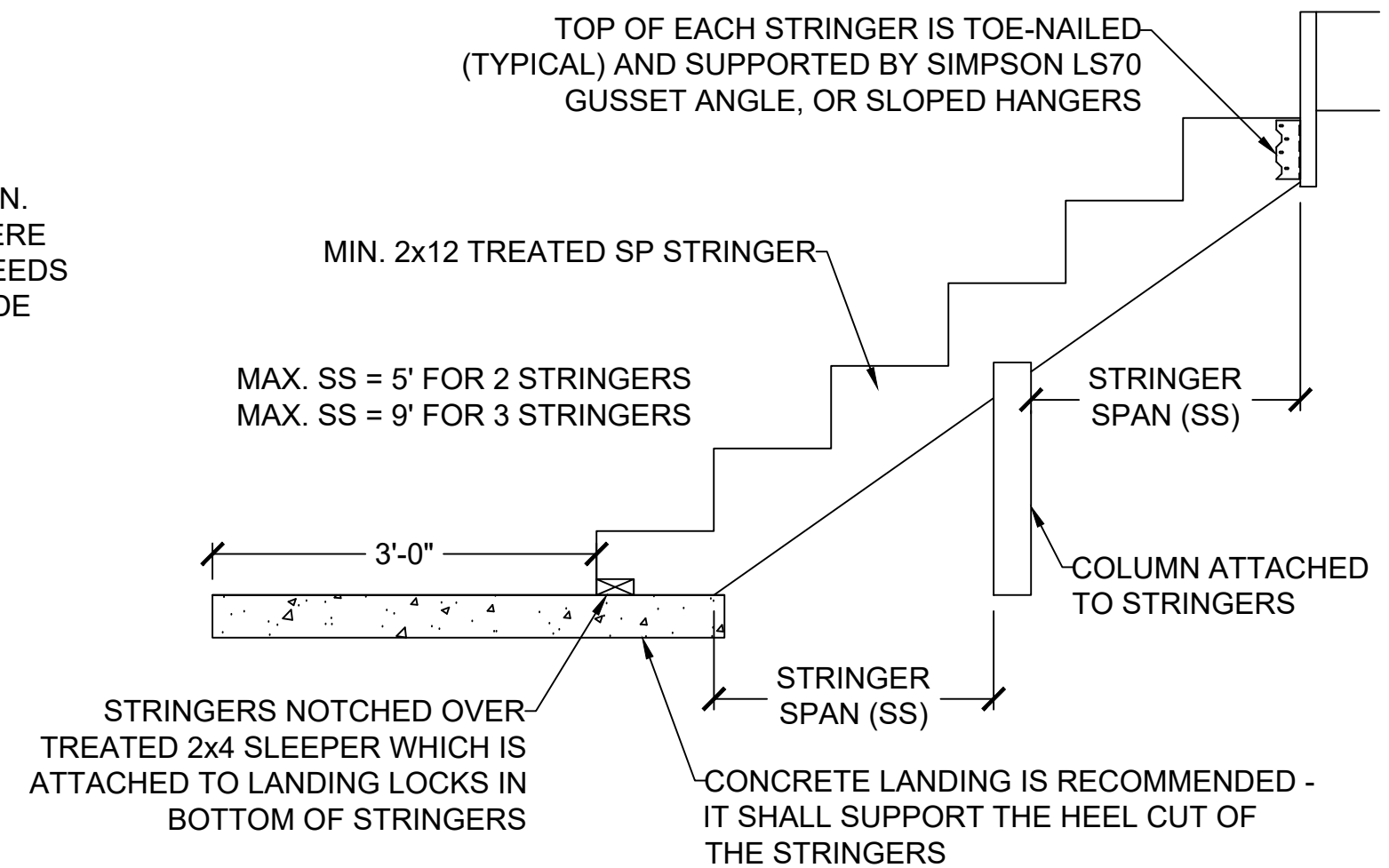
3 DECK POST BASE  
S3.3 SCALE: 1" = 1'-0" (18x24) OR 1½" = 1'-0" (24x36)



4 REINF. POST CONNECTIONS  
S3.3 SCALE: 1" = 1'-0" (18x24) OR 1½" = 1'-0" (24x36)



7 ALTERNATE COVERED DECK/PORCH INTERSECTION  
S3.3 CORNER BEAM CONNECTION SCALE: 1" = 1'-0" (18x24) OR 1½" = 1'-0" (24x36)



9 STAIR STRINGER DETAIL (MAX. 5' STAIR WIDTH)  
S3.3 SCALE: ½" = 1'-0" (18x24) OR ¾" = 1'-0" (24x36)

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ENGINEERING, LLC

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DENNIS@VISTASTRUCTURAL.COM \* VISTASTRUCTURAL.COM

CLIENT: PFEIFER HOMES, INC.  
JOB TITLE: LOT 1485, WINTERSET VALLEY  
CARUTHERS RESIDENCE  
LOCATION: LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI  
DENNIS HEIER  
NUMBER  
FE-201001772  
PROFESSIONAL ENGINEER  
12-21-2020

NO. DATE REVISION BY

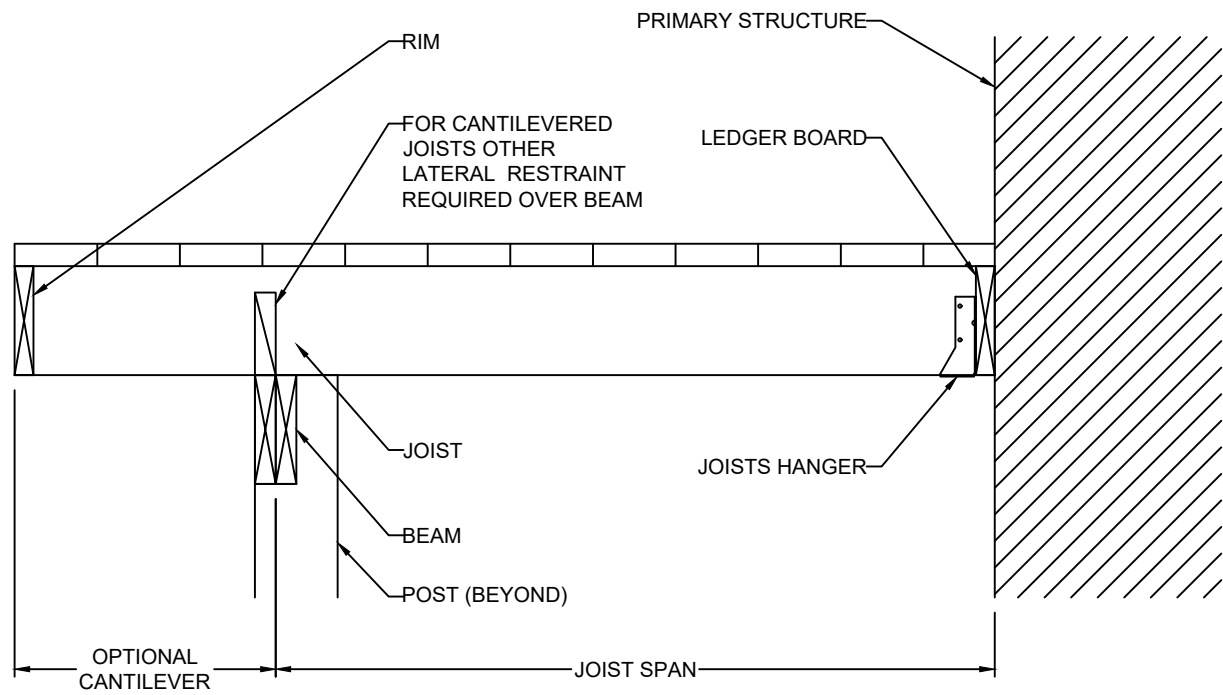
DRAWING TITLE  
**FRAMING  
DETAILS**

ENGINEER: DMH CHECKED BY: DMH  
JOB NO.: 2971 DRAWN BY: DMH  
DATE: 12-21-20  
SHEET NUMBER

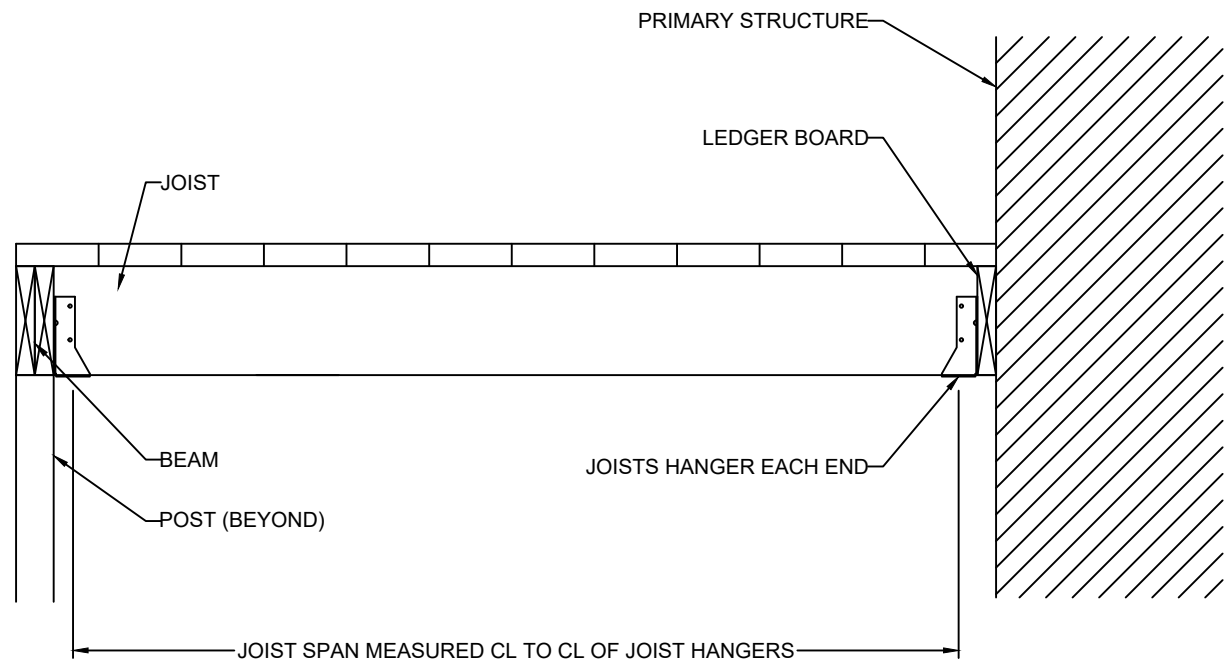
**S3.3**

RELEASE FOR CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
02/17/2021

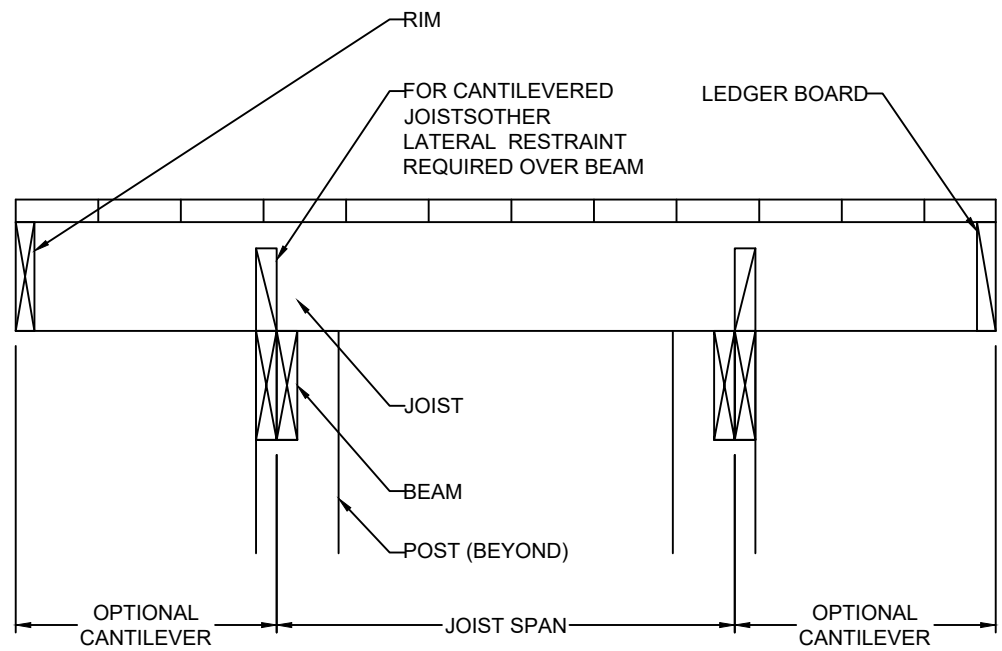




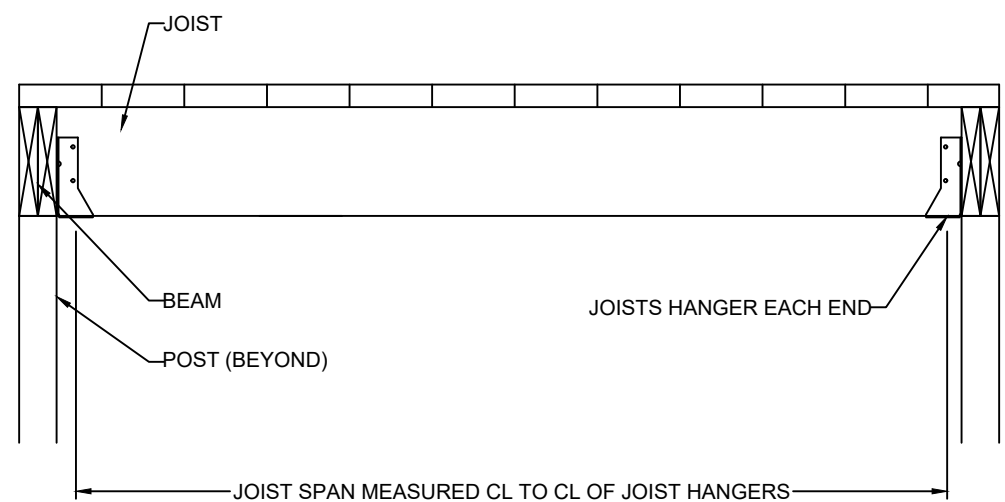
CANTILEVERED JOISTS  
WITH DROPPED BEAM



JOISTS WITH FLUSH BEAM

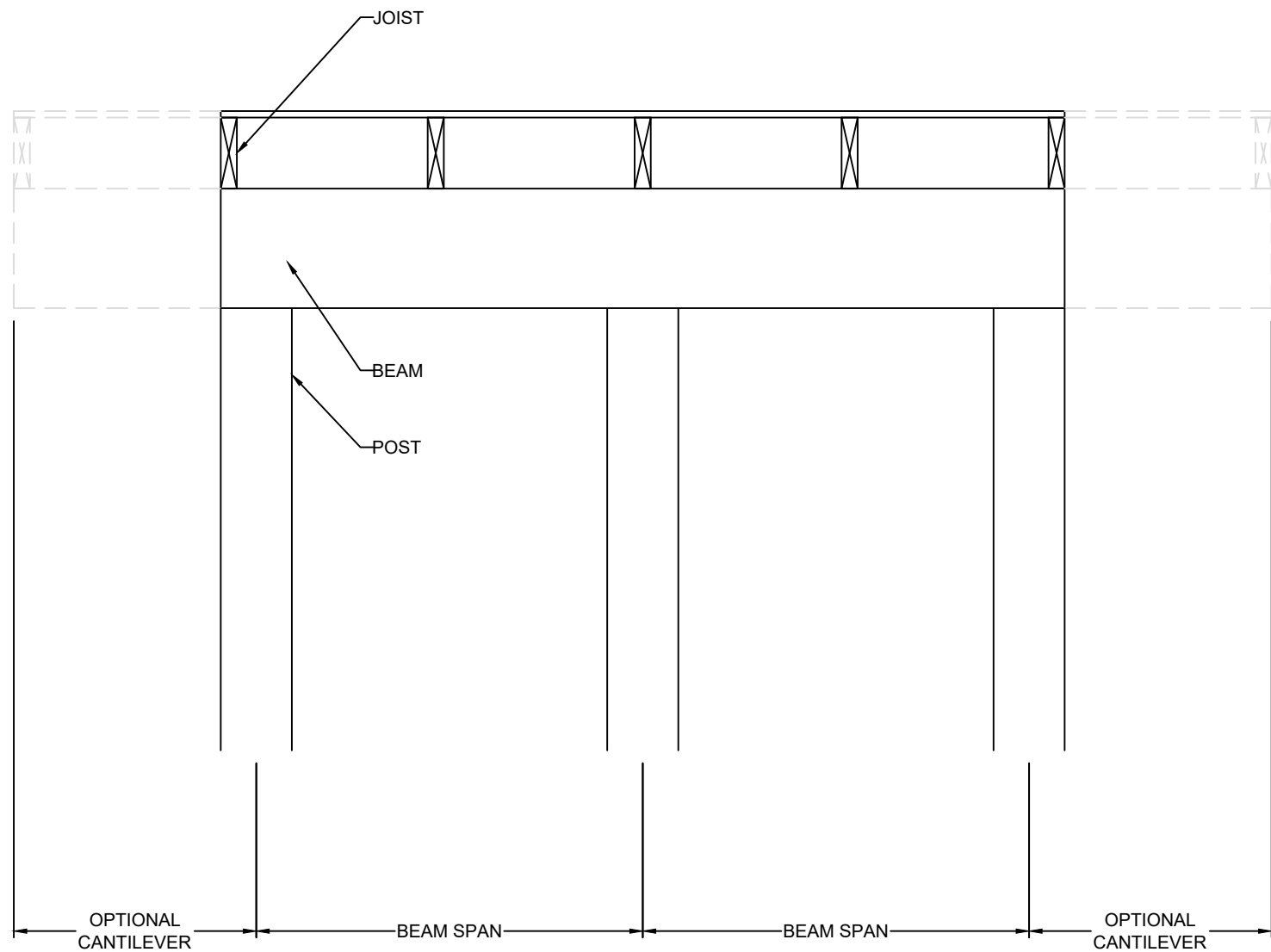


JOISTS ON FREE-STANDING  
DECK WITH DROPPED BEAM

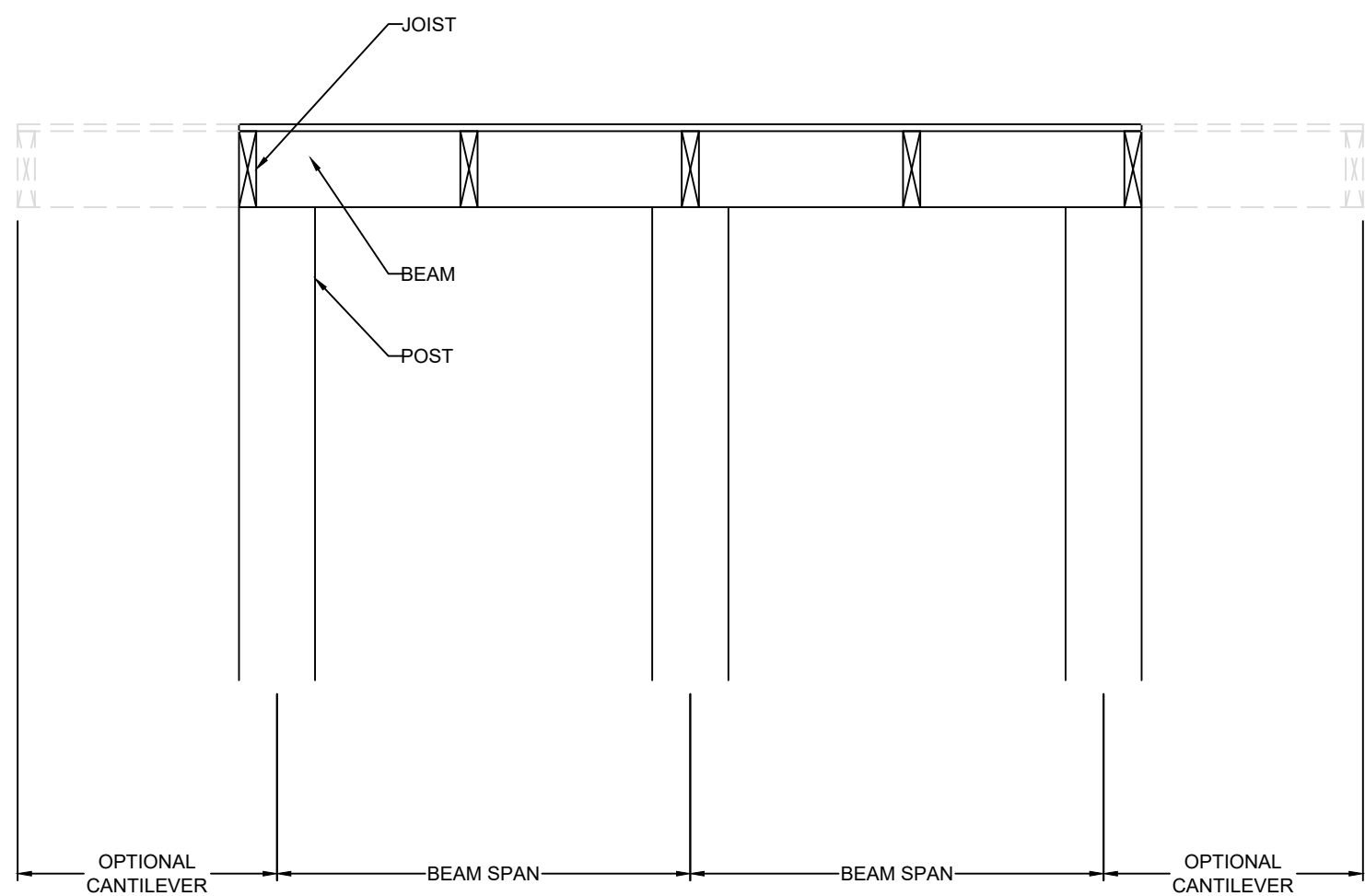


JOISTS WITH FLUSH BEAM

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)

VISTA

STRUCTURAL

ENGINEERING, LLC

14718 NW DELIA STREET

PORTLAND, OREGON 97229

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NO.	DATE	REVISION	BY

DRAWING TITLE

FRAMING  
DETAILS

ENGINEER: DMH	CHECKED BY: DMH
JOB NO. 2971	DRAWN BY: DMH
DATE: 12-21-20	
SHEET NUMBER	

S3.3

PLEASE FOR  
CONSTRUCTION  
AS NOTED ON PLANS REVIEW  
DEVELOPMENT SERVICES  
LEE'S SUMMIT, MISSOURI  
02/17/2021





## 2 WELDED T-BEAM CONNECTION FOR W12x, W14x, W16x & W18x BEAMS

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

