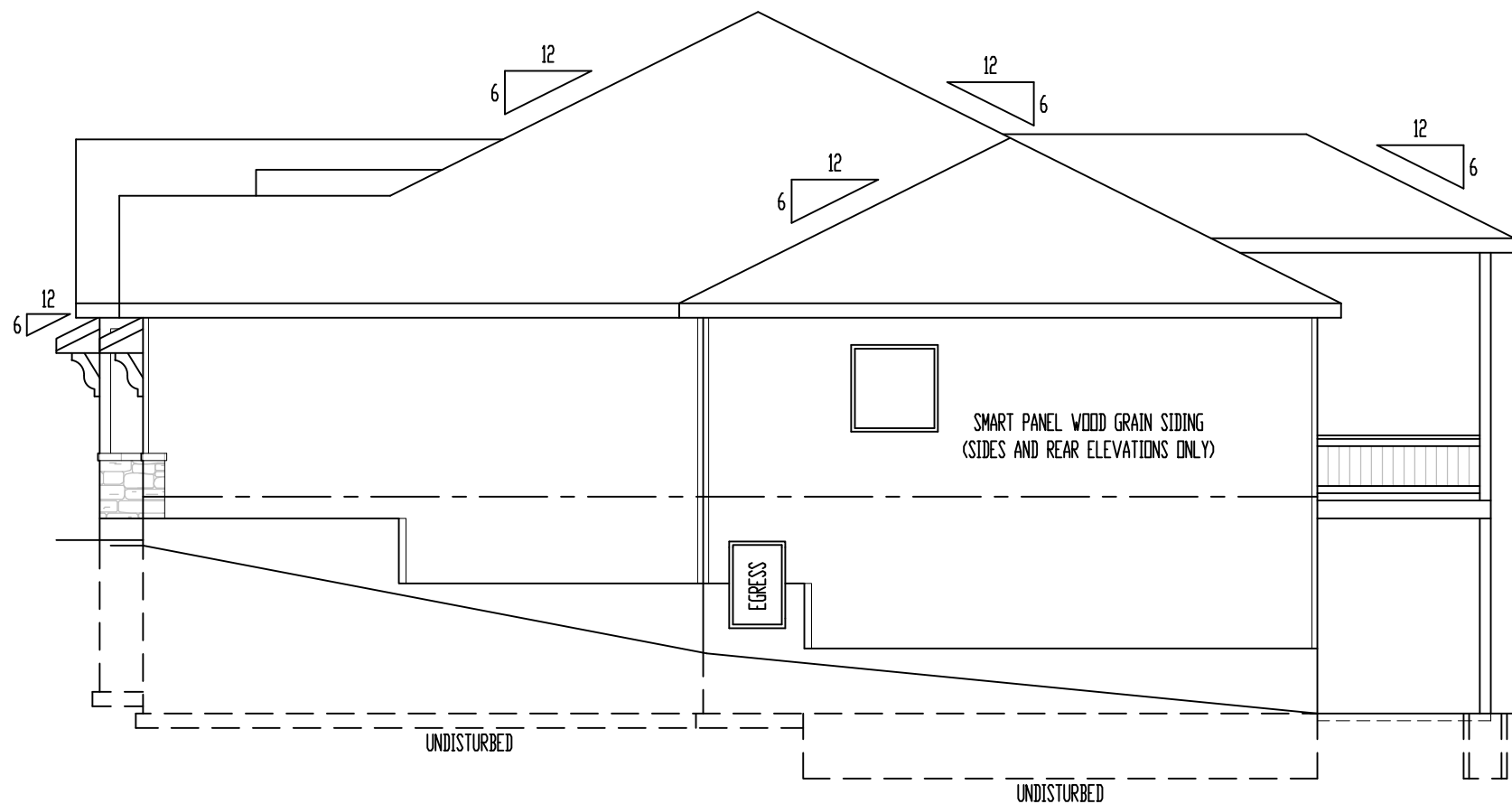
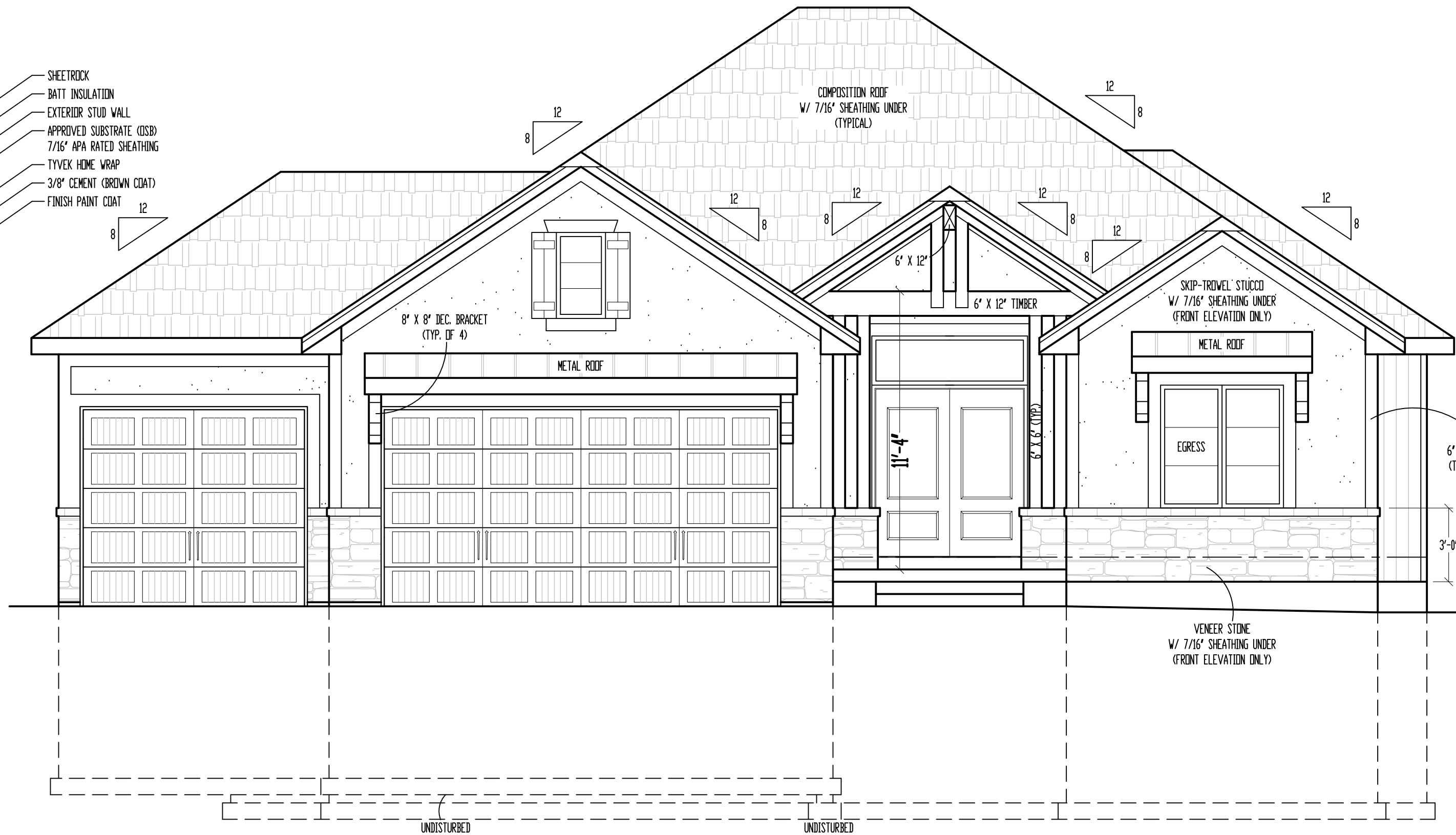
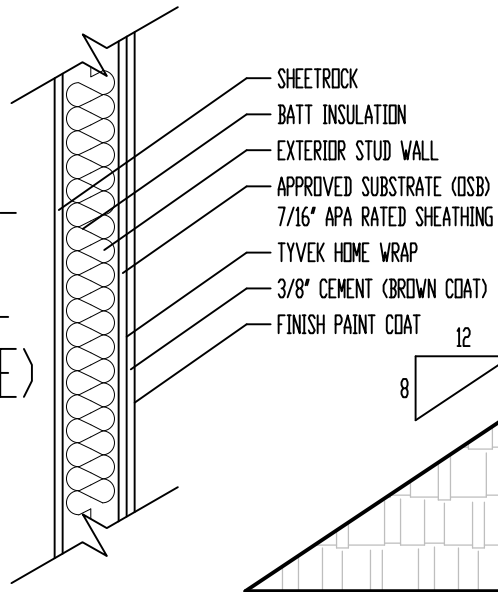
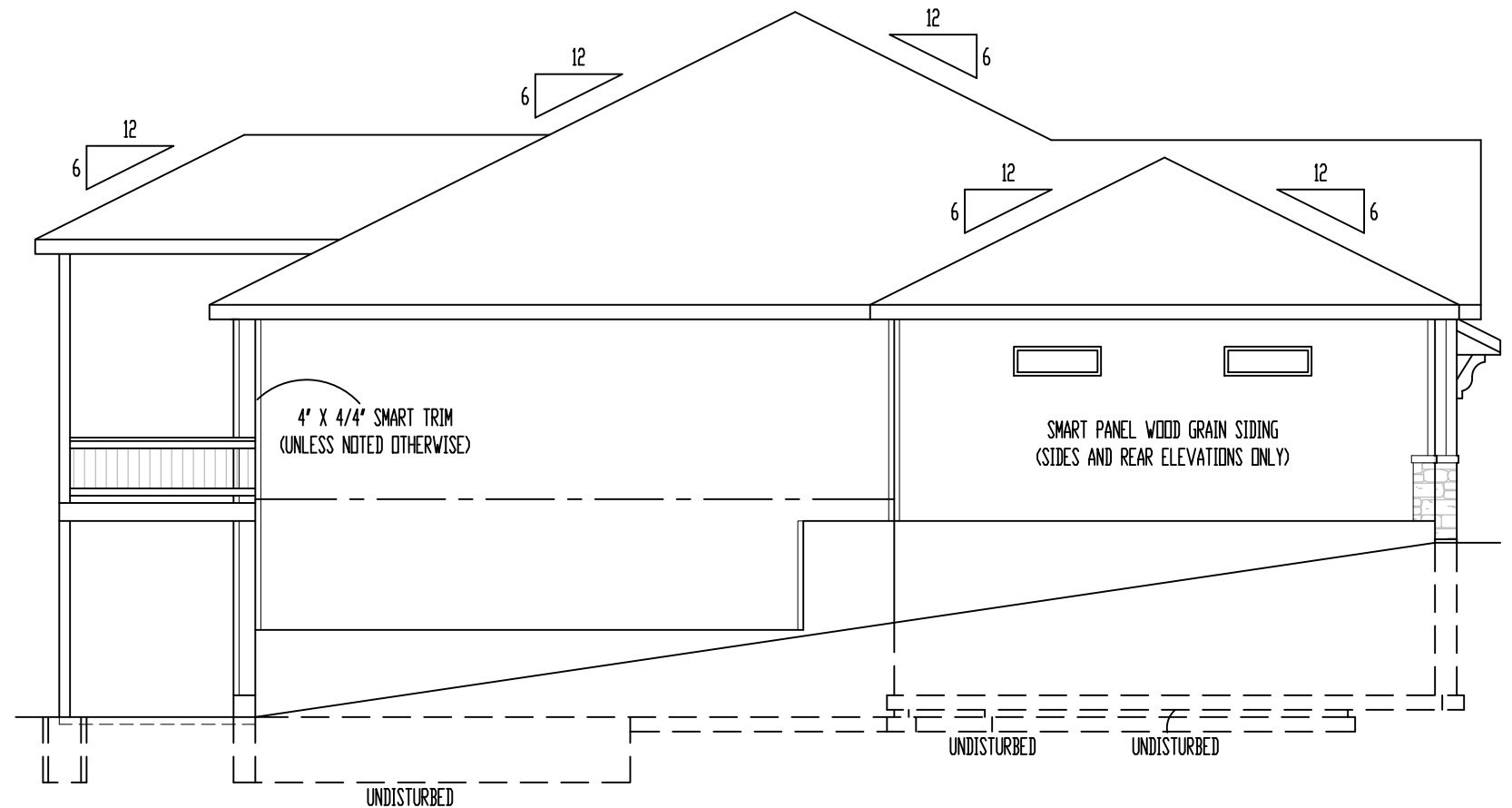


STUCCO APPLI-
CATION
DETAIL
(NOT TO SCALE)

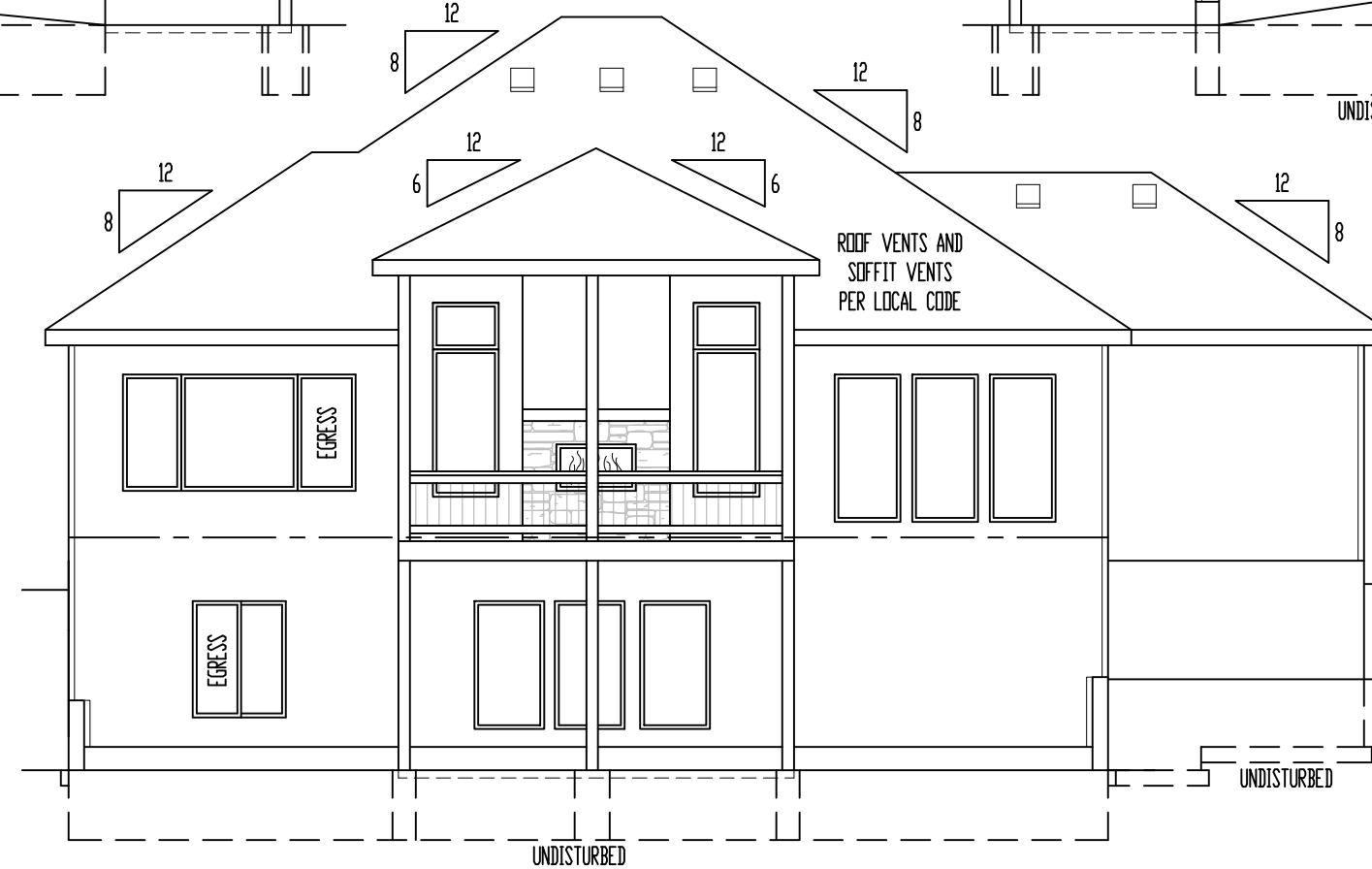


RIGHT ELEVATION
SCALE: 1/8" = 1'-0"

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



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



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

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04/17/2024 8:41:11

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

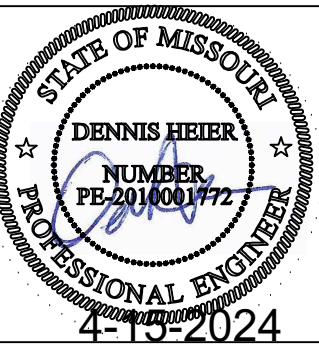
DECK:
DECK CONSTRUCTION TO COMPLY WITH MUNICIPALITY'S
RESIDENTIAL DECK STANDARDS
2" X 10" #2 TTD, @ 16" O.C. FLOOR JOISTS (MAX SPAN 14'-0")
2" X 6" TTD, DECKING
6" X 6" TTD, POSTS
2" X 2" TTD, SPINDLES
2" X 6" TTD, TOP RAIL
DETERMINE OPTIONAL STAIRS ON SITE

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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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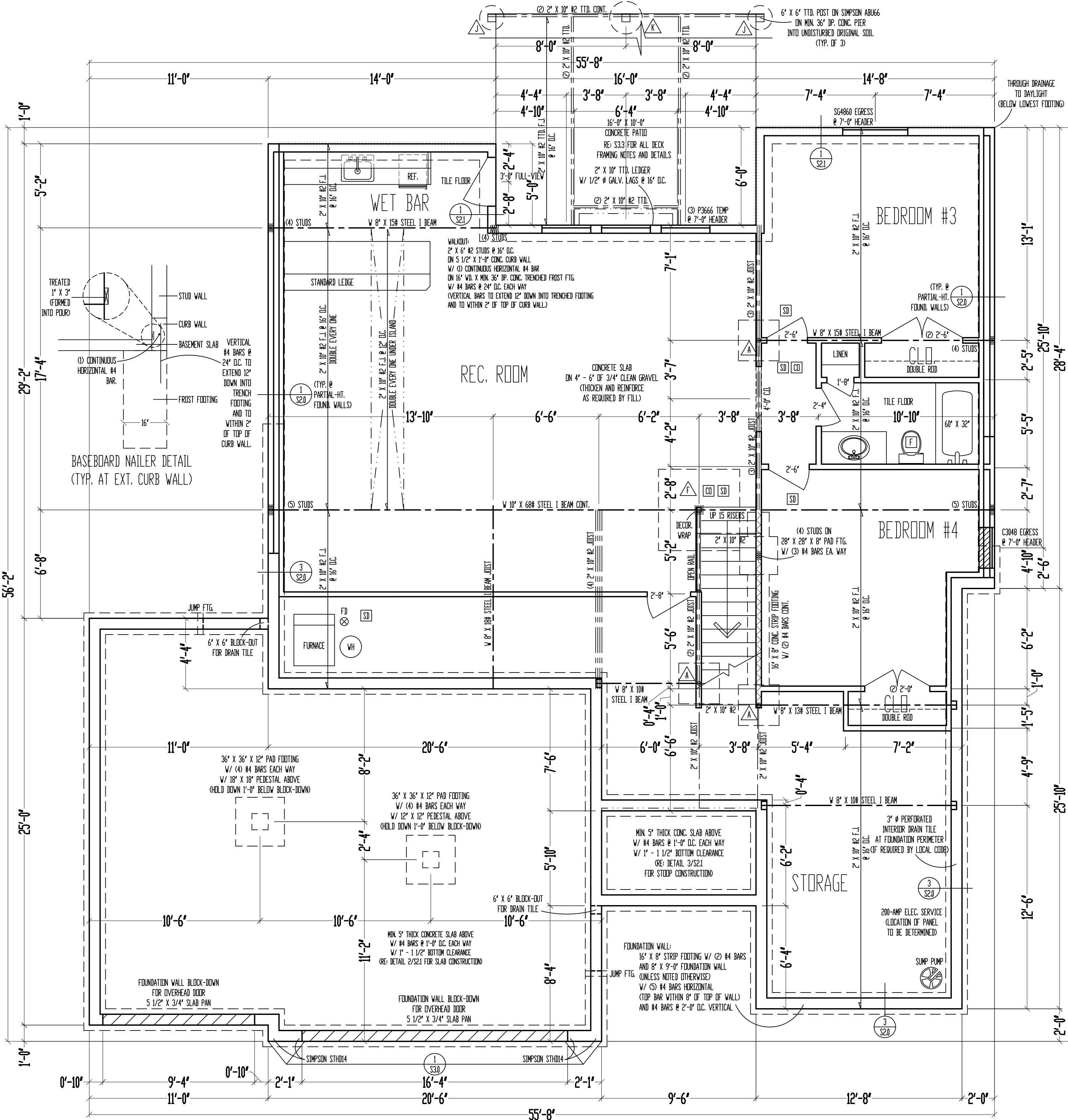
Title:
The PHOENIX 2
Description:
Lot 185, The Retreat at Hook Farms - 2nd Plat
Property Address:
2805 SW Heartland Rd., Lee's Summit, Missouri
General Contractor:
Walker Custom Homes, LLC



Date: 4-2-AD 2024
Rev. 1: 4-15-AD 2024
Rev. 2:
Rev. 3:

Sheet Title:
ELEVATIONS

Sheet No.:
A-1 of 4



***** = WALL BRACING PER FRAMING NOTE #1 AND PER CALCULATIONS ON SHEET S11.

FRAMING NOTES:

- BASEMENT LEVEL EXTERIOR WOOD-FRAMED 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. SMART PANEL, OR EQUAL, INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
- ===== = 6B: 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 & FIELDS (MIN. 8'-0" SECTIONS ONE SIDE OF WALL (CR) MIN. 4'-0" SECTION FOR BOTH SIDES)
- ===== = LOAD BEARING INTERIOR WALL.
- (2) 2" X 10" #2 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 1-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 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.
- 1/2" Ø ANCHOR BOLTS W/ MIN. 7" EMBEDMENT @ 48" O.C. MAX. & WITHIN 6" - 12" OF END OF EACH PLATE LENGTH.
- LVL'S SHOWN ON PLANS MAY BE REPLACED WITH DF/DF GRADE 24F-V4 GLULAM BEAMS OF THE SAME DEPTH, AND THE FOLLOWING WIDTHS:
(2) 1 3/4" LVL PLIES = 3 1/2" GLULAM
(3) 1 3/4" LVL PLIES = 5 1/2" GLULAM
- NEW FOUNDATION SHALL BEAR ON ORIGINAL SOIL WITH MINIMUM BEARING CAPACITY OF 1500 PSF. A GEOTECHNICAL ENGINEER IS RECOMMENDED FOR VERIFICATION OF THESE CONDITIONS DURING THE EXCAVATION PHASE. ENGINEER OF RECORD ASSUMES NO RESPONSIBILITY FOR CONSTRUCTION NOT VERIFIED TO BE FOUND ON ANYTHING SHORT OF THE AFOREMENTIONED REQUIREMENTS.
- CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD BEFORE CONSTRUCTION OF ANY DEFLECTION LIMITATIONS MORE STRINGENT THAN CODE MINIMUMS ABOVE ANY OPENINGS.

9'-0" FOUNDATION WALLS
(UNLESS NOTED OTHERWISE)
ON 16" X 8" STRIP FOOTINGS
(STEP WHERE GRADE REQUIRES)

2" X 10" FLOOR SYSTEM
FOUNDATION
SCALE: 1/4" = 1'-0"

STEEL COLUMN & PAD FOOTING SCHEDULE	
A	3" X 11 GA. STEEL COLUMN ON 30" X 30" X 10" PAD FOOTING W/ (4) #4 BARS EACH WAY (125K)
B	3 1/2" X 11 GA. STEEL COLUMN ON 36" X 36" X 10" PAD FOOTING W/ (4) #4 BARS EACH WAY (180K)
C	3" SCH. 40 STEEL COLUMN ON 42" X 42" X 12" PAD FOOTING W/ (5) #4 BARS EACH WAY (245K)
D	3 1/2" SCH. 40 STEEL COLUMN ON 48" X 48" X 12" PAD FOOTING W/ (6) #4 BARS EACH WAY (320K)
E	3 1/2" SCH. 40 STEEL COLUMN ON 54" X 54" X 14" PAD FOOTING W/ (7) #4 BARS EACH WAY (405K)
F	3 1/2" SCH. 40 STEEL COLUMN ON 60" X 60" X 14" PAD FOOTING W/ (8) #4 BARS EACH WAY (500K)

PIER FOOTING SCHEDULE	
G	12" Ø PIER FTG.
H	16" Ø PIER FTG.
J	18" Ø PIER FTG.
K	24" Ø PIER FTG.

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Office: (816) 554-0400 Email: admin@viewpointdesign.net

Title: **The PHOENIX 2**
Description: **Lot 185, The Retreat at Hook Farms - 2nd Plat**
Property Address: **2805 SW Heartland Rd., Lee's Summit, Missouri**
General Contractor: **Walker Custom Homes, LLC**



Date: 4-2-AD 2024
Rev. 1: 4-15-AD 2024
Rev. 2:
Rev. 3:

Sheet Title: **FOUNDATION PLAN**

Sheet No.:

RELEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI 04/17/2024 8:41:12

FASTENER SCHEDULE FOR STRUCTURAL MEMBERS. Table with columns: DESCRIPTION OF BUILDING ELEMENTS, NUMBER AND TYPE OF FASTENER, SPACING AND LOCATION. Sections include ROOF, WALL, and FLOOR.

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.

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.

GARAGE NOTES (CONTINUED)

- 44. THE GARAGE SHALL BE SEPARATED FROM THE DWELLING AND ITS ATTIC AREAS BY MINIMUM 3/4" GYP. BOARD APPLIED TO THE GARAGE SIDE OF FRAMING.

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, HABITABLE ATTICS, BALCONIES, FIRE ESCAPES, etc.

- 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.

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.

INSULATION AND PENETRATION REQUIREMENTS BY COMPONENT (TABLE N1102.1.1). Table with columns: CLIMATE ZONE, FENESTRATION U-FACTOR, SKYLIGHT U-FACTOR, etc.

DUCT SEALING

- M1103.2.2 (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.

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".

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 1/2" TO 3/8" OPENINGS.

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 1/2", WITH NOT LESS THAN 3/8" MORTAR OR GROUT COVER TO OUTSIDE FACE.

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.

MECHANICAL VENTILATION SYSTEM FAN EFFICACY. Table with columns: FAN LOCATION, AIR FLOW RATE, MINIMUM EFFICACY (CFM/WATT), AIR FLOW RATE, MAXIMUM (CFM).

MULTIPLE-PLY WOOD BEAM FASTENING SCHEDULE

Table with columns: DIMENSIONAL LUMBER BEAM SIZE/TYPE, FASTENERS, LVL BEAM SIZE/TYPE, FASTENERS, LVL BEAM SIZE/TYPE, FASTENERS. Rows show different beam sizes and their corresponding fasteners.

FASTENER 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, sheathing, and masonry veneer.

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



CLIENT: WALKER CUSTOM HOMES, LLC
JOB TITLE: RHF185 SPEC
LOT 185, THE RETREAT AT HOOK FARMS
LOCATION: 2805 SW HEARTLAND RD., LEE'S SUMMIT, MISSOURI



Structural Notes section containing a revision table and the text 'STRUCTURAL NOTES'. Includes a release for construction stamp dated 04/17/2024 8:41:12.

RESIDENTIAL SEISMIC & WIND ANALYSIS

DETERMINE WEIGHT OF HOUSE:		INPUT		CALCULATED VALUE	
LOCATION		DEAD LOAD (psf)	AREA (ft ²)	WEIGHT (lbs.)	
ROOF		10	2767	27670	
CEILING		10	2767	27670	
FIRST FLOOR		10	2767	27670	
FIRST FLOOR EXT. WALL DL	WALL LENGTH (ft)	WALL HEIGHT (ft)	WALL UNIT WT. (psf)	WEIGHT (lbs)	
	281	10	10	28100	
FIRST FLOOR INT. PARTITION WALL DL		DEAD LOAD (psf)	AREA (ft ²)	WEIGHT (lbs)	
		6	2767	16602	
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		
SLOPED ROOF	AREA	LOAD	SLOPED ROOF	AREA	LOAD
VERT. ROOF	40	558	VERT. ROOF	420	1808
1ST	731.5	10200	1ST	814	11160
BSMT	0	0	BSMT	122	8689
PRESSURE (PSF) - PER ASCE CH. 6					
SLOPED ROOF	ZONE B	5.9	ZONE C	11.6	2a (FIG. 28.6-1, ASCE7)
WALL/VERT. ROOF	ZONE A	17.4	ZONE D	3.4	
MEAN ROOF HT., ft		20			13.3

a) If there is a walkout wall to be sheathed, determine tributary wind area and enter here. If no walkout, enter 0 for area.
 $q_{e10} = 0.00256 K_d K_{zt} K_x V^2$ (ASCE7-10 Velocity Pressure) $q_{e10, ASD} = 0.6 q_{e10}$ (Design Velocity Pressure for ASD analysis under ASCE7-10 and IRC/IBC 2012)

1ST FLOOR TRIBUTARY WEIGHT	69390
BASEMENT TRIBUTARY WEIGHT	69390
S _g (SITE GROUND MOTION - %g - FROM ASCE7 SEISMIC MAP)	12.0%
F _a (from ASCE7 Table 11.4-1)	1.6
S _{DS} (= 2/3 * S _g * F _a)	0.128
R (from ASCE7 Table 12.2-1)	6.5

SEISMIC SHEAR		
LOCATION	From ASCE7 (Eq. 12.8-1):	V (= 1.2 * S _{DS} * W / R) (lbs.)
1ST FLOOR		1640
BASEMENT		1640

Sheathing Location	Min. Sheathing Schedule	Fastening Schedule	Allowable Shear (#/LF)	Code Reference
Exterior (Option #1)	7/16" APA Rated Plywood/OSB	1-1/2" 18ga. Staples w/ 1" penetration @ 4" O.C. Edges, 6" O.C. Field For 24" stud spacing, 12" O.C. Field For 18" stud spacing	165	per IBC, Table 2306.3(1)
Exterior (Option #2)	7/16" APA Rated Plywood/OSB	1-1/2" 18ga. Staples w/ 1" penetration @ 4" O.C. Edges, 6" O.C. Field For 24" stud spacing, 12" O.C. Field For 18" stud spacing	230	per IBC, Table 2306.3(1)
Exterior (Option #3)	7/16" APA Rated Plywood/OSB	1-1/2" 18ga. Staples w/ 1" penetration @ 3" O.C. Edges, 6" O.C. Field For 24" stud spacing, 12" O.C. Field For 18" stud spacing	310	per IBC, Table 2306.3(1)
Exterior (Option #4)	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 (Option #5)	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 (Option #6)	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- 1/4" Type W or S Screws @ 8" O.C. Edges, 12" O.C. Field	60	per IBC, 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 FIRST FLOOR	5	WIDTH OF 1ST STORY (FT.)	66.5	WIDTH OF 2ND STORY (FT.)	1
EXTERIOR SHEATHING OPTION FOR BASEMENT WALLS	4	DEPTH OF 1ST STORY (FT.)	74	DEPTH OF 2ND STORY (FT.)	1
		BACK WALL OF GARAGE (FT.)	22.5		
		GAR. WALL: 1=F-B, 2=S-S	2		

	SEISMIC				WIND			
	FRONT-TO-BACK	RESISTANCE (lbs.)	SIDE-TO-SIDE	RESISTANCE (lbs.)	FRONT-TO-BACK	RESISTANCE (lbs.)	SIDE-TO-SIDE	RESISTANCE (lbs.)
1ST FLOOR	92	34960	27.5	10450	92	48944	27.5	14630
BASEMENT	0	0	24	6720	0	0	24	9408

	ADDITIONAL RESISTANCE REQUIRED		Anchor Bolt Spacing (in.)		16d Nail Spacing req'd at bottom plate (in.)	
	SEISMIC	WIND	diameter (in.)	spacing (in.)	1st Floor F-B	1st Floor S-S
1ST FLOOR FRONT-TO-BACK	0	0	0.5		33	
1ST FLOOR SIDE-TO-SIDE	0	0	0.5		27	
BASEMENT FRONT-TO-BACK	0	0				
BASEMENT 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?
1ST FLOOR FRONT-TO-BACK	0					0	YES
1ST FLOOR SIDE-TO-SIDE	0					0	YES
BASEMENT FRONT-TO-BACK	0					0	YES
BASEMENT SIDE-TO-SIDE	0					0	YES

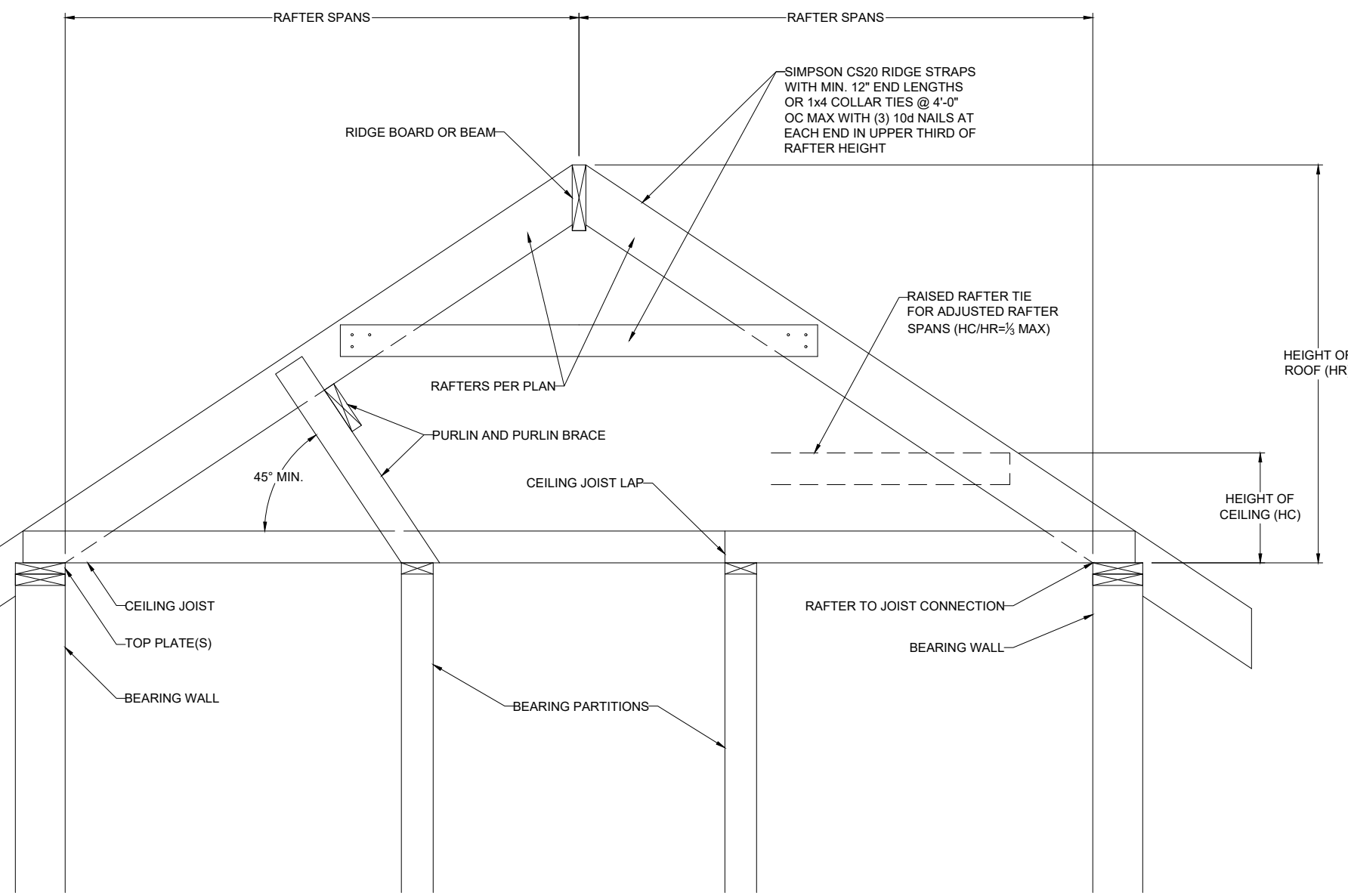
**NOTES: 1) SEE ATTACHED CALCULATIONS FOR PORTAL FRAME OR PERFORATED SHEAR WALL RESISTANCE CAPACITIES (IF APPLICABLE).
 2) SEE SHEET S1 FOR INTERIOR STEEL X-BRACE INSTALLATION. 3) INTERIOR WALLS SHEATHED WITH OSB SHALL BE ATTACHED WITH SAME STAPLE/NAILING PATTERN AS EXTERIOR OSB ON SAME FLOOR (SEE TABLE 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							
ROOF PITCH (MAX)	X/12	DEGREES	PITCH OF 6 OR LESS: EOH-13.3, E-7.2, G-5.2				
	5	22.6					
ASCE 7							
OVERHANG	LENGTH (FT.)	PRESSURE (PSF)	LINAL FT. OF OH	UPLIFT PER FT. (LBS)			
	1	16.56	283	16.56			
	TOTAL AREA (FT ²)	ZONE E AREA (FT ²)	ZONE G AREA (FT ²)	PRESSURE ZN. E (PSF)	PRESSURE ZN. G (PSF)	TOTAL FORCE (LBS)	FORCE PER LINEAL FT. @ PERIMETER (LBS)
MAIN ROOF**	4921	-654.36	5575.36	15.12	10.5	48647	173.1
**ALONG PERIMETER	TOTAL UPLIFT PER LINEAL FOOT ALONG EXTERIOR (POUNDS)				UPLIFT OK		
**INSIDE EXTERIOR WALLS	RESISTANCE DUE TO DEAD WEIGHT & (3) 10d TOENAILS				189.7		
					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 8d @ 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 2018 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)	1154	ft ²
Ceiling Height in Usable Space	8.5	ft

Note: Per 2018 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 2018 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 ft³)

Required air space in combined areas:	7500	ft ³
---------------------------------------	------	-----------------

Required combined area:	882	ft ²
-------------------------	-----	-----------------

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 ²
Minimum grill size:	14 x 11	(inches)
Note: two grills required - one within 12" of floor, one within 12" of clg.		

VISTA
 STRUCTURAL
 ENGINEERING, LLC

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 OFFICE: 971.255.6099 * MOBILE: 971.255.6099 *
 EMAIL: DENNIS@VISTASTRUCTURAL.COM

CLIENT: WALKER CUSTOM HOMES, LLC
 JOB TITLE: RHF185 SPEC
 LOT 185, THE RETREAT AT HOOK FARMS
 LOCATION: 2805 SW HEARTLAND RD.
 LEE'S SUMMIT, MISSOURI

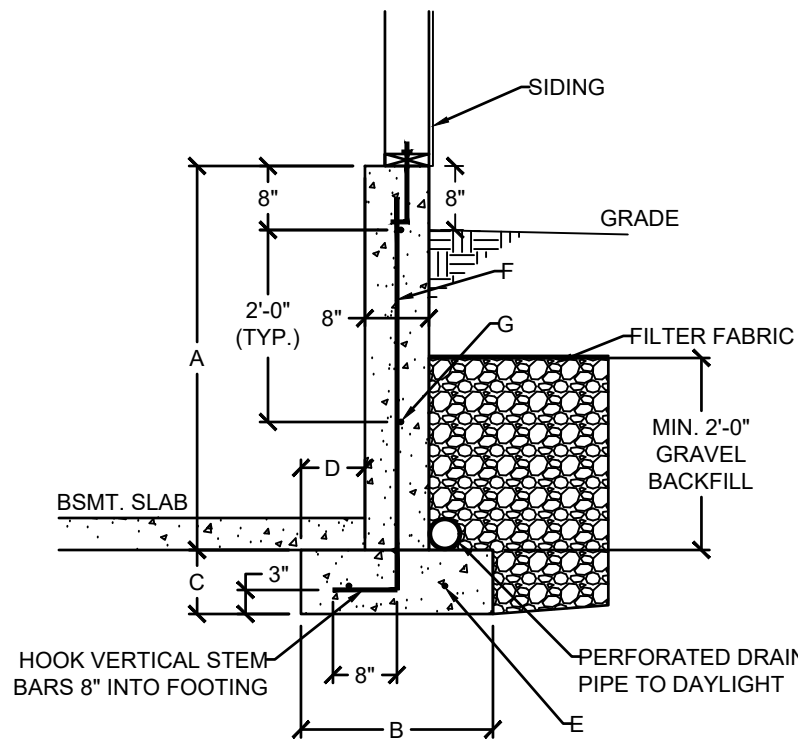
STATE OF MISSOURI
 DENNIS HBIER
 NUMBER: PE-201400172
 PROFESSIONAL ENGINEER
 4-13-2024

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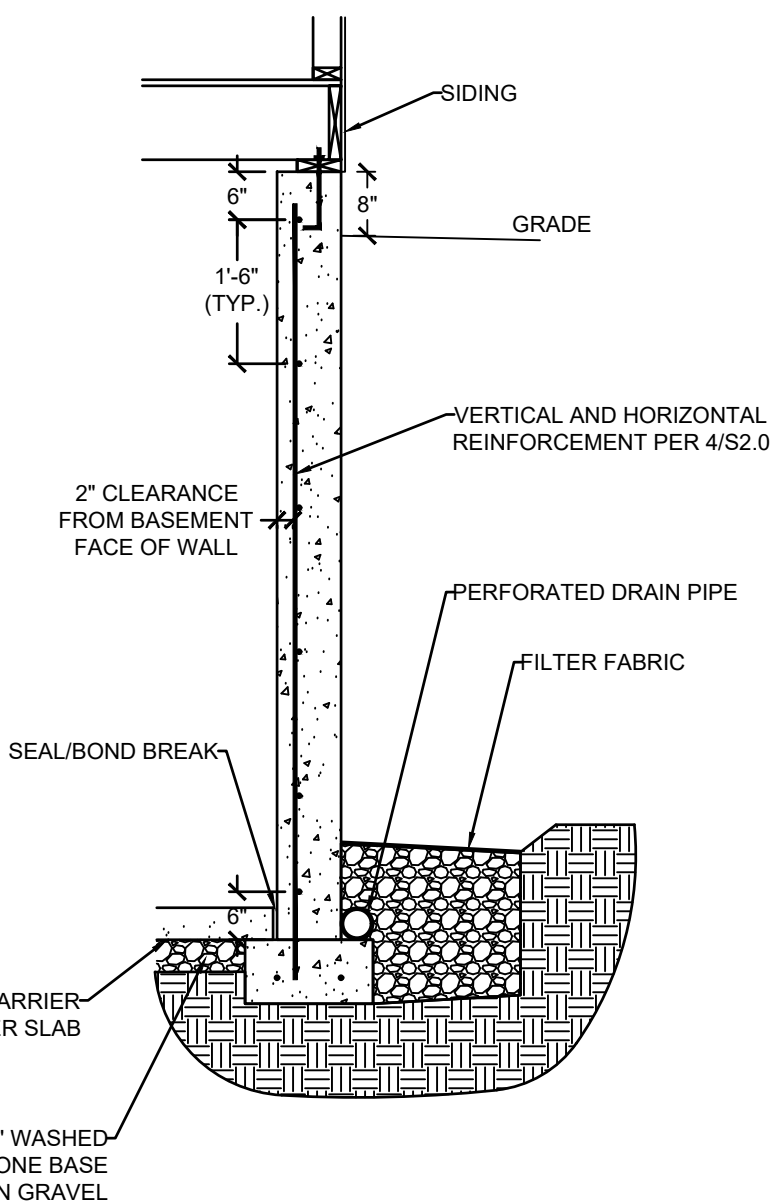
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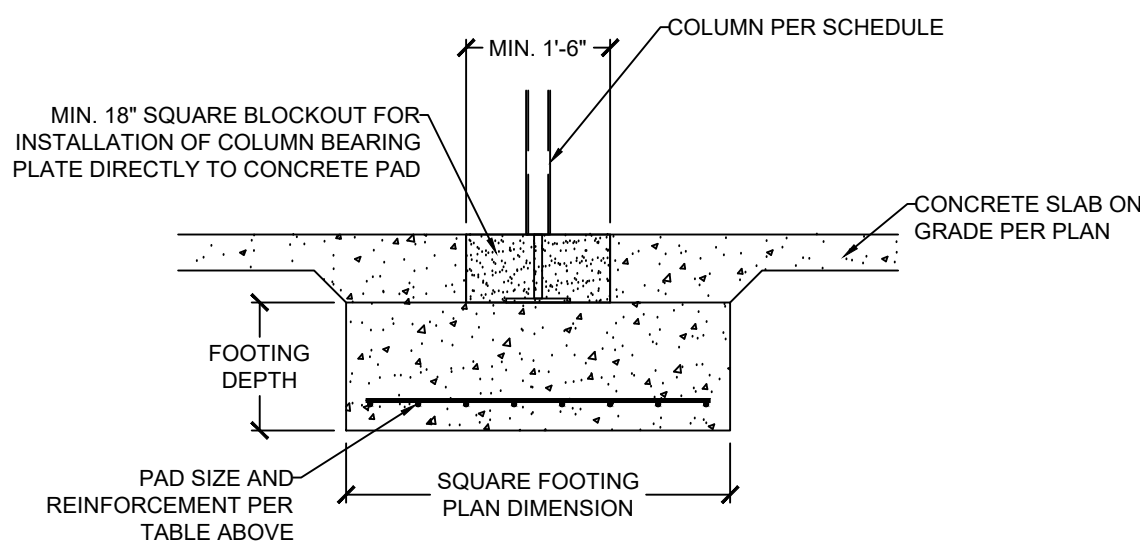


1 DAYLIGHT WALL CONSTRUCTION
S2.0 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)

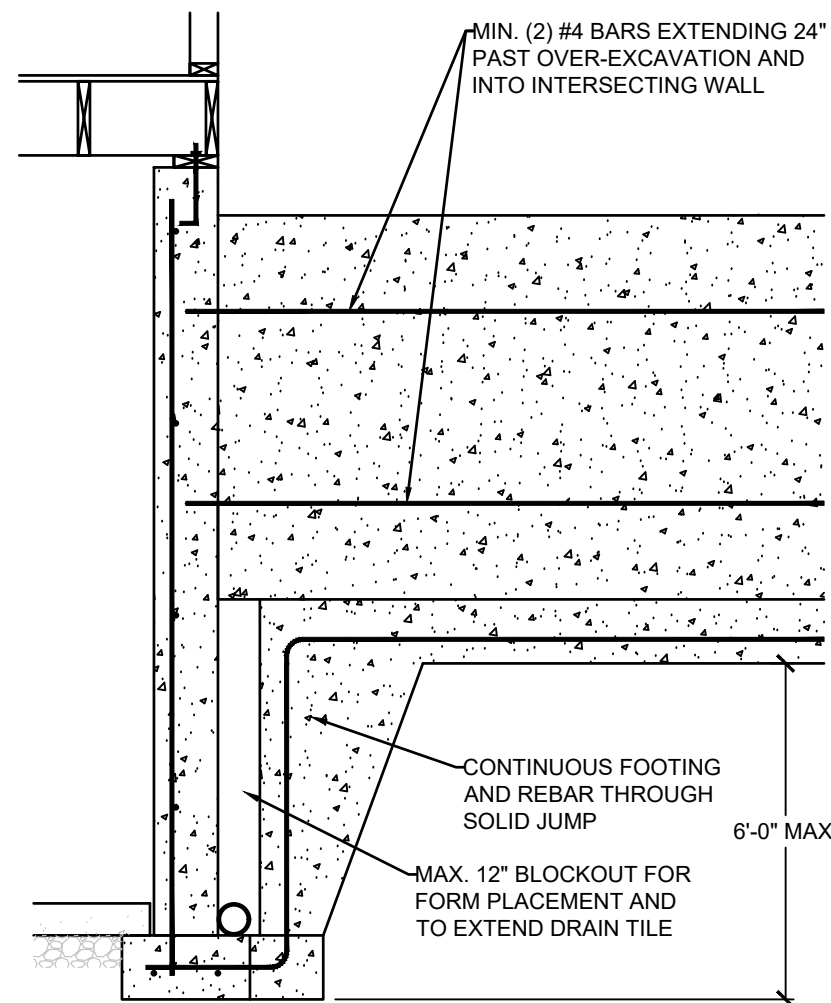
DAYLIGHT BASEMENT WALL SCHEDULE						
A	B	C	D	E	F	G
4'-0"	1'-6"	0'-8"	0'-5"	(2) #4	#4 VERT. @ 12" O.C.	(2) #4 HORIZ.
5'-0"	2'-0"	0'-8"	0'-7"	(2) #4	#4 VERT. @ 12" O.C.	(3) #4 HORIZ.
6'-0"	2'-6"	0'-8"	0'-10"	(3) #4	#4 VERT. @ 12" O.C.	(3) #4 HORIZ.



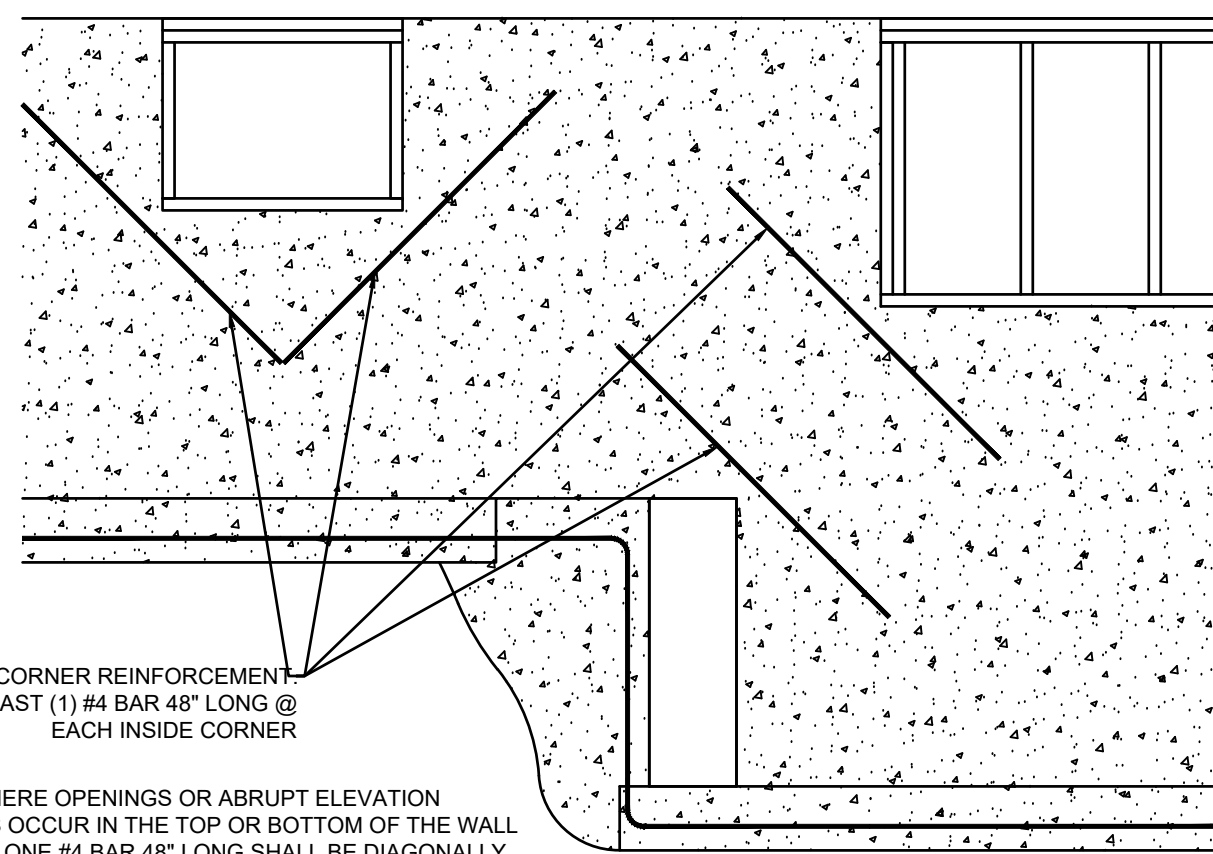
3 CONCRETE WALL SECTION
S2.0 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)



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

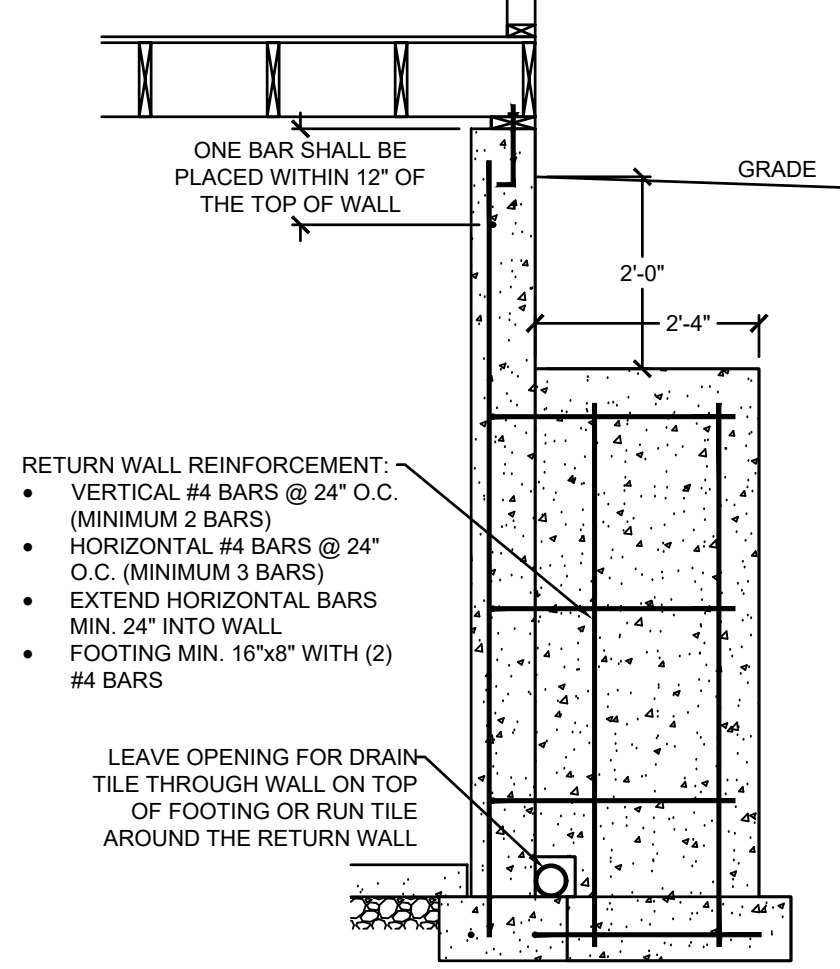


5 SOLID JUMP
S2.0 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)



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

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



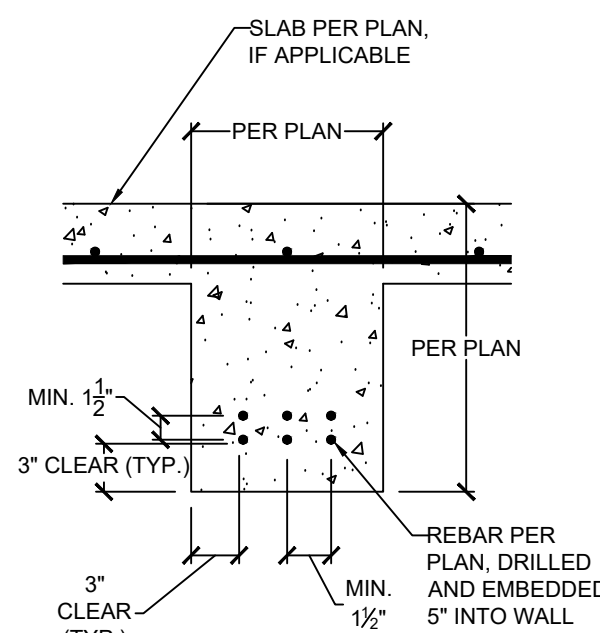
7 RETURN WALL DETAIL
S2.0 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)

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 3/4" 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



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

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CLIENT: WALKER CUSTOM HOMES, LLC
JOB TITLE: RHF185 SPEC
LOT 185, THE RETREAT AT HOOK FARMS
LOCATION: 2805 SW HEARTLAND RD.
LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI
DENNIS HEIER
NUMBER: PE-2014001772
PROFESSIONAL ENGINEER
4-13-2024

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S2.0

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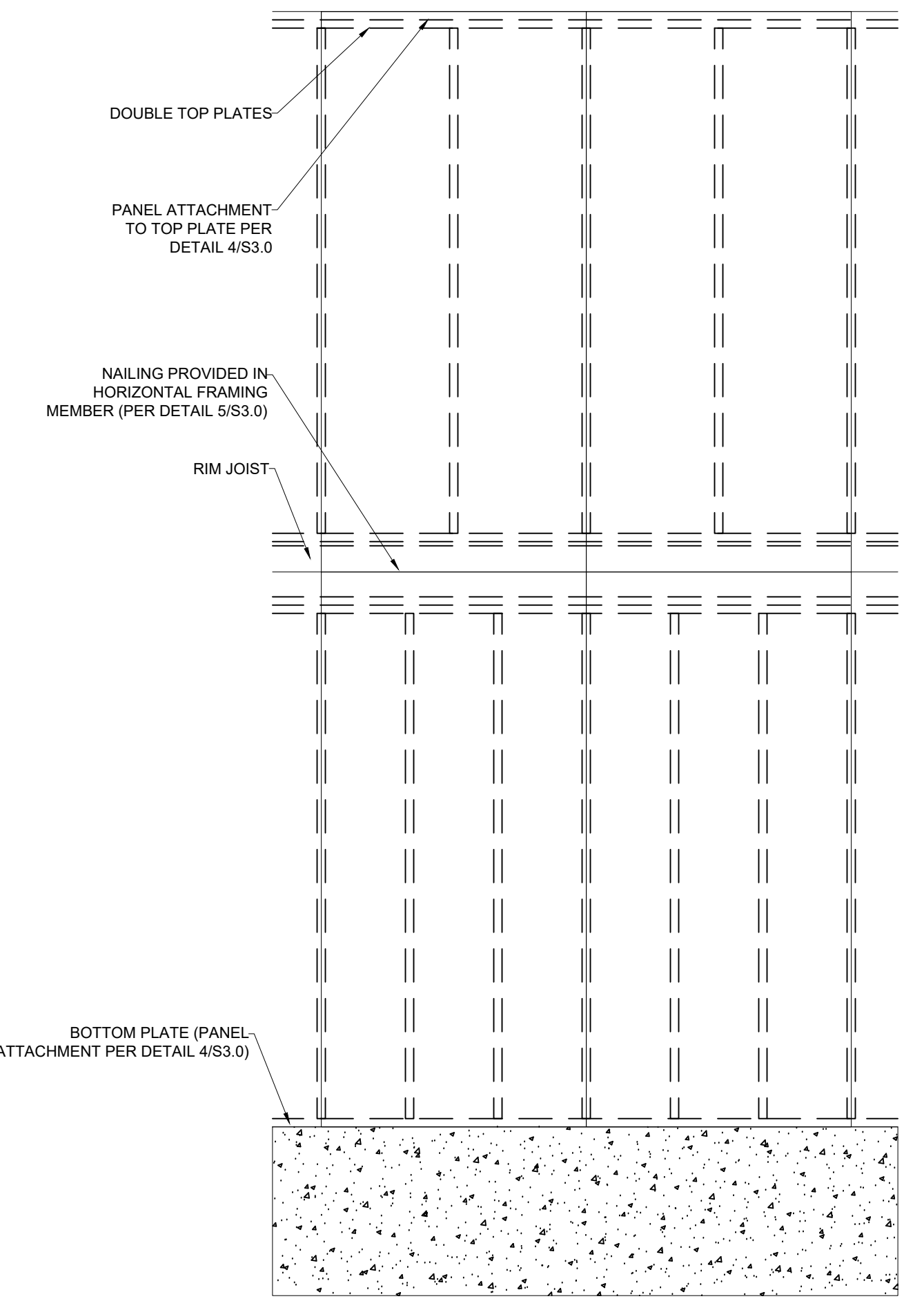
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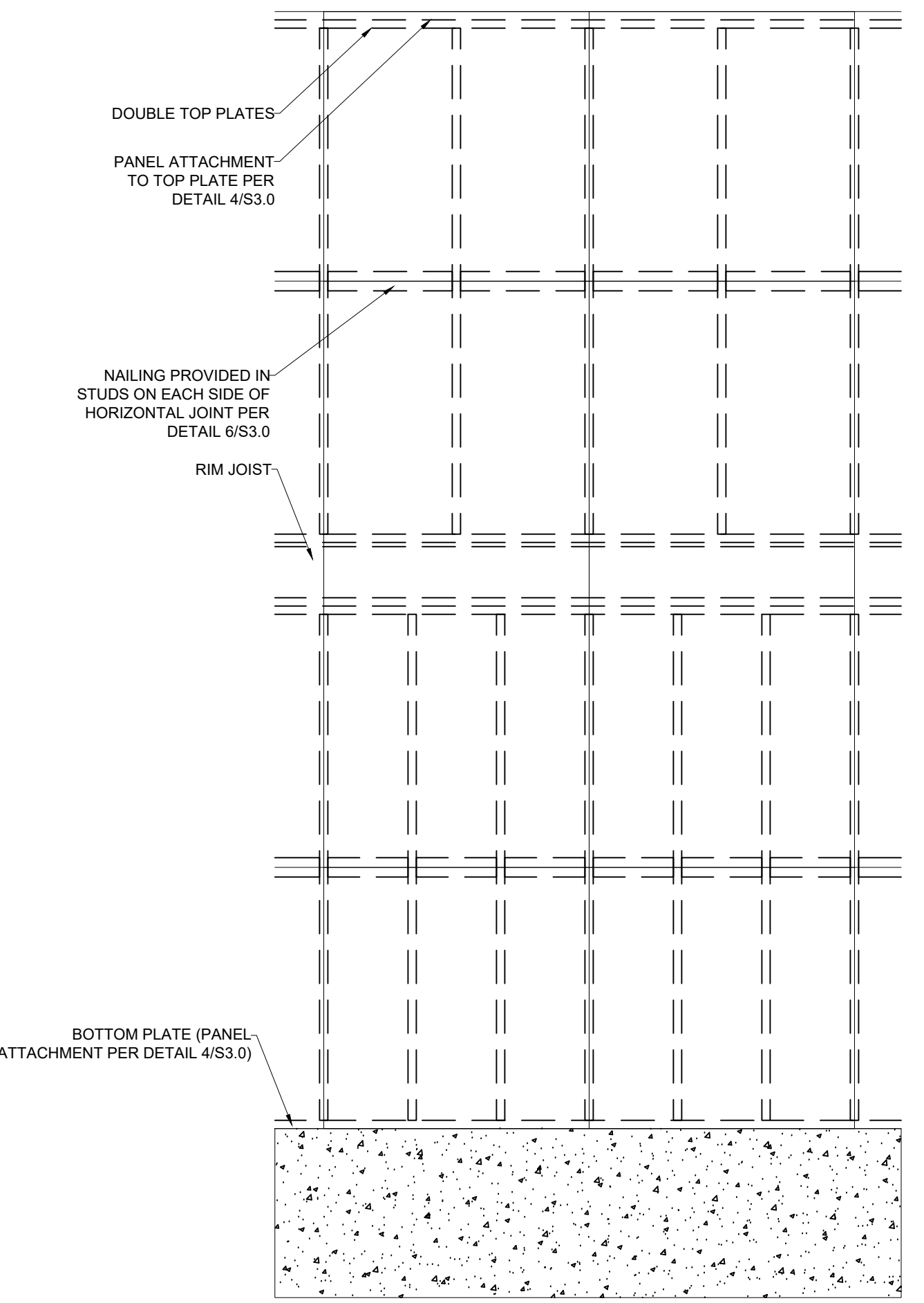
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S3.1

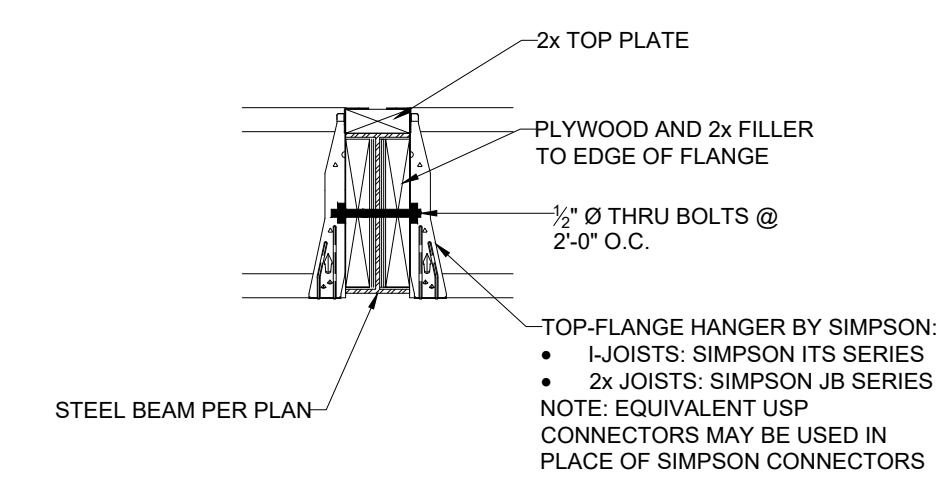
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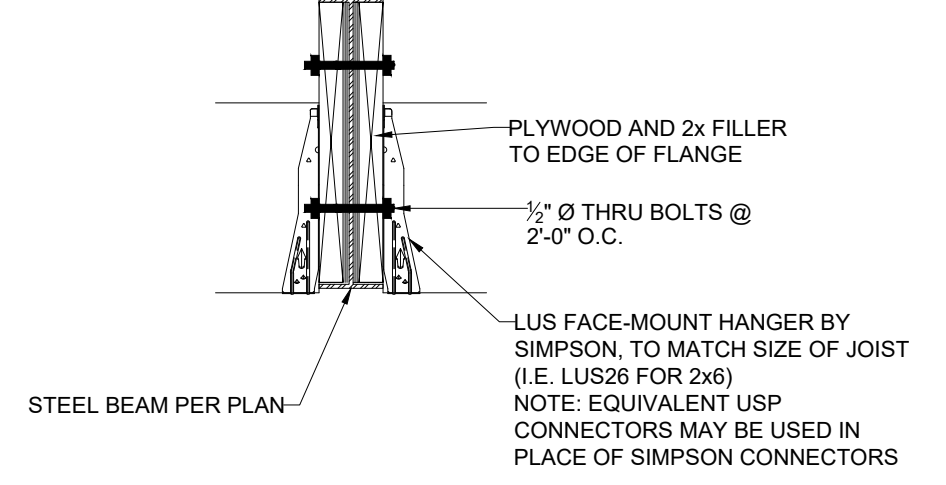
1 EXTERIOR WALL SHEATHING PANEL ATTACHMENT
S3.1 PANEL SPLICE OVER HORIZONTAL FRAMING MEMBER
SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)



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)

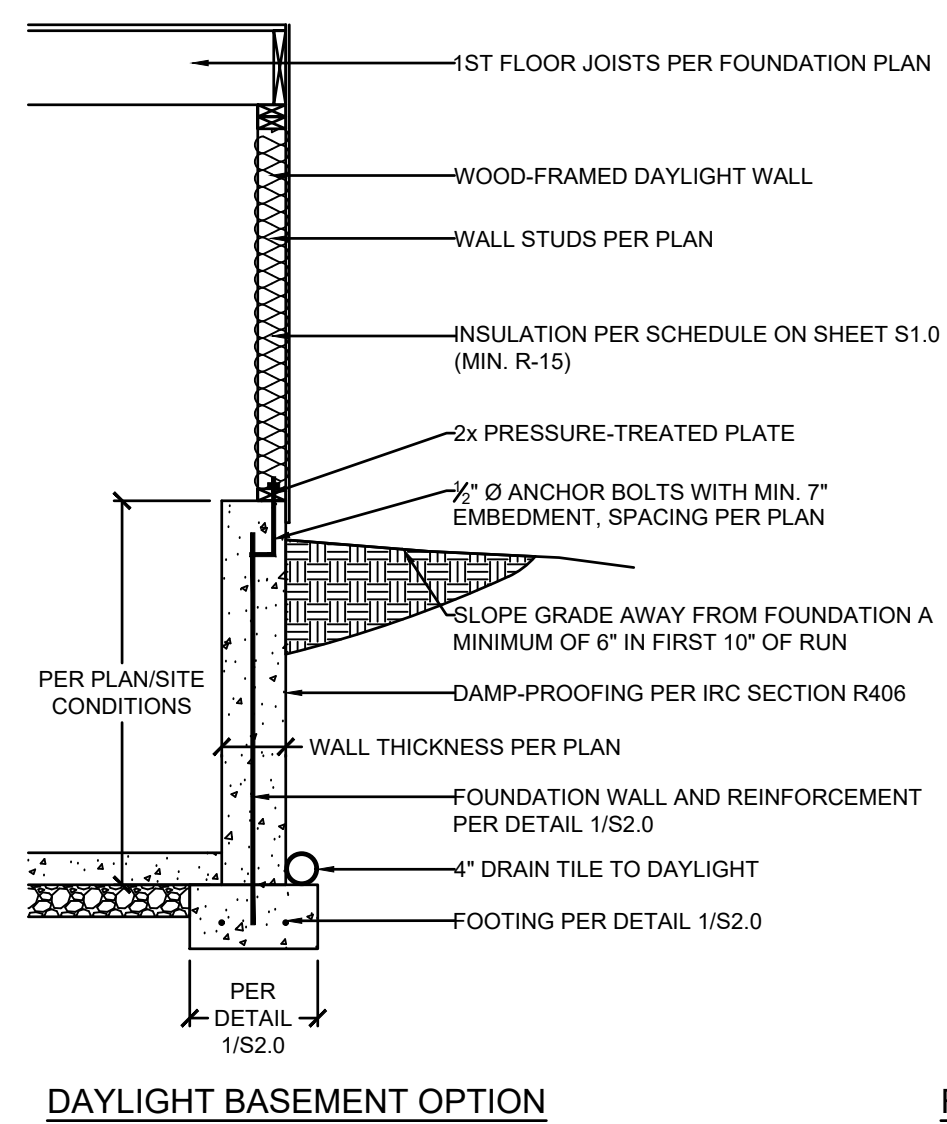


4 FLOOR JOIST TO FLUSH STEEL BEAM DETAIL
S3.1 SCALE: 1" = 1'-0" (18x24) OR 1 1/2" = 1'-0" (24x36)

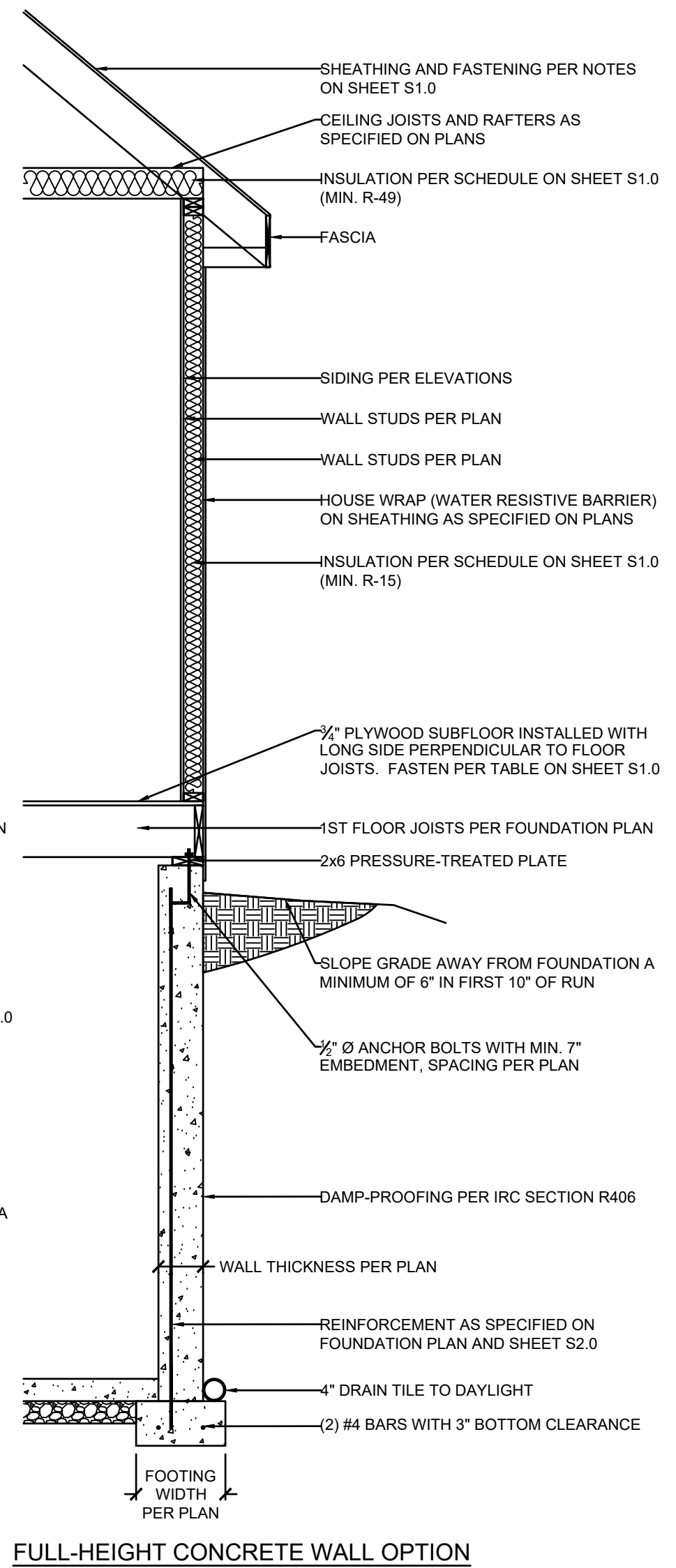


5 CEILING JOIST TO FLUSH STEEL BEAM DETAIL
S3.1 SCALE: 1" = 1'-0" (18x24) OR 1 1/2" = 1'-0" (24x36)

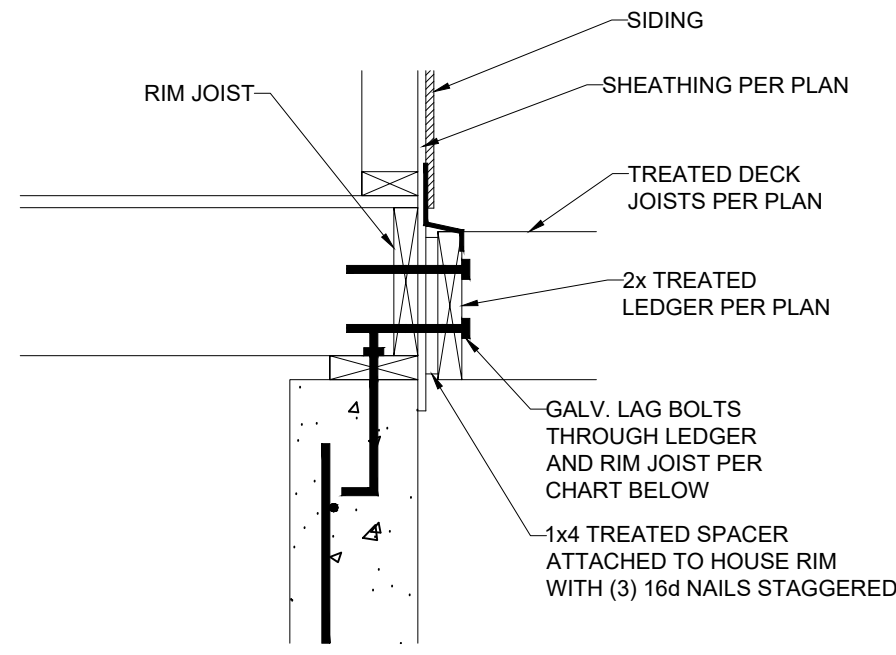
3 EXTERIOR WALL SECTION
S3.1 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)



DAYLIGHT BASEMENT OPTION

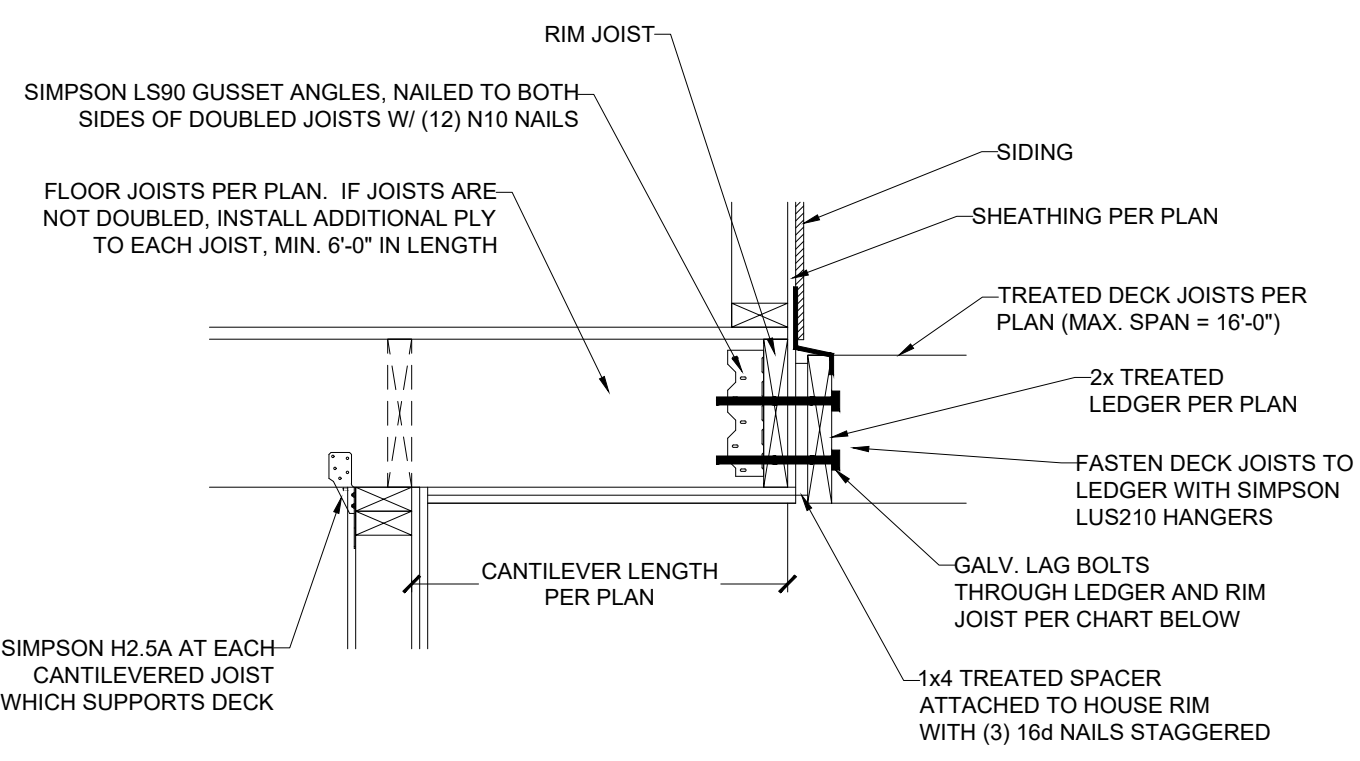


FULL-HEIGHT CONCRETE WALL OPTION



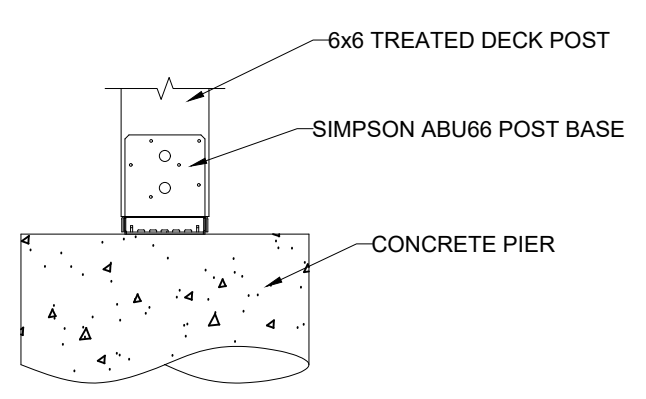
DECK LEDGER ATTACHMENT GUIDE

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



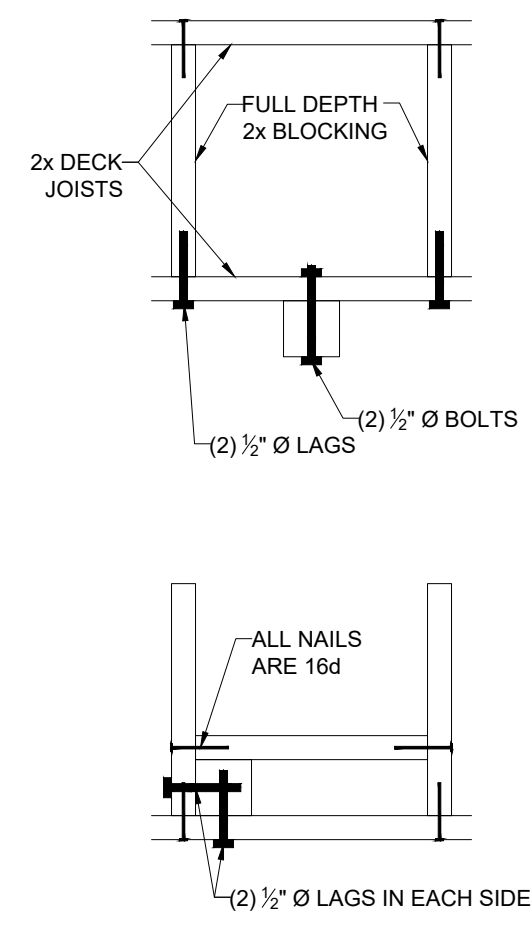
2 CANTILEVER WITH DECK ATTACHMENT

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



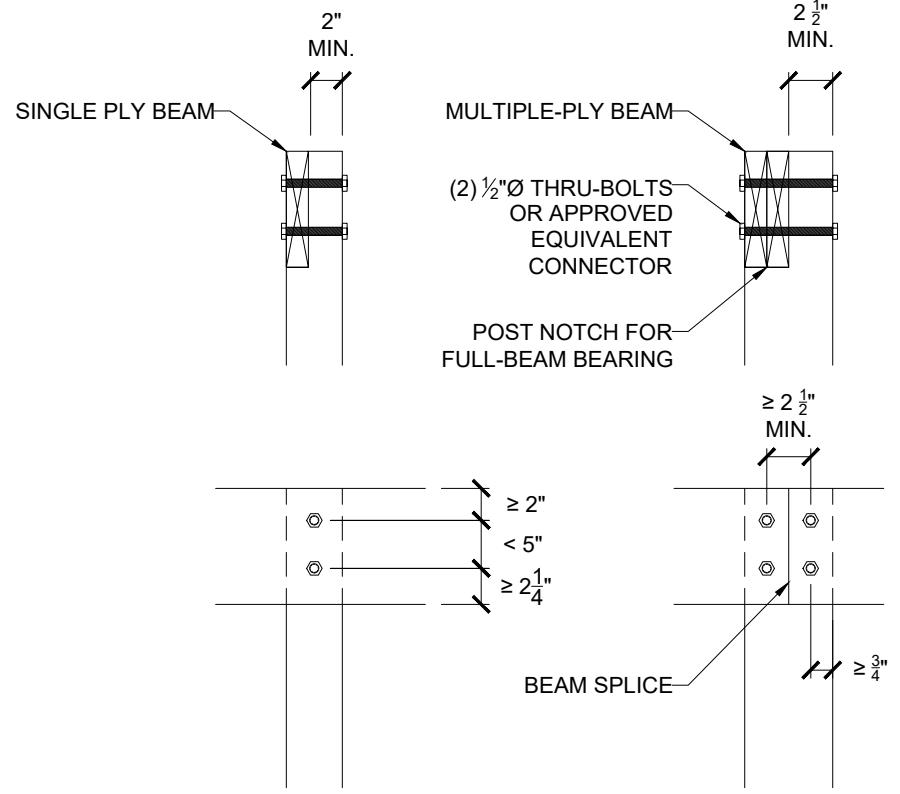
3 DECK POST BASE

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



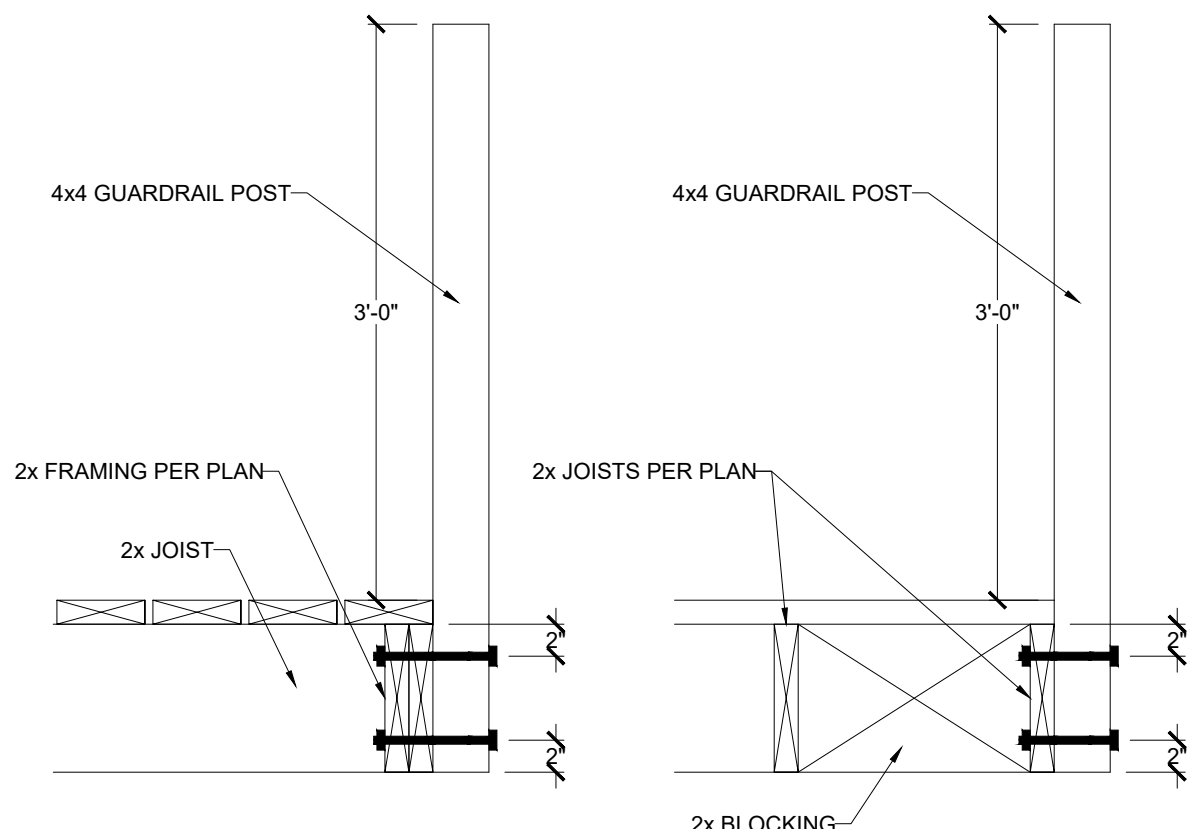
4 REINF. POST CONNECTIONS

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



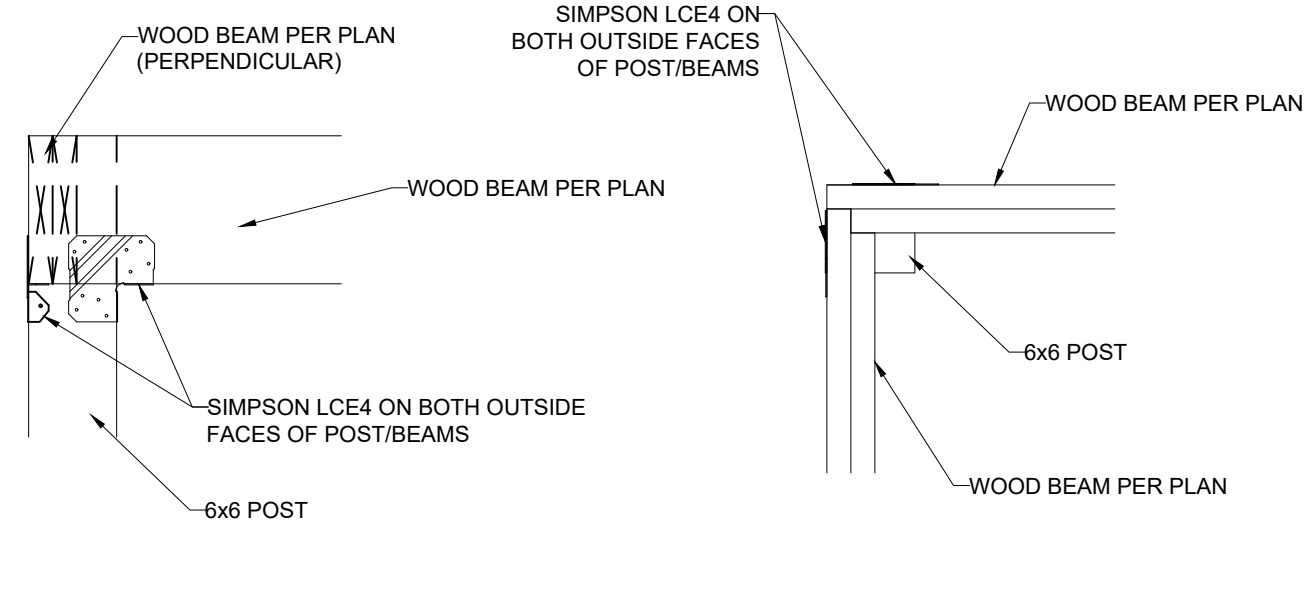
5 LET-IN (COVERED) DECK BEAM CONNECTION

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



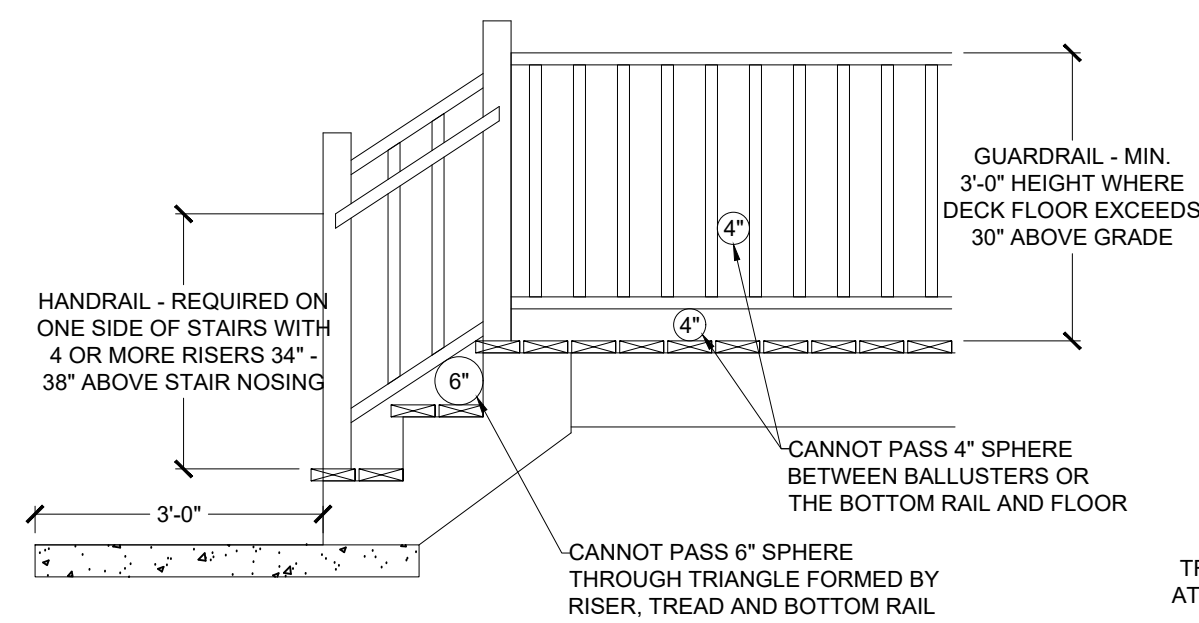
6 GUARDRAIL CONNECTION

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



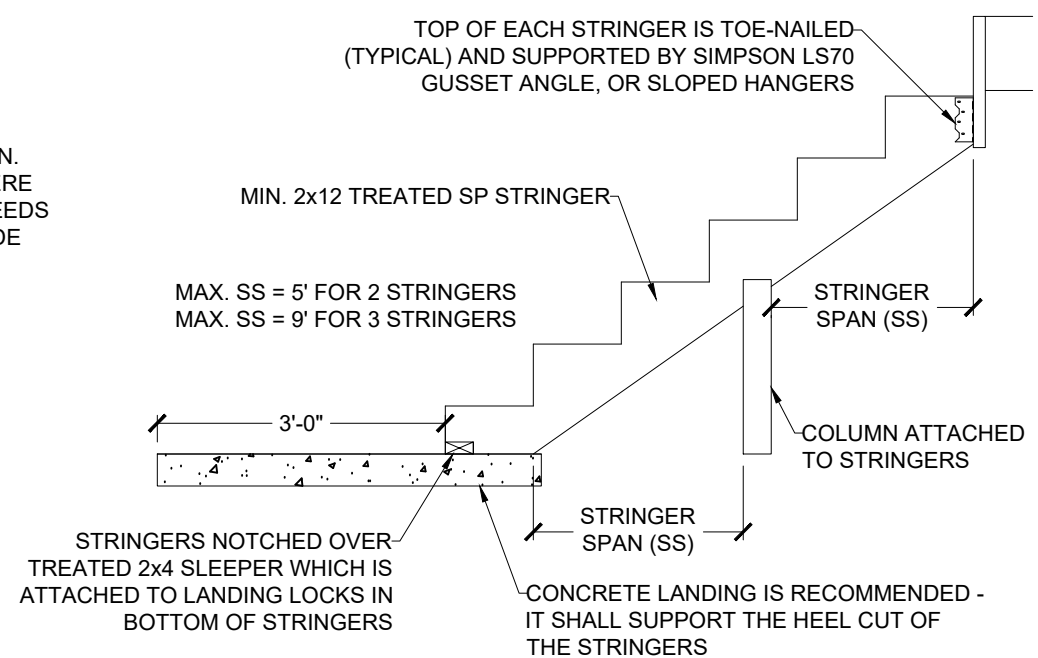
7 ALTERNATE COVERED DECK/PORCH INTERSECTION CORNER BEAM CONNECTION

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)



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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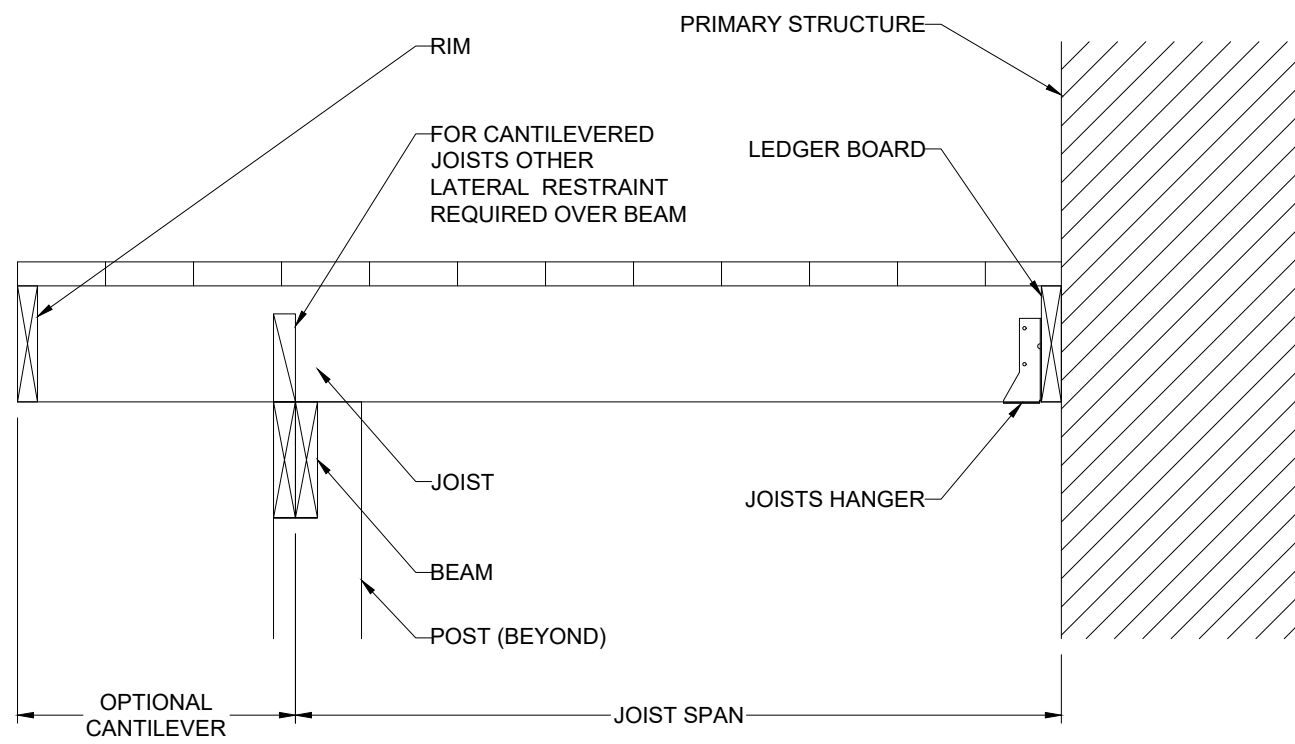
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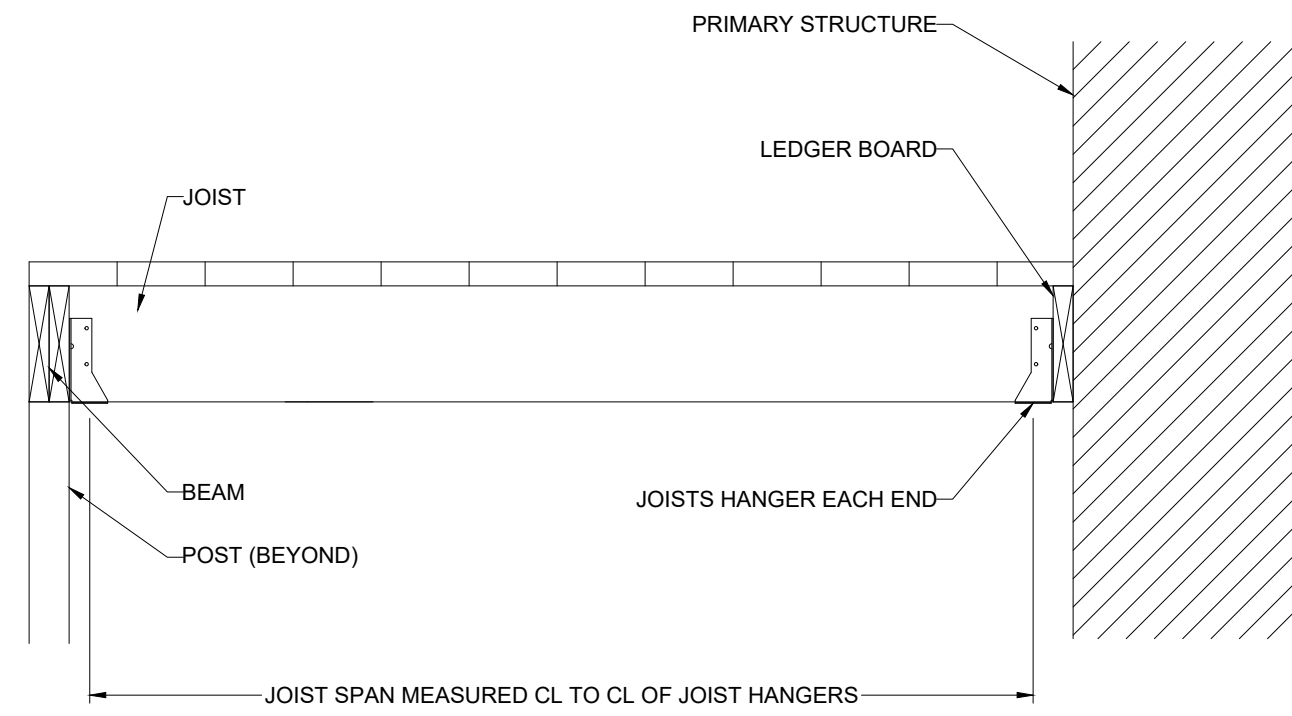
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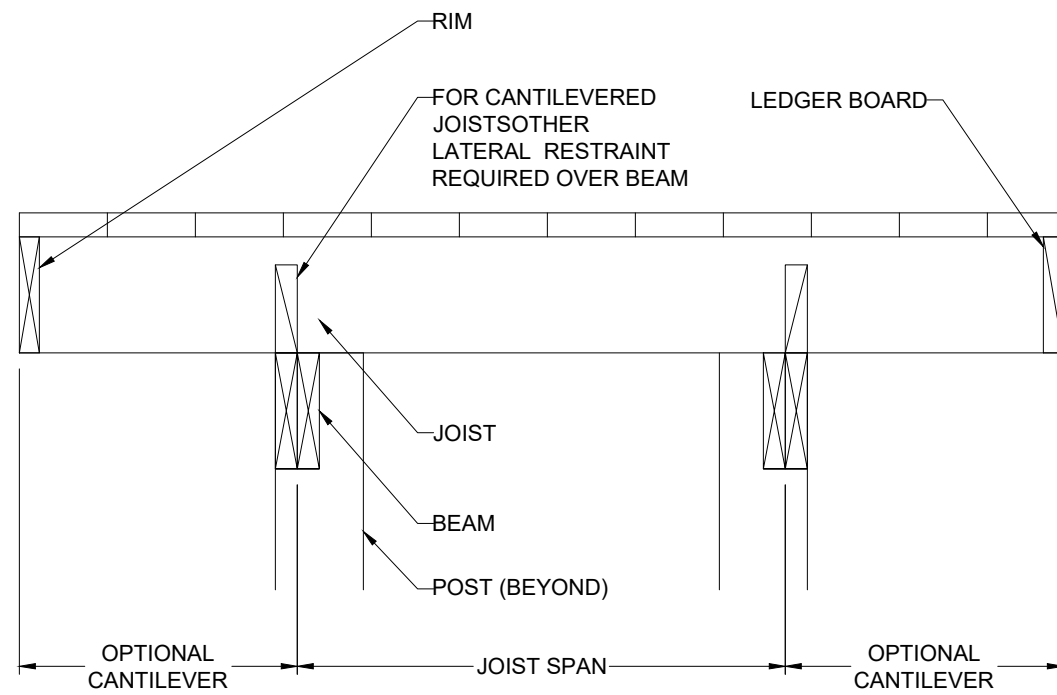
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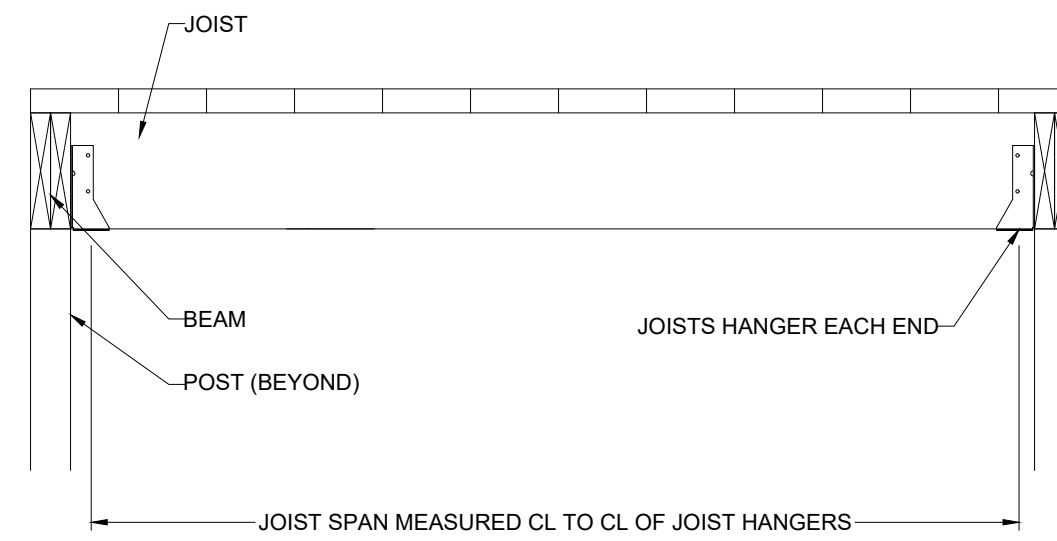
CANTILEVERED JOISTS WITH DROPPED BEAM



JOISTS WITH FLUSH BEAM

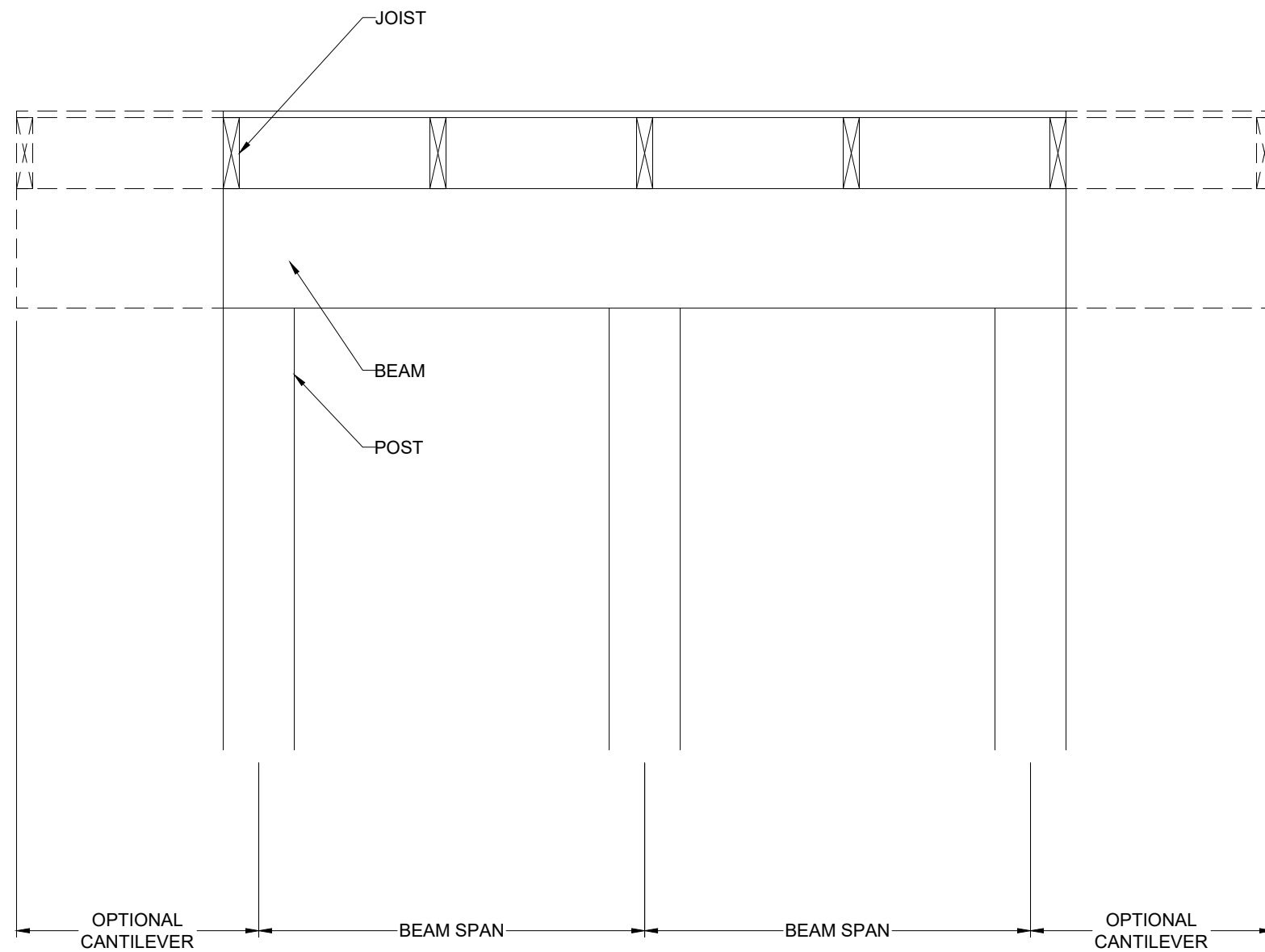


JOISTS ON FREE-STANDING DECK WITH DROPPED BEAM

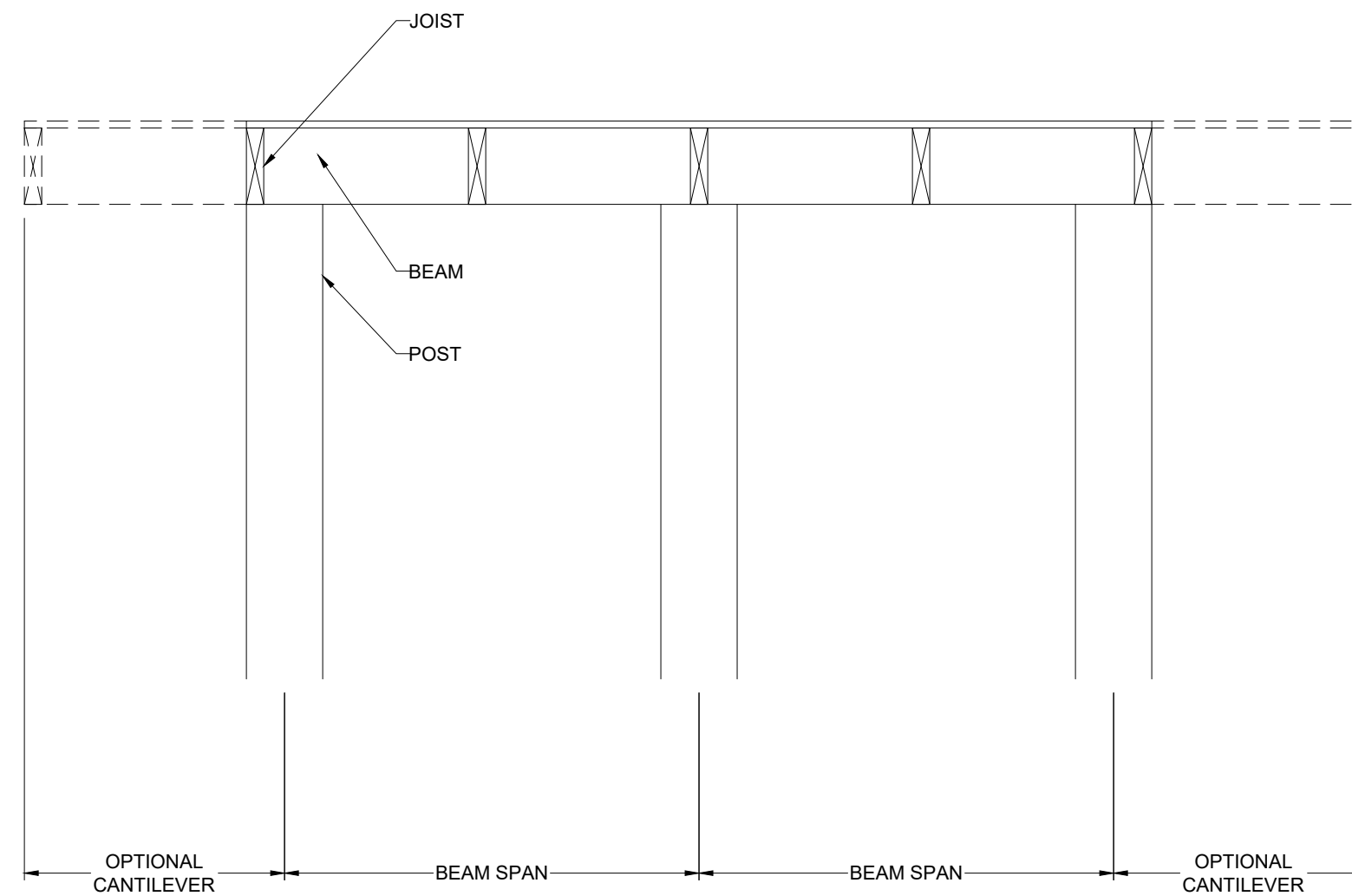


JOISTS WITH FLUSH BEAM

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



DROPPED BEAM



FLUSH BEAM

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