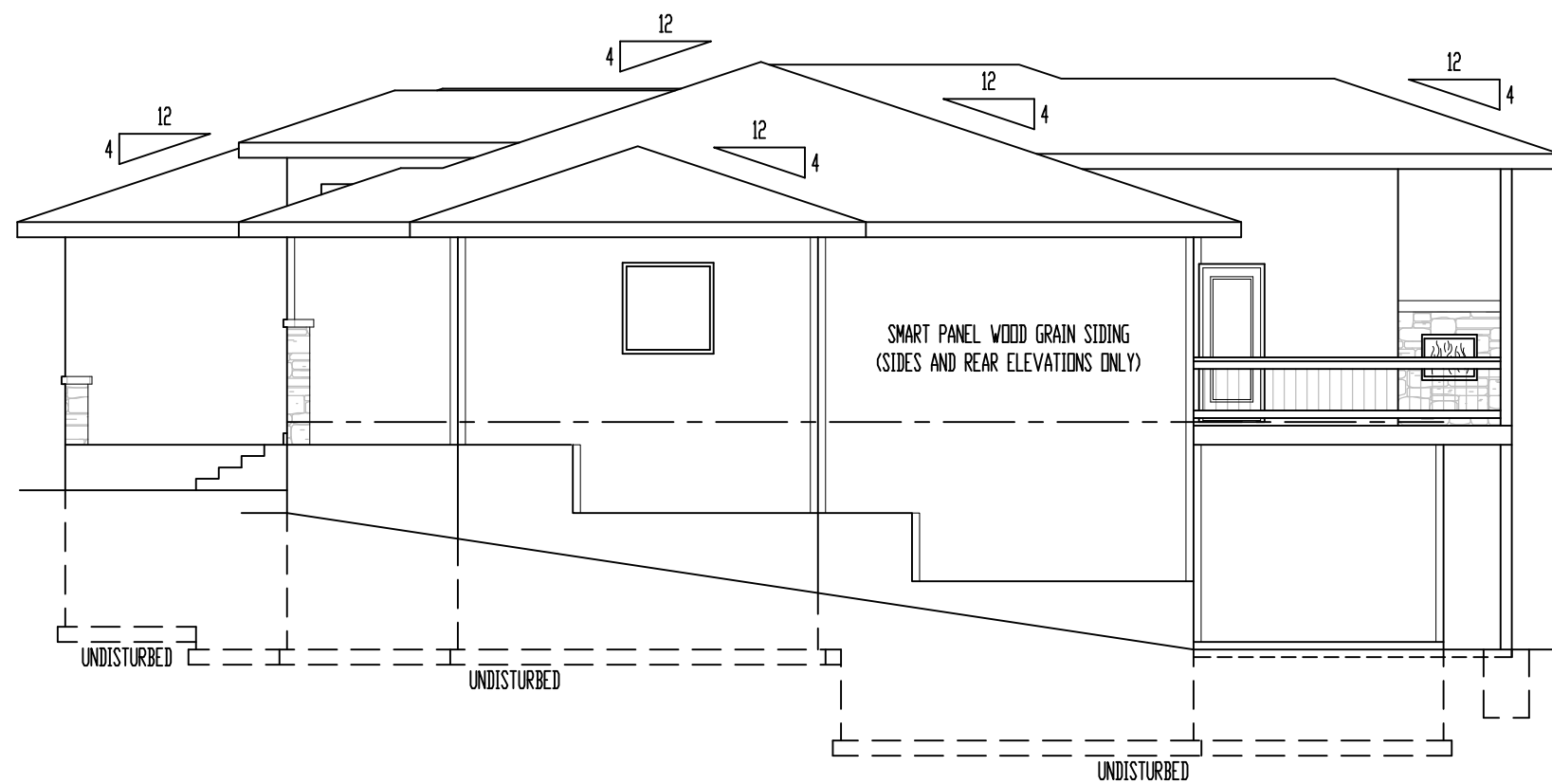
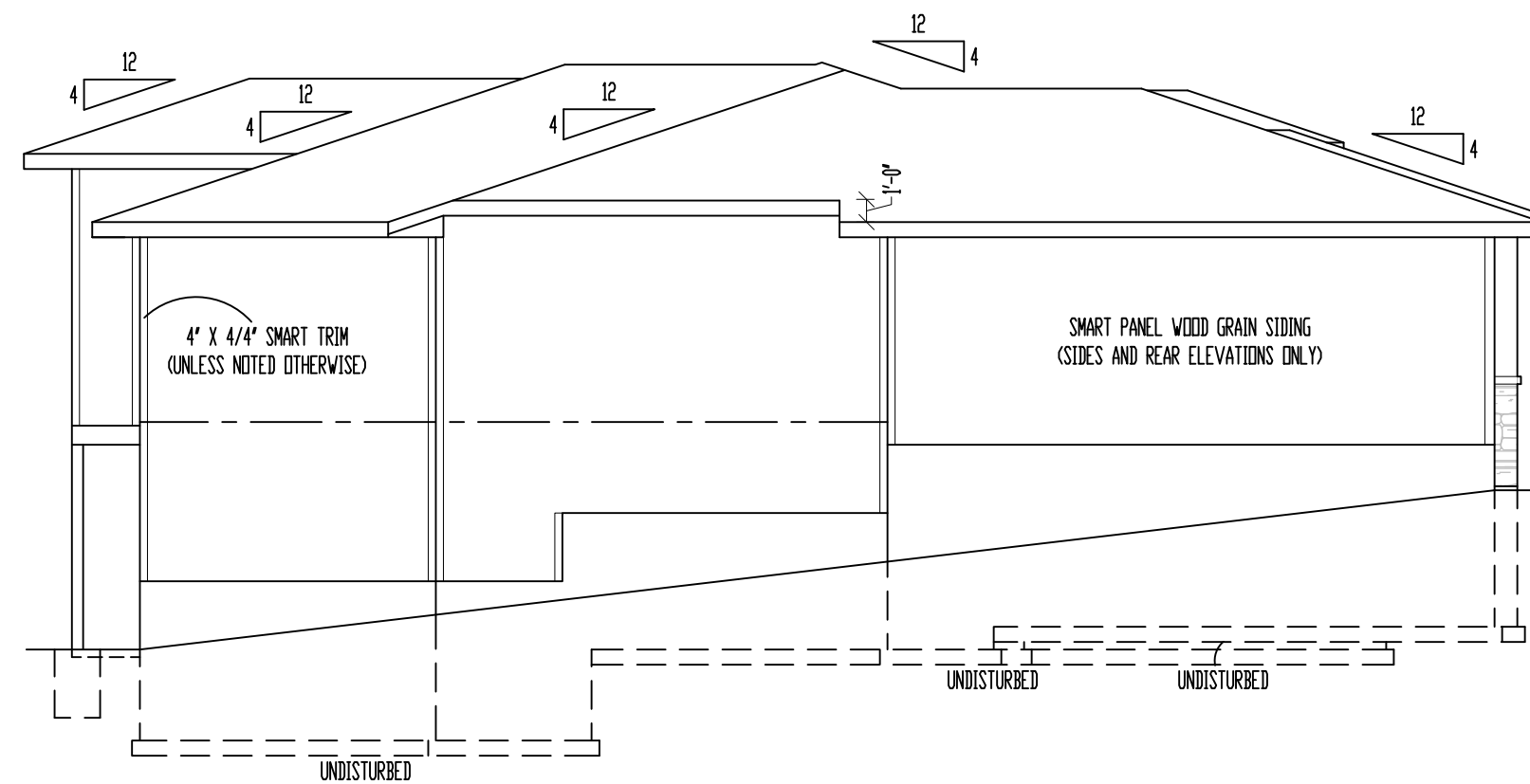


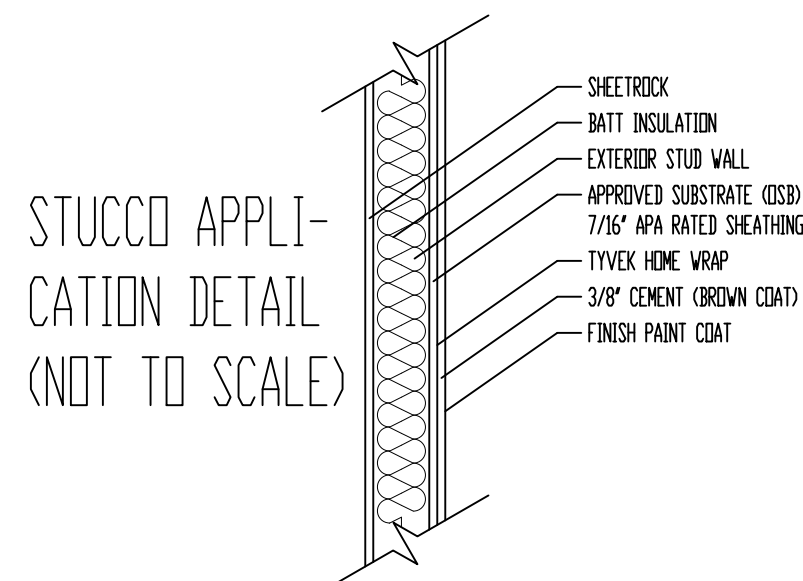
FRONT ELEVATION
SCALE: 1/4" = 1'-0"



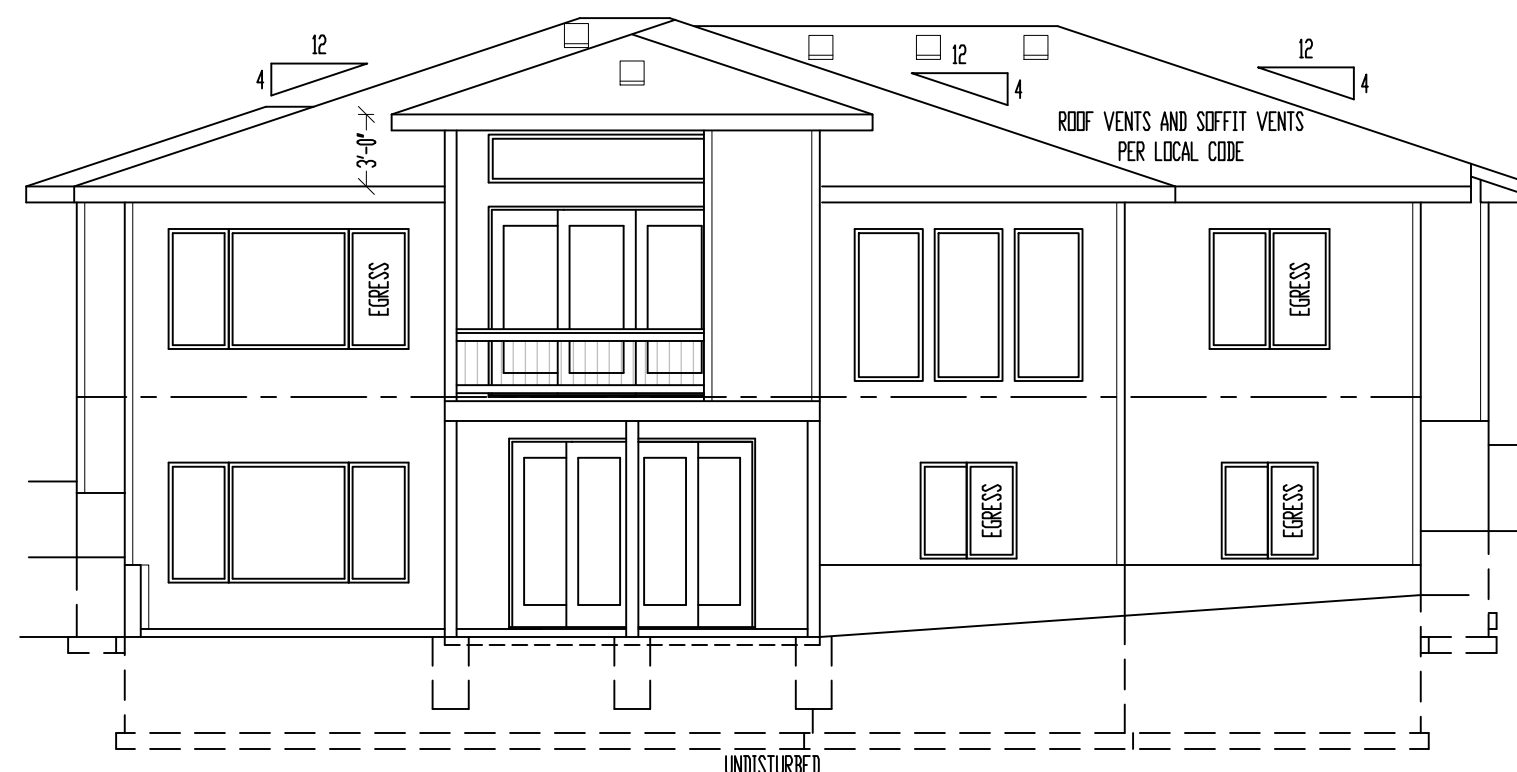
RIGHT ELEVATION
SCALE: 1/8" = 1'-0"



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



STUCCO APPLICATION DETAIL
(NOT TO SCALE)



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

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

RELEASE FOR CONSTRUCTION
AS NOTED ON PLANS REVIEW
Development Services
LEE'S SUMMIT, MISSOURI

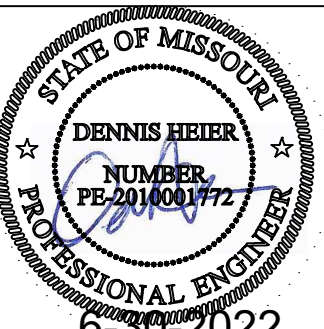
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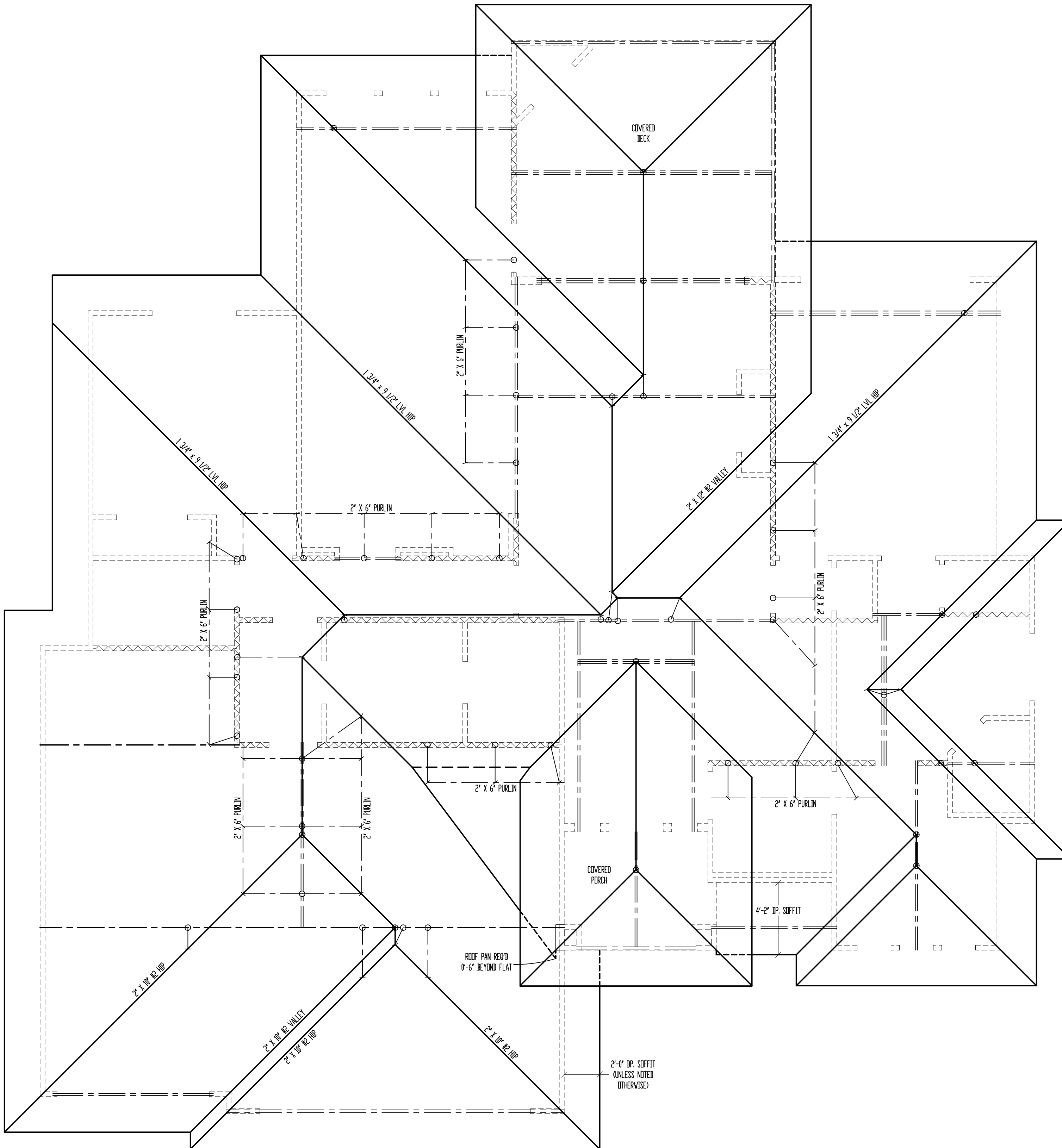
Drawing Title:
The HEATHER
Site Description:
Lot 52, The Retreat at Hook Farms
Street Address:
2816 SW Hearthstone Pl., Lee's Summit, Missouri
General Contractor:
Walker Custom Homes, LLC



Date: 6-21-AD 2022
Rev. 1:
Rev. 2:
Rev. 3:

Sheet Title:
ELEVATIONS

Sheet No.:
A-1 of 4



ROOF

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

*ALL RAFTERS SHALL BE 2" X 6" #2 @ 16" O.C., UNLESS NOTED OTHERWISE.
SEE DETAIL 7/S32 FOR ALTERNATE RAFTER BEARING DETAIL WHEN RAFTERS ARE REQUIRED TO BEAR HIGHER THAN THE WALL DOUBLE TOP PLATE.

FLASHING NOTE:
DRIP EDGE, VALLEYS AND FLASHINGS TO BE METAL CLAD.

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

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

RAFTERS	SPACING	MAX HORIZONTAL CLEARSPAN
#2-2x6	@24" O.C.	11'-7"
#2-2x6	@16" O.C.	14'-2"
#2-2x8	@24" O.C.	14'-8"
#2-2x8	@16" O.C.	17'-11"
#2-2x10	@24" O.C.	17'-10"
#2-2x10	@16" O.C.	21'-11"

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

RAFTERS	SPACING	MAX HORIZONTAL CLEARSPAN
#2-2x6	@24" O.C.	8'-6"
#2-2x6	@16" O.C.	9'-9"
#2-2x8	@24" O.C.	11'-3"
#2-2x8	@16" O.C.	12'-9"
#2-2x10	@24" O.C.	14'-3"
#2-2x10	@16" O.C.	16'-3"

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

- * VAULTS TO BE 2x10 DEPTH
- * RIDGE BOARDS ARE: (UNLESS OTHERWISE NOTED)
 - #2-2x8 UP TO 10/12 PITCH
 - #2-2x10 OVER 10/12 PITCH
- * ALL HIPS & VALLEYS ARE: (UNLESS OTHERWISE NOTED)
 - #2-2x8 UP TO 10/12 PITCH
 - #2-2x10 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 PURLINS STRUTS SHALL HAVE A MAXIMUM UNBRACED LENGTH OF 8'-0"
 - PURLINS STRUTS SHALL BE CONSTRUCTED IN A "T" CONFIGURATION AND PER THE FOLLOWING CHART:

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

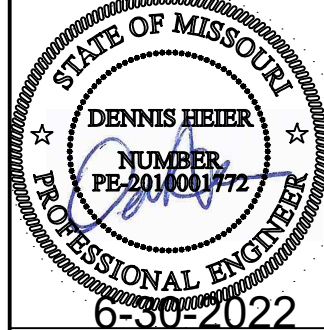
- * VERTICAL BRACE IF DOT IS UNDER HIP OR VALLEY
- * SLASH IS TOP END OF BRACE (/), DOT IS BOTTOM OF BRACE (o)
- * --- DENOTES BEARING WALL
- * --- DENOTES ROOF BRACE
- * --- DENOTES PURLIN
- * --- DENOTES BEARING STRUCTURE

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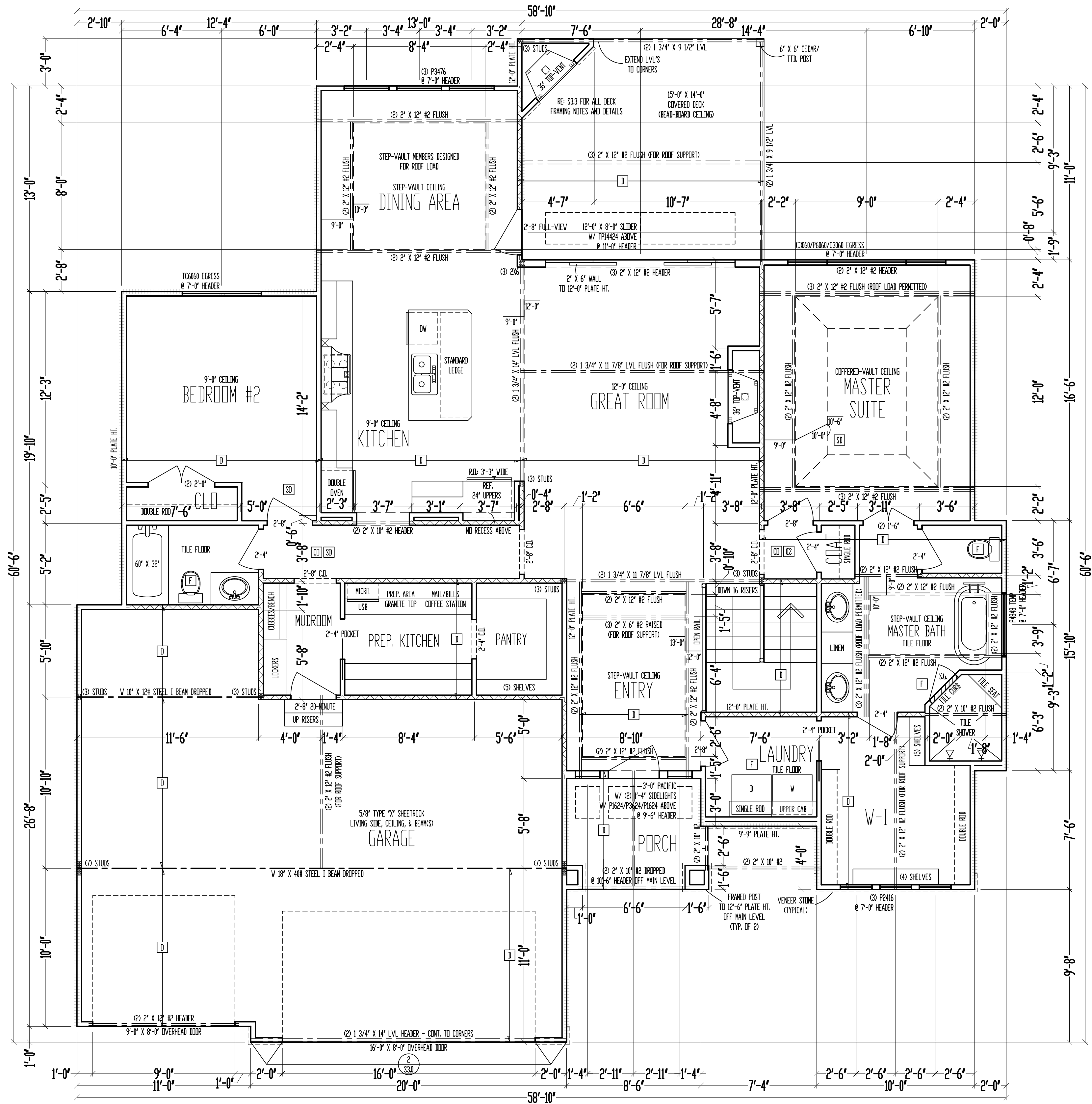
Drawing Title:
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Street Address:
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General Contractor:
Walker Custom Homes, LLC



Date: 6-21-AD 2022
Rev. 1:
Rev. 2:
Rev. 3:

Sheet Title:
ROOF PLAN

Sheet No.:
10
RELEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW
D:\Projects\2022\Lee's Summit\10 of 4
LEE'S SUMMIT, MISSOURI



9'-0" CEILING
MAIN LEVEL
 SCALE: 1/4" = 1'-0"

MAIN LEVEL: 1845 SQ. FT.
 LOWER LEVEL: 1218 SQ. FT.
 TOTAL: 3063 SQ. FT.

GARAGE: 726 SQ. FT.
 COV. OUT/LIV: 216 SQ. FT.
 UNFIN. BASEMENT: 473 SQ. FT.

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

***** = 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 @ 4" O.C. AT EDGES & @ 12" O.C. IN THE FIELD. SMART PANEL, OR EQUAL, INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
 - ////////// = G.B.: 1/2" MIN. GYPSUM BOARD OVER STUDS SPACED 24" MAX FASTENED W/ NO. 6 - 1 1/4" TYPE W DR S DRYWALL SCREWS @ 7" O.C. EDGES & FIELD. ONLY 8"-0" SECTIONS ONE SIDE OF WALL (DR) 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 ONLY REQUIRED WITH I-JOISTS.
 - PROVIDE MULTIPLE STUDS FOR SOLID BEARING BELOW ALL BEAMS.
 - ALL DESIGNATED 2" X 6" WALLS SHALL HAVE DOUBLE KING STUDS AT DOOR AND WINDOW OPENINGS.
 - ALL 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" # 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 AFORESAID REQUIREMENTS.
 - CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD BEFORE CONSTRUCTION OF ANY DEFLECTION LIMITATIONS MORE STRINGENT THAN CODE MINIMUMS ABOVE ANY OPENINGS.

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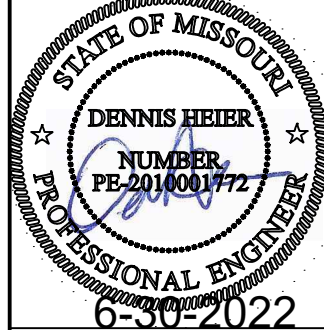
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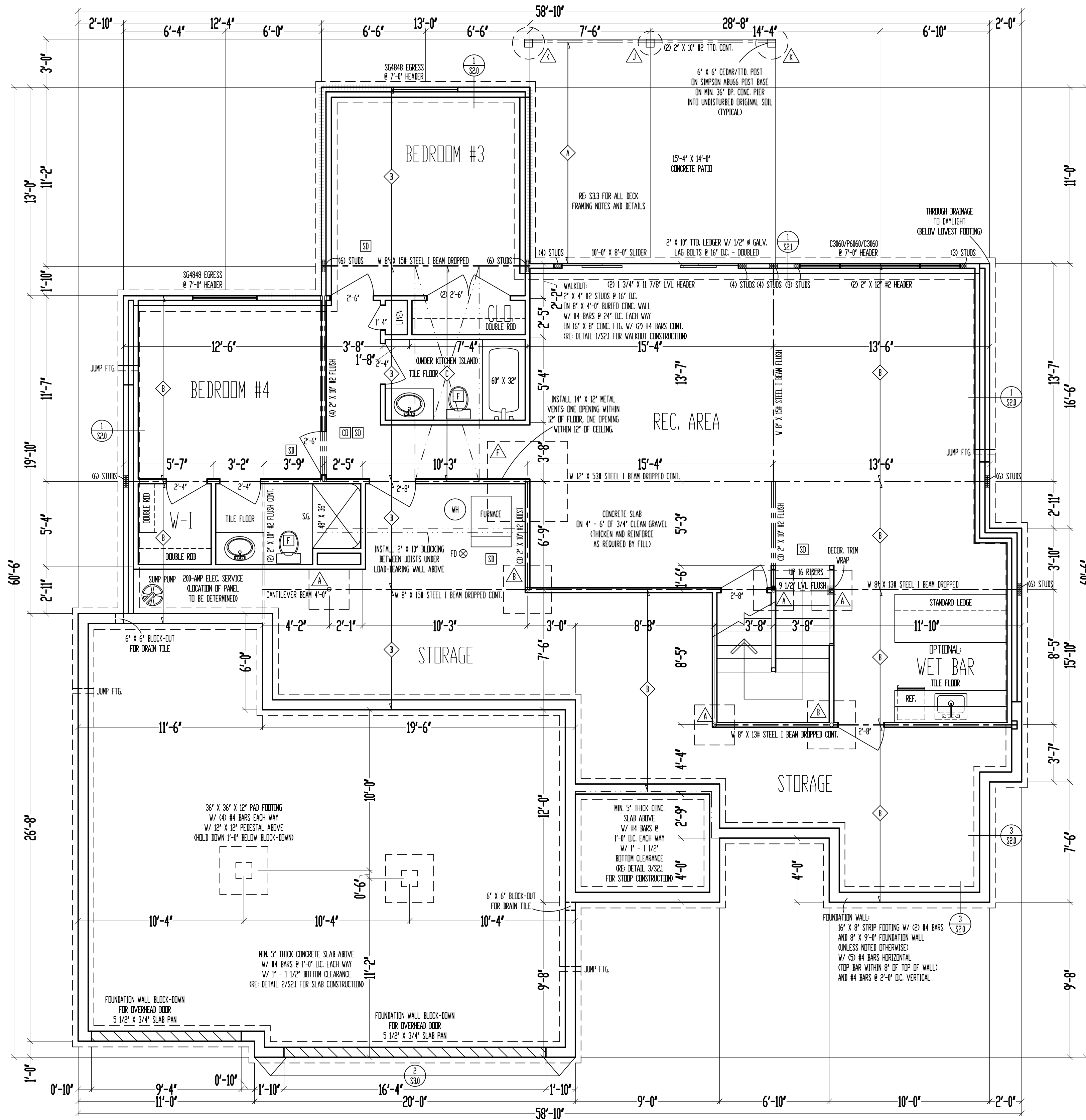
Drawing Title:
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 Site Description:
Lot 52, The Retreat at Hook Farms
 Street Address:
2816 SW Hearthstone Pl., Lee's Summit, Missouri
 General Contractor:
Walker Custom Homes, LLC



Date: 6-21-AD 2022
 Rev. 1:
 Rev. 2:
 Rev. 3:

Sheet Title:
MAIN LEVEL PLAN

Sheet No.:
CONSTRUCTION
 AS NOTED ON PLANS REVIEW
 DATE: 6-21-2022
 LEE'S SUMMIT, MISSOURI
 of 4



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

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

***** = 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" D.S.B. 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.
 - \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ = GB: 1/2" MIN. GYPSUM BOARD OVER STUDS SPACED 24" MAX FASTENED W/ NO. 6 - 1 1/4" TYPE W DR S DRYWALL SCREWS @ 7" O.C. EDGES & FIELD. MIN. 8'-0" SECTIONS ONE SIDE OF WALL (DR) 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 I-JOISTS).
 - PROVIDE MULTIPLE STUDS FOR SOLID BEARING BELOW ALL BEAMS.
 - ALL DESIGNATED 2" X 6" WALLS SHALL HAVE DOUBLE KING STUDS AT DOOR AND WINDOW OPENINGS.
 - ALL 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" # ANCHOR BOLTS W/ MIN. 7" EMBEDMENT @ 48" O.C. MAX. & WITHIN 6" - 12" OF END OF EACH PLATE LENGTH.
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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 (2.5k)
B	3 1/2" X 11 GA. STEEL COLUMN ON 36" X 36" X 10" PAD FOOTING W/ (4) #4 BARS EACH WAY (18.0k)
C	3" SCH. 40 STEEL COLUMN ON 42" X 42" X 12" PAD FOOTING W/ (5) #4 BARS EACH WAY (24.5k)
D	3 1/2" SCH. 40 STEEL COLUMN ON 48" X 48" X 12" PAD FOOTING W/ (6) #4 BARS EACH WAY (32.0k)
E	3 1/2" SCH. 40 STEEL COLUMN ON 54" X 54" X 14" PAD FOOTING W/ (7) #4 BARS EACH WAY (40.5k)
F	3 1/2" SCH. 40 STEEL COLUMN ON 60" X 60" X 14" PAD FOOTING W/ (8) #4 BARS EACH WAY (50.0k)

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

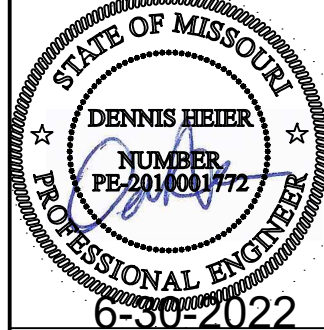
JOIST SCHEDULE	
A	2" X 10" #2 TTB. FLOOR JOIST @ 16" O.C.
B	2" X 10" #2 FLOOR JOIST @ 16" O.C.
C	2" X 10" #2 FLOOR JOIST @ 16" O.C. - DOUBLED

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Sheet Title:
FOUNDATION PLAN

Sheet No.:
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AS NOTED ON PLANS REVIEW
DATE: 06/21/2022
LEE'S SUMMIT, MISSOURI
of 4

RESIDENTIAL SEISMIC & WIND ANALYSIS

DETERMINE WEIGHT OF HOUSE:

LOCATION	DEAD LOAD (psf)	AREA (ft ²)	WEIGHT (lbs.)
ROOF	10	2787	27870
CEILING	10	2787	27870
FIRST FLOOR	10	2787	27870
FIRST FLOOR EXT. WALL DL	10	238.66	23866
FIRST FLOOR INT. PARTITION WALL DL	6	2787	16722

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	250	1101	315
VERT. ROOF	33	460	39
1ST	647.13	10732	665.5
BSMT*	0	0	123
PRESSURE (PSF) - PER ASCE CH. 6		2a (FIG. 28.6-1, ASCE7)	
SLOPED ROOF	ZONE B	5.9	11.6
WALL/VERT. ROOF	ZONE A	17.4	3.4
MEAN ROOF HT., ft		17.5	11.766

a) If there is a walkout wall to be sheathed, determine tributary wind area and enter here. If no walkout, enter 0 for area.
 $q_{w10} = 0.00256 K_d K_e K_z V^2$ (ASCE7-10 Velocity Pressure) $q_{w10, ASD} = 0.6 q_{w10}$ (Design Velocity Pressure for ASD analysis under ASCE7-10 and IRC/IBC 2012)

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

67673
67673
12.0%
1.6
0.128
6.5

SEISMIC SHEAR		
LOCATION	From ASCE7 (Eq. 12.8-1):	$V = 1.2 * S_{ps} * W / R$ (lbs.)
1ST FLOOR		1599
BASEMENT		1599

Sheathing Location	Min. Sheathing Schedule	Fastening Schedule	Allowable Shear (#/LF)	Code Reference
Exterior (Option #1)	7/16" APA Rated Plywood/OSB	1-1/2" Sigs. Staples w/ 1" penetration @ 3" OC Edges, 6" OC Field For 24" stud spacing, 12" OC Field For 18" stud spacing	155	per IRC, Table 2306.3(1)
Exterior (Option #2)	7/16" APA Rated Plywood/OSB	1-1/2" Sigs. Staples w/ 1" penetration @ 4" OC Edges, 6" OC Field For 24" stud spacing, 12" OC Field For 18" stud spacing	230	per IRC, Table 2306.3(1)
Exterior (Option #3)	7/16" APA Rated Plywood/OSB	1-1/2" Sigs. Staples w/ 1" penetration @ 3" OC Edges, 6" OC Field For 24" stud spacing, 12" OC Field For 18" stud spacing	310	per IRC, Table 2306.3(1)
Exterior (Option #4)	7/16" APA Rated Plywood/OSB or shiplap panel sheathing, or 3/8" shiplap panel sheathing with lighter 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 lighter 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 lighter 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 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 FIRST FLOOR	5
EXTERIOR SHEATHING OPTION FOR BASEMENT WALLS	4

WIDTH OF 1ST STORY (FT.)	58.83	WIDTH OF 2ND STORY (FT.)	1
DEPTH OF 1ST STORY (FT.)	60.5	DEPTH OF 2ND STORY (FT.)	1
BACK WALL OF GARAGE (FT.)	0		
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	49	16620	24	9120	49	26068	24	12768
BASEMENT	0	0	20.5	5740	0	0	20.5	6036

	ADDITIONAL RESISTANCE REQUIRED		Anchor Bolt Spacing (in.)		16d Nail Spacing req'd at bottom plate (in)	
	SEISMIC	WIND	diameter (in.)	Shear value (per NDS)	1st Floor F-B	1st Floor S-S
1ST FLOOR FRONT-TO-BACK	0	0	0.5	944	31	28
1ST FLOOR SIDE-TO-SIDE	0	0		204.4		
BASEMENT FRONT-TO-BACK	0	0		188.6		
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

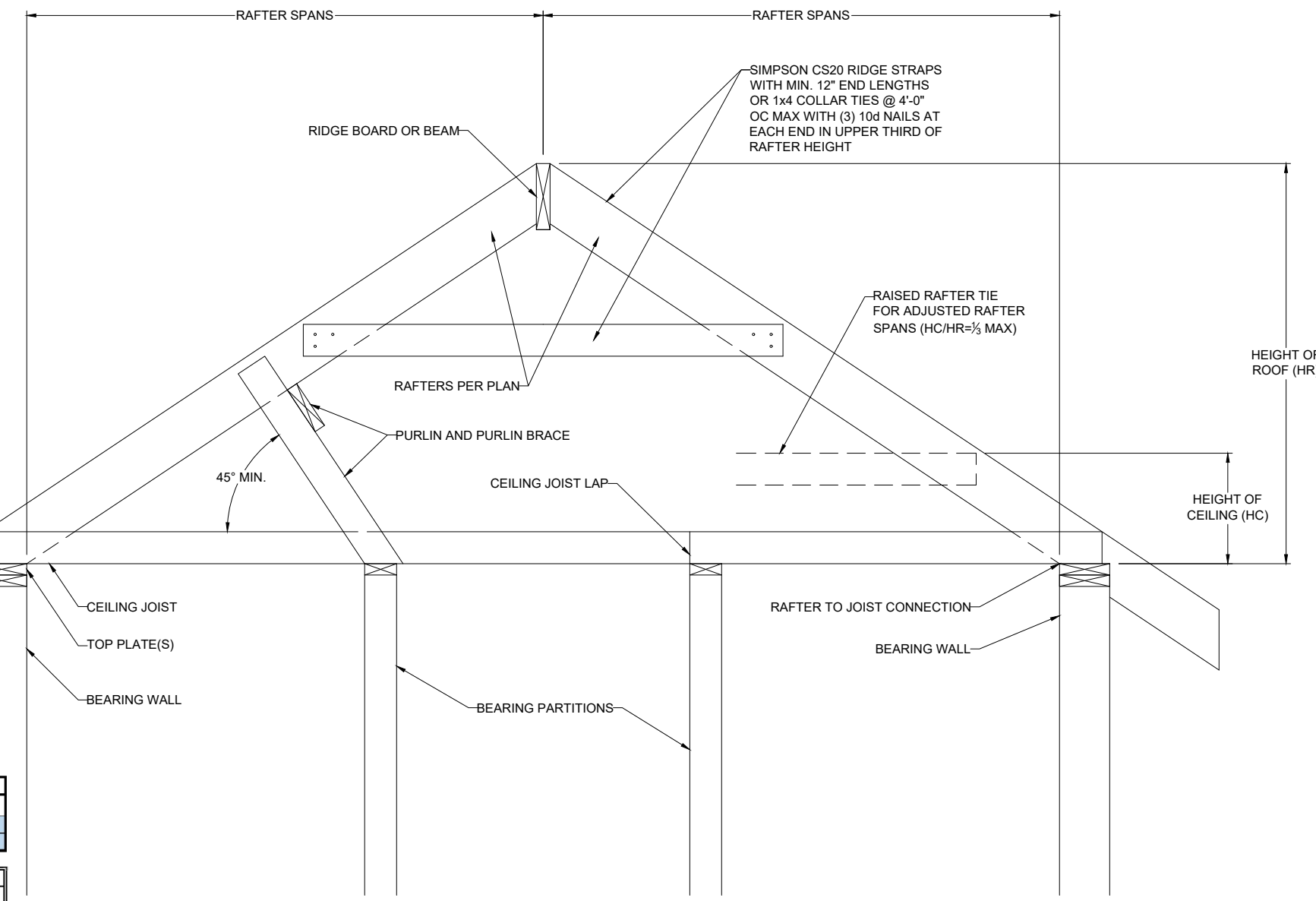
**NOTES: 1) SEE ATTACHED CALCULATIONS FOR PORTAL FRAME OR PERFORATED SHEAR WALL RESISTANCE CAPACITIES (IF APPLICABLE), 2) SEE SHEET S1 FOR INTERIOR STEEL X-BRACE INSTALLATION, 3) INTERIOR WALLS SHEATHED WITH OSB SHALL BE ATTACHED WITH SAME STAPLE/NAILING PATTERN AS EXTERIOR OSB ON SAME FLOOR (SEE TABLE 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				
	4	18.4					
ASCE 7							
OVERHANG	LENGTH (FT.)	PRESSURE (PSF)	LINEAL FT. OF OH	UPLIFT PER FT* (LBS)			
	1	16.56	240.66	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**		3559.215	-506.691024	4065.906024	15.12	10.5	35031
*ALONG PERIMETER				TOTAL UPLIFT PER LINEAL FOOT ALONG EXTERIOR (POUNDS)	163.3	UPLIFT OK	
**INSIDE EXTERIOR WALLS				RESISTANCE DUE TO DEAD WEIGHT & (3) 16d 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 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" (18/24) OR 1/2" = 1'-0" (24/36)

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)	1275	ft ²
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 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.		

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CLIENT: WALKER CUSTOM HOMES, LLC
 JOB TITLE: RHF052 SPEC
 LOT 52, THE RETREAT AT HOOK FARMS
 LOCATION: 2816 SW HEARTHSTONE PL.
 LEE'S SUMMIT, MISSOURI

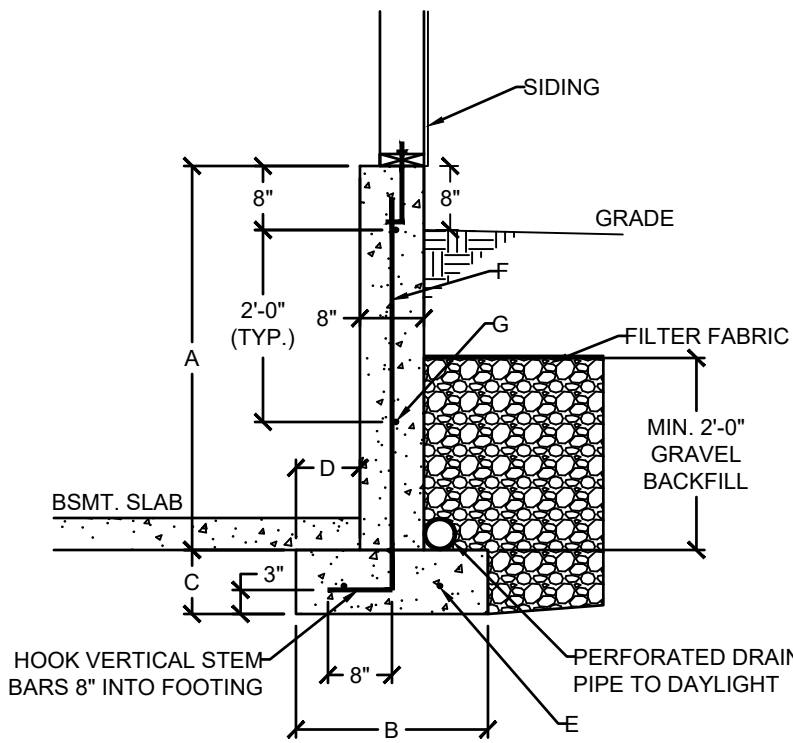
STATE OF MISSOURI
 DENNIS HBIER
 PROFESSIONAL ENGINEER
 NUMBER: PE-201400172
 6-30-2022

NO.	DATE	REVISION	BY

DRAWING TITLE
STRUCTURAL CALCULATIONS

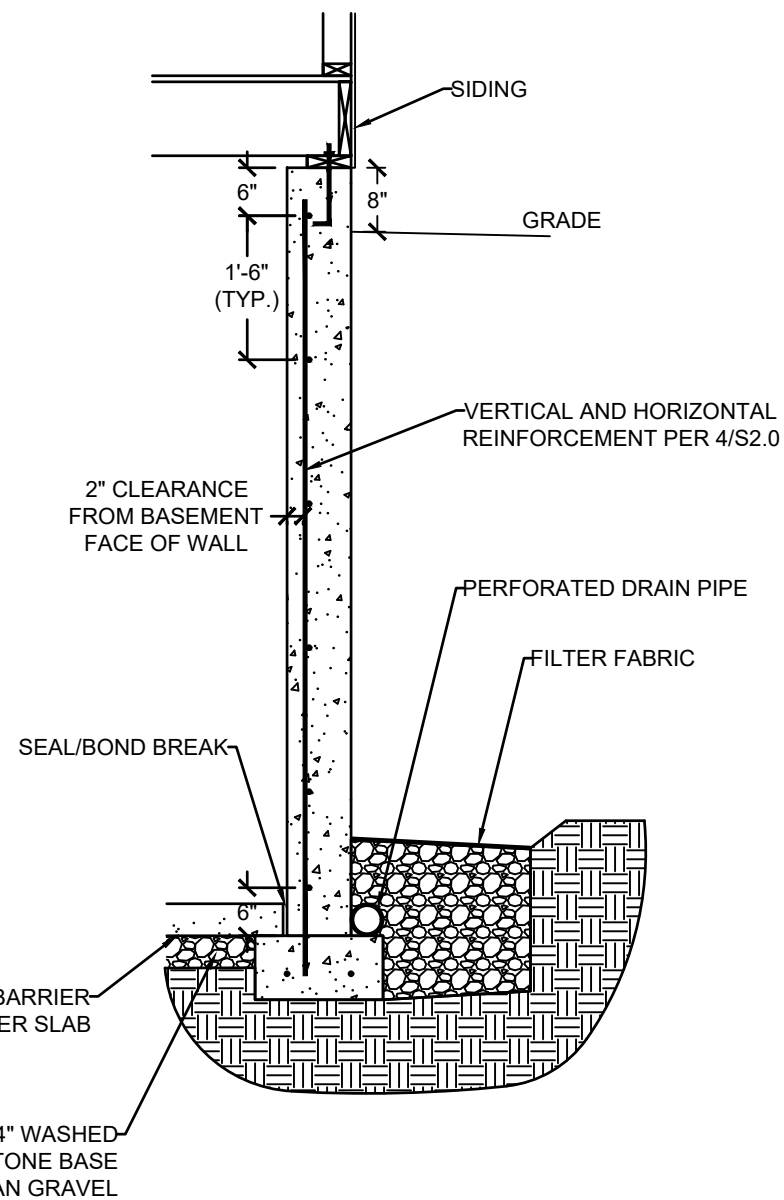
ENGINEER: DMH CHECKED BY: DMH
 JOB NO. DRAWN BY: DMH
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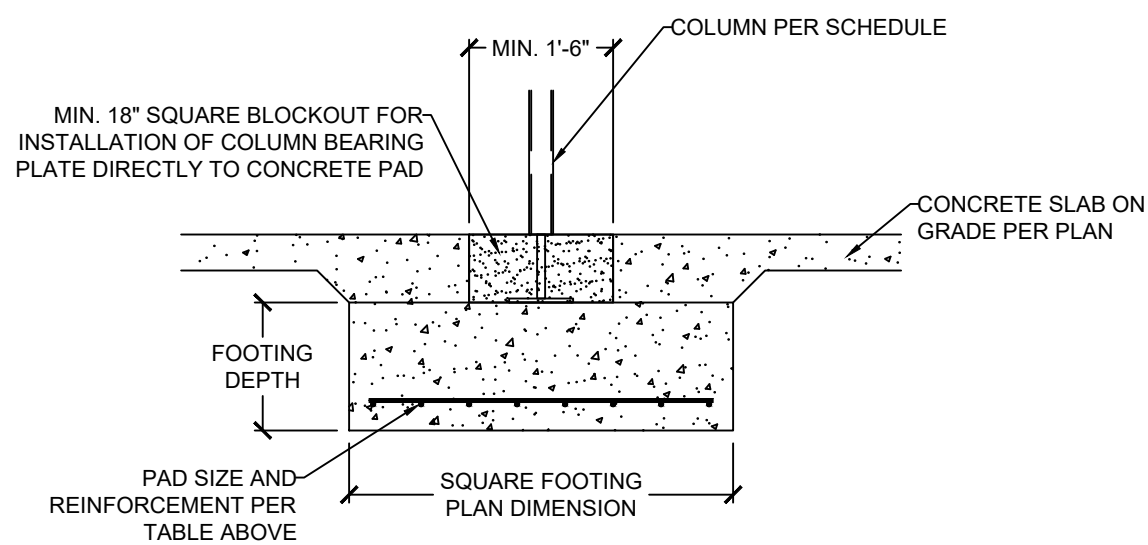


1 DAYLIGHT WALL CONSTRUCTION
S2.0 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)

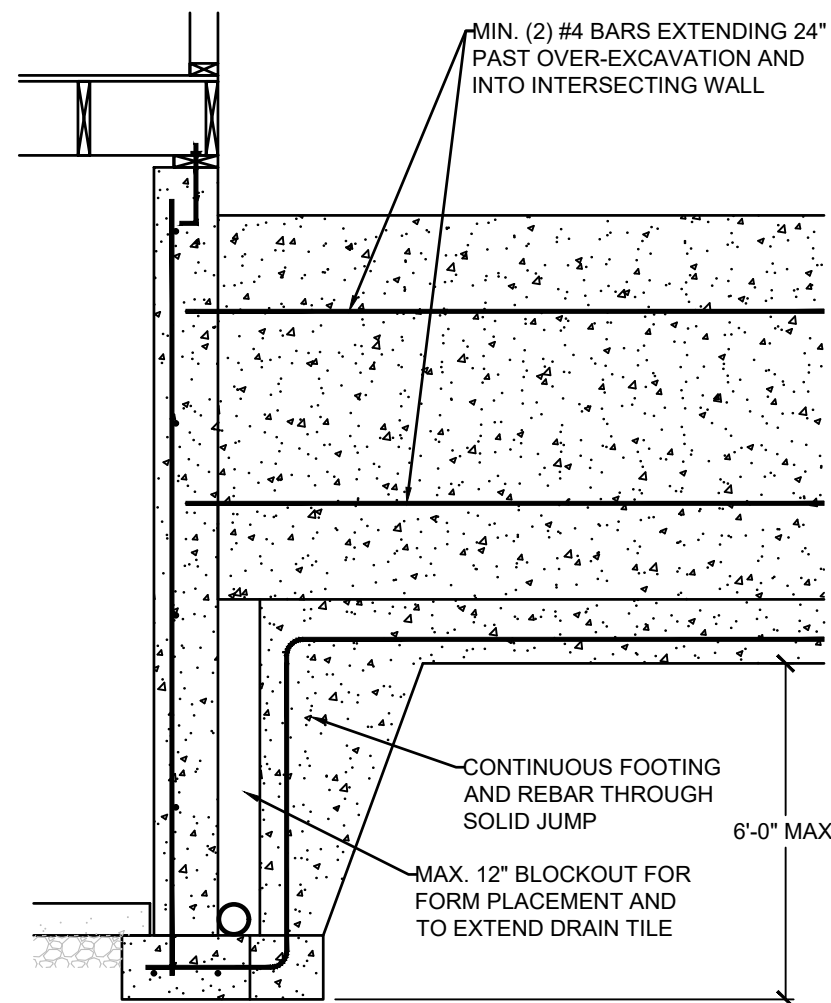
DAYLIGHT BASEMENT WALL SCHEDULE						
A	B	C	D	E	F	G
4'-0"	1'-6"	0'-8"	0'-5"	(2) #4	#4 VERT. @ 12" O.C.	(2) #4 HORIZ.
5'-0"	2'-0"	0'-8"	0'-7"	(2) #4	#4 VERT. @ 12" O.C.	(3) #4 HORIZ.
6'-0"	2'-6"	0'-8"	0'-10"	(3) #4	#4 VERT. @ 12" O.C.	(3) #4 HORIZ.



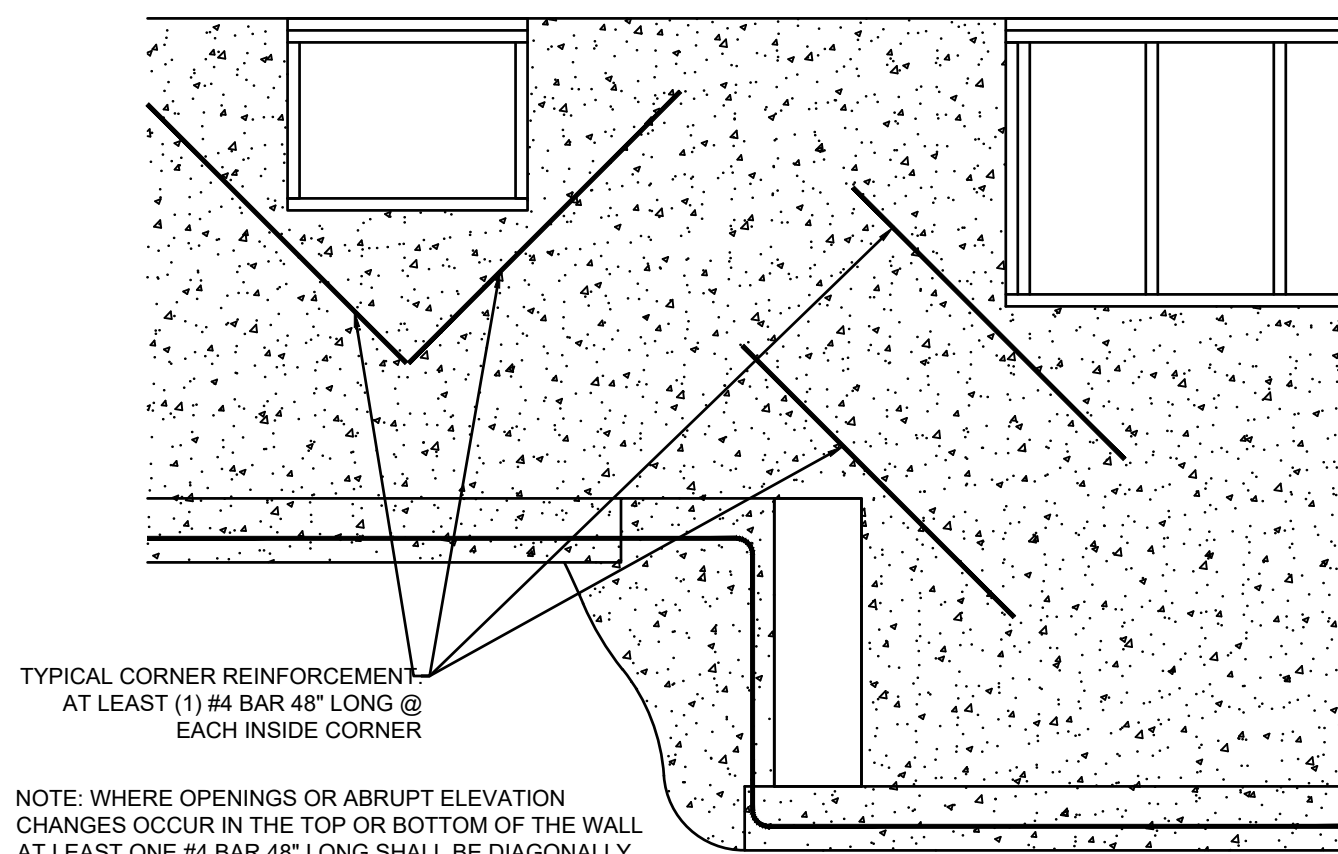
3 CONCRETE WALL SECTION
S2.0 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)



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)

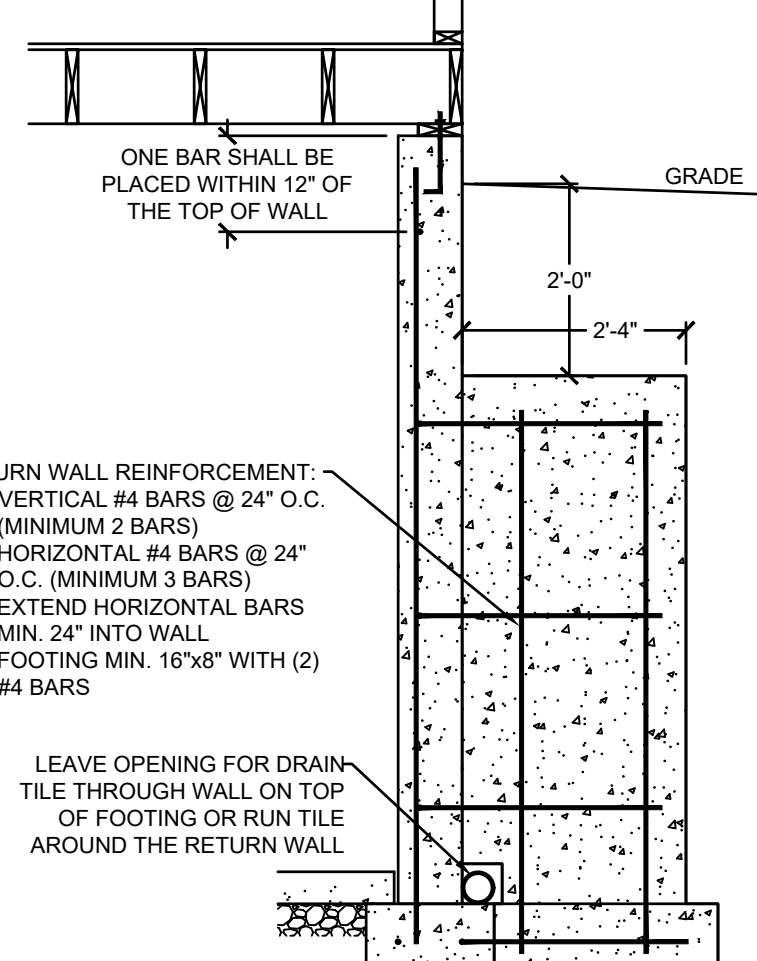
CONCRETE STRENGTH/GRADE REINFORCEMENT (#4 BARS)	8" THICK WALL			10" THICK WALL		
	8'	9'	10'	8'	9'	10'
3,000 PSI/ GRADE 40	24	24	16	24	24	18
3,500 PSI/ GRADE 40	24	24	16	24	24	18
3,000 PSI/ GRADE 60	24	24	16	24	24	18
3,500 PSI/ GRADE 60	24	24	16	24	24	18

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

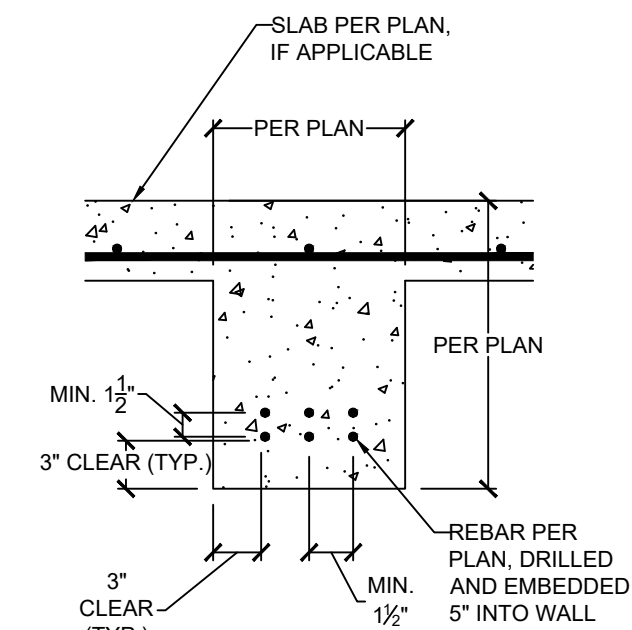
NOTE: WHERE FLOOR JOIST RUNS PARALLEL TO FDN WALL, SOLID BLOCK OUTSIDE 3 JOIST SPACES @ 36" OC ALIGNING BLOCKING WITH THE ANCHOR BOLT



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

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

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



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

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JOB TITLE: RHF062 SPEC
LOT 52, THE RETREAT AT HOOK FARMS
LOCATION: 2816 SW HEARTHSTONE PL.
LEE'S SUMMIT, MISSOURI

STATE OF MISSOURI
DENNIS HEIER
NUMBER: PE-2014001772
PROFESSIONAL ENGINEER
6-30-2022

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S2.0

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LOCATION: 2816 SW HEARTHSTONE PL. LEE'S SUMMIT, MISSOURI

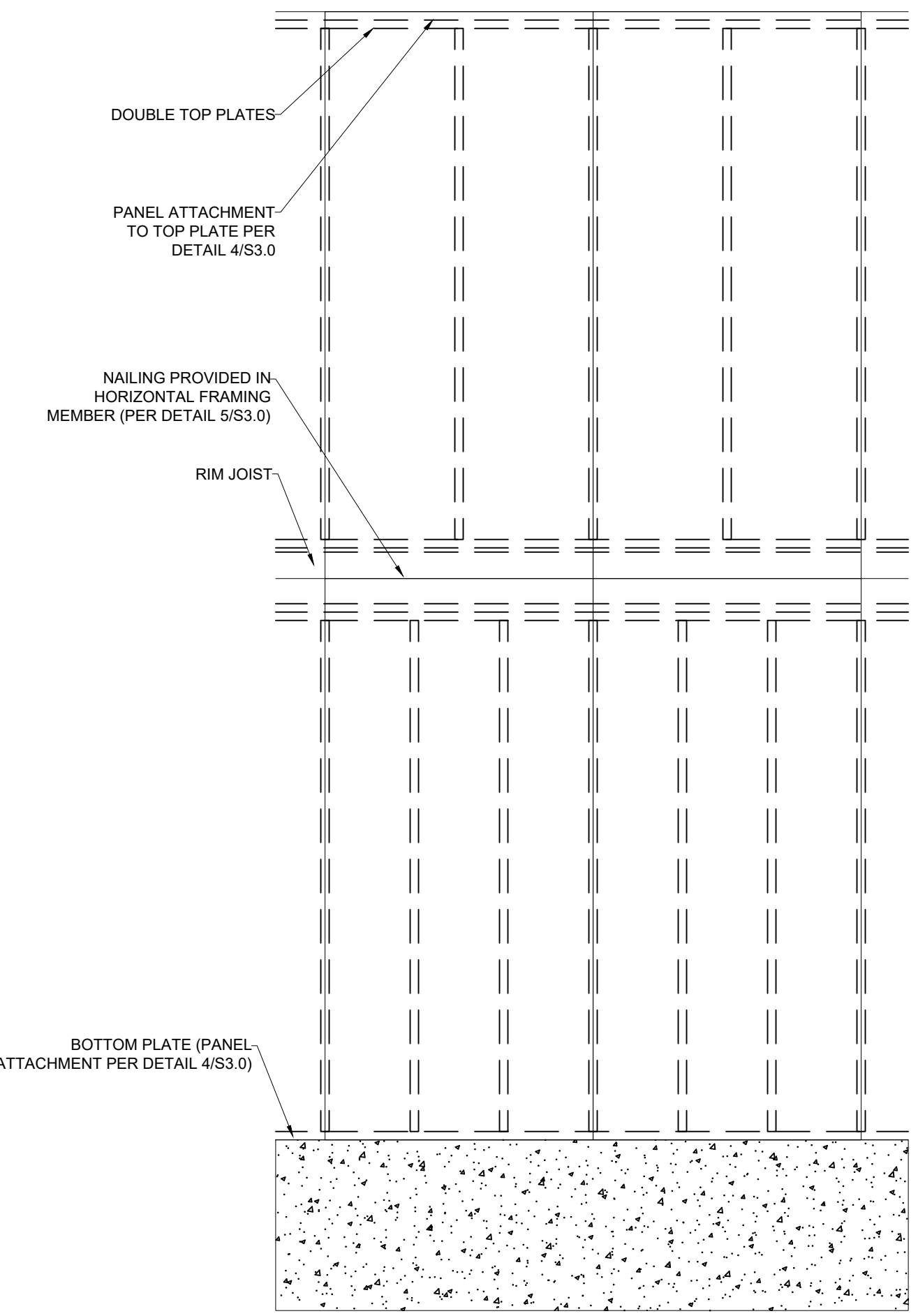
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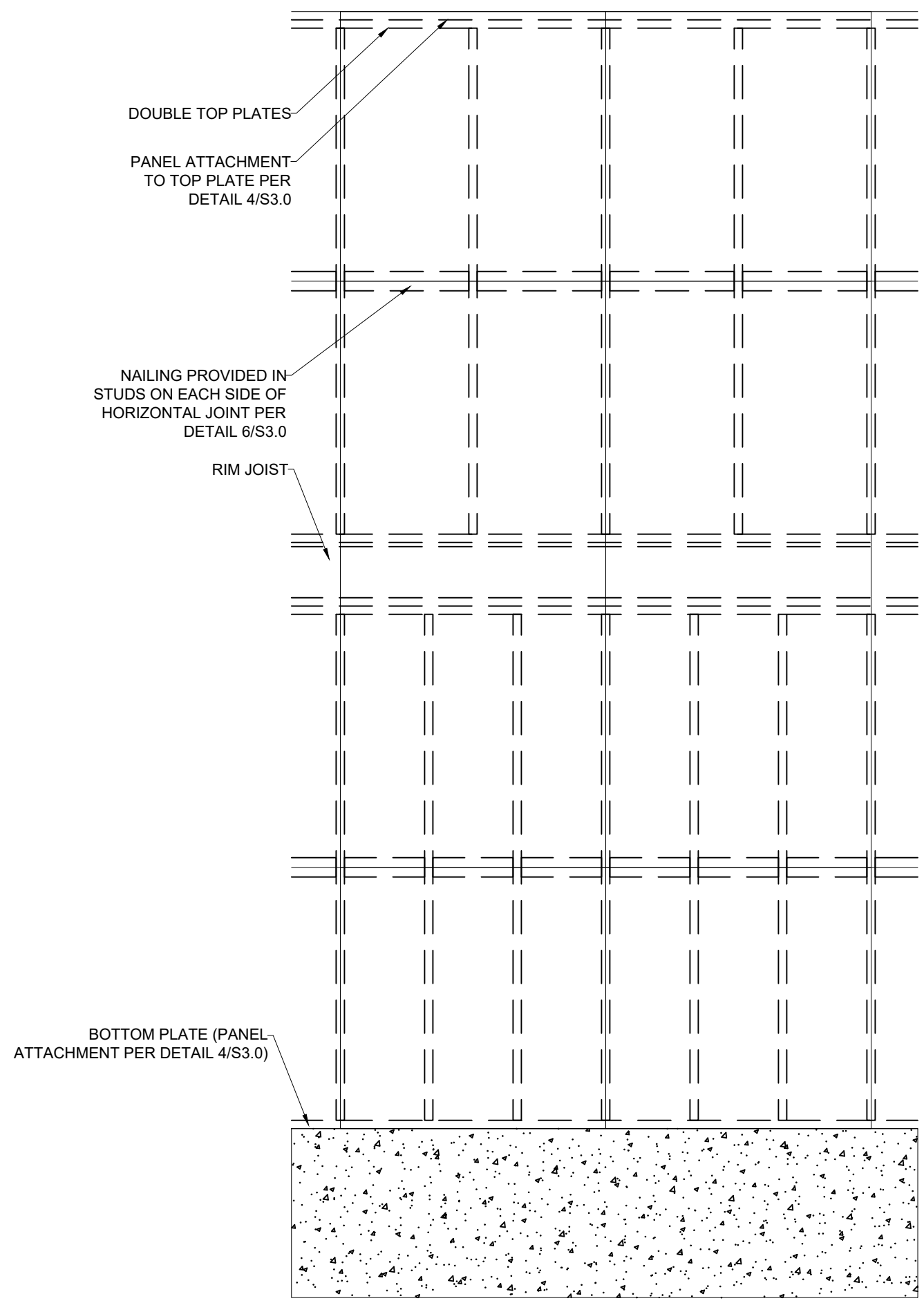
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ENGINEER: DMH CHECKED BY: DMH
JOB NO. DRAWN BY: DMH
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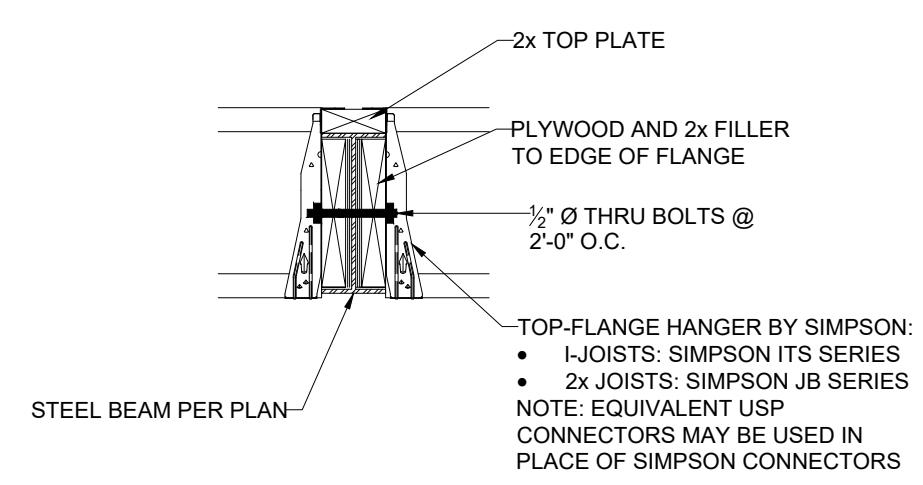
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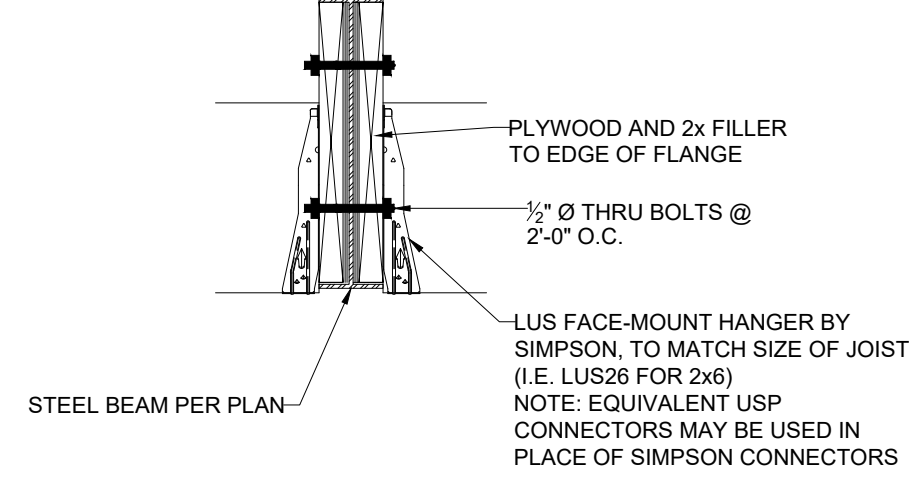
1 EXTERIOR WALL SHEATHING PANEL ATTACHMENT
S3.1 PANEL SPLICE OVER HORIZONTAL FRAMING MEMBER
SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)



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

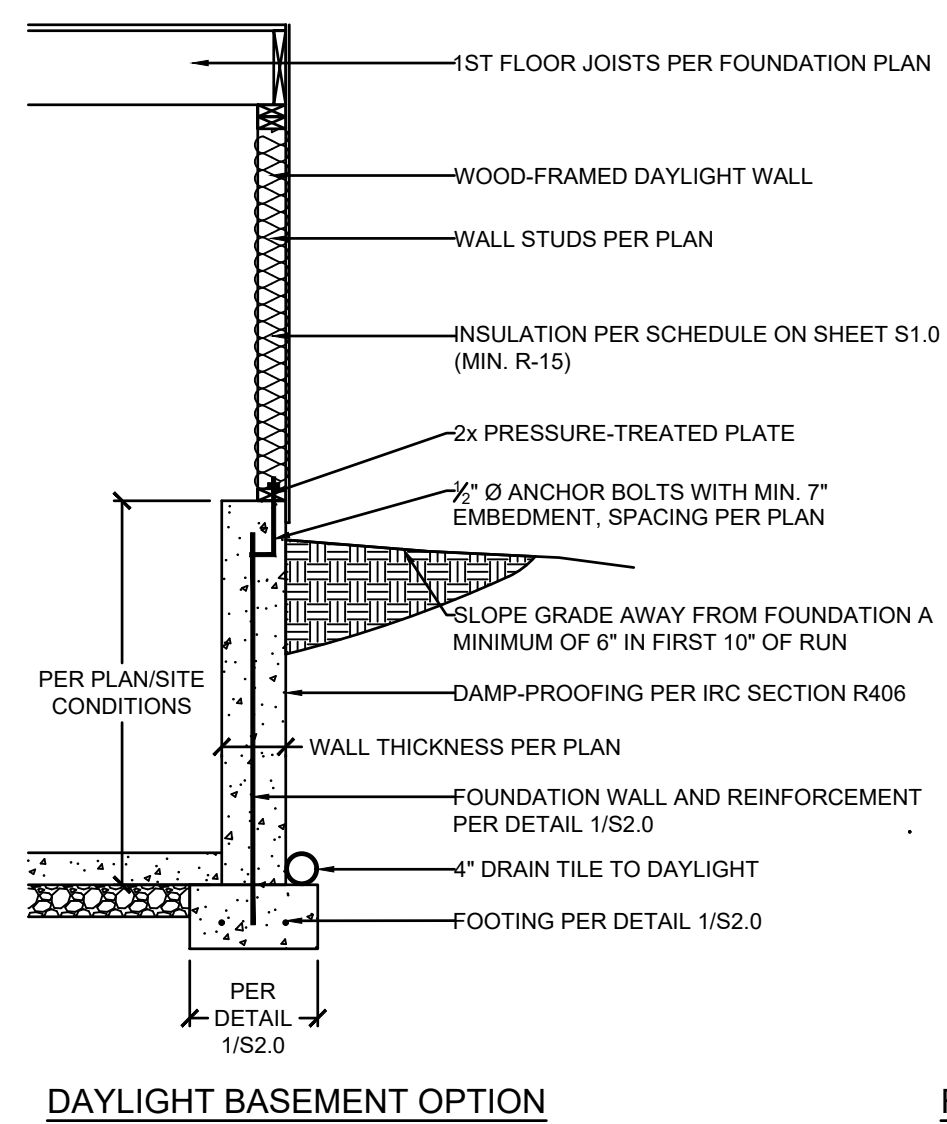


4 FLOOR JOIST TO FLUSH STEEL BEAM DETAIL
S3.1 SCALE: 1" = 1'-0" (18x24) OR 1 1/2" = 1'-0" (24x36)

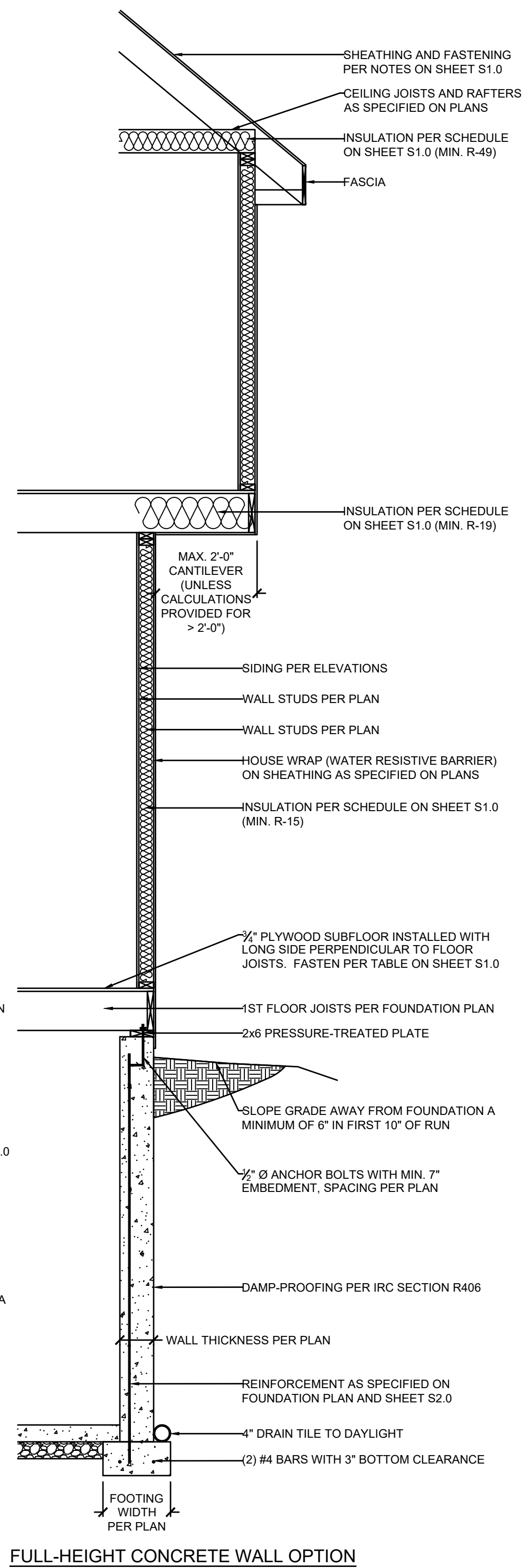


5 CEILING JOIST TO FLUSH STEEL BEAM DETAIL
S3.1 SCALE: 1" = 1'-0" (18x24) OR 1 1/2" = 1'-0" (24x36)

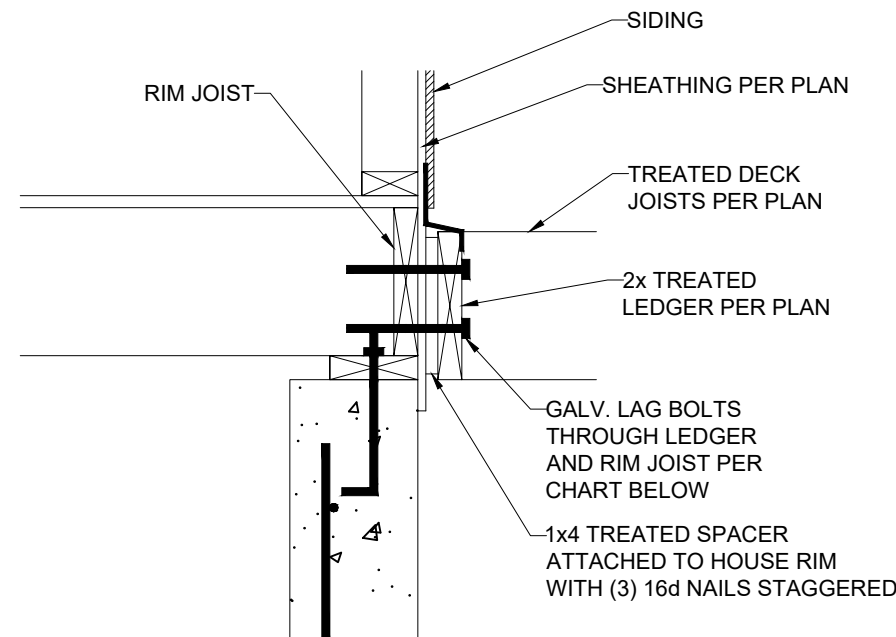
3 EXTERIOR WALL SECTION
S3.1 SCALE: 1/2" = 1'-0" (18x24) OR 3/4" = 1'-0" (24x36)



DAYLIGHT BASEMENT OPTION

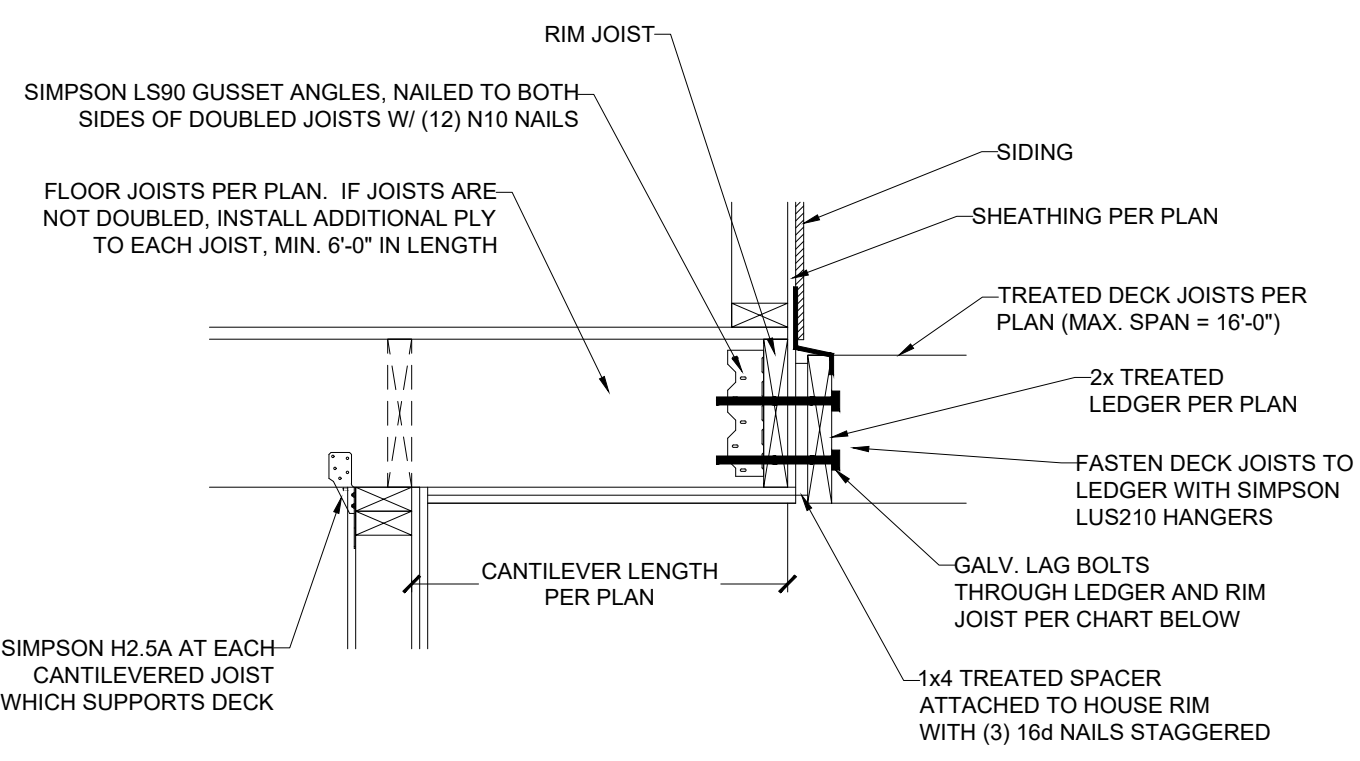


FULL-HEIGHT CONCRETE WALL OPTION



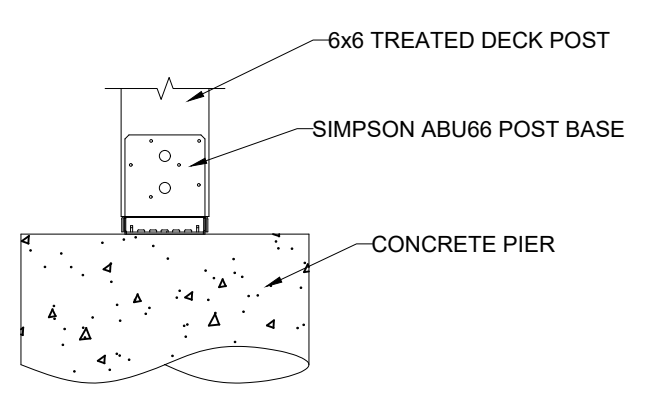
DECK LEDGER ATTACHMENT GUIDE

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



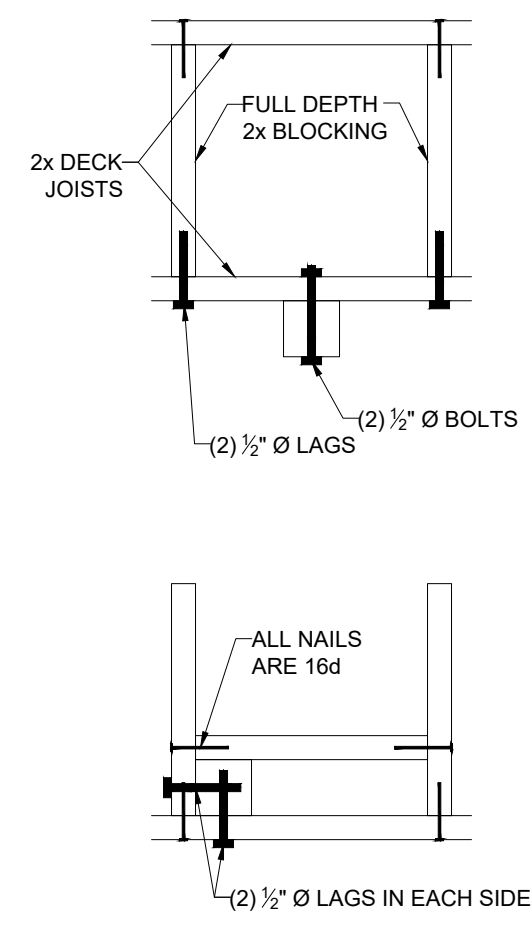
2 CANTILEVER WITH DECK ATTACHMENT

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



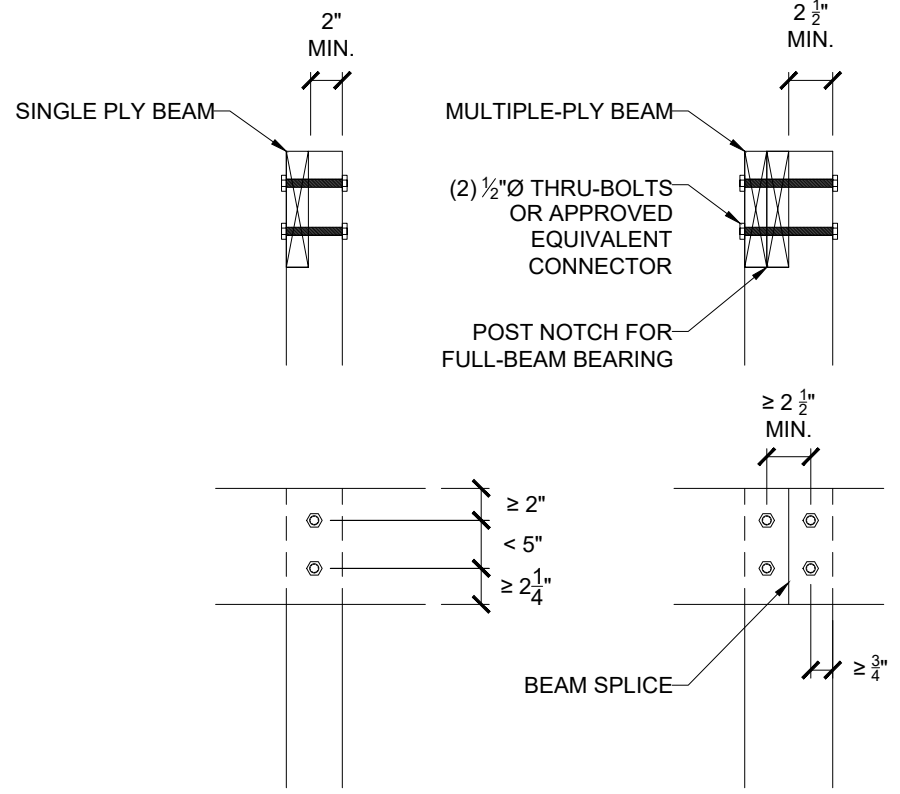
3 DECK POST BASE

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



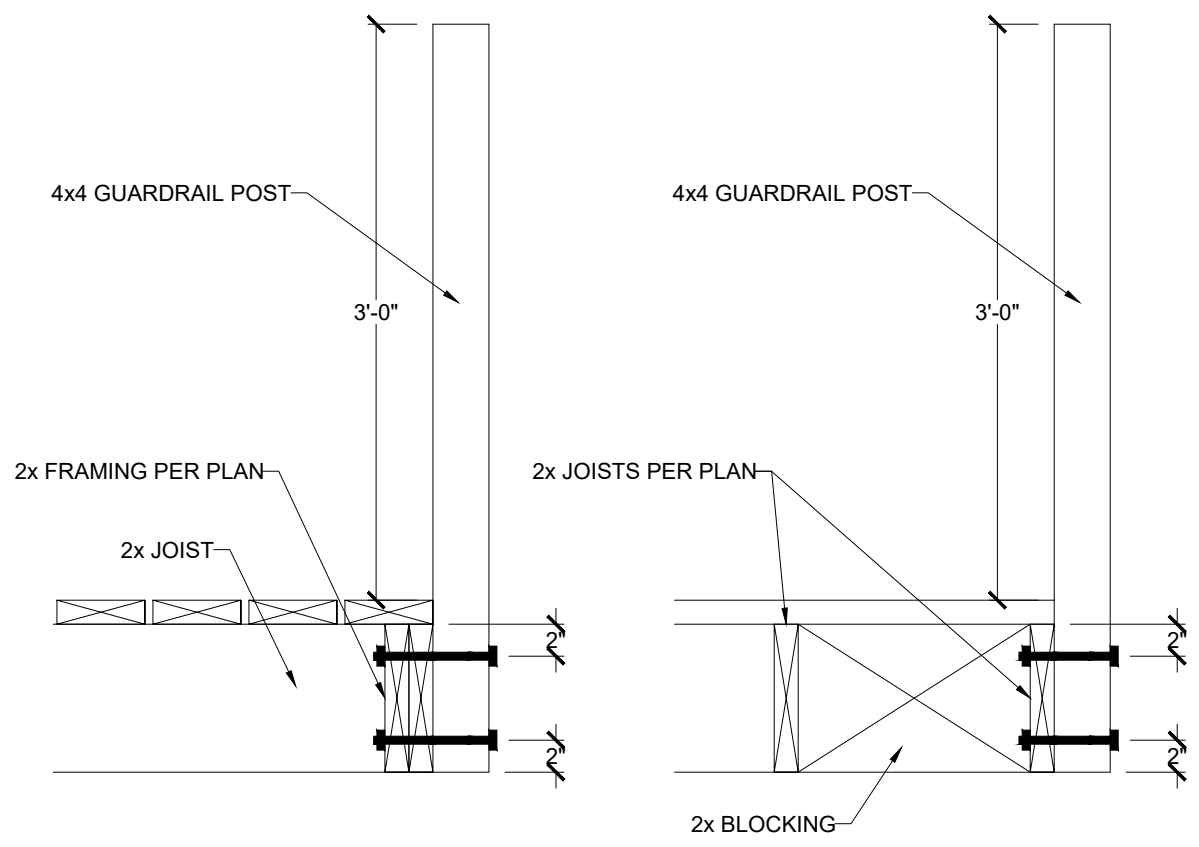
4 REINF. POST CONNECTIONS

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



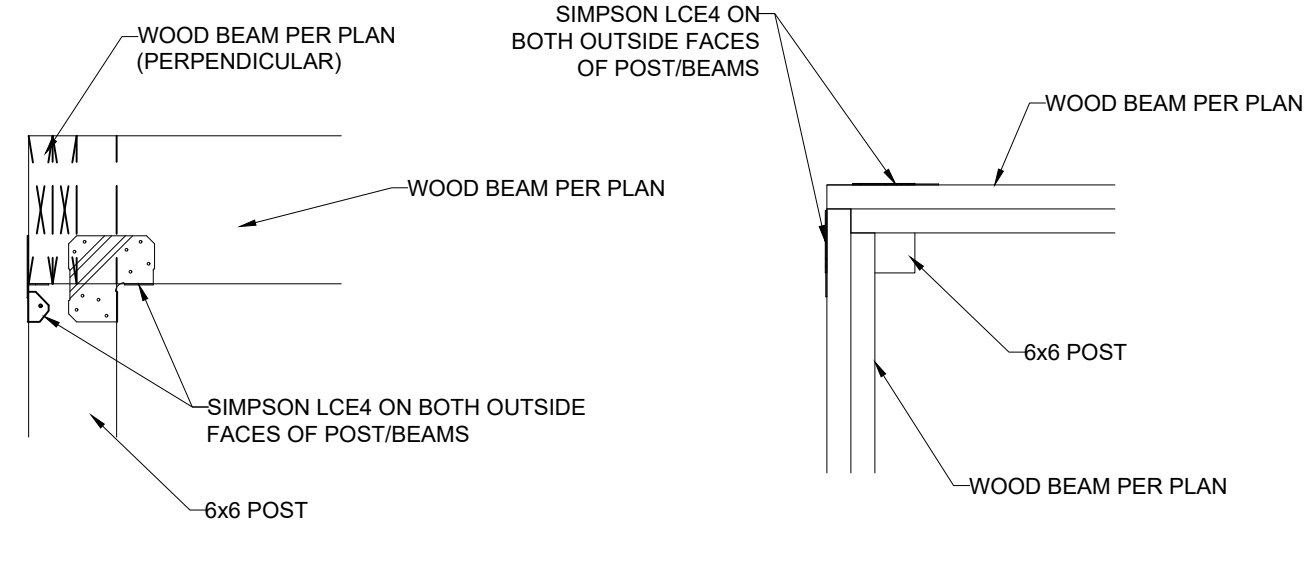
5 LET-IN (COVERED) DECK BEAM CONNECTION

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



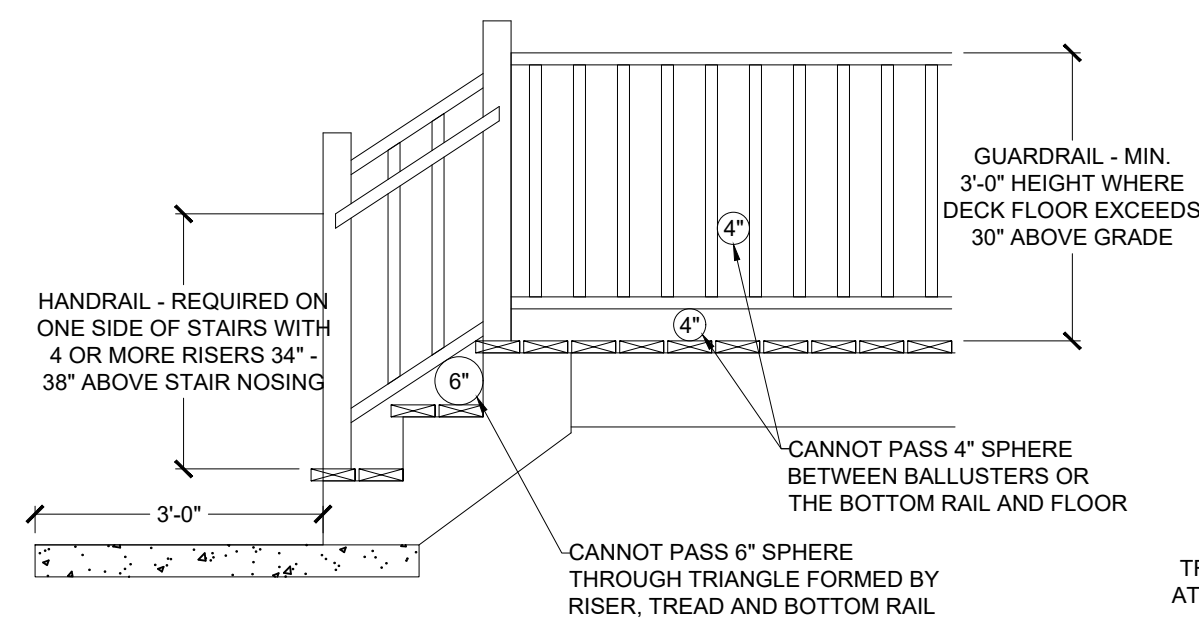
6 GUARDRAIL CONNECTION

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



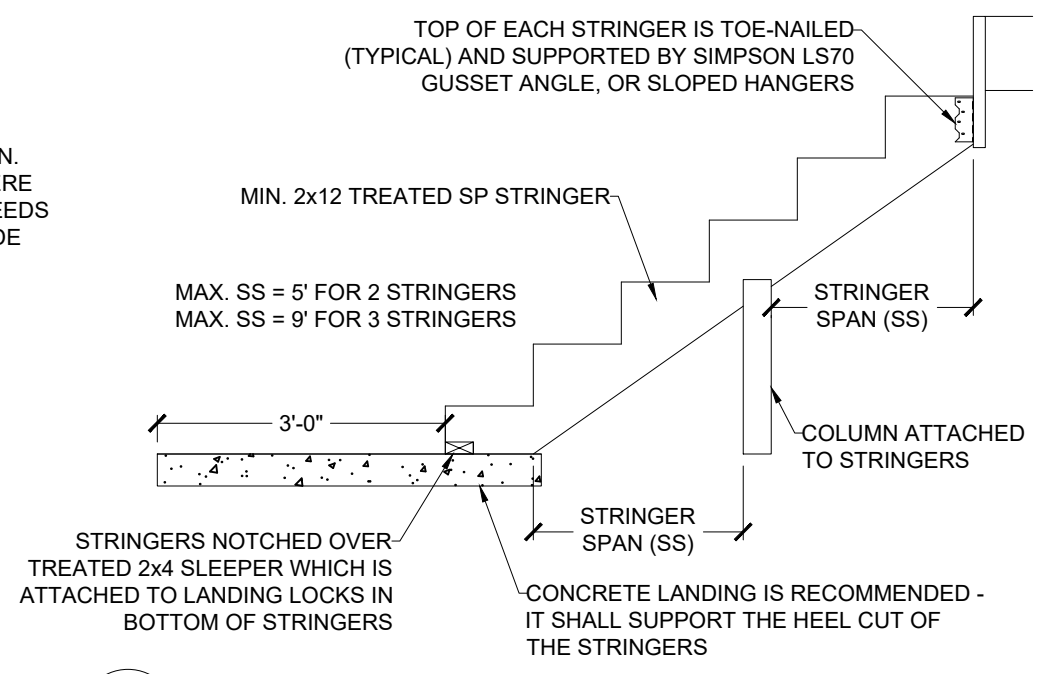
7 ALTERNATE COVERED DECK/PORCH INTERSECTION CORNER BEAM CONNECTION

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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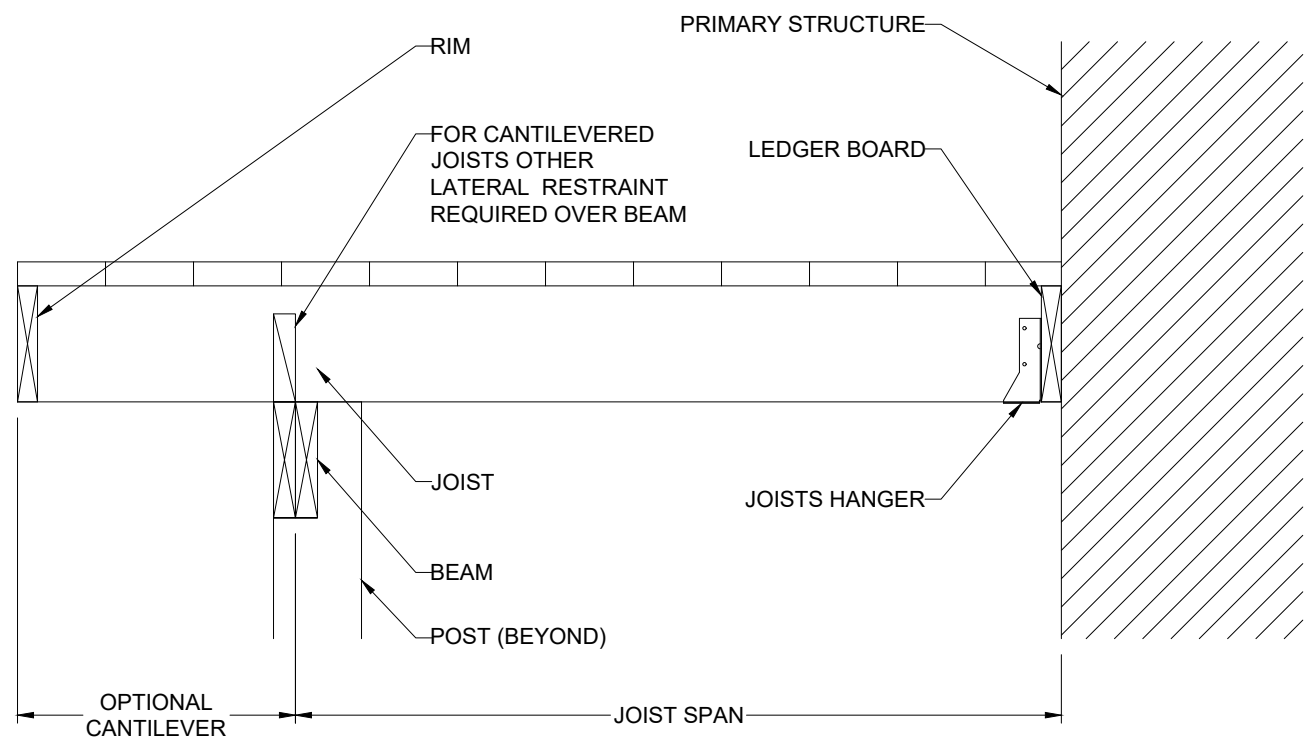
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**FRAMING
DETAILS**

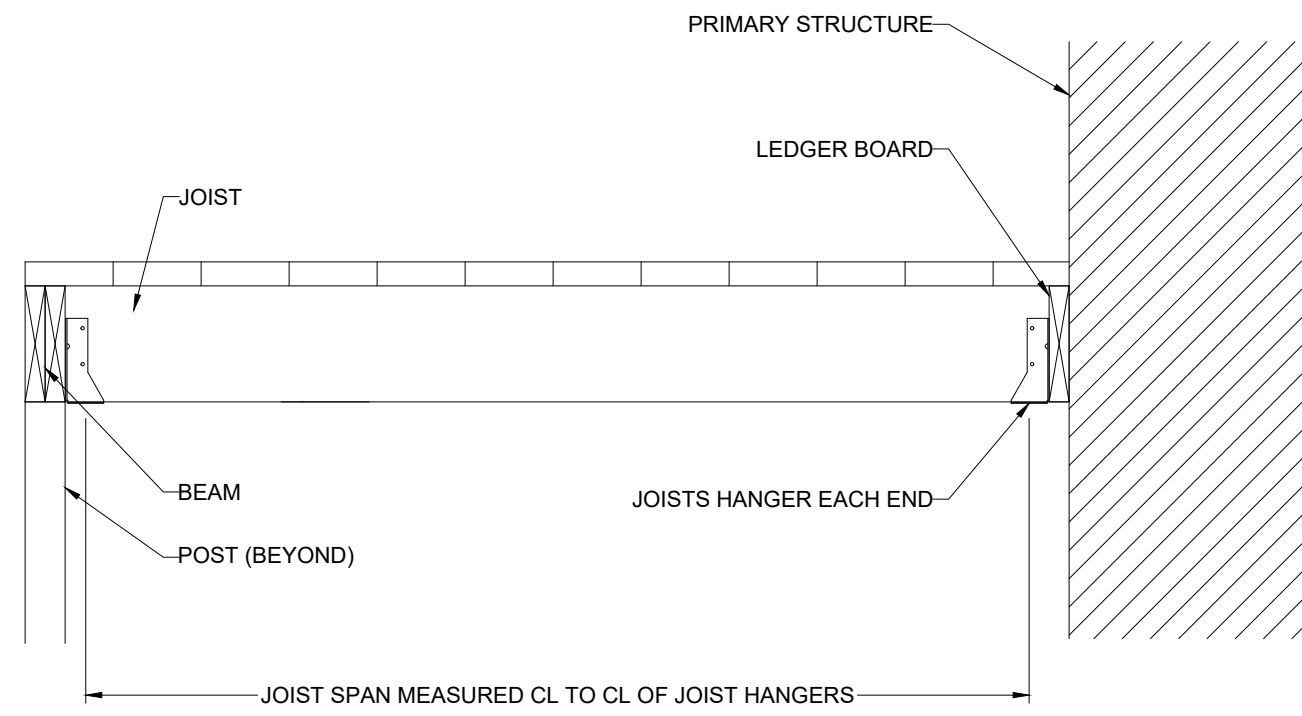
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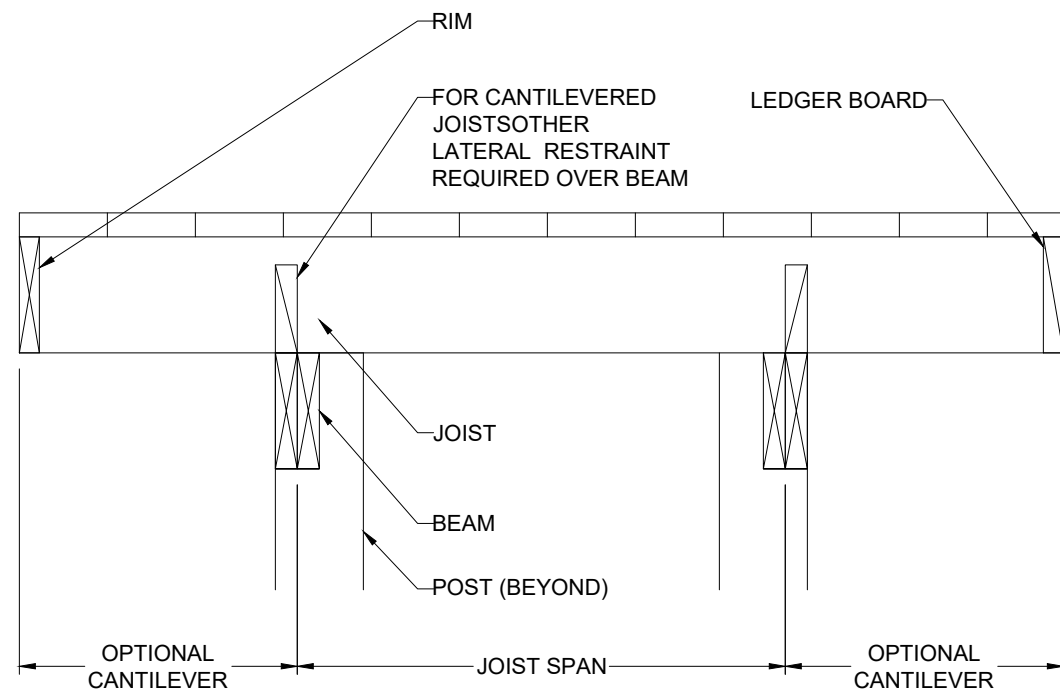
S3.3



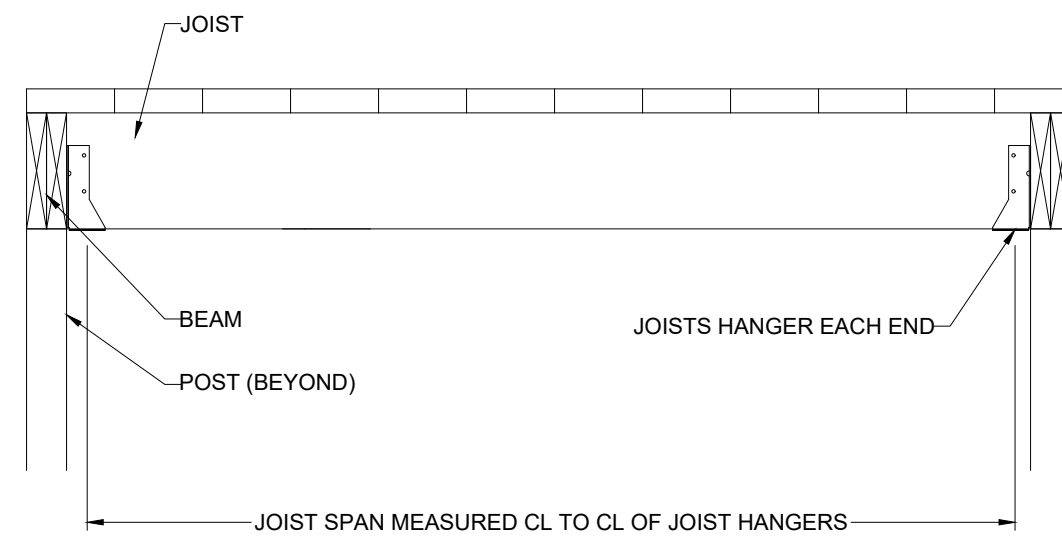
CANTILEVERED JOISTS WITH DROPPED BEAM



JOISTS WITH FLUSH BEAM

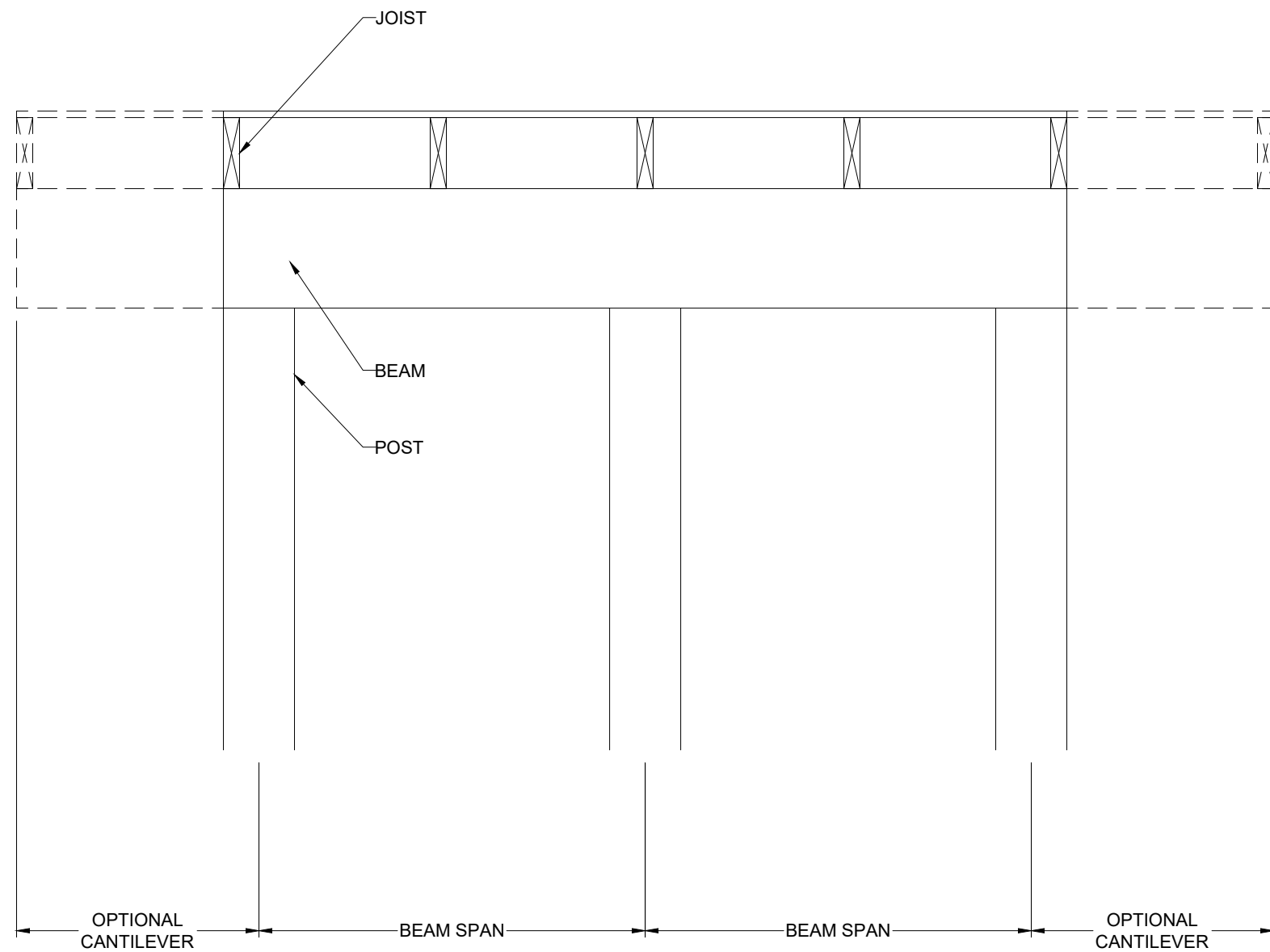


JOISTS ON FREE-STANDING DECK WITH DROPPED BEAM

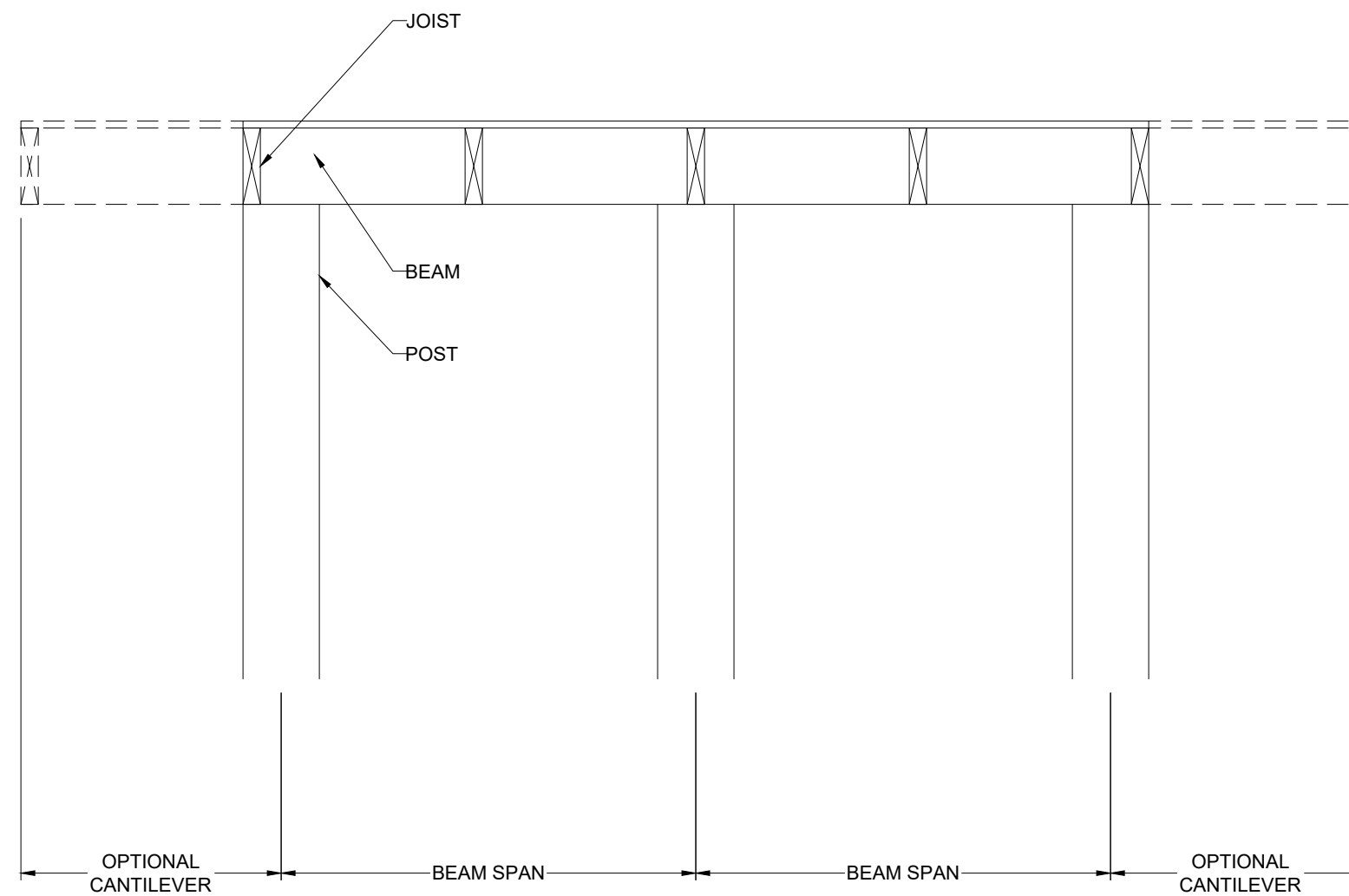


JOISTS WITH FLUSH BEAM

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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**FRAMING
DETAILS**

ENGINEER: DMH CHECKED BY: DMH
JOB NO. DRAWN BY: DMH
DATE: 06-30-22
SHEET NUMBER

S3.3

RELEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW Development Services LEE'S SUMMIT, MISSOURI