



524 CLEVELAND BLVD. #230
CALDWELL, IDAHO 83605
(208) 453-6512

Completed by: JDJ
Review/Check: KKJ

Project Name: Lot 56 River Ranch
SRE Project #: 2025-10727
City and State: McCall, Idaho

Lateral Calculations

Project Title: Lot 56 River Ranch

Location: McCall (150), Idaho

Job #: 2025-10727



Disclaimer:

1. Calculations are not to be used for determining lengths of structural members.
2. Calculations are single use and location specific to property listed above.
3. Calculations shall not to be reproduced, reused, or altered in any way.
4. Calculations based on drawings received prior to stamp date. Any changes made after stamp date must be reviewed and approved by Engineer of Record prior to construction.
5. All work to conform to all local, state, and national codes.

Prepared in accordance with 2018 IBC. Calculations expire by: **10/6/2026**



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SITE SPECIFIC DESIGN CRITERIA:

Snow Criteria:

Roof Load (P_f)	150 psf
Ground Load (P_g)	150 psf
Exposure Factor (C_e)	1.0 Partially
Thermal Factor (C_t)	1.0 Typical
Importance (I_s)	1.0

Wind Criteria:

Wind Speed (V_3)	115 mph
Wind Exposure	C Open Terrain
Wind Importance (I_w)	1.0
Building Category	II

Seismic Criteria:

Site Class	D	Stiff Soil	
Ss	0.47	Fa	1.42
S1	0.14	Fv	2.24
S _{DS}	0.45	S _{D1}	0.21
Risk Category	II	Other	
Seismic Importance (I _E)	1.0		
Seismic Design Category (SDC)	D		

Seismic Criteria (continued):

Wall Material	Design Base Shear	Response Coeff., R	
OSB	.08Wp	6.5	Typ @ Ext
GYP	.27Wp	2	Typ @ Int
Cant. Col.	.36Wp	1.5	

Soil Criteria:

Brg. Strength	1500 psf
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STRUCTURE SPECIFIC DESIGN CRITERIA:

Live Loads:

Typ Residential	40 psf
Garage (P.V.)	50 psf
Sleeping Area's	30 psf

Roof Dead Loads:

Deck	1.5
Insulation	2.0
Roofing	3.0
Joist	2.5
Ceiling	3.0
Misc	4.5
TOTAL	17 psf

Roof not engineered for Tile, Slate or Concrete.

Exterior Wall Dead Loads:

Studs	2.0
Siding	2.5
Insulation	0.5
Gyp. Board	2.5
Sheathing	1.5
Misc	3.0
TOTAL	12 psf

Floor Dead Loads:

Deck	2.5
Joist	2.0
Ceiling	2.0
Flooring	2.5
Misc	3.0
TOTAL	12 psf

Floor joists not engineered for concrete overlay.

Interior Wall Dead Loads:

Studs	2.0
Gyp. Board	2.5
Misc	3.0
TOTAL	8 psf

Deck Dead Load

Decking	4.4
Joist	2.0
	0.0
Misc	3.0
TOTAL	10 psf

Deck not engineered for hot tub loading.

Deck not engineered for concrete overlay.



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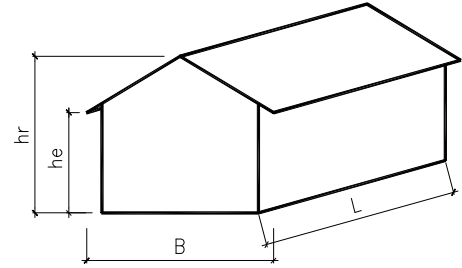
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WIND ANALYSIS: Low-rise Building - Based on IBC / ASCE 7

INPUT DATA

Exposure category (B, C or D, ASCE 7-16 26.7.3)		C	
Importance factor (ASCE 7-16 Table 1.5-2)	$I_w =$	1.00	for all Category
Basic wind speed (ASCE 7-16 26.5.1 or 2018 IBC)	$V =$	115	mph
Topographic factor (ASCE 7-16 26.8 & Table 26.8-1)	$K_{zt} =$	1.00	Flat
Building height to ridge	$h_r =$	31.98 ft	ft
Building height to eave	$h_e =$	22.25 ft	ft
Building width	$B =$	144.25 ft	ft
Building length	$L =$	150.04 ft	ft
Overhang sloped width	$O_h =$	3.00 ft	ft
Effective area of components (or Solar Panel area)	$A =$	33.3 ft ²	ft ² , <== Overhang? (Yes or No): Yes
Enclosed? (Y/N)		y	



ANALYSIS

Velocity pressure

$$q_h = 0.00256 K_z K_{zt} K_d K_e V^2 = 27.67 \text{ psf}$$

where: q_h = velocity pressure at mean roof height, h. (Eq. 26.10-1 page 268)

K_z = velocity pressure exposure coefficient evaluated at height, h, (Tab. 26.10-1, pg 266) = 0.96

K_d = wind directionality factor. (Tab. 26.6-1, for building, page 266) = 0.85

h = mean roof height = 27.12 ft

K_e = ground elevation factor. (1.0 per Sec. 26.9, page 268) < 60 ft, [Satisfactory] (ASCE 7-16 26.2.1)

< Min (L, B), [Satisfactory] (ASCE 7-16 26.2.2)

Design pressures for MWFRS

$$p = q_h [(G C_{pf}) - (G C_{pi})]$$

where: p = pressure in appropriate zone. (Eq. 28.3-1, page 311).

$p_{min} = 16$ psf (ASCE 7-16 28.3.4)

$G C_{pf}$ = product of gust effect factor and external pressure coefficient, see table below. (Fig. 28.3-1, page 312 & 313)

$G C_{pi}$ = product of gust effect factor and internal pressure coefficient. (Tab. 26.13-1, Enclosed Building, page 271)

= 0.18 or -0.18

a = width of edge strips, Fig 28.3-1, page 312, MAX[MIN(0.1B, 0.1L, 0.4h), MIN(0.04B, 0.04L), 3] = 10.85 ft

Net Pressures (psf), Basic Load Cases

Surface	Roof angle $q = 22.62$			Roof angle $q = 22.62$		
	$G C_{pf}$	Net Press. W/		$G C_{pf}$	Net Press. W/	
		(+GC _{pi})	(-GC _{pi})		(+GC _{pi})	(-GC _{pi})
1	0.54	9.90	19.86	-0.45	-17.43	-7.47
2	-0.45	-17.55	-7.59	-0.69	-24.07	-14.11
3	-0.47	-17.90	-7.94	-0.37	-15.22	-5.26
4	-0.41	-16.44	-6.48	-0.45	-17.43	-7.47
5				0.40	6.09	16.05
6				-0.29	-13.01	-3.04
1E	0.77	16.36	26.32	-0.48	-18.26	-8.30
2E	-0.72	-24.87	-14.91	-1.07	-34.59	-24.63
3E	-0.65	-22.91	-12.95	-0.53	-19.65	-9.69
4E	-0.60	-21.53	-11.57	-0.48	-18.26	-8.30
5E				0.61	11.90	21.86
6E				-0.43	-16.88	-6.92

Net Pressures (psf), Torsional Load Cases

Surface	Roof angle $q = 22.62$		
	$G C_{pf}$	Net Press. W/	
		(+GC _{pi})	(-GC _{pi})
1T	0.54	2.48	4.97
2T	-0.45	-4.39	-1.90
3T	-0.47	-4.48	-1.98
4T	0.00	-4.11	-1.62
Surface	Roof angle $q = 0.00$		
	$G C_{pf}$	Net Press. W/	
		(+GC _{pi})	(-GC _{pi})
5T	0.40	1.52	4.01
6T	-0.29	-3.25	-0.76

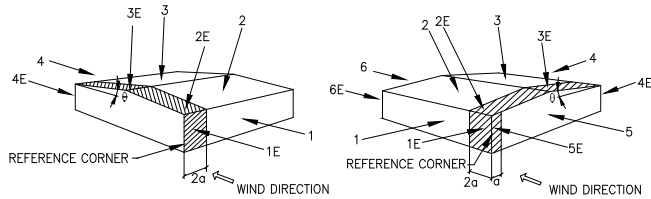
+ / - Wind Pressure 62%



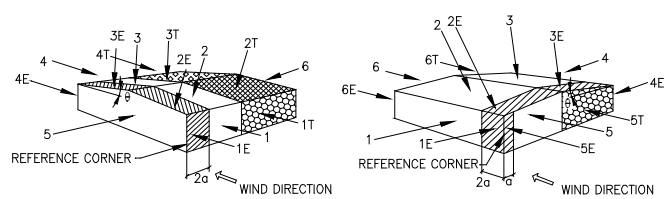
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Load Case A (Transverse) Load Case B (Longitudinal)
Basic Load Cases



Load Case A (Transverse) Load Case B (Longitudinal)
Torsional Load Cases

Design pressures for components and cladding

$$p = q_h [(G C_p) - (G C_{pi})]$$

where: p = pressure on component. (Eq. 30.3-1, pg 33)

$$p_{min} = 16.00 \text{ psf (ASCE 7-16 30.2.2)}$$

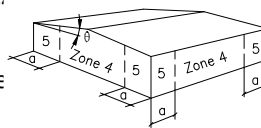
$$G C_p = 1.00 \text{ external pressure coefficient}$$

see table below. (ASCE 7-16 30.3.2)

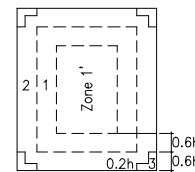
$$q = 22.62 \text{ }^{\circ}$$

$$p_{overhang} = -95.47 \text{ psf}$$

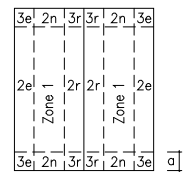
(ASCE 7-16 28.3.3)



Walls



Roof $\theta \leq 7^{\circ}$



Roof $\theta > 7^{\circ}$

Comp. & Cladding Coeffs.	Effective Area (ft ²)	Zone 1		Zone 1'		Zone 2		Zone 2e		Zone 2n		Zone 2r	
		GC _p	- GC _p	GC _p	- GC _p	GC _p	- GC _p	GC _p	- GC _p	GC _p	- GC _p	GC _p	- GC _p
	6936	0.30	-0.80	0.30	-0.80	0.30	-2.20	0.30	-0.80	0.30	-1.00	0.30	-1.00
	Effective Area (ft ²)	Zone 3		Zone 3e		Zone 3r		Zone 4		Zone 5			
		GC _p	- GC _p	GC _p	- GC _p	GC _p	- GC _p	GC _p	- GC _p	GC _p	- GC _p		
33	0.30	-2.50	0.30	-2.50	0.30	-1.80	0.99	-1.09	0.99	-1.37			

Comp. & Cladding Pressures	Zone 1		Zone 1'		Zone 2		Zone 2e		Zone 2n		Zone 2r	
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
	13.28	-27.12	13.28	-27.12	13.28	-65.86	13.28	-27.12	13.28	-32.65	13.28	-32.65
	Zone 3		Zone 3e		Zone 3r		Zone 4		Zone 5		(Max Pressure 74.16 psf)	
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative		
	13.28	-74.16	13.28	-74.16	13.28	-54.79	32.26	-35.02	32.26	-42.93		

LOAD CASE 'A' FACTORED LOADS		
$0.6 * W_r = (Z_2 + Z_3) * 0.6 =$		0.2 psf
$0.6 * W_{re} = (Z_{2e} + Z_{3e}) * 0.6 =$		1.2 psf
$0.6 * W_w = (Z_1 + Z_4) * 0.6 =$		15.8 psf
$0.6 * W_{we} = (Z_{1e} + Z_{4e}) * 0.6 =$		22.7 psf

LOAD CASE 'B' FACTORED LOADS		
$0.6 * W_r = (Z_2 + Z_3) * 0.6 =$		5.3 psf
$0.6 * W_{re} = (Z_{2e} + Z_{3e}) * 0.6 =$		9.0 psf
$0.6 * W_w = (Z_5 + Z_6) * 0.6 =$		11.5 psf
$0.6 * W_{we} = (Z_{5e} + Z_{6e}) * 0.6 =$		17.3 psf

ROOF COMPONENTS FACTORED LOAD	
$0.6 * Z_{r,c\&c} =$	19.6 psf

WALL COMPONENTS FACTORED LOAD	
$0.6 * Z_{w,c\&c} =$	21.0 psf



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OSB SEISMIC LOADING ANALYSIS

IBC / ASCE 7: Equivalent Lateral Force (ELF) Procedure:

INPUT DATA

Typical floor height: $h = 10$ ft
Typical floor weight: $w_x = 367.9$ kips
Number of floors: $n = 2$
Importance factor (ASCE 11.5.1): $I_e = 1.00$
Design spectral response: $S_{DS} = 0.45$ g
 $S_{D1} = 0.21$ g
Mapped spectral resp.: $S_1 = 0.14$ g
Period Parameter, C_t :
(ASCE Tab 12.8-2): $C_t = 0.020$
Resp. coefficient: (ASCE
Tab. 12.2.1): $R = 6.5$
Seismic design category: SDC = D
 $h_n = 32.0$ ft

DESIGN SUMMARY

$C_s = 1.2 * S_{DS} / (R / I_e) = 0.0825$ <= Applicable
Period Parameter, $x = 0.75$, ASCE Tab 12.8-2
Period: $T_a = C_t (h_n)^x = 0.27$ sec, ASCE 12.8.2.1
 $C_s < S_{D1} / [(R / I_e) T_a] = 0.1202$, ASCE Tab 12.8.1.1 <= Not Applicable
 $C_s > 0.044 S_{DS} I_e = 0.0197$, ASCE Tab 12.8.1.1 <= Not Applicable
 $C_s > 0.5 S_1 / (R / I_e) = 0.0108$, ASCE Tab 12.8.1.1 <= Not Applicable
 $k = 2.50$, (ASCE 12.8.3, page 91)
 $V = C_s W = 0.0825$ W
 $0.7 * V = 0.0577$ W
 $W = 736$ kips, total

SEISMIC COMPONENT & ANCHORING ANALYSIS

Out-of-plane seismic force for wall design (ASCE 7, Sec.12.11.1)

$$k_a = 1.0 + \frac{L_f}{100} \quad (12.11-2)$$

Lf: 10 ft ka: 1.1

$$F_p = 0.4 S_{DS} k_a I_e W_p \quad (12.11-1) = 2.4 \text{ psf} \quad \leq \text{USE FOR O.O.P. WALL}$$

Where: $W_p = 12.0$ psf, $I_e = 1.00$

For seismic design category C and above, flexible diaphragm (ASCE 7)

$$F_{px} = 0.4 S_{DS} I_e W_{px} \quad (12.10-3) = 3.04 \text{ psf} \quad \leq \text{USE FOR ROOF FRAMING UPLIFT}$$

Where: $W_{px} = 17.0$ psf,



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WIND / SEISMIC SHEAR FORCE CALCULATIONS:

From ASCE 7-16 Wind & Seismic Loading Analysis

Wall Line	Roof / Floor						Wall					Load above		*C _s (W/p)	=	Loading		
	Wind Force (psf)	Diaph. Weight	Wt, We	truss trib (ft)	Area W (ft)	Area L (ft)	Wind Force (psf)	Wall DL (psf)	Wall ht (ft)	wall line dist (ft)	Upr. Flr Wall ht (ft)	Wind (#)	Seismic (#)			Wind Force (kips)	Seismic Force (kips)	Lateral Control

X1-2	9.6	55	9.7	35.0	66.0		20.1	12.0	10.0	35.0				0.06	=	3.39	3.88	Seismic
X2-2	9.6	55	9.7	35.0	66.0		20.1	12.0	10.0	35.0				0.06	=	4.19	5.41	Seismic
	9.6	55	2.4	14.0	66.0		22.7	12.0	8.0	14.0				0.06	=			
X3-2	9.6	55	4.7	28.0	66.0		21.2	12.0	9.0	28.0				0.06	=	1.97	3.08	Seismic
X4-2	9.6	55	4.7	28.0	66.0		21.2	12.0	9.0	28.0				0.06	=	1.97	3.08	Seismic

Y1-2	9.6	55	9.7	31.5	35.0		20.6	12.0	10.0	31.5				0.06	=	3.09	1.95	Wind
Y2-2	9.6	55	9.7	31.5	35.0		20.6	12.0	10.0	31.5				0.06	=	4.39	2.73	Wind
	9.6	55	9.7	12.5	35.0		22.7	12.0	10.0	12.5				0.06	=			
Y3-2	9.6	55	9.7	12.5	35.0		22.7	12.0	10.0	12.5				0.06	=	1.29	0.78	Wind
Y4-2	9.6	55	4.7	26.5	28.0		21.5	12.0	9.0	26.5				0.06	=	1.88	1.33	Wind
Y5-2	9.6	55	4.7	26.5	28.0		21.5	12.0	9.0	26.5				0.06	=	1.88	1.33	Wind

X1-1	9.6	55	9.0	24.5	71.2		21.9	12.0	12.0	24.5	0.0	0	0	0.06	=	2.67	2.95	Seismic
X2-1	9.6	55	9.0	24.5	71.2		21.9	12.0	12.0	24.5	0.0	0	0	0.06	=	9.59	8.19	Wind
	0.0	18	0.0	31.0	71.2		20.7	12.0	10.0	31.0	6.0	3.39	3.88	0.06	=			
X3-1	0.0	18	0.0	31.0	71.2		20.7	12.0	10.0	31.0	6.0	4.19	5.41	0.06	=	9.19	8.55	Wind
	9.6	55	8.7	15.0	71.2		22.7	12.0	10.0	15.0	0.0	0	0	0.06	=			
X4-1	9.6	55	8.7	15.0	71.2		22.7	12.0	10.0	15.0	0.0	0	0	0.06	=	1.48	1.78	Seismic
X5-1	0.0	18	2.4	31.0	16.5		20.7	12.0	10.0	31.0	6.0	1.97	3.08	0.06	=	3.43	2.22	Wind
X6-1	9.6	55	11.0	59.0	63.0		18.4	12.0	16.0	59.0	0.0	0	0	0.06	=	7.45	6.50	Wind
X7-1	0.0	18	0.0	59.0	63.0		18.4	12.0	16.0	59.0	6.0	1.97	3.08	0.06	=	9.55	5.67	Wind

Y1-1	9.6	55	9.0	30.7	70.5		20.7	12.0	12.0	30.7	0	0	0	0.06	=	3.23	3.66	Seismic
Y2-1	9.6	55	9.0	30.7	70.5		20.7	12.0	12.0	30.7	0	0	0	0.06	=	8.32	6.31	Wind



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Y1-1	9.6	55	9.0	30.7	70.5	20.7	12.0	12.0	30.7	0	0	0	0.06	=	3.23	3.66	Seismic
Y2-1	9.6	55	9.0	30.7	70.5	20.7	12.0	12.0	30.7	0	0	0	0.06	=	8.32	6.31	Wind
	0.0	18	0.0	16.0	70.5	22.7	12.0	10.0	16.0	6	3.09	1.95	0.06	=			
Y3-1	0.0	18	0.0	16.0	70.5	22.7	12.0	10.0	16.0	6	2.19	1.36	0.06	=	8.26	3.89	Wind
	0.0	18	0.0	15.0	46.0	22.7	12.0	10.0	15.0	6	2.19	1.36	0.06	=			
Y4-1	0.0	18	0.0	15.0	46.0	22.7	12.0	10.0	15.0	6	1.29	0.78	0.06	=	5.56	2.85	Wind
	9.6	55	4.9	19.0	46.0	22.7	12.0	18.0	19.0	0	0	0	0.06	=			
Y5-1	9.6	55	4.9	19.0	46.0	22.7	12.0	18.0	19.0	0	0	0	0.06	=	6.18	4.64	Wind
	9.6	55	10.4	38.2	46.0	19.7	12.0	10.0	38.2	0	0	0	0.06	=			
Y6-1	9.6	55	10.4	38.2	46.0	19.7	12.0	10.0	38.2	0	0	0	0.06	=	3.79	3.03	Wind
Y7-1	9.6	55	2.4	8.0	31.0	22.7	12.0	8.0	8.0	0	0	0	0.06	=	0.45	0.43	Wind
Y8-1	9.6	55	2.4	8.0	31.0	22.7	12.0	8.0	8.0	0	0	0	0.06	=	4.42	3.45	Wind
	9.6	55	11.0	29.0	59.0	21.0	12.0	16.0	29.0	0	0	0	0.06	=			
Y9-1	9.6	55	11.0	29.0	59.0	21.0	12.0	16.0	29.0	0	0	0	0.06	=	8.93	4.90	Wind
	0.0	18	0.0	26.0	28.0	21.6	12.0	10.0	26.0	6	1.88	1.33	0.06	=			
Y10-1	0.0	18	0.0	26.0	28.0	21.6	12.0	10.0	26.0	6	1.88	1.33	0.06	=	5.89	2.39	Wind
	9.6	55	9.7	9.0	31.0	22.7	12.0	10.0	9.0	0	0	0	0.06	=			



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SHEAR WALL CALCULATIONS:

		X1-2	X1-2	X2-2	X2-2	X3-2	X4-2
Shear Wall Forces							
Number of Panels		1	1	1	1	1	1
Total length of wall		67.00 ft	67.00 ft	58.00 ft	36.00 ft	26.46 ft	26.46 ft
Total length of shear wall	L =	53.58 ft	2.92 ft	58.00 ft	2.08 ft	26.46 ft	26.46 ft
Total length of full ht seg.	L _w =	15.75 ft	2.92 ft	25.58 ft	2.08 ft	13.33 ft	13.33 ft
height of shear wall	H =	10.00 ft	9.00 ft	10.00 ft	9.00 ft	9.00 ft	9.00 ft
Maximum opening height	H' =	8.00 ft	0.00 ft	10.00 ft	0.00 ft	4.00 ft	4.00 ft
Total force at top of wall	V ₁ =	2372 lbs	1506 lbs	4381 lbs	1028 lbs	3082 lbs	3082 lbs
Self weight	W _{DL self} =	120 plf	108 plf	120 plf	108 plf	108 plf	108 plf
Applied dead load	W _{DL above} =	68 plf	289 plf	68 plf	68 plf	68 plf	68 plf
Prefered OSB thickness	in	7/16	7/16	7/16	7/16	7/16	7/16
Prefered Gyp thickness	in	1/2	1/2	1/2	1/2	1/2	1/2
Wall Connected to Concrete	y/n =	N	N	N	N	N	N
Shear Wall Segments							
		3.00	2.92	4.33	2.08	7.00	7.00
		3.00		5.08		6.33	6.33
		4.25		3.42			
		5.50		3.42			
				3.88			
				5.46			
Shear Transfer to Concrete							
T =		Not Req'd	3500 lbs	Not Req'd	3500 lbs	Not Req'd	Not Req'd
Provide:							
Min # of 1/2 Anchor Bolts							
Load From Above		0.00	0.00	0.00	0.00	0.00	0.00
			S3		S3		
Shear Resisting System							
Force Calculated		299.41	516.25	362.68	494.00	269.40	269.40
		OSB	P.F.	OSB	P.F.	OSB	OSB
Min Shear Wall Segment:		2.86 ft	1.33 ft	2.86 ft	1.33 ft	2.57 ft	2.57 ft
Provide: V _a =		SW2	2657	SW2	1610	SW2	SW2
Min Shear Wall Segment:							
Provide: V _a =							
Blocking / Nailing Framing Attachment							
Blocking Unit Shear		35 plf	22 plf	76 plf	29 plf	116 plf	116 plf
Blocking		NONE	NONE	NONE	NONE	NONE	NONE
Nailing		See SCHED	See SCHED	See SCHED	See SCHED	See SCHED	See SCHED
Unit Base Shear							
% of full height segments	%fh = L _w /L =	0.294	1.000	0.441	1.000	0.504	0.504
% of maximum opening height	%oh = H'/H =	0.800	0.000	1.000	0.000	0.444	0.444
Shear cap adj factor	SCAF =	0.50	1.00	0.47	1.00	0.86	0.86
Unit base shear	vbase V ₁ /L _w =	151 plf	516 plf	171 plf	494 plf	231 plf	231 plf
Effective unit base shear	vreq=v _{base} /SCAF =	299 plf	516 plf	363 plf	494 plf	269 plf	269 plf
Ovrtrn. mo. Ttl. length of wall	OTM =	47.2 k-ft	13.6 k-ft	92.8 k-ft	9.2 k-ft	32.3 k-ft	32.3 k-ft
Shear wall adjustment factor							
Resist moment total L. of wall	RM =	269.9 k-ft	1.7 k-ft	316.2 k-ft	0.4 k-ft	61.6 k-ft	61.6 k-ft
	r =	0.3423	1.0000	0.4411	1.0000	0.6956	0.6956
	C ₀ =	0.5029	1.0000	0.4722	1.0000	0.8581	0.8581



**524 CLEVELAND BLVD. #230
CALDWELL, IDAHO 83605
(208) 453-6512**

**Completed by: JDJ
Review/Check: KKJ**

**Project Name: Lot 56 River Ranch
SRE Project #: 2025-10727
City and State: McCall, Idaho**

SHEAR WALL CALCULATIONS:

	Y1-2	Y2-2	Y3-2	Y4-2	Y5-2	X1-1
Shear Wall Forces						
Number of Panels	1	1	1	1	1	1
Total length of wall	47.00 ft	36.00 ft	29.33 ft	28.00 ft	28.00 ft	30.00 ft
Total length of shear wall	L = 47.00 ft	36.00 ft	29.33 ft	28.00 ft	28.00 ft	4.75 ft
Total length of full ht seg.	L _w = 19.17 ft	8.00 ft	8.00 ft	8.00 ft	15.00 ft	4.75 ft
height of shear wall	H = 10.00 ft	10.00 ft	10.00 ft	9.00 ft	9.00 ft	10.00 ft
Maximum opening height	H' = 10.00 ft	10.00 ft	0.00 ft	0.00 ft	9.00 ft	0.00 ft
Total force at top of wall	V ₁ = 3092 lbs	4386 lbs	1294 lbs	1876 lbs	1876 lbs	1366 lbs
Self weight	w _{DL self} = 120 plf	120 plf	120 plf	108 plf	108 plf	120 plf
Applied dead load	w _{DL above} = 40 plf	40 plf	40 plf	40 plf	40 plf	40 plf
Preferred OSB thickness	in 7/16	7/16	7/16	7/16	7/16	7/16
Preferred Gyp thickness	in 1/2	1/2	1/2	1/2	1/2	1/2
Wall Connected to Concrete	y/n = N	N	N	N	N	Y
Shear Wall Segments						
	4.92	3.00	4.00	4.00	11.00	4.75
	5.00	5.00	4.00	4.00	4.00	
	4.00					
	5.25					
Shear Transfer to Concrete						
T =	Not Req'd	5339 lbs	Not Req'd	Not Req'd	Not Req'd	2648 lbs
						48" O.C.
Provide:						A4
Min # of 1/2 Anchor Bolts						(2) Min
Load From Above	0.00	0.00	0.00	0.00	0.00	0.00
		S4				HD2
Shear Resisting System						
Force Calculated	352.37	548.23	161.78	234.51	241.21	287.55
	OSB	OSB	OSB	OSB	OSB	OSB
Min Shear Wall Segment:	2.86 ft	2.86 ft	2.86 ft	2.57 ft	2.57 ft	2.86 ft
Provide: V _a =	SW1	SW2	SW1	SW1	SW1	SW1
Min Shear Wall Segment:						
Provide: V _a =						
Blocking / Nailing Framing Attachment						
Blocking Unit Shear	66 plf	122 plf	44 plf	67 plf	67 plf	46 plf
Blocking	NONE	NONE	NONE	NONE	NONE	NONE
Nailing	See SCHED	See SCHED	See SCHED	See SCHED	See SCHED	See SCHED
Unit Base Shear						
% of full height segments %f _h = L _w /L =	0.408	0.222	0.273	0.286	0.536	1.000
% of maximum opening height %o _h = H'/H =	1.000	1.000	0.000	0.000	1.000	0.000
Shear cap adj factor SCAF =	0.46	0.39	1.00	1.00	0.52	1.00
Unit base shear v _{base} V ₁ /L _w =	161 plf	548 plf	162 plf	235 plf	125 plf	288 plf
Effective unit base shear v _{req} =v _{base} /SCAF =	352 plf	1401 plf	162 plf	235 plf	241 plf	288 plf
Ovrtrn. mo. Ttl. length of wall OTM =	67.5 k-ft	16.4 k-ft	12.9 k-ft	16.9 k-ft	32.6 k-ft	13.7 k-ft
Shear wall adjustment factor						
Resist moment total L. of wall RM =	176.5 k-ft	0.7 k-ft	68.7 k-ft	57.9 k-ft	57.9 k-ft	1.8 k-ft
r =	0.4078	0.2222	0.9997	0.9997	0.5357	1.0000
C _o =	0.4578	0.3913	3.6638	3.4971	0.5185	1.0000



**524 CLEVELAND BLVD. #230
CALDWELL, IDAHO 83605
(208) 453-6512**

**Completed by: JDJ
Review/Check: KKJ**

**Project Name: Lot 56 River Ranch
SRE Project #: 2025-10727
City and State: McCall, Idaho**

SHEAR WALL CALCULATIONS:

	X1-1	X2-1	X2-1	X3-1	X3-1	X4-1
Shear Wall Forces						
Number of Panels	2	1	2	1	2	1
Total length of wall	30.00 ft	115.50 ft	115.50 ft	109.50 ft	109.50 ft	96.00 ft
Total length of shear wall L =	2.75 ft	115.50 ft	2.25 ft	109.50 ft	1.50 ft	96.00 ft
Total length of full ht seg. L _w =	2.75 ft	24.50 ft	2.25 ft	35.54 ft	1.50 ft	23.83 ft
height of shear wall H =	8.00 ft	10.00 ft	9.00 ft	10.00 ft	9.00 ft	10.00 ft
Maximum opening height H' =	0.00 ft	10.00 ft	0.00 ft	10.00 ft	0.00 ft	10.00 ft
Total force at top of wall V ₁ =	791 lbs	6100 lbs	1743 lbs	7862 lbs	664 lbs	1784 lbs
Self weight w _{DL self} =	96 plf	120 plf	108 plf	120 plf	108 plf	120 plf
Applied dead load w _{DL above} =	60 plf	60 plf	60 plf	60 plf	60 plf	60 plf
Preferred OSB thickness in	7/16	7/16	7/16	7/16	7/16	7/16
Preferred Gyp thickness in	1/2	1/2	1/2	1/2	1/2	1/2
Wall Connected to Concrete y/n =	Y	Y	Y	Y	Y	Y
Shear Wall Segments						
	2.75	8.00	2.25	7.50	1.50	10.08
		5.00		7.54		3.00
		6.62		3.88		3.00
		4.88		3.54		3.88
				6.00		3.88
				3.54		
				3.54		
Shear Transfer to Concrete						
T =	2172 lbs	Not Req'd	3500 lbs	Not Req'd	3500 lbs	Not Req'd
1/2 Anchor Bolts @	72 " O.C.	72 " O.C.		72 " O.C.		72 " O.C.
Provide:	Code Min.	Code Min.		Code Min.		Code Min.
Min # of 1/2 Anchor Bolts	(2) Min	(6) Min		(8) Min		(2) Min
Load From Above	0.00	0.00	0.00	0.00	0.00	0.00
Holdown	HD2		HD3		HD3	
Shear Resisting System						
Force Calculated	287.55	641.43	774.73	520.17	442.52	187.37
	OSB	OSB	P.F.	OSB	P.F.	OSB
Min Shear Wall Segment:	2.29 ft	2.86 ft	1.33 ft	2.86 ft	1.33 ft	2.86 ft
Provide: Va =	SW2	SW4	2307	SW4	1264	SW1
Min Shear Wall Segment:						
Provide: Va =						
Blocking / Nailing Framing Attachment						
Blocking Unit Shear	53 plf	53 plf	30 plf	72 plf	12 plf	19 plf
Blocking	NONE	NONE	NONE	NONE	NONE	NONE
Nailing	See SCHED	See SCHED	See SCHED	See SCHED	See SCHED	See SCHED
Unit Base Shear						
% of full height segments %fh = L _w /L =	1.000	0.212	1.000	0.325	1.000	0.248
% of maximum opening height %oh = H'/H =	0.000	1.000	0.000	1.000	0.000	1.000
Shear cap adj factor SCAF =	1.00	0.39	1.00	0.43	1.00	0.40
Unit base shear vbase V ₁ /L _w =	288 plf	249 plf	775 plf	221 plf	443 plf	75 plf
Effective unit base shear vreq=v _{base} /SCAF =	288 plf	641 plf	775 plf	520 plf	443 plf	187 plf
Ovrtrn. mo. Ttl. length of wall OTM =	6.3 k-ft	157.1 k-ft	15.7 k-ft	184.8 k-ft	6.0 k-ft	44.7 k-ft
Shear wall adjustment factor						
Resist moment total L. of wall RM =	0.6 k-ft	1197.3 k-ft	0.4 k-ft	1076.1 k-ft	0.2 k-ft	827.1 k-ft
r =	1.0000	0.2121	1.0000	0.3245	1.0000	0.2483
C ₀ =	1.0000	0.3882	1.0000	0.4254	1.0000	0.3994



**524 CLEVELAND BLVD. #230
CALDWELL, IDAHO 83605
(208) 453-6512**

**Completed by: JDJ
Review/Check: KKJ**

**Project Name: Lot 56 River Ranch
SRE Project #: 2025-10727
City and State: McCall, Idaho**

SHEAR WALL CALCULATIONS:

	X5-1	X6-1	X6-1	X7-1	X7-1	X7-1
Shear Wall Forces						
Number of Panels	1	1	1	1	3	2
Total length of wall	30.17 ft	29.00 ft	29.00 ft	72.00 ft	72.00 ft	72.00 ft
Total length of shear wall	L = 30.17 ft	21.00 ft	8.00 ft	20.54 ft	3.00 ft	2.00 ft
Total length of full ht seg.	L _w = 13.67 ft	16.00 ft	5.50 ft	8.50 ft	3.00 ft	2.00 ft
height of shear wall	H = 10.00 ft	16.00 ft	16.00 ft	14.00 ft	10.00 ft	9.00 ft
Maximum opening height	H' = 10.00 ft	5.00 ft	13.50 ft	14.00 ft	0.00 ft	0.00 ft
Total force at top of wall	V ₁ = 3425 lbs	4583 lbs	2864 lbs	3453 lbs	1219 lbs	1219 lbs
Self weight	w _{DL self} = 120 plf	192 plf	192 plf	168 plf	120 plf	108 plf
Applied dead load	w _{DL above} = 60 plf	60 plf	60 plf	60 plf	60 plf	60 plf
Preferred OSB thickness	in 7/16	7/16	7/16	7/16	7/16	7/16
Preferred Gyp thickness	in 1/2	1/2	1/2	1/2	1/2	1/2
Wall Connected to Concrete	y/n = Y	Y	Y	Y	Y	Y
Shear Wall Segments						
	4.75	4.75	2.75	4.25	3.00	2.00
	4.75	6.50	2.75	4.25		
	4.17	4.75				
Shear Transfer to Concrete						
T =	1662 lbs	2503 lbs	3500 lbs	5397 lbs	3901 lbs	3500 lbs
1/2 Anchor Bolts @	72 " O.C.	60 " O.C.		72 " O.C.	72 " O.C.	
Provide:	Code Min.	A5		Code Min.	Code Min.	
Min # of 1/2 Anchor Bolts	(4) Min	(5) Min		(4) Min	(2) Min	
Load From Above	0.00	0.00	0.00	0.00	0.00	0.00
Holdown	HD1	HD2	HD3	HD3	HD3	HD3
Shear Resisting System						
Force Calculated	524.76	286.42	769.95	882.44	406.21	609.32
	OSB	OSB	B.F.	OSB	OSB	P.F.
Min Shear Wall Segment:	2.86 ft	4.57 ft	1.33 ft	4.00 ft	2.86 ft	1.33 ft
Provide: V _a =	SW2	SW1	4400	SW4	SW2	1960
Min Shear Wall Segment:						
Provide: V _a =						
Blocking / Nailing Framing Attachment						
Blocking Unit Shear	114 plf	158 plf	99 plf	48 plf	51 plf	34 plf
Blocking	NONE	NONE	NONE	NONE	NONE	NONE
Nailing	See SCHED	T1	See SCHED	See SCHED	See SCHED	See SCHED
Unit Base Shear						
% of full height segments	%fh = L _w /L = 0.453	0.762	0.688	0.414	1.000	1.000
% of maximum opening height	%oh = H'/H = 1.000	0.313	0.844	1.000	0.000	0.000
Shear cap adj factor	SCAF = 0.48	1.00	0.68	0.46	1.00	1.00
Unit base shear	v _{base} V ₁ /L _w = 251 plf	286 plf	521 plf	406 plf	406 plf	609 plf
Effective unit base shear	v _{req} = v _{base} /SCAF = 525 plf	286 plf	770 plf	882 plf	406 plf	609 plf
Ovrtrn. mo. of shrt. pnl	OTM = 71.7 k-ft	73.3 k-ft	22.9 k-ft	24.2 k-ft	12.2 k-ft	11.0 k-ft
Shear wall adjustment factor						
Resist moment of shrt panel	RM = 81.7 k-ft	55.5 k-ft	1.0 k-ft	2.1 k-ft	0.8 k-ft	0.3 k-ft
	r = 0.4530	0.9110	0.7228	0.4138	1.0000	1.0000
	C ₀ = 0.4776	1.0151	0.6764	0.4603	1.0000	1.0000



**524 CLEVELAND BLVD. #230
CALDWELL, IDAHO 83605
(208) 453-6512**

**Completed by: JDJ
Review/Check: KKJ**

**Project Name: Lot 56 River Ranch
SRE Project #: 2025-10727
City and State: McCall, Idaho**

SHEAR WALL CALCULATIONS:

	Y1-1	Y2-1	Y3-1	Y3-1	Y4-1	Y4-1
Shear Wall Forces						
Number of Panels	1	1	2	1	2	1
Total length of wall	60.25 ft	71.50 ft	44.00 ft	44.00 ft	44.00 ft	44.00 ft
Total length of shear wall	L = 60.25 ft	67.21 ft	3.00 ft	10.00 ft	3.00 ft	10.00 ft
Total length of full ht seg.	L _w = 30.54 ft	39.53 ft	3.00 ft	10.00 ft	3.00 ft	10.00 ft
height of shear wall	H = 10.00 ft	10.00 ft	10.00 ft	10.00 ft	10.00 ft	10.00 ft
Maximum opening height	H' = 10.00 ft	10.00 ft	0.00 ft	0.00 ft	0.00 ft	0.00 ft
Total force at top of wall	V ₁ = 3657 lbs	8322 lbs	1549 lbs	5164 lbs	1042 lbs	3474 lbs
Self weight	w _{DL self} = 120 plf	120 plf	120 plf	120 plf	120 plf	120 plf
Applied dead load	w _{DL above} = 60 plf	60 plf	60 plf	60 plf	60 plf	60 plf
Preferred OSB thickness	in 7/16	7/16	7/16	7/16	7/16	7/16
Preferred Gyp thickness	in 1/2	1/2	1/2	1/2	1/2	1/2
Wall Connected to Concrete	y/n = Y	Y	Y	Y	Y	Y
Shear Wall Segments						
	11.50	9.42	3.00	10.00	3.00	10.00
	3.71	6.46				
	3.33	14.17				
	4.00	4.83				
	4.00	4.65				
	4.00					
Shear Transfer to Concrete						
T =	Not Req'd	Not Req'd	5002 lbs	4625 lbs	3312 lbs	2935 lbs
1/2 Anchor Bolts @	72 " O.C.	72 " O.C.	36 " O.C.	24 " O.C.	36 " O.C.	36 " O.C.
Provide:	Code Min.	Code Min.	A3	A2	A3	A3
Min # of 1/2 Anchor Bolts	(4) Min	(9) Min	(2) Min	(5) Min	(2) Min	(4) Min
Load From Above	0.00	0.00	0.00	0.00	0.00	0.00
			HD3	HD3	HD3	HD2
Shear Resisting System						
Force Calculated	237.81	383.98	516.37	516.37	347.38	347.38
	OSB	OSB	OSB	OSB	OSB	OSB
Min Shear Wall Segment:	2.86 ft	2.86 ft	2.86 ft	2.86 ft	2.86 ft	2.86 ft
Provide: Va =	SW1	SW2	SW4	SW4	SW2	SW2
Min Shear Wall Segment:						
Provide: Va =						
Blocking / Nailing Framing Attachment						
Blocking Unit Shear	61 plf	116 plf	70 plf	117 plf	47 plf	79 plf
Blocking	NONE	NONE	NONE	NONE	NONE	NONE
Nailing	See SCHED	See SCHED	See SCHED	See SCHED	See SCHED	See SCHED
Unit Base Shear						
% of full height segments	%fh = L _w /L = 0.507	0.588	1.000	1.000	1.000	1.000
% of maximum opening height	%oh = H'/H = 1.000	1.000	0.000	0.000	0.000	0.000
Shear cap adj factor	SCAF = 0.50	0.55	1.00	1.00	1.00	1.00
Unit base shear	vbase V ₁ /L _w = 120 plf	211 plf	516 plf	516 plf	347 plf	347 plf
Effective unit base shear	vreq=v _{base} /SCAF = 238 plf	384 plf	516 plf	516 plf	347 plf	347 plf
Ovrtrn. mo. Ttl. length of wall	OTM = 72.6 k-ft	151.8 k-ft	15.5 k-ft	51.6 k-ft	10.4 k-ft	34.7 k-ft
Shear wall adjustment factor						
Resist moment total L. of wall	RM = 325.8 k-ft	405.4 k-ft	0.8 k-ft	9.0 k-ft	0.8 k-ft	9.0 k-ft
	r = 0.5070	0.5881	1.0000	1.0000	1.0000	1.0000
	C ₀ = 0.5035	0.5483	1.0000	1.0000	1.0000	1.0000



**524 CLEVELAND BLVD. #230
CALDWELL, IDAHO 83605
(208) 453-6512**

**Completed by: JDJ
Review/Check: KKJ**

**Project Name: Lot 56 River Ranch
SRE Project #: 2025-10727
City and State: McCall, Idaho**

SHEAR WALL CALCULATIONS:

	Y5-1	Y5-1	Y6-1	Y7-1	Y8-1	Y8-1
Shear Wall Forces						
Number of Panels	1	1	1	1	1	1
Total length of wall	46.00 ft	46.00 ft	40.00 ft	31.00 ft	59.00 ft	59.00 ft
Total length of shear wall	L = 16.10 ft	44.00 ft	40.00 ft	31.00 ft	7.00 ft	6.00 ft
Total length of full ht seg.	L _w = 15.63 ft	18.75 ft	21.00 ft	8.00 ft	7.00 ft	6.00 ft
height of shear wall	H = 18.00 ft	10.00 ft	10.00 ft	8.00 ft	16.00 ft	8.00 ft
Maximum opening height	H' = 0.00 ft	10.00 ft	10.00 ft	1.50 ft	0.00 ft	0.00 ft
Total force at top of wall	V ₁ = 2810 lbs	3371 lbs	3792 lbs	455 lbs	2380 lbs	2040 lbs
Self weight	w _{DL self} = 216 plf	120 plf	120 plf	96 plf	192 plf	96 plf
Applied dead load	w _{DL above} = 60 plf	60 plf	60 plf	60 plf	289 plf	60 plf
Preferred OSB thickness	in 7/16	7/16	7/16	7/16	7/16	7/16
Preferred Gyp thickness	in 1/2	1/2	1/2	1/2	1/2	1/2
Wall Connected to Concrete	y/n = Y	Y	Y	Y	Y	Y
Shear Wall Segments						
	7.46	5.00	5.00	4.00	7.00	6.00
	8.17	9.75	4.00	4.00		
		4.00	4.00			
			4.00			
			4.00			
Shear Transfer to Concrete						
T =	1865 lbs	Not Req'd	Not Req'd	Not Req'd	4431 lbs	2441 lbs
1/2 Anchor Bolts @	72 " O.C.	72 " O.C.	72 " O.C.	72 " O.C.	36 " O.C.	72 " O.C.
Provide:	Code Min.	Code Min.	Code Min.	Code Min.	A3	Code Min.
Min # of 1/2 Anchor Bolts	(3) Min	(4) Min	(4) Min	(2) Min	(3) Min	(2) Min
Load From Above	0.00	0.00	0.00	0.00	0.00	0.00
Holdown	HD1				HD3	HD2
Shear Resisting System						
Force Calculated	179.79	386.10	352.13	56.87	340.06	340.06
	OSB	OSB	OSB	OSB	OSB	OSB
Min Shear Wall Segment:	5.14 ft	2.86 ft	2.86 ft	2.29 ft	4.57 ft	2.29 ft
Provide: V _a =	SW1	SW2	SW1	SW1	SW1	SW1
Min Shear Wall Segment:						
Provide: V _a =						
Blocking / Nailing Framing Attachment						
Blocking Unit Shear	61 plf	73 plf	95 plf	15 plf	40 plf	35 plf
Blocking	NONE	NONE	NONE	NONE	NONE	NONE
Nailing	See SCHED	See SCHED	See SCHED	See SCHED	See SCHED	See SCHED
Unit Base Shear						
% of full height segments %fh = L _w /L =	0.971	0.426	0.525	0.258	1.000	1.000
% of maximum opening height %oh = H'/H =	0.000	1.000	1.000	0.188	0.000	0.000
Shear cap adj factor SCAF =	1.00	0.47	0.51	1.00	1.00	1.00
Unit base shear v _{base} V ₁ /L _w =	180 plf	180 plf	181 plf	57 plf	340 plf	340 plf
Effective unit base shear v _{req} =v _{base} /SCAF =	180 plf	386 plf	352 plf	57 plf	340 plf	340 plf
Ovrtrn. mo. Ttl. length of wall OTM =	50.6 k-ft	72.4 k-ft	73.9 k-ft	3.6 k-ft	38.1 k-ft	16.3 k-ft
Shear wall adjustment factor						
Resist moment total L. of wall RM =	35.7 k-ft	173.8 k-ft	143.6 k-ft	74.7 k-ft	11.8 k-ft	2.8 k-ft
r =	1.0000	0.4261	0.5250	0.6497	1.0000	1.0000
C ₀ =	1.0303	0.4656	0.5128	1.4806	1.0000	1.0000



**524 CLEVELAND BLVD. #230
CALDWELL, IDAHO 83605
(208) 453-6512**

**Completed by: JDJ
Review/Check: KKJ**

**Project Name: Lot 56 River Ranch
SRE Project #: 2025-10727
City and State: McCall, Idaho**

SHEAR WALL CALCULATIONS:

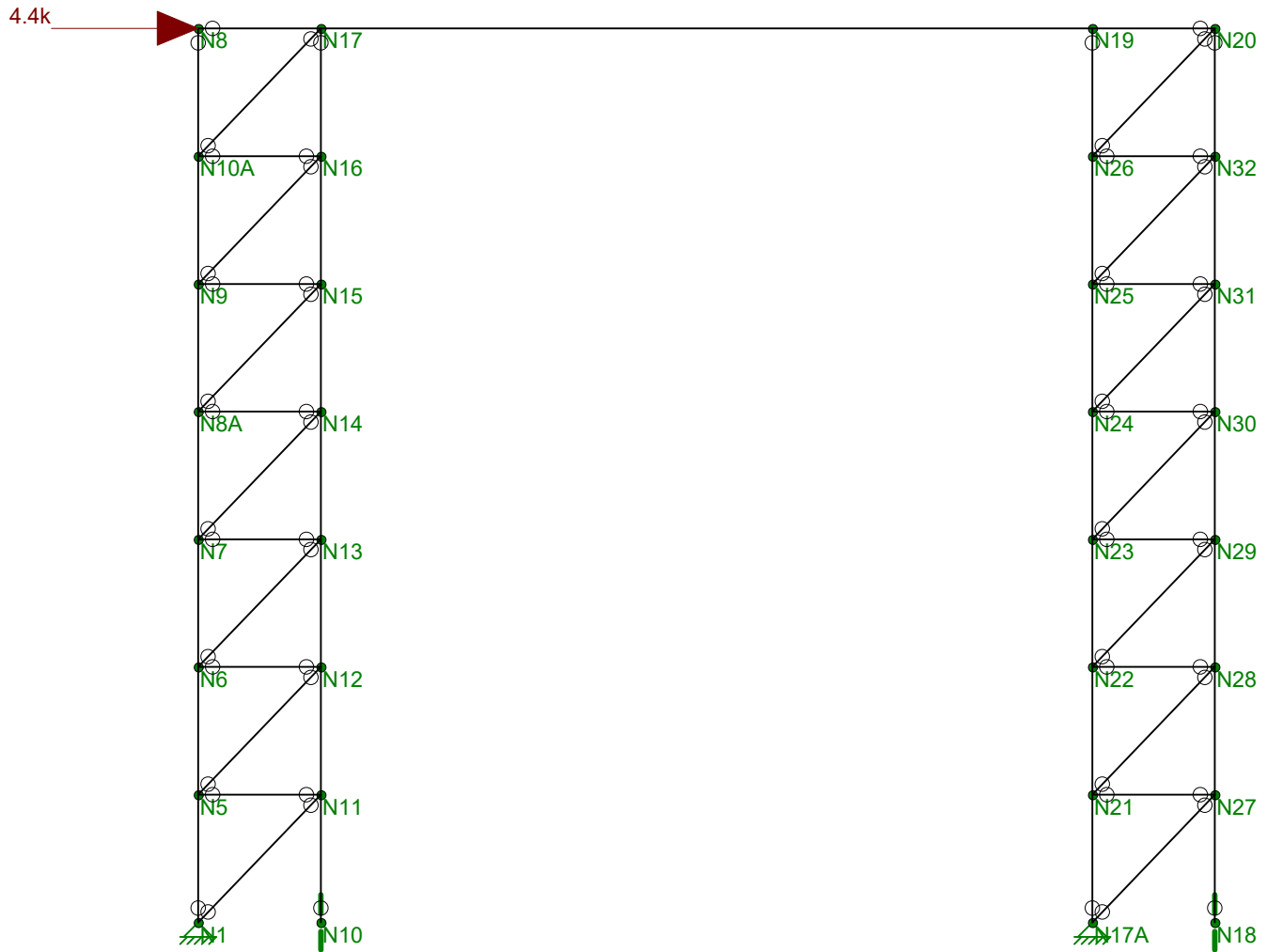
		Y9-1	Y10-1				
Shear Wall Forces							
Number of Panels		1	1				
Total length of wall		53.00 ft	28.00 ft				
Total length of shear wall	L =	53.00 ft	28.00 ft				
Total length of full ht seg.	L _w =	21.00 ft	20.08 ft				
height of shear wall	H =	16.00 ft	10.00 ft				
Maximum opening height	H' =	10.00 ft	10.00 ft				
Total force at top of wall	V ₁ =	8929 lbs	5895 lbs				
Self weight	W _{DL self} =	192 plf	120 plf				
Applied dead load	W _{DL above} =	221 plf	60 plf				
Prefered OSB thickness	in	7/16	7/16				
Prefered Gyp thickness	in	1/2	1/2				
Wall Connected to Concrete	y/n =	Y	Y				
Shear Wall Segments							
		13.00	4.00				
		8.00	10.08				
			6.00				
Shear Transfer to Concrete							
	T =	Not Req'd	2494 lbs				
1/2 Anchor Bolts @		72 " O.C.	60 " O.C.				
Provide:		Code Min.	A5				
Min # of 1/2 Anchor Bolts		(9) Min	(6) Min				
Load From Above		0.00	0.00				
			HD2				
Shear Resisting System							
Force Calculated		649.81	459.64				
		OSB	OSB				
Min Shear Wall Segment:		4.57 ft	2.86 ft				
Provide: Va =		SW3	SW2				
Min Shear Wall Segment:							
Provide: Va =							
Blocking / Nailing Framing Attachment							
Blocking Unit Shear		168 plf	211 plf				
Blocking		NONE	B1				
Nailing		T1	T1				
Unit Base Shear							
% of full height segments	%fh = L _w /L =	0.396	0.717				
% of maximum opening height	%oh = H'/H =	0.625	1.000				
Shear cap adj factor	SCAF =	0.65	0.64				
Unit base shear	vbase V ₁ /L _w =	425 plf	294 plf				
Effective unit base shear	vreq=v _{base} /SCAF =	650 plf	460 plf				
Ovrtrn. mo. of shrt. pnl	OTM =	218.3 k-ft	92.3 k-ft				
Shear wall adjustment factor							
Resist moment of shrt panel	RM =	580.1 k-ft	70.4 k-ft				
	r =	0.5122	0.7171				
	C _o =	0.6543	0.6387				



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Loads: BLC 1, Wind Load
Envelope Only Solution



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Wood Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in ²]	I (90,270) ... I (0,180) [i...
1	Chord	4.5X5.5FS	Column	Rectangular	DF/L #2	Typical	24.75	41.766 62.391
2	Web	2X6	Beam	None	DF/L #2	Typical	8.25	1.547 20.797
3	Beam	4X12	Beam	None	24F-1.8E DF Balanced	Typical	39.375	40.195 415.283

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Temp [F]
1	N1	0	0	0
2	N8	0	14	0
3	N10	1.92	0	0
4	N17	1.92	14	0
5	N5	0	2	0
6	N6	0	4	0
7	N7	0	6	0
8	N8A	0	8	0
9	N9	0	10	0
10	N10A	0	12	0
11	N11	1.92	2	0
12	N12	1.92	4	0
13	N13	1.92	6	0
14	N14	1.92	8	0
15	N15	1.92	10	0
16	N16	1.92	12	0
17	N17A	14	0	0
18	N18	15.92	0	0
19	N19	14	14	0
20	N20	15.92	14	0
21	N21	14	2	0
22	N22	14	4	0
23	N23	14	6	0
24	N24	14	8	0
25	N25	14	10	0
26	N26	14	12	0
27	N27	15.92	2	0
28	N28	15.92	4	0
29	N29	15.92	6	0
30	N30	15.92	8	0
31	N31	15.92	10	0
32	N32	15.92	12	0

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Rotation[k-ft/rad]
1	N1	Reaction	Reaction	
2	N18		Reaction	
3	N10		Reaction	
4	N17A	Reaction	Reaction	



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Wood Design Parameters

	Label	Shape	Length[...]	Le-out[ft]	Le-in[ft]	le-bend to...	le-bend bo...	K-out	K-in	CV	Cr	Out sw...	In sway
1	M1	Chord	14	2	2	Lb out							
2	M2	Chord	14	2	2								
3	M4	Web	2.772			Lb out							
4	M5	Web	1.92			Lb out							
5	M6	Web	2.772			Lb out							
6	M7	Web	1.92			Lb out							
7	M8	Web	2.772			Lb out							
8	M9	Web	1.92			Lb out							
9	M10	Web	2.772			Lb out							
10	M11	Web	1.92			Lb out							
11	M12	Web	2.772			Lb out							
12	M13	Web	1.92			Lb out							
13	M14	Web	2.772			Lb out							
14	M15	Web	1.92			Lb out							
15	M16	Web	2.772			Lb out							
16	M17	Chord	14	2	2								
17	M18	Chord	14	2	2								
18	M19	Web	2.772			Lb out							
19	M20	Web	1.92			Lb out							
20	M21	Web	2.772			Lb out							
21	M22	Web	1.92			Lb out							
22	M23	Web	2.772			Lb out							
23	M24	Web	1.92			Lb out							
24	M25	Web	2.772			Lb out							
25	M26	Web	1.92			Lb out							
26	M27	Web	2.772			Lb out							
27	M28	Web	1.92			Lb out							
28	M29	Web	2.772			Lb out							
29	M30	Web	1.92			Lb out							
30	M31	Web	2.772			Lb out							
31	M31A	Beam	15.92	0	0	Lb out							

Joint Loads and Enforced Displacements (BLC 1 : Wind Load)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/f...
1	N8	L	X	4.4

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Joint	Point	Distributed
1	Wind Load	WL			1		
2	Dead Load	DL					1

Envelope Maximum Member Section Forces

	Member		Axial[k]	Loc[ft]	LC	Shear[k]	Loc[ft]	LC	Moment[k-ft]	Loc[ft]	LC
1	M1	max	1.391	12.104	17	.031	2.042	17	.143	2.042	17
2		min	-6.633	0	17	-.072	0	17	-.026	11.958	17
3	M2	max	7.869	0	9	.023	4.083	17	.111	4.083	9



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Envelope Maximum Member Section Forces (Continued)

	Member		Axial[k]	Loc[ft]	LC	Shear[k]	Loc[ft]	LC	Moment[k-ft]	Loc[ft]	LC
4		min	-.265	12.104	17	-.065	2.042	9	-.016	1.896	9
5	M4	max	.107	0	16	0	0	1	0	0	1
6		min	-1.891	0	17	0	0	1	0	0	1
7	M5	max	1.27	0	17	0	0	1	0	0	1
8		min	-.068	0	1	0	0	1	0	0	1
9	M6	max	.091	0	16	0	0	1	0	0	1
10		min	-1.815	0	17	0	0	1	0	0	1
11	M7	max	1.273	0	17	0	0	1	0	0	1
12		min	-.065	0	1	0	0	1	0	0	1
13	M8	max	.094	0	16	0	0	1	0	0	1
14		min	-1.837	0	17	0	0	1	0	0	1
15	M9	max	1.268	0	17	0	0	1	0	0	1
16		min	-.065	0	1	0	0	1	0	0	1
17	M10	max	.094	0	16	0	0	1	0	0	1
18		min	-1.835	0	17	0	0	1	0	0	1
19	M11	max	1.28	0	17	0	0	1	0	0	1
20		min	-.065	0	1	0	0	1	0	0	1
21	M12	max	.094	0	16	0	0	1	0	0	1
22		min	-1.829	0	17	0	0	1	0	0	1
23	M13	max	1.242	0	17	0	0	1	0	0	1
24		min	-.065	0	1	0	0	1	0	0	1
25	M14	max	.094	0	16	0	0	1	0	0	1
26		min	-1.918	0	17	0	0	1	0	0	1
27	M15	max	1.434	0	17	0	0	1	0	0	1
28		min	-.066	0	1	0	0	1	0	0	1
29	M16	max	.096	0	16	0	0	1	0	0	1
30		min	-1.967	0	17	0	0	1	0	0	1
31	M17	max	2.598	12.104	9	.033	10.063	9	.14	2.042	9
32		min	-5.997	0	17	-.071	0	9	-.046	11.958	9
33	M18	max	8.303	0	9	.024	4.083	9	.107	4.083	17
34		min	-.251	12.104	9	-.063	2.042	9	-.017	1.896	9
35	M19	max	-.058	0	18	0	0	1	0	0	1
36		min	-2.076	0	9	0	0	1	0	0	1
37	M20	max	1.509	0	9	0	0	1	0	0	1
38		min	.04	0	18	0	0	1	0	0	1
39	M21	max	-.056	0	18	0	0	1	0	0	1
40		min	-2.029	0	9	0	0	1	0	0	1
41	M22	max	1.319	0	9	0	0	1	0	0	1
42		min	.039	0	18	0	0	1	0	0	1
43	M23	max	-.056	0	18	0	0	1	0	0	1
44		min	-1.94	0	9	0	0	1	0	0	1
45	M24	max	1.357	0	9	0	0	1	0	0	1
46		min	.039	0	18	0	0	1	0	0	1
47	M25	max	-.056	0	18	0	0	1	0	0	1
48		min	-1.946	0	9	0	0	1	0	0	1
49	M26	max	1.345	0	9	0	0	1	0	0	1
50		min	.039	0	18	0	0	1	0	0	1
51	M27	max	-.057	0	18	0	0	1	0	0	1
52		min	-1.95	0	9	0	0	1	0	0	1
53	M28	max	1.352	0	9	0	0	1	0	0	1
54		min	.039	0	18	0	0	1	0	0	1
55	M29	max	-.055	0	18	0	0	1	0	0	1



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Envelope Maximum Member Section Forces (Continued)

Member		Axial[k]	Loc[ft]	LC	Shear[k]	Loc[ft]	LC	Moment[k-ft]	Loc[ft]	LC
56		min	-1.918	0	9	0	1	0	0	1
57	M30	max	1.348	0	9	0	1	0	0	1
58		min	.041	0	18	0	1	0	0	1
59	M31	max	-.064	0	18	0	1	0	0	1
60		min	-2.027	0	9	0	1	0	0	1
61	M31A	max	2.656	0	17	1.807	14.096	3.329	13.93	9
62		min	-.004	0	1	-.785	13.93	-2.6	1.99	17

Envelope Member End Reactions

Member	Membe...		Axial[k]	LC	Shear[k]	LC	Moment[k-ft]	LC
1	M1	I	max	.204	16	0	1	0
2			min	-6.633	17	-.072	17	0
3		J	max	1.391	17	.004	1	0
4			min	-.211	1	-.013	17	0
5	M2	I	max	7.869	9	.008	9	0
6			min	.08	18	0	1	0
7		J	max	.54	16	.003	1	0
8			min	-.265	17	-.002	17	0
9	M4	I	max	.107	16	0	1	0
10			min	-1.891	17	0	1	0
11		J	max	.107	16	0	1	0
12			min	-1.891	17	0	1	0
13	M5	I	max	1.27	17	0	1	0
14			min	-.068	1	0	1	0
15		J	max	1.27	17	0	1	0
16			min	-.068	1	0	1	0
17	M6	I	max	.091	16	0	1	0
18			min	-1.815	17	0	1	0
19		J	max	.091	16	0	1	0
20			min	-1.815	17	0	1	0
21	M7	I	max	1.273	17	0	1	0
22			min	-.065	1	0	1	0
23		J	max	1.273	17	0	1	0
24			min	-.065	1	0	1	0
25	M8	I	max	.094	16	0	1	0
26			min	-1.837	17	0	1	0
27		J	max	.094	16	0	1	0
28			min	-1.837	17	0	1	0
29	M9	I	max	1.268	17	0	1	0
30			min	-.065	1	0	1	0
31		J	max	1.268	17	0	1	0
32			min	-.065	1	0	1	0
33	M10	I	max	.094	16	0	1	0
34			min	-1.835	17	0	1	0
35		J	max	.094	16	0	1	0
36			min	-1.835	17	0	1	0
37	M11	I	max	1.28	17	0	1	0
38			min	-.065	1	0	1	0
39		J	max	1.28	17	0	1	0
40			min	-.065	1	0	1	0



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Envelope Member End Reactions (Continued)

	Member	Membe...		Axial[k]	LC	Shear[k]	LC	Moment[k-ft]	LC
41	M12	I	max	.094	16	0	1	0	1
42			min	-1.829	17	0	1	0	1
43		J	max	.094	16	0	1	0	1
44			min	-1.829	17	0	1	0	1
45	M13	I	max	1.242	17	0	1	0	1
46			min	-.065	1	0	1	0	1
47		J	max	1.242	17	0	1	0	1
48			min	-.065	1	0	1	0	1
49	M14	I	max	.094	16	0	1	0	1
50			min	-1.918	17	0	1	0	1
51		J	max	.094	16	0	1	0	1
52			min	-1.918	17	0	1	0	1
53	M15	I	max	1.434	17	0	1	0	1
54			min	-.066	1	0	1	0	1
55		J	max	1.434	17	0	1	0	1
56			min	-.066	1	0	1	0	1
57	M16	I	max	.096	16	0	1	0	1
58			min	-1.967	17	0	1	0	1
59		J	max	.096	16	0	1	0	1
60			min	-1.967	17	0	1	0	1
61	M17	I	max	.198	16	0	18	0	1
62			min	-5.997	17	-.071	9	0	1
63		J	max	2.598	9	-.003	18	0	1
64			min	.368	18	-.024	9	0	1
65	M18	I	max	8.303	9	.009	9	0	1
66			min	.166	18	0	18	0	1
67		J	max	-.078	18	-.002	18	0	1
68			min	-.251	9	-.007	9	0	1
69	M19	I	max	-.058	18	0	1	0	1
70			min	-2.076	9	0	1	0	1
71		J	max	-.058	18	0	1	0	1
72			min	-2.076	9	0	1	0	1
73	M20	I	max	1.509	9	0	1	0	1
74			min	.04	18	0	1	0	1
75		J	max	1.509	9	0	1	0	1
76			min	.04	18	0	1	0	1
77	M21	I	max	-.056	18	0	1	0	1
78			min	-2.029	9	0	1	0	1
79		J	max	-.056	18	0	1	0	1
80			min	-2.029	9	0	1	0	1
81	M22	I	max	1.319	9	0	1	0	1
82			min	.039	18	0	1	0	1
83		J	max	1.319	9	0	1	0	1
84			min	.039	18	0	1	0	1
85	M23	I	max	-.056	18	0	1	0	1
86			min	-1.94	9	0	1	0	1
87		J	max	-.056	18	0	1	0	1
88			min	-1.94	9	0	1	0	1
89	M24	I	max	1.357	9	0	1	0	1
90			min	.039	18	0	1	0	1
91		J	max	1.357	9	0	1	0	1
92			min	.039	18	0	1	0	1



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Envelope Member End Reactions (Continued)

	Member	Membe...		Axial[k]	LC	Shear[k]	LC	Moment[k-ft]	LC
93	M25	I	max	-.056	18	0	1	0	1
94			min	-1.946	9	0	1	0	1
95		J	max	-.056	18	0	1	0	1
96			min	-1.946	9	0	1	0	1
97	M26	I	max	1.345	9	0	1	0	1
98			min	.039	18	0	1	0	1
99		J	max	1.345	9	0	1	0	1
100			min	.039	18	0	1	0	1
101	M27	I	max	-.057	18	0	1	0	1
102			min	-1.95	9	0	1	0	1
103		J	max	-.057	18	0	1	0	1
104			min	-1.95	9	0	1	0	1
105	M28	I	max	1.352	9	0	1	0	1
106			min	.039	18	0	1	0	1
107		J	max	1.352	9	0	1	0	1
108			min	.039	18	0	1	0	1
109	M29	I	max	-.055	18	0	1	0	1
110			min	-1.918	9	0	1	0	1
111		J	max	-.055	18	0	1	0	1
112			min	-1.918	9	0	1	0	1
113	M30	I	max	1.348	9	0	1	0	1
114			min	.041	18	0	1	0	1
115		J	max	1.348	9	0	1	0	1
116			min	.041	18	0	1	0	1
117	M31	I	max	-.064	18	0	1	0	1
118			min	-2.027	9	0	1	0	1
119		J	max	-.064	18	0	1	0	1
120			min	-2.027	9	0	1	0	1
121	M31A	I	max	2.656	17	1.395	17	0	1
122			min	-.004	1	-.211	1	0	1
123		J	max	1.4	9	1.714	9	0	1
124			min	.042	18	.125	18	0	1

Envelope Wood Code Checks

	Member	Shape	Code Check	Loc[...LC	Shear..Loc[...LC	Fc' [k...Ft' [ksi]	Fb' [k...Fv' [k...	RB	CL	CP	Eqn					
1	M1	4.5X5....	.415	1.896	17	.016	0	17	1.101	.756	1.194	.272	6.755	.995	.983	3.9-1
2	M2	4.5X5....	.289	0	9	.014	2.042	9	1.101	.756	1.194	.272	6.755	.995	.983	3.6.3
3	M4	2X6	.194	0	17	.000	0	18	.875	1.18	1.847	.288	9.018	.987	.368	3.9-1
4	M5	2X6	.102	0	17	.000	0	18	1.51	1.186	1.856	.288	7.505	.991	.635	3.6.3
5	M6	2X6	.186	0	17	.000	0	18	.875	1.18	1.847	.288	9.018	.987	.368	3.9-1
6	M7	2X6	.102	0	17	.000	0	18	1.51	1.186	1.856	.288	7.505	.991	.635	3.6.3
7	M8	2X6	.189	0	17	.000	0	18	.875	1.18	1.847	.288	9.018	.987	.368	3.9-1
8	M9	2X6	.102	0	17	.000	0	18	1.51	1.186	1.856	.288	7.505	.991	.635	3.6.3
9	M10	2X6	.188	0	17	.000	0	18	.875	1.18	1.847	.288	9.018	.987	.368	3.9-1
10	M11	2X6	.103	0	17	.000	0	18	1.51	1.186	1.856	.288	7.505	.991	.635	3.6.3
11	M12	2X6	.188	0	17	.000	0	18	.875	1.18	1.847	.288	9.018	.987	.368	3.9-1
12	M13	2X6	.100	0	17	.000	0	18	1.51	1.186	1.856	.288	7.505	.991	.635	3.6.3
13	M14	2X6	.197	0	17	.000	0	18	.875	1.18	1.847	.288	9.018	.987	.368	3.9-1
14	M15	2X6	.115	0	17	.000	0	18	1.51	1.186	1.856	.288	7.505	.991	.635	3.6.3
15	M16	2X6	.202	0	17	.000	0	18	.875	1.18	1.847	.288	9.018	.987	.368	3.9-1



524 CLEVELAND BLVD. #230
CALDWELL, IDAHO 83605
(208) 453-6512

Completed by: JDJ
Review/Check: KKJ

Project Name: Lot 56 River Ranch
SRE Project #: 2025-10727
City and State: McCall, Idaho

Envelope Wood Code Checks (Continued)

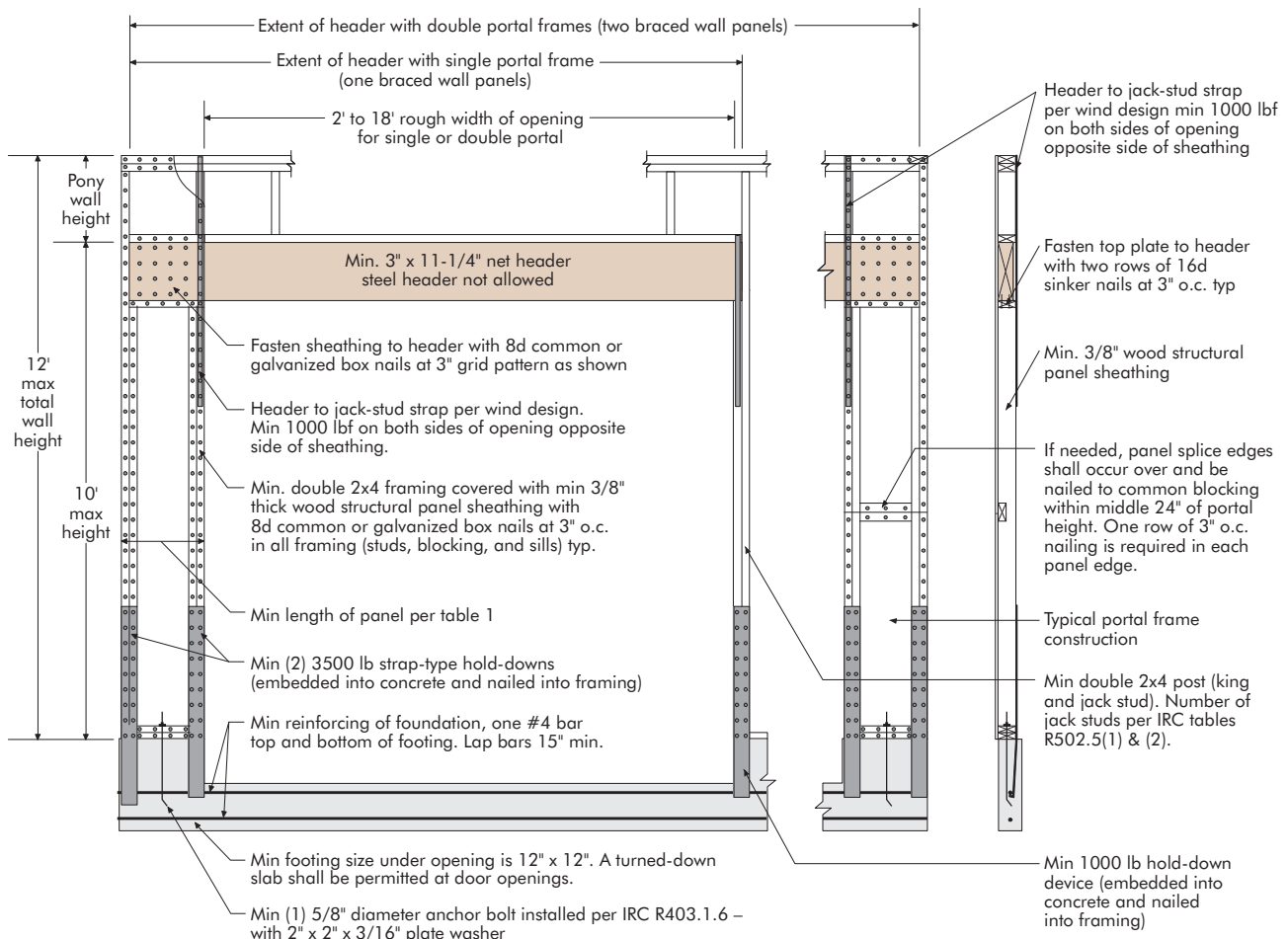
	Member	Shape	Code Check	Loc[...LC	Shear...Loc[...LC	Fc' [k...Ft' [ksi]	Fb' [k...Fv' [k...	RB	CL	CP	Eqn					
16	M17	4.5X5....	.380	1.896	17	.016	0	9	1.101	.756	1.194	.272	6.755	.995	.983	3.9-1
17	M18	4.5X5....	.305	0	9	.014	2.042	9	1.101	.756	1.194	.272	6.755	.995	.983	3.6.3
18	M19	2X6	.213	0	9	.000	0	18	.875	1.18	1.847	.288	9.018	.987	.368	3.9-1
19	M20	2X6	.121	0	9	.000	0	18	1.51	1.186	1.856	.288	7.505	.991	.635	3.6.3
20	M21	2X6	.208	0	9	.000	0	18	.875	1.18	1.847	.288	9.018	.987	.368	3.9-1
21	M22	2X6	.106	0	9	.000	0	18	1.51	1.186	1.856	.288	7.505	.991	.635	3.6.3
22	M23	2X6	.199	0	9	.000	0	18	.875	1.18	1.847	.288	9.018	.987	.368	3.9-1
23	M24	2X6	.109	0	9	.000	0	18	1.51	1.186	1.856	.288	7.505	.991	.635	3.6.3
24	M25	2X6	.200	0	9	.000	0	18	.875	1.18	1.847	.288	9.018	.987	.368	3.9-1
25	M26	2X6	.108	0	9	.000	0	18	1.51	1.186	1.856	.288	7.505	.991	.635	3.6.3
26	M27	2X6	.200	0	9	.000	0	18	.875	1.18	1.847	.288	9.018	.987	.368	3.9-1
27	M28	2X6	.109	0	9	.000	0	18	1.51	1.186	1.856	.288	7.505	.991	.635	3.6.3
28	M29	2X6	.197	0	9	.000	0	18	.875	1.18	1.847	.288	9.018	.987	.368	3.9-1
29	M30	2X6	.108	0	9	.000	0	18	1.51	1.186	1.856	.288	7.505	.991	.635	3.6.3
30	M31	2X6	.208	0	9	.000	0	18	.875	1.18	1.847	.288	9.018	.987	.368	3.9-1
31	M31A	4X12	.149	13.93	9	.162	14.0...	9	2.56	1.76	3.646	.424	11.97	.95	1	3.9-3

Minimum Width (in.)	Maximum Height (ft)	Allowable Design (ASD) Values per Frame Segment		
		Shear ^(e,f) (lbf)	Deflection (in.)	Load Factor
16	8	850	0.33	3.09
	10	625	0.44	2.97
24	8	1,675	0.38	2.88
	10	1,125	0.51	3.42

Foundation for Wind or Seismic Loading^(a,b,c,d)

- (a) Design values are based on the use of Douglas-fir or Southern pine framing. For other species of framing, multiply the above shear design value by the specific gravity adjustment factor = $(1 - (0.5 - SG))$, where SG = specific gravity of the actual framing. This adjustment shall not be greater than 1.0.
- (b) For construction as shown in Figure 1.
- (c) Values are for a single portal-frame segment (one vertical leg and a portion of the header). For multiple portal-frame segments, the allowable shear design values are permitted to be multiplied by the number of frame segments (e.g., two = 2x, three = 3x, etc.).
- (d) Interpolation of design values for heights between 8 and 10 feet, and for portal widths between 16 and 24 inches, is permitted.
- (e) The allowable shear design value is permitted to be multiplied by a factor of 1.4 for wind design.
- (f) If story drift is not a design consideration, the tabulated design shear values are permitted to be multiplied by a factor of 1.15. This factor is permitted to be used cumulatively with the wind-design adjustment factor in Footnote (e) above.

Figure 1. Construction Details for APA Portal-Frame Design with Hold Downs





524 CLEVELAND BLVD. #230
CALDWELL, IDAHO 83605
(208) 453-6512

Completed by: JDJ
Review/Check: KKJ

Project Name: Lot 56 River Ranch
SRE Project #: 2025-10727
City and State: McCall, Idaho

TALL WALL CALCULATIONS:

This spreadsheet is used for designing a stud wall according to the NDS.

Description:

	16' Tall Wall	King Stud (5' Max Opening)	16' Trimmer	King Stud (3' Max Opening)	16' Trimmer	King Stud (2.5' Max Opening)
Type:	2x Lumber (2"-4")	2x Lumber (2"-4")	2x Lumber (2"-4")	2x Lumber (2"-4")	2x Lumber (2"-4")	2x Lumber (2"-4")
Species:	DF-L	DF-L	DF-L	DF-L	DF-L	DF-L
Grade:	No. 2	No. 2	No. 2	No. 2	No. 2	No. 2
Nominal width, t =	(2) 2	(3) 2	(3) 2	(2) 2	(2) 2	(2) 2
Actual width =	3.00 in	4.50 in	4.50 in	3.00 in	3.00 in	3.00 in
Nominal depth, d =	6	6	6	6	6	6
Actual depth =	5.50 in	5.50 in	5.50 in	5.50 in	5.50 in	5.50 in
Span, L =	16.000 ft	16.000 ft	16.000 ft	16.000 ft	16.000 ft	16.000 ft
w/o Plates	15.750 ft	15.750 ft	15.750 ft	15.750 ft	15.750 ft	15.750 ft
Stud spacing, s =	16 in	40 in	16 in	28 in	16 in	25 in
Lat. Pressure, w_{wind} =	16.53 psf	16.53 psf	5.00 psf	16.53 psf	5.00 psf	16.53 psf
Axial load, P =	3785 lbs	50 lbs	7098 lbs	50 lbs	4259 lbs	50 lbs
Eccentricity, e =	0 in	0 in	0 in	0 in	0 in	0 in
K_{CE} =	0.3	0.3	0.3	0.3	0.3	0.3
c =	0.8	0.8	0.8	0.8	0.8	0.8
w =	22.0 plf	55.5 plf	6.7 plf	38.9 plf	6.7 plf	34.8 plf
F_b	900 psi	900 psi	900 psi	900 psi	900 psi	900 psi
F_v	180 psi	180 psi	180 psi	180 psi	180 psi	180 psi
F_{c-prll}	1,350 psi	1,350 psi	1,350 psi	1,350 psi	1,350 psi	1,350 psi
F_{c-perp}	625 psi	625 psi	625 psi	625 psi	625 psi	625 psi
C_d	1.60	1.60	1.15	1.60	1.15	1.60
$C_{F,Fb}$	1.30	1.30	1.30	1.30	1.30	1.30
$C_{F,Fcprll}$	1.10	1.10	1.10	1.10	1.10	1.10
C_r	1.15	1.00	1.00	1.00	1.00	1.00
C_p	0.16	0.16	0.22	0.16	0.22	0.16
C_H	1.00	1.00	1.00	1.00	1.00	6.00
C_b	1.07	1.07	1.07	1.07	1.07	1.07
E	1,600,000 psi	1,600,000 psi	1,600,000 psi	1,600,000 psi	1,600,000 psi	1,600,000 psi
E_{min}	580,000 psi	580,000 psi	580,000 psi	580,000 psi	580,000 psi	580,000 psi
Allowable Stress:						
$F'_b = F_b C_d C_F C_r$	2153 psi	1872 psi	1346 psi	1872 psi	1346 psi	1872 psi
$F'_v = F_v C_d C_H$	288 psi	288 psi	207 psi	288 psi	207 psi	1728 psi
$F'_c = F_c C_d C_F$	2376 psi	2376 psi	1708 psi	2376 psi	1708 psi	2376 psi
$F'_{CE} = (K_{CE} E') / (l/d)^2$	406 psi	406 psi	406 psi	406 psi	406 psi	406 psi
$F'_c = F_c C_d C_F C_p$	391 psi	391 psi	384 psi	391 psi	384 psi	391 psi
$F'_{c-perp} = F_{c-perp} C_b$	668 psi	668 psi	668 psi	668 psi	668 psi	668 psi
$E' = E$	1600000 psi	1600000 psi	1600000 psi	1600000 psi	1600000 psi	1600000 psi
$F_{bE} =$	6026 psi	13558 psi	13558 psi	6026 psi	6026 psi	6026 psi
Slenderness Ratio:	< 50 OK	< 50 OK	< 50 OK	< 50 OK	< 50 OK	< 50 OK
$R_b =$	11	7	7	11	11	11
Bending:	< F'b OK	< F'b OK	< F'b OK	< F'b OK	< F'b OK	< F'b OK
$M = w L^2 / 8 + P e / 12$	683 ft-lbs	1719 ft-lbs	207 ft-lbs	1207 ft-lbs	207 ft-lbs	1079 ft-lbs
$f_b = M / S$	542 psi	909 psi	109 psi	957 psi	164 psi	856 psi
$S =$	15 in ³	23 in ³	23 in ³	15 in ³	15 in ³	15 in ³
Shear:	< F'v OK	< F'v OK	< F'v OK	< F'v OK	< F'v OK	< F'v OK
$V = w L / 2$	174 lbs	437 lbs	53 lbs	306 lbs	53 lbs	130 lbs
$f_v = 1.5 V / A$	16 psi	26 psi	3 psi	28 psi	5 psi	12 psi
$A =$	17 in ²	25 in ²	25 in ²	17 in ²	17 in ²	17 in ²
Compression:	< F'c OK	< F'c OK	< F'c OK	< F'c OK	< F'c OK	< F'c OK
$P / A =$	229 psi	2 psi	287 psi	3 psi	258 psi	3 psi
Compression (perp.):	< F'c OK	< F'c OK	< F'c OK	< F'c OK	< F'c OK	< F'c OK
$P / A =$	229 psi	2 psi	287 psi	3 psi	258 psi	3 psi
Combined:	< 1.0 OK					
$((f_c / F_c) + ((f_b / (F_b (1 - (f_c / F_c) E)))$	0.92					
Deflection:	> 180 OK	> 180 OK	> 180 OK	> 180 OK	> 180 OK	> 180 OK
$D = 22.5 w L^4 / E' I =$	0.46 in	0.77 in	0.09 in	0.81 in	0.14 in	0.72 in
$I =$	42 in ⁴	62 in ⁴	62 in ⁴	42 in ⁴	42 in ⁴	42 in ⁴
SPAN /	412	246	2044	233	1363	261



524 CLEVELAND BLVD. #230
CALDWELL, IDAHO 83605
(208) 453-6512

Completed by: JDJ
Review/Check: KKJ

Project Name: Lot 56 River Ranch
SRE Project #: 2025-10727
City and State: McCall, Idaho

TALL WALL CALCULATIONS:

This spreadsheet is used for designing a stud wall according to the NDS.

Description:

	King Stud (12' Max Opening)	16' Trimmer	King Stud (12' Max Opening)	10' Trimmer	King Stud (12.5' Max Opening)	10' Trimmer
Type:	2x Lumber (2"-4")	2x Lumber (2"-4")	2x Lumber (2"-4")	2x Lumber (2"-4")	2x Lumber (2"-4")	2x Lumber (2"-4")
Species:	DF-L	DF-L	DF-L	DF-L	DF-L	DF-L
Grade:	No. 2	No. 2	No. 2	No. 2	No. 2	No. 2
Nominal width, t =	(5) 2	(2) 2	(2) 2	(4) 2	(2) 2	(5) 2
Actual width =	7.50 in	3.00 in	3.00 in	6.00 in	3.00 in	7.50 in
Nominal depth, d =	6	6	6	6	6	6
Actual depth =	5.50 in	5.50 in	5.50 in	5.50 in	5.50 in	5.50 in
Span, L =	16.000 ft	16.000 ft	10.000 ft	10.000 ft	10.000 ft	10.000 ft
w/o Plates	15.750 ft	15.750 ft	9.750 ft	9.750 ft	9.750 ft	9.750 ft
Stud spacing, s =	82 in	16 in	82 in	16 in	85 in	16 in
Lat. Pressure, w_{wind} =	16.53 psf	5.00 psf	16.53 psf	5.00 psf	16.53 psf	5.00 psf
Axial load, P =	50 lbs	3507 lbs	50 lbs	21543 lbs	50 lbs	22441 lbs
Eccentricity, e =	0 in	0 in	0 in	0 in	0 in	0 in
K_{CE} =	0.3	0.3	0.3	0.3	0.3	0.3
c =	0.8	0.8	0.8	0.8	0.8	0.8
w =	113.3 plf	6.7 plf	113.3 plf	6.7 plf	117.4 plf	6.7 plf
F_b	900 psi	900 psi	900 psi	900 psi	900 psi	900 psi
F_v	180 psi	180 psi	180 psi	180 psi	180 psi	180 psi
F_{c-prll}	1,350 psi	1,350 psi	1,350 psi	1,350 psi	1,350 psi	1,350 psi
F_{c-perp}	625 psi	625 psi	625 psi	625 psi	625 psi	625 psi
C_d	1.60	1.15	1.60	1.15	1.60	1.15
$C_{F,Fb}$	1.30	1.30	1.30	1.30	1.30	1.30
$C_{F,Fcprll}$	1.10	1.10	1.10	1.10	1.10	1.10
C_r	1.00	1.00	1.00	1.00	1.00	1.00
C_p	0.16	0.22	0.39	0.51	0.39	0.51
C_H	1.00	1.00	1.00	1.00	1.00	6.00
C_b	1.07	1.07	1.07	1.07	1.07	1.07
E	1,600,000 psi	1,600,000 psi	1,600,000 psi	1,600,000 psi	1,600,000 psi	1,600,000 psi
E_{min}	580,000 psi	580,000 psi	580,000 psi	580,000 psi	580,000 psi	580,000 psi
Allowable Stress:						
$F'_b = F_b C_d C_F C_r$	1872 psi	1346 psi	1872 psi	1346 psi	1872 psi	1346 psi
$F'_v = F_v C_d C_H$	288 psi	207 psi	288 psi	207 psi	288 psi	1242 psi
$F'_c = F_c C_d C_F$	2376 psi	1708 psi	2376 psi	1708 psi	2376 psi	1708 psi
$F'_{CE} = (K_{CE} E') / (l/d)^2$	406 psi	406 psi	1061 psi	1061 psi	1061 psi	1061 psi
$F'_c = F_c C_d C_F C_p$	391 psi	384 psi	938 psi	876 psi	938 psi	876 psi
$F'_{c-perp} = F_{c-perp} C_b$	668 psi	668 psi	668 psi	668 psi	668 psi	668 psi
$E' = E$	1600000 psi	1600000 psi	1600000 psi	1600000 psi	1600000 psi	1600000 psi
$F_{bE} =$	37662 psi	6026 psi	9734 psi	38937 psi	9734 psi	60839 psi
Slenderness Ratio:	< 50 OK	< 50 OK	< 50 OK	< 50 OK	< 50 OK	< 50 OK
$R_b =$	4	11	8	4	8	3
Bending:	< F'b OK	< F'b OK	< F'b OK	< F'b OK	< F'b OK	< F'b OK
$M = w L^2 / 8 + P e / 12$	3514 ft-lbs	207 ft-lbs	1346 ft-lbs	79 ft-lbs	1396 ft-lbs	79 ft-lbs
$f_b = M / S$	1115 psi	164 psi	1068 psi	31 psi	1107 psi	25 psi
$S =$	38 in ³	15 in ³	15 in ³	30 in ³	15 in ³	38 in ³
Shear:	< F'v OK	< F'v OK	< F'v OK	< F'v OK	< F'v OK	< F'v OK
$V = w L / 2$	892 lbs	53 lbs	552 lbs	33 lbs	573 lbs	24 lbs
$f_v = 1.5 V / A$	32 psi	5 psi	50 psi	1 psi	52 psi	1 psi
$A =$	41 in ²	17 in ²	17 in ²	33 in ²	17 in ²	41 in ²
Compression:	< F'c OK	< F'c OK	< F'c OK	< F'c OK	< F'c OK	< F'c OK
$P / A =$	1 psi	213 psi	3 psi	653 psi	3 psi	544 psi
Compression (perp.):	< F'c OK	< F'c OK	< F'c OK	< F'c OK	< F'c OK	< F'c OK
$f_{c-perp} = P / A$	1 psi	213 psi	3 psi	653 psi	3 psi	544 psi
Combined:						
$(f_c / F_c) + (f_b / [F_b (1 - (f_c / F_c) E)])$						
Deflection:	> 180 OK	> 180 OK	> 180 OK	> 180 OK	> 180 OK	> 180 OK
$\Delta = 22.5 w L^4 / E' I =$	0.94 in	0.14 in	0.35 in	0.01 in	0.36 in	0.01 in
$I =$	104 in ⁴	42 in ⁴	42 in ⁴	83 in ⁴	42 in ⁴	104 in ⁴
SPAN /	200	1363	338	11488	326	14360



524 CLEVELAND BLVD. #230
CALDWELL, IDAHO 83605
(208) 453-6512

Completed by: JDJ
Review/Check: KKJ

Project Name: Lot 56 River Ranch
SRE Project #: 2025-10727
City and State: McCall, Idaho

TALL WALL CALCULATIONS:

This spreadsheet is used for designing a stud wall according to the NDS.

Description:

	12' Tall Wall	King Stud (3' Max Opening)	12' Trimmer	King Stud (12.5' Max Opening)	12' Trimmer	King Stud (2.5' Max Opening)
Type:	2x Lumber (2"-4")	2x Lumber (2"-4")	2x Lumber (2"-4")	2x Lumber (2"-4")	2x Lumber (2"-4")	2x Lumber (2"-4")
Species:	DF-L	DF-L	DF-L	DF-L	DF-L	DF-L
Grade:	No. 2	No. 2	No. 2	No. 2	No. 2	No. 2
Nominal width, t =	(1) 2	(1) 2	(1) 2	(3) 2	(1) 2	(1) 2
Actual width =	1.50 in	1.50 in	1.50 in	4.50 in	1.50 in	1.50 in
Nominal depth, d =	6	6	6	6	6	6
Actual depth =	5.50 in	5.50 in	5.50 in	5.50 in	5.50 in	5.50 in
Span, L =	12.000 ft	12.000 ft	12.000 ft	12.000 ft	12.000 ft	12.000 ft
w/o Plates	11.750 ft	11.750 ft	11.750 ft	11.750 ft	11.750 ft	11.750 ft
Stud spacing, s =	16 in	28 in	16 in	85 in	16 in	25 in
Lat. Pressure, w_{wind} =	16.53 psf	16.53 psf	5.00 psf	16.53 psf	5.00 psf	16.53 psf
Axial load, P =	2561 lbs	50 lbs	2881 lbs	50 lbs	3653 lbs	50 lbs
Eccentricity, e =	0 in	0 in	0 in	0 in	0 in	0 in
K_{CE} =	0.3	0.3	0.3	0.3	0.3	0.3
c =	0.8	0.8	0.8	0.8	0.8	0.8
w =	22.0 plf	38.9 plf	6.7 plf	117.4 plf	6.7 plf	34.8 plf
F_b	900 psi	900 psi	900 psi	900 psi	900 psi	900 psi
F_v	180 psi	180 psi	180 psi	180 psi	180 psi	180 psi
F_{c-prll}	1,350 psi	1,350 psi	1,350 psi	1,350 psi	1,350 psi	1,350 psi
F_{c-perp}	625 psi	625 psi	625 psi	625 psi	625 psi	625 psi
C_d	1.60	1.60	1.15	1.60	1.15	1.60
$C_{F,Fb}$	1.30	1.30	1.30	1.30	1.30	1.30
$C_{F,Fcprll}$	1.10	1.10	1.10	1.10	1.10	1.10
C_r	1.15	1.00	1.00	1.00	1.00	1.00
C_p	0.28	0.28	0.38	0.28	0.38	0.28
C_H	1.00	1.00	1.00	1.00	1.00	6.00
C_b	1.07	1.07	1.07	1.07	1.07	1.07
E	1,600,000 psi	1,600,000 psi	1,600,000 psi	1,600,000 psi	1,600,000 psi	1,600,000 psi
E_{min}	580,000 psi	580,000 psi	580,000 psi	580,000 psi	580,000 psi	580,000 psi
Allowable Stress:						
$F'_b = F_b C_d C_F C_r$	2153 psi	1872 psi	1346 psi	1872 psi	1346 psi	1872 psi
$F'_v = F_v C_d C_H$	288 psi	288 psi	207 psi	288 psi	207 psi	1728 psi
$F'_c = F_c C_d C_F$	2376 psi	2376 psi	1708 psi	2376 psi	1708 psi	2376 psi
$F'_{CE} = (K_{CE} E') / (l/d)^2$	730 psi	730 psi	730 psi	730 psi	730 psi	730 psi
$F'_c = F_c C_d C_F C_p$	676 psi	676 psi	650 psi	676 psi	650 psi	676 psi
$F'_{c-perp} = F_{c-perp} C_b$	668 psi	668 psi	668 psi	668 psi	668 psi	668 psi
$E' = E$	1600000 psi	1600000 psi	1600000 psi	1600000 psi	1600000 psi	1600000 psi
$F_{bE} =$	2019 psi	2019 psi	2019 psi	18174 psi	2019 psi	2019 psi
Slenderness Ratio:	< 50 OK	< 50 OK	< 50 OK	< 50 OK	< 50 OK	< 50 OK
$R_g =$	19	19	19	6	19	19
Bending:	< F'b OK	< F'b OK	< F'b OK	< F'b OK	< F'b OK	< F'b OK
$M = w L^2 / 8 + P e / 12$	380 ft-lbs	672 ft-lbs	115 ft-lbs	2027 ft-lbs	115 ft-lbs	600 ft-lbs
$f_b = M / S$	604 psi	1066 psi	183 psi	1072 psi	183 psi	953 psi
$S =$	8 in ³	8 in ³	8 in ³	23 in ³	8 in ³	8 in ³
Shear:	< F'v OK	< F'v OK	< F'v OK	< F'v OK	< F'v OK	< F'v OK
$V = w L / 2$	130 lbs	229 lbs	39 lbs	690 lbs	39 lbs	97 lbs
$f_v = 1.5 V / A$	24 psi	42 psi	7 psi	42 psi	7 psi	18 psi
$A =$	8 in ²	8 in ²	8 in ²	25 in ²	8 in ²	8 in ²
Compression:	< F'c OK	< F'c OK	< F'c OK	< F'c OK	< F'c OK	< F'c OK
$P / A =$	310 psi	6 psi	349 psi	2 psi	443 psi	6 psi
Compression (perp.):	< F'c OK	< F'c OK	< F'c OK	< F'c OK	< F'c OK	< F'c OK
$f_{c-perp} = P / A$	310 psi	6 psi	349 psi	2 psi	443 psi	6 psi
Combined:	< 1.0 OK					
$(f_c / F_c) + (f_b / [F_b (1 - (f_c / F_c) E)]) =$	0.70					
Deflection:	> 180 OK	> 180 OK	> 180 OK	> 180 OK	> 180 OK	> 180 OK
$D = 22.5 w L^4 / E' I =$	0.28 in	0.50 in	0.09 in	0.50 in	0.09 in	0.45 in
$I =$	21 in ⁴	21 in ⁴	21 in ⁴	62 in ⁴	21 in ⁴	21 in ⁴
SPAN /	496	281	1641	279	1641	314



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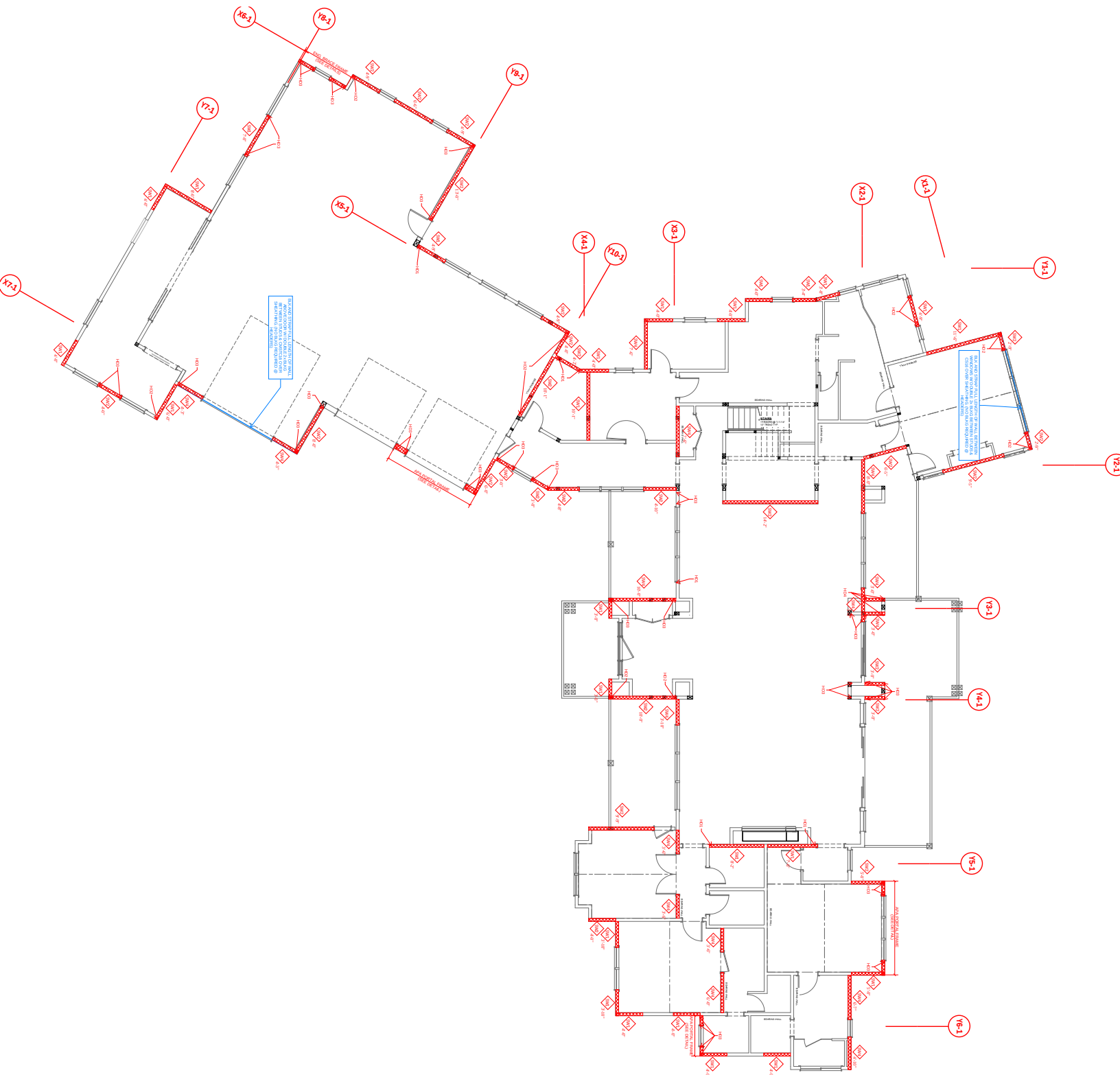




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(208) 453-6512

Completed by: JDJ
Review/Check: KKJ

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City and State: McCall, Idaho

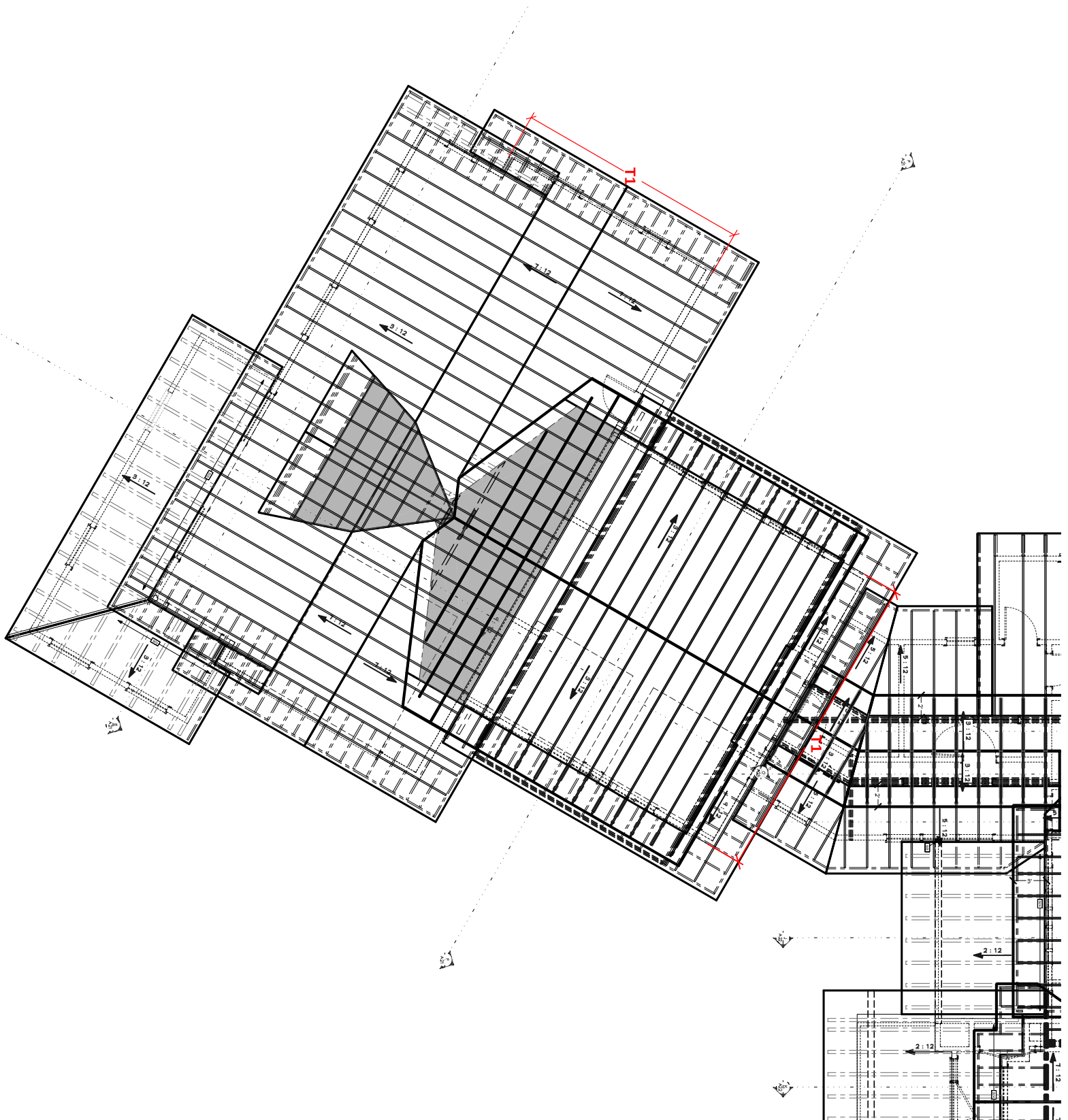




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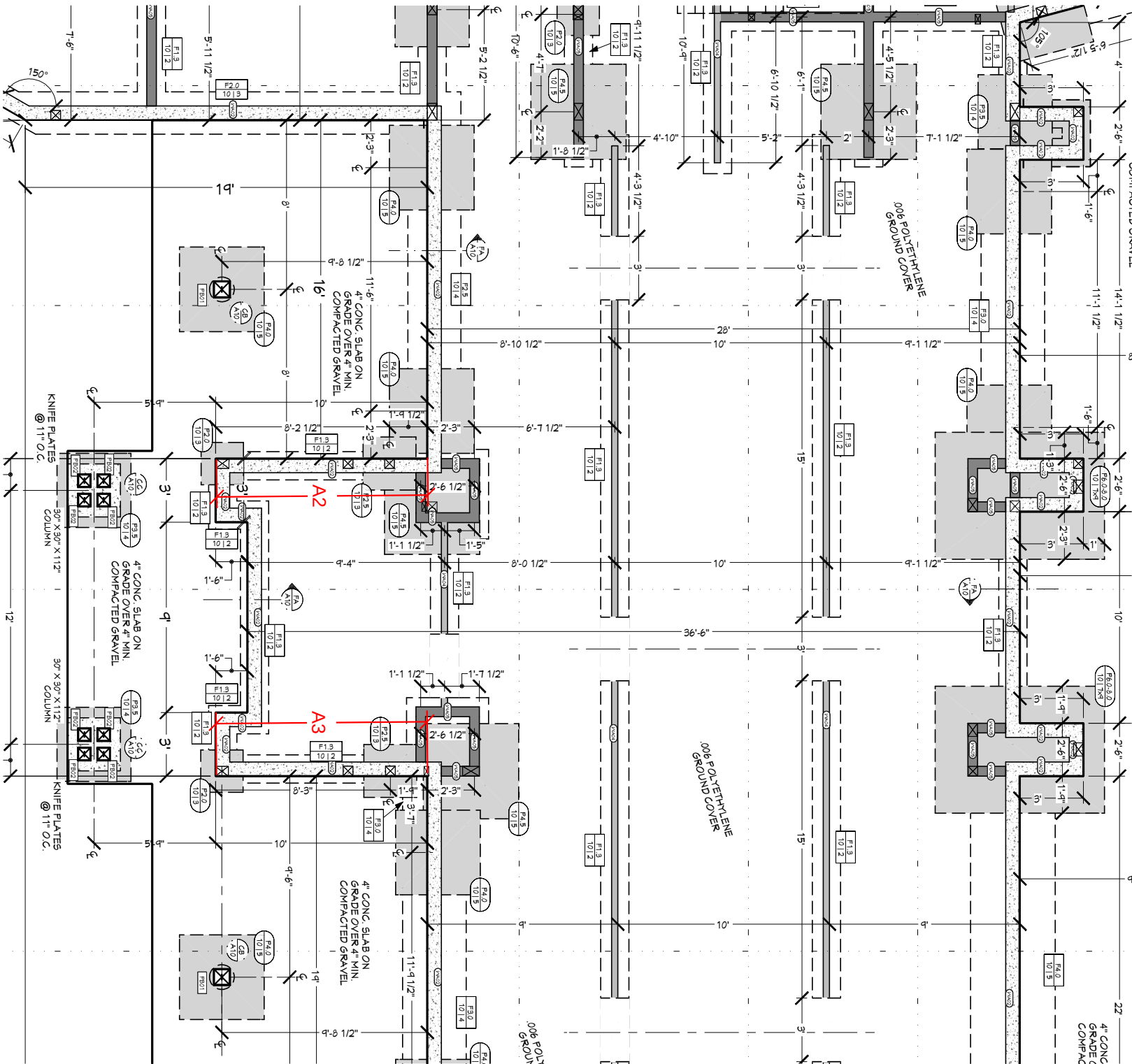




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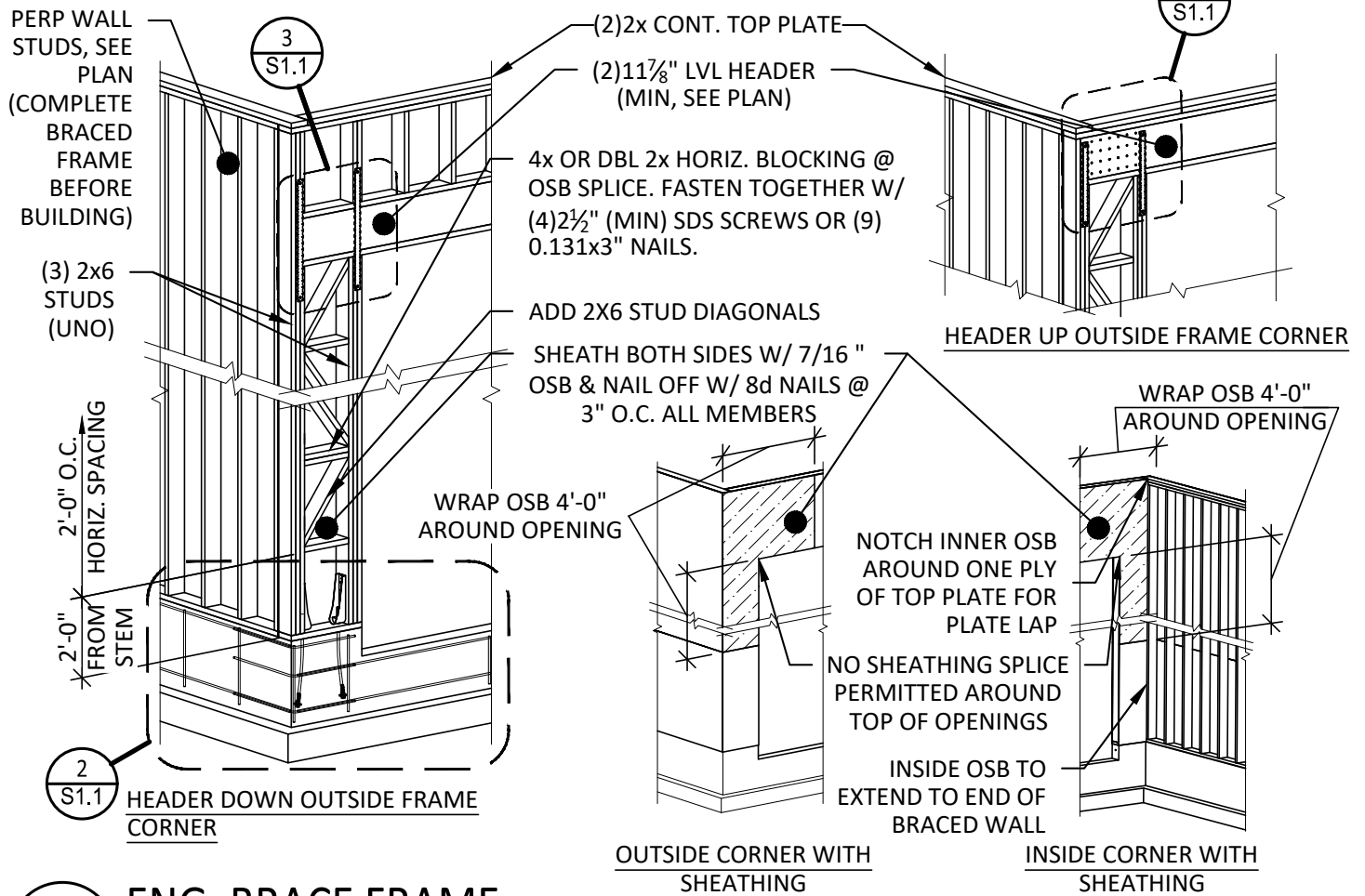


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MIRRORED @ OPPOSITE SIDE OF OPENING



1
S1.1

ENG. BRACE FRAME

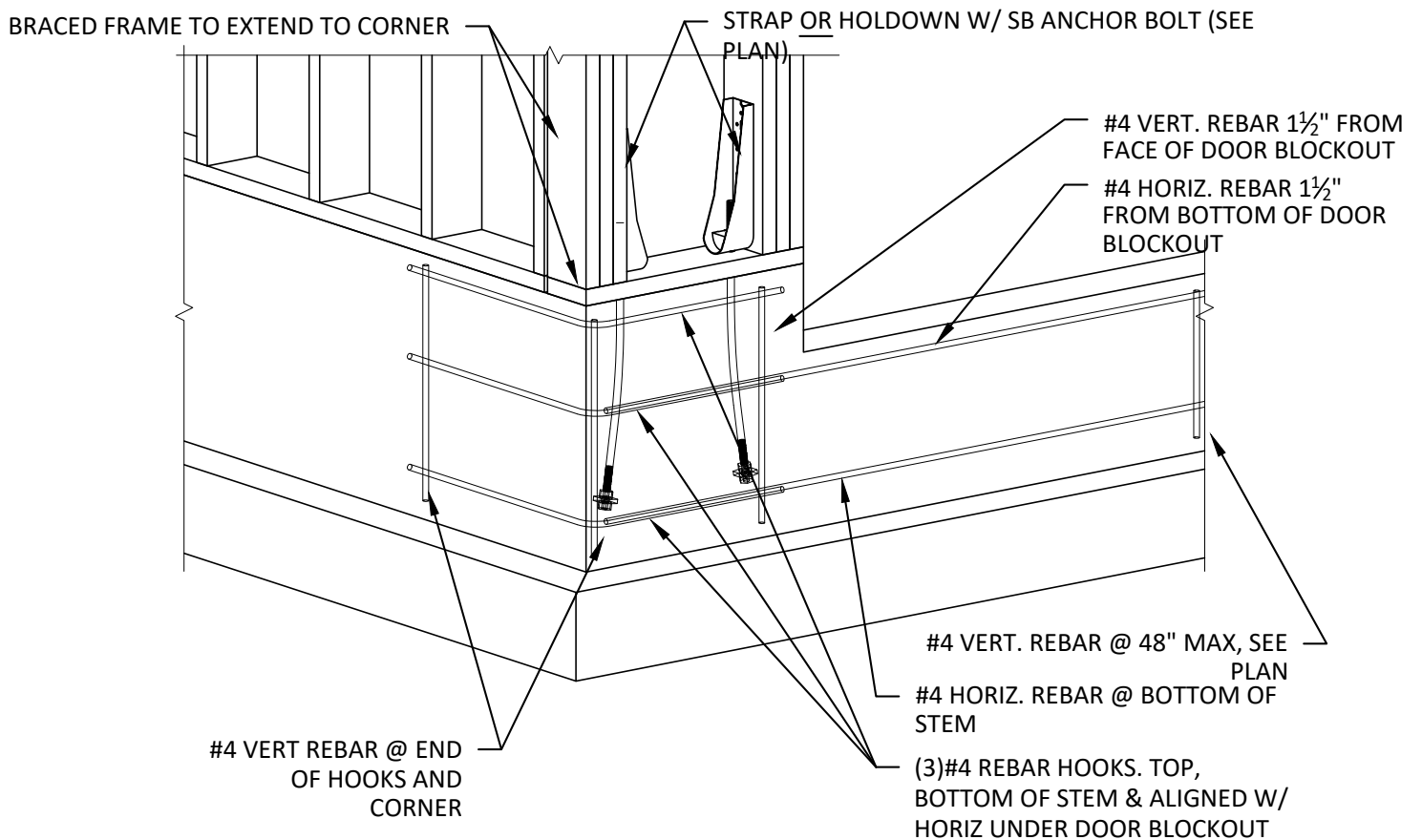
SCALE: 1/4" = 1'-0"



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2
S1.1

ENG. BRACE FRAME

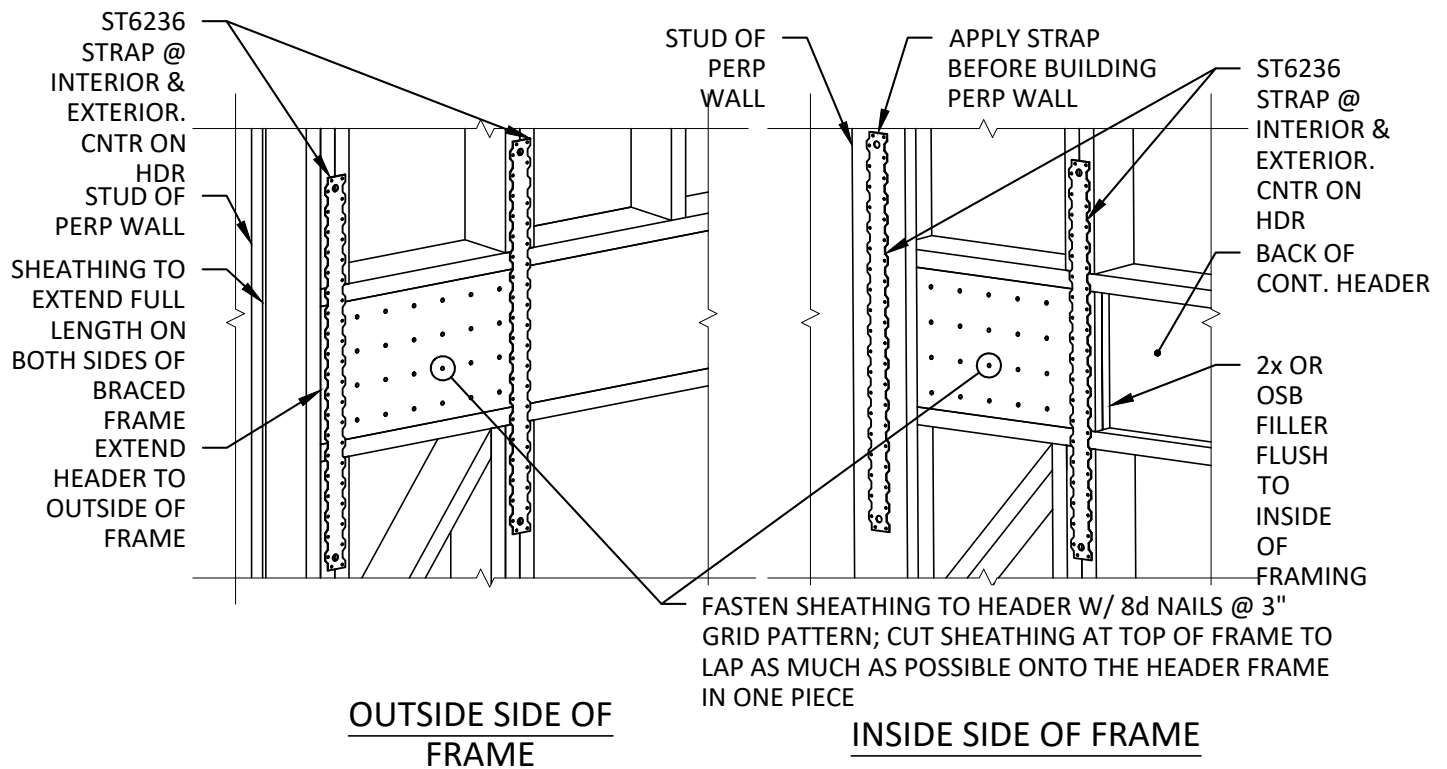
SCALE: $\frac{3}{4}$ " = 1'-0"



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3
S1.1

ENG. BRACE FRAME

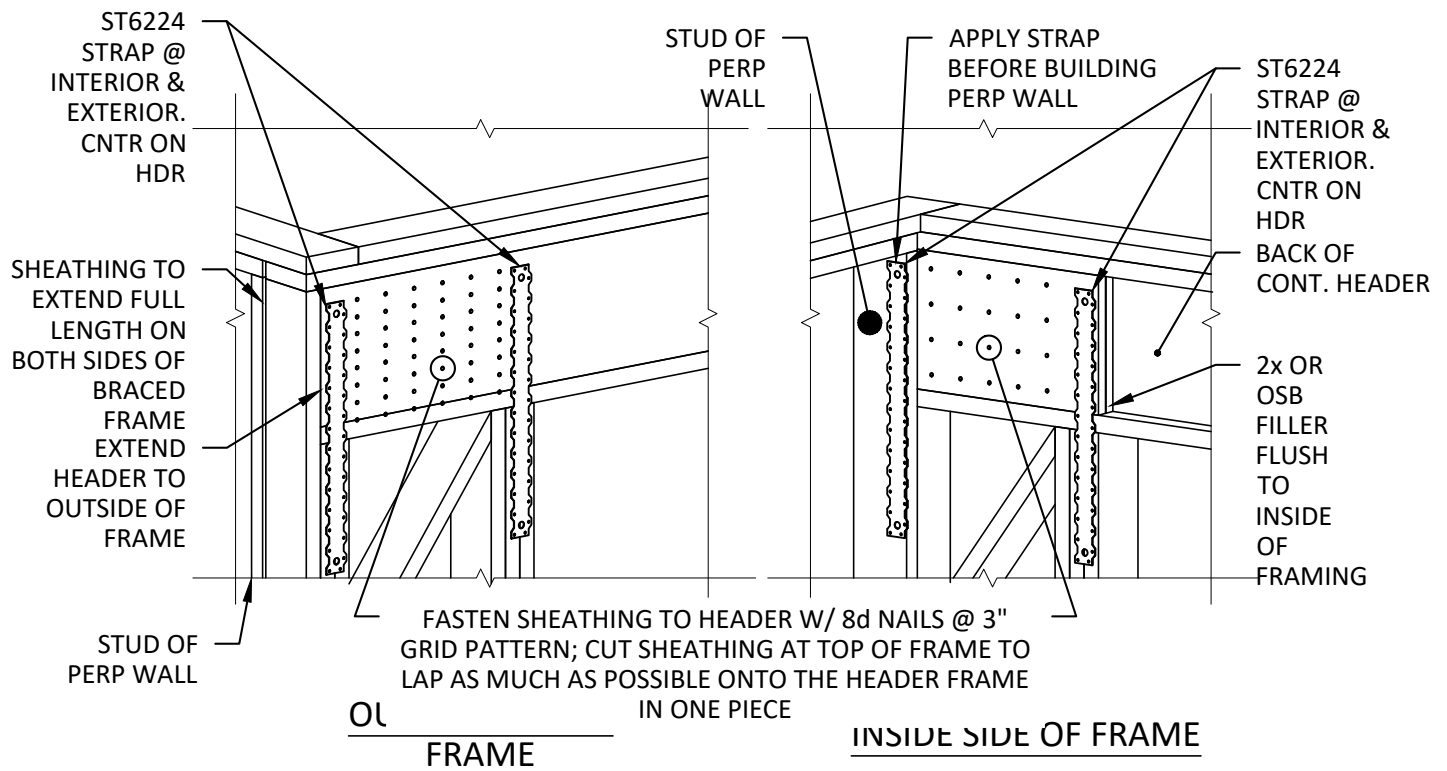
SCALE: 3/4" = 1'-0"



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4
S1.1

ENG. BRACE FRAME

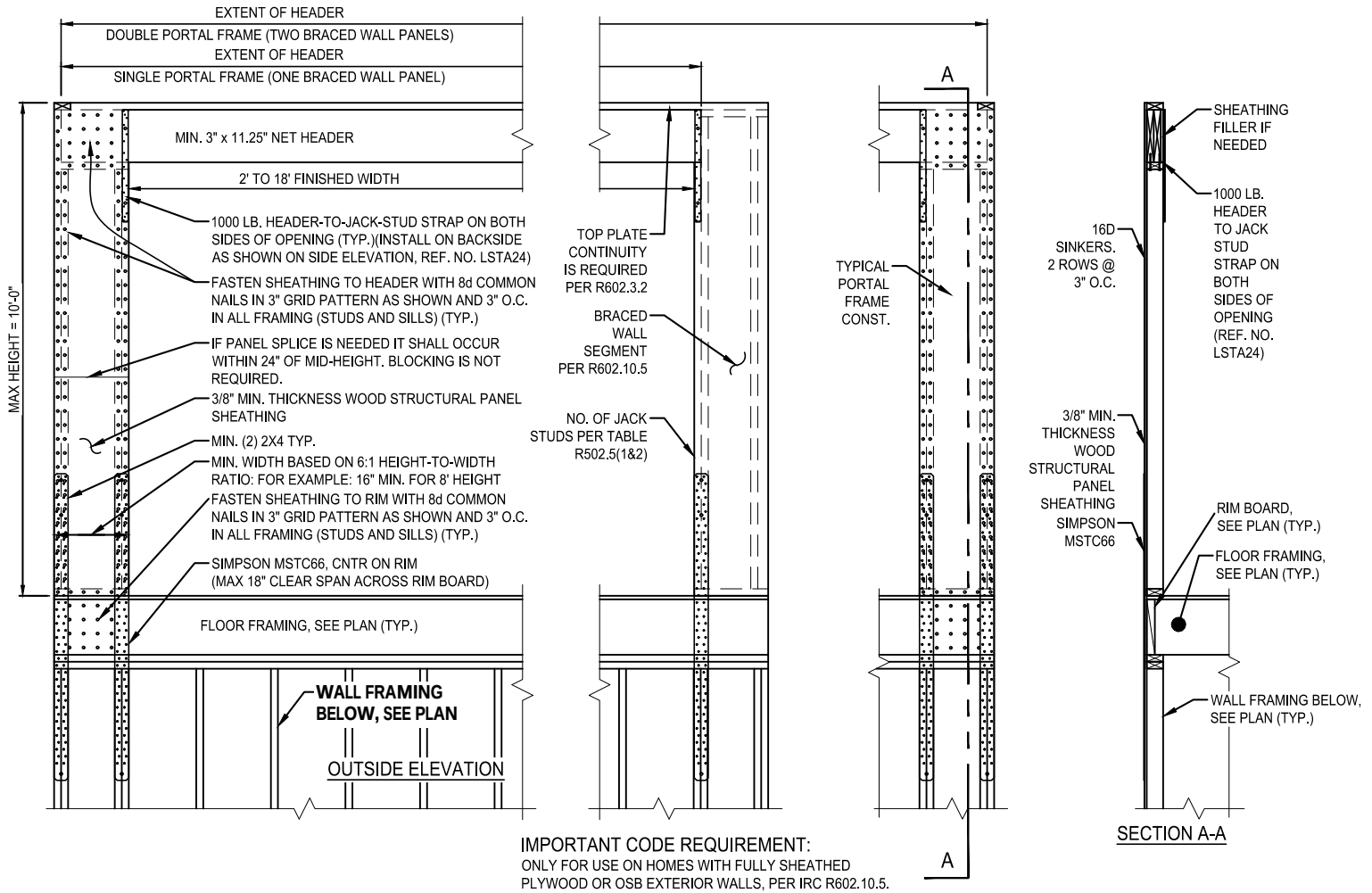
SCALE: 3/4" = 1'-0"



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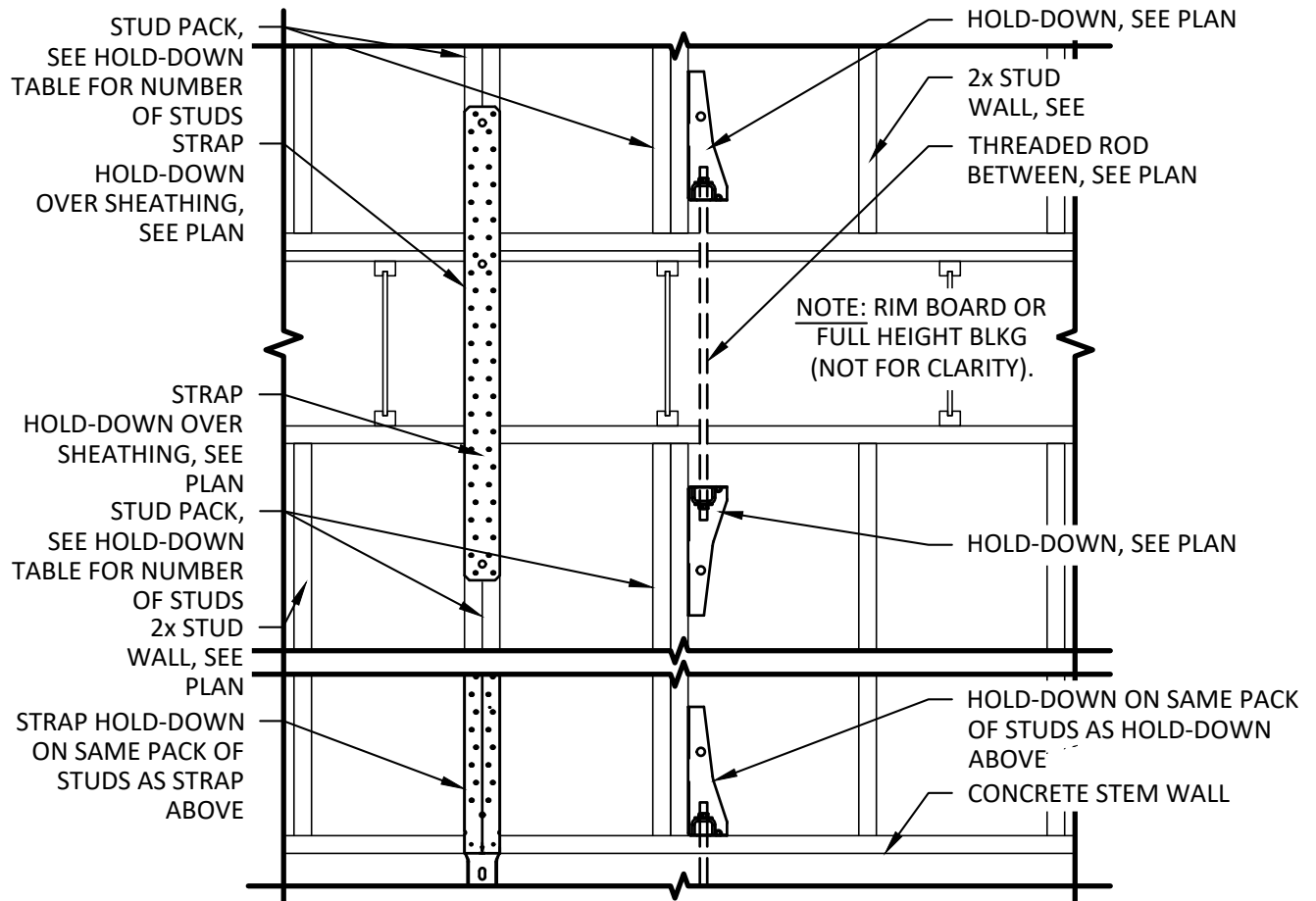




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1
SD1.0

UPPER HOLDOWN DETAIL

SCALE: 3/4" = 1'-0"

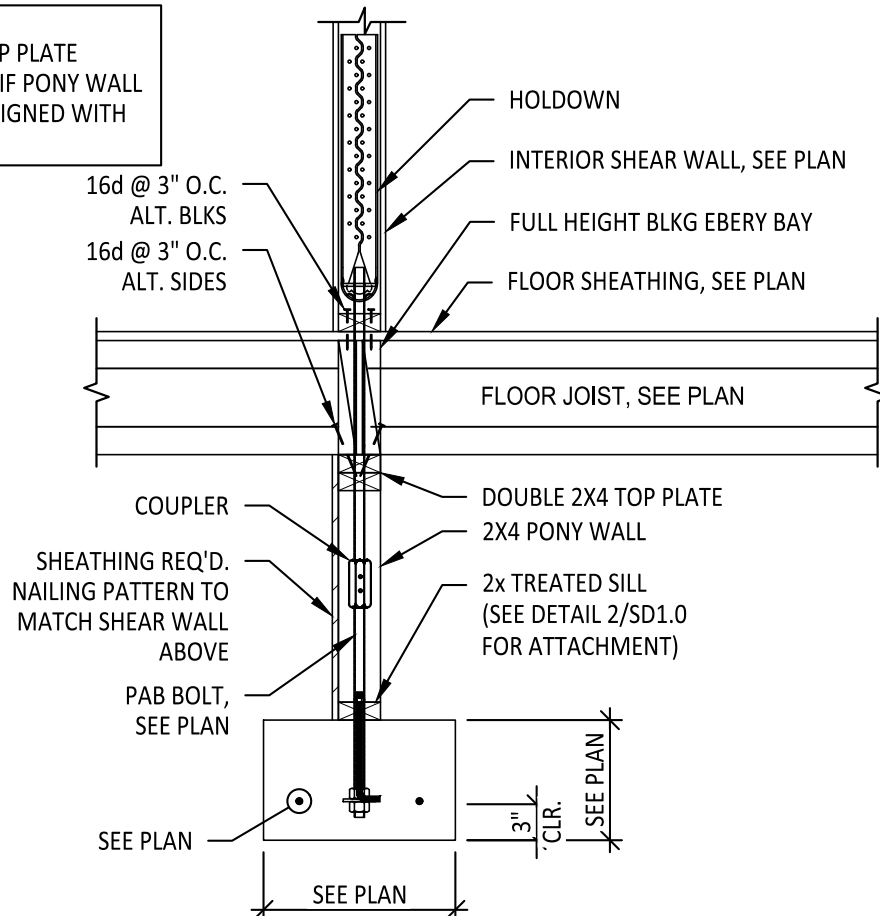


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NOTE:
SINGLE TOP PLATE
ALLOWED IF PONY WALL
STUD IS ALIGNED WITH
JOISTS



TYPICAL HOLD-DOWN DETAIL

SCALE: 3/4" = 1'-0"



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OSB SHEAR WALL SCHEDULE:

MARK	SHEATHING	SIDES OF WALL	SHEET NAILING PERIMETER / FIELD		SHEET STAPLING PERIMETER / FIELD	BLKG	NAILING (UNO) BOTTOM PLATE INTO RIM
SW1	7/16" APA RATED	1	8d @ 6 / 12	OR	16ga x 1-1/2" @ 3 / 12 (NOT FOR WALLS >10')	YES	(2) 16d NAILS PER 16" BAY
SW2	7/16" APA RATED	1	8d @ 4 / 12	OR	16ga x 1-1/2" @ 2 / 12 (NOT FOR WALLS >10')	YES	(3) 16d NAILS PER 16" BAY
SW3	7/16" APA RATED	1	8d @ 3 / 12			YES	(4) 16d NAILS PER 16" BAY
SW4	7/16" APA RATED	1	8d @ 2 / 12	(4x STUDS @ SHEATHING PERIMETER)		YES	(4) SDS SCREWS PER 16" BAY

TYP. NOTES:

- 1 ALL SHEATHING PANEL EDGES SHALL BE BLOCKED UNO
- 2 PROVIDE SAME NAILING PATTERN ABOVE AND BELOW OPENINGS AS ADJACENT SHEAR PANEL.
- 3 ALL EXTERIOR WALLS SHALL BE SHEARWALL "SW1" WITHOUT BLKG UNO
- 4 FASTEN GABLE/RIM TO SHEAR WALLS BELOW W/ 10d TOENAILS @ 12" O.C. UNO
- 5 FASTEN TRUSS HEELS TO SHEAR WALLS W/ H2.5A AND (2) 10d TOENAILS @ EACH
- 6 GYP BOARD SHEAR WALLS MAY BE SUBSTITUTED WITH AN SW1 SHEAR WALL @ CONTRACTOR'S OPTION
- 7 WALL SHEATHING CAN BE APPLIED TO EITHER SIDE OF THE WALL. (UNLESS NOTED OTHERWISE)

GABLE / DRAG TRUSS OR RIM KEY NOTES:

T1	-	ATTACH GABLE / DRAG TRUSS OR RIM TO TOP PLATE W/ 10d TOENAILS @ 6" O.C., EDGE NAIL SHEATHING ABOVE TO TRUSS OR RIM
----	---	---

STRAP SCHEDULE:

(STRAP / ALL THREAD TO CLEAR SPAN ACROSS RIM TO WALL BELOW)

MARK	STRAP TYPE	STRAP FASTENERS	# OF STUDS		BOLT TYPE	# OF STUDS	BOLT FASTENERS
S3	MSTC52	(48) 16d SINKERS	2	OR	HDU5-SDS2.5 W/ 5/8"Ø ALL THREAD	2	(14) 1/4"x2-1/2" SDS
S4	MSTC66	(68) 16d SINKERS	2	OR	HDU8-SDS2.5 W/ 7/8"Ø ALL THREAD	3	(20) 1/4"x2-1/2" SDS



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HOLDOWN SCHEDULE:

MARK	STRAP TYPE	STRAP FASTENERS	# OF STUDS	ANCHOR BOLT TYPE	# OF STUDS	ANCHOR BOLT FASTENERS
HD1	LSTD8 OR LSTD8RJ W/ RIM	(20) 16d SINKERS	2 OR	DTT2Z W/1/2"Øx10"	2	(8) 1/4"x1-1/2" SDS
HD2	STHD10 OR STHD10RJ W/ RIM	(24) 16d SINKERS	2 OR	HDU2- SDS2.5 W/ SB5/8x24 OR PAB5 @ INT. PONY WALLS	2	(6) 1/4"x2-1/2" SDS
HD3	STHD14 OR STHD14RJ W/ RIM	(30) 16d SINKERS	2 OR	HDU5-SDS2.5 W/ SB5/8x24 OR PAB5 @ INT. PONY WALLS	2	(14) 1/4"x2-1/2" SDS
HD4	-			HDU8-SDS2.5 W/ SB7/8x24 OR PAB7 @ INT. PONY WALLS	3	(20) 1/4"x2-1/2" SDS

ANCHOR BOLT KEY NOTES:

A2	-	1/2"Ø ANCHOR BOLTS @ 24" O.C.
A3	-	1/2"Ø ANCHOR BOLTS @ 36" O.C.