



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

Completed by: TDS
Review/Check: KKJ

Project Name: Glasby House
SRE Project #: 2023-4981
City and State: Valley County, Idaho

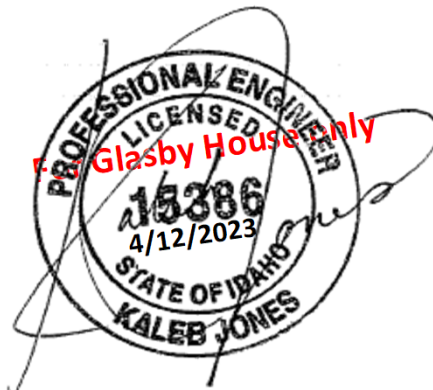
Structural Calculations

Project Title: Glasby House

Address: 13148 Farm to Market Rd

Location: Valley County, Idaho

Job #: 2023-4981



Prepared in accordance with 2018 IBC. Calculations expire by: 4/12/2024



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SITE SPECIFIC DESIGN CRITERIA:

Snow Criteria:

Roof Load (P_f)	120 psf	
Ground Load (P_g)	120 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
S_s	0.51	F_a 1.39
S_1	0.15	F_v 2.19
S_{D1}	0.47	S_{D1} 0.22
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	.09Wp	6.5	Typ @ Ext
GYP	.28Wp	2	Typ @ Int
CANT COL	.38Wp	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

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

Interior Wall Dead Loads:

Studs	2.0
Gyp. Board	2.5
Misc	3.0
TOTAL	8 psf

Deck Dead Load

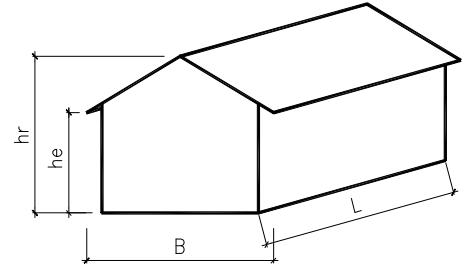
Decking	4.4
Joist	2.0
	0.0
Misc	3.0
TOTAL	10 psf



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	$h_r =$	25.58	ft		
Building height to eave	$h_e =$	12.00	ft		
Building width	$B =$	34.00	ft		
Building length	$L =$	36.00	ft		
Overhang sloped width	$O_h =$	3.00	ft		
Effective area of components (or Solar Panel area)	$A =$	48.0	ft ² , <== Overhang? (Yes or No):	Yes	
Enclosed? (Y/N)		y			



ANALYSIS

Velocity pressure

$$q_h = 0.00256 K_z K_{zt} K_d K_e V^2 = 25.62 \text{ psf}$$

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. 268) = **0.89**

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

h = mean roof height = **18.79 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

$$p = q_h [(G C_{p_f}) - (G C_{p_i})]$$

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

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

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

$G C_{p_i}$ = 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, $\text{MAX}[\text{MIN}(0.1B, 0.1L, 0.4h), \text{MIN}(0.04B, 0.04L), 3]$ = **3.40 ft**

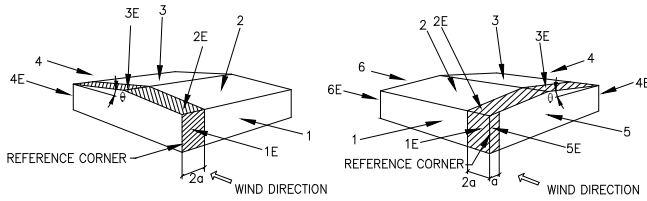
Net Pressures (psf), Basic Load Cases

Surface	Roof angle $q = 18.43$			Roof angle $q = 18.43$		
	$G C_{p_f}$	Net Press. W/		$G C_{p_f}$	Net Press. W/	
		(+ $G C_{p_i}$)	(- $G C_{p_i}$)		(+ $G C_{p_i}$)	(- $G C_{p_i}$)
1	0.52	8.62	17.84	-0.45	-16.14	-6.92
2	-0.69	-22.29	-13.06	-0.69	-22.29	-13.06
3	-0.47	-16.61	-7.39	-0.37	-14.09	-4.87
4	-0.42	-15.25	-6.03	-0.45	-16.14	-6.92
5				0.40	5.64	14.86
6				-0.29	-12.04	-2.82
1E	0.78	15.37	24.60	-0.48	-16.91	-7.68
2E	-1.07	-32.02	-22.80	-1.07	-32.02	-22.80
3E	-0.67	-21.86	-12.64	-0.53	-18.19	-8.97
4E	-0.62	-20.44	-11.22	-0.48	-16.91	-7.68
5E				0.61	11.01	20.24
6E				-0.43	-15.63	-6.40

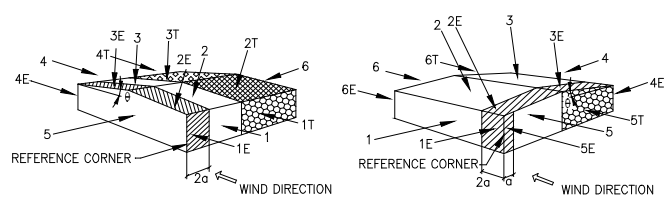
Net Pressures (psf), Torsional Load Cases

Surface	Roof angle $q = 18.43$		
	$G C_{p_f}$	Net Press. W/	
		(+ $G C_{p_i}$)	(- $G C_{p_i}$)
1T	0.52	2.15	4.46
2T	-0.69	-5.57	-3.27
3T	-0.47	-4.15	-1.85
4T	0.00	-3.81	-1.51
Surface	Roof angle $q = 0.00$		
	$G C_{p_f}$	Net Press. W/	
		(+ $G C_{p_i}$)	(- $G C_{p_i}$)
5T	0.40	1.41	3.71
6T	-0.29	-3.01	-0.70

+ / - Wind Pressure 64%



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)

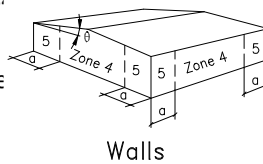
$p_{min} = 16.00$ psf (ASCE 7-16 30.2.2)

$G C_p = 1.00$ external pressure coefficient
see table below. (ASCE 7-16 30.3.2)

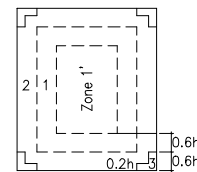
$q = 18.43$ °

$p_{overhang} = -88.37$ psf

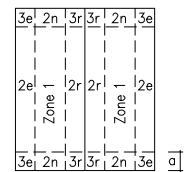
(ASCE 7-16 28.3.3)



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
	385	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			
48	0.30	-2.50	0.30	-2.50	0.30	-1.80	0.98	-1.08	0.98	-1.35			

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
	3.07	-15.88	3.07	-15.88	3.07	-51.74	3.07	-15.88	3.07	-21.00	3.07	-21.00
	Zone 3		Zone 3e		Zone 3r		Zone 4		Zone 5			
Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative	(Max Pressure 59.43 psf)		
3.07	-59.43	3.07	-59.43	3.07	-41.50	20.41	-22.97	20.41	-30.06			

LOAD CASE 'A' FACTORED LOADS	
$0.6 * W_r = (Z_2 + Z_3) * 0.6 =$	3.4 psf
$0.6 * W_{rE} = (Z_{2E} + Z_{3E}) * 0.6 =$	6.1 psf
$0.6 * W_w = (Z_1 + Z_4) * 0.6 =$	14.3 psf
$0.6 * W_{wE} = (Z_{1E} + Z_{4E}) * 0.6 =$	21.5 psf

LOAD CASE 'B' FACTORED LOADS	
$0.6 * W_r = (Z_2 + Z_3) * 0.6 =$	4.9 psf
$0.6 * W_{rE} = (Z_{2E} + Z_{3E}) * 0.6 =$	8.3 psf
$0.6 * W_w = (Z_5 + Z_6) * 0.6 =$	10.6 psf
$0.6 * W_{wE} = (Z_{5E} + Z_{6E}) * 0.6 =$	16.0 psf

ROOF COMPONENTS FACTORED LOAD	
$0.6 * Z_{r,c\&c} =$	12.6 psf

WALL COMPONENTS FACTORED LOAD	
$0.6 * Z_{w,c\&c} =$	13.8 psf



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OSB SEISMIC LOADING ANALYSIS

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

INPUT DATA

Typical floor height: $h = 12$ ft
 Typical floor weight: $w_x = 20.8$ kips
 Number of floors: $n = 1$
 Importance factor (ASCE 11.5.1): $I_e = 1.00$
 Design spectral response: $S_{DS} = 0.47$ g
 $S_{D1} = 0.22$ g
 Mapped spectral resp.: $S_1 = 0.15$ 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: $SDC = D$
 $h_n = 25.6$ ft

DESIGN SUMMARY

$C_s = 1.2 * S_{DS} / (R / I_e) = 0.0870$ <= Applicable
 Period Parameter, $x = 0.75$, ASCE Tab 12.8-2
 Period: $T_a = C_t (h_n)^x = 0.23$ sec, ASCE 12.8.2.1
 $C_s < S_{D1} / [(R / I_e) T_a] = 0.1502$, ASCE Tab 12.8.1.1 <= Not Applicable
 $C_s > 0.044 S_{DS} I_e = 0.0207$, ASCE Tab 12.8.1.1 <= Not Applicable
 $C_s > 0.5 S_1 / (R / I_e) = 0.0117$, ASCE Tab 12.8.1.1 <= Not Applicable
 $k = 1.36$, (ASCE 12.8.3, page 91)
 $V = C_s W = 0.0870$ W
 $0.7 * V = 0.0609$ W
 $W = 21$ kips, total

SEISMIC COMPONENT & ANCHORING ANALYSIS

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

$$w_{1, seismic} = MAX(0.4 I S_{DS} W_p, 0.1 W_p) = 0.2 W_p = 0.2 \text{ psf} \quad \leq \text{USE FOR DIAPHRAGMS}$$

Where: $W_p = 1.0$ psf, $I_e = 1.00$
 (CBC / IBC Tab. 1604.5 & ASCE 7 Tab. 1.5-2)

Out-of-plane seismic force for anchorage design

For seismic design category A & B, any diaphragm (ASCE 7 Sec. 12.11.2)

$$F_{anch, seismic} = MAX \left[0.4 S_{DS} I W_p \frac{(h+h_p)^2}{2h}, 0.1 W_p \frac{(h+h_p)^2}{2h}, 400 S_{DS} I, F_{min} \right] =$$

Where: $F_{min} = 0.13$ plf, $2.01 W_p = 188$ plf (Horizontal) <= Not Applicable
 (ASCE 7 Sec. 12.11.2 & 11.7.3)

For seismic design category C and above, flexible diaphragm (ASCE 7 Sec. 12.11.2.1)

$$F_{anch, seismic} = MAX \left[0.8 S_{DS} I W_p \frac{(h+h_p)^2}{2h}, 0.1 W_p \frac{(h+h_p)^2}{2h}, 400 S_{DS} I, F_{min} \right] =$$

$$= 4.02 W_p = 188 \text{ plf (Horizontal)} \quad \leq \text{Applicable}$$

For connections (ASCE 7 Sec. 12.11.2.1)

$$F_{conn, seismic} = MAX [0.133 S_{DS} w_p, 0.5 w_p] = 0.5 W_p = 0.5 \text{ plf (Horizontal)}$$



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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 (Wp)	=	Loading		
	Wind Force (psf)	Diaph. Weight	Wr, 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	47	7.2	15.0	34.0	17.6	12.0	8.0	15.0				0.06	=	1.04	0.82	Wind	
X1-1	0.0	18	0.0	36.0	34.0	15.7	12.0	9.0	36.0	7.0	1.04	0.82	0.06	=	4.29	1.72	Wind	
X2-1	9.6	47	13.6	36.0	34.0	15.7	12.0	12.0	36.0	0.0	0	0	0.06	=	4.04	2.07	Wind	
Y1-1	9.6	47	13.6	34.0	36.0	15.8	12.0	12.0	34.0	0	0	0	0.06	=	3.82	2.05	Wind	
Y2-1	9.6	47	13.6	34.0	36.0	15.8	12.0	12.0	34.0	0	0	0	0.06	=	3.82	2.05	Wind	



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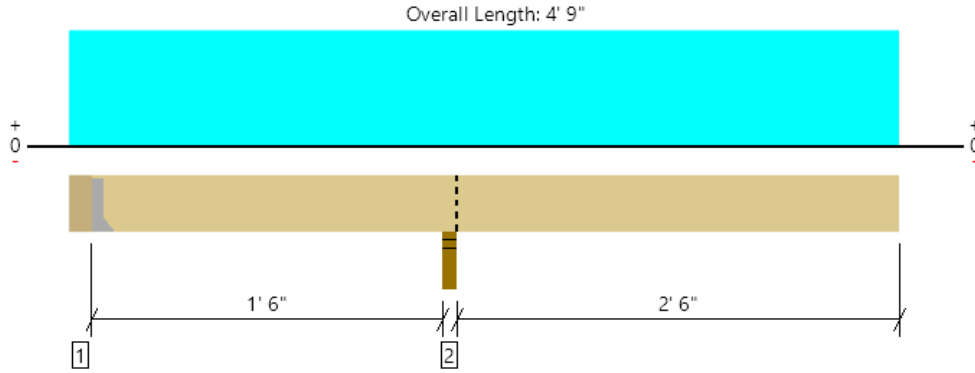
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SHEAR WALL CALCULATIONS:

		X1-2	X1-1	X2-1	Y1-1	Y2-1	
Shear Wall Forces							
Total length of wall		18.33 ft	28.00 ft	28.00 ft	36.00 ft	36.00 ft	
Total length of shear wall	L =	18.33 ft	28.00 ft	2.29 ft	23.83 ft	19.90 ft	
Total length of full ht seg.	L _w =	11.50 ft	14.00 ft	2.29 ft	16.92 ft	19.90 ft	
height of shear wall	H =	8.00 ft	9.00 ft	8.00 ft	12.00 ft	12.00 ft	
Maximum opening height	H' =	6.00 ft	2.00 ft	0.00 ft	6.67 ft	0.00 ft	
Total force at top of wall	V ₁ =	1043 lbs	4288 lbs	2020 lbs	3823 lbs	3823 lbs	
Self weight	W _{DL self} =	96 plf	108 plf	96 plf	144 plf	144 plf	
Applied dead load	W _{DL above} =	40 plf	40 plf	40 plf	261 plf	261 plf	
Prefered OSB thickness	in	7/16	7/16	7/16	7/16	7/16	
Prefered Gyp thickness	in	1/2	1/2	1/2	1/2	1/2	
Wall Connected to Concrete	y/n =	N	Y	Y	Y	Y	
Shear Wall Segments							
		5.75	3.50	2.29	3.50	19.90	
		5.75	3.50		8.67		
			4.00		4.75		
			3.00				
Shear Transfer to Concrete							
	T =	Not Req'd	274 lbs	6963 lbs	Not Req'd	Not Req'd	
			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			(5) Min	(2) Min	(4) Min	(4) Min	
Load From Above		0.00	0.00	0.00	0.00	0.00	
			Perp. Wall	HD4			
Shear Resisting System							
Force Calculated		132.90	306.25	882.01	269.70	192.13	
		OSB	OSB	OSB	OSB	OSB	
Min Shear Wall Segment:		2.29 ft	2.57 ft	2.29 ft	3.43 ft	3.43 ft	
Provide:	V _a =	SW1	SW1	SW4	SW1	SW1	
Min Shear Wall Segment:							
Provide:	V _a =						
Blocking / Nailing Framing Attachment							
Blocking Unit Shear		57 plf	153 plf	144 plf	106 plf	106 plf	
Blocking		NONE	NONE	NONE	NONE	NONE	
Nailing		See SCHED	T1	See SCHED	See SCHED	See SCHED	
Unit Base Shear							
% of full height segments	%fh = L _w /L =	0.627	0.500	1.000	0.710	1.000	
% of maximum opening height	%oh = H'/H =	0.750	0.222	0.000	0.556	0.000	
Shear cap adj factor	SCAF =	0.68	1.00	1.00	0.84	1.00	
Unit base shear	v _{base} V ₁ /L _w =	91 plf	306 plf	882 plf	226 plf	192 plf	
Effective unit base shear	v _{req} = v _{base} /SCAF =	133 plf	306 plf	882 plf	270 plf	192 plf	
Ovrtrn. mo. Ttl. length of wall	OTM =	12.2 k-ft	38.6 k-ft	16.2 k-ft	54.8 k-ft	45.9 k-ft	
Shear wall adjustment factor							
Resist moment total L. of wall	RM =	22.8 k-ft	57.9 k-ft	0.4 k-ft	114.9 k-ft	80.1 k-ft	
	r =	0.6918	0.8182	1.0000	0.8150	1.0000	
	C _o =	0.6822	1.2000	1.0000	0.8378	1.0000	

House, Outlookers
1 piece(s) 2 x 6 DF No.2 @ 24" OC



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1533 @ 2' 1 1/4"	3281 (3.50")	Passed (47%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	643 @ 1' 6"	1139	Passed (56%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	-959 @ 2' 1 1/4"	975	Passed (98%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.137 @ 4' 9"	0.265	Passed (2L/464)	--	1.0 D + 1.0 S (Alt Spans)
Total Load Defl. (in)	0.156 @ 4' 9"	0.353	Passed (2L/408)	--	1.0 D + 1.0 S (Alt Spans)

System : Roof
Member Type : Joist
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 0/12

- Deflection criteria: LL (L/240) and TL (L/180).
- Overhang deflection criteria: LL (2L/240) and TL (2L/180).
- Right cantilever length exceeds 1/3 member length or 1/2 back span length. Additional bracing should be considered.
- Allowed moment does not reflect the adjustment for the beam stability factor.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- -330 lbs uplift at support located at 5 1/2". Strapping or other restraint may be required.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Factored	
1 - Hanger on 5 1/2" DF beam	5.50"	Hanger ¹	1.50"	-29	52/-302	24/-330	See note ¹
2 - Stud wall - DF	3.50"	3.50"	1.64"	190	1343	1533	Blocking

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- ¹ See Connector grid below for additional information and/or requirements.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	4' 4" o/c	
Bottom Edge (Lu)	1' 11" o/c	

- Maximum allowable bracing intervals based on applied load.

Connector: Simpson Strong-Tie

Support	Model	Seat Length	Top Fasteners	Face Fasteners	Member Fasteners	Accessories
1 - Face Mount Hanger	LU26	1.50"	N/A	6-10dx1.5	4-10dx1.5	

- Refer to manufacturer notes and instructions for proper installation and use of all connectors.

Vertical Load	Location (Side)	Spacing	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 4' 9"	24"	17.0	120.0	Default Load

Weyerhaeuser Notes

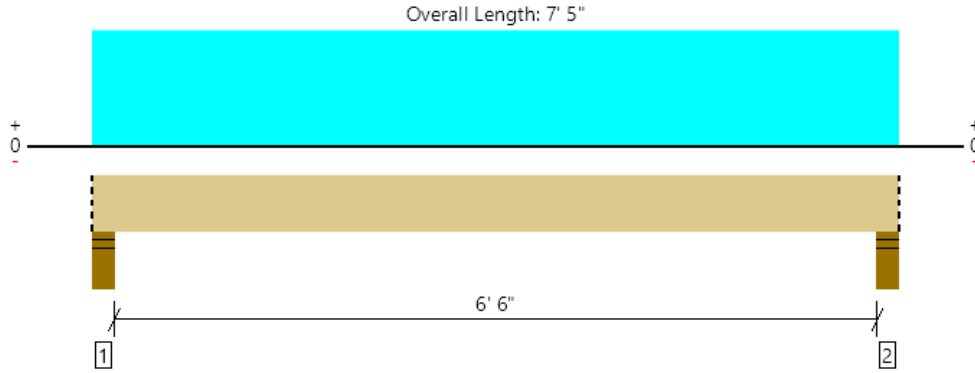
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The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

ForteWEB Software Operator	Job Notes
Trevor Steelsmith Snake River Engineering (208) 453-6512 trevor@snakeriverengineering.com	



House, RB1
1 piece(s) 6 x 10 DF No.2



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	3097 @ 4"	18906 (5.50")	Passed (16%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	2053 @ 1' 3"	6810	Passed (30%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	4757 @ 3' 8 1/2"	6937	Passed (69%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.066 @ 3' 8 1/2"	0.338	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.076 @ 3' 8 1/2"	0.450	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)

System : Roof
Member Type : Drop Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 0/12

- Deflection criteria: LL (L/240) and TL (L/180).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Lumber grading provisions must be extended over the length of the member per NDS 4.2.5.5.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Factored	
1 - Stud wall - DF	5.50"	5.50"	1.50"	427	2670	3097	Blocking
2 - Stud wall - DF	5.50"	5.50"	1.50"	427	2670	3097	Blocking

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	7' 5" o/c	
Bottom Edge (Lu)	7' 5" o/c	

- Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 7' 5"	N/A	13.2	--	
1 - Uniform (PSF)	0 to 7' 5" (Front)	6'	17.0	120.0	Default Load

Weyerhaeuser Notes

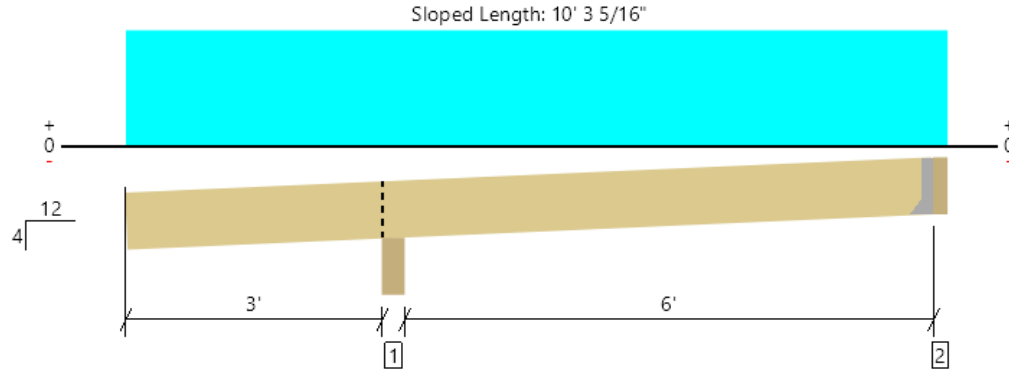
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ForteWEB Software Operator	Job Notes
Trevor Steelsmith Snake River Engineering (208) 453-6512 trevor@snakeriverengineering.com	



House, Side Roof Rafters
1 piece(s) 2 x 8 DF No.2 @ 16" OC



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Member Length : 10' 2 1/16"

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	486 @ 9' 5 1/2"	1406 (1.50")	Passed (35%)	--	1.0 D + 1.0 S (Alt Spans)
Shear (lbs)	579 @ 4' 3/8"	1501	Passed (39%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	-959 @ 3' 2 3/4"	1564	Passed (61%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.130 @ 0	0.340	Passed (2L/628)	--	1.0 D + 1.0 S (Alt Spans)
Total Load Defl. (in)	0.140 @ 0	0.454	Passed (2L/584)	--	1.0 D + 1.0 S (Alt Spans)

System : Roof
Member Type : Joist
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD
Member Pitch : 4/12

- Deflection criteria: LL (L/240) and TL (L/180).
- Overhang deflection criteria: LL (2L/240) and TL (2L/180).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Factored	
1 - Beveled Plate - DF	5.50"	5.50"	1.50"	172	1149	1320	Blocking
2 - Hanger on 7 1/4" DF beam	3.50"	Hanger ¹	1.50"	61	478	539	See note ¹

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- ¹ See Connector grid below for additional information and/or requirements.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	10' o/c	
Bottom Edge (Lu)	10' o/c	

- Maximum allowable bracing intervals based on applied load.

Connector: Simpson Strong-Tie							
Support	Model	Seat Length	Top Fasteners	Face Fasteners	Member Fasteners	Accessories	
2 - Face Mount Hanger	LRU26Z	1.94"	N/A	4-10dx1.5	5-10d		

- Refer to manufacturer notes and instructions for proper installation and use of all connectors.

Vertical Load	Location (Side)	Spacing	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 9' 9"	16"	17.0	120.0	Default Load

Weyerhaeuser Notes

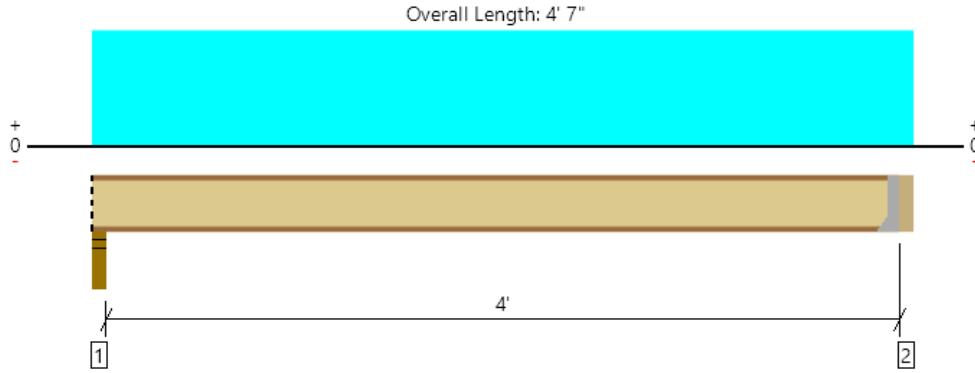
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ForteWEB Software Operator	Job Notes
Trevor Steelsmith Snake River Engineering (208) 453-6512 trevor@snakeriverengineering.com	



House, Upper Floor: Joist
1 piece(s) 14" TJI® 360 @ 24" OC



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	212 @ 4' 3 1/2"	1080 (1.75")	Passed (20%)	1.00	1.0 D + 1.0 L (All Spans)
Shear (lbs)	212 @ 4' 3 1/2"	1955	Passed (11%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	217 @ 2' 3"	7335	Passed (3%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.003 @ 2' 3"	0.102	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.004 @ 2' 3"	0.204	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	70	40	Passed	--	--

System : Floor
Member Type : Joist
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- A structural analysis of the deck has not been performed.
- Deflection analysis is based on composite action with a single layer of 23/32" Weyerhaeuser Edge™ Panel (24" Span Rating) that is glued and nailed down.
- Additional considerations for the TJ-Pro™ Rating include: None.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Factored	
1 - Stud wall - DF	3.50"	3.50"	1.75"	54	180	234	Blocking
2 - Hanger on 14" DF beam	3.50"	Hanger ¹	1.75" / - ²	56	187	243	See note ¹

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- ¹ See Connector grid below for additional information and/or requirements.
- ² Required Bearing Length / Required Bearing Length with Web Stiffeners

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	4' 4" o/c	
Bottom Edge (Lu)	4' 4" o/c	

- TJI joists are only analyzed using Maximum Allowable bracing solutions.
- Maximum allowable bracing intervals based on applied load.

Connector: Simpson Strong-Tie

Support	Model	Seat Length	Top Fasteners	Face Fasteners	Member Fasteners	Accessories
2 - Face Mount Hanger	IUS2.37/14	2.00"	N/A	12-10dx1.5	2-Strong-Grip	

- Refer to manufacturer notes and instructions for proper installation and use of all connectors.

Vertical Load	Location	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 4' 7"	24"	12.0	40.0	Default Load

Weyerhaeuser Notes

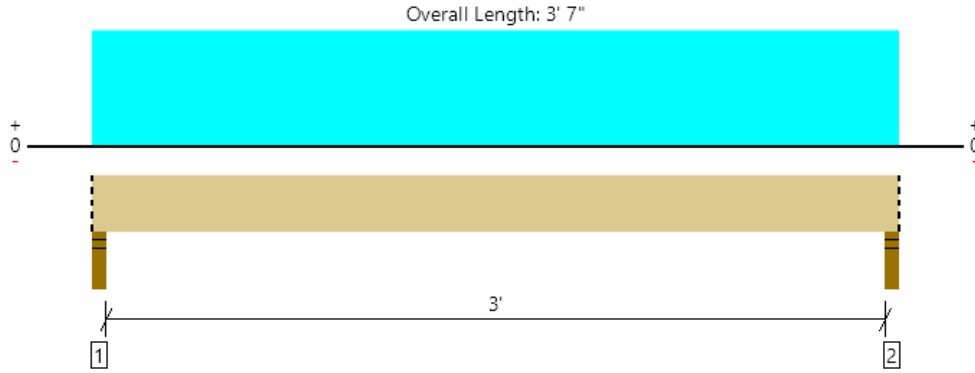
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ForteWEB Software Operator	Job Notes
Trevor Steelsmith Snake River Engineering (208) 453-6512 trevor@snakeriverengineering.com	



House, Crawl Beams
1 piece(s) 4 x 10 DF No.2



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	853 @ 2"	7656 (3.50")	Passed (11%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	347 @ 1' 3/4"	3885	Passed (9%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	629 @ 1' 9 1/2"	4492	Passed (14%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.002 @ 1' 9 1/2"	0.081	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.003 @ 1' 9 1/2"	0.162	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

System : Floor
Member Type : Drop Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Factored	
1 - Stud wall - DF	3.50"	3.50"	1.50"	208	645	853	Blocking
2 - Stud wall - DF	3.50"	3.50"	1.50"	208	645	853	Blocking

• Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	3' 7" o/c	
Bottom Edge (Lu)	3' 7" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 3' 7"	N/A	8.2	--	
1 - Uniform (PSF)	0 to 3' 7" (Front)	9'	12.0	40.0	Default Load

Weyerhaeuser Notes

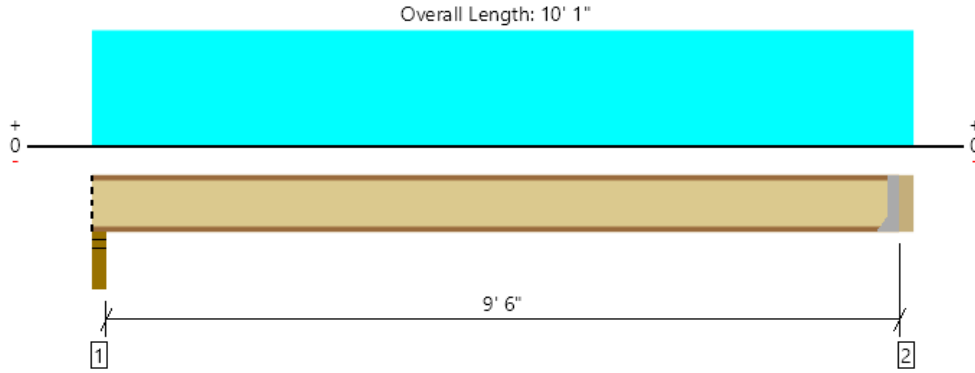
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ForteWEB Software Operator	Job Notes
Trevor Steelsmith Snake River Engineering (208) 453-6512 trevor@snakeriverengineering.com	



House, Main Floor: Joist
1 piece(s) 9 1/2" TJI® 110 @ 24" OC



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	498 @ 9' 9 1/2"	910 (1.75")	Passed (55%)	1.00	1.0 D + 1.0 L (All Spans)
Shear (lbs)	498 @ 9' 9 1/2"	1220	Passed (41%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	1194 @ 5'	2500	Passed (48%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.092 @ 5'	0.240	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.119 @ 5'	0.479	Passed (L/963)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	46	40	Passed	--	--

System : Floor
Member Type : Joist
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- A structural analysis of the deck has not been performed.
- Deflection analysis is based on composite action with a single layer of 23/32" Weyerhaeuser Edge™ Panel (24" Span Rating) that is glued and nailed down.
- Additional considerations for the TJ-Pro™ Rating include: None.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Factored	
1 - Stud wall - DF	3.50"	3.50"	1.75"	120	400	520	Blocking
2 - Hanger on 9 1/2" DF beam	3.50"	Hanger ¹	1.75" / - ²	122	407	529	See note ¹

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- ¹ See Connector grid below for additional information and/or requirements.
- ² Required Bearing Length / Required Bearing Length with Web Stiffeners

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	4' 7" o/c	
Bottom Edge (Lu)	9' 10" o/c	

- TJI joists are only analyzed using Maximum Allowable bracing solutions.
- Maximum allowable bracing intervals based on applied load.

Connector: Simpson Strong-Tie

Support	Model	Seat Length	Top Fasteners	Face Fasteners	Member Fasteners	Accessories
2 - Face Mount Hanger	IUS1.81/9.5	2.00"	N/A	8-10dx1.5	2-Strong-Grip	

- Refer to manufacturer notes and instructions for proper installation and use of all connectors.

Vertical Load	Location	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 10' 1"	24"	12.0	40.0	Default Load

Weyerhaeuser Notes

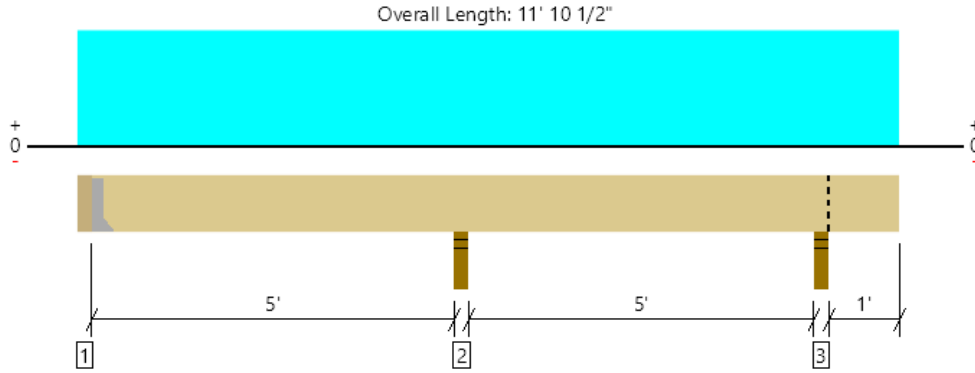
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ForteWEB Software Operator	Job Notes
Trevor Steelsmith Snake River Engineering (208) 453-6512 trevor@snakeriverengineering.com	



House, Deck Joist
1 piece(s) 2 x 8 DF No.2 @ 16" OC



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1130 @ 5' 5 1/4"	2231 (3.50")	Passed (51%)	--	1.0 D + 1.0 S (Adj Spans)
Shear (lbs)	434 @ 4' 8 1/4"	1501	Passed (29%)	1.15	1.0 D + 1.0 S (Adj Spans)
Moment (Ft-lbs)	-584 @ 5' 5 1/4"	1564	Passed (37%)	1.15	1.0 D + 1.0 S (Adj Spans)
Live Load Defl. (in)	0.019 @ 2' 7 9/16"	0.129	Passed (L/999+)	--	1.0 D + 1.0 S (Alt Spans)
Total Load Defl. (in)	0.021 @ 2' 7 7/16"	0.257	Passed (L/999+)	--	1.0 D + 1.0 S (Alt Spans)
TJ-Pro™ Rating	N/A	N/A	N/A	--	N/A

System : Floor
Member Type : Joist
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Overhang deflection criteria: LL (2L/480) and TL (2L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.
- No composite action between deck and joist was considered in analysis.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Factored	
1 - Hanger on 7 1/4" DF beam	3.50"	Hanger ¹	1.50"	36	385	421	See note ¹
2 - Stud wall - SPF	3.50"	3.50"	1.77"	101	1029	1130	None
3 - Stud wall - DF	3.50"	3.50"	1.50"	53	553	606	Blocking

- Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.
- At hanger supports, the Total Bearing dimension is equal to the width of the material that is supporting the hanger
- ¹ See Connector grid below for additional information and/or requirements.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	11' 7" o/c	
Bottom Edge (Lu)	11' 7" o/c	

- Maximum allowable bracing intervals based on applied load.

Connector: Simpson Strong-Tie						
Support	Model	Seat Length	Top Fasteners	Face Fasteners	Member Fasteners	Accessories
1 - Face Mount Hanger	LU26	1.50"	N/A	6-10dx1.5	4-10dx1.5	

- Refer to manufacturer notes and instructions for proper installation and use of all connectors.

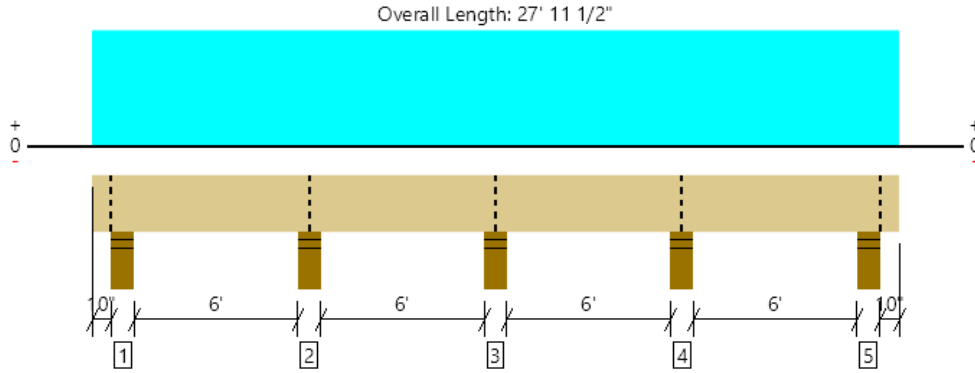
Vertical Load	Location (Side)	Spacing	Dead (0.90)	Snow (1.15)	Comments
1 - Uniform (PSF)	0 to 11' 10 1/2"	16"	12.0	120.0	Default Load

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ForteWEB Software Operator	Job Notes
Trevor Steelsmith Snake River Engineering (208) 453-6512 trevor@snakeriverengineering.com	



House, DECK BEAM 1
1 piece(s) 6 x 8 DF No.2



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	5297 @ 7' 6 1/4"	18906 (5.50")	Passed (28%)	--	1.0 D + 1.0 S (Adj Spans)
Shear (lbs)	2141 @ 6' 8"	5376	Passed (40%)	1.15	1.0 D + 1.0 S (Adj Spans)
Moment (Ft-lbs)	-3257 @ 7' 6 1/4"	3706	Passed (88%)	1.15	1.0 D + 1.0 S (Adj Spans)
Live Load Defl. (in)	0.058 @ 4' 5/8"	0.161	Passed (L/999+)	--	1.0 D + 1.0 S (Alt Spans)
Total Load Defl. (in)	0.064 @ 4' 1/2"	0.323	Passed (L/999+)	--	1.0 D + 1.0 S (Alt Spans)

System : Floor
Member Type : Drop Beam
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Overhang deflection criteria: LL (2L/480) and TL (2L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Factored	
1 - Stud wall - DF	5.50"	5.50"	1.50"	273	2448	2720	Blocking
2 - Stud wall - DF	5.50"	5.50"	1.54"	531	4766	5297	Blocking
3 - Stud wall - DF	5.50"	5.50"	1.50"	446	4261	4707	Blocking
4 - Stud wall - DF	5.50"	5.50"	1.54"	531	4766	5297	Blocking
5 - Stud wall - DF	5.50"	5.50"	1.50"	273	2448	2720	Blocking

• Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	28' o/c	
Bottom Edge (Lu)	28' o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 27' 11 1/2"	N/A	10.4	--	
1 - Uniform (PSF)	0 to 27' 11 1/2" (Front)	5' 3"	12.0	120.0	Default Load

Weyerhaeuser Notes

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The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

ForteWEB Software Operator	Job Notes
Trevor Steelsmith Snake River Engineering (208) 453-6512 trevor@snakeriverengineering.com	





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

Completed by: TDS
Review/Check: KKJ

Project Name: Glasby House
SRE Project #: 2023-4981
City and State: Valley County, Idaho

Beam Calculations

	Additional Drift	Roof	Floor	Deck	Wall	Total Load	Total Load
Trib	0.0	20.125	9	0	5.33		
Dead Load	-	342.1	108.0	0.0	64.0	514.1 plf	3,289.1 plf
Live / Snow Load	0	2415.0	360.0	0.0	-	2,775.0 plf	

Description:	3.5 ft Opening							
Header Callout	(2)9'-1/4" LVL 2.0E							
Trimmers	(2) 2x6 DF-L No. 2							
King Studs	(1) 2x6 DF-L No. 2							

Wood Design								
Species	LVL							
Grade	2.0E							
Width	3.50 in							
Depth	9.25 in							

Reaction								
Dead Load	900 lbs							
Live Load	4,856 lbs							

Load								
l _u	3.5 ft							
l _e	7.2 ft							

Adjustment Factors								
C _d	1.15							
C _F	1.1							

Material Properties								
F _b	2,900 psi							
F _v	285 psi							
E	2,000,000 psi							
E _{min}	1,016,535 psi							

Calculated Prop.								
A	32.38 in ²							
I	230.84 in ⁴							
S	49.91 in ³							
RB	8.08							
E _{min} '	1,016,535 psi							
F _{bE}	18,672 psi							
F _b *	3,669 psi							
CL	1							

Shear and Moment								
M	60,437 lb-in							
V	5,756 lbs							

Stress								
f _b	1,211 psi							
F _b '	3,625 psi							
f _b /F _b '	0.33							
f _v	267 psi							
F _v '	328 psi							
f _v /F _v '	0.81							
Max Ratio	0.81							
	Pass							

Deflection								
Δ _L	0.02 in							
	L/1,746							
Δ _{LL}	0.02 in							
	L/2,070							
	Pass							



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City and State: Valley County, Idaho

Beam Calculations

	Additional Drift	Roof	Floor	Deck	Wall	Total Load	Total Load
Trib	0.0	17.125	9	0	5.33		
Dead Load	-	291.1	108.0	0.0	64.0	463.1 plf	2,878.1 plf
Live / Snow Load	0	2055.0	360.0	0.0	-	2,415.0 plf	

Description:	6.3 ft Opening						
Header Callout	(3)9'-1/4" LVL 2.0E						
Trimmers	(2) 2x6 DF-L No. 2						
King Studs	(2) 2x6 DF-L No. 2						

Wood Design							
Species	LVL						
Grade	2.0E						
Width	5.25 in						
Depth	9.25 in						

Reaction							
Dead Load	1,447 lbs						
Live Load	7,547 lbs						

Load							
l _u	6.3 ft						
l _e	12.5 ft						

Adjustment Factors							
C _d	1.15						
C _F	1.1						

Material Properties							
F _b	2,900 psi						
F _v	285 psi						
E	2,000,000 psi						
E _{min}	1,016,535 psi						

Calculated Prop.							
A	48.56 in ²						
I	346.26 in ⁴						
S	74.87 in ³						
RB	7.10						
E _{min'}	1,016,535 psi						
F _{bE}	24,232 psi						
F _{b*}	3,669 psi						
CL	1						

Shear and Moment							
M	168,638 lb-in						
V	8,994 lbs						

Stress							
f _b	2,252 psi						
F _{b'}	3,636 psi						
f _b /F _{b'}	0.62						
f _v	278 psi						
F _{v'}	328 psi						
f _v /F _{v'}	0.85						
Max Ratio	0.85						
	Pass						

Deflection							
Δ _{T_L}	0.14 in						
	L/526						
Δ _{LL}	0.12 in						
	L/626						
	Pass						



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Beam Calculations

	Additional Drift	Roof	Floor	Deck	Wall	Total Load	Total Load
Trib	0.0	5.75	0	0	5.33		851.7 plf
Dead Load	-	97.8	0.0	0.0	64.0	161.7 plf	
Live / Snow Load	0	690.0	0.0	0.0	-	690.0 plf	

Description:	9.7 ft Opening						
Header Callout	(2)9'-1/4" LVL 2.0E						
Trimmers	(2) 2x6 DF-L No. 2						
King Studs	(2) 2x6 DF-L No. 2						

Wood Design							
Species	LVL						
Grade	2.0E						
Width	3.50 in						
Depth	9.25 in						

Reaction							
Dead Load	782 lbs						
Live Load	3,336 lbs						

Load							
l _u	9.7 ft						
l _e	18.1 ft						

Adjustment Factors							
C _d	1.15						
C _F	1.1						

Material Properties							
F _b	2,900 psi						
F _v	285 psi						
E	2,000,000 psi						
E _{min}	1,016,535 psi						

Calculated Prop.							
A	32.38 in ²						
I	230.84 in ⁴						
S	49.91 in ³						
RB	12.80						
E _{min} '	1,016,535 psi						
F _{bE}	7,448 psi						
F _b *	3,669 psi						
CL	1						

Shear and Moment							
M	119,464 lb-in						
V	4,118 lbs						

Stress							
f _b	2,394 psi						
F _b '	3,512 psi						
f _b /F _b '	0.68						
f _v	191 psi						
F _v '	328 psi						
f _v /F _v '	0.58						
Max Ratio	0.68						
	Pass						

Deflection							
Δ _{T_L}	0.36 in						
	L/320						
Δ _{L_L}	0.29 in						
	L/395						
	Pass						



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Beam Calculations

	Additional Drift	Roof	Floor	Deck	Wall	Total Load	Total Load
Trib	0.0	20	9	0	5.33		3,272.0 plf
Dead Load	-	340.0	108.0	0.0	64.0	512.0 plf	
Live / Snow Load	0	2400.0	360.0	0.0	-	2,760.0 plf	

Description:	3.0 ft Opening	3.5 ft Opening					
Header Callout	(2)9'-1/4" LVL 2.0E	(2)9'-1/4" LVL 2.0E					
Trimmers	(2) 2x6 DF-L No. 2	(2) 2x6 DF-L No. 2					
King Studs	(1) 2x6 DF-L No. 2	(1) 2x6 DF-L No. 2					

Wood Design							
Species	LVL	LVL					
Grade	2.0E	2.0E					
Width	3.50 in	3.50 in					
Depth	9.25 in	9.25 in					

Reaction							
Dead Load	768 lbs	896 lbs					
Live Load	4,140 lbs	4,830 lbs					

Load							
l _u	3.0 ft	3.5 ft					
l _e	6.2 ft	7.2 ft					

Adjustment Factors							
C _d	1.15	1.15					
C _F	1.1	1.1					

Material Properties							
F _b	2,900 psi	2,900 psi					
F _v	285 psi	285 psi					
E	2,000,000 psi	2,000,000 psi					
E _{min}	1,016,535 psi	1,016,535 psi					

Calculated Prop.							
A	32.38 in ²	32.38 in ²					
I	230.84 in ⁴	230.84 in ⁴					
S	49.91 in ³	49.91 in ³					
RB	7.48	8.08					
E _{min} '	1,016,535 psi	1,016,535 psi					
F _{bE}	21,784 psi	18,672 psi					
F _b *	3,669 psi	3,669 psi					
C _L	1	1					

Shear and Moment							
M	44,171 lb-in	60,122 lb-in					
V	4,908 lbs	5,726 lbs					

Stress							
f _b	885 psi	1,205 psi					
F _b '	3,632 psi	3,625 psi					
f _b /F _b '	0.24	0.33					
f _v	227 psi	265 psi					
F _v '	328 psi	328 psi					
f _v /F _v '	0.69	0.81					
Max Ratio	0.69	0.81					
	Pass	Pass					

Deflection							
Δ _{T_L}	0.01 in	0.02 in					
	L/2,787	L/1,755					
Δ _{T_U}	0.01 in	0.02 in					
	L/3,304	L/2,081					
	Pass	Pass					



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Beam Calculations

	Additional Drift	Roof	Floor	Deck	Wall	Total Load	Total Load
Trib	0.0	17	0	0	5.33		
Dead Load	-	289.0	0.0	0.0	64.0	353.0 plf	2,393.0 plf
Live / Snow Load	0	2040.0	0.0	0.0	-	2,040.0 plf	

Description:	6.3 ft Opening	10.5 ft Opening					
Header Callout	(3)9'-1/4" LVL 2.0E	(3)14" LVL 2.0E					
Trimmers	(2) 2x6 DF-L No. 2	(3) 2x6 DF-L No. 2					
King Studs	(2) 2x6 DF-L No. 2	(2) 2x6 DF-L No. 2					

Wood Design							
Species	LVL	LVL					
Grade	2.0E	2.0E					
Width	5.25 in	5.25 in					
Depth	9.25 in	14.00 in					

Reaction							
Dead Load	1,103 lbs	1,853 lbs					
Live Load	6,375 lbs	10,710 lbs					

Load							
lu	6.3 ft	10.5 ft					
le	12.5 ft	20.6 ft					

Adjustment Factors							
Cd	1.15	1.15					
CF	1.1	1					

Material Properties							
Fb	2,900 psi	2,900 psi					
Fv	285 psi	285 psi					
E	2,000,000 psi	2,000,000 psi					
Emin	1,016,535 psi	1,016,535 psi					

Calculated Prop.							
A	48.56 in ²	73.50 in ²					
I	346.26 in ⁴	1,200.50 in ⁴					
S	74.87 in ³	171.50 in ³					
RB	7.10	11.21					
Emin'	1,016,535 psi	1,016,535 psi					
FbE	24,232 psi	9,708 psi					
Fb*	3,669 psi	3,335 psi					
CL	1	1					

Shear and Moment							
M	140,213 lb-in	395,736 lb-in					
V	7,478 lbs	12,563 lbs					

Stress							
fb	1,873 psi	2,307 psi					
Fb'	3,636 psi	3,253 psi					
fb/Fb'	0.52	0.71					
fv	231 psi	256 psi					
Fv'	328 psi	328 psi					
fv/Fv'	0.70	0.78					
Max Ratio	0.70	0.78					
	Pass	Pass					

Deflection							
Δ _L	0.12 in	0.27 in					
	L/632	L/462					
Δ _{LL}	0.10 in	0.23 in					
	L/742	L/542					
	Pass	Pass					



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Beam Calculations

	Additional Drift	Roof	Floor	Deck	Wall	Total Load	Total Load
Trib	0.0	3.5	1	0	13.33		691.5 plf
Dead Load	-	59.5	12.0	0.0	160.0	231.5 plf	
Live / Snow Load	0	420.0	40.0	0.0	-	460.0 plf	

Description:	3.0 ft Opening	3.5 ft Opening	4.0 ft Opening	5.0 ft Opening				
Header Callout	(2)2x6 DF-L No. 2	(2)2x6 DF-L No. 2	(2)2x6 DF-L No. 2	(2)2x8 DF-L No. 2				
Trimmers	(1) 2x6 DF-L No. 2	(1) 2x6 DF-L No. 2	(1) 2x6 DF-L No. 2	(1) 2x6 DF-L No. 2				
King Studs	(3) 2x6 DF-L No. 2	(4) 2x6 DF-L No. 2	(4) 2x6 DF-L No. 2	(4) 2x6 DF-L No. 2				

Wood Design								
Species	DF-L	DF-L	DF-L	DF-L				
Grade	No. 2	No. 2	No. 2	No. 2				
Width	3.00 in	3.00 in	3.00 in	3.00 in				
Depth	5.50 in	5.50 in	5.50 in	7.25 in				

Reaction								
Dead Load	347 lbs	405 lbs	463 lbs	579 lbs				
Live Load	690 lbs	805 lbs	920 lbs	1,150 lbs				

Load								
lu	3.0 ft	3.5 ft	4.0 ft	5.0 ft				
le	6.2 ft	7.1 ft	7.9 ft	10.0 ft				

Adjustment Factors								
Cd	1.15	1.15	1.15	1.15				
CF	1.3	1.3	1.3	1.2				

Material Properties								
Fb	900 psi	900 psi	900 psi	900 psi				
Fv	180 psi	180 psi	180 psi	180 psi				
E	1,600,000 psi	1,600,000 psi	1,600,000 psi	1,600,000 psi				
Emin	580,000 psi	580,000 psi	580,000 psi	580,000 psi				

Calculated Prop.								
A	16.50 in^2	16.50 in^2	16.50 in^2	21.75 in^2				
I	41.59 in^4	41.59 in^4	41.59 in^4	95.27 in^4				
S	15.13 in^3	15.13 in^3	15.13 in^3	26.28 in^3				
RB	6.73	7.21	7.61	9.81				
Emin'	580,000 psi	580,000 psi	580,000 psi	580,000 psi				
FbE	15,357 psi	13,405 psi	12,021 psi	7,227 psi				
Fb*	1,346 psi	1,346 psi	1,346 psi	1,242 psi				
CL	1	1	1	1				

Shear and Moment								
M	9,335 lb-in	12,706 lb-in	16,595 lb-in	25,930 lb-in				
V	1,037 lbs	1,210 lbs	1,383 lbs	1,729 lbs				

Stress								
fb	617 psi	840 psi	1,097 psi	987 psi				
Fb'	1,339 psi	1,338 psi	1,337 psi	1,229 psi				
fb/Fb'	0.46	0.63	0.82	0.80				
fv	94 psi	110 psi	126 psi	119 psi				
Fv'	207 psi	207 psi	207 psi	207 psi				
fv/Fv'	0.46	0.53	0.61	0.58				
Max Ratio	0.46	0.63	0.82	0.80				
	Pass	Pass	Pass	Pass				

Deflection								
Δ _L	0.02 in	0.04 in	0.06 in	0.06 in				
	L/1,901	L/1,197	L/802	L/941				
Δ _{LL}	0.01 in	0.02 in	0.04 in	0.04 in				
	L/2,858	L/1,800	L/1,206	L/1,414				
	Pass	Pass	Pass	Pass				



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WOOD HEADER ALLOWABLE LOADS (kips/ft)

Load Duration Factor: 1.15
LVL Grade: 2.0E

Top Chord Bracing: 2'-0" O.C.
Max TL Deflection: L/240, 0.75in
Repetitive Stress Increase: No

Header Type	Header Span										
	2'	3'	4'	5'	6'	8'	10'	12'	14'	16'	18'
(2) 2x4 DF Stud	1.15	0.69	0.29	0.22	0.12	NA	NA	NA	NA	NA	NA
(3) 2x4 DF Stud	1.84	1.04	0.46	0.35	0.18	NA	NA	NA	NA	NA	NA
(2) 2x6 DF #2	3.34	1.44	0.83	0.48	0.36	0.20	0.12	NA	NA	NA	NA
(3) 2x6 DF #2	5.06	2.19	1.27	0.72	0.55	0.30	0.18	0.13	NA	NA	NA
(2) 2x8 DF #2	5.41	2.30	1.27	0.80	0.59	0.32	0.20	0.14	0.09	NA	NA
(3) 2x8 DF #2	8.74	3.39	2.19	1.18	0.97	0.53	0.33	0.23	0.16	0.12	NA
(2) 2x10 DF #2	8.05	3.39	1.96	1.18	0.89	0.48	0.31	0.21	0.15	0.10	NA
(3) 2x10 DF #2	13.23	5.18	3.22	1.80	1.38	0.82	0.52	0.36	0.25	0.20	0.15
(2) 2x12 DF #2	10.81	4.83	2.65	1.60	1.15	0.67	0.41	0.29	0.21	0.15	0.12
(3) 2x12 DF #2	17.94	7.02	4.49	2.40	1.96	1.10	0.70	0.48	0.35	0.26	0.21
(2) 1-3/4x7-1/4 LVL	13.80	6.79	3.80	2.40	1.61	0.94	0.52	0.30	0.18	0.12	NA
(3) 1-3/4x7-1/4 LVL	20.70	10.47	5.64	3.50	2.53	1.38	0.79	0.45	0.28	0.17	NA
(2) 1-3/4x9-1/2 LVL	24.73	10.47	5.64	3.75	2.65	1.50	0.92	0.63	0.39	0.24	0.15
(3) 1-3/4x9-1/2 LVL	37.15	17.25	8.51	6.00	4.03	2.30	1.38	0.95	0.60	0.37	0.22
(2) 1-3/4x11-7/8 LVL	40.71	17.25	8.86	6.00	4.49	2.53	1.61	1.12	0.82	0.53	0.32
(3) 1-3/4x11-7/8 LVL	61.30	24.15	13.23	8.75	6.67	3.80	2.42	1.61	1.15	0.79	0.48
(2) 1-3/4x14 LVL	56.47	24.15	12.54	8.00	5.75	3.45	2.19	1.50	1.13	0.86	0.54
(3) 1-3/4x14 LVL	85.10	28.75	18.86	12.00	8.63	5.29	3.34	2.30	1.61	1.27	0.81



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TALL WALL CALCULATIONS:

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

Description:

	12' Tall Wall	King Stud (6.25' Max Opening)	King Stud (10.5' Max Opening)	9' Tall Wall		
Type:	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		
Grade:	No. 2	No. 2	No. 2	No. 2		
Nominal width, t =	(1) 2	(1) 2	(2) 2	(1) 2		
Actual width =	1.50 in	1.50 in	3.00 in	1.50 in		
Nominal depth, d =	6	6	6	6		
Actual depth =	5.50 in	5.50 in	5.50 in	5.50 in		
Span, L =	12.000 ft	12.000 ft	12.000 ft	9.000 ft		
w/o Plates	11.750 ft	11.750 ft	11.750 ft	8.750 ft		
Stud spacing, s =	16 in	48 in	73 in	16 in		
Lat. Pressure, w _{wind} =	13.78 psf	13.78 psf	13.78 psf	13.78 psf		
Axial load, P =	3128 lbs	50 lbs	50 lbs	3653 lbs		
Eccentricity, e =	0 in	0 in	0 in	0 in		
K _{cE} =	0.3	0.3	0.3	0.3		
c =	0.8	0.8	0.8	0.8		
w =	18.4 plf	54.8 plf	84.1 plf	18.4 plf		
F _b	900 psi	900 psi	900 psi	900 psi		
F _v	180 psi	180 psi	180 psi	180 psi		
F _{c-prll}	1,350 psi	1,350 psi	1,350 psi	1,350 psi		
F _{c-perp}	625 psi	625 psi	625 psi	625 psi		
C _d	1.60	1.60	1.60	1.60		
C _{F,Fb}	1.30	1.30	1.30	1.30		
C _{F,Fcprll}	1.10	1.10	1.10	1.10		
C _r	1.15	1.00	1.00	1.15		
C _p	0.28	0.28	0.28	0.47		
C _H	1.00	1.00	1.00	1.00		
C _b	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		
E _{min}	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	1872 psi	2153 psi		
F' _v = F _v C _d C _H	288 psi	288 psi	288 psi	288 psi		
F' _c = F _c C _d C _F	2376 psi	2376 psi	2376 psi	2376 psi		
F' _{cE} = (K _{cE} E')/(l/d)2	730 psi	730 psi	730 psi	1317 psi		
F' _c = F _c C _d C _F C _p	676 psi	676 psi	676 psi	1118 psi		
F' _{c-perp} = F _{c-perp} C _b	668 psi	668 psi	668 psi	668 psi		
E'	1600000 psi	1600000 psi	1600000 psi	1600000 psi		
F _{bE}	2019 psi	2019 psi	8077 psi	2712 psi		
Slenderness Ratio:	< 50 OK	< 50 OK	< 50 OK	< 50 OK		
R _g	19	19	9	16		
Bending:	< F'_b OK	< F'_b OK	< F'_b OK	< F'_b OK		
M = w L ² /8 + P e/12	317 ft-lbs	946 ft-lbs	1452 ft-lbs	176 ft-lbs		
f _b = M/S	503 psi	1502 psi	1152 psi	279 psi		
S	8 in ³	8 in ³	15 in ³	8 in ³		
Shear:	< F'_v OK	< F'_v OK	< F'_v OK	< F'_v OK		
V = w L/2	108 lbs	322 lbs	494 lbs	80 lbs		
f _v = 1.5 V/A	20 psi	59 psi	45 psi	15 psi		
A	8 in ²	8 in ²	17 in ²	8 in ²		
Compression:	< F'_c OK	< F'_c OK	< F'_c OK	< F'_c OK		
f _c = P/A	379 psi	6 psi	3 psi	443 psi		
Compression (perp.):	< F'_c OK	< F'_c OK	< F'_c OK	< F'_c OK		
f _{c-perp} = P/A	379 psi	6 psi	3 psi	443 psi		
Combined:	< 1.0 OK			< 1.0 OK		
(f _c /F _c)2 + (f _b /[F _b (1-(f _c /F _c E))]) =	0.80			0.35		
Deflection:	> 180 OK	> 180 OK	> 180 OK	> 180 OK		
D = 22.5 w L ⁴ /E' I =	0.24 in	0.71 in	0.54 in	0.07 in		
I	21 in ⁴	21 in ⁴	42 in ⁴	21 in ⁴		
SPAN /	595	199	260	1442		



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

Completed by: TDS
Review/Check: KKJ

Project Name: Glasby House
SRE Project #: 2023-4981
City and State: Valley County, Idaho

TALL WALL CALCULATIONS:

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

Description:	King Stud (10.5' Max Opening)	King Stud (5' Max Opening)	King Stud (3.5' Max Opening)	13.25' Tall Wall		
	Type:	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		
Grade:	No. 2	No. 2	No. 2	No. 2		
Nominal width, t =	(3) 2	(1) 2	(1) 2	(1) 2		
Actual width =	4.50 in	1.50 in	1.50 in	1.50 in		
Nominal depth, d =	8	8	8	8		
Actual depth =	7.25 in	7.25 in	7.25 in	7.25 in		
Span, L =	19.830 ft	16.000 ft	16.000 ft	13.250 ft		
w/o Plates	19.580 ft	15.750 ft	15.750 ft	13.000 ft		
Stud spacing, s =	73 in	40 in	31 in	16 in		
Lat. Pressure, w _{wind} =	13.78 psf	13.78 psf	13.78 psf	13.78 psf		
Axial load, P =	50 lbs	50 lbs	50 lbs	731 lbs		
Eccentricity, e =	0 in	0 in	0 in	0 in		
K _{CE} =	0.3	0.3	0.3	0.3		
c =	0.8	0.8	0.8	0.8		
w =	84.1 plf	46.2 plf	35.9 plf	18.4 plf		
F _b	900 psi	900 psi	900 psi	900 psi		
F _v	180 psi	180 psi	180 psi	180 psi		
F _{c-prll}	1,350 psi	1,350 psi	1,350 psi	1,350 psi		
F _{c-perp}	625 psi	625 psi	625 psi	625 psi		
C _d	1.60	1.60	1.60	1.60		
C _{F,Fb}	1.20	1.20	1.20	1.20		
C _{F,Fcprll}	1.05	1.05	1.05	1.05		
C _r	1.00	1.00	1.00	1.15		
C _p	0.19	0.29	0.29	0.40		
C _H	1.00	1.00	1.00	1.00		
C _b	1.00	1.00	1.00	1.00		
E	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		
Allowable Stress:						
F' _b = F _b C _d C _F C _r	1728 psi	1728 psi	1728 psi	1987 psi		
F' _v = F _v C _d C _H	288 psi	288 psi	288 psi	288 psi		
F' _c = F _c C _d C _F	2268 psi	2268 psi	2268 psi	2268 psi		
F' _{CE} = (K _{CE} E')/(l/d)2	457 psi	706 psi	706 psi	1037 psi		
F' _c = F _c C _d C _F C _p	436 psi	653 psi	653 psi	914 psi		
F' _{c-perp} = F _c C _b	625 psi	625 psi	625 psi	625 psi		
E'	1600000 psi	1600000 psi	1600000 psi	1600000 psi		
F _{bE}	8274 psi	1143 psi	1143 psi	1385 psi		
Slenderness Ratio:	< 50 OK	< 50 OK	< 50 OK	< 50 OK		
R _b	9	25	25	22		
Bending:	< F'_b OK	< F'_b OK	< F'_b OK	< F'_b OK		
M = w L ² /8 + P e/12	4032 ft-lbs	1433 ft-lbs	1113 ft-lbs	388 ft-lbs		
f _b = M/S	1227 psi	1309 psi	1016 psi	354 psi		
S	39 in ³	13 in ³	13 in ³	13 in ³		
Shear:	< F'_v OK	< F'_v OK	< F'_v OK	< F'_v OK		
V = w L/2	824 lbs	364 lbs	283 lbs	119 lbs		
f _v = 1.5 V/A	38 psi	50 psi	39 psi	16 psi		
A	33 in ²	11 in ²	11 in ²	11 in ²		
Compression:	< F'_c OK	< F'_c OK	< F'_c OK	< F'_c OK		
f _c = P/A	2 psi	5 psi	5 psi	67 psi		
Compression (perp.):	< F'_c OK	< F'_c OK	< F'_c OK	< F'_c OK		
f _{c-perp} = P/A	2 psi	5 psi	5 psi	67 psi		
Combined:				< 1.0 OK		
(f _c /F _c)2 + (f _b /[F _b (1-(f _c /F _c E))])				0.20		
Deflection:	> 180 OK	> 180 OK	> 180 OK	> 180 OK		
D = 22.5 w L ⁴ /E' I =	1.22 in	0.84 in	0.65 in	0.15 in		
I	143 in ⁴	48 in ⁴	48 in ⁴	48 in ⁴		
SPAN /	193	225	290	1007		



524 CLEVELAND BLVD. #230
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City and State: Valley County, Idaho

WOOD TALL WALL & KING STUD ALLOWABLE LOADS (plf):

Load Duration Factor: 1.6
Max Vert. Load: 50 lbs

Max Deflection: L/180

King Stud	Height						
	12'	14'	16'	18'	20'	22'	24'
(1) 2x4 Stud	12.8	NA	NA	NA	NA	NA	NA
(2) 2x4 Stud	25.6	NA	NA	NA	NA	NA	NA
(3) 2x4 Stud	38.4	NA	NA	NA	NA	NA	NA
(1) 2x6 DF #2	57.0	35.8	24.1	16.9	NA	NA	NA
(2) 2x6 DF #2	114.0	71.6	48.2	33.8	NA	NA	NA
(3) 2x6 DF #2	171.0	107.4	72.3	50.7	NA	NA	NA
(1) 2x8 DF #2	130.0	81.7	55.0	38.7	28.2	21.2	16.3
(2) 2x8 DF #2	260.0	163.4	110.0	77.4	56.4	42.4	32.6
(3) 2x8 DF #2	390.0	245.1	165.0	116.1	84.6	63.6	48.9
(1) 2x6 LSL	67.8	42.7	28.5	20.0	14.7	NA	NA
(2) 2x6 LSL	135.6	85.4	57.0	40.0	29.4	NA	NA
(3) 2x6 LSL	203.4	128.1	85.5	60.0	44.1	NA	NA
(1) 2x8 LSL	155.0	98.3	65.5	46.0	33.5	25.2	19.5
(2) 2x8 LSL	310.0	196.6	131.0	92.0	67.0	50.4	39.0
(3) 2x8 LSL	465.0	294.9	196.5	138.0	100.5	75.6	58.5

*NOTE 1: this table combined with trimmer table to determine combined stress on each common wall stud.
*NOTE 2: allowable loads are interpolated at heights not in 2' increments.

WOOD TRIMMER ALLOWABLE LOADS (kips):

Load Duration Factor: 1.0
Eccentricity: 0"

Weak Axis Braced: Y

Trimmer Type	Height						
	8'	10'	12'	14'	16'	18'	20'
(1) 2x4 Stud	2.4	1.7	1.2	NA	NA	NA	NA
(2) 2x4 Stud	4.9	3.4	2.4	NA	NA	NA	NA
(3) 2x4 Stud	7.1	5.0	3.6	NA	NA	NA	NA
(1) 2x6 DF #2	5.1	5.1	5.0	3.8	3.0	NA	NA
(2) 2x6 DF #2	10.3	10.3	10.1	7.7	6.0	NA	NA
(3) 2x6 DF #2	15.4	15.4	15.1	11.6	9.1	NA	NA
(1) 2x8 DF #2	6.7	6.7	6.7	6.7	6.4	5.3	4.4
(2) 2x8 DF #2	13.5	13.5	13.5	13.5	12.9	10.6	8.8
(3) 2x8 DF #2	20.3	20.3	20.3	20.3	19.4	15.9	13.2

*NOTE 1: this table combined with king stud table to determine combined stress on each common wall stud.
*NOTE 2: allowable loads are interpolated at heights not in 2' increments.



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UNBRACED WOOD COLUMN ALLOWABLE LOADS (kips)

Column Type	Unbraced Height							Compression Perp. To Grain
	8'	10'	12'	14'	16'	18'	20'	
(2) 2x4 DF #2	4.50	3.00	2.10	SR	SR	SR	SR	6.50
(3) 2x4 DF #2	8.80	5.90	4.20	3.20	SR	SR	SR	9.80
4x4 DF #2	7.00	4.60	3.30	2.40	SR	SR	SR	7.60
(2) 2x6 DF #2	7.20	4.70	3.30	SR	SR	SR	SR	10.30
(3) 2x6 DF #2	20.40	14.70	10.70	8.00	6.20	4.90	SR	15.40
6x6 DF #2	18.00	15.70	13.00	10.50	8.50	6.90	5.70	18.90
6x8 DF #2	24.50	21.40	17.80	14.30	11.60	9.40	7.80	25.70
6x10 DF #2	31.40	27.10	22.50	18.20	14.70	12.00	9.90	32.60
8x8 DF #2	36.60	34.60	31.90	28.50	24.90	21.30	18.20	35.20
8x10 DF #2	46.30	43.90	40.40	36.20	31.50	27.00	23.10	44.50
8x12 DF #2	56.20	53.10	49.00	43.80	38.10	32.70	28.00	53.40
10x10 DF #2	60.50	58.80	56.50	53.40	49.60	45.20	40.50	56.40



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 City and State: Valley County, Idaho

Individual Footing Design

Program: Continuous Footing

Soil Bearing Pressure: 1500psf

<i>Roof</i>			
Roof Dead	(17psf)	(15.1ft)	= 257plf
Snow Live	(120psf)	(15.1ft)	= 1815plf

<i>Upper Floor</i>			
Floor Dead	(12psf)	(14.0ft)	= 168plf
Floor Live	(40psf)	(14.0ft)	= 560plf

<i>Main Floor</i>			
Floor Dead	(12psf)	(7.5ft)	= 90plf
Floor Live	(40psf)	(7.5ft)	= 300plf

<i>Deck Cover</i>			
Roof Dead	(17psf)	(.0ft)	= plf
Snow Live	(120psf)	(.0ft)	= plf

<i>Deck Floor</i>			
Floor Dead	(12psf)	(.0ft)	= plf
Snow Live	(120psf)	(.0ft)	= plf

<i>Misc</i>			
Wall Load:	(12psf)	(12.0ft)	= 144plf
Conc Stem:	(145pcf)	(2 x .5ft)	= 145plf
Misc Load:	(.0ft)	(.0ft) (.0ft)	= plf

2810plf

Use Footing Width:	30	x	10	in
W/	(3)	#4	Cont.	



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Project Name: Glasby House
 SRE Project #: 2023-4981
 City and State: Valley County, Idaho

Individual Footing Design

Program: Continuous Footing

Soil Bearing Pressure: 1500psf

<i>Roof</i>			
Roof Dead	(17psf)	(4.0ft)	= 68plf
Snow Live	(120psf)	(4.0ft)	= 480plf

<i>Upper Floor</i>			
Floor Dead	(12psf)	(1.0ft)	= 12plf
Floor Live	(40psf)	(1.0ft)	= 40plf

<i>Main Floor</i>			
Floor Dead	(12psf)	(1.0ft)	= 12plf
Floor Live	(40psf)	(1.0ft)	= 40plf

<i>Deck Cover</i>			
Roof Dead	(17psf)	(.0ft)	= plf
Snow Live	(120psf)	(.0ft)	= plf

<i>Deck Floor</i>			
Floor Dead	(12psf)	(2.5ft)	= 30plf
Snow Live	(120psf)	(2.5ft)	= 300plf

<i>Misc</i>			
Wall Load:	(12psf)	(20.0ft)	= 240plf
Conc Stem:	(145pcf)	(2 x .5ft)	= 145plf
Misc Load:	(.0ft)	(.0ft) (.0ft)	= plf

1287plf

Use Footing Width:	12	x	8	in
W/		(2)	#4	Cont.

Soil Bearing Pressure

Axial Load

2132 pounds

Design Soil Bearing Pressure

1500 psf

Skin Friction (Soil to Concrete)

250 psf

Height of Pole Embedment

0 inches

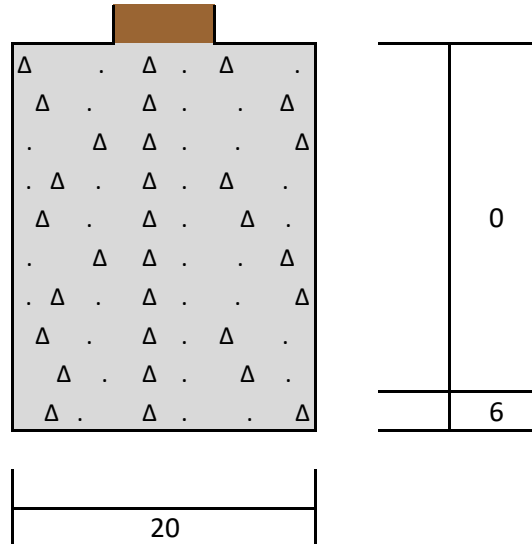
Diameter of Concrete Footing

20 inches

Allowable Axial Load

3272 pounds

3272 > 2132
OK





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PAD FOOTING DESIGN CAPACITIES:

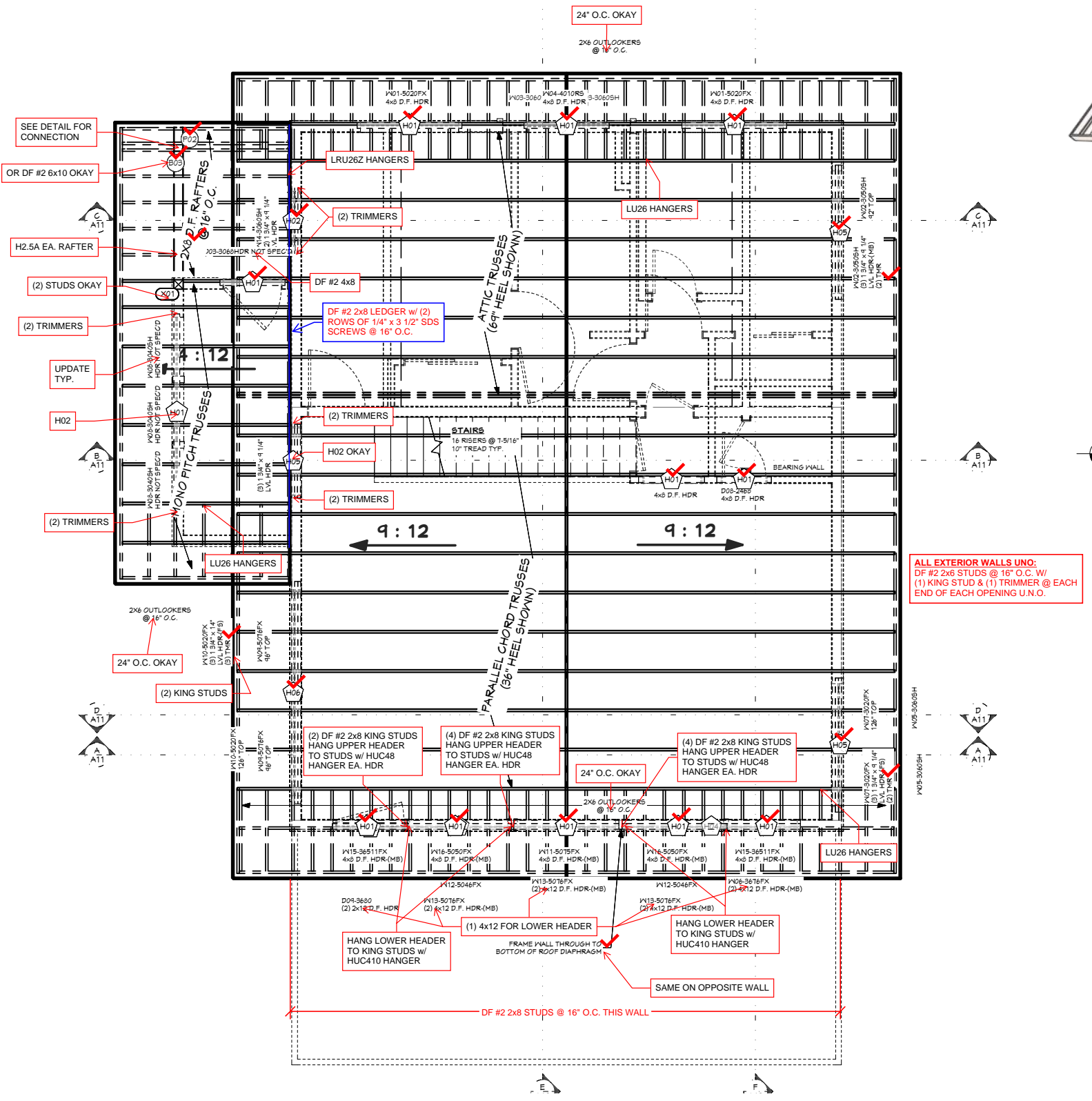
Soil Bearing (1500 psf)							
Dimensions (Inches)			Capacity	# of Bars	Min. Col. Size		
72	x	72	x	12	47,500 lbs	10	3.5 sq.
66	x	66	x	12	39,750 lbs	8	3.5 sq.
60	x	60	x	10	33,450 lbs	6	3.5 sq.
54	x	54	x	10	27,000 lbs	5	3.5 sq.
48	x	48	x	8	21,500 lbs	4	3.5 sq.
42	x	42	x	8	16,500 lbs	4	3.5 sq.
36	x	36	x	8	12,000 lbs	4	3.5 sq.
30	x	30	x	8	8,350 lbs	3	3.5 sq.
24	x	24	x	8	5,300 lbs	2	3.5 sq.
18	x	18	x	8	2,900 lbs	2	3.5 sq.

Bars to be 3 1/2" from bottom of pad. Evenly space in both directions.

CONT. FOOTING DESIGN CAPACITIES:

Soil Bearing (1500 psf)				
Dimensions (Inches)			Capacity	# of Bars
60	x	10	6,850 plf	6
54	x	10	6,200 plf	5
48	x	10	5,500 plf	4
42	x	10	4,750 plf	4
36	x	10	4,000 plf	3
30	x	10	3,400 plf	3
24	x	8	2,800 plf	2
18	x	8	2,100 plf	2
16	x	8	1,850 plf	2
12	x	8	1,350 plf	2

Bars to be 3 1/2" from bottom of footing.



SEE DETAIL FOR CONNECTION

OR DF #2 6x10 OKAY

H2.5A EA. RAFTER

(2) STUDS OKAY

(2) TRIMMERS

UPDATE TYP.

H02

(2) TRIMMERS

2x6 OUTLOOKERS @ 16" O.C.

24" O.C. OKAY

(2) KING STUDS

(2) DF #2 2x8 KING STUDS HANG UPPER HEADER TO STUDS w/ HUC48 HANGER EA. HDR

(4) DF #2 2x8 KING STUDS HANG UPPER HEADER TO STUDS w/ HUC48 HANGER EA. HDR

(4) DF #2 2x8 KING STUDS HANG UPPER HEADER TO STUDS w/ HUC48 HANGER EA. HDR

24" O.C. OKAY

HANG LOWER HEADER TO KING STUDS w/ HUC410 HANGER

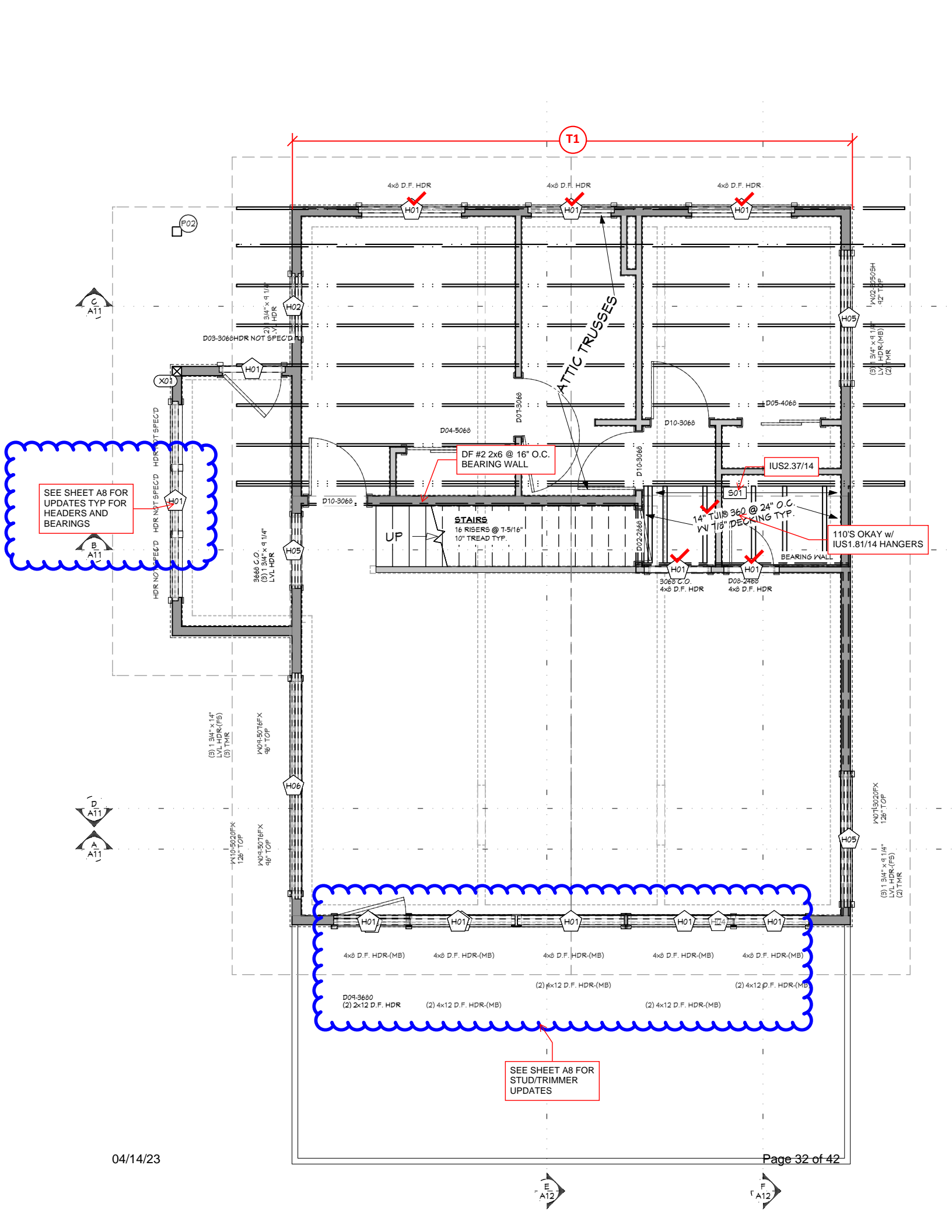
(1) 4x12 FOR LOWER HEADER

HANG LOWER HEADER TO KING STUDS w/ HUC410 HANGER

SAME ON OPPOSITE WALL

DF #2 2x8 STUPS @ 16" O.C. THIS WALL

ALL EXTERIOR WALLS UNO:
DF #2 2x6 STUDS @ 16" O.C. w/
(1) KING STUD & (1) TRIMMER @ EACH
END OF EACH OPENING U.N.O.



SEE SHEET A8 FOR UPDATES TYP FOR HEADERS AND BEARINGS

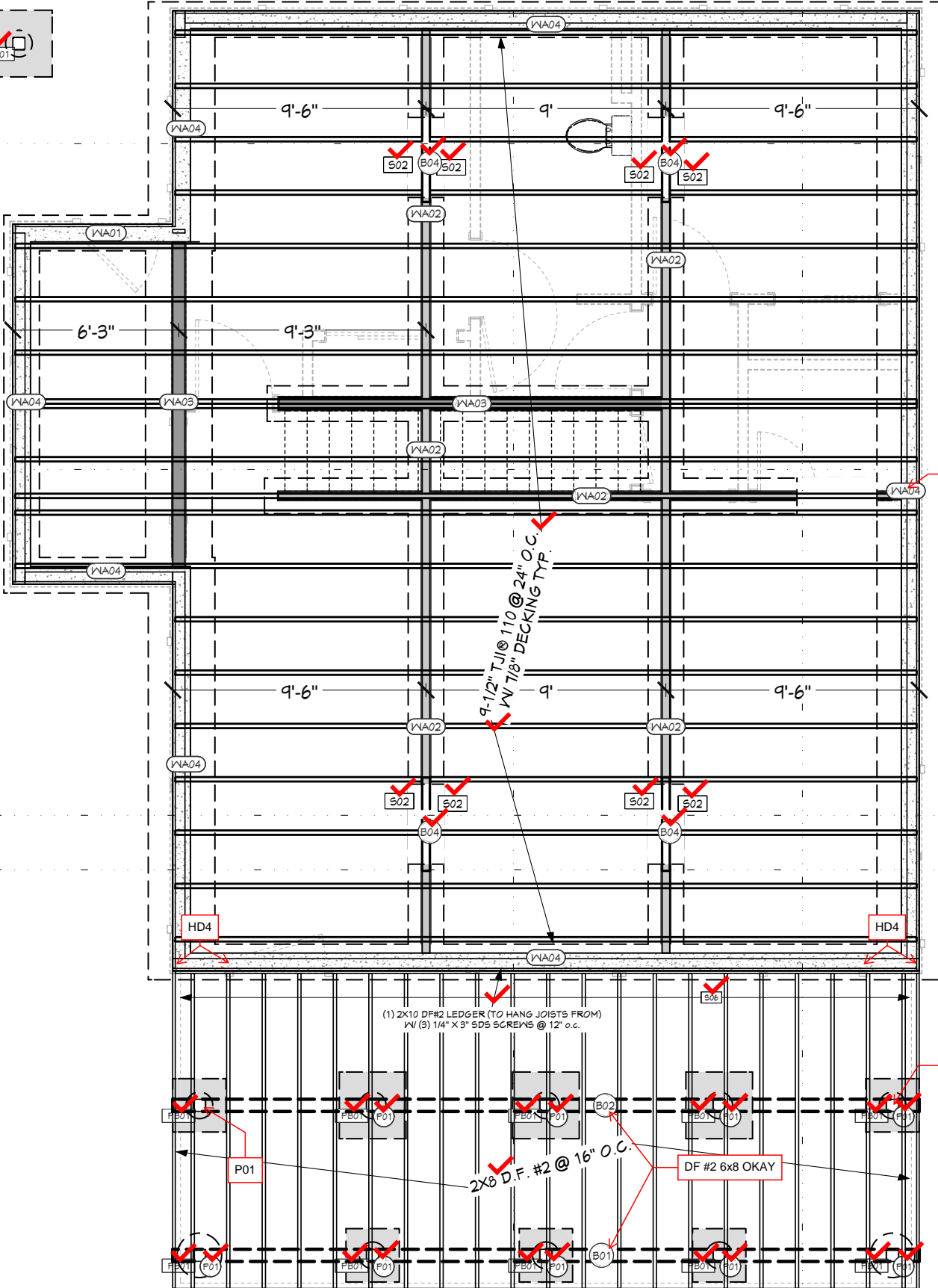
DF #2 2x6 @ 16" O.C. BEARING WALL

STAIRS
16 RISERS @ 7-5/16"
10" TREAD TYP.

14" TJI'S 360 @ 24" O.C.
w/ 1/8" DECKING TYP.

110'S OKAY w/
IUS1.81/14 HANGERS

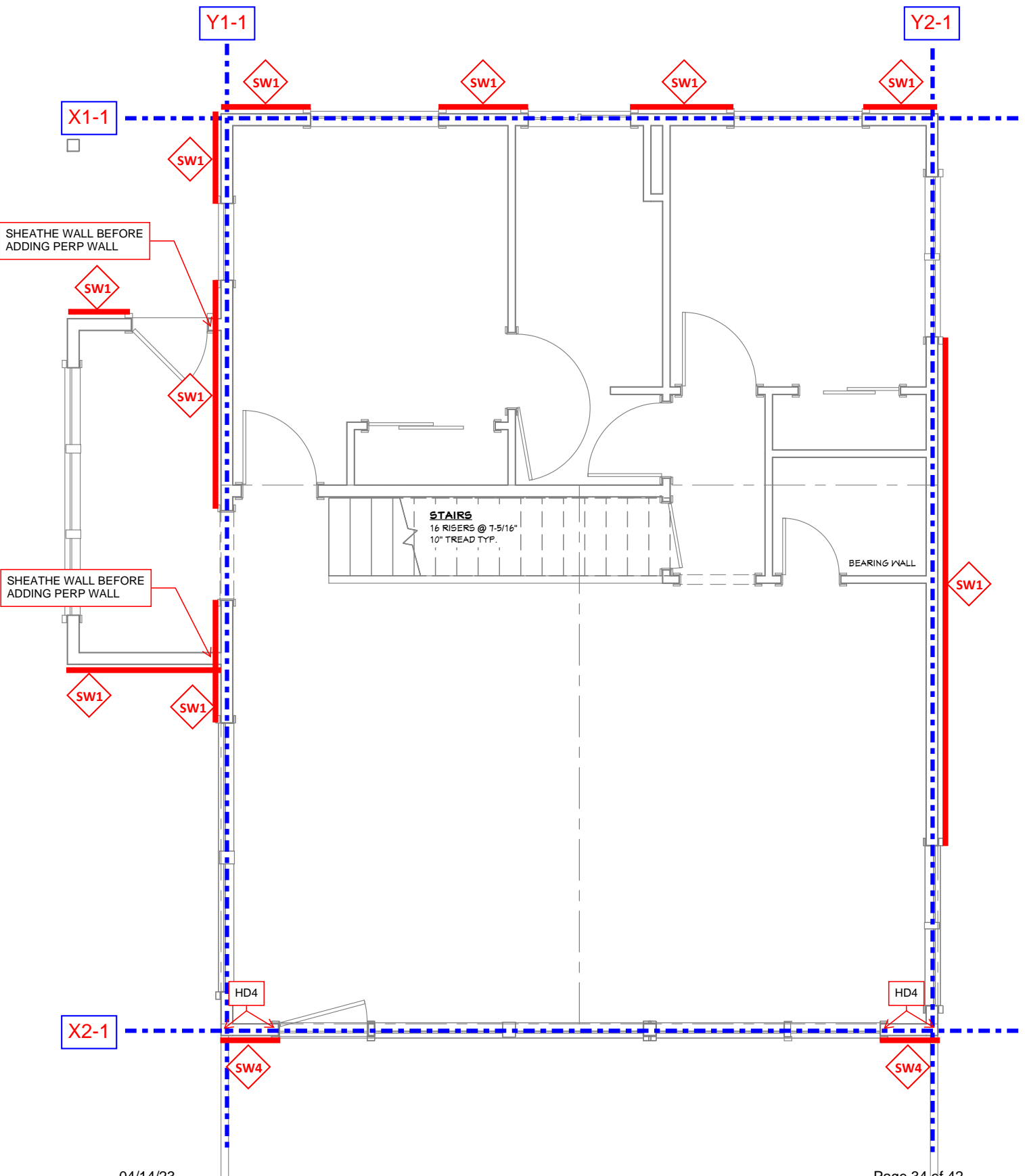
SEE SHEET A8 FOR STUD/TRIMMER UPDATES

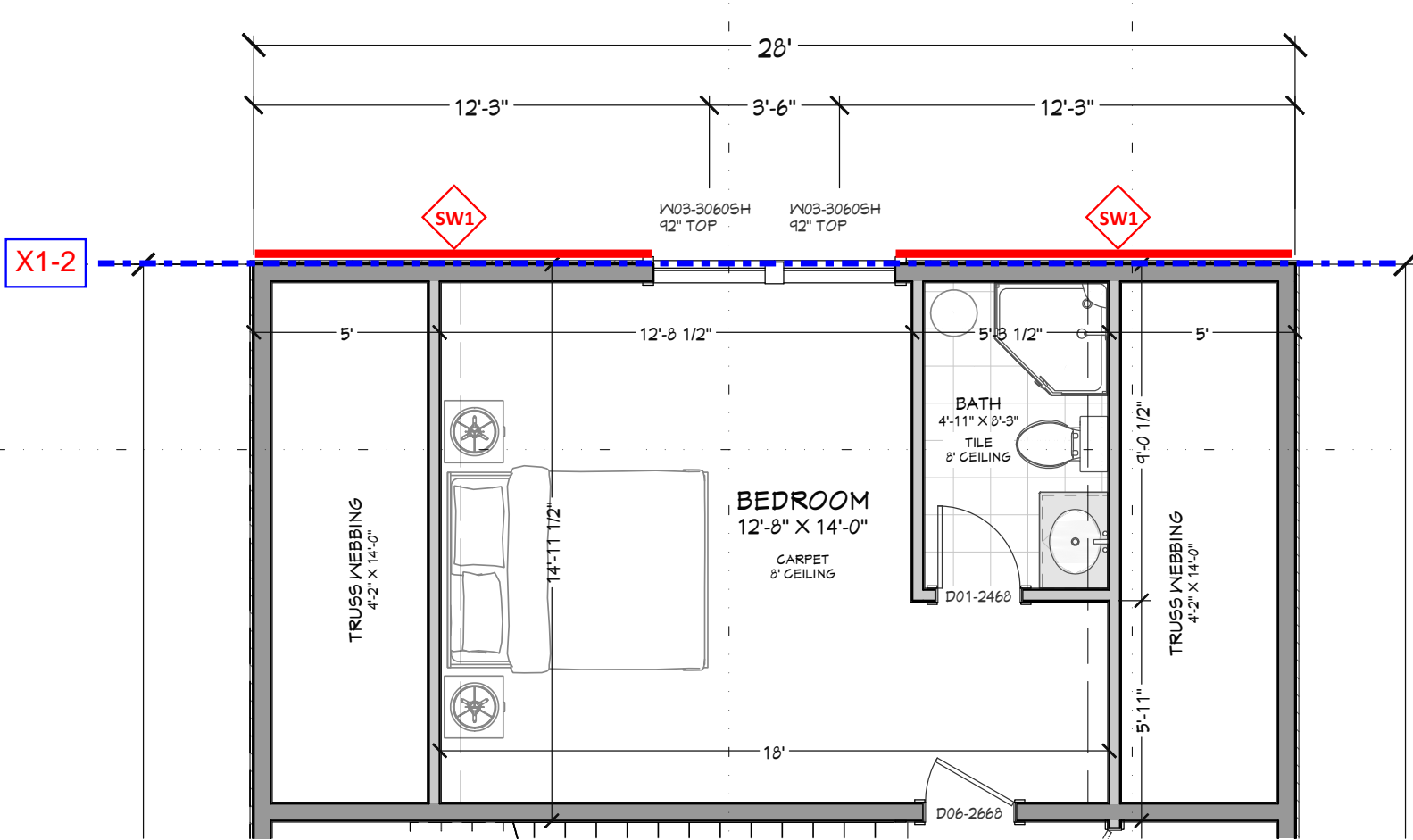


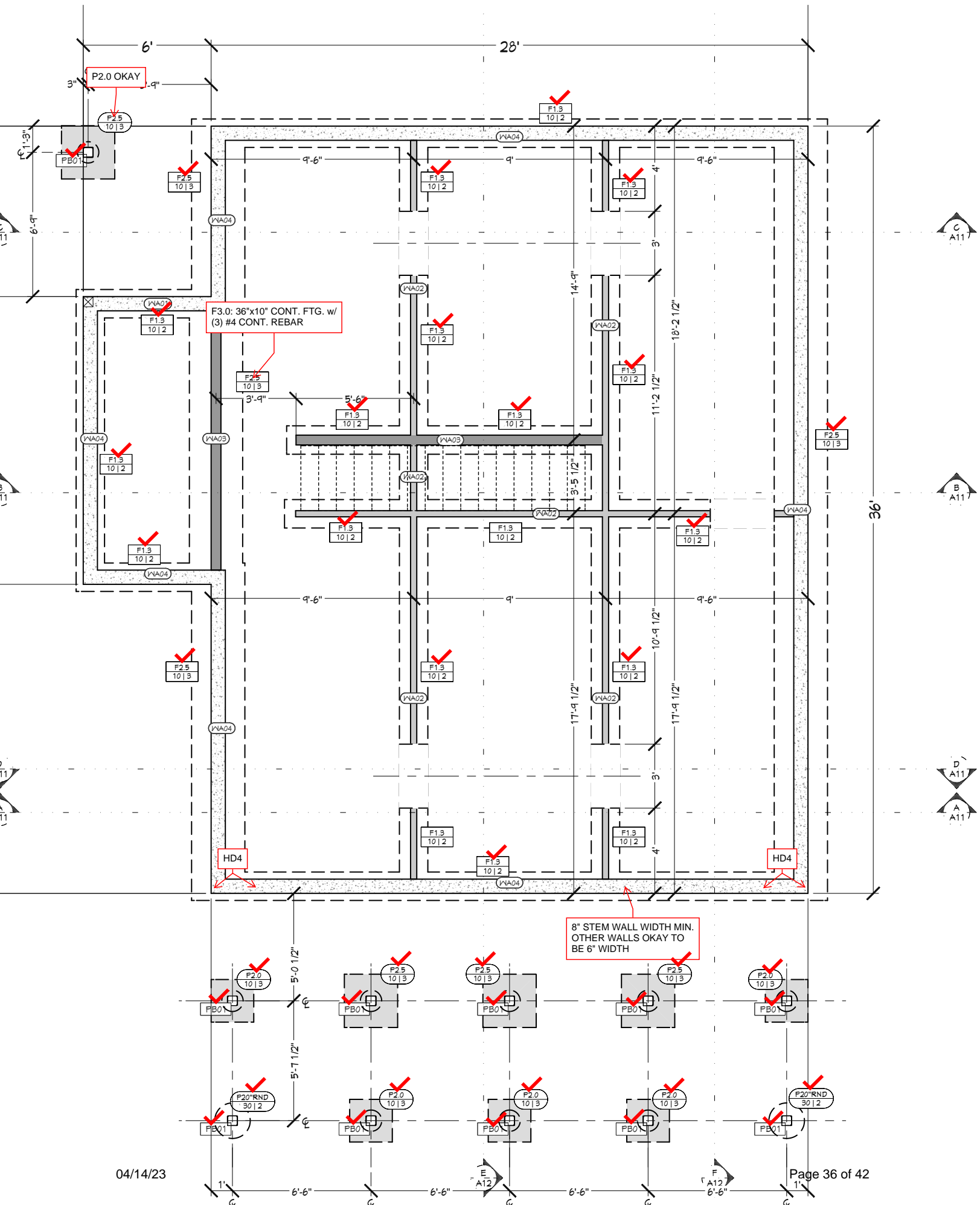
NO SCHEDULE FOR
WAO1-WAO4?

HL55PC ANGLES PER
DETAIL TYP @ DECK



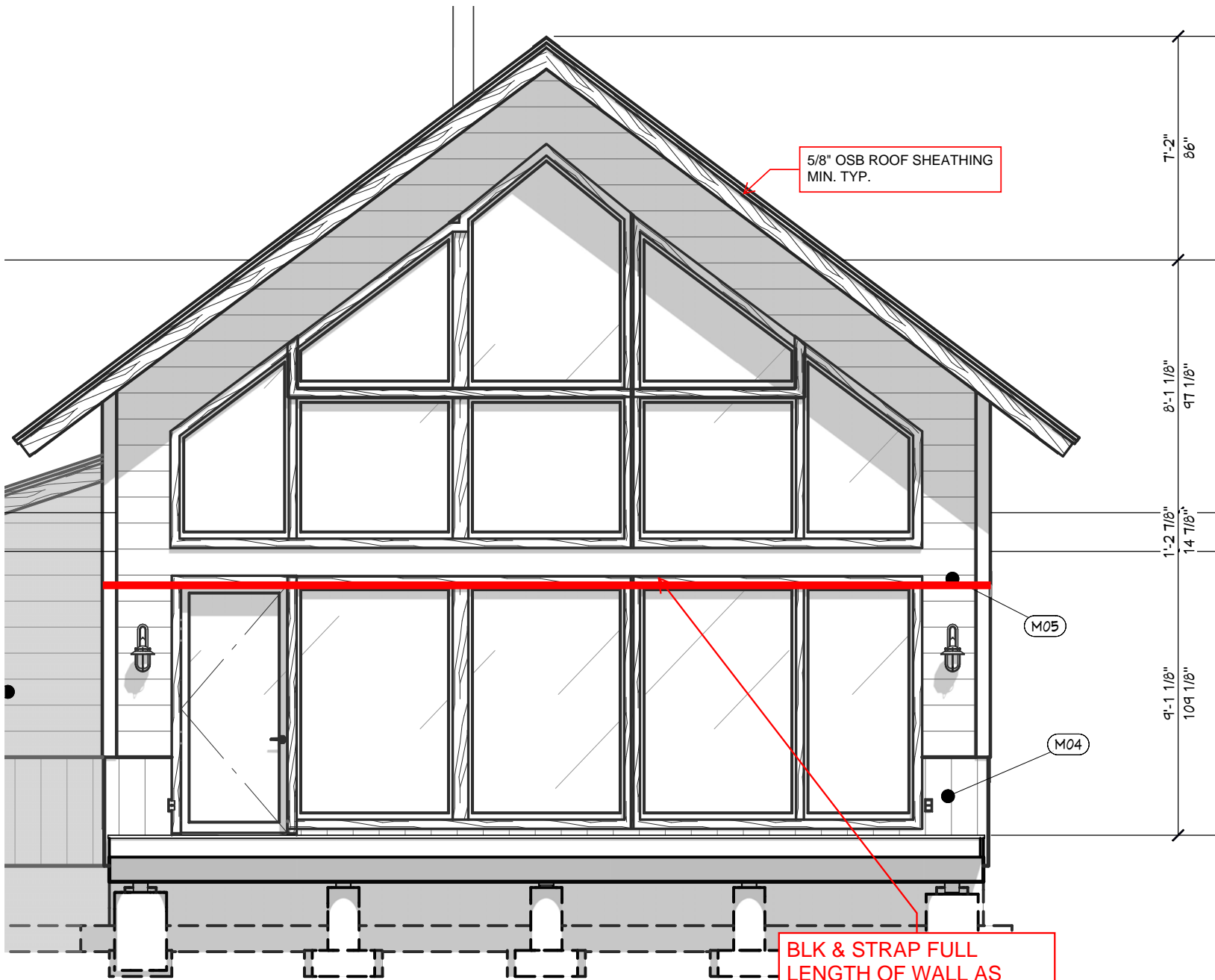






F3.0: 36"x10" CONT. FTG. w/ (3) #4 CONT. REBAR

8" STEM WALL WIDTH MIN. OTHER WALLS OKAY TO BE 6" WIDTH



5/8" OSB ROOF SHEATHING
MIN. TYP.

7'-2"
86"

8'-1 1/8"
97 1/8"

1'-2 7/8"
14 7/8"

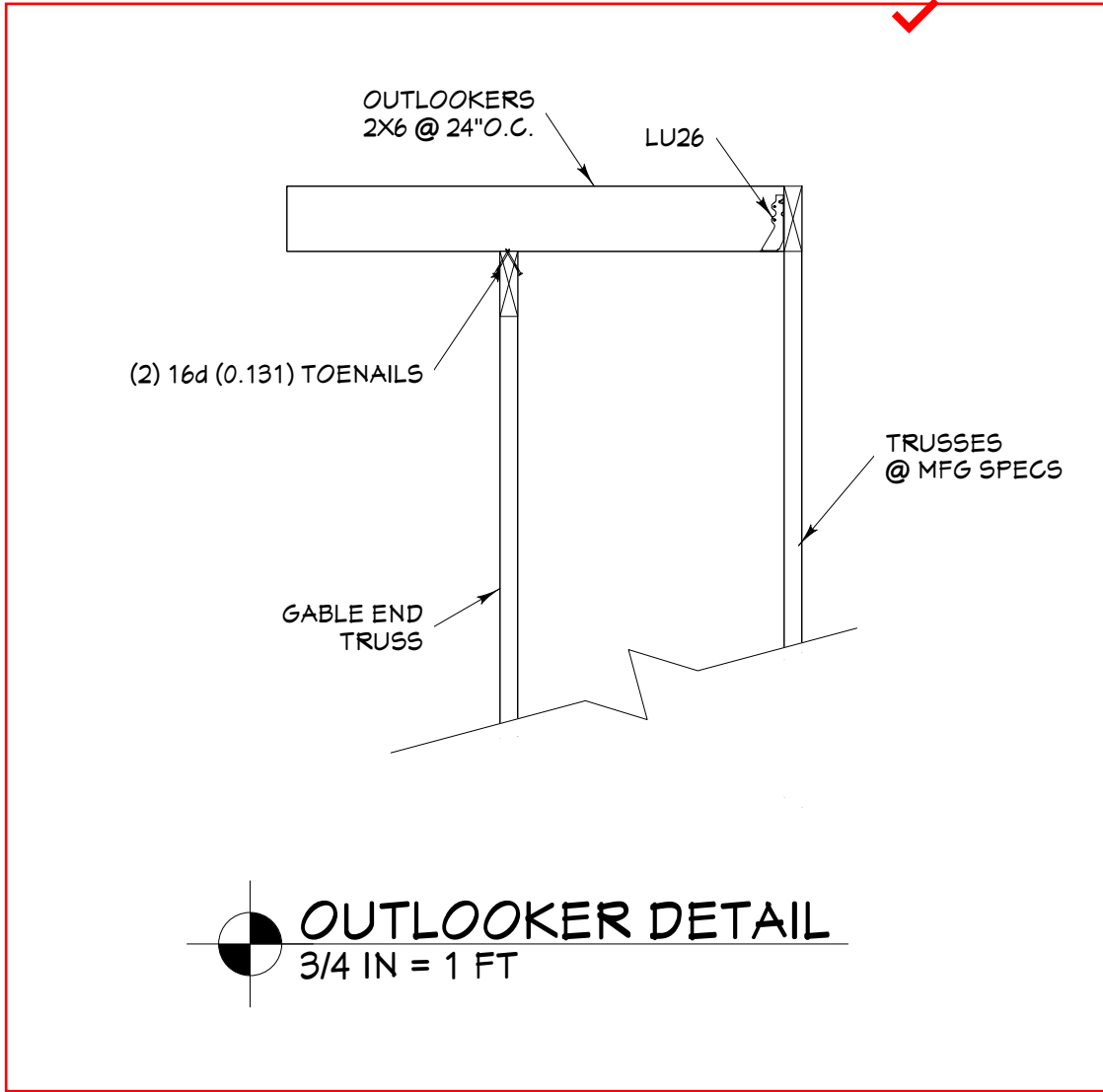
9'-1 1/8"
109 1/8"

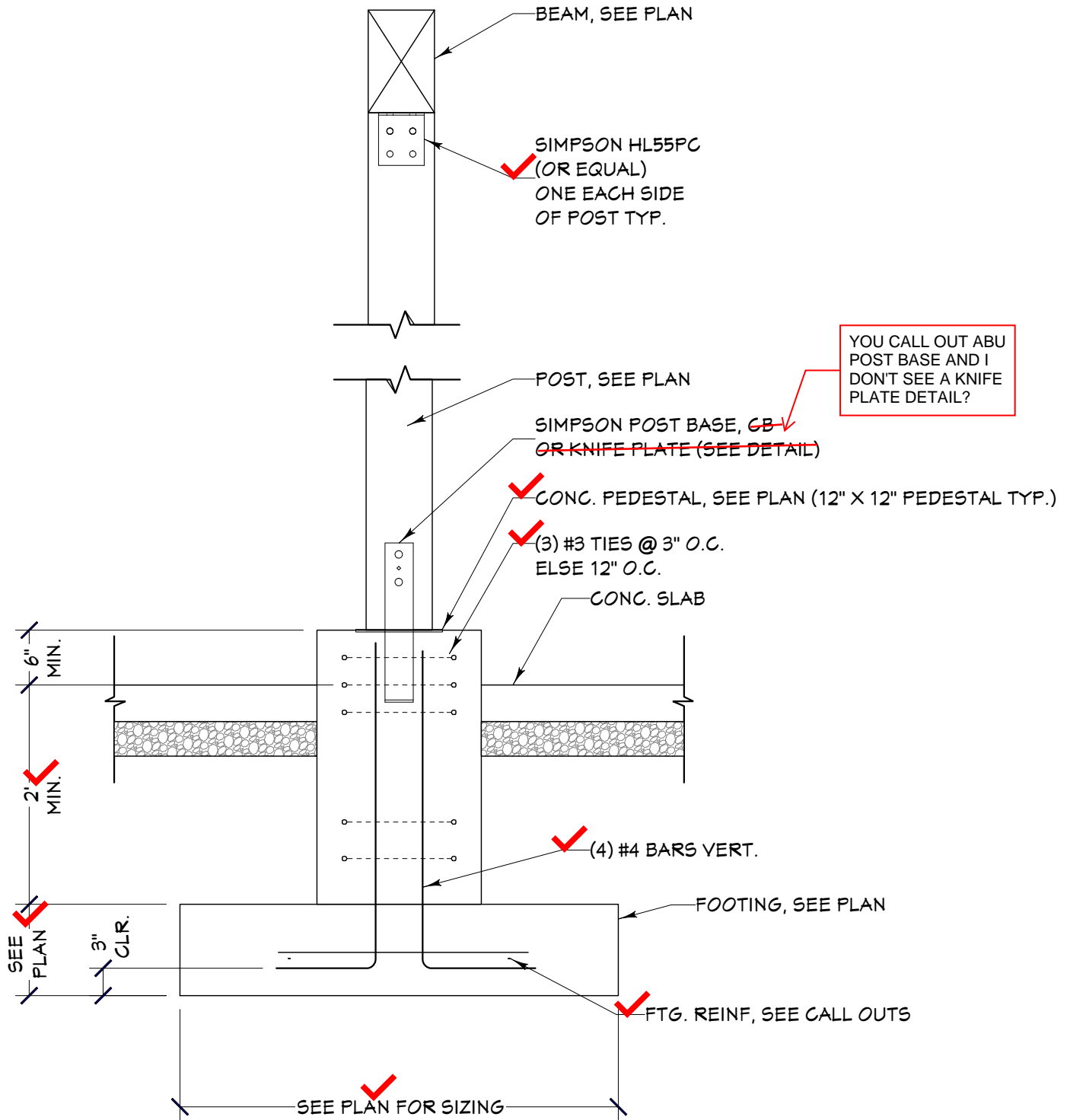
M05

M04

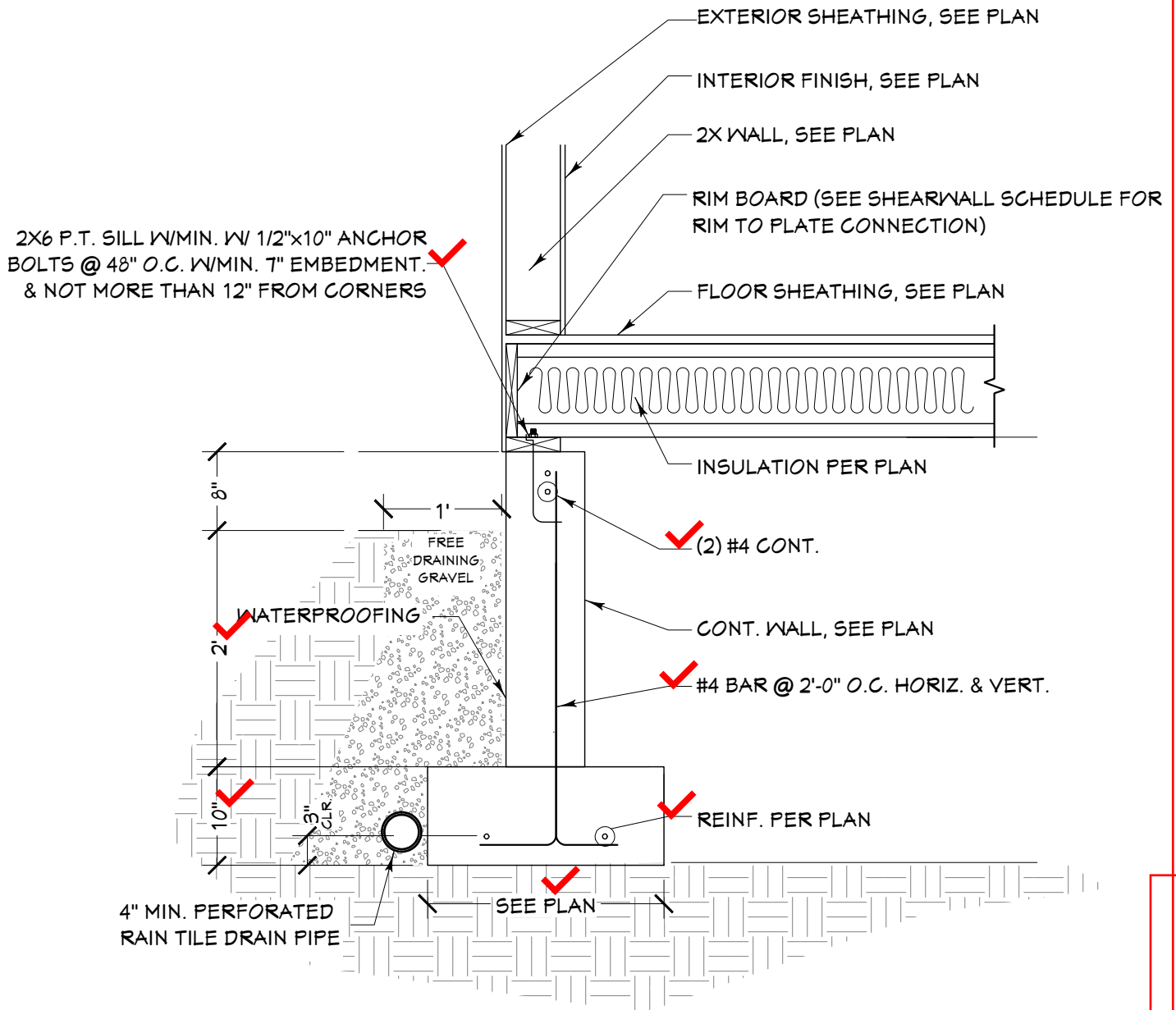
BLK & STRAP FULL
LENGTH OF WALL AS
SHOWN W/ DOUBLE 2X
BLKG BETWEEN STUDS &
CMSTC16 OVER
SHEATHING. (NO BLKG
REQ @ HDRS)

FT FRONT ELEVATIO
1/4 IN = 1 FT





○ POST FOUNDATION DETAIL
 3/4 IN = 1 FT



○ FOUNDATION @ CRAWL SPACE DETAIL
 3/4 IN = 1 FT



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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	YES	(2) 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)

HOLDOWN SCHEDULE:

MARK	STRAP TYPE	STRAP FASTENERS	# OF STUDS	ANCHOR BOLT	# OF STUDS	FASTENERS
HD4	-			HDU8-SDS2.5 W/ SB7/8x24 OR PAB7 @ INT. PONY WALLS	3	(20) 1/4"x2-1/2" SDS

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
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CALLOUT	PAD FOOTING SIZE	PAD FOOTING SCHEDULE REINFORCEMENT	QTY
	20" DIA X 30"	(2) #4 REBAR E.W.	2
	30" X 30" X 10"	(3) #4 REBAR E.W.	4
	24" X 24" X 10"	(3) #4 REBAR E.W.	5

(2) OKAY



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

Completed by: TDS
Review/Check: KKJ

Project Name: Glasby House
SRE Project #: 2023-4981
City and State: Valley County, Idaho

HANGER SCHEDULE

CALLOUT	MODEL	TOP NAILS	SEAT LG.	MEMBER NAILS	FACE NAILS
S01	IUS1.81/14	N/A	2.00"	2-STRONG-GRIP	12-10DX1.5
S02	IUS1.81/9.5	N/A	2.00"	2-STRONG-GRIP	(8) 0.148 X 3
S06	LUS28	N/A	1.75"	3-10D	6-10DX1.5

HEADER SCHEDULE

NO.	TYPE
H01	(1) 4X8 D.F.
H02	(2) 1 3/4 X 9 1/4 LVL
H03	(2) 2X12 D.F.
H04	(2) 4X12 D.F.
H05	(3) 1 3/4 X 9 1/4 LVL
H06	(3) 1 3/4 X 14 LVL

POST SCHEDULE

NO.	QTY	FLR.	NOTES
P01	9	0	6X6 D.F. #2
P02	1	1	6X6 D.F. #2

BEAM SCHEDULE

NO.	FLR.	PLY(S)	NOTES	CTR. LG +/-	MIN BRG	T.O. BEAM	B.O. BEAM	CALC #
B01	0	1	(B-01) 6X10 D.F. #2	28'		-0'-8 3/8"	-1'-5 7/8"	1
B02	0	1	(B-02) 6X10 D.F. #2	28'		-0'-8 3/8"	-1'-5 7/8"	2
B03	1	1	(B-03) 6X12 D.F. #2	8'-2 3/4"		9'-5 3/8"	8'-5 7/8"	3
B04	0	4	(B-04C5) 4X10 D.F. #2 (CRAWL SPACE HDRS)	3'-6"		-0'-0 3/4"	-0'-10"	4C5

BEARING SCHEDULE

NO.	BEARING AREA (X)	COMMENTS
X01	5 1/2" X 5 1/2"	(4) STUDS MIN.

CONTINUOUS FOOTING SCHEDULE (ALL FOOTINGS "F1.3" UNO)

CALLOUT	FOOTING SIZE	REINFORCEMENT
F1.3 10 2	16" X 10"	(2) #4 CONT. REBAR
F2.5 10 3	30" X 10"	(3) #4 CONT. REBAR

POST BASE SCHEDULE

NUMBER	LABEL	QTY
PB01	ABU66Z	11