Structural Calculations for Permit Re-Submittal:

Mercer Island Residence

5236 W Mercer Way

Mercer Island, WA

Client:	N5 Architecture
Date:	January 26, 2026
Project No:	0031-2025-06

FRANK CO
structural engineering

4742 42nd Ave SW #297 | Seattle, WA 98116 | 206.579.8160 | liz@frankcompany.com

Seismic Design Loads (ASCE 7-16)

for a Wood Framed Structure

RISK CAT.	II	Table 1.5-1			
IMP. FACTOR	1	Table 1.5-2			
SITE CLASS	c	Table 20.3-1	SEISMIC		
R =	6.5	Table 12.2-1	DESIGN CATEGORY	D	11.6-1 & 11.6-2

S_s =	1.45			
S_1 =	0.50			
F_a =	1.20	Table 11.4-1		
F_v =	1.50	Table 11.4-2	Seismic Dead Load:	15 psf Roof
S_{DS}=	1.16			10 psf Floor
S_{D1}=	0.50			10 psf Wall
				5 psf PV/Decking
Cs_{ULT}=	0.178	Eqn. 12.8-2	W_{roof}=12 + 10/2 + 5= 22 psf	
Cs_{ASD}=	0.125		W_{floor}=10 + 10= 20 psf	

Vertical Design Loads

Criteria

IBC 2021

Dead Loads

Roof (Composit)	2.5	psf	Flooring	1	psf
1/2" Ply	1.5	psf	3/4" Ply	2.3	psf
Rafter/Truss	2	psf	Joist	2.6	psf
Insulation	1	psf	5/8" GWB	3.1	psf
5/8" GWB	3.1	psf	Misc. Mech	1	psf
Misc./Mech.	1.9	psf			psf
	12	psf		10	
Use	12	psf	Use	10	psf

Live Loads

Snow (roof)	25	psf
floor	40	psf
decks	60	psf

Soil Bearing

	3000	psf

Project:	5236 W Mercer	Date:	1/22/2026
		Project #:	0031-2025-06
		Design:	EAF
		Sheet:	Criteria 1

Wind Design Loads (ASCE 7-16)

Chapter 27 Part 1

Risk Cat	II		Table 1.5-1			
Exposure	c			Roof Angle =	23	degrees
V=	110	mph	Fig 26.5-1	Ground to top of roof	27	ft
K_d=	0.85		Table 26.6-1	Bottom of roof to top of roof	7	ft
I=	1		Table 1.5-2	(mean roof height) h=	23.5	ft
G=	0.85		26.9.1			

Topography from Website

K_{zt}= 1.60

Pressure Coefficients from Figure 27.4-1:

Bldg Face	C_p
Windward Wall	0.8
Leeward Wall	-0.5
Windward Roof	0.3
Leeward Roof	-0.6

*Note= Cp values are conservative worst case values

Pressures:

Ht	K_z	q_z	$P_{ww\ walls}$	$P_{lwwalls}$	**P_{walls} (psf)**	
0-15	0.85	35.81	24.35	16.83	**41.18**	24.71
15-20	0.9	37.91	25.78	16.83	**42.61**	25.57
20-25	0.94	39.60	26.93	16.83	**43.76**	26.25
25-30	0.98	41.28	28.07	16.83	**44.90**	26.94
30-40	1.04	43.81	29.79	16.83	**46.62**	27.97

$P_{ww\ roof}$	$P_{lw\ roof}$	**P_{roof} (psf)**
10.10	20.20	**30.29**

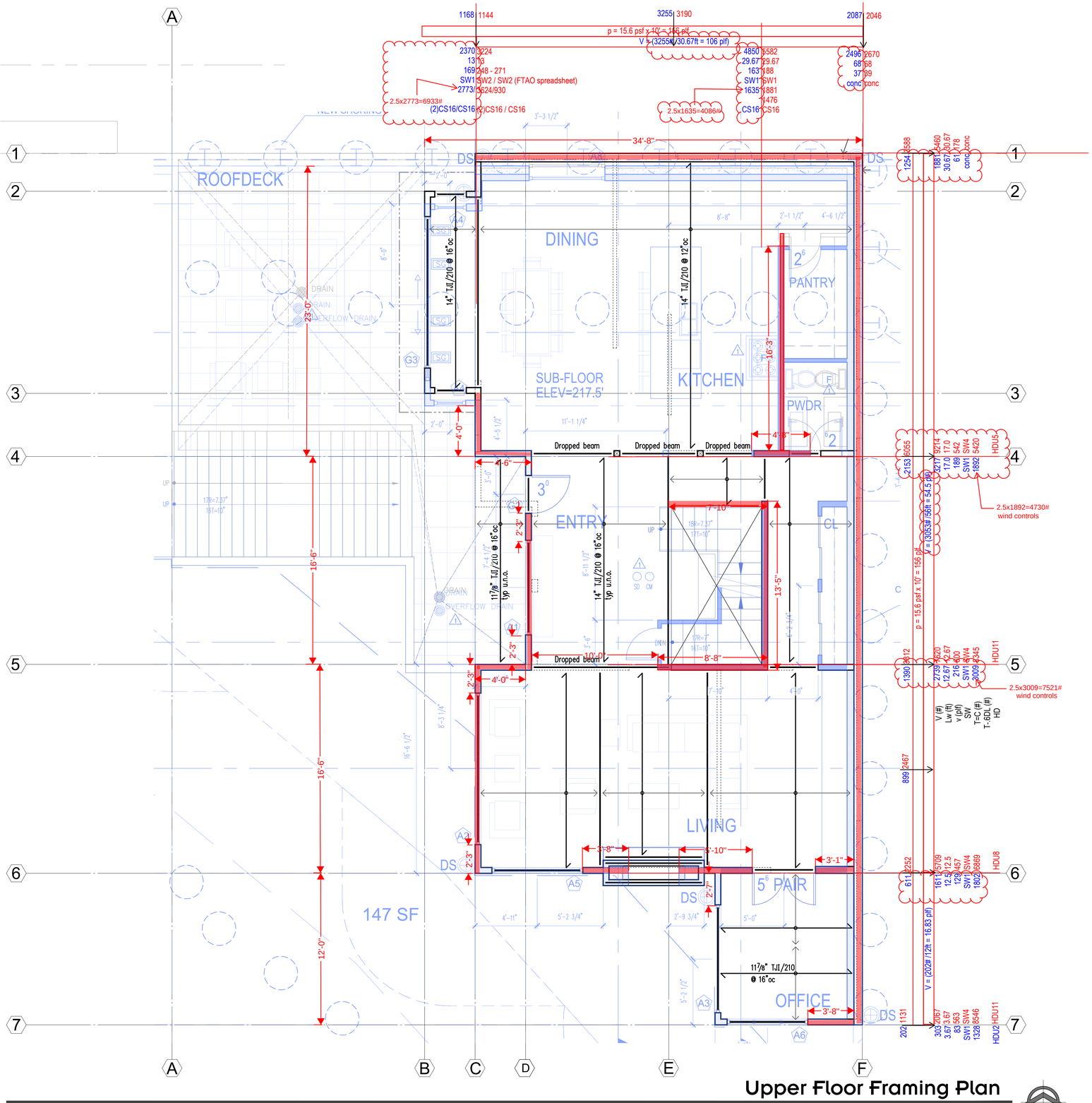
Project: 5236 W Mercer

Date: 1/22/2026
Project #: 0031-2025-06
Design: EAF
Sheet: Criteria 2

WOOD SEISMIC

ROOF MASS	22 PSF	Cs	0.125 (allowable)	Sds	1.16		
FLOOR MASS	20 PSF	V	9.8 (kips)	I	1.0		

BUILDING MASSES					VERTICAL DISTRIBUTION			DIAPHRAGM FORCES					
DIAPH (level)	AREA (ft2)	w (psf)	W (kips)	h (ft)	W x h (kip-ft)	W x h / (Σ W x h) % V	Fp (kips)	Σ Fi (kips)	Σ wi (kips)	wpx (kips)	Fpx (kips)	min (kips)	Fx (kips)
ROOF	1860	22	41	20	818.4	66.7%	6.510	6.5	41	41	6.5	6.8	6.8
UPPER	1860	20	37	11	409.2	33.3%	3.255	9.8	78	37	4.7	6.2	6.2
			78.12		1227.6	100%	9.765						



Upper Floor Framing Plan

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

FRANK CO
structural engineering
4742 42nd ave. sw, #297
seattle, wa 98116
206.579.8160

Project:

Mercer Island Residence

5236 W Mercer Way
Mercer Island, WA

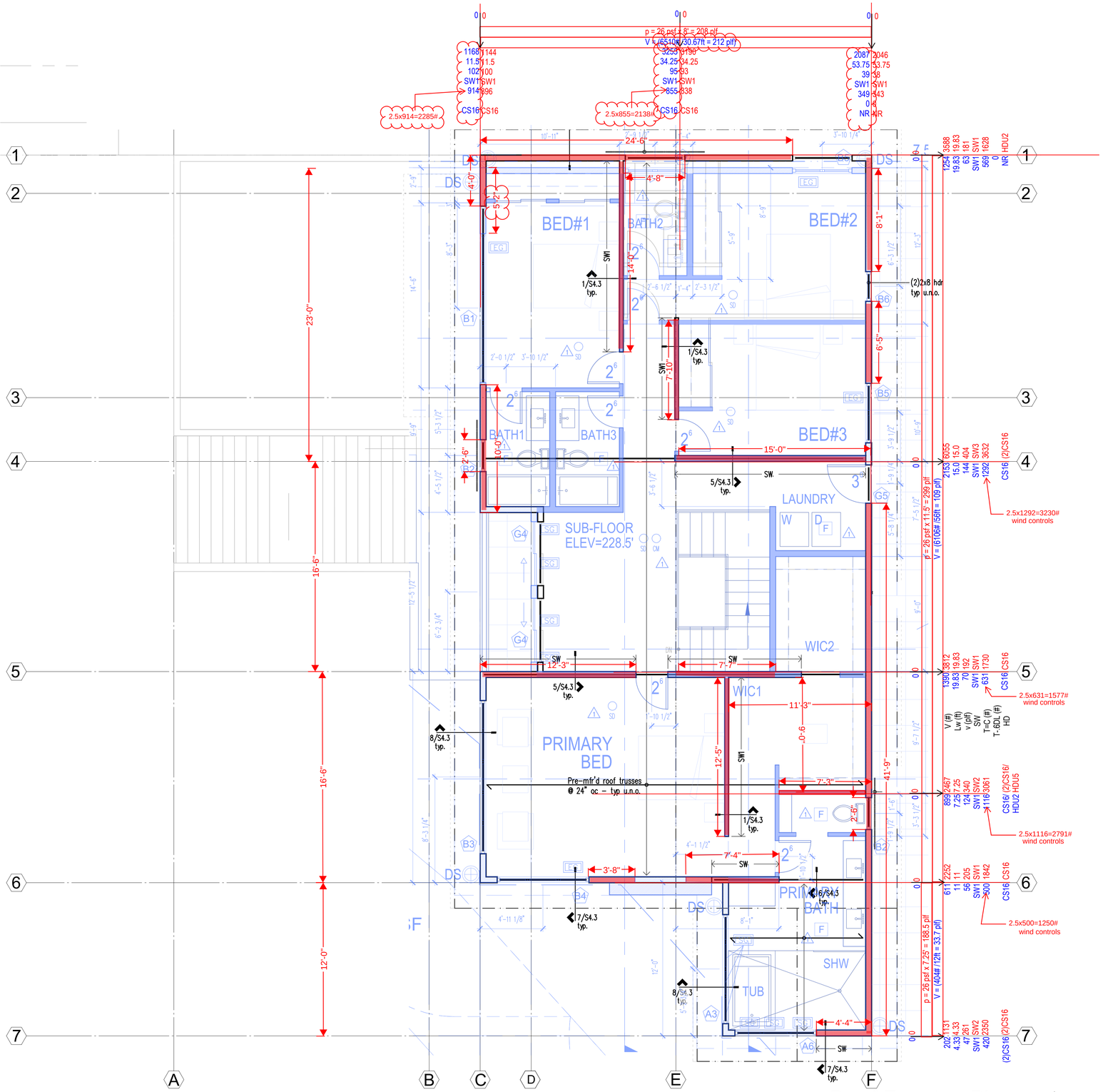
N5
4200 Stone Way N
Seattle, Washington 98103

Frank Co. Project No.: 0031-2025-06
Design: EAF
Drawn: JAS
Approved: EAF
Issue: Permit
Date: 09-22-2025
Revisions:

For Building Department use:

Sheet Contents: Upper Floor Framing Plan

Scale (u.n.o.): 1/4"=1'-0"
Sheet No.: S2.3



Roof Framing Plan

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

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Project:

Mercer Island Residence

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Design: EAF
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Revisions:

For Building Department use:

Sheet Contents: Roof Framing Plan

Scale (u.n.o.): 1/4"=1'-0"
Sheet No.: S2.4

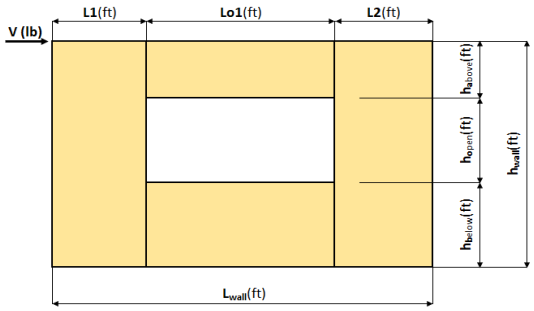
Force Transfer Around Openings Calculator

ONE OPENING

The force transfer around openings (FTAO) method of shear wall analysis is an approach that aims to reinforce the wall such that it performs as if there was no opening. This approach lends certain advantages over segmented shear walls: more versatility, because it allows for narrower wall segments while still meeting the height-to-width ratios and, often, fewer required hold-downs.

Project Information

Code:	**Date:** 9/16/2025
Designer:	EAF
Client:	N5
Project:	5236 Mercer
Wall Line:	west wall center



Shear Wall Calculation Variables

V	1116 lbf	Opening 1	
L1	2.25 ft	h_a	2.00 ft
L2	2.25 ft	h_o	6.00 ft
h_{wall}	10.00 ft	h_b	2.00 ft
L_{wall}	12.00 ft	Lo1	7.50 ft

Adj. Factor Method =	1.25-0.125h/bs	
Wall Pier Aspect Ratio		Adj. Factor
P1=h_o/L1=	2.67	0.917
P2=h_o/L2=	2.67	0.917

1. Hold-down forces: H = Vh_{wall}/L_{wall} 930 lbf

2. Unit shear above + below opening

First opening: va1 = vb1 = H/(h_a+h_b) = 233 plf

3. Total boundary force above + below openings

First opening: O1 = va1 x (Lo1) = 1744 lbf

4. Corner forces

F1 = O1(L1)/(L1+L2) = 872 lbf

F2 = O1(L2)/(L1+L2) = 872 lbf

5. Tributary length of openings

T1 = (L1*Lo1)/(L1+L2) = 3.75 ft

T2 = (L2*Lo1)/(L1+L2) = 3.75 ft

6. Unit shear beside opening

v1 = (V/L)(L1+T1)/L1 = 248 plf

v2 = (V/L)(T2+L2)/L2 = 248 plf

Check v1*L1+v2*L2=V? 1116 lbf **OK**

7. Resistance to corner forces

R1 = v1*L1 = 558 lbf

R2 = v2*L2 = 558 lbf

8. Difference corner force + resistance

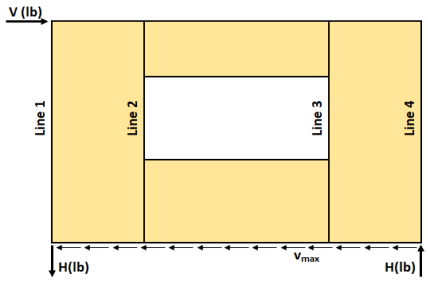
R1-F1 = -314 lbf

R2-F2 = -314 lbf

9. Unit shear in corner zones

vc1 = (R1-F1)/L1 = -140 plf

vc2 = (R2-F2)/L2 = -140 plf



Check Summary of Shear Values for One Opening

Line 1: vc1(h_a+h_b)+v1(h_o)=H?		-558	1488	930 lbf
Line 2: va1(h_a+h_b)-vc1(h_a+h_b)-v1(h_o)=0?	930	-558	1488	0
Line 3: va1(h_a+h_b)-vc2(h_a+h_b)-v1(h_o)=0?	930	-558	1488	0
Line 4: vc2(h_a+h_b)+v2(h_o)=H?		-558	1488	930 lbf

Design Summary*

Req. Sheathing Capacity	271 plf **	**4-Term Deflection**		**3-Term Deflection**	
Req. Strap Force	872 lbf	**4-Term Story Drift %**		**3-Term Story Drift %**	
Req. HD Force (H)	930 lbf				
Req. Shear Wall Anchorage Force (v_{max})	93 plf				

****Req. Sheathing Capacity has been adjusted per the Aspect Ratio Adjustment Factor**

***The Design Summary assumes that the shear wall is designed as blocked.**

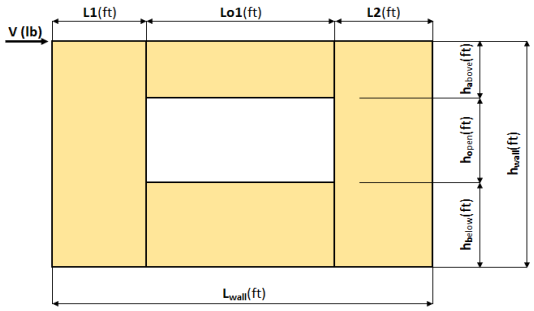
Force Transfer Around Openings Calculator

ONE OPENING

The force transfer around openings (FTAO) method of shear wall analysis is an approach that aims to reinforce the wall such that it performs as if there was no opening. This approach lends certain advantages over segmented shear walls: more versatility, because it allows for narrower wall segments while still meeting the height-to-width ratios and, often, fewer required hold-downs.

Project Information

Code:	**Date:** 9/16/2025
Designer:	EAF
Client:	N5
Project:	5236 Mercer
Wall Line:	west wall south end



Shear Wall Calculation Variables

V	1116 lbf	Opening 1	
L1	2.25 ft	h_a	2.00 ft
L2	2.25 ft	h_o	6.00 ft
h_{wall}	10.00 ft	h_b	2.00 ft
L_{wall}	16.50 ft	Lo1	12.00 ft

Adj. Factor Method =	1.25-0.125h/bs	
Wall Pier Aspect Ratio		Adj. Factor
P1=h_o/L1=	2.67	0.917
P2=h_o/L2=	2.67	0.917

1. Hold-down forces: H = Vh_{wall}/L_{wall} 676 lbf

2. Unit shear above + below opening

First opening: va1 = vb1 = H/(h_a+h_b) = 169 plf

3. Total boundary force above + below openings

First opening: O1 = va1 x (Lo1) = 2029 lbf

4. Corner forces

F1 = O1(L1)/(L1+L2) = 1015 lbf

F2 = O1(L2)/(L1+L2) = 1015 lbf

5. Tributary length of openings

T1 = (L1*Lo1)/(L1+L2) = 6.00 ft

T2 = (L2*Lo1)/(L1+L2) = 6.00 ft

6. Unit shear beside opening

v1 = (V/L)(L1+T1)/L1 = 248 plf

v2 = (V/L)(T2+L2)/L2 = 248 plf

Check v1*L1+v2*L2=V? 1116 lbf **OK**

7. Resistance to corner forces

R1 = v1*L1 = 558 lbf

R2 = v2*L2 = 558 lbf

8. Difference corner force + resistance

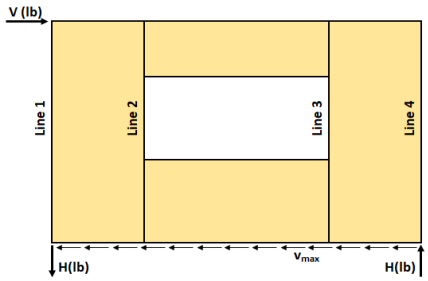
R1-F1 = -457 lbf

R2-F2 = -457 lbf

9. Unit shear in corner zones

vc1 = (R1-F1)/L1 = -203 plf

vc2 = (R2-F2)/L2 = -203 plf



Check Summary of Shear Values for One Opening

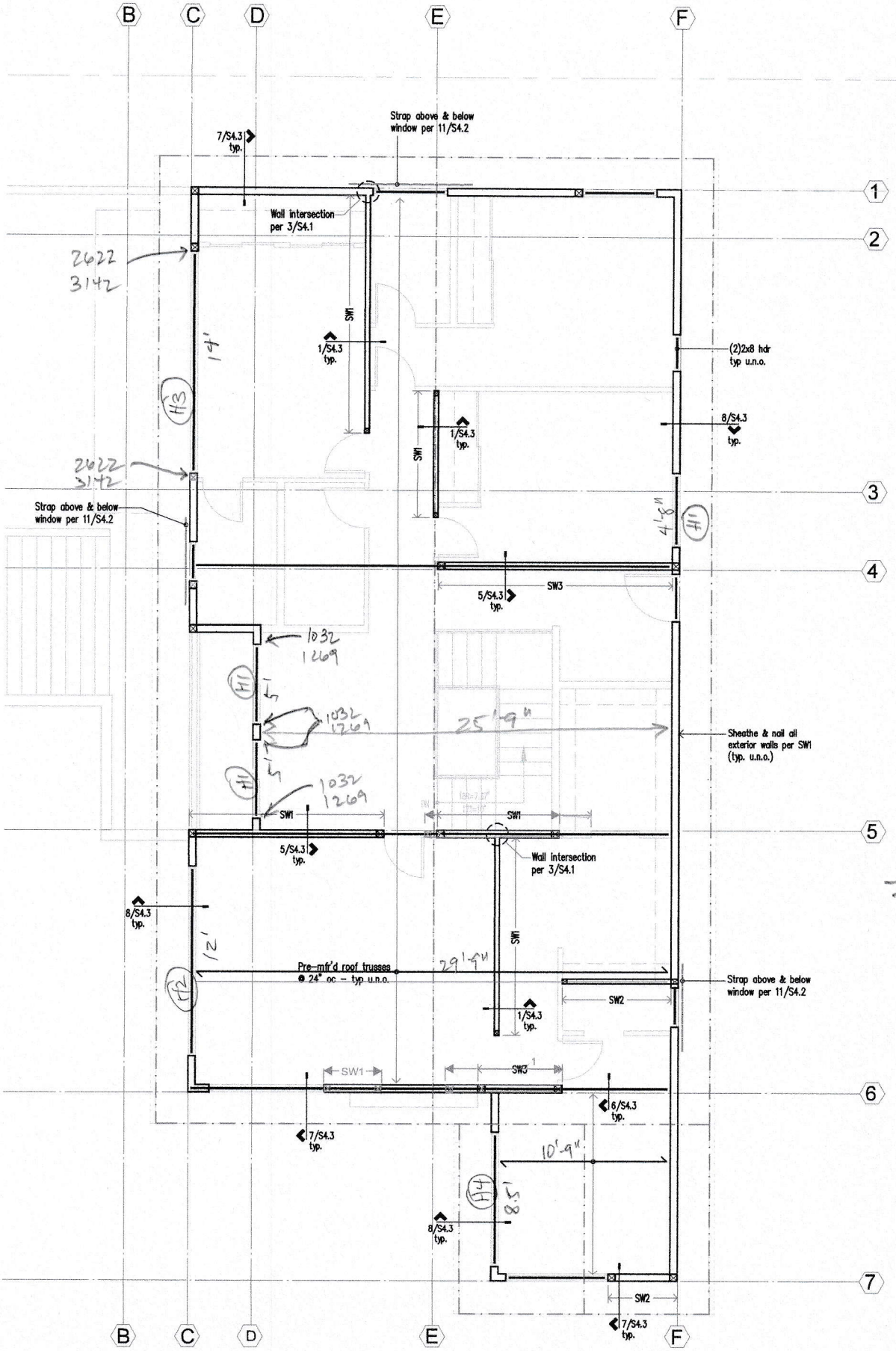
Line 1: vc1(h_a+h_b)+v1(h_o)=H?		-812	1488	676 lbf
Line 2: va1(h_a+h_b)-vc1(h_a+h_b)-v1(h_o)=0?	676	-812	1488	0
Line 3: va1(h_a+h_b)-vc2(h_a+h_b)-v1(h_o)=0?	676	-812	1488	0
Line 4: vc2(h_a+h_b)+v2(h_o)=H?		-812	1488	676 lbf

Design Summary*

Req. Sheathing Capacity	271 plf **	**4-Term Deflection**		**3-Term Deflection**	
Req. Strap Force	1015 lbf	**4-Term Story Drift %**		**3-Term Story Drift %**	
Req. HD Force (H)	676 lbf				
Req. Shear Wall Anchorage Force (v_{max})	68 plf				

****Req. Sheathing Capacity has been adjusted per the Aspect Ratio Adjustment Factor**

***The Design Summary assumes that the shear wall is designed as blocked.**



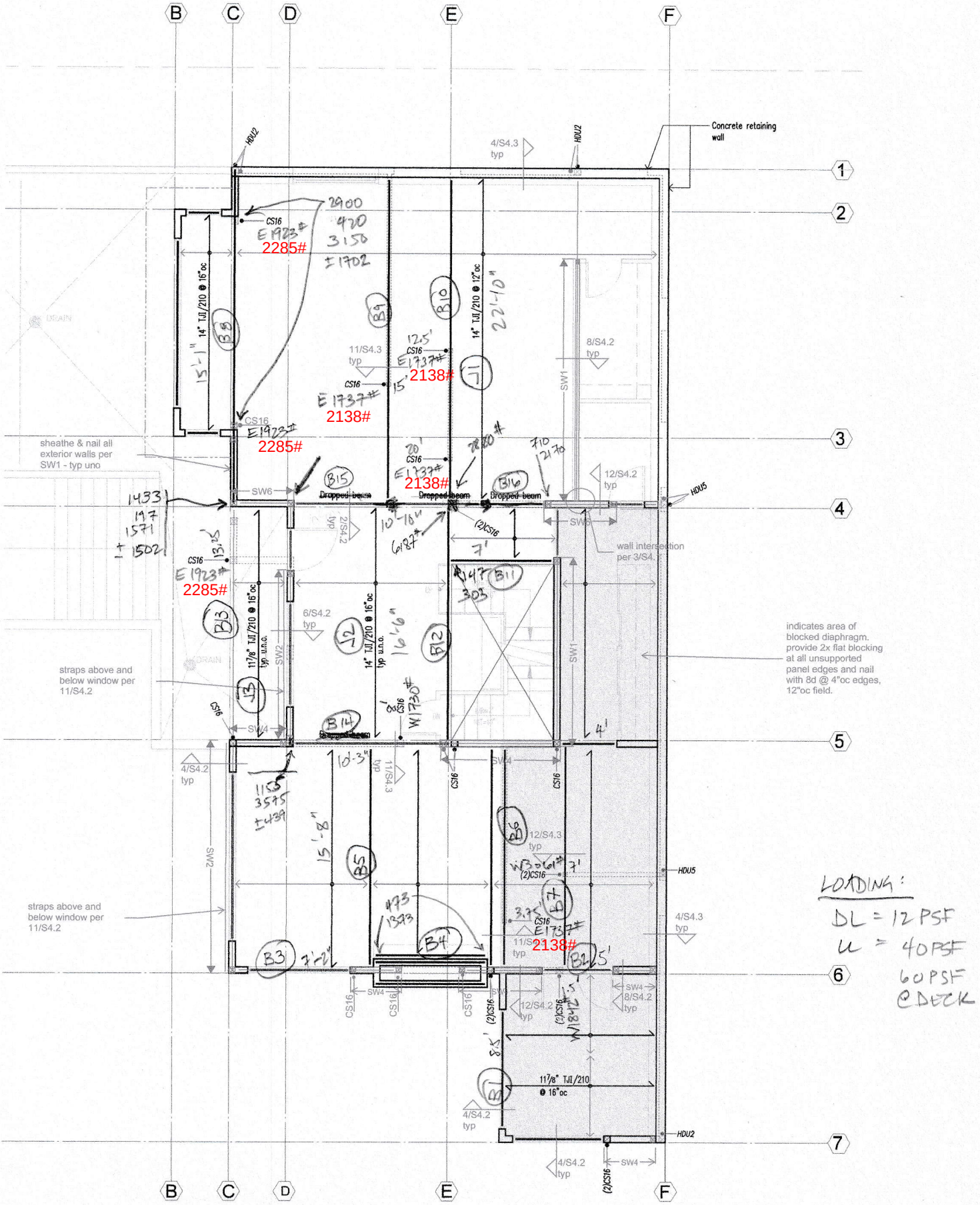
LOADING:

DL = 15 + 5 PV

LL = 25 SNOW

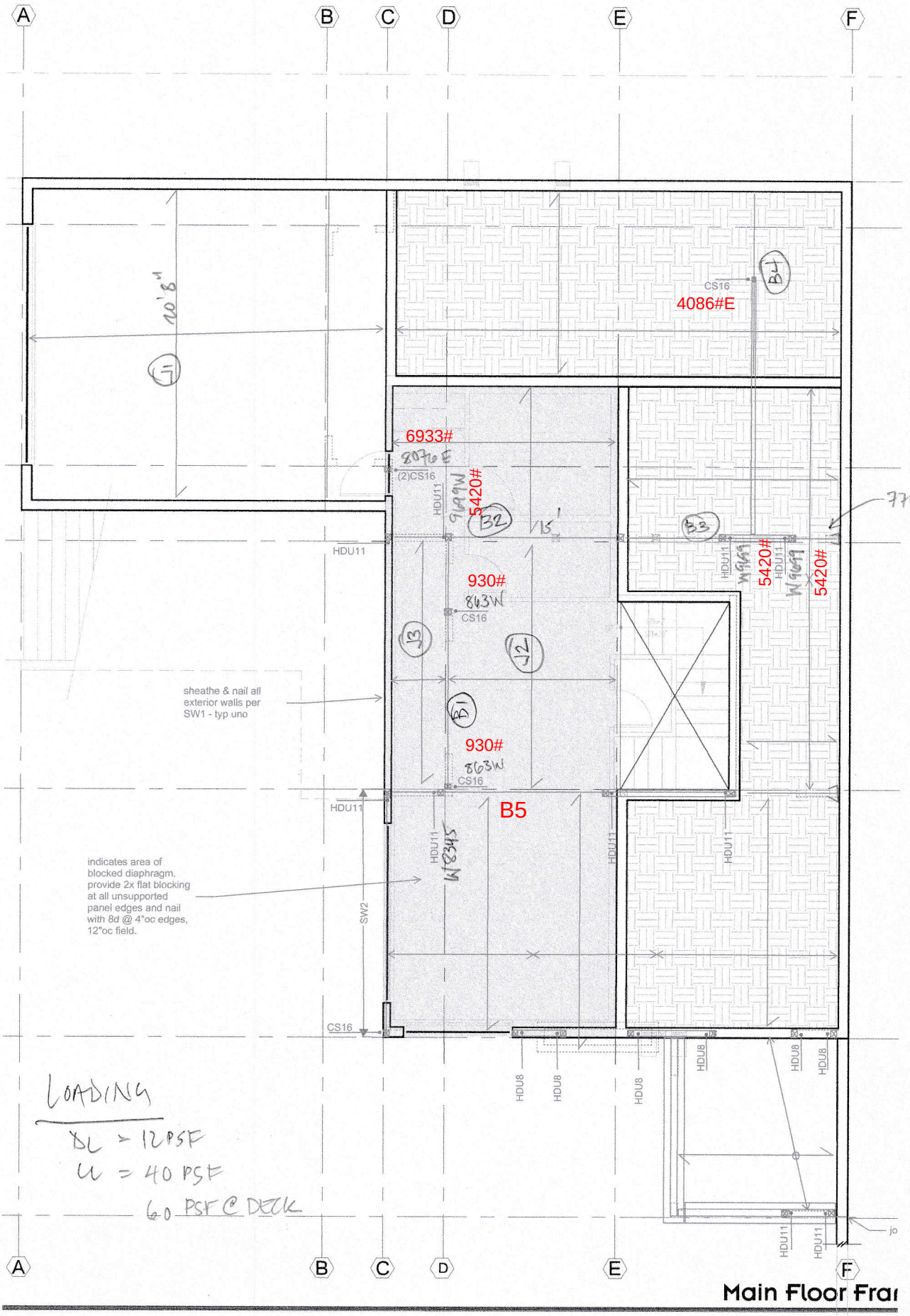
Roof Framing Plan

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



Upper Floor Framing Plan

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

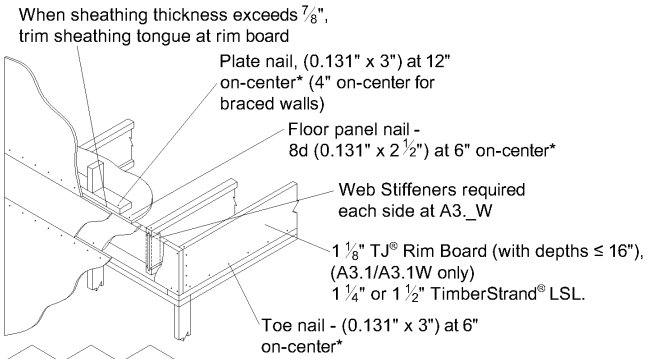

A
B
C
D
E
F
10'-8"
CS16
4086#E
B4
6933#
807# E
(2)CS16
HDU11
5420#
B2
15'
B3
7717/-808
930#
863W
CS16
J3
J2
B1
sheathe & nail all exterior walls per SW1 - typ uno
B5
indicates area of blocked diaphragm. provide 2x flat blocking at all unsupported panel edges and nail with 8d @ 4"oc edges, 12"oc field.
SW2
HDU8
LOADING
DL = 12PSF
LL = 40 PSF
60 PSF @ DECK
Main Floor Fra

Upper Floor			
Member Name	**Results (Max UTIL %)**	**Current Solution**	**Comments**
Floor: Flush Beam B6 r1	Passed (35% R)	1 piece(s) 3 1/2" x 14" 1.55E TimberStrand® LSL	
Floor: Flush Beam B8 r1	Passed (100% R)	1 piece(s) 3 1/2" x 14" 1.55E TimberStrand® LSL	
Floor: Flush Beam B9 r1	Passed (48% ΔL)	1 piece(s) 3 1/2" x 14" 1.55E TimberStrand® LSL	
Floor: Flush Beam B10 r1	Passed (48% ΔL)	1 piece(s) 3 1/2" x 14" 1.55E TimberStrand® LSL	
Floor: Flush Beam B13 r1	Passed (71% R)	1 piece(s) 3 1/2" x 11 7/8" 1.55E TimberStrand® LSL	
Main Floor			
Member Name	**Results (Max UTIL %)**	**Current Solution**	**Comments**
Floor: Joist J1 r1	Passed (96% ΔL)	1 piece(s) 11 7/8" TJI® 360 @ 12" OC	
Floor: Flush Beam B1 r1	Passed (45% ΔL)	1 piece(s) 3 1/2" x 11 7/8" 1.55E TimberStrand® LSL	
Floor: Flush Beam B2 r1	Failed (100% R)	1 piece(s) 7" x 11 7/8" 2.2E Parallam® PSL	An excessive uplift of -1297 lbs at support located at 3 1/2" failed this product.
Floor: Flush Beam B3 r1	Passed (100% R)	1 piece(s) 5 1/4" x 11 7/8" 2.2E Parallam® PSL	
Floor: Flush Beam B4 r1	Failed (35% R)	1 piece(s) 5 1/4" x 11 7/8" 2.2E Parallam® PSL	Multiple Failures/Errors
Floor: Flush Beam B5 r1	Failed (100% R)	1 piece(s) 7" x 11 7/8" 2.2E Parallam® PSL	An excessive uplift of -2838 lbs at support located at 3 1/2" failed this product.

ForteWEB Software Operator	Job Notes
Elizabeth Fekete Frank Co. (206) 579-8160 liz@frankcompany.com	

Weyerhaeuser

1/23/2026 8:24:40 PM UTC
ForteWEB v4.0
File Name: 5236 Mercer



A3 A3.1 A3.2 A3.3

A3W A3.1 W A3.2 W A3.3 W

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

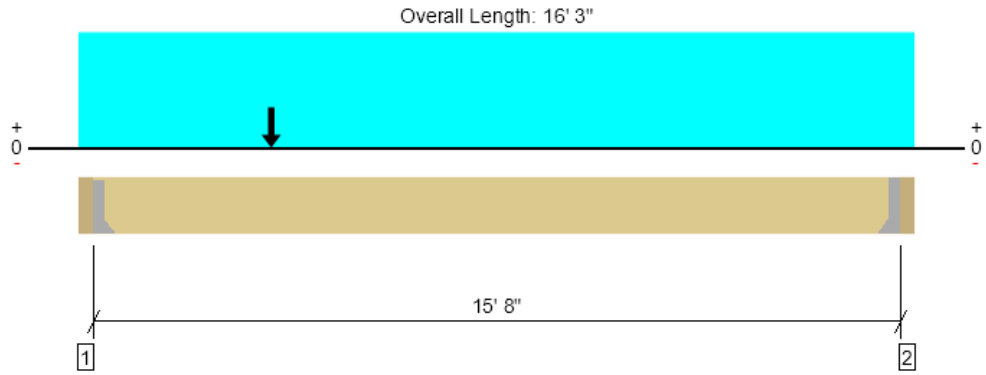
ForteWEB Software Operator	Job Notes
Elizabeth Fekete Frank Co. (206) 579-8160 liz@frankcompany.com	

Weyerhaeuser

1/23/2026 8:24:40 PM UTC
ForteWEB v4.0
File Name: 5236 Mercer

Upper Floor, Floor: Flush Beam B6 r1

1 piece(s) 3 1/2" x 14" 1.55E TimberStrand® LSL



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1653 @ 3 1/2"	4725 (1.50")	Passed (35%)	--	1.0 D + 0.525 E + 0.75 L + 0.75 S (All Spans)
Shear (lbs)	1537 @ 1' 5 1/2"	16203	Passed (9%)	1.60	1.0 D + 0.525 E + 0.75 L + 0.75 S (All Spans)
Moment (Ft-lbs)	3661 @ 8' 1 1/2"	21840	Passed (17%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.095 @ 8' 1 1/2"	0.392	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.141 @ 8' 1 1/2"	0.783	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

Member Length : 15' 8"
System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2021
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- -977 lbs uplift at support located at 3 1/2". Strapping or other restraint may be required.

Supports	Bearing Length			Loads to Supports (lbs)				
	Total	Available	Required	Dead	Floor Live	Seismic	Factored	Accessories
1 - Hanger on 14" SPF beam	3.50"	Hanger[1]	1.50"	315	650	1666/-1666	1677/-977	See note [1]
2 - Hanger on 14" SPF beam	3.50"	Hanger[1]	1.50"	315	650	472/-472	1050/-141	See note [1]

- 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)	15' 8" o/c	
Bottom Edge (Lu)	15' 8" 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	LUS410	2.00"	N/A	8-10dx1.5	6-10d	
2 - Face Mount Hanger	LUS410	2.00"	N/A	8-10dx1.5	6-10d	

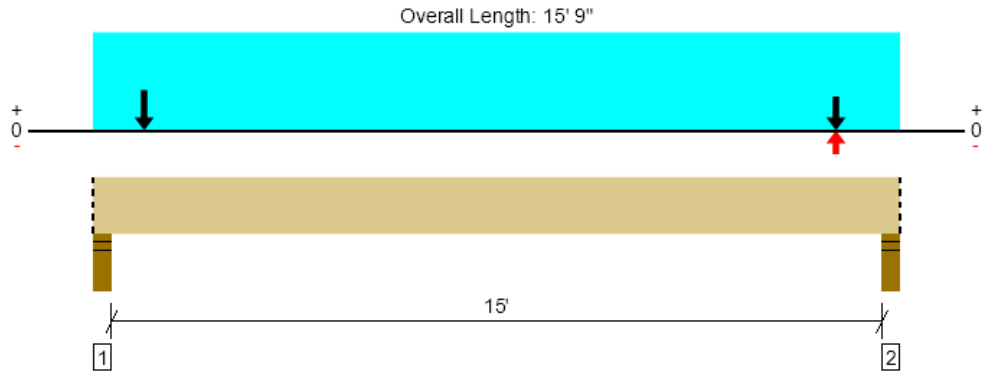
- Refer to manufacturer notes and instructions for proper installation and use of all connectors.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Seismic (1.60)	Comments
0 - Self Weight (PLF)	3 1/2" to 15' 11 1/2"	N/A	15.3	--	--	
1 - Uniform (PSF)	0 to 16' 3" (Front)	2'	12.0	40.0	--	Default Load
2 - Point (lb)	3' 9" (Front)	N/A	--	--	2138	

- Side loads are assumed to not induce cross-grain tension.

Upper Floor, Floor: Flush Beam B8 r1

1 piece(s) 3 1/2" x 14" 1.55E TimberStrand® LSL



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	6684 @ 3"	6694 (4.50")	Passed (100%)	--	1.0 D + 0.525 E + 0.75 L + 0.75 S (All Spans)
Shear (lbs)	4521 @ 14' 2 1/2"	11646	Passed (39%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	6476 @ 9' 1/4"	25116	Passed (26%)	1.15	1.0 D + 0.75 L + 0.75 S (All Spans)
Live Load Defl. (in)	0.132 @ 7' 11 13/16"	0.381	Passed (L/999+)	--	1.0 D + 0.75 L + 0.75 S (All Spans)
Total Load Defl. (in)	0.265 @ 7' 11 7/8"	0.762	Passed (L/690)	--	1.0 D + 0.75 L + 0.75 S (All Spans)

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

Member Length : 15' 9"
System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2021
Design Methodology : ASD

Supports	Bearing Length			Loads to Supports (lbs)					
	Total	Available	Required	Dead	Floor Live	Snow	Seismic	Factored	Accessories
1 - Stud wall - SPF	4.50"	4.50"	4.49"	2912	420	3194	2023/-2023	6684	Blocking
2 - Stud wall - SPF	4.50"	4.50"	4.38"	2826	420	3090	2023/-2023	6520	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)	15' 9" o/c	
Bottom Edge (Lu)	15' 9" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Seismic (1.60)	Comments
0 - Self Weight (PLF)	0 to 15' 9"	N/A	15.3	--	--	--	
1 - Uniform (PSF)	0 to 15' 9" (Front)	1' 4"	12.0	40.0	--	--	Default Load
2 - Point (lb)	1' (Front)	N/A	2622	--	3142	2285	
3 - Point (lb)	14' 6" (Front)	N/A	2622	--	3142	-2285	

- Side loads are assumed to not induce cross-grain tension.

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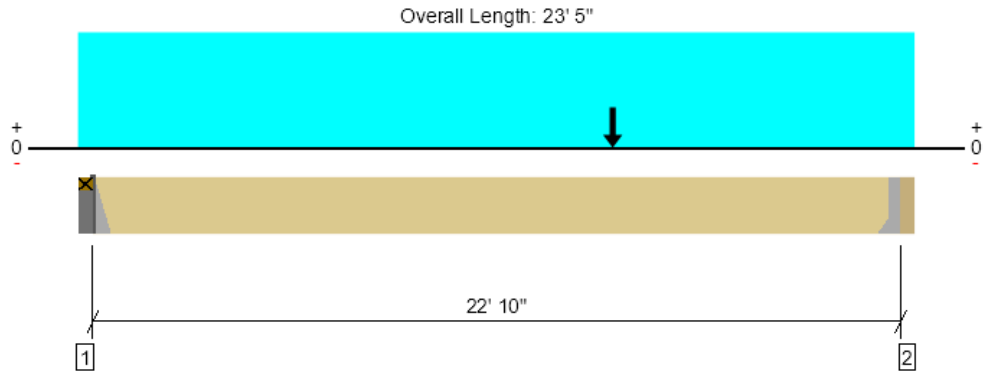
The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

ForteWEB Software Operator	Job Notes
Elizabeth Fekete Frank Co. (206) 579-8160 liz@frankcompany.com	

Weyerhaeuser

Upper Floor, Floor: Flush Beam B9 r1

1 piece(s) 3 1/2" x 14" 1.55E TimberStrand® LSL



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1537 @ 23' 1 1/2"	4725 (1.50")	Passed (33%)	--	1.0 D + 0.525 E + 0.75 L + 0.75 S (All Spans)
Shear (lbs)	1454 @ 21' 11 1/2"	16203	Passed (9%)	1.60	1.0 D + 0.525 E + 0.75 L + 0.75 S (All Spans)
Moment (Ft-lbs)	10136 @ 15'	34944	Passed (29%)	1.60	1.0 D + 0.525 E + 0.75 L + 0.75 S (All Spans)
Live Load Defl. (in)	0.273 @ 11' 8 1/2"	0.571	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.434 @ 11' 8 1/2"	1.142	Passed (L/631)	--	1.0 D + 1.0 L (All Spans)

Member Length : 22' 10"
System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2021
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- -315 lbs uplift at support located at 3 1/2". Strapping or other restraint may be required.
- -747 lbs uplift at support located at 23' 1 1/2". Strapping or other restraint may be required.

Supports	Bearing Length			Loads to Supports (lbs)				
	Total	Available	Required	Dead	Floor Live	Seismic	Factored	Accessories
1 - Hanger on Single 2X SPF plate	3.50"	Hanger[1]	1.50"	362	624	761/-761	1230/-315	See note [1]
2 - Hanger on 14" SPF beam	3.50"	Hanger[1]	1.50"	362	624	1377/-1377	1554/-747	See note [1]

- 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)	22' 10" o/c	
Bottom Edge (Lu)	22' 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
1 - Top Mount Hanger	DGT3.62/14	2.50"	6-10dx1.5	2-10dx1.5	6-10dx1.5	
2 - Face Mount Hanger	LUS410	2.00"	N/A	8-10dx1.5	6-10d	

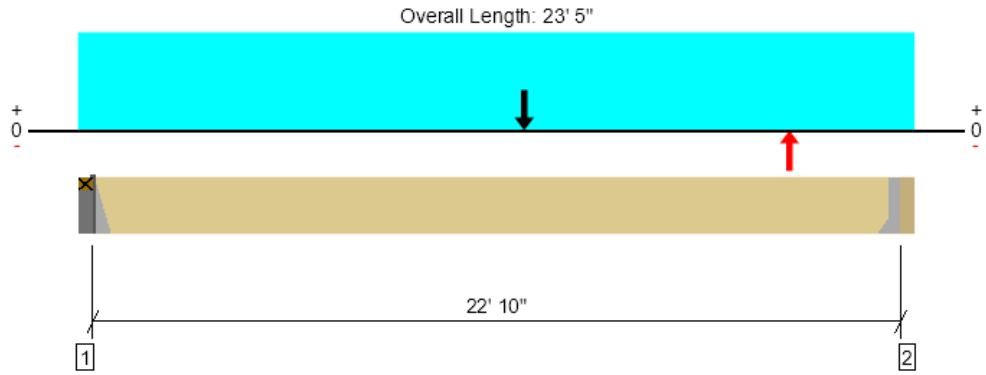
- Refer to manufacturer notes and instructions for proper installation and use of all connectors.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Seismic (1.60)	Comments
0 - Self Weight (PLF)	3 1/2" to 23' 1 1/2"	N/A	15.3	--	--	
1 - Uniform (PSF)	0 to 23' 5" (Front)	1' 4"	12.0	40.0	--	Default Load
2 - Point (lb)	15' (Front)	N/A	--	--	2138	

- Side loads are assumed to not induce cross-grain tension.

Upper Floor, Floor: Flush Beam B10 r1

1 piece(s) 3 1/2" x 14" 1.55E TimberStrand® LSL



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1183 @ 3 1/2"	4725 (1.50")	Passed (25%)	--	1.0 D + 0.525 E + 0.75 L + 0.75 S (All Spans)
Shear (lbs)	868 @ 1' 5 1/2"	10127	Passed (9%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	9127 @ 12' 6"	34944	Passed (26%)	1.60	1.0 D + 0.525 E + 0.75 L + 0.75 S (All Spans)
Live Load Defl. (in)	0.273 @ 11' 8 1/2"	0.571	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.434 @ 11' 8 1/2"	1.142	Passed (L/631)	--	1.0 D + 1.0 L (All Spans)

Member Length : 22' 10"
System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2021
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- -274 lbs uplift at support located at 3 1/2". Strapping or other restraint may be required.
- -274 lbs uplift at support located at 23' 1 1/2". Strapping or other restraint may be required.

Supports	Bearing Length			Loads to Supports (lbs)				
	Total	Available	Required	Dead	Floor Live	Seismic	Factored	Accessories
1 - Hanger on Single 2X SPF plate	3.50"	Hanger[1]	1.50"	362	624	702/-702	1199/-274	See note [1]
2 - Hanger on 14" SPF beam	3.50"	Hanger[1]	1.50"	362	624	702/-702	1199/-274	See note [1]

- 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)	22' 10" o/c	
Bottom Edge (Lu)	22' 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
1 - Top Mount Hanger	DGT3.62/14	2.50"	6-10dx1.5	2-10dx1.5	6-10dx1.5	
2 - Face Mount Hanger	LUS410	2.00"	N/A	8-10dx1.5	6-10d	

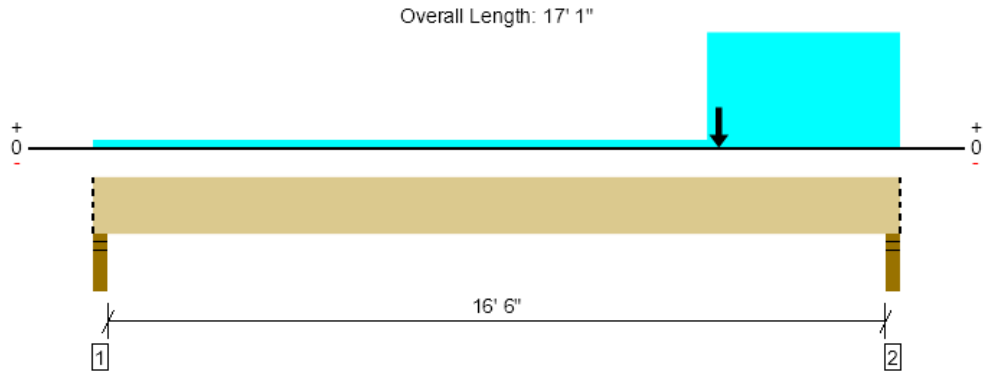
- Refer to manufacturer notes and instructions for proper installation and use of all connectors.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Seismic (1.60)	Comments
0 - Self Weight (PLF)	3 1/2" to 23' 1 1/2"	N/A	15.3	--	--	
1 - Uniform (PSF)	0 to 23' 5" (Front)	1' 4"	12.0	40.0	--	Default Load
2 - Point (lb)	12' 6" (Front)	N/A	--	--	2138	
3 - Point (lb)	20' (Front)	N/A	--	--	-2138	

- Side loads are assumed to not induce cross-grain tension.

Upper Floor, Floor: Flush Beam B13 r1

1 piece(s) 3 1/2" x 11 7/8" 1.55E TimberStrand® LSL



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	3696 @ 16' 11"	5206 (3.50")	Passed (71%)	--	1.0 D + 0.525 E + 0.75 L + 0.75 S (All Spans)
Shear (lbs)	2819 @ 15' 9 5/8"	13743	Passed (21%)	1.60	1.0 D + 0.525 E + 0.75 L + 0.75 S (All Spans)
Moment (Ft-lbs)	8532 @ 13' 3"	25525	Passed (33%)	1.60	1.0 D + 0.525 E + 0.75 L + 0.75 S (All Spans)
Live Load Defl. (in)	0.167 @ 9' 2"	0.419	Passed (L/999+)	--	1.0 D + 0.75 L + 0.75 S (All Spans)
Total Load Defl. (in)	0.336 @ 9' 2 7/16"	0.837	Passed (L/598)	--	1.0 D + 0.75 L + 0.75 S (All Spans)

Member Length : 17' 1"
System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2021
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- -389 lbs uplift at support located at 16' 11". Strapping or other restraint may be required.

Supports	Bearing Length			Loads to Supports (lbs)					
	Total	Available	Required	Dead	Floor Live	Snow	Seismic	Factored	Accessories
1 - Stud wall - SPF	3.50"	3.50"	1.50"	378	323	198	500/-500	1031/-124	Blocking
2 - Stud wall - SPF	3.50"	3.50"	2.48"	1433	197	1571	1785/-1785	3696/-389	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)	17' 1" o/c	
Bottom Edge (Lu)	17' 1" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Snow (1.15)	Seismic (1.60)	Comments
0 - Self Weight (PLF)	0 to 17' 1"	N/A	13.0	--	--	--	
1 - Uniform (PSF)	0 to 13' (Front)	8"	20.0	60.0	--	--	Default Load
2 - Point (lb)	13' 3" (Front)	N/A	--	--	--	2285	
3 - Uniform (PSF)	13' to 17' 1" (Front)	17' 4"	20.0	--	25.0	--	Default Load

• Side loads are assumed to not induce cross-grain tension.

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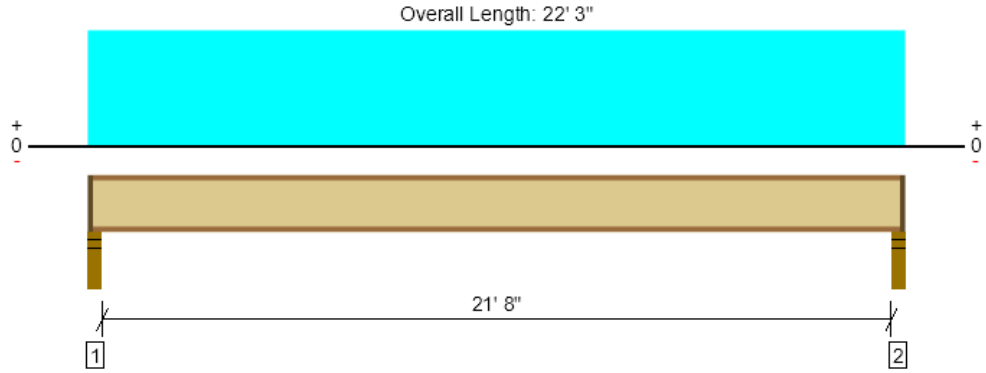
The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

ForteWEB Software Operator	Job Notes
Elizabeth Fekete Frank Co. (206) 579-8160 liz@frankcompany.com	

Weyerhaeuser

Main Floor, Floor: Joist J1 r1

1 piece(s) 11 7/8" TJI® 360 @ 12" OC



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	882 @ 2 1/2"	1202 (2.25")	Passed (73%)	1.00	1.0 D + 1.0 L (All Spans)
Shear (lbs)	867 @ 3 1/2"	1705	Passed (51%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	4767 @ 11' 1 1/2"	6180	Passed (77%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.701 @ 11' 1 1/2"	0.728	Passed (L/374)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.935 @ 11' 1 1/2"	1.092	Passed (L/280)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	40	40	Passed	--	--

Member Length : 22' 1/2"
System : Floor
Member Type : Joist
Building Use : Residential
Building Code : IBC 2021
Design Methodology : ASD

- Deflection criteria: LL (L/360) 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" Panel (24" Span Rating) that is glued and nailed down.
- Additional considerations for the TJ-Pro™ Rating include: 5/8" Gypsum ceiling.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories	Details
	Total	Available	Required	Dead	Floor Live	Factored		
1 - Stud wall - SPF	3.50"	2.25"	1.75"	223	667	890	1 1/4" Rim Board	A3
2 - Stud wall - SPF	3.50"	2.25"	1.75"	223	667	890	1 1/4" Rim Board	A3

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	4' 2" o/c	
Bottom Edge (Lu)	22' 1" o/c	

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

Vertical Load	Location	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 22' 3"	12"	20.0	60.0	Default Load

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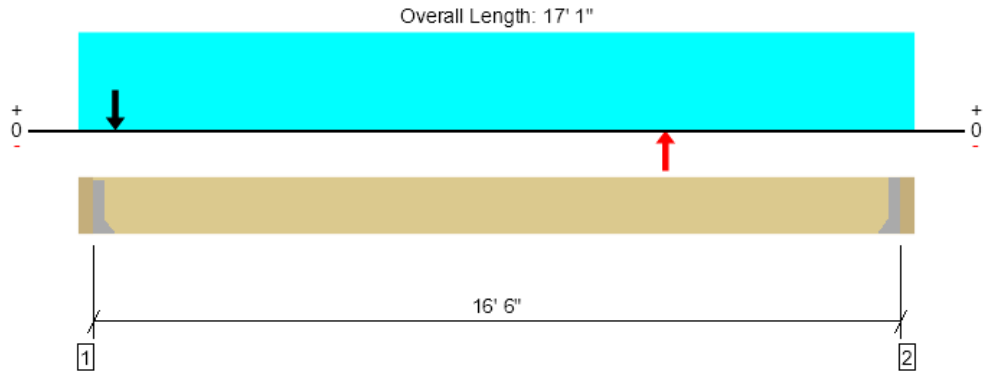
ForteWEB Software Operator	Job Notes
Elizabeth Fekete Frank Co. (206) 579-8160 liz@frankcompany.com	

Weyerhaeuser

Main Floor, Floor: Flush Beam B1 r1

1 piece(s) 3 1/2" x 11 7/8" 1.55E TimberStrand® LSL



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Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1108 @ 3 1/2"	4725 (1.50")	Passed (23%)	--	1.0 D + 0.45 W + 0.75 L + 0.75 S (All Spans)
Shear (lbs)	869 @ 1' 3 3/8"	8590	Passed (10%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	4072 @ 8' 6 1/2"	15953	Passed (26%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.186 @ 8' 6 1/2"	0.412	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.278 @ 8' 6 1/2"	0.825	Passed (L/712)	--	1.0 D + 1.0 L (All Spans)

Member Length : 16' 6"
System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2021
Design Methodology : ASD

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

Supports	Bearing Length			Loads to Supports (lbs)				
	Total	Available	Required	Dead	Floor Live	Wind	Factored	Accessories
1 - Hanger on 11 7/8" SPF beam	3.50"	Hanger[1]	1.50"	335	683	634	1133	See note [1]
2 - Hanger on 11 7/8" SPF beam	3.50"	Hanger[1]	1.50"	335	683	-634	1018/-179	See note [1]

- 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)	16' 6" o/c	
Bottom Edge (Lu)	16' 6" 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	LUS410	2.00"	N/A	8-10dx1.5	6-10d	
2 - Face Mount Hanger	LUS410	2.00"	N/A	8-10dx1.5	6-10d	

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

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Wind (1.60)	Comments
0 - Self Weight (PLF)	3 1/2" to 16' 9 1/2"	N/A	13.0	--	--	
1 - Uniform (PSF)	0 to 17' 1" (Front)	1' 4"	20.0	60.0	--	Default Load
2 - Point (lb)	9" (Front)	N/A	--	--	930	
3 - Point (lb)	12' (Front)	N/A	--	--	-930	

- Side loads are assumed to not induce cross-grain tension.

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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
Elizabeth Fekete Frank Co. (206) 579-8160 liz@frankcompany.com	

Weyerhaeuser

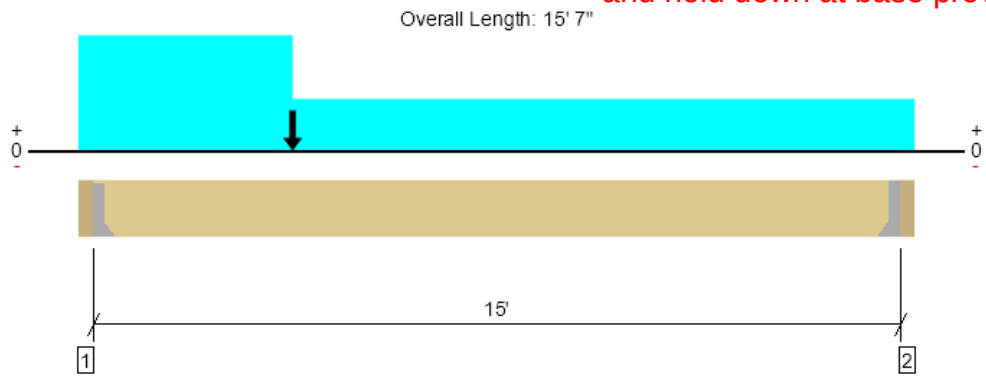
~~FAILED~~

Main Floor, Floor: Flush Beam B2 r1

1 piece(s) 7" x 11 7/8" 2.2E Parallam® PSL

~~An excessive uplift of -1297 lbs at support located at 3 1/2" failed this product.~~

Post cap with required uplift capacity and hold down at base provided



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	10298 @ 3 1/2"	10298 (2.35")	Passed (100%)	--	1.0 D + 0.525 E + 0.75 L + 0.75 S (All Spans)
Shear (lbs)	8135 @ 1' 3 3/8"	16071	Passed (51%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	28614 @ 7' 2 15/16"	39805	Passed (72%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.437 @ 7' 7 7/8"	0.500	Passed (L/412)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.583 @ 7' 7 7/8"	0.750	Passed (L/309)	--	1.0 D + 1.0 L (All Spans)

Member Length : 15'
System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2021
Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Member should be side-loaded from both sides of the member or braced to prevent rotation.

Supports	Bearing Length			Loads to Supports (lbs)				
	Total	Available	Required	Dead	Floor Live	Seismic	Factored	Accessories
1 - Hanger on 11 7/8" SPF beam	3.50"	Hanger[1]	2.35"	2598	8011	4080/-4080	10749/-1297	See note [1]
2 - Hanger on 11 7/8" SPF beam	3.50"	Hanger[1]	1.63"	1849	5514	1340/-1340	7363	See note [1]

- 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)	15' o/c	
Bottom Edge (Lu)	15' 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	HGUS7.25/12	4.00"	N/A	56-16d	20-16d	
2 - Face Mount Hanger	HGUS7.25/10	4.00"	N/A	46-16d	16-16d	

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

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Seismic (1.60)	Comments
0 - Self Weight (PLF)	3 1/2" to 15' 3 1/2"	N/A	26.0	--	--	
1 - Uniform (PSF)	0 to 15' 7" (Front)	16' 6"	12.0	40.0	--	Default Load
2 - Point (lb)	4' (Front)	N/A	--	--	5420	
3 - Uniform (PSF)	0 to 4' (Front)	20' 3"	12.0	40.0	--	Default Load

- Side loads are assumed to not induce cross-grain tension.

ForteWEB Software Operator	Job Notes
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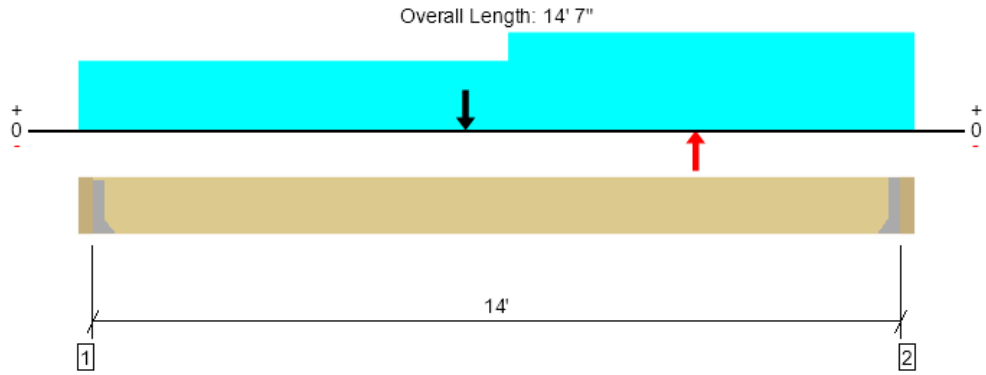
Main Floor, Floor: Flush Beam B3 r1

1 piece(s) 5 1/4" x 11 7/8" 2.2E Parallam® PSL



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	7390 @ 14' 3 1/2"	7390 (2.25")	Passed (100%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	6260 @ 13' 3 5/8"	12053	Passed (52%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	23912 @ 7' 9 13/16"	29854	Passed (80%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.423 @ 7' 4 11/16"	0.467	Passed (L/397)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.561 @ 7' 4 11/16"	0.700	Passed (L/299)	--	1.0 D + 1.0 L (All Spans)

Member Length : 14'
System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2021
Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.

Supports	Bearing Length			Loads to Supports (lbs)				
	Total	Available	Required	Dead	Floor Live	Seismic	Factored	Accessories
1 - Hanger on 11 7/8" SPF beam	3.50"	Hanger[1]	1.91"	1602	4884	1549/-1549	6486/-123	See note [1]
2 - Hanger on 11 7/8" SPF beam	3.50"	Hanger[1]	2.25"	1886	5831	1549/-1549	7717	See note [1]

- 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)	14' o/c	
Bottom Edge (Lu)	14' 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	HGUS5.50/10	4.00"	N/A	46-10d	16-10d	
2 - Face Mount Hanger	HGUS5.50/10	4.00"	N/A	46-16d	16-16d	

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

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Seismic (1.60)	Comments
0 - Self Weight (PLF)	3 1/2" to 14' 3 1/2"	N/A	19.5	--	--	
1 - Uniform (PSF)	0 to 14' 7" (Front)	1' 4"	12.0	40.0	--	Default Load
2 - Point (lb)	6' 9" (Front)	N/A	--	--	5420	
3 - Point (lb)	10' 9" (Front)	N/A	--	--	-5420	
4 - Uniform (PSF)	0 to 7' 6" (Front)	14'	12.0	40.0	--	Default Load
5 - Uniform (PSF)	7' 6" to 14' 7" (Front)	20' 3"	12.0	40.0	--	Default Load

- Side loads are assumed to not induce cross-grain tension.

ForteWEB Software Operator	Job Notes
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Weyerhaeuser

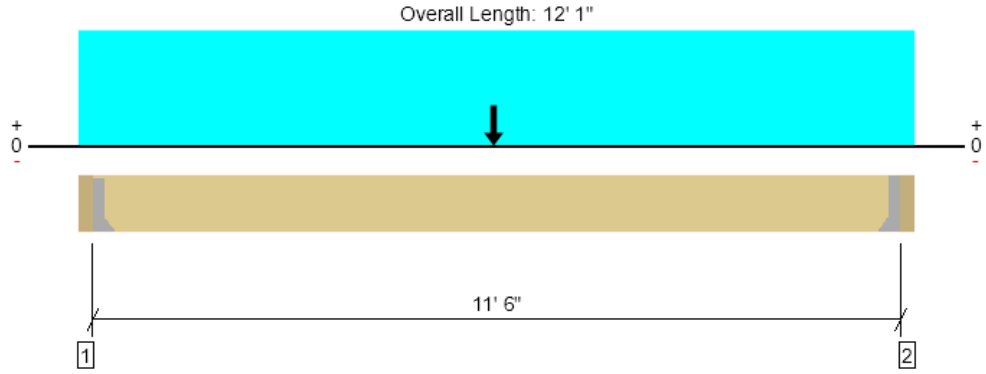
Main Floor, Floor: Flush Beam B4 r1

1 piece(s) 5 1/4" x 11 7/8" 2.2E Parallam® PSL

~~An excessive uplift of -1277 lbs at support located at 3 1/2" failed this product.~~

~~An excessive uplift of -1256 lbs at support located at 11' 9 1/2" failed this product.~~

Hangers with required uplift capacity provided



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1706 @ 3 1/2"	4922 (1.50")	Passed (35%)	--	1.0 D + 0.7 E (All Spans)
Shear (lbs)	1660 @ 1' 3 3/8"	19285	Passed (9%)	1.60	1.0 D + 0.7 E (All Spans)
Moment (Ft-lbs)	8985 @ 6'	47766	Passed (19%)	1.60	1.0 D + 0.7 E (All Spans)
Live Load Defl. (in)	0.022 @ 6' 1/2"	0.287	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.034 @ 6' 1/2"	0.575	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

Member Length : 11' 6"
System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2021
Design Methodology : ASD

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

Supports	Bearing Length			Loads to Supports (lbs)				Accessories
	Total	Available	Required	Dead	Floor Live	Seismic	Factored	
1 - Hanger on 11 7/8" SPF beam	3.50"	Hanger[1]	1.50"	273	483	2058/-2058	1716/-1277	See note [1]
2 - Hanger on 11 7/8" SPF beam	3.50"	Hanger[1]	1.50"	273	483	2028/-2028	1700/-1256	See note [1]

- 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' 6" o/c	
Bottom Edge (Lu)	11' 6" 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	HGU5.50-SDS H=11.813	5.25"	N/A	36-SDS25212	24-SDS25212	
2 - Face Mount Hanger	HGU5.50-SDS H=11.813	5.25"	N/A	36-SDS25212	24-SDS25212	

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

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Seismic (1.60)	Comments
0 - Self Weight (PLF)	3 1/2" to 11' 9 1/2"	N/A	19.5	--	--	
1 - Uniform (PSF)	0 to 12' 1" (Front)	1' 4"	20.0	60.0	--	Default Load
2 - Point (lb)	6' (Front)	N/A	--	--	4086	

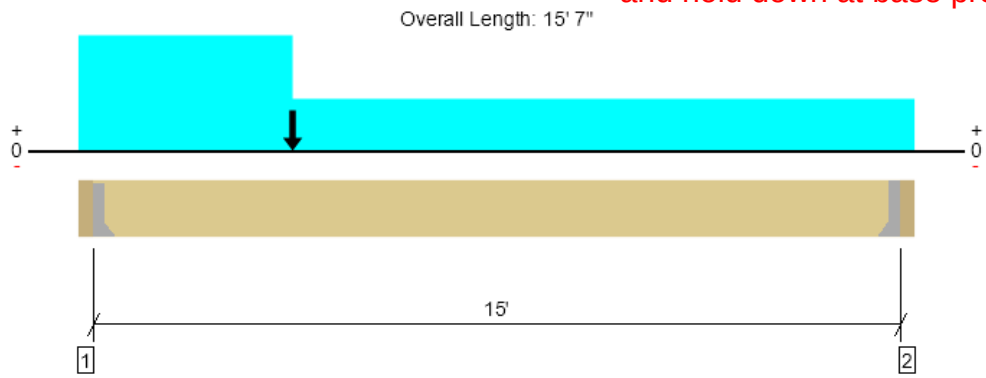
- Side loads are assumed to not induce cross-grain tension.

Main Floor, Floor: Flush Beam B5 r1

1 piece(s) 7" x 11 7/8" 2.2E Parallam® PSL

~~An excessive uplift of -2838 lbs at support located at 3 1/2" failed this product.~~

Post cap with required uplift capacity and hold down at base provided



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

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	11454 @ 3 1/2"	11454 (2.62")	Passed (100%)	--	1.0 D + 0.525 E + 0.75 L + 0.75 S (All Spans)
Shear (lbs)	8135 @ 1' 3 3/8"	16071	Passed (51%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	28614 @ 7' 2 15/16"	39805	Passed (72%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.437 @ 7' 7 7/8"	0.500	Passed (L/412)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.583 @ 7' 7 7/8"	0.750	Passed (L/309)	--	1.0 D + 1.0 L (All Spans)

Member Length : 15'
System : Floor
Member Type : Flush Beam
Building Use : Residential
Building Code : IBC 2021
Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- -335 lbs uplift at support located at 15' 3 1/2". Strapping or other restraint may be required.
- Member should be side-loaded from both sides of the member or braced to prevent rotation.

Supports	Bearing Length			Loads to Supports (lbs)				
	Total	Available	Required	Dead	Floor Live	Seismic	Factored	Accessories
1 - Hanger on 11 7/8" SPF beam	3.50"	Hanger[1]	2.62"	2598	8011	6282/-6282	11905/-2838	See note [1]
2 - Hanger on 11 7/8" SPF beam	3.50"	Hanger[1]	1.63"	1849	5514	2063/-2063	7363/-335	See note [1]

- 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)	15' o/c	
Bottom Edge (Lu)	15' 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	HGUS7.25/12	4.00"	N/A	56-16d	20-16d	
2 - Face Mount Hanger	HGUS7.25/10	4.00"	N/A	46-16d	16-16d	

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

Vertical Loads	Location (Side)	Tributary Width	Dead (0.90)	Floor Live (1.00)	Seismic (1.60)	Comments
0 - Self Weight (PLF)	3 1/2" to 15' 3 1/2"	N/A	26.0	--	--	
1 - Uniform (PSF)	0 to 15' 7" (Front)	16' 6"	12.0	40.0	--	Default Load
2 - Point (lb)	4' (Front)	N/A	--	--	8345	
3 - Uniform (PSF)	0 to 4' (Front)	20' 3"	12.0	40.0	--	Default Load

- Side loads are assumed to not induce cross-grain tension.

ForteWEB Software Operator	Job Notes
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