DEVELOPMENT SPECIFIC SITE DESIGN CRITERIA

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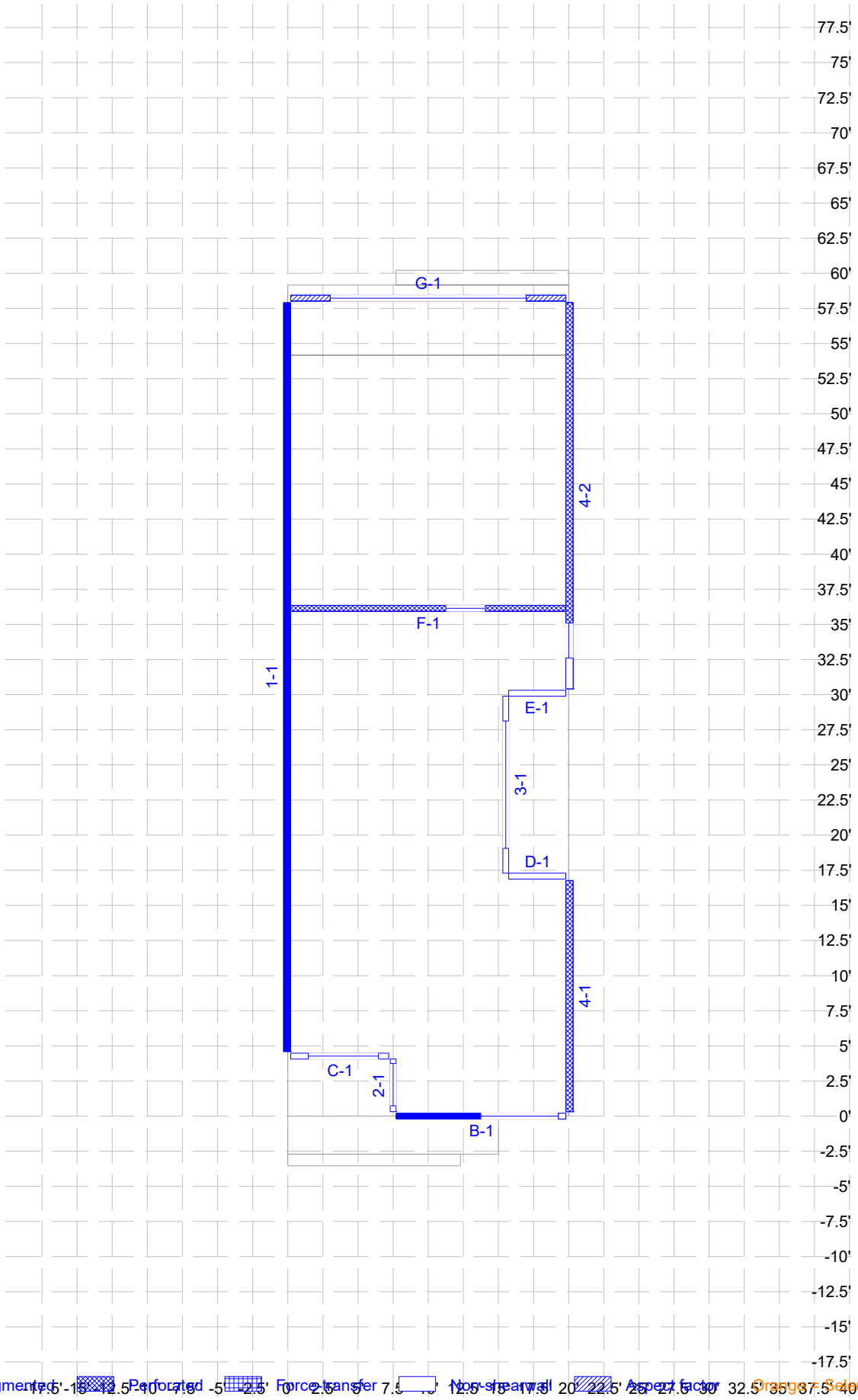
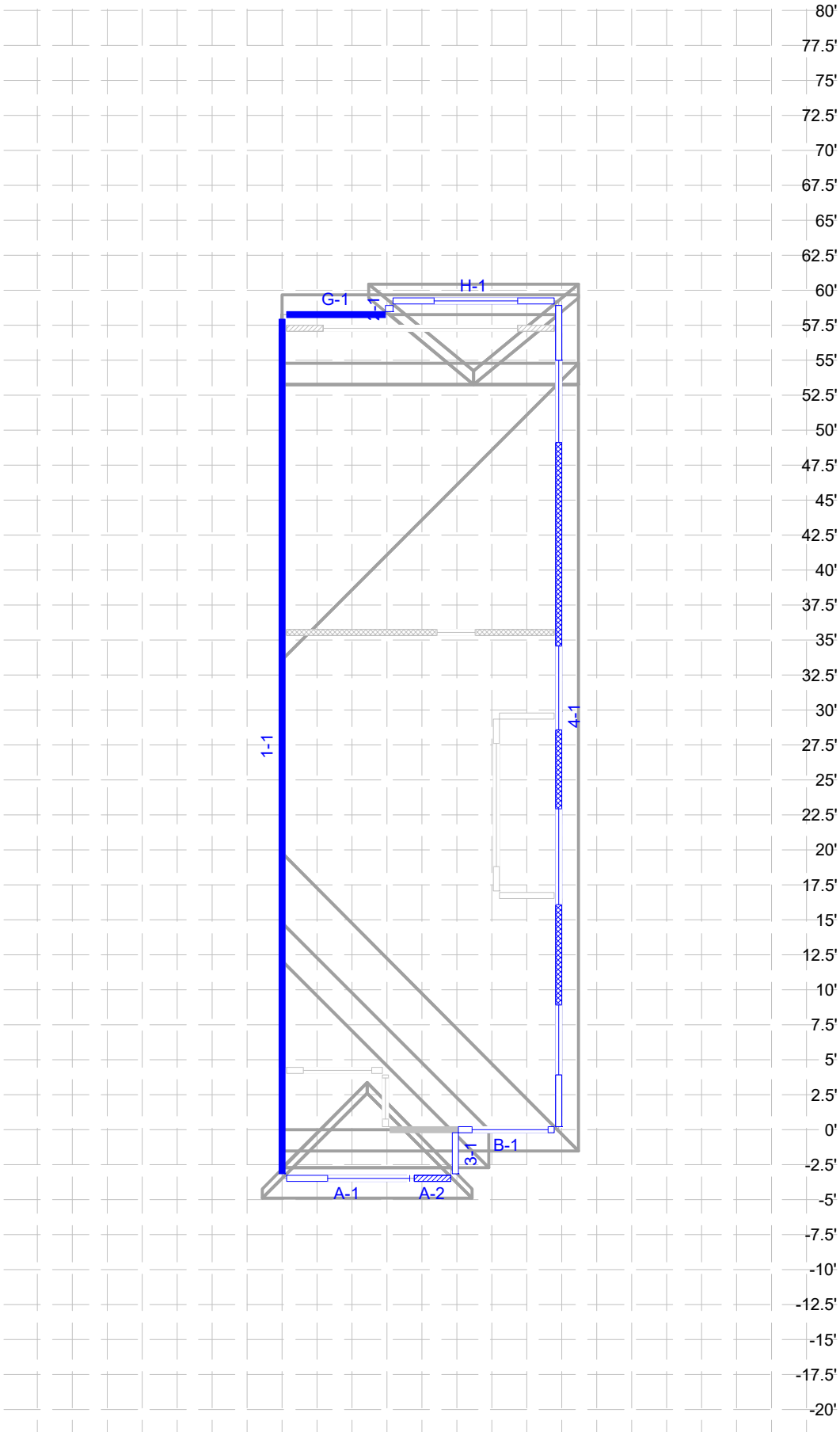
WoodWorks® Shearwalls 2019 (Update 3)

Level 1 of 2



WoodWorks® Shearwalls 2019 (Update 3)

Level 2 of 2



WoodWorks® Shearwalls

SOFTWARE FOR WOOD DESIGN

WoodWorks® Shearwalls 2019 (Update 3)

Project Information

COMPANY AND PROJECT INFORMATION

Company	Project
PLIRIS 327 W 3RD AVE, STE 207 SPOKANE, WA 99201 833.4PLIRIS	1767 2 PLEX REGION 1

DESIGN SETTINGS

Design Code	Wind Standard	Seismic Standard
IBC 2021/AWC SDPWS 2021	ASCE 7-16 Directional (All heights)	ASCE 7-16

Load Combinations

For Design (ASD)	For Deflection (Strength)
0.70 Seismic	1.00 Seismic
0.60 Wind	1.00 Wind

Building Code Capacity Modification

Wind	Seismic
1.00	1.00

Service Conditions and Load Duration

Duration Factor	Temperature Range	Moisture Content Fabrication	Moisture Content Service
-	-	15% (<=19%)	10% (<=19%)

Max Shearwall Offset [ft]

Plan (within story)	Elevation (between stories)
4.00	0.83

Maximum Height-to-width Ratio

Wood panels Wind	Wood panels Seismic	Fiberboard	Lumber Wind	Lumber Seismic	Gypsum Blocked	Gypsum Unblocked
3.5	3.5	-	-	-	2.0	1.5

Ignore non-wood-panel shear resistance contribution...

Wind	Seismic
when comb'd w/ wood panels	Always

Forces based on...

Hold-downs	Applied loads
Drag struts	Applied loads

Shearwall relative rigidity:	Deflection-based stiffness of wall segments
Perforated shearwall Co factor:	SDPWS Equation 4.3-5
Non-identical materials and construction on the shearline:	Allowed, except for material type
Deflection Equation:	3-term from SDPWS 4.3-1
Drift limit for wind design:	1 / 500 story height
Force-transfer strap:	Continuous at top of highest opening and bottom of lowest

SITE INFORMATION

Wind
ASCE 7-16 Directional (All heights)

Design Wind Speed	105 mph
Serviceability Wind Speed	85 mph
Exposure	Exposure B
Enclosure	Enclosed
Min Wind Loads: Walls	16 psf
Roofs	8 psf

Topographic Information [ft]

Shape	Height	Length
-	-	-

Site Location: -

Elev: 205ft
Rigid building - Static analysis

Case 2	E-W loads	N-S loads
Eccentricity (%)	15	15
Loaded at	75%	

Seismic
ASCE 7-16 12.8 Equivalent Lateral Force Procedure

Risk Category	Category II - All others
Structure Type	Regular
Building System	Bearing Wall
Design Category	D
Site Class	D

Spectral Response Acceleration
S1: 0.415g **Ss:** 0.878g

Fundamental Period	E-W	N-S
T Used	0.200s	0.200s
Approximate Ta	0.200s	0.200s
Maximum T	0.280s	0.280s
Response Factor R	6.50	6.50

Fa: 1.15 **Fv:** 1.88

Structural Data

STORY INFORMATION

	Story Elev [ft]	Floor/Ceiling Depth [in]	Wall Height [ft]	Hold-down Length subject to shrinkage [in]	Hold-down Bolt length [in]
Ceiling	21.03	0.0			
Level 2	12.93	12.0	8.10	15.7	16.5
Level 1	2.83	10.0	9.10	13.8	14.5
Foundation	2.00				

BLOCK and ROOF INFORMATION

	Block Dimensions [ft]		Roof Panels Face	Type	Slope	Overhang [ft]
Block 1	2 Story	N-S Ridge				
Location X,Y =	0.00	0.00	**North**	Hip	18.4	1.50
Extent X,Y =	20.00	54.00	**South**	Hip	18.4	1.50
Ridge X Location, Offset	0.00	-10.00	**East**	Side	18.4	1.50
Ridge Elevation, Height	27.69	6.65	**West**	Side	90.0	0.00
Block 2	2 Story	N-S Ridge				
Location X,Y =	0.00	-2.75	**North**	Joined	161.6	0.27
Extent X,Y =	15.00	2.75	**South**	Hip	18.4	0.00
Ridge X Location, Offset	0.00	-7.50	**East**	Side	18.4	0.00
Ridge Elevation, Height	26.02	4.99	**West**	Side	90.0	0.00
Block 3	2 Story	N-S Ridge				
Location X,Y =	0.00	-3.50	**North**	Joined	161.6	1.50
Extent X,Y =	12.25	0.75	**South**	Hip	18.4	1.50
Ridge X Location, Offset	6.13	0.00	**East**	Side	18.4	1.50
Ridge Elevation, Height	23.07	2.04	**West**	Side	18.4	1.50
Block 4	2 Story	E-W Ridge				
Location X,Y =	0.00	54.00	**North**	Side	18.4	1.50
Extent X,Y =	20.00	5.00	**South**	Side	90.0	1.50
Ridge Y Location, Offset	54.00	-2.50	**East**	Gable	90.0	1.50
Ridge Elevation, Height	22.70	1.66	**West**	Gable	90.0	0.00
Block 5	2 Story	N-S Ridge				
Location X,Y =	7.75	59.00	**North**	Hip	18.4	1.22
Extent X,Y =	12.25	1.00	**South**	Joined	161.6	1.50
Ridge X Location, Offset	13.88	0.00	**East**	Side	15.2	1.50
Ridge Elevation, Height	22.70	1.66	**West**	Side	15.2	1.50

SHEATHING MATERIALS by WALL GROUP

Grp	Surf	Material	Sheathing Ratng	Thick in	GU in	Ply	Or	Gvtv lbs/in	Fasteners Size	Type	Df	Eg in	Fd in	Bk	Apply Notes
1	Ext	Struct Sh OSB	24/16	7/16	-	-	Vert	83500	8d	Nail	N	6	12	N	3
2	Ext	Struct Sh OSB	24/16	7/16	-	-	Vert	83500	8d	Nail	N	2	12	Y	2,3
3	1	Struct Sh OSB	24/16	7/16	-	-	Vert	83500	8d	Nail	N	6	12	Y	3
	2	Gyp WB 1-ply	24/16	1/2	-	-	Horz	40000	No. 6	Screw	N	8	12	N	5
4	Ext	Struct Sh OSB	24/16	7/16	-	-	Vert	83500	8d	Nail	N	3	12	Y	2,3
5	Ext	Struct Sh OSB	24/16	7/16	-	-	Vert	83500	8d	Nail	N	4	12	Y	2,3
6	Both	Gyp WB 1-ply	24/16	1/2	-	-	Horz	40000	5d	Nail	N	7	7	N	5
7	Ext	Struct Sh OSB	24/16	7/16	-	-	Vert	83500	8d	Nail	N	6	12	N	3
	Int	Gyp WB 1-ply		1/2	-	-	Horz	40000	No. 6	Screw	N	8	12	N	5

Legend:
Grp – Wall Design Group number, used to reference wall in other tables (created by program)
Surf – Exterior or interior surface when applied to exterior wall
Ratng – Span rating, see SDPWS Table C4.2.2.2C
Thick – Nominal panel thickness
GU - Gypsum underlay thickness
Ply – Number of plies (or layers) in construction of plywood sheets
Or – Orientation of longer dimension of sheathing panels
Gvtv – Shear stiffness in lb/in. of depth from SDPWS Tables C4.2.2A-B
Type – Fastener type from SDPWS Tables 4.3A-D: Nail – common wire nail for structural panels and lumber, cooler or gypsum wallboard nail for GWB, plasterboard nail for gypsum lath, galvanised nail for gypsum sheathing; Box - box nail; Casing – casing nail; Roof – roofing nail; Screw – drywall screw
Size - Common, box, and casing nails: refer to SDPWS Table A1 (casing sizes = box sizes).
Gauges: 11 ga = 0.120" x 1-3/4" (gypsum sheathing, 25/32" fiberboard), 1-1/2" (lath & plaster, 1/2" fiberboard); 13 ga plasterboard = 0.92" x 1-1/8".
Cooler or gypsum wallboard nail: 5d = .086" x 1-5/8"; 6d = .092" x 1-7/8"; 8d = .113" x 2-3/8"; 6/8d = 6d base ply, 8d face ply for 2-ply GWB.
Drywall screws: No. 6, 1-1/4" long.
5/8" gypsum sheathing can also use 6d cooler or GWB nail
Df – Deformed nails (threaded or spiral), with increased withdrawal capacity
Eg – Panel edge fastener spacing
Fd – Field spacing interior to panels
Bk – Sheathing is nailed to blocking at all panel edges; Y(es) or N(o)
Apply Notes – Notes below table legend which apply to sheathing side

Notes:
2. Framing at adjoining panel edges must be 3" nominal or wider with staggered nailing according to SDPWS 4.3.7.1.4
3. Shear capacity for current design has been increased to the value for 15/32" sheathing with same nailing because stud spacing is 16" max. or panel orientation is horizontal. See SDPWS T4.3A Note 2.
5. This material does not contribute to seismic shear resistance because of the "Ignore non-wood-panel contribution for all walls" design setting.

FRAMING MATERIALS and STANDARD WALL by WALL GROUP

Wall Grp	Species	Grade	b in	d in	Spcg in	SG	E psi^6	Standard Wall
1	D.Fir-L	Stud	1.50	5.50	16	0.50	1.40	
2	D.Fir-L	Stud	1.50	5.50	16	0.50	1.40	2/12B_SEG_OSB_7/16_8D
3	D.Fir-L	Stud	1.50	5.50	16	0.50	1.40	6/12B_PERF_OSB_7/16_8D
4	D.Fir-L	Stud	1.50	5.50	16	0.50	1.40	3/12B_SEG_OSB_7/16_8D
5	D.Fir-L	Stud	1.50	5.50	16	0.50	1.40	4/12B_SEG_OSB_7/16_8D
6	D.Fir-L	Stud	1.50	5.50	24	0.50	1.40	
7	D.Fir-L	Stud	1.50	5.50	16	0.50	1.40	

Legend:
Wall Grp – Wall Design Group
b – Stud breadth (thickness)
d – Stud depth (width)
Spcg – Maximum on-centre spacing of studs for design, actual spacing may be less.
SG – Specific gravity
E – Modulus of elasticity
Standard Wall - Standard wall designed as group.

Notes:
Check manufacture requirements for stud size, grade and specific gravity (G) for all shearwall hold-downs.

SHEARLINE, WALL and OPENING DIMENSIONS

North-south Shearlines	Type	Wall Group	Location X [ft]	Extent [ft] Start	Extent [ft] End	Length [ft]	FHS [ft]	Aspect Ratio	Height [ft]
Line 1									
Level 2									
Line 1	Seg	6	0.00	-3.50	59.00	62.50	62.50	-	8.10
Wall 1-1	Seg	6	0.00	-3.50	59.00	62.50	62.50	0.13	-
Level 1									
Line 1	Seg	6	0.00	4.25	58.00	53.75	53.75	-	9.10
Wall 1-1	Seg	6	0.00	4.25	58.00	53.75	53.75	0.17	-
Line 2									
Level 2									
Line 2	NSW		7.50	0.00	60.00	60.00	0.00	-	8.10
Wall 2-1	NSW		7.75	59.00	60.00	1.00	0.00	1.00	-
Level 1									
Line 2			7.50	0.00	60.00	60.00	0.00	-	9.10
Wall 2-1	NSW		7.50	0.00	4.25	4.25	0.00	-	-
Segment 1		-	-	0.00	0.75	0.75	-	-	-
Opening 1		-	-	0.75	3.75	3.00	-	-	9.00
Segment 2		-	-	3.75	4.25	0.50	-	-	-
Line 3									
Level 2									
Line 3	NSW		15.50	-3.50	30.00	33.50	0.00	-	8.10
Wall 3-1	NSW		12.50	-3.50	0.00	3.50	0.00	1.00	-
Level 1									
Line 3			15.50	0.00	58.00	58.00	0.00	-	9.10
Wall 3-1	Prf		15.50	17.00	30.00	13.00	0.00	-	-
Segment 1		-	-	17.00	19.00	2.00	2.00	4.55	-
Opening 1		-	-	19.00	28.00	9.00	9.00	-	8.00
Segment 2		-	-	28.00	30.00	2.00	2.00	4.55	-
Line 4									
Level 2									
Line 4		7	20.00	0.00	60.00	60.00	32.00	-	8.10
Wall 4-1	Prf	7	20.00	0.00	60.00	60.00	32.00	-	-
Segment 1		-	-	0.00	4.00	4.00	4.00	2.02	-
Opening 1		-	-	4.00	9.00	5.00	5.00	-	3.00
Segment 2		-	-	9.00	16.25	7.25	7.25	1.12	-
Opening 2		-	-	16.25	23.25	7.00	7.00	-	5.00
Segment 3		-	-	23.25	29.00	5.75	5.75	1.41	-
Opening 3		-	-	29.00	35.00	6.00	6.00	-	5.00
Segment 4		-	-	35.00	49.75	14.75	14.75	0.55	-
Opening 4		-	-	49.75	55.75	6.00	6.00	-	2.00
Segment 5		-	-	55.75	60.00	4.25	4.25	1.91	-
Level 1									
Line 4		7	20.00	0.00	58.00	58.00	40.00	-	9.10
Wall 4-1	Prf	7	20.00	0.00	17.00	17.00	17.00	0.54	-
Wall 4-2	Prf	7	20.00	30.00	58.00	28.00	23.00	-	-
Segment 1		-	-	30.00	32.50	2.50	2.50	3.64	-
Opening 1		-	-	32.50	35.00	2.50	2.50	-	4.50
Segment 2		-	-	35.00	58.00	23.00	23.00	0.40	-

East-west Shearlines	Type	Wall Group	Location Y [ft]	Extent [ft] Start	Extent [ft] End	Length [ft]	FHS [ft]	Aspect Ratio	Height [ft]
Line A									
Level 2									
Line A		1,2	-3.50	0.00	12.50	12.50	3.25	-	8.10
Wall A-1	Prf	1	-3.50	0.00	9.25	9.25	0.00	-	-
Segment 1		-	-	0.00	3.25	3.25	3.25	2.49	-
Opening 1		-	-	3.25	9.25	6.00	6.00	-	5.00
Segment 2		-	-	9.25	9.25	0.00	0.00	-	-
Wall A-2	Seg	2	-3.50	9.25	12.50	3.25	3.25	2.49	-
Line B									
Level 2									
Line B			0.00	0.00	20.00	20.00	0.00	-	8.10
Wall B-1	Prf		0.00	12.50	20.00	7.50	0.00	-	-
Segment 1		-	-	12.50	13.75	1.25	1.25	6.48	-
Opening 1		-	-	13.75	19.25	5.50	5.50	-	3.00
Segment 2		-	-	19.25	20.00	0.75	0.75	10.80	-
Level 1									
Line B		2	0.00	7.50	20.00	12.50	6.25	-	9.10
Wall B-1	Seg	2	0.00	7.50	20.00	12.50	6.25	-	-
Segment 1		-	-	7.50	13.75	6.25	-	1.46	-
Opening 1		-	-	13.75	19.25	5.50	-	-	5.00

SHEARLINE, WALL and OPENING DIMENSIONS (continued)

Segment 2		-	-	19.25	20.00	0.75	-	12.13	-
Line C									
Level 1									
Line C			4.25	0.00	20.00	20.00	0.00	-	9.10
Wall C-1	Prf		4.25	0.00	7.50	7.50	0.00	-	-
Segment 1		-	-	0.00	1.50	1.50	1.50	6.07	-
Opening 1		-	-	1.50	6.50	5.00	5.00	-	6.00
Segment 2		-	-	6.50	7.50	1.00	1.00	9.10	-
Line D									
Level 1									
Line D	Prf		17.00	0.00	20.00	20.00	0.00	-	9.10
Wall D-1	Prf		17.00	15.50	20.00	4.50	0.00	2.02	-
Line E									
Level 1									
Line E	Prf		30.00	0.00	20.00	20.00	0.00	-	9.10
Wall E-1	Prf		30.00	15.50	20.00	4.50	0.00	2.02	-
Line F									
Level 1									
Line F		3	36.00	0.00	20.00	20.00	17.25	-	9.10
Wall F-1	Prf	3	36.00	0.00	20.00	20.00	17.25	-	-
Segment 1		-	-	0.00	11.25	11.25	11.25	0.81	-
Opening 1		-	-	11.25	14.00	2.75	2.75	-	8.00
Segment 2		-	-	14.00	20.00	6.00	6.00	1.52	-
Line G									
Level 2									
Line G	Seg	5	59.00	0.00	20.00	20.00	7.75	-	8.10
Wall G-1	Seg	5	59.00	0.00	7.75	7.75	7.75	1.05	-
Level 1									
Line G		4	58.00	0.00	20.00	20.00	6.00	-	9.10
Wall G-1	Seg	4	58.00	0.00	20.00	20.00	6.00	-	-
Segment 1		-	-	0.00	3.00	3.00	-	3.03	-
Opening 1		-	-	3.00	17.00	14.00	-	-	8.00
Segment 2		-	-	17.00	20.00	3.00	-	3.03	-
Line H									
Level 2									
Line H			60.00	7.75	20.00	12.25	0.00	-	8.10
Wall H-1	Prf		60.00	7.75	20.00	12.25	0.00	-	-
Segment 1		-	-	7.75	11.00	3.25	3.25	2.49	-
Opening 1		-	-	11.00	17.00	6.00	6.00	-	5.50
Segment 2		-	-	17.00	20.00	3.00	3.00	2.70	-

Legend:
Type - Seg = segmented, Prf = perforated, FT = force-transfer, NSW = non-shearwall
Location - Dimension perpendicular to wall
FHS - Length of full-height sheathing used to resist shear force. For perforated walls, it is based on the factored segments Li defined in SDPWS 4.3.4.3
Aspect Ratio – Ratio of wall height to segment length (h/bs), for force-transfer walls, the aspect ratio of the central pier
Wall Group - Wall design group defined in Sheathing and Framing Materials tables, where it shows associated Standard Wall
If two wall group numbers listed, they are for rigid diaphragm and flexible diaphragm design.

Loads

WIND SHEAR LOADS (as entered or generated)

Level 2 Block	F	Element	Load Case	Wnd Dir	Surf Dir	Prof	Location [ft] Start	Location [ft] End	Magnitude [lbs,plf,psf] Start	Magnitude [lbs,plf,psf] End	Trib Ht [ft]
Block 1	W	Wall	1	W->E	Wind	Line	-3.00	59.00	40.3		
Block 1	W	Wall	Min	W->E	Wind	Line	-3.00	59.00	32.4		
Block 1	W	L Roof	1	W->E	Wind	Line	0.00	20.00	0.0	71.1	
Block 1	W	L Roof	Min	W->E	Wind	Line	0.00	20.00	0.0	8.4	
Block 1	W	Ctr Roof	Min	W->E	Wind	Line	20.00	34.00	8.4		
Block 1	W	Ctr Roof	1	W->E	Wind	Line	20.00	34.00	71.1		
Block 1	W	R Roof	Min	W->E	Wind	Line	34.00	54.00	8.4	0.0	
Block 1	W	R Roof	1	W->E	Wind	Line	34.00	54.00	71.1	0.0	
Block 1	W	Wall	Min	W->E	Wind	Line	59.00	60.00	32.4		
Block 1	W	Wall	1	W->E	Wind	Line	59.00	60.00	40.3		
Block 1	E	Wall	Min	W->E	Lee	Line	-3.00	0.00	32.4		
Block 1	E	Wall	1	W->E	Lee	Line	-3.00	0.00	27.0		
Block 1	E	L Roof	Min	W->E	Lee	Line	-1.50	20.00	0.0	28.6	
Block 1	E	Wall	Min	W->E	Lee	Line	0.00	60.00	32.4		
Block 1	E	Wall	1	W->E	Lee	Line	0.00	60.00	27.0		
Block 1	E	Ctr Roof	Min	W->E	Lee	Line	20.00	34.00	28.6		
Block 1	E	R Roof	Min	W->E	Lee	Line	34.00	55.50	28.6	0.0	
Block 1	W	Wall	Min	E->W	Lee	Line	-3.00	59.00	32.4		
Block 1	W	Wall	1	E->W	Lee	Line	-3.00	59.00	27.0		
Block 1	W	L Roof	Min	E->W	Lee	Line	0.00	20.00	0.0	8.4	
Block 1	W	L Roof	1	E->W	Lee	Line	0.00	20.00	0.0	53.3	
Block 1	W	Ctr Roof	Min	E->W	Lee	Line	20.00	34.00	8.4		
Block 1	W	Ctr Roof	1	E->W	Lee	Line	20.00	34.00	53.3		
Block 1	W	R Roof	1	E->W	Lee	Line	34.00	54.00	53.3	0.0	
Block 1	W	R Roof	Min	E->W	Lee	Line	34.00	54.00	8.4	0.0	
Block 1	W	Wall	Min	E->W	Lee	Line	59.00	60.00	32.4		
Block 1	W	Wall	1	E->W	Lee	Line	59.00	60.00	27.0		
Block 1	E	Wall	1	E->W	Wind	Line	-3.00	0.00	40.3		
Block 1	E	Wall	Min	E->W	Wind	Line	-3.00	0.00	32.4		
Block 1	E	L Roof	Min	E->W	Wind	Line	-1.50	20.00	0.0	28.6	
Block 1	E	Wall	1	E->W	Wind	Line	0.00	60.00	40.3		
Block 1	E	Wall	Min	E->W	Wind	Line	0.00	60.00	32.4		
Block 1	E	Ctr Roof	Min	E->W	Wind	Line	20.00	34.00	28.6		
Block 1	E	R Roof	Min	E->W	Wind	Line	34.00	55.50	28.6	0.0	
Block 1	S	R Roof	Min	S->N	Wind	Line	-0.00	21.50	28.6	0.0	
Block 1	S	R Roof	1	S->N	Wind	Line	-0.00	21.50	-1.9	-0.0	
Block 1	S	Wall	1	S->N	Wind	Line	0.00	12.50	40.3		
Block 1	S	Wall	Min	S->N	Wind	Line	0.00	12.50	32.4		
Block 1	S	Wall	1	S->N	Wind	Line	12.50	20.00	40.3		
Block 1	S	Wall	Min	S->N	Wind	Line	12.50	20.00	32.4		
Block 1	N	R Roof	Min	S->N	Lee	Line	-0.00	21.50	28.6	0.0	
Block 1	N	R Roof	1	S->N	Lee	Line	-0.00	21.50	54.2	0.0	
Block 1	N	Wall	1	S->N	Lee	Line	0.00	7.75	14.3		
Block 1	N	Wall	Min	S->N	Lee	Line	0.00	7.75	32.4		
Block 1	N	Wall	1	S->N	Lee	Line	7.75	20.00	14.3		
Block 1	N	Wall	Min	S->N	Lee	Line	7.75	20.00	32.4		
Block 1	S	R Roof	Min	N->S	Lee	Line	-0.00	21.50	28.6	0.0	
Block 1	S	R Roof	1	N->S	Lee	Line	-0.00	21.50	54.2	0.0	
Block 1	S	Wall	Min	N->S	Lee	Line	0.00	12.50	32.4		
Block 1	S	Wall	1	N->S	Lee	Line	0.00	12.50	14.3		
Block 1	S	Wall	1	N->S	Lee	Line	12.50	20.00	14.3		
Block 1	S	Wall	Min	N->S	Lee	Line	12.50	20.00	32.4		
Block 1	N	R Roof	1	N->S	Wind	Line	-0.00	21.50	-1.9	-0.0	
Block 1	N	R Roof	Min	N->S	Wind	Line	-0.00	21.50	28.6	0.0	
Block 1	N	Wall	Min	N->S	Wind	Line	0.00	7.75	32.4		
Block 1	N	Wall	1	N->S	Wind	Line	0.00	7.75	40.3		
Block 1	N	Wall	Min	N->S	Wind	Line	7.75	20.00	32.4		
Block 1	N	Wall	1	N->S	Wind	Line	7.75	20.00	40.3		
Block 2	W	L Roof	1	W->E	Wind	Line	-2.75	0.00	0.0	30.6	
Block 2	W	L Roof	Min	W->E	Wind	Line	-2.75	0.00	0.0	3.7	
Block 2	W	Ctr Roof	1	W->E	Wind	Line	0.00	12.25	30.6		
Block 2	W	Ctr Roof	Min	W->E	Wind	Line	0.00	12.25	3.7		
Block 2	W	R Roof	Min	W->E	Wind	Line	12.25	15.00	3.7	0.0	
Block 2	W	R Roof	1	W->E	Wind	Line	12.25	15.00	30.6	0.0	
Block 2	E	L Roof	Min	W->E	Lee	Line	-2.75	0.00	0.0	3.7	
Block 2	E	Ctr Roof	Min	W->E	Lee	Line	0.00	12.25	3.7		
Block 2	E	R Roof	Min	W->E	Lee	Line	12.25	15.00	3.7	0.0	
Block 2	W	L Roof	Min	E->W	Lee	Line	-2.75	0.00	0.0	3.7	

WIND SHEAR LOADS (as entered or generated) (continued)

Block 2	W	L Roof	1	E->W	Lee	Line	-2.75	0.00	0.0	23.0
Block 2	W	Ctr Roof	1	E->W	Lee	Line	0.00	12.25	23.0	
Block 2	W	Ctr Roof	Min	E->W	Lee	Line	0.00	12.25	3.7	
Block 2	W	R Roof	Min	E->W	Lee	Line	12.25	15.00	3.7	0.0
Block 2	W	R Roof	1	E->W	Lee	Line	12.25	15.00	23.0	0.0
Block 2	E	L Roof	Min	E->W	Wind	Line	-2.75	0.00	0.0	3.7
Block 2	E	Ctr Roof	Min	E->W	Wind	Line	0.00	12.25	3.7	
Block 2	E	R Roof	Min	E->W	Wind	Line	12.25	15.00	3.7	0.0
Block 2	S	R Roof	Min	S->N	Wind	Line	-0.00	15.00	-20.0	-0.0
Block 2	S	R Roof	1	S->N	Wind	Line	-0.00	15.00	-11.9	-0.0
Block 2	S	R Roof	Min	N->S	Lee	Line	-0.00	15.00	20.0	0.0
Block 2	S	R Roof	1	N->S	Lee	Line	-0.00	15.00	39.6	0.0
Block 3	W	L Roof	1	W->E	Wind	Line	-5.00	-4.25	-0.0	-0.6
Block 3	W	L Roof	Min	W->E	Wind	Line	-5.00	-4.25	0.0	1.0
Block 3	W	Ctr Roof	Min	W->E	Wind	Line	-4.25	2.63	1.0	
Block 3	W	Ctr Roof	1	W->E	Wind	Line	-4.25	2.63	-0.6	
Block 3	W	R Roof	Min	W->E	Wind	Line	2.63	3.38	1.0	0.0
Block 3	W	R Roof	1	W->E	Wind	Line	2.63	3.38	-0.6	-0.0
Block 3	E	L Roof	Min	W->E	Lee	Line	-5.00	-4.25	0.0	1.0
Block 3	E	L Roof	1	W->E	Lee	Line	-5.00	-4.25	0.0	1.9
Block 3	E	Ctr Roof	Min	W->E	Lee	Line	-4.25	2.63	1.0	
Block 3	E	Ctr Roof	1	W->E	Lee	Line	-4.25	2.63	1.9	
Block 3	E	R Roof	Min	W->E	Lee	Line	2.63	3.38	1.0	0.0
Block 3	E	R Roof	1	W->E	Lee	Line	2.63	3.38	1.9	0.0
Block 3	W	L Roof	1	E->W	Lee	Line	-5.00	-4.25	0.0	1.9
Block 3	W	L Roof	Min	E->W	Lee	Line	-5.00	-4.25	0.0	1.0
Block 3	W	Ctr Roof	1	E->W	Lee	Line	-4.25	2.63	1.9	
Block 3	W	Ctr Roof	Min	E->W	Lee	Line	-4.25	2.63	1.0	
Block 3	W	R Roof	1	E->W	Lee	Line	2.63	3.38	1.9	0.0
Block 3	W	R Roof	Min	E->W	Lee	Line	2.63	3.38	1.0	0.0
Block 3	E	L Roof	Min	E->W	Wind	Line	-5.00	-4.25	0.0	1.0
Block 3	E	L Roof	1	E->W	Wind	Line	-5.00	-4.25	-0.0	-0.6
Block 3	E	Ctr Roof	1	E->W	Wind	Line	-4.25	2.63	-0.6	
Block 3	E	Ctr Roof	Min	E->W	Wind	Line	-4.25	2.63	1.0	
Block 3	E	R Roof	1	E->W	Wind	Line	2.63	3.38	-0.6	-0.0
Block 3	E	R Roof	Min	E->W	Wind	Line	2.63	3.38	1.0	0.0
Block 3	S	L Roof	1	S->N	Wind	Line	-1.50	6.13	-0.0	-5.9
Block 3	S	L Roof	Min	S->N	Wind	Line	-1.50	6.13	-0.0	-10.1
Block 3	S	R Roof	Min	S->N	Wind	Line	6.12	13.75	-10.1	-0.0
Block 3	S	R Roof	1	S->N	Wind	Line	6.12	13.75	-5.9	-0.0
Block 3	S	L Roof	Min	N->S	Lee	Line	-1.50	6.13	0.0	10.1
Block 3	S	L Roof	1	N->S	Lee	Line	-1.50	6.13	0.0	19.7
Block 3	S	R Roof	Min	N->S	Lee	Line	6.12	13.75	10.1	0.0
Block 3	S	R Roof	1	N->S	Lee	Line	6.12	13.75	19.7	0.0
Block 4	W	R Gable	Min	W->E	Wind	Line	54.00	59.00	13.3	0.0
Block 4	W	R Gable	1	W->E	Wind	Line	54.00	59.00	17.2	0.0
Block 4	E	R Gable	Min	W->E	Lee	Line	54.00	59.00	13.3	0.0
Block 4	E	R Gable	1	W->E	Lee	Line	54.00	59.00	4.3	0.0
Block 4	W	R Gable	1	E->W	Lee	Line	54.00	59.00	4.3	0.0
Block 4	W	R Gable	Min	E->W	Lee	Line	54.00	59.00	13.3	0.0
Block 4	E	R Gable	Min	E->W	Wind	Line	54.00	59.00	13.3	0.0
Block 4	E	R Gable	1	E->W	Wind	Line	54.00	59.00	17.2	0.0
Block 4	S	Roof	Min	S->N	Wind	Line	0.00	21.50	2.1	
Block 4	S	Roof	1	S->N	Wind	Line	0.00	21.50	17.2	
Block 4	N	Roof	Min	S->N	Lee	Line	0.00	21.50	8.6	
Block 4	S	Roof	Min	N->S	Lee	Line	0.00	21.50	2.1	
Block 4	S	Roof	1	N->S	Lee	Line	0.00	21.50	12.9	
Block 4	N	Roof	Min	N->S	Wind	Line	0.00	21.50	8.6	
Block 5	W	L Roof	Min	W->E	Wind	Line	54.00	55.00	0.0	1.1
Block 5	W	L Roof	1	W->E	Wind	Line	54.00	55.00	-0.0	-0.6
Block 5	W	Ctr Roof	Min	W->E	Wind	Line	55.00	60.22	1.1	
Block 5	W	Ctr Roof	1	W->E	Wind	Line	55.00	60.22	-0.6	
Block 5	W	R Roof	1	W->E	Wind	Line	60.22	61.22	-0.6	-0.0
Block 5	W	R Roof	Min	W->E	Wind	Line	60.22	61.22	1.1	0.0
Block 5	E	L Roof	Min	W->E	Lee	Line	54.00	55.00	0.0	1.1
Block 5	E	L Roof	1	W->E	Lee	Line	54.00	55.00	0.0	2.1
Block 5	E	Ctr Roof	Min	W->E	Lee	Line	55.00	60.22	1.1	
Block 5	E	Ctr Roof	1	W->E	Lee	Line	55.00	60.22	2.1	
Block 5	E	R Roof	1	W->E	Lee	Line	60.22	61.22	2.1	0.0
Block 5	E	R Roof	Min	W->E	Lee	Line	60.22	61.22	1.1	0.0
Block 5	W	L Roof	1	E->W	Lee	Line	54.00	55.00	0.0	2.1
Block 5	W	L Roof	Min	E->W	Lee	Line	54.00	55.00	0.0	1.1
Block 5	W	Ctr Roof	Min	E->W	Lee	Line	55.00	60.22	1.1	

WIND SHEAR LOADS (as entered or generated) (continued)

Block 5	W	Ctr Roof	1	E->W	Lee	Line	55.00	60.22	2.1		
Block 5	W	R Roof	1	E->W	Lee	Line	60.22	61.22	2.1	0.0	
Block 5	W	R Roof	Min	E->W	Lee	Line	60.22	61.22	1.1	0.0	
Block 5	E	L Roof	Min	E->W	Wind	Line	54.00	55.00	0.0	1.1	
Block 5	E	L Roof	1	E->W	Wind	Line	54.00	55.00	-0.0	-0.6	
Block 5	E	Ctr Roof	1	E->W	Wind	Line	55.00	60.22	-0.6		
Block 5	E	Ctr Roof	Min	E->W	Wind	Line	55.00	60.22	1.1		
Block 5	E	R Roof	1	E->W	Wind	Line	60.22	61.22	-0.6	-0.0	
Block 5	E	R Roof	Min	E->W	Wind	Line	60.22	61.22	1.1	0.0	
Block 5	N	L Roof	1	S->N	Lee	Line	6.25	13.88	0.0	16.1	
Block 5	N	L Roof	Min	S->N	Lee	Line	6.25	13.88	0.0	8.3	
Block 5	N	R Roof	1	S->N	Lee	Line	13.88	21.50	16.1	0.0	
Block 5	N	R Roof	Min	S->N	Lee	Line	13.88	21.50	8.3	0.0	
Block 5	N	L Roof	Min	N->S	Wind	Line	6.25	13.88	-0.0	-8.3	
Block 5	N	L Roof	1	N->S	Wind	Line	6.25	13.88	-0.0	-4.8	
Block 5	N	R Roof	Min	N->S	Wind	Line	13.88	21.50	-8.3	-0.0	
Block 5	N	R Roof	1	N->S	Wind	Line	13.88	21.50	-4.8	-0.0	

Level 1 Block	F	Element	Load Case	Wnd Dir	Surf Dir	Prof	Location [ft] Start	Location [ft] End	Magnitude [lbs,plf,psf] Start	Magnitude [lbs,plf,psf] End	Trib Ht [ft]
Block 1	W	Wall	Min	W->E	Wind	Line	-3.00	59.00	32.4		
Block 1	W	Wall	1	W->E	Wind	Line	-3.00	59.00	38.0		
Block 1	W	Wall	1	W->E	Wind	Line	0.00	4.25	51.6		
Block 1	W	Wall	Min	W->E	Wind	Line	0.00	4.25	44.4		
Block 1	W	Wall	Min	W->E	Wind	Line	4.25	58.00	44.4		
Block 1	W	Wall	1	W->E	Wind	Line	4.25	58.00	51.6		
Block 1	W	Wall	Min	W->E	Wind	Line	59.00	60.00	32.4		
Block 1	W	Wall	1	W->E	Wind	Line	59.00	60.00	38.0		
Block 1	E	Wall	Min	W->E	Lee	Line	-3.00	0.00	32.4		
Block 1	E	Wall	1	W->E	Lee	Line	-3.00	0.00	27.0		
Block 1	E	Wall	Min	W->E	Lee	Line	0.00	60.00	32.4		
Block 1	E	Wall	1	W->E	Lee	Line	0.00	17.00	37.0		
Block 1	E	Wall	Min	W->E	Lee	Line	0.00	17.00	44.4		
Block 1	E	Wall	1	W->E	Lee	Line	0.00	60.00	27.0		
Block 1	E	Wall	Min	W->E	Lee	Line	17.00	30.00	44.4		
Block 1	E	Wall	1	W->E	Lee	Line	17.00	30.00	37.0		
Block 1	E	Wall	1	W->E	Lee	Line	30.00	58.00	37.0		
Block 1	E	Wall	Min	W->E	Lee	Line	30.00	58.00	44.4		
Block 1	W	Wall	1	E->W	Lee	Line	-3.00	59.00	27.0		
Block 1	W	Wall	Min	E->W	Lee	Line	-3.00	59.00	32.4		
Block 1	W	Wall	Min	E->W	Lee	Line	0.00	4.25	44.4		
Block 1	W	Wall	1	E->W	Lee	Line	0.00	4.25	37.0		
Block 1	W	Wall	1	E->W	Lee	Line	4.25	58.00	37.0		
Block 1	W	Wall	Min	E->W	Lee	Line	4.25	58.00	44.4		
Block 1	W	Wall	1	E->W	Lee	Line	59.00	60.00	27.0		
Block 1	W	Wall	Min	E->W	Lee	Line	59.00	60.00	32.4		
Block 1	E	Wall	1	E->W	Wind	Line	-3.00	0.00	38.0		
Block 1	E	Wall	Min	E->W	Wind	Line	-3.00	0.00	32.4		
Block 1	E	Wall	1	E->W	Wind	Line	0.00	60.00	38.0		
Block 1	E	Wall	Min	E->W	Wind	Line	0.00	17.00	44.4		
Block 1	E	Wall	1	E->W	Wind	Line	0.00	17.00	51.6		
Block 1	E	Wall	Min	E->W	Wind	Line	0.00	60.00	32.4		
Block 1	E	Wall	Min	E->W	Wind	Line	17.00	30.00	44.4		
Block 1	E	Wall	1	E->W	Wind	Line	17.00	30.00	51.6		
Block 1	E	Wall	Min	E->W	Wind	Line	30.00	58.00	44.4		
Block 1	E	Wall	1	E->W	Wind	Line	30.00	58.00	51.6		
Block 1	S	Wall	Min	S->N	Wind	Line	0.00	12.50	32.4		
Block 1	S	Wall	Min	S->N	Wind	Line	0.00	7.25	44.4		
Block 1	S	Wall	1	S->N	Wind	Line	0.00	7.25	51.6		
Block 1	S	Wall	1	S->N	Wind	Line	0.00	12.50	38.0		
Block 1	S	Wall	Min	S->N	Wind	Line	7.25	20.00	44.4		
Block 1	S	Wall	1	S->N	Wind	Line	7.25	20.00	51.6		
Block 1	S	Wall	1	S->N	Wind	Line	12.50	20.00	38.0		
Block 1	S	Wall	Min	S->N	Wind	Line	12.50	20.00	32.4		
Block 1	S	Wall	Min	S->N	Wind	Line	15.00	20.00	44.4		
Block 1	S	Wall	1	S->N	Wind	Line	15.00	20.00	51.6		
Block 1	N	Wall	Min	S->N	Lee	Line	0.00	20.00	44.4		
Block 1	N	Wall	1	S->N	Lee	Line	0.00	20.00	19.6		
Block 1	N	Wall	Min	S->N	Lee	Line	0.00	7.75	32.4		
Block 1	N	Wall	1	S->N	Lee	Line	0.00	7.75	14.3		
Block 1	N	Wall	1	S->N	Lee	Line	7.75	20.00	14.3		
Block 1	N	Wall	Min	S->N	Lee	Line	7.75	20.00	32.4		

WIND SHEAR LOADS (as entered or generated) (continued)

Block 1	N	Wall	Min	S->N	Lee	Line	15.00	20.00	44.4
Block 1	N	Wall	1	S->N	Lee	Line	15.00	20.00	19.6
Block 1	S	Wall	1	N->S	Lee	Line	0.00	7.25	19.6
Block 1	S	Wall	1	N->S	Lee	Line	0.00	12.50	14.3
Block 1	S	Wall	Min	N->S	Lee	Line	0.00	7.25	44.4
Block 1	S	Wall	Min	N->S	Lee	Line	0.00	12.50	32.4
Block 1	S	Wall	Min	N->S	Lee	Line	7.25	20.00	44.4
Block 1	S	Wall	1	N->S	Lee	Line	7.25	20.00	19.6
Block 1	S	Wall	Min	N->S	Lee	Line	12.50	20.00	32.4
Block 1	S	Wall	1	N->S	Lee	Line	12.50	20.00	14.3
Block 1	S	Wall	Min	N->S	Lee	Line	15.00	20.00	44.4
Block 1	S	Wall	1	N->S	Lee	Line	15.00	20.00	19.6
Block 1	N	Wall	Min	N->S	Wind	Line	0.00	7.75	32.4
Block 1	N	Wall	Min	N->S	Wind	Line	0.00	20.00	44.4
Block 1	N	Wall	1	N->S	Wind	Line	0.00	20.00	51.6
Block 1	N	Wall	1	N->S	Wind	Line	0.00	7.75	38.0
Block 1	N	Wall	1	N->S	Wind	Line	7.75	20.00	38.0
Block 1	N	Wall	Min	N->S	Wind	Line	7.75	20.00	32.4
Block 1	N	Wall	1	N->S	Wind	Line	15.00	20.00	51.6
Block 1	N	Wall	Min	N->S	Wind	Line	15.00	20.00	44.4

Legend:
Block - Block used in load generation
Accum. = loads from one block combined with another
Manual = user-entered loads (so no block)
F - Building face (north, south, east or west)
Element - Building surface on which loads generated or entered
Load Case - One of the following:
ASCE 7 All Heights: Case 1 or 2 from Fig 27.3-8 or minimum loads from 27.1.5
ASCE 7 Low-rise: Reference corner and Case A or B from Fig 28.3-1 or minimum loads from 28.3.4
Wind Dir - Direction of wind for loads with positive magnitude, also direction of MWFRS.
Surf Dir - Windward or leeward side of the building for loads in given direction
Prof - Profile (distribution)
Location - Start and end points on building element
Magnitude - Start = intensity of uniform and point loads or leftmost intensity of trapezoidal load, End = right intensity of trap load
Trib Ht - Tributary height of area loads only

Notes:
Windward load on the monoslope roof was not generated, to comply with ASCE 7 Figure 27.3-1, Note 7.
All loads entered by the user or generated by program are specified (unfactored) loads.The program applies a load factor of 0.60 to wind loads before distributing them to the shearlines.

BUILDING MASSES

Level 2 Force Dir	Building Element	Block	Wall Line	Profile	Location [ft] Start	Location [ft] End	Magnitude [lbs,plf,psf] Start	Magnitude [lbs,plf,psf] End	Trib Width [ft]
E-W	Roof	Block 1	1	Line	-1.50	55.50	190.0	190.0	
E-W	Roof	Block 1	4	Line	-1.50	55.50	218.5	218.5	
E-W	Roof	Block 2	1	Line	-2.75	0.00	142.5	142.5	
E-W	Roof	Block 2		Line	-2.75	0.00	142.5	142.5	
E-W	Roof	Block 3	1	Line	-5.00	-2.75	144.9	144.9	
E-W	Roof	Block 3		Line	-5.00	-2.75	144.9	144.9	
E-W	Roof	Block 4	1	Line	52.50	60.50	190.0	190.0	
E-W	Roof	Block 4	4	Line	52.50	60.50	218.5	218.5	
E-W	Roof	Block 5		Line	59.00	61.22	144.9	144.9	
E-W	Roof	Block 5	4	Line	59.00	61.22	144.9	144.9	
E-W	L Gable	Block 4	1	Line	54.00	59.00	0.0	20.0	
E-W	R Gable	Block 4	1	Line	54.00	54.00	20.0	0.0	
E-W	R Gable	Block 4	4	Line	54.00	59.00	0.0	20.0	
E-W	L Gable	Block 4	4	Line	54.00	54.00	20.0	0.0	
N-S	Roof	Block 1	B	Line	0.00	21.50	541.5	541.5	
N-S	Roof	Block 1		Line	0.00	21.50	541.5	541.5	
N-S	Roof	Block 2		Line	0.00	15.00	26.1	26.1	
N-S	Roof	Block 2	B	Line	0.00	15.00	26.1	26.1	
N-S	Roof	Block 3	A	Line	-1.50	13.75	35.6	35.6	
N-S	Roof	Block 3		Line	-1.50	13.75	7.1	7.1	
N-S	Roof	Block 4		Line	0.00	21.50	76.0	76.0	
N-S	Roof	Block 4		Line	0.00	21.50	76.0	76.0	
N-S	Roof	Block 5		Line	6.25	21.50	9.5	9.5	
N-S	Roof	Block 5	H	Line	6.25	21.50	32.8	32.8	
Both	Wall 1-1	n/a	1	Line	-3.50	59.00	48.6	48.6	
Both	Wall 2-1	n/a		Line	59.00	60.00	48.6	48.6	
Both	Wall 3-1	n/a		Line	-3.50	0.00	48.6	48.6	
Both	Wall 4-1	n/a	4	Line	0.00	60.00	48.6	48.6	
Both	Wall A-1	n/a	A	Line	0.00	12.50	48.6	48.6	
Both	Wall B-1	n/a	B	Line	12.50	20.00	48.6	48.6	
Both	Wall G-1	n/a		Line	0.00	7.75	48.6	48.6	
Both	Wall H-1	n/a	H	Line	7.75	20.00	48.6	48.6	

Level 1 Force Dir	Building Element	Block	Wall Line	Profile	Location [ft] Start	Location [ft] End	Magnitude [lbs,plf,psf] Start	Magnitude [lbs,plf,psf] End	Trib Width [ft]
Both	Wall 1-1	n/a	1	Line	-3.50	59.00	48.6	48.6	
E-W	Floor F2	n/a	1	Line	4.25	17.00	150.0	150.0	
E-W	Floor F3	n/a	1	Line	17.00	30.00	116.3	116.3	
E-W	Floor F4	n/a	1	Line	30.00	58.00	150.0	150.0	
E-W	Floor F1	n/a	2	Line	0.00	4.25	93.8	93.8	
Both	Wall 2-1	n/a		Line	59.00	60.00	48.6	48.6	
Both	Wall 3-1	n/a		Line	-3.50	0.00	48.6	48.6	
E-W	Floor F3	n/a	3	Line	17.00	30.00	116.3	116.3	
Both	Wall 4-1	n/a	4	Line	0.00	60.00	48.6	48.6	
E-W	Floor F1	n/a	4	Line	0.00	4.25	93.8	93.8	
E-W	Floor F2	n/a	4	Line	4.25	17.00	150.0	150.0	
E-W	Floor F4	n/a	4	Line	30.00	58.00	150.0	150.0	
Both	Wall A-1	n/a	A	Line	0.00	12.50	48.6	48.6	
N-S	Floor F2	n/a	B	Line	7.50	15.50	435.0	435.0	
Both	Wall B-1	n/a	B	Line	12.50	20.00	48.6	48.6	
N-S	Floor F4	n/a	B	Line	15.50	20.00	127.5	127.5	
N-S	Floor F1	n/a	C	Line	0.00	7.50	403.1	403.1	
N-S	Floor F4	n/a	D	Line	15.50	20.00	127.5	127.5	
N-S	Floor F3	n/a	E	Line	15.50	20.00	210.0	210.0	
N-S	Floor F1	n/a	G	Line	0.00	7.50	403.1	403.1	
N-S	Floor F2	n/a	G	Line	7.50	15.50	435.0	435.0	
N-S	Floor F3	n/a	G	Line	15.50	20.00	210.0	210.0	

BUILDING MASSES (continued)

Both	Wall G-1	n/a		Line	0.00	7.75	48.6	48.6
Both	Wall H-1	n/a	H	Line	7.75	20.00	48.6	48.6
Both	Wall 1-1	n/a	1	Line	4.25	58.00	54.6	54.6
Both	Wall 2-1	n/a	2	Line	0.00	4.25	54.6	54.6
Both	Wall 3-1	n/a	3	Line	17.00	30.00	54.6	54.6
Both	Wall 4-1	n/a	4	Line	0.00	17.00	54.6	54.6
Both	Wall 4-2	n/a	4	Line	30.00	58.00	54.6	54.6
Both	Wall B-1	n/a	B	Line	7.50	20.00	54.6	54.6
Both	Wall C-1	n/a	C	Line	0.00	7.50	54.6	54.6
Both	Wall D-1	n/a	D	Line	15.50	20.00	54.6	54.6
Both	Wall E-1	n/a	E	Line	15.50	20.00	54.6	54.6
Both	Wall F-1	n/a	F	Line	0.00	20.00	45.5	45.5
Both	Wall G-1	n/a	G	Line	0.00	20.00	54.6	54.6

Legend:
Force Dir - Direction in which the mass is used for seismic load generation, E-W, N-S, or Both
Building element - Roof, gable end, wall or floor area used to generate mass, wall line for user-applied masses, Floor F# - refer to Plan View for floor area number
Wall line - Shearline that equivalent line load is assigned to
Location - Start and end points of equivalent line load on wall line
Trib Width. - Tributary width; for user applied area loads only

SEISMIC LOADS

Level 2 Force Dir	Profile	Location [ft] Start	Location [ft] End	Mag [lbs,plf,psf] Start	Mag [lbs,plf,psf] End
E-W	Line	-5.00	-3.50	38.2	38.2
E-W	Point	-3.50	-3.50	80	80
E-W	Line	-3.50	-2.75	51.0	51.0
E-W	Line	-2.75	-1.50	50.3	50.3
E-W	Line	-1.50	0.00	104.2	104.2
E-W	Point	0.00	0.00	48	48
E-W	Line	0.00	52.50	66.6	66.6
E-W	Line	52.50	54.00	120.4	120.4
E-W	Line	54.00	55.50	125.7	124.1
E-W	Line	55.50	59.00	70.3	66.6
E-W	Point	59.00	59.00	50	50
E-W	Line	59.00	60.00	104.8	104.8
E-W	Point	60.00	60.00	78	78
E-W	Line	60.00	60.50	92.0	92.0
E-W	Line	60.50	61.22	38.2	38.2
N-S	Line	-1.50	0.00	5.6	5.6
N-S	Point	0.00	0.00	407	407
N-S	Line	0.00	6.25	188.0	188.0
N-S	Line	6.25	7.75	193.6	193.6
N-S	Point	7.75	7.75	6	6
N-S	Line	7.75	12.50	193.6	193.6
N-S	Point	12.50	12.50	22	22
N-S	Line	12.50	13.75	193.6	193.6
N-S	Line	13.75	15.00	187.9	187.9
N-S	Line	15.00	20.00	181.1	181.1
N-S	Point	20.00	20.00	391	391
N-S	Line	20.00	21.50	168.3	168.3

Level 1 Force Dir	Profile	Location [ft] Start	Location [ft] End	Mag [lbs,plf,psf] Start	Mag [lbs,plf,psf] End
E-W	Point	-3.50	-3.50	44	44
E-W	Point	-3.50	-3.50	2990	2990
E-W	Line	-3.50	0.00	7.1	7.1
E-W	Point	0.00	0.00	77	77
E-W	Line	0.00	4.25	28.8	28.8
E-W	Point	4.25	4.25	30	30
E-W	Line	4.25	17.00	37.0	37.0
E-W	Point	17.00	17.00	18	18
E-W	Line	17.00	30.00	32.1	32.1
E-W	Point	30.00	30.00	18	18
E-W	Line	30.00	58.00	37.0	37.0
E-W	Point	36.00	36.00	67	67
E-W	Point	58.00	58.00	80	80
E-W	Line	58.00	59.00	7.1	7.1
E-W	Point	59.00	59.00	28	28
E-W	Line	59.00	60.00	7.1	7.1
E-W	Point	60.00	60.00	44	44
N-S	Point	0.00	0.00	437	437
N-S	Line	0.00	7.50	77.4	77.4
N-S	Point	7.50	7.50	17	17
N-S	Line	7.50	7.75	82.0	82.0
N-S	Point	7.75	7.75	4	4
N-S	Line	7.75	12.50	82.0	82.0
N-S	Point	12.50	12.50	12	12
N-S	Line	12.50	15.50	82.0	82.0
N-S	Point	15.50	15.50	52	52
N-S	Line	15.50	20.00	75.7	75.7
N-S	Point	20.00	20.00	393	393

Legend:
Loads in table can be accumulation of loads from several building masses, so they do not correspond with a particular building element.
Location - Start and end of load in direction perpendicular to seismic force direction

Notes:
All loads entered by the user or generated by program are specified (unfactored) loads.The program applies a load factor of 0.70 and redundancy

factor to seismic loads before distributing them to the shearlines.

Design Summary

SHEARWALL DESIGN

Wind Shear Loads, Flexible Diaphragm
All shearwalls have sufficient design capacity.

Seismic Loads, Flexible Diaphragm

The following under-capacity shearlines were found:
Level 1: G-1
Level 2: A-2

HOLDDOWN DESIGN

Wind Loads, Flexible Diaphragm
Under-capacity hold-downs were found on the following walls:
Level 1: B-1, G-1
Level 2: A-2

Seismic Loads, Flexible Diaphragm
Under-capacity hold-downs were found on the following walls:
Level 1: G-1

This Design Summary does not include failures that occur due to excessive story drift from ASCE 7 CC.2.2 (wind) or 12.12 (seismic).
Refer to Story Drift table in this report to verify this design criterion.
Refer to the Deflection table for possible issues regarding fastener slippage (SDPWS Table C4.2.2D).

ALL ELEMENTS INDICATED AS
"UNDER-CAPACITY" HAVE BEEN REVIEWED AND
EITHER APPROVED WITH MINOR OVERSTRESSES
AND/OR DESIGN REVISED ON FINAL DOCS

Flexible Diaphragm Wind Design
ASCE 7 Directional (All Heights) Loads

SHEAR RESULTS

N-S Shearlines	W Gp	For Dir	ASD Shear Force [plf] v	vmax/vft	V [lbs]	Asp-Cub Int	Asp-Cub Ext	Allowable Shear [plf] Int	Ext	Co	C	Cmb	V [lbs]	Resp. Ratio
Line 1														
Level 2														
Ln1, Lev2	6	S->N	9.8	-	611	1.0	1.0	75	75	-	A	150	9375	0.07
	6	N->S	13.0	-	811	1.0	1.0	75	75	-	A	150	9375	0.09
Level 1														
Ln1, Lev1	6	S->N	29.0	-	1557	1.0	1.0	75	75	-	A	150	8063	0.19
	6^	N->S	32.2	-	1733	1.0	1.0	75	75	-	A	150	8063	0.21
Line 4														
Level 2														
Ln4, Lev2	7	S->N	18.6	23.7	597	1.0	.60	60	218	0.79	A	219	6075	0.09
	7	N->S	21.8	27.8	606	1.0	.60	60	218	0.79	A	219	6075	0.10
Level 1														
Ln4, Lev1	-	S->N	-	-	1739	-	-	-	-	-		-	11136	-
	-	N->S	-	-	1760	-	-	-	-	-		-	11136	-
Wall 4-1	7	S->N	25.5	25.5	433	1.0	.60	60	218	1.00	A	278	4733	0.09
	7	N->S	26.2	26.2	446	1.0	.60	60	218	1.00	A	278	4733	0.09
Wall 4-2	7	S->N	56.8	56.8	1307	1.0	.60	60	218	1.00	A	278	6403	0.20
	7	N->S	57.2	57.2	1315	1.0	.60	60	218	1.00	A	278	6403	0.21

E-W Shearlines	W Gp	For Dir	ASD Shear Force [plf] v	vmax/vft	V [lbs]	Asp-Cub Int	Asp-Cub Ext	Allowable Shear [plf] Int	Ext	Co	C	Cmb	V [lbs]	Resp. Ratio
Line A														
Level 2														
LnA, Lev2	-	W->E	-	-	2225	-	-	-	-	-		-	2733	-
	-	E->W	-	-	1982	-	-	-	-	-		-	2733	-
Wall A-1	1	Both	0.0		0	-	.60	-	218	1.00		218	-	-
Wall A-2	2	W->E	684.7	-	2225	-	.94	-	896	-		841	2733	0.81
	2	E->W	609.7	-	1982	-	.94	-	896	-		841	2733	0.73
Line B														
Level 1														
LnB, Lev1	-	W->E	-	-	4002	-	-	-	-	-		-	5600	-
	-	E->W	-	-	3758	-	-	-	-	-		-	5600	-
Wall B-1	2	W->E	-	-	4002	-	1.0	-	896	-		-	5600	-
	2	E->W	-	-	3758	-	1.0	-	896	-		-	5600	-
Seg. 1	-	W->E	640.4	0.0	4002	-	1.0	-	896	-		896	5600	0.71
	-	E->W	601.4	0.0	3758	-	1.0	-	896	-		896	5600	0.67
Seg. 2	-	Both	0.0	0.0	0	-	1.0	-	896	-		896	-	-
Line F														
LnF, Lev1	3^	Both	155.0	189.9	2674	1.0	1.0	60	364	0.82	A	346	5970	0.45
Line G														
Level 2														
LnG, Lev2	-	W->E	-	-	2089	-	-	-	-	-		-	4123	-
	-	E->W	-	-	1901	-	-	-	-	-		-	4123	-
Wall G-1	5	W->E	269.5	-	2089	-	1.0	-	532	-		532	4123	0.51
	5	E->W	245.3	-	1901	-	1.0	-	532	-		532	4123	0.46
Level 1														
LnG, Lev1	-	W->E	-	-	3181	-	-	-	-	-		-	3584	-
	-	E->W	-	-	2994	-	-	-	-	-		-	3584	-
Wall G-1	4	W->E	-	-	3181	-	1.0	-	686	-		-	3584	-
	4	E->W	-	-	2994	-	1.0	-	686	-		-	3584	-
Seg. 1	-	W->E	464.5	0.0	1394	-	.87	-	597	-		597	1792	0.78
	-	E->W	498.9	0.0	1497	-	.87	-	597	-		597	1792	0.84
Seg. 2	-	W->E	595.8	0.0	1787	-	.87	-	597	-		597	1792	1.00
	-	E->W	498.9	0.0	1497	-	.87	-	597	-		597	1792	0.84

Legend:
W Gp - Wall design group defined in Sheathing and Framing Materials tables, where it shows associated Standard Wall. "^" means that this wall is critical for all walls in the Standard Wall group.
For Dir - Direction of wind force along shearline.
v - Design shear force on segment = ASD-factored shear force per unit length of full-height sheathing (FHS)
vmax/vft - Perforated walls: Collector and in-plane anchorage force as per SDPWS eqn. 4.3-9 = V/FHS/Co. FHS is factored for narrow segments as per 4.3.4.3
Force-transfer walls: Shear force in piers above and below either openings or piers beside opening(s). Aspect ratio factor does not apply to these piers.
V - ASD factored shear force. For shearline: total shearline force. For wall: total of all segments on wall. For segment: force on segment

Asp/Cub – For wall: Unblocked structural wood panel factor Cub from SDPWS 4.3.3.2. For segment or force-transfer pier: Aspect Ratio Factor from SDPWS 4.3.4.2.
Int - Unit shear capacity of interior sheathing; Ext - Unit shear capacity of exterior sheathing. For wall: Unfactored. For segment: Include Cub factor and aspect ratio adjustments.
Co - Adjustment factor for perforated walls from SDPWS Equation 4.3-5.
C - Sheathing combination rule, A = Add capacities, S = Strongest side or twice weakest, G = Stiffness-based using SDPWS 4.3-3.
Cmb - Combined interior and exterior unit shear capacity including perforated wall factor Co.
V – Total factored shear capacity of shearline, wall or segment.
Crit Resp – Response ratio = v/Cmb = design shear force/unit shear capacity. "S" indicates that the wind design criterion was critical in selecting wall.

Notes:
Refer to Elevation View diagrams for individual level for uplift anchorage force t for perforated walls given by SDPWS 4.3.6.4.2,4.

HOLD-DOWN DESIGN (flexible wind design)

Level 1 Line-Wall	Posit'n	Location [ft] X	Location [ft] Y	Load Case	Tensile ASD Holddown Force [lbs] Shear	Dead	Uplift	Cmb'd	Hold-down	Cap [lbs]	Crit Resp.
Line 1											
1-1	L End	0.00	-3.37	1	80			80			
1-1	L End	0.00	4.38	1	265			265	HDU5-SDS2.	5645	0.05
1-1	R End	0.00	57.88	1	295			295	HDU5-SDS2.	5645	0.05
1-1	L End	0.00	58.88	1	106			106			
Line 4											
4-1	L End	20.00	0.12	Min	235			235	HDU5-SDS2.	5645	0.04
	V Elem	20.00	9.13	Min	225			225	Refer to upper level		
4-1	R End	20.00	16.88	1	242			242	HDU5-SDS2.	5645	0.04
4	t @ Op 3	20.00	23.25	1	80						
4-2	L End	20.00	35.12	1	523			523	HDU5-SDS2.	5645	0.09
	V Elem	20.00	49.63	Min	229			229	Refer to upper level		
4-2	R End	20.00	57.88	1	526			526	HDU5-SDS2.	5645	0.09
Line A											
	V Elem	9.38	-3.50	1	6009			6009	Refer to upper level		
	V Elem	12.38	-3.50	1	5350			5350	Refer to upper level		
Line B											
B-1	L End	7.63	0.00	1	6070			6070	HDU5-SDS2.	5645	1.08*
B-1	L Op 1	13.63	0.00	1	5700			5700	HDU5-SDS2.	5645	1.01*
Line F											
F-1	L End	0.12	36.00	1	1754			1754	HDU5-SDS2.	5645	0.31
F-1	R End	19.88	36.00	1	1754			1754	HDU5-SDS2.	5645	0.31
Line G											
G-1	L End	0.12	58.00	1	6867			6867	HDU5-SDS2.	5645	1.22*
G-1	L Op 1	2.88	58.00	1	4953			4953	HDU5-SDS2.	5645	0.88
	V Elem	7.63	59.00	1	2053			2053	Refer to upper level		
G-1	R Op 1	17.13	58.00	1	5915			5915	HDU5-SDS2.	5645	1.05*
G-1	R End	19.88	58.00	1	4953			4953	HDU5-SDS2.	5645	0.88

Level 2 Line-Wall	Posit'n	Location [ft] X	Location [ft] Y	Load Case	Tensile ASD Holddown Force [lbs] Shear	Dead	Uplift	Cmb'd	Hold-down	Cap [lbs]	Crit Resp.
Line 1											
1-1	L End	0.00	-3.37	1	80			80	HDU5-SDS2.	5645	0.01
1-1	R End	0.00	58.88	1	106			106	HDU5-SDS2.	5645	0.02
Line 4											
4-1	L End	20.00	9.13	Min	225			225	HDU5-SDS2.	5645	0.04
4-1	R End	20.00	49.63	Min	229			229	HDU5-SDS2.	5645	0.04
Line A											
A-2	L End	9.38	-3.50	1	6009			6009	HDU5-SDS2.	5645	1.06*
A-2	R End	12.38	-3.50	1	5350			5350	HDU5-SDS2.	5645	0.95
Line G											
G-1	L End	0.12	59.00	1	2256			2256	HDU5-SDS2.	5645	0.40
G-1	R End	7.63	59.00	1	2053			2053	HDU5-SDS2.	5645	0.36

Legend:
Line-Wall:
At wall or opening – Shearline and wall number At vertical element - Shearline
Posit'n - Position of stud that hold-down is attached to:
V Elem - Vertical element: column or strengthened studs required where not at wall end or opening
L or R End - At left or right wall end
L or R Op n - At left or right side of opening n
t @ Op n - Uplift force t at opening n from offset opening in perforated wall above, from SDPWS 4.3.6.2.1
Location - Co-ordinates in Plan View
Load Case - Results are for critical load case:
ASCE 7 All Heights: Case 1 or 2 from Fig. 27.3-8
ASCE 7 Low-rise: Windward corner(s) and Case A or B from Fig. 28.3-1
ASCE 7 Minimum loads (27.1.5 / 28.3.4)
Hold-down Forces:
Shear – Wind shear overturning component, based on shearline force, factored for ASD by 0.60. For perforated walls, T from SDPWS 4.3-8 is used.
Dead – Dead load resisting component, factored for ASD by 0.60
Uplift - Uplift wind load component, factored for ASD by 0.60. For perforated walls, T from SDPWS 4.3-8 is used.
Cmb'd - Sum of ASD-factored overturning, dead and uplift forces. May also include the uplift force t from perforated walls from SDPWS 4.3.6.2.1 when openings are staggered.
Hold-down – Device used from hold-down database
Cap – Allowable ASD tension load

Crit. Resp. - Critical Response = Combined ASD force / Allowable ASD tension load

Notes:
Refer to Shear Results table for factor Co, and shearline dimensions table for the sum of Li, used to calculate tension force T for perforated walls from SDPWS Eqn. 4.3-8.
*WARNING - Design capacity has been exceeded.

ALL ELEMENTS INDICATED AS "UNDER-CAPACITY" HAVE BEEN REVIEWED AND EITHER APPROVED WITH MINOR OVERSTRESSES AND/OR DESIGN REVISED ON FINAL DOCS

SOFTWARE BY DEFAULT PLACES AN HDU5. THERE IS NO WAY TO REMOVE THIS. EOR HAS REVIEWED THE ANALYSIS AND SELECTED THE NECESSARY SIZE AND LOCATION OF THE HD'S

COLLECTOR FORCES (flexible wind design)

Level 1 Line-Wall	Position on Wall or Opening	Location [ft] X	Location [ft] Y	Load Case	Drag Strut Force [lbs] --->	Drag Strut Force [lbs] <---	Strap/Blocking Force [lbs] --->	Strap/Blocking Force [lbs] <---
Line 4								
4-1	Right Wall End	20.00	17.00	1	-77	70		
4-2	Right Opening 1	20.00	35.00	1	-617	617		
Line B								
B-1	Left Opening 1	13.75	0.00	1	2001	-1879		
Line F								
F-1	Left Opening 1	11.25	36.00	1	294	-294		
F-1	Right Opening 1	14.00	36.00	1	-157	157		
Line G								
G-1	Left Opening 1	3.00	58.00	1	916	-1048		
G-1	Right Opening 1	17.00	58.00	1	-1310	1048		

Level 2 Line-Wall	Position on Wall or Opening	Location [ft] X	Location [ft] Y	Load Case	Drag Strut Force [lbs] --->	Drag Strut Force [lbs] <---	Strap/Blocking Force [lbs] --->	Strap/Blocking Force [lbs] <---
Line 4								
4-1	Right Opening 1	20.00	9.00	1	-114	116		
4-1	Left Opening 2	20.00	16.25	1	-7	7		
4-1	Right Opening 2	20.00	23.25	1	-96	97		
4-1	Left Opening 3	20.00	29.00	1	-11	11		
4-1	Right Opening 3	20.00	35.00	1	-87	88		
4-1	Left Opening 4	20.00	49.75	1	130	-132		
Line G								
G-1	Right Wall End	7.75	59.00	1	1279	-1164		

Legend:
Line-Wall - Shearline and wall number
Position…- Side of opening or wall end that drag strut is attached to
Location - Co-ordinates in Plan View
Load Case - Results are for critical load case:
ASCE 7 All heights Case 1 or 2
ASCE 7 Low-rise corner; Case A or B
Drag strut Force - Axial force in transfer element at openings, gaps, or changes in design shear along shearline. + : tension; - : compression.
Based on ASD-factored shearline force (vmax from 4.3.6.4.1.1 for perforated walls)
Strap/Blocking Force – For force-transfer walls, force transferred from above and below opening to shearwall pier.
-> Due to shearline force in the west-to-east or south-to-north direction
<- Due to shearline force in the east-to-west or north-to-south direction

MWFRS DEFLECTION (flexible wind design)

These deflections are used to determine shearwall stiffness for force distribution

Wall, segment	W Gp	Dir	Srf	v plf	b ft	h ft	Bending A sq.in	Bending Defl in	Ga kips/ in	Nail slip Vn lbs	Nail slip en in	Shear Defl in	Hold Defl in	Total Defl in
Level 1														
Line 1														
1-1	6	S->N	Both	29.0	53.75	9.10	16.5	.000	4.2	61	.030	.032	0.03	0.06
		N->S	Both	32.2	53.75	9.10	16.5	.000	4.2	61	.030	.035	0.03	0.07
Line 4														
4-1	7	S->N	Ext	20.0	17.00	9.10	16.5	.001	15.4	168	.024	.018	0.10	0.12
		S->N	Int	5.5					3.4	56	.030	.018		
		N->S	Ext	20.6	17.00	9.10	16.5	.001	15.4	168	.024	.019	0.10	0.12
		N->S	Int	5.7					3.4	56	.030	.019		
4-2	7	S->N	Ext	44.6	23.00	9.10	16.5	.001	15.4	168	.024	.041	0.07	0.12
		S->N	Int	12.2					3.4	56	.030	.041		
		N->S	Ext	44.8	23.00	9.10	16.5	.001	15.4	168	.024	.041	0.07	0.12
		N->S	Int	12.3					3.4	56	.030	.041		
Line B														
B-1,1	2	W->E	Ext	640.4	6.25	9.10	16.5	.027	38.6	149	.017	.151	0.45	0.62
		E->W	Ext	601.4	6.25	9.10	16.5	.025	38.6	149	.017	.142	0.44	0.60
Line F														
F-1	3	Both	1	163.1	17.25	9.10	16.5	.003	13.4	182	.030	.102	0.11	0.22
		Both	2	26.9					3.4	56	.030	.102		
Line G														
G-1,1	4	W->E	Ext	464.5	3.00	9.10	16.5	.040	25.2	172	.025	.168	0.98	1.19
		E->W	Ext	498.9	3.00	9.10	16.5	.043	25.2	172	.025	.180	0.86	1.08
G-1,2		W->E	Ext	595.8	3.00	9.10	16.5	.052	25.2	172	.025	.215	0.92	1.19
		E->W	Ext	498.9	3.00	9.10	16.5	.043	25.2	172	.025	.180	0.86	1.08

Wall, segment	W Gp	Dir	Srf	v plf	b ft	h ft	Bending A sq.in	Bending Defl in	Ga kips/ in	Nail slip Vn lbs	Nail slip en in	Shear Defl in	Hold Defl in	Total Defl in
Level 2														
Line 1														
1-1	6	S->N	Both	9.8	62.50	8.10	16.5	.000	4.2	61	.030	.009	0.03	0.04
		N->S	Both	13.0	62.50	8.10	16.5	.000	4.2	61	.030	.013	0.03	0.04
Line 4														
4-1	7	S->N	Ext	21.5	27.75	8.10	16.5	.000	15.4	168	.024	.018	0.06	0.08
		S->N	Int	5.9					3.4	56	.030	.018		
		N->S	Ext	21.8	27.75	8.10	16.5	.000	15.4	168	.024	.018	0.06	0.08
		N->S	Int	6.0					3.4	56	.030	.018		
Line A														
A-2	2	W->E	Ext	684.7	3.25	8.10	16.5	.039	38.6	149	.017	.144	1.11	1.29
		E->W	Ext	609.7	3.25	8.10	16.5	.035	38.6	149	.017	.128	1.04	1.20
Line G														
G-1	5	W->E	Ext	269.5	7.75	8.10	16.5	.006	19.4	177	.028	.112	0.30	0.42
		E->W	Ext	245.3	7.75	8.10	16.5	.006	19.4	177	.028	.102	0.29	0.40

Legend:

Wall, segment - Wall and segment between openings, e.g. B-3, 2 = second segment on Wall 3 on Shearline B

W Gp - Wall design group defined in Sheathing and Materials tables, where it shows associated Standard Wall.

Dir – Force direction

Srf – Wall surface, interior or exterior for perimeter walls, 1 or 2 for interior partitions

v – ASD shear force per unit distance on wall segment. For perforated walls, vmax from SDPWS 4.3-9 is used, as per 4.3.2.1. For force-transfer walls, unit shear force in pier beside opening(s) is used.

b – Segmented wall or force-transfer wall segments: Width of wall segment between openings. Perforated wall: Sum of FHS segments, modified as per SDPWS 4.3.2.1. Force-transfer wall: Length of wall including openings.

h – Wall height. For force-transfer piers, distance from bottom of opening to top of wall is shown; for end segments, results using that distance and the wall height are averaged, as per APA T555.

Defl – Horizontal shearwall deflection due to given term:

Bending = 8vh^3 / EAb Cub; A – Cross sectional area of segment end stud(s); E – stud mod. of elasticity in Framing Materials table

Shear = vh / 1000 Ga Cub. Ga – vw / (vw / Gt + 0.75 en), from SDPWS Ex. C4.3.2-1; vw – ASD sheathing capacity; Gt – Shear stiffness from C4.3.3.2, value is in Sheathing Materials table; en – Nail slip from table C4.2.2D; Vn – Shear force per nail along panel edge using vw

Hold – Hold-down = da x h / b; refer to Hold-down Displacement table for components of da. For force-transfer walls, hold-down device at end of wall is applied to all segments, as per APA T555.

Cub – Unblocked factor from 4.3.2.2, shown in the Shear Results table.

Total defl = Deflection from bending + shear + hold-down, as per SDPWS C4.3.2-1. For force-transfer walls, the average of the values for the segments, as per APA T555.

MWFRS HOLD-DOWN DISPLACEMENT (flexible wind design)

These displacements are used to determine deflections for force distribution

Wall, segment	Dir	Hold-down	Uplift force lbs	Elong / Disp Manuf in	Elong / Disp Add in	Elong / Disp da in	Slippage Pf lbs	Slippage da in	Shrink da in	Crush+ Extra in	Total da in	Hold Defl in
Level 1												
Line 1												
1-1	S->N	HDU5-SDS	265	.005	.000	0.006	-	-	.138	0.04	0.18	0.03
	N->S	HDU5-SDS	295	.006	.000	0.006	-	-	.138	0.04	0.18	0.03
Line 4												
4-1	S->N	HDU5-SDS	235	.005	.000	0.005	-	-	.138	0.04	0.18	0.10
	N->S	HDU5-SDS	242	.005	.000	0.005	-	-	.138	0.04	0.18	0.10
4-2	S->N	HDU5-SDS	523	.011	.000	0.011	-	-	.138	0.04	0.19	0.07
	N->S	HDU5-SDS	526	.011	.001	0.011	-	-	.138	0.04	0.19	0.07
Line B												
B-1,1	W->E	HDU5-SDS	6070	.124	.006	0.129	-	-	.138	0.04	0.31	0.45
	E->W	HDU5-SDS	5700	.116	.005	0.122	-	-	.138	0.04	0.30	0.44
Line F												
F-1	Both	HDU5-SDS	1754	.036	.002	0.037	-	-	.138	0.04	0.21	0.11
Line G												
G-1,1	W->E	HDU5-SDS	6867	.140	.007	0.146	-	-	.138	0.04	0.32	0.98
	E->W	HDU5-SDS	4953	.101	.005	0.106	-	-	.138	0.04	0.28	0.86
G-1,2	W->E	HDU5-SDS	5915	.120	.006	0.126	-	-	.138	0.04	0.30	0.92
	E->W	HDU5-SDS	4953	.101	.005	0.106	-	-	.138	0.04	0.28	0.86
Wall, segment	**Dir**	**Hold-down**	**Uplift force lbs**	**Elong / Disp Manuf in**	**Elong / Disp Add in**	**Elong / Disp da in**	**Slippage Pf lbs**	**Slippage da in**	**Shrink da in**	**Crush+ Extra in**	**Total da in**	**Hold Defl in**
Level 2												
Line 1												
1-1	S->N	HDU5-SDS	80	.003	.000	0.003	-	-	.158	0.04	0.20	0.03
	N->S	HDU5-SDS	106	.004	.000	0.004	-	-	.158	0.04	0.20	0.03
Line 4												
4-1	S->N	HDU5-SDS	225	.009	.000	0.009	-	-	.158	0.04	0.21	0.06
	N->S	HDU5-SDS	229	.009	.000	0.009	-	-	.158	0.04	0.21	0.06
Line A												
A-2	W->E	HDU5-SDS	6009	.245	.003	0.248	-	-	.158	0.04	0.45	1.11
	E->W	HDU5-SDS	5350	.218	.003	0.221	-	-	.158	0.04	0.42	1.04
Line G												
G-1	W->E	HDU5-SDS	2256	.092	.001	0.093	-	-	.158	0.04	0.29	0.30
	E->W	HDU5-SDS	2053	.084	.001	0.085	-	-	.158	0.04	0.28	0.29

Legend:

Wall, segment – Wall and segment between openings, e.g. B-3, 2 = second segment on Wall 3 on Shearline B

Dir - Force direction

Uplift force (P) –Accumulated ASD hold-down tension force from overturning, dead and wind uplift. For perforated walls, T from SDPWS 4.3-8 is used for overturning

da – Vertical displacements due to the following components:

Elong/Disp – Elongation when slippage calculated separately; displacement when combined elongation/slippage used

Manuf - Using manufacturer's value for anchor bolt length, or no bolt contribution for connector-only elongation.

*Unless marked with * = (ASD uplift force / ASD hold-down capacity) x max ASD elongation or displacement*

** - Maximum strength-level elongation or displacement is used. May result in higher than actual displacements for lightly loaded hold-downs, causing the segment to draw less force due to lower than actual stiffness.*

Add - Due to longer anchor bolt length than manufacturer's value, or entire bolt length for connector-only elongation = PL / (Ab x Es);

Ab – bolt cross-sectional area;

Es = steel modulus = 29000000 psi;

L = Lb – Lh;

Lb = Total bolt length shown in Storey Information table;

Lh = Manufacturer's anchor bolt length for given displacement/elongation from hold-down database.

Slippage – Due to vertical slippage of hold-down fasteners attached to stud(s) when not combined with elongation

Pf = ASD uplift force P / number of fasteners

Bolts: = Pf / (270,000 D^1.5) (NDS 11.3.6) ; D = bolt diameter

Nails: = en, from SDPWS Table C4.2.2D using Pf for Vn and values for Wood Structural Panel

Shrink - Wood shrinkage = 0.002 x (15% fabrication – 10% in-service moisture contents) x Ls

Ls = Perp.-to-grain length between fasteners subject to shrinkage, shown in Storey Information table

Crush + Extra – 0.04" wood crushing at compression end of wall segment plus extra displacement due to mis-cuts, gaps, etc.

Total da = Elong/Disp + Slippage + Shrink + Crush + Extra

Hold Defl – Horizontal deflection = h/b x da (4th term in the deflection equation SDPWS C4.3.2-1)

h = wall height; b = segment length between openings; h,b values in Deflection table. For end segments from force-transfer walls, h is the average of the distance from bottom of opening to top of wall and the wall height.

Flexible Diaphragm Seismic Design

SEISMIC INFORMATION

Level	Mass [lbs]	Area [sq.ft]	Story Shear [lbs] E-W	Story Shear [lbs] N-S	Diaphragm Force [lbs] E-W:	Fpx	Design	N-S:	Fpx	Design
2	36849	1236.0	4854	4854		3473	3473		3473	3473
1	34080	1069.6	2491	2491		3212	8445		3212	3212
All	**70928**	-	**7345**	**7345**		-	-		-	-

Legend:
Mass – Sum of all generated and input building masses on level = wx in ASCE 7 equation 12.8-12.
Story Shear – Total unfactored (strength-level) shear force induced at level x, = Fx in ASCE 7 equation 12.8-11.
Diaphragm Force – Minimum ASD-factored force for diaphragm design, used by Shearwalls only for drag strut forces, as per Exception to 12.10.2.1. Fpx is from Eqns. 12.10-1, -2, and -3. Design = The greater of the story shear and Fpx + transfer forces from discontinuous shearlines, factored by overstrength (omega) as per 12.10.1.1. Omega = 2.5 as per 12.2-1.

Redundancy Factor p (rho):
E-W 1.30, N-S 1.00
Automatically calculated according to ASCE 7 12.3.4.2.
Applies to shearwall design, hold-down forces and the drag strut force component based on shearline forces; does not apply to story drift, out-of-plane force, or the diaphragm force Fpx and the drag strut force component based on it.

Vertical Earthquake Load Ev
Ev = 0 for Seismic Design Category A as per ASCE 7 12.4.2.2.

SHEAR RESULTS (flexible seismic design)

N-S Shearlines	W Gp	For Dir	ASD Shear Force [plf] v	vmax/vft	V [lbs]	Asp-Cub Int	Asp-Cub Ext	Allowable Shear [plf] Int	Ext	Co	C	Cmb	V [lbs]	Resp. Ratio
Line 4														
Level 2														
Ln4, Lev2	7	S->N	122.4	149.0	3398	1.0	.60	0	156	0.82	S	128	4101	0.96
	7	N->S	106.2	129.2	3398	1.0	.60	0	156	0.82	S	128	4101	0.83
Level 1														
Ln4, Lev1	-	Both	-	-	5142	-	-	-	-	-		-	6240	-
Wall 4-1	7	S->N	116.7	116.7	1984	1.0	.60	0	156	1.00	S	156	2652	0.75
	7	N->S	117.2	117.2	1992	1.0	.60	0	156	1.00	S	156	2652	0.75
Wall 4-2	7^	S->N	137.3	137.3	3158	1.0	.60	0	156	1.00	S	156	3588	0.88
	7	N->S	136.9	136.9	3149	1.0	.60	0	156	1.00	S	156	3588	0.88

E-W Shearlines	W Gp	For Dir	ASD Shear Force [plf] v	vmax/vft	V [lbs]	Asp-Cub Int	Asp-Cub Ext	Allowable Shear [plf] Int	Ext	Co	C	Cmb	V [lbs]	Resp. Ratio
Line A														
Level 2														
LnA, Lev2	-	Both	-	-	2093	-	-	-	-	-		-	1952	-
Wall A-1	1	Both	0.0		0	-	.60	-	156	1.00		156	-	-
Wall A-2	2^	Both	644.1	-	2093	-	.94	-	640	-		601	1952	1.07*
Line B														
Level 1														
LnB, Lev1	-	Both	-	-	3445	-	-	-	-	-		-	4000	-
Wall B-1	2	Both	-	-	3445	-	1.0	-	640	-		-	4000	-
Seg. 1	-	Both	551.3	0.0	3445	-	1.0	-	640	-		640	4000	0.86
Seg. 2	-	Both	0.0	0.0	0	-	1.0	-	640	-		640	-	-
Line F														
LnF, Lev1	3	Both	59.2	72.6	1022	1.0	1.0	0	260	0.82	S	212	3661	0.28
Line G														
Level 2														
LnG, Lev2	-	Both	-	-	2324	-	-	-	-	-		-	2945	-
Wall G-1	5^	Both	299.9	-	2324	-	1.0	-	380	-		380	2945	0.79
Level 1														
LnG, Lev1	-	Both	-	-	2845	-	-	-	-	-		-	2560	-
Wall G-1	4	Both	-	-	2845	-	1.0	-	490	-		-	2560	-
Seg. 1	-	W->E	392.1	0.0	1176	-	.87	-	427	-		427	1280	0.92
	-	E->W	474.1	0.0	1422	-	.87	-	427	-		427	1280	1.11*
Seg. 2	-	W->E	556.1	0.0	1668	-	.87	-	427	-		427	1280	1.30*
	-	E->W	474.1	0.0	1422	-	.87	-	427	-		427	1280	1.11*

Legend:
W Gp - Wall design group defined in Sheathing and Framing Materials tables, where it shows associated Standard Wall. "^" means that this wall is critical for all walls in the Standard Wall group.
For Dir – Direction of seismic force along shearline.
v - Design shear force on segment = ASD-factored shear force per unit length of full-height sheathing (FHS)
vmax/vft - Perforated walls: Collector and in-plane anchorage force as per SDPWS eqn. 4.3-9 = V/FHS/Co. FHS is factored for narrow segments as per 4.3.4.3
Force-transfer walls: Shear force in piers above and below either openings or piers beside opening(s). Aspect ratio factor does not apply to these piers.
V - ASD factored shear force. For shearline: total shearline force. For wall: total of all segments on wall. For segment: force on segment
Asp/Cub – For wall: Unblocked structural wood panel factor Cub from SDPWS 4.3.3.2. For segment or force-transfer pier: Aspect Ratio Factor from SDPWS 4.3.4.2.
Int - Unit shear capacity of interior sheathing; Ext - Unit shear capacity of exterior sheathing. For wall: Unfactored. For segment: Include Cub factor and aspect ratio adjustments.
Co - Adjustment factor for perforated walls from SDPWS Equation 4.3-5.
C - Sheathing combination rule, A = Add capacities, S = Strongest side or twice weakest, G = Stiffness-based using SDPWS 4.3-3.
Cmb - Combined interior and exterior unit shear capacity including perforated wall factor Co.
V – Total factored shear capacity of shearline, wall or segment.
Crit Resp – Response ratio = v/Cmb = design shear force/unit shear capacity. "W" indicates that the wind design criterion was critical in selecting wall.

Notes:
Refer to Elevation View diagrams for individual level for uplift anchorage force t for perforated walls given by SDPWS 4.3.6.4.2,4.
The contribution to shear resistance from gypsum, fiberboard, or lumber sheathing is taken as zero because of the "Ignore non-wood-panel contribution…" Design Setting. Refer to the Sheathing Materials table for the wall groups affected.
*WARNING - Design capacity has been exceeded.

ALL ELEMENTS INDICATED AS "UNDER-CAPACITY" HAVE BEEN REVIEWED AND EITHER APPROVED WITH MINOR OVERSTRESSES AND/OR DESIGN REVISED ON FINAL DOCS

HOLD-DOWN DESIGN (flexible seismic design)

Level 1 Line-Wall	Posit'n	Location [ft] X	Location [ft] Y	Tensile ASD Holddown Force [lbs] Shear	Dead	Ev	Cmb'd	Hold-down	Cap [lbs]	Crit Resp.
Line 4										
4-1	L End	20.00	0.12	1078			1078	HDU5-SDS2.	5645	0.19
	V Elem	20.00	9.13	1064			1064	Refer to upper level		
4-1	R End	20.00	16.88	1082			1082	HDU5-SDS2.	5645	0.19
4	t @ Op 3	20.00	23.25	372						
4-2	L End	20.00	35.12	1263			1263	HDU5-SDS2.	5645	0.22
	V Elem	20.00	49.63	1064			1064	Refer to upper level		
4	t @ Op 5	20.00	57.75	114						
4-2	R End	20.00	57.88	1260			1373	HDU5-SDS2.	5645	0.24
Line A										
	V Elem	9.38	-3.50	5652			5652	Refer to upper level		
	V Elem	12.38	-3.50	5652			5652	Refer to upper level		
Line B										
B-1	L End	7.63	0.00	5226			5226	HDU5-SDS2.	5645	0.93
B-1	L Op 1	13.63	0.00	5226			5226	HDU5-SDS2.	5645	0.93
Line F										
F-1	L End	0.12	36.00	670			670	HDU5-SDS2.	5645	0.12
F-1	R End	19.88	36.00	670			670	HDU5-SDS2.	5645	0.12
Line G										
G-1	L End	0.12	58.00	6402			6402	HDU5-SDS2.	5645	1.13*
G-1	L Op 1	2.88	58.00	4707			4707	HDU5-SDS2.	5645	0.83
	V Elem	7.63	59.00	2510			2510	Refer to upper level		
G-1	R Op 1	17.13	58.00	5521			5521	HDU5-SDS2.	5645	0.98
G-1	R End	19.88	58.00	4707			4707	HDU5-SDS2.	5645	0.83

Level 2 Line-Wall	Posit'n	Location [ft] X	Location [ft] Y	Tensile ASD Holddown Force [lbs] Shear	Dead	Ev	Cmb'd	Hold-down	Cap [lbs]	Crit Resp.
Line 4										
4-1	L End	20.00	9.13	1064			1064	HDU5-SDS2.	5645	0.19
4-1	R End	20.00	49.63	1064			1064	HDU5-SDS2.	5645	0.19
Line A										
A-2	L End	9.38	-3.50	5652			5652	HDU5-SDS2.	5645	1.00
A-2	R End	12.38	-3.50	5652			5652	HDU5-SDS2.	5645	1.00
Line G										
G-1	L End	0.12	59.00	2510			2510	HDU5-SDS2.	5645	0.44
G-1	R End	7.63	59.00	2510			2510	HDU5-SDS2.	5645	0.44

Legend:
Line-Wall:
At wall or opening – Shearline and wall number
At vertical element - Shearline
Posit'n - Position of stud that hold-down is attached to:
V Elem - Vertical element: column or strengthened studs required where not at wall end or opening
L or R End - At left or right wall end
L or R Op n - At left or right side of opening n
t @ Op n - Uplift force t at opening n from offset opening in perforated wall above, from SDPWS 4.3.6.2.1
Location - Co-ordinates in Plan View
Hold-down Forces:
Shear – Seismic shear overturning component, factored for ASD by 0.7. For perforated walls, T from SDPWS 4.3-8 is used
Dead – Dead load resisting component, factored for ASD by 0.60
Ev – Vertical seismic load effect from ASCE 7 12.4.2.2 = -0.2Sds x ASD seismic factor x unfactored D = 0.000 x factored D. Refer to Seismic Information table for more details.
Cmb'd - Sum of ASD-factored overturning, dead and vertical seismic forces. May also include the uplift force t from perforated walls from SDPWS 4.3.6.2.1 when openings are staggered.
Hold-down – Device used from hold-down database
Cap – Allowable ASD tension load
Crit. Resp. – Critical Response = Combined ASD force/Allowable ASD tension load

Notes:
Combined force from ASCE 7 2.4.1 load combination 10 = - (0.6D - 0.7Ev + 0.7Eh); Eh (from 12.4.2.1) = - shear overturning force
Refer to Shear Results table for factor Co, and shearline dimensions table for the sum of Li, used to calculate tension force T for perforated walls from SDPWS Eqn. 4.3-8.
*WARNING - Design capacity has been exceeded.

ALL ELEMENTS INDICATED AS "UNDER-CAPACITY" HAVE BEEN REVIEWED AND EITHER APPROVED WITH MINOR OVERSTRESSES AND/OR DESIGN REVISED ON FINAL DOCS

SOFTWARE BY DEFAULT PLACES AN HDU5. THERE IS NO WAY TO REMOVE THIS. IT IS UP TO THE EOR TO REVIEW THE ANALYSIS AND SELECT THE APPLICABLE HD'S AS NEEDED

COLLECTOR FORCES (flexible seismic design)

Level 1 Line-Wall	Position on Wall or Opening	Location [ft] X	Y	Drag Strut Force [lbs] --->	<---	Strap/Blocking Force [lbs] --->	<---
Line 4							
	Shearline force			8262	8262		
4-1	Right Wall End	20.00	17.00	766	-780		
4-2	Right Opening 1	20.00	35.00	-1798	1784		
Line B							
	Shearline force			5851	5851		
B-1	Left Opening 1	13.75	0.00	2926	-2926		
Line F							
	Shearline force			1022	1022		
F-1	Left Opening 1	11.25	36.00	112	-112		
F-1	Right Opening 1	14.00	36.00	-60	60		
Line G							
	Shearline force			2845	2845		
G-1	Left Opening 1	3.00	58.00	750	-996		
G-1	Right Opening 1	17.00	58.00	-1242	996		

Level 2 Line-Wall	Position on Wall or Opening	Location [ft] X	Y	Drag Strut Force [lbs] --->	<---	Strap/Blocking Force [lbs] --->	<---
Line 4							
	Shearline force			3473	3473		
4-1	Right Opening 1	20.00	9.00	-634	634		
4-1	Left Opening 2	20.00	16.25	-187	187		
4-1	Right Opening 2	20.00	23.25	-680	680		
4-1	Left Opening 3	20.00	29.00	-326	326		
4-1	Right Opening 3	20.00	35.00	-748	748		
4-1	Left Opening 4	20.00	49.75	161	-161		
4-1	Right Opening 4	20.00	55.75	-262	262		
Line G							
	Shearline force			2324	2324		
G-1	Right Wall End	7.75	59.00	1423	-1423		

Legend:
Line-Wall - Shearline and wall number
Position…- Side of opening or wall end that drag strut is attached to
Location - Co-ordinates in Plan View
Drag strut Force - Axial force in transfer element at openings, gaps, or changes in design shear along shearline. + : tension; - : compression.
Based on ASD-factored shearline force shown. For SDC C-F, it is the greater of the design shearline force and the diaphragm force Fpx, added to shearline force from story above and to forces transferred from discontinuous shearlines factored by overstrength (omega) as per 12.10.1.1. Refer to Seismic Information table for diaphragm forces and omega factor.
For SDC D-F, if horizontal torsional irregularities 2, 3, or 4 are input, or vertical irregularity 4 detected or input, 25% increase from 12.3.3.4 applied.
For perforated walls, this force is converted to vmax using 4.3.6.4.1.1.
Strap/Blocking Force – For force-transfer walls, force transferred from above and below opening to shearwall pier.
-> Due to shearline force in the west-to-east or south-to-north direction
<- Due to shearline force in the east-to-west or north-to-south direction

DEFLECTION (flexible seismic design)

Wall, segment	W Gp	Dir	Srf	v plf	b ft	h ft	Bending A sq.in	Bending Defl in	Ga kips/ in	Nail slip Vn lbs	Nail slip en in	Shear Defl in	Hold Defl in	Total Defl in
Level 1														
Line 4														
4-1	7	S->N	Ext	166.7	17.00	9.10	16.5	.004	15.4	168	.024	.164	0.11	0.28
		S->N	Int	0.0					0.0	0	.000	.000		
		N->S	Ext	167.4	17.00	9.10	16.5	.004	15.4	168	.024	.165	0.11	0.28
		N->S	Int	0.0					0.0	0	.000	.000		
4-2	7	S->N	Ext	196.2	23.00	9.10	16.5	.004	15.4	168	.024	.194	0.08	0.28
		S->N	Int	0.0					0.0	0	.000	.000		
		N->S	Ext	195.6	23.00	9.10	16.5	.004	15.4	168	.024	.193	0.09	0.28
		N->S	Int	0.0					0.0	0	.000	.000		
Line B														
B-1,1	2	Both	Ext	605.8	6.25	9.10	16.5	.025	38.6	149	.017	.143	0.48	0.65
Line F														
F-1	3	Both	1	79.8	17.25	9.10	16.5	.001	13.4	182	.030	.054	0.10	0.16
		Both	2	0.0					0.0	0	.000	.000		
Line G														
G-1,1	4	W->E	Ext	430.9	3.00	9.10	16.5	.037	25.2	172	.025	.155	1.10	1.30
		E->W	Ext	521.0	3.00	9.10	16.5	.045	25.2	172	.025	.188	0.95	1.19
G-1,2		W->E	Ext	611.1	3.00	9.10	16.5	.053	25.2	172	.025	.220	1.02	1.30
		E->W	Ext	521.0	3.00	9.10	16.5	.045	25.2	172	.025	.188	0.95	1.19

Wall, segment	W Gp	Dir	Srf	v plf	b ft	h ft	Bending A sq.in	Bending Defl in	Ga kips/ in	Nail slip Vn lbs	Nail slip en in	Shear Defl in	Hold Defl in	Total Defl in
Level 2														
Line 4														
4-1	7	Both	Ext	184.6	32.00	8.10	16.5	.002	15.4	168	.024	.162	0.07	0.23
		Both	Int	0.0					0.0	0	.000	.000		
Line A														
A-2	2	Both	Ext	707.8	3.25	8.10	16.5	.040	38.6	149	.017	.149	1.29	1.48
Line G														
G-1	5	Both	Ext	329.5	7.75	8.10	16.5	.008	19.4	177	.028	.137	0.35	0.50

Legend:
Wall, segment - Wall and segment between openings, e.g. B-3, 2 = second segment on Wall 3 on Shearline B
W Gp – Wall design group, refer to Sheathing and Framing Materials
Dir - Force direction
Srf – Wall surface, interior or exterior for perimeter walls, 1 or 2 for interior partitions
v – Unfactored (strength-level) shear force per unit distance on wall segment = ASD force/0.70. For perforated walls, vmax from SDPWS 4.3-9 is used, as per 4.3.2.1. For force-transfer walls, unit shear force in pier beside opening(s) is used.
b – Segmented wall or force-transfer wall segments: Width of wall segment between openings. Perforated wall: Sum of FHS segments, modified as per SDPWS 4.3.2.1. Force-transfer wall: Length of wall including openings.
h – Wall height. For force-transfer piers, distance from bottom of opening to top of wall is shown; for end segments, results using that distance and the wall height are averaged, as per APA T555.
Defl – Horizontal shearwall deflection due to given term:
Bending = 8vh^3 / EAb Cub; A – Cross sectional area of segment end stud(s); E – stud mod. of elasticity in Framing Materials table
Shear = vh / 1000 Ga Cub. Ga – 1.4 vs / (1.4 vs / Gt + 0.75 en) from SDPWS Ex. C4.3.2-1; vs – ASD sheathing capacity; Gt – Shear stiffness from C4.3.3.2, value is in Sheathing Materials table; en – Nail slip from table C4.2.2D; Vn – Shear force per nail along panel edge using 1.4 vs
Hold – Hold-down = da x h / b; refer to Hold-down Displacement table for components of da. For force-transfer walls, hold-down device at end of wall is applied to all segments, as per APA T555.
Cub – Unblocked factor from 4.3.2.2, shown in the Shear Results table.
Total defl = Deflection from bending + shear + hold-down, as per SDPWS C4.3.2-1. For force-transfer walls, the average of the values for the segments, as per APA T555.

HOLD-DOWN DISPLACEMENT (flexible seismic design)

Wall, segment	Dir	Hold-down	Uplift force lbs	Elong / Disp Manuf in	Elong / Disp Add in	Elong / Disp da in	Slippage Pf lbs	Slippage da in	Shrink da in	Crush+ Extra in	Total da in	Hold Defl in
Level 1												
Line 4												
4-1	S->N	HDU5-SDS	1540	.030	.001	0.032	-	-	.138	0.04	0.21	0.11
	N->S	HDU5-SDS	1546	.030	.001	0.032	-	-	.138	0.04	0.21	0.11
4-2	S->N	HDU5-SDS	1805	.035	.002	0.037	-	-	.138	0.04	0.21	0.08
	N->S	HDU5-SDS	1962	.038	.002	0.040	-	-	.138	0.04	0.22	0.09
Line B												
B-1,1	Both	HDU5-SDS	5742	.146	.005	0.152	-	-	.138	0.04	0.33	0.48
Line F												
F-1	Both	HDU5-SDS	737	.019	.001	0.019	-	-	.138	0.04	0.20	0.10
Line G												
G-1,1	W->E	HDU5-SDS	7036	.179	.007	0.186	-	-	.138	0.04	0.36	1.10
	E->W	HDU5-SDS	5172	.132	.005	0.137	-	-	.138	0.04	0.31	0.95
G-1,2	W->E	HDU5-SDS	6067	.155	.006	0.160	-	-	.138	0.04	0.34	1.02
	E->W	HDU5-SDS	5172	.132	.005	0.137	-	-	.138	0.04	0.31	0.95

Wall, segment	Dir	Hold-down	Uplift force lbs	Elong / Disp Manuf in	Elong / Disp Add in	Elong / Disp da in	Slippage Pf lbs	Slippage da in	Shrink da in	Crush+ Extra in	Total da in	Hold Defl in
Level 2												
Line 4												
4-1	Both	HDU5-SDS	1520	.060	.001	0.060	-	-	.158	0.04	0.26	0.07
Line A												
A-2	Both	HDU5-SDS	6211	.316	.003	0.320	-	-	.158	0.04	0.52	1.29
Line G												
G-1	Both	HDU5-SDS	2758	.140	.001	0.142	-	-	.158	0.04	0.34	0.35

Legend:
Wall, segment – Wall and segment between openings, e.g. B-3, 2 = second segment on Wall 3 on Shearline B
Dir - Force direction
Uplift force (P) –Strength-level accumulated hold-down tension force from overturning, dead and wind uplift. For perforated walls, T from SDPWS 4.3-8 is used for overturning
da – Vertical displacements due to the following components:
Elong/Disp – Elongation when slippage calculated separately; displacement when combined elongation/slippage used
Manuf - Using manufacturer's value for anchor bolt length, or no bolt contribution for connector-only elongation.
*Unless marked with * = (ASD uplift force / ASD hold-down capacity) x max strength-level elongation or displacement*
** - Maximum strength-level elongation or displacement is used. May result in higher than actual displacements for lightly loaded hold-downs, causing the segment to draw less force due to lower than actual stiffness.*
Add - Due to longer anchor bolt length than manufacturer's value, or entire bolt length for connector-only elongation = PL / (Ab x Es);
Ab – bolt cross-sectional area;
Es = steel modulus = 29000000 psi;
L = Lb – Lh;
Lb = Total bolt length shown in Storey Information table;
Lh = Manufacturer's anchor bolt length for given displacement/elongation from hold-down database.
Slippage – Due to vertical slippage of hold-down fasteners attached to stud(s) when not combined with elongation
Pf = ASD uplift force P / number of fasteners
Bolts: = Pf / (270,000 D^1.5) (NDS 11.3.6) ; D = bolt diameter
Nails: = en, from SDPWS Table C4.2.2D using Pf for Vn and values for Wood Structural Panel
Shrink - Wood shrinkage = 0.002 x (15% fabrication – 10% in-service moisture contents) x Ls
Ls = Perp.-to-grain length between fasteners subject to shrinkage, shown in Storey Information table
Crush + Extra – 0.04" wood crushing at compression end of wall segment plus extra displacement due to mis-cuts, gaps, etc.
Total da = Elong/Disp + Slippage + Shrink + Crush + Extra
Hold Defl – Horizontal deflection = h/b x da (4th term in the deflection equation SDPWS C4.3.2-1)
h = wall height; b = segment length between openings; h,b values in Deflection table. For end segments from force-transfer walls, h is the average of the distance from bottom of opening to top of wall and the wall height.

STORY DRIFT (flexible seismic design)

Level	Dir	Wall height ft	Actual Story Drift (in) Max dxe	Line	Max dx	Center of Mass	C of M dxe	C of M dx	Allowable Story Drift hsx ft	Delta a in	Ratio Max	Ratio C of M
1		9.10							10.10	3.03		
	N<->S		0.28	4	1.13	9.93	0.00	0.00			0.37	0.00
	E<->W		1.19	G	4.75	29.53	0.00	0.00			1.57*	0.00
2		8.10							8.10	2.43		
	N<->S		0.23	4	0.92	10.46	0.12	0.48			0.38	0.20
	E<->W		1.48	A	5.91	32.92	0.25	1.01			2.43*	0.42

ASCE 7 Eqn. 12.8-15: dx = dxe x Cd / Ie
Deflection amplification factor Cd from Table 12.2-1 = (E-W), 4.0 (N-S)
Importance factor Ie = 1.00

Legend:
Max dxe – Largest deflection for any shearline on level in this direction; refer to Deflections table
Line – Shearline with largest deflection on level in this direction
hsx – Story height in ASCE Table 12.12-1 = Height of walls plus joist depth between this level and the one above.
Max dx – Largest amplified deflection on level in this direction using ASCE 7 Eq'n 12.8-15
C of M dxe - Deflection at the center of mass of this level; from interpolating deflections at adjacent shearlines.
C of M dx - Amplified deflection at center of mass using Eq'n 12.8-15. Does not include differences between top and bottom diaphragm deflection.
Delta a = Allowable story drift on this level from ASCE 7 Table 12.12-1
Ratio - Proportion of allowable story drift experienced, on this level in this direction.

Notes:
*FAILURE – Story drift on this level is greater than maximum allowed by ASCE 7 Table 12.12-1.
Maximum of all shearlines used to satisfy flexible diaphragm assumption in 12.3.1.1.

ALL ELEMENTS INDICATED AS "UNDER-CAPACITY" HAVE BEEN REVIEWED AND EITHER APPROVED WITH MINOR OVERSTRESSES AND/OR DESIGN REVISED ON FINAL DOCS

STORY DRIFT IS A SERVICEABILITY RATIO AND NOT A REQUIRED DESIGN ELEMENT IN LOW-RISE RESIDENTIAL CONSTRUSTION. THIS HAS BEEN REVIEWED AND DESIGN IS APPROVED PER EOR.

Table 1. Recommended Allowable Design Values for APA Portal Frame Used on a Rigid-Base

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

Foundation for Wind or Seismic Loading[a,b,c,d]

(a) Design values are based on the use of Douglas-fir or Southern pine framing. For other species of framing, multiply the above shear design value by the specific gravity adjustment factor = (1 – (0.5 – SG)), where SG = specific gravity of the actual framing. This adjustment shall not be greater than 1.0.

(b) For construction as shown in Figure 1.

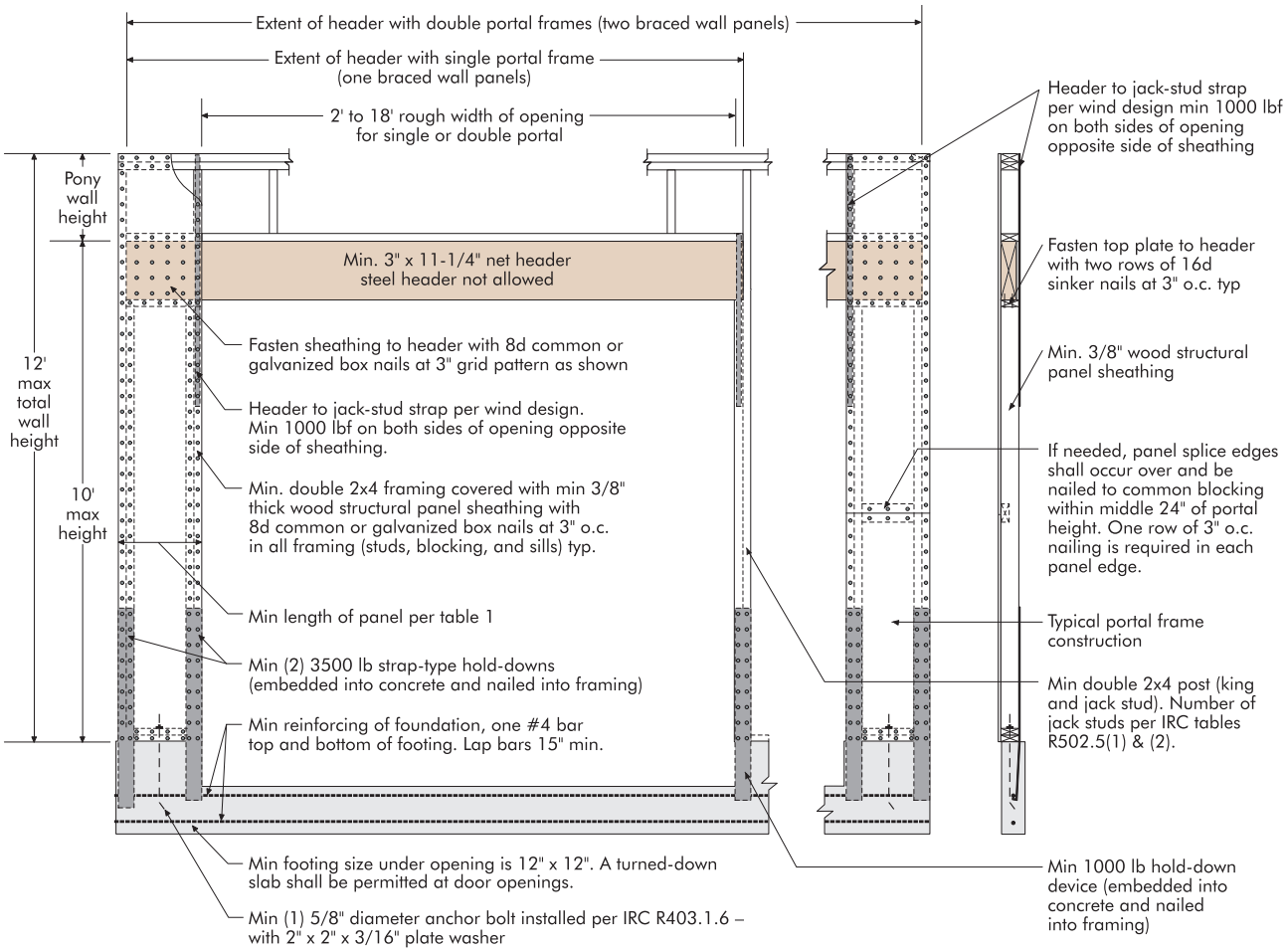
(c) Values are for a single portal-frame segment (one vertical leg and a portion of the header). For multiple portal-frame segments, the allowable shear design values are permitted to be multiplied by the number of frame segments (e.g., two = 2x, three = 3x, etc.).

(d) Interpolation of design values for heights between 8 and 10 feet, and for portal widths between 16 and 24 inches, is permitted.

(e) The allowable shear design value is permitted to be multiplied by a factor of 1.4 for wind design.

(f) If story drift is not a design consideration, the tabulated design shear values are permitted to be multiplied by a factor of 1.15. This factor is permitted to be used cumulatively with the wind-design adjustment factor in Footnote (e) above.

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



UPPER			
Member Name	**Results (Max UTIL %)**	**Current Solution**	**Comments**
6'-FRONT WINDOW	Passed (39% M)	1 piece(s) 4 x 8 DF No.2	
5.5'-FRONT STAIR WELL WINDOW	Passed (98% R)	1 piece(s) 4 x 10 DF No.2	
5'-SIDE WINDOW	Passed (51% M)	1 piece(s) 4 x 8 DF No.2	
7'-SIDE WINDOW	Passed (98% M)	1 piece(s) 4 x 8 DF No.2	
6'-SIDE WINDOW	Passed (72% M)	1 piece(s) 4 x 8 DF No.2	
6'-SIDE WINDOW (GIRDER ABOVE)	Passed (92% R)	1 piece(s) 3 1/2" x 9" 24F-V4 DF Glulam	
UPPER FLOOR			
Member Name	**Results (Max UTIL %)**	**Current Solution**	**Comments**
19' MIDDLE GARAGE-FLOOR TRUSSES (BM5)	Passed (99% ΔL)	1 piece(s) 5 1/2" x 15" 24F-V4 DF Glulam	
6'-FLOOR BEAM	Passed (15% R)	1 piece(s) 3 1/2" x 14" 24F-V4 DF Glulam	
7.25'-FLOOR BEAM (BM10)	Passed (54% R)	1 piece(s) 1 3/4" x 14" 2.0E Microllam® LVL	
16'-FLOOR BEAM (BM6)	Passed (31% R)	1 piece(s) 1 3/4" x 14" 2.0E Microllam® LVL	
15.5'-FLOOR BEAM (BM4)	Passed (100% ΔL)	1 piece(s) 5 1/2" x 14" 24F-V4 DF Glulam	
12'-FLOOR BEAM (BM13)	Passed (80% R)	1 piece(s) 3 1/2" x 14" 1.55E TimberStrand® LSL	
3.5'-FLOOR BEAM (GIRDER ABOVE)	Passed (20% R)	1 piece(s) 1 3/4" x 14" 1.55E TimberStrand® LSL	Squash Blocks Required
3.25'-FLOOR BEAM (GIRDER ABOVE)	Passed (71% R)	1 piece(s) 3 1/2" x 14" 24F-V4 DF Glulam	
MAIN			
Member Name	**Results (Max UTIL %)**	**Current Solution**	**Comments**
5.5'-FRONT WINDOW	Passed (25% M)	1 piece(s) 4 x 8 DF No.2	
3'-FRONT ENTRY	Passed (10% R)	1 piece(s) 4 x 8 DF No.2	
5'-FRONT WINDOW	Passed (69% M)	1 piece(s) 4 x 8 DF No.2	
9'-SIDE DOOR	Passed (64% M)	1 piece(s) 4 x 8 DF No.2	
16'-GARAGE	Passed (60% ΔT)	1 piece(s) 5 1/2" x 11 7/8" 24F-V4 DF Glulam	
2.5'-INTERIOR HEADER	Passed (56% M)	2 piece(s) 2 x 6 DF No.2	
MAIN FLOOR			
Member Name	**Results (Max UTIL %)**	**Current Solution**	**Comments**
FLOOR GIRDER TYP.	Passed (67% M)	1 piece(s) 4 x 8 DF No.2	

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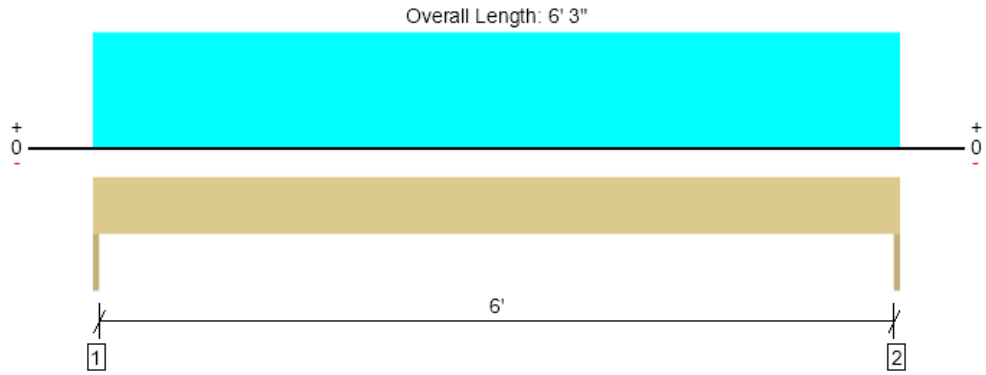
UPPER , 6'-FRONT WINDOW

1 piece(s) 4 x 8 DF No.2



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)	864 @ 0	3281 (1.50")	Passed (26%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	662 @ 8 3/4"	3502	Passed (19%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	1350 @ 3' 1 1/2"	3438	Passed (39%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.031 @ 3' 1 1/2"	0.208	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.053 @ 3' 1 1/2"	0.313	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)

Member Length : 6' 3"
System : Wall
Member Type : Header
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.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Factored	
1 - Trimmer - DF	1.50"	1.50"	1.50"	358	506	864	None
2 - Trimmer - DF	1.50"	1.50"	1.50"	358	506	864	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	6' 3" o/c	
Bottom Edge (Lu)	6' 3" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 6' 3"	N/A	6.4	--	
1 - Uniform (PLF)	0 to 6' 3"	N/A	108.0	162.0	

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

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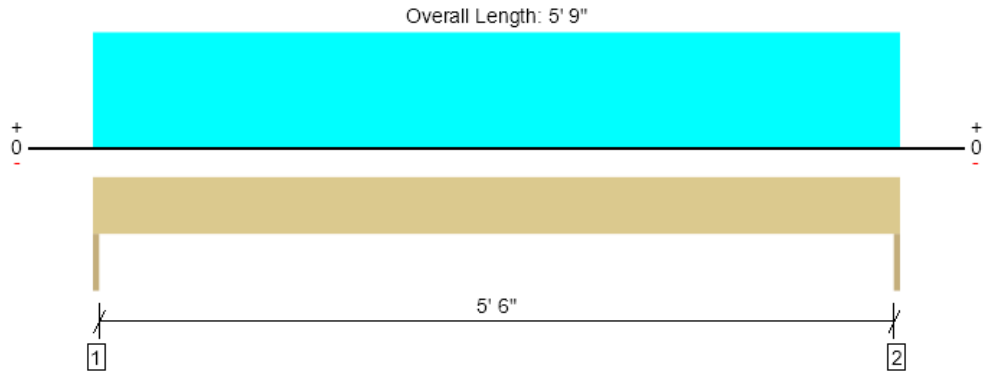
UPPER , 5.5'-FRONT STAIR WELL WINDOW

1 piece(s) 4 x 10 DF No.2



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Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	3215 @ 0	3281 (1.50")	Passed (98%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	2213 @ 10 3/4"	4468	Passed (50%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	4621 @ 2' 10 1/2"	5166	Passed (89%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.044 @ 2' 10 1/2"	0.192	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.074 @ 2' 10 1/2"	0.287	Passed (L/927)	--	1.0 D + 1.0 S (All Spans)

Member Length : 5' 9"
System : Wall
Member Type : Header
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.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Factored	
1 - Trimmer - DF	1.50"	1.50"	1.50"	1300	1915	3215	None
2 - Trimmer - DF	1.50"	1.50"	1.50"	1300	1915	3215	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	5' 9" o/c	
Bottom Edge (Lu)	5' 9" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 5' 9"	N/A	8.2	--	
1 - Uniform (PLF)	0 to 5' 9"	N/A	444.0	666.0	Default Load

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

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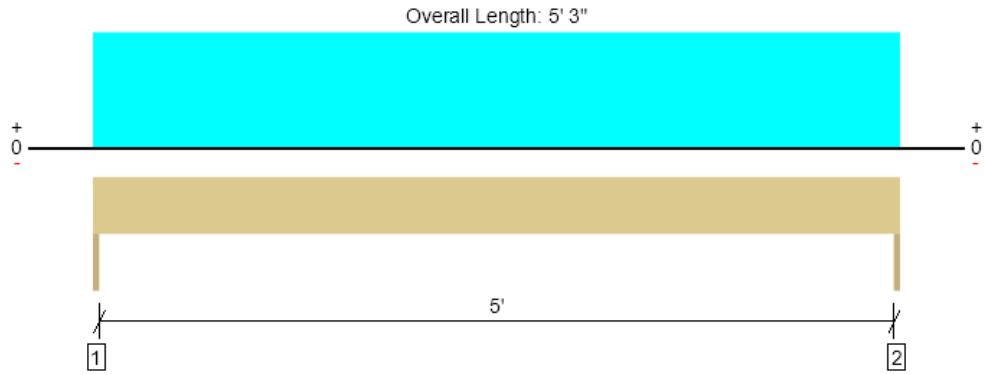
Weyerhaeuser

UPPER , 5'-SIDE WINDOW

1 piece(s) 4 x 8 DF No.2



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)	1342 @ 0	3281 (1.50")	Passed (41%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	970 @ 8 3/4"	3502	Passed (28%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	1762 @ 2' 7 1/2"	3438	Passed (51%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.029 @ 2' 7 1/2"	0.175	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.049 @ 2' 7 1/2"	0.262	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)

Member Length : 5' 3"
System : Wall
Member Type : Header
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.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Factored	
1 - Trimmer - DF	1.50"	1.50"	1.50"	547	795	1342	None
2 - Trimmer - DF	1.50"	1.50"	1.50"	547	795	1342	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	5' 3" o/c	
Bottom Edge (Lu)	5' 3" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 5' 3"	N/A	6.4	--	
1 - Uniform (PLF)	0 to 5' 3"	N/A	202.0	303.0	Default Load

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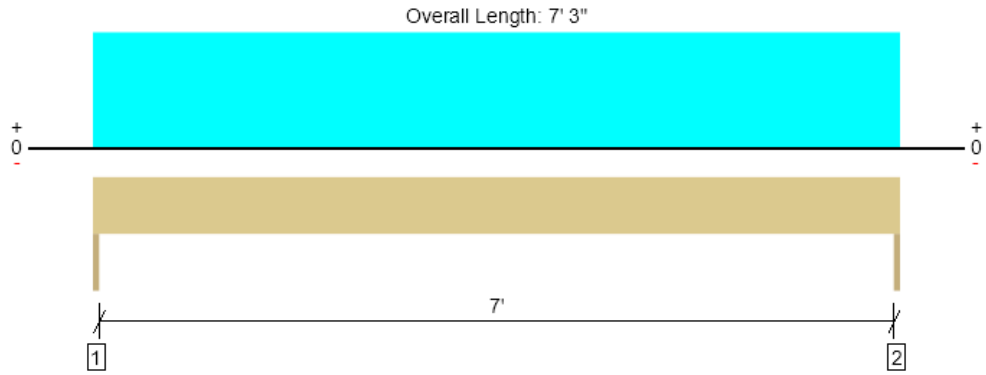
The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

ForteWEB Software Operator	Job Notes
Justin Concepcion Pliris Plans +639772505777 justinc@plirisplans.com	

Weyerhaeuser

UPPER , 7'-SIDE WINDOW

1 piece(s) 4 x 8 DF No.2



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)	1854 @ 0	3281 (1.50")	Passed (57%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	1481 @ 8 3/4"	3502	Passed (42%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	3360 @ 3' 7 1/2"	3438	Passed (98%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.106 @ 3' 7 1/2"	0.242	Passed (L/821)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.179 @ 3' 7 1/2"	0.313	Passed (L/487)	--	1.0 D + 1.0 S (All Spans)

Member Length : 7' 3"
System : Wall
Member Type : Header
Building Use : Residential
Building Code : IBC 2021
Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (5/16").
- 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 - Trimmer - DF	1.50"	1.50"	1.50"	756	1098	1854	None
2 - Trimmer - DF	1.50"	1.50"	1.50"	756	1098	1854	None

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

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 7' 3"	N/A	6.4	--	
1 - Uniform (PLF)	0 to 7' 3"	N/A	202.0	303.0	Default Load

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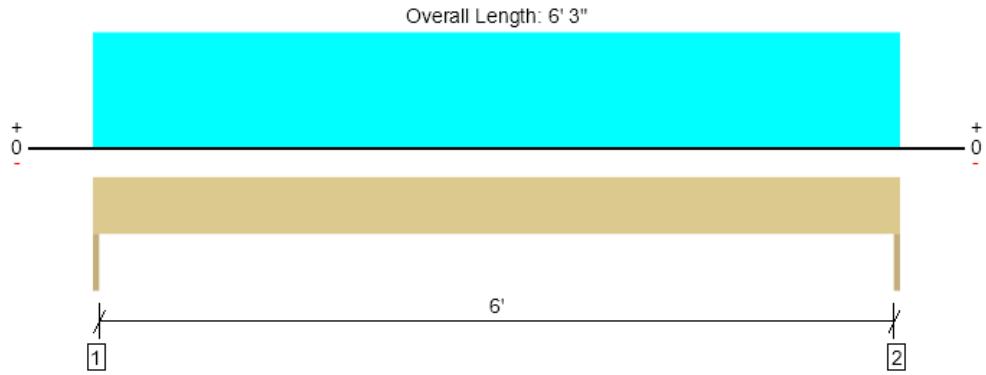
ForteWEB Software Operator	Job Notes
Justin Concepcion Pliris Plans +639772505777 justinc@plirisplans.com	

Weyerhaeuser

UPPER , 6'-SIDE WINDOW

1 piece(s) 4 x 8 DF No.2



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)	1589 @ 0	3281 (1.50")	Passed (48%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	1218 @ 8 3/4"	3502	Passed (35%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	2483 @ 3' 1 1/2"	3438	Passed (72%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.058 @ 3' 1 1/2"	0.208	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.098 @ 3' 1 1/2"	0.313	Passed (L/764)	--	1.0 D + 1.0 S (All Spans)

Member Length : 6' 3"
System : Wall
Member Type : Header
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.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Factored	
1 - Trimmer - DF	1.50"	1.50"	1.50"	648	941	1589	None
2 - Trimmer - DF	1.50"	1.50"	1.50"	648	941	1589	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	6' 3" o/c	
Bottom Edge (Lu)	6' 3" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 6' 3"	N/A	6.4	--	
1 - Uniform (PLF)	0 to 6' 3"	N/A	201.0	301.0	Default Load

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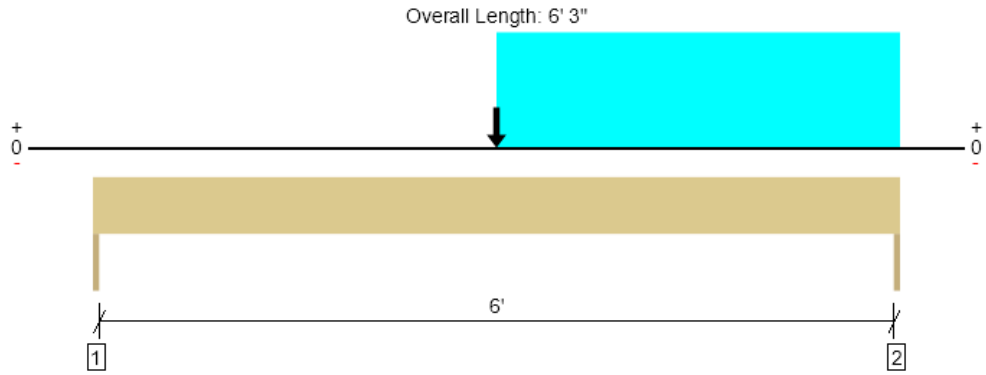
ForteWEB Software Operator	Job Notes
Justin Concepcion Pliris Plans +639772505777 justinc@plirisplans.com	

Weyerhaeuser

UPPER , 6'-SIDE WINDOW (GIRDER ABOVE)

1 piece(s) 3 1/2" x 9" 24F-V4 DF Glulam



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)	3139 @ 6' 3"	3413 (1.50")	Passed (92%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	2515 @ 5' 4 1/2"	6400	Passed (39%)	1.15	1.0 D + 1.0 S (All Spans)
Pos Moment (Ft-lbs)	6329 @ 3' 1 1/2"	10868	Passed (58%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.059 @ 3' 2 7/16"	0.208	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.100 @ 3' 2 7/16"	0.313	Passed (L/753)	--	1.0 D + 1.0 S (All Spans)

Member Length : 6' 3"
System : Wall
Member Type : Header
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.
- Critical positive moment adjusted by a volume/size factor of 1.00 that was calculated using length L = 6' 3".
- The effects of positive or negative camber have not been accounted for when calculating deflection.
- The specified glulam is assumed to have its strong laminations at the bottom of the beam. Install with proper side up as indicated by the manufacturer.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Factored	
1 - Trimmer - DF	1.50"	1.50"	1.50"	829	1208	2037	None
2 - Trimmer - DF	1.50"	1.50"	1.50"	1270	1869	3139	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	6' 3" o/c	
Bottom Edge (Lu)	6' 3" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 6' 3"	N/A	7.7	--	
1 - Point (lb)	3' 1 1/2"	N/A	670	1005	Default Load
2 - Point (lb)	3' 1 1/2"	N/A	500	750	
3 - Uniform (PLF)	3' 1 1/2" to 6' 3"	N/A	282.0	423.0	

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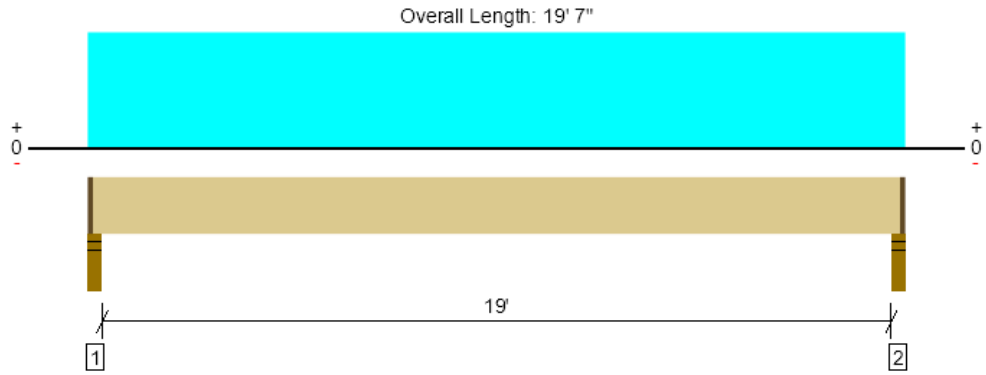
ForteWEB Software Operator	Job Notes
Justin Concepcion Pliris Plans +639772505777 justinc@plirisplans.com	

Weyerhaeuser

UPPER FLOOR, 19' MIDDLE GARAGE-FLOOR TRUSSES (BM5)

1 piece(s) 5 1/2" x 15" 24F-V4 DF Glulam



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)	6443 @ 2"	7734 (2.25")	Passed (83%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	5487 @ 1' 6 1/2"	14575	Passed (38%)	1.00	1.0 D + 1.0 L (All Spans)
Pos Moment (Ft-lbs)	30805 @ 9' 9 1/2"	40406	Passed (76%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.477 @ 9' 9 1/2"	0.481	Passed (L/484)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.738 @ 9' 9 1/2"	0.962	Passed (L/313)	--	1.0 D + 1.0 L (All Spans)

Member Length : 19' 4 1/2"
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.
- Critical positive moment adjusted by a volume/size factor of 0.98 that was calculated using length L = 19' 3".
- The effects of positive or negative camber have not been accounted for when calculating deflection.
- The specified glulam is assumed to have its strong laminations at the bottom of the beam. Install with proper side up as indicated by the manufacturer.
- 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"	2.25"	1.87"	2299	4210	6510	1 1/4" Rim Board
2 - Stud wall - DF	3.50"	2.25"	1.87"	2299	4210	6510	1 1/4" Rim Board

• 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)	19' 5" o/c	
Bottom Edge (Lu)	19' 5" 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)	1 1/4" to 19' 5 3/4"	N/A	20.0	--	
1 - Uniform (PSF)	0 to 19' 7" (Back)	5'	20.0	40.0	Default Load
2 - Uniform (PSF)	0 to 19' 7" (Front)	5' 9"	20.0	40.0	

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

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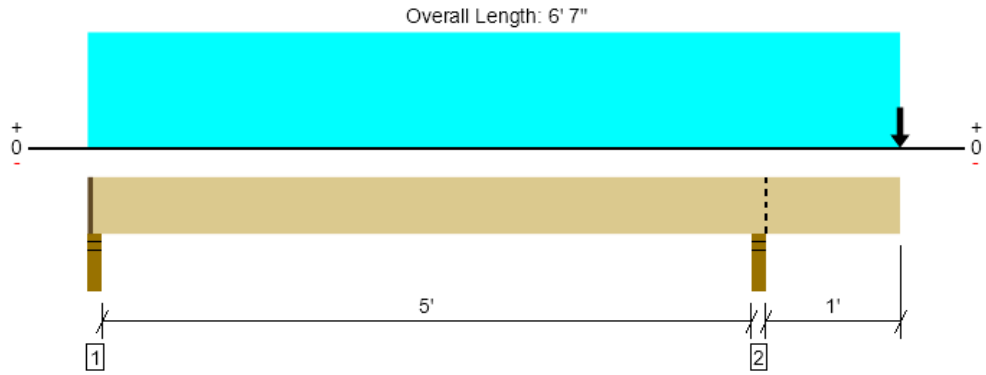
ForteWEB Software Operator	Job Notes
Justin Concepcion Pliris Plans +639772505777 justinc@plirisplans.com	

Weyerhaeuser

UPPER FLOOR, 6'-FLOOR BEAM

1 piece(s) 3 1/2" x 14" 24F-V4 DF Glulam



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)	1159 @ 5' 5 1/4"	7656 (3.50")	Passed (15%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	729 @ 6' 7"	9955	Passed (7%)	1.15	1.0 D + 1.0 S (All Spans)
Pos Moment (Ft-lbs)	60 @ 1' 5 9/16"	22867	Passed (0%)	1.00	1.0 D + 1.0 L (Alt Spans)
Neg Moment (Ft-lbs)	-995 @ 5' 5 1/4"	20270	Passed (5%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	-0.001 @ 3' 1 13/16"	0.132	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.003 @ 6' 7"	0.200	Passed (2L/999+)	--	1.0 D + 1.0 S (All Spans)

Member Length : 6' 5 3/4"
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).
- Overhang deflection criteria: LL (2L/480) and TL (0.2").
- Allowed moment does not reflect the adjustment for the beam stability factor.
- Critical positive moment adjusted by a volume/size factor of 1.00 that was calculated using length L = 2' 7 1/16".
- Critical negative moment adjusted by a volume/size factor of 1.00 that was calculated using length L = 6' 5".
- The effects of positive or negative camber have not been accounted for when calculating deflection.
- The specified glulam is assumed to have its strong laminations at the bottom of the beam. Install with proper side up as indicated by the manufacturer.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)				Accessories
	Total	Available	Required	Dead	Floor Live	Snow	Factored	
1 - Stud wall - DF	3.50"	2.25"	1.50"	-8	112/-1	-92	104/-101	1 1/4" Rim Board
2 - Stud wall - DF	3.50"	3.50"	1.50"	642	156	517	1159	Blocking

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.
- 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)	6' 6" o/c	
Bottom Edge (Lu)	6' 6" 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)	Comments
0 - Self Weight (PLF)	1 1/4" to 6' 7"	N/A	11.9	--	--	
1 - Point (lb)	6' 7" (Top)	N/A	425	-	425	Default Load
2 - Uniform (PSF)	0 to 6' 7" (Front)	1'	20.0	40.0	-	

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

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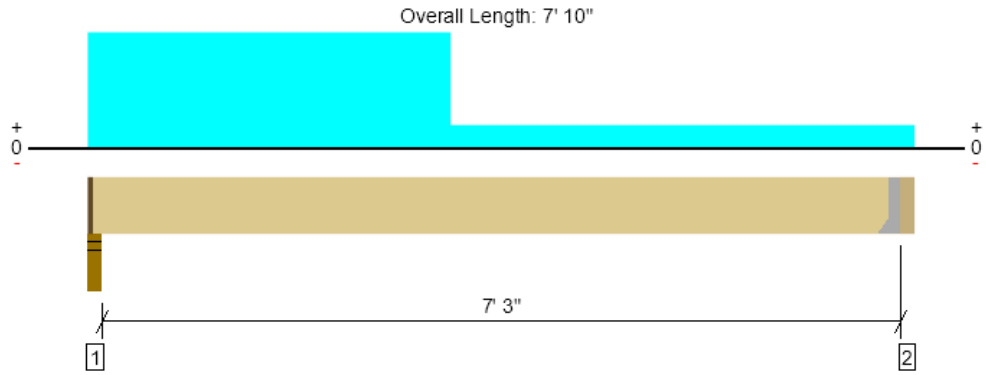
ForteWEB Software Operator	Job Notes
Justin Concepcion Pliris Plans +639772505777 justinc@plirisplans.com	

Weyerhaeuser

UPPER FLOOR, 7.25'-FLOOR BEAM (BM10)

1 piece(s) 1 3/4" x 14" 2.0E Microllam® LVL



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)	1335 @ 2"	2461 (2.25")	Passed (54%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	706 @ 1' 5 1/2"	4655	Passed (15%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	1837 @ 2' 11 3/4"	12129	Passed (15%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.023 @ 3' 6"	0.184	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.029 @ 3' 6"	0.369	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

Member Length : 7' 5 1/4"
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	Factored	
1 - Stud wall - DF	3.50"	2.25"	1.50"	287	1096	1383	1 1/4" Rim Board
2 - Hanger on 14" DF beam	3.50"	Hanger[1]	1.50"	185	476	661	See note [1]

- Rim Board is assumed to carry all loads applied directly above it, bypassing 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)	7' 5" o/c	
Bottom Edge (Lu)	7' 5" 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	IUS1.81/9.5	2.00"	N/A	8-10dx1.5	2-10dx1.5	

- 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)	Comments
0 - Self Weight (PLF)	1 1/4" to 7' 6 1/2"	N/A	7.2	--	
1 - Uniform (PSF)	0 to 7' 10" (Back)	1' 6"	20.0	40.0	UPPER FLOOR
2 - Uniform (PSF)	0 to 3' 6" (Front)	5' 3"	10.0	60.0	STAIRS

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

Weyerhaeuser Notes

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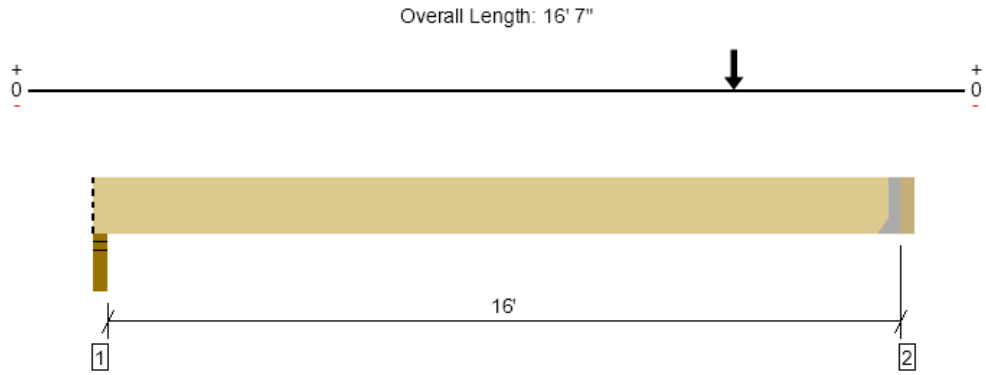
The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

ForteWEB Software Operator	Job Notes
Justin Concepcion Pliris Plans +639772505777 justinc@plirisplans.com	

Weyerhaeuser

UPPER FLOOR, 16'-FLOOR BEAM (BM6)

1 piece(s) 1 3/4" x 14" 2.0E Microllam® LVL



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)	615 @ 16' 3 1/2"	1969 (1.50")	Passed (31%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	606 @ 15' 1 1/2"	4655	Passed (13%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	1985 @ 13'	12129	Passed (16%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.060 @ 9' 3 5/16"	0.538	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.098 @ 9' 1 1/4"	0.806	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

Member Length : 16' 3 1/2"
System : Floor
Member Type : Drop 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)			Accessories
	Total	Available	Required	Dead	Floor Live	Factored	
1 - Stud wall - DF	3.50"	3.50"	1.50"	100	102	202	Blocking
2 - Hanger on 14" DF beam	3.50"	Hanger[1]	1.50"	217	398	615	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)	16' 4" o/c	
Bottom Edge (Lu)	16' 4" 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	IUS1.81/9.5	2.00"	N/A	8-10dx1.5	2-10dx1.5	

- 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)	Comments
0 - Self Weight (PLF)	0 to 16' 3 1/2"	N/A	7.2	--	
1 - Point (lb)	13' (Back)	N/A	200	500	BM10

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

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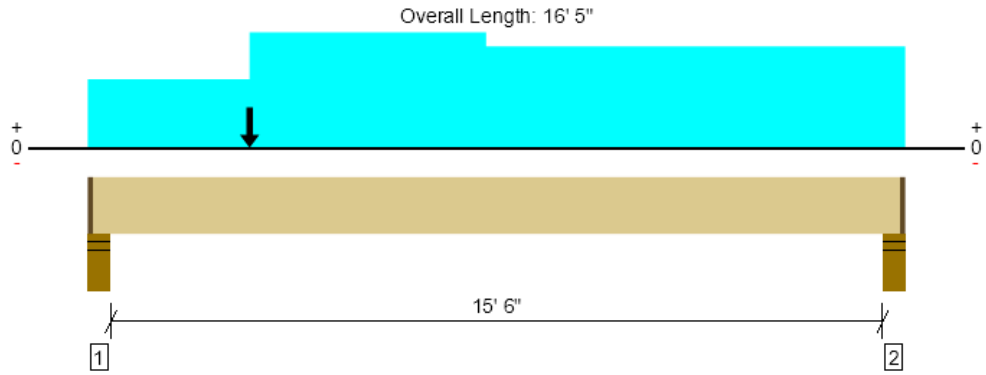
ForteWEB Software Operator	Job Notes
Justin Concepcion Pliris Plans +639772505777 justinc@plirisplans.com	

Weyerhaeuser

UPPER FLOOR, 15.5'-FLOOR BEAM (BM4)

1 piece(s) 5 1/2" x 14" 24F-V4 DF Glulam



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)	7751 @ 16' 1"	14609 (4.25")	Passed (53%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	6633 @ 1' 7 1/2"	13603	Passed (49%)	1.00	1.0 D + 1.0 L (All Spans)
Pos Moment (Ft-lbs)	30680 @ 7' 11 7/16"	35933	Passed (85%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.394 @ 8' 2 1/16"	0.394	Passed (L/479)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.605 @ 8' 2"	0.788	Passed (L/313)	--	1.0 D + 1.0 L (All Spans)

Member Length : 16' 2 1/2"
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.
- Critical positive moment adjusted by a volume/size factor of 1.00 that was calculated using length L = 15' 9".
- The effects of positive or negative camber have not been accounted for when calculating deflection.
- The specified glulam is assumed to have its strong laminations at the bottom of the beam. Install with proper side up as indicated by the manufacturer.
- 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	5.50"	4.25"	2.21"	2682	4979	7661	1 1/4" Rim Board
2 - Stud wall - DF	5.50"	4.25"	2.25"	2722	5123	7846	1 1/4" Rim Board

• 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)	16' 3" o/c	
Bottom Edge (Lu)	16' 3" 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)	1 1/4" to 16' 3 3/4"	N/A	18.7	--	
1 - Uniform (PSF)	0 to 16' 5" (Back)	8' 9"	20.0	40.0	UPPER FLOOR
2 - Uniform (PSF)	0 to 3' 3" (Front)	1' 6"	20.0	40.0	UPPER FLOOR
3 - Point (lb)	3' 3" (Front)	N/A	250	400	BM6
4 - Uniform (PSF)	3' 3" to 8' (Front)	8' 6"	20.0	40.0	UPPER FLOOR
5 - Uniform (PSF)	8' to 16' 5" (Front)	6' 4 1/2"	20.0	40.0	UPPER FLOOR

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

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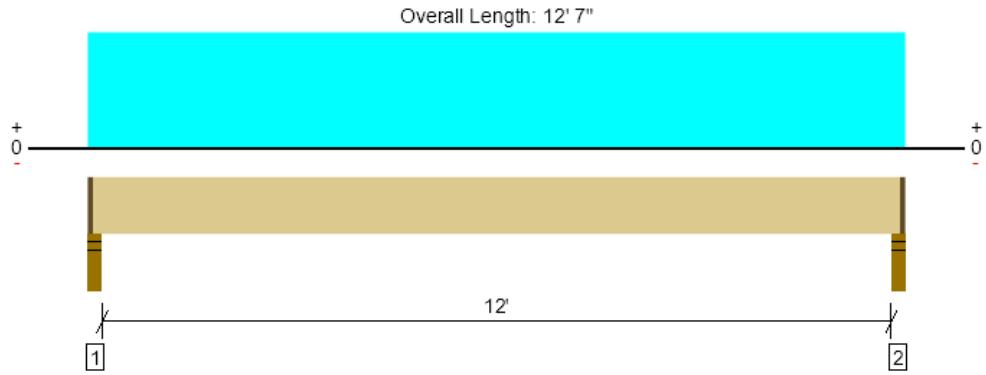
The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

ForteWEB Software Operator	Job Notes
Justin Concepcion Pliris Plans +639772505777 justinc@plirisplans.com	

Weyerhaeuser

UPPER FLOOR, 12'-FLOOR BEAM (BM13)

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)	3937 @ 2"	4922 (2.25")	Passed (80%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	3076 @ 1' 5 1/2"	11646	Passed (26%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	11936 @ 6' 3 1/2"	25116	Passed (48%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.141 @ 6' 3 1/2"	0.306	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.296 @ 6' 3 1/2"	0.613	Passed (L/496)	--	1.0 D + 1.0 S (All Spans)

Member Length : 12' 4 1/2"
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	Snow	Factored	
1 - Stud wall - DF	3.50"	2.25"	1.80"	2096	252	1906	4002	1 1/4" Rim Board
2 - Stud wall - DF	3.50"	2.25"	1.80"	2096	252	1906	4002	1 1/4" Rim Board

- 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)	12' 5" o/c	
Bottom Edge (Lu)	12' 5" 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)	Comments
0 - Self Weight (PLF)	1 1/4" to 12' 5 3/4"	N/A	15.3	--	--	
1 - Uniform (PLF)	0 to 12' 7" (Top)	N/A	202.0	-	303.0	ROOF
2 - Uniform (PSF)	0 to 12' 7" (Top)	1'	20.0	40.0	-	FLOOR
3 - Uniform (PSF)	0 to 12' 7" (Top)	8'	12.0	-	-	WALL

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

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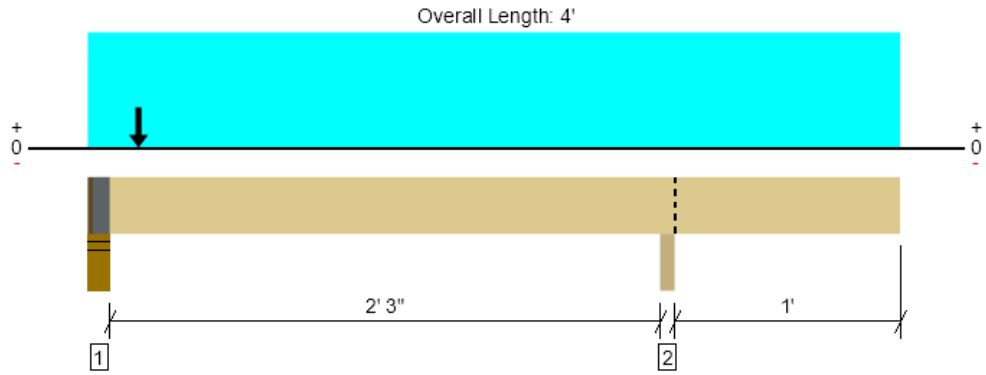
Justin Concepcion Pliris Plans +639772505777 justinc@plirisplans.com	

Weyerhaeuser

UPPER FLOOR, 3.5'-FLOOR BEAM (GIRDER ABOVE)

1 piece(s) 1 3/4" x 14" 1.55E TimberStrand® LSL



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Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	964 @ 2' 10 1/4"	4747 (3.50")	Passed (20%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	105 @ 1' 7 1/2"	5823	Passed (2%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	-237 @ 2' 10 1/4"	12558	Passed (2%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.001 @ 1' 6 3/16"	0.063	Passed (L/999+)	--	1.0 D + 1.0 S (Alt Spans)
Total Load Defl. (in)	0.002 @ 1' 5 11/16"	0.126	Passed (L/999+)	--	1.0 D + 1.0 S (Alt Spans)

Member Length : 3' 10 3/4"
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).
- Overhang deflection criteria: LL (2L/480) and TL (2L/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	Snow	Factored	
1 - Stud wall - DF	5.50"	4.25"	1.50"	3025	4602	7627	1 1/4" Rim Board, Squash Blocks
2 - Column - DF	3.50"	3.50"	1.50"	399	565	964	Blocking

- Rim Board is assumed to carry all loads applied directly above it, bypassing the member being designed.
- Squash Blocks must match bearing length and are assumed to carry all loads applied directly above them, bypassing the member being designed.
- 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' 11" o/c	
Bottom Edge (Lu)	3' 11" 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)	1 1/4" to 4'	N/A	7.7	--	
1 - Uniform (PLF)	0 to 4' (Front)	N/A	142.0	212.0	Default Load
2 - Point (lb)	3" (Top)	N/A	2826	4292	

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

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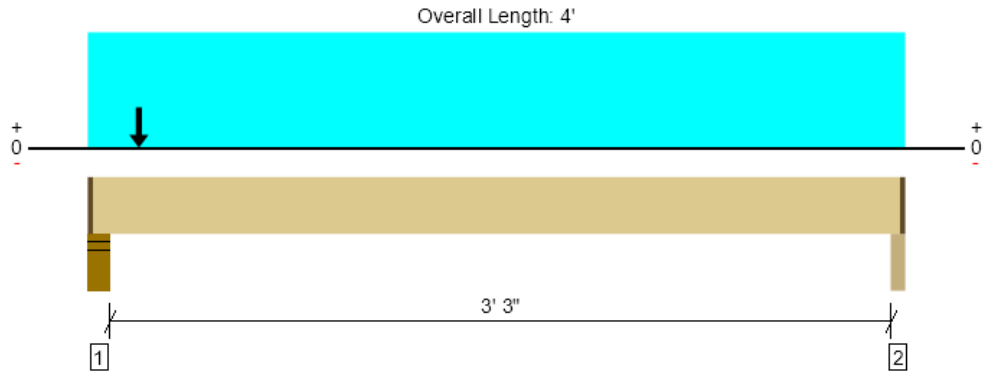
Justin Concepcion Pliris Plans +639772505777 justinc@plirisplans.com	

Weyerhaeuser

UPPER FLOOR, 3.25'-FLOOR BEAM (GIRDER ABOVE)

1 piece(s) 3 1/2" x 14" 24F-V4 DF Glulam



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Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	6604 @ 4"	9297 (4.25")	Passed (71%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	168 @ 1' 7 1/2"	9955	Passed (2%)	1.15	1.0 D + 1.0 S (All Spans)
Pos Moment (Ft-lbs)	560 @ 2' 1"	26297	Passed (2%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.000 @ 2' 1"	0.087	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.001 @ 2' 1"	0.175	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)

Member Length : 3' 9 1/2"
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.
- Critical positive moment adjusted by a volume/size factor of 1.00 that was calculated using length L = 3' 6".
- The effects of positive or negative camber have not been accounted for when calculating deflection.
- The specified glulam is assumed to have its strong laminations at the bottom of the beam. Install with proper side up as indicated by the manufacturer.
- 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"	4.25"	3.02"	2671	3970	6641	1 1/4" Rim Board
2 - Column - DF	3.50"	2.25"	1.50"	294	406	700	1 1/4" Rim Board

• 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)	3' 10" o/c	
Bottom Edge (Lu)	3' 10" 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)	1 1/4" to 3' 10 3/4"	N/A	11.9	--	
1 - Uniform (PLF)	0 to 4' (Front)	N/A	142.0	212.0	Default Load
2 - Point (lb)	3" (Front)	N/A	2352	3528	

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

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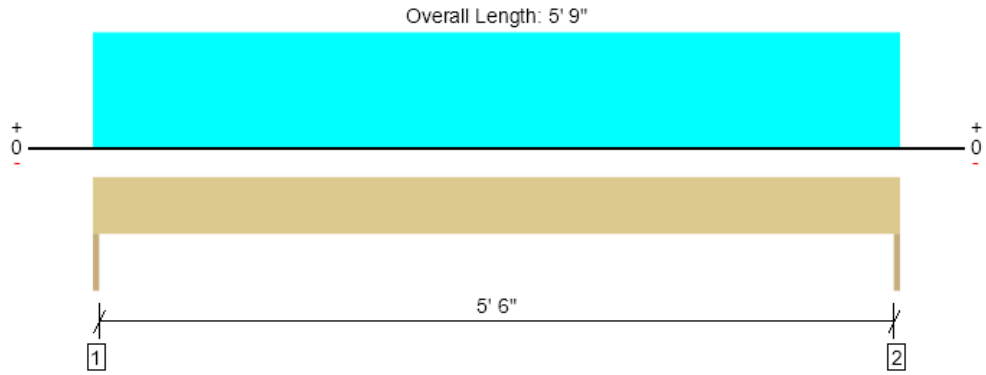
Weyerhaeuser

MAIN, 5.5'-FRONT WINDOW

1 piece(s) 4 x 8 DF No.2



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Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	593 @ 0	3281 (1.50")	Passed (18%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	443 @ 8 3/4"	3502	Passed (13%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	853 @ 2' 10 1/2"	3438	Passed (25%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.028 @ 2' 10 1/2"	0.192	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.029 @ 2' 10 1/2"	0.287	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)

Member Length : 5' 9"
System : Wall
Member Type : Header
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.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Factored	
1 - Trimmer - DF	1.50"	1.50"	1.50"	18	575	593	None
2 - Trimmer - DF	1.50"	1.50"	1.50"	18	575	593	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	5' 9" o/c	
Bottom Edge (Lu)	5' 9" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 5' 9"	N/A	6.4	--	
1 - Uniform (PLF)	0 to 5' 9"	N/A	-	200.0	Default Load

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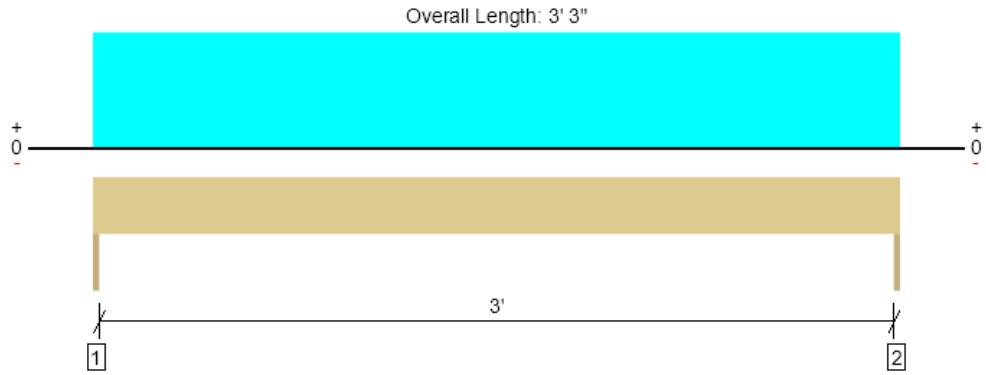
Weyerhaeuser

MAIN, 3'-FRONT ENTRY

1 piece(s) 4 x 8 DF No.2



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)	335 @ 0	3281 (1.50")	Passed (10%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	185 @ 8 3/4"	3502	Passed (5%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	273 @ 1' 7 1/2"	3438	Passed (8%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.003 @ 1' 7 1/2"	0.108	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.003 @ 1' 7 1/2"	0.162	Passed (L/999+)	--	1.0 D + 1.0 S (All Spans)

Member Length : 3' 3"
System : Wall
Member Type : Header
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.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Snow	Factored	
1 - Trimmer - DF	1.50"	1.50"	1.50"	10	325	335	None
2 - Trimmer - DF	1.50"	1.50"	1.50"	10	325	335	None

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

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 3' 3"	N/A	6.4	--	
1 - Uniform (PLF)	0 to 3' 3"	N/A	-	200.0	Default Load

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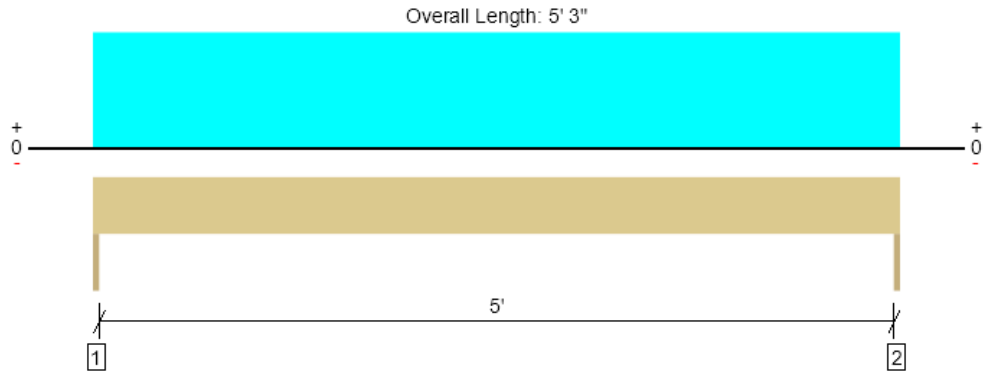
ForteWEB Software Operator	Job Notes
Justin Concepcion Pliris Plans +639772505777 justinc@plirisplans.com	

Weyerhaeuser

MAIN, 5'-FRONT WINDOW

1 piece(s) 4 x 8 DF No.2



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Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1572 @ 0	3281 (1.50")	Passed (48%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	1135 @ 8 3/4"	3045	Passed (37%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	2063 @ 2' 7 1/2"	2989	Passed (69%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.038 @ 2' 7 1/2"	0.175	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.058 @ 2' 7 1/2"	0.262	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

Member Length : 5' 3"
System : Wall
Member Type : Header
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.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Factored	
1 - Trimmer - DF	1.50"	1.50"	1.50"	535	1037	1572	None
2 - Trimmer - DF	1.50"	1.50"	1.50"	535	1037	1572	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	5' 3" o/c	
Bottom Edge (Lu)	5' 3" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 5' 3"	N/A	6.4	--	
1 - Uniform (PSF)	0 to 5' 3"	9' 10 1/2"	20.0	40.0	Default Load

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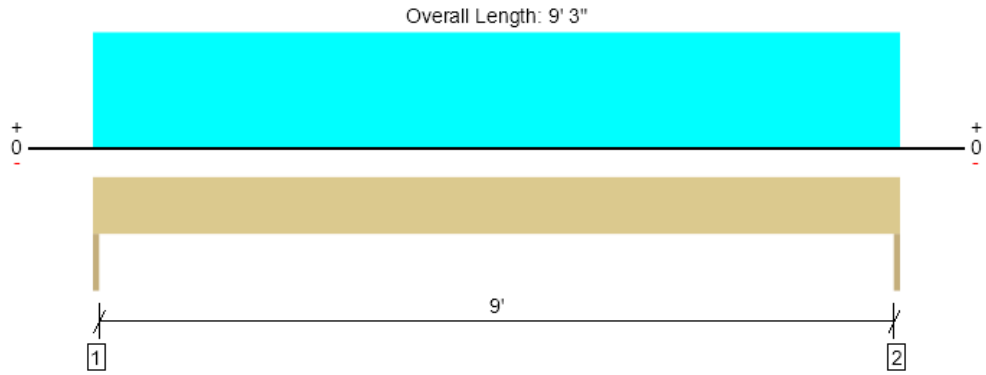
ForteWEB Software Operator	Job Notes
Justin Concepcion Pliris Plans +639772505777 justinc@plirisplans.com	

Weyerhaeuser

MAIN, 9'-SIDE DOOR

1 piece(s) 4 x 8 DF No.2



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Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	955 @ 0	3281 (1.50")	Passed (29%)	--	1.0 D + 1.0 S (All Spans)
Shear (lbs)	804 @ 8 3/4"	3502	Passed (23%)	1.15	1.0 D + 1.0 S (All Spans)
Moment (Ft-lbs)	2208 @ 4' 7 1/2"	3438	Passed (64%)	1.15	1.0 D + 1.0 S (All Spans)
Live Load Defl. (in)	0.185 @ 4' 7 1/2"	0.308	Passed (L/599)	--	1.0 D + 1.0 S (All Spans)
Total Load Defl. (in)	0.191 @ 4' 7 1/2"	0.313	Passed (L/581)	--	1.0 D + 1.0 S (All Spans)

Member Length : 9' 3"
System : Wall
Member Type : Header
Building Use : Residential
Building Code : IBC 2021
Design Methodology : ASD

- Deflection criteria: LL (L/360) and TL (5/16").
- 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 - Trimmer - DF	1.50"	1.50"	1.50"	30	925	955	None
2 - Trimmer - DF	1.50"	1.50"	1.50"	30	925	955	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	9' 3" o/c	
Bottom Edge (Lu)	9' 3" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Snow (1.15)	Comments
0 - Self Weight (PLF)	0 to 9' 3"	N/A	6.4	--	
1 - Uniform (PLF)	0 to 9' 3"	N/A	-	200.0	Default Load

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ForteWEB Software Operator	Job Notes
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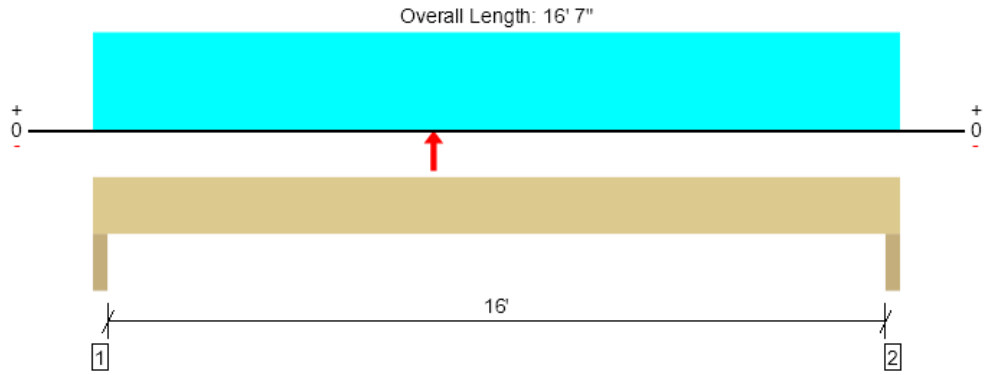
Weyerhaeuser

MAIN, 16'-GARAGE

1 piece(s) 5 1/2" x 11 7/8" 24F-V4 DF Glulam



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)	3552 @ 2"	12513 (3.50")	Passed (28%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	3003 @ 1' 3 3/8"	11539	Passed (26%)	1.00	1.0 D + 1.0 L (All Spans)
Pos Moment (Ft-lbs)	14140 @ 8' 3 1/2"	25853	Passed (55%)	1.00	1.0 D + 1.0 L (All Spans)
Neg Moment (Ft-lbs)	-2266 @ 7'	31885	Passed (7%)	1.60	0.6 D + 0.6 W (All Spans)
Live Load Defl. (in)	0.312 @ 8' 3 1/2"	0.542	Passed (L/624)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.486 @ 8' 3 1/2"	0.813	Passed (L/401)	--	1.0 D + 1.0 L (All Spans)

Member Length : 16' 7"
System : Wall
Member Type : Header
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.
- Critical positive moment adjusted by a volume/size factor of 1.00 that was calculated using length L = 16' 3".
- Critical negative moment adjusted by a volume/size factor of 1.00 that was calculated using length L = 12' 3/4".
- The effects of positive or negative camber have not been accounted for when calculating deflection.
- The specified glulam is assumed to have its strong laminations at the bottom of the beam. Install with proper side up as indicated by the manufacturer.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)				Accessories
	Total	Available	Required	Dead	Floor Live	Wind	Factored	
1 - Trimmer - DF	3.50"	3.50"	1.50"	1272	2280	-1275	3552/-2	None
2 - Trimmer - DF	3.50"	3.50"	1.50"	1272	2280	-925	3552	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	16' 7" o/c	
Bottom Edge (Lu)	16' 7" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Floor Live (1.00)	Wind (1.60)	Comments
0 - Self Weight (PLF)	0 to 16' 7"	N/A	15.9	--	--	
1 - Uniform (PSF)	0 to 16' 7"	6' 10 1/2"	20.0	40.0	-	Default Load
2 - Point (lb)	7'	N/A	-	-	-2200	

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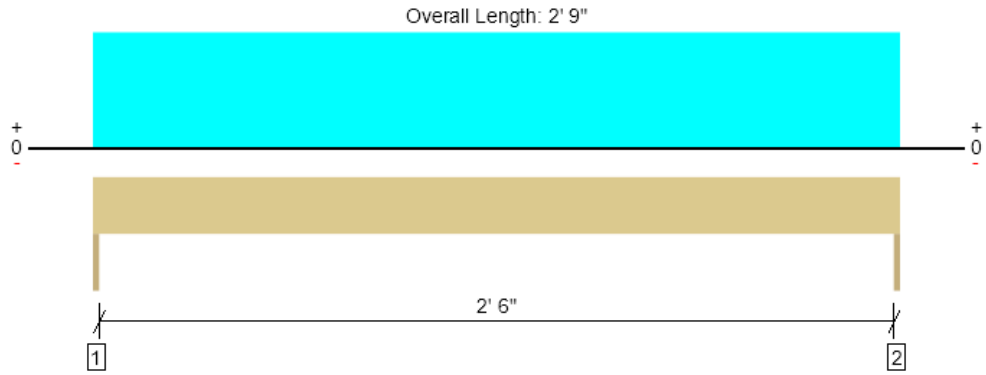
Justin Concepcion Pliris Plans +639772505777 justinc@plirisplans.com	

Weyerhaeuser

MAIN, 2.5'-INTERIOR HEADER

2 piece(s) 2 x 6 DF No.2



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Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	1192 @ 0	2813 (1.50")	Passed (42%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	686 @ 7"	1980	Passed (35%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	819 @ 1' 4 1/2"	1475	Passed (56%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.011 @ 1' 4 1/2"	0.092	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.017 @ 1' 4 1/2"	0.138	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)

Member Length : 2' 9"
System : Wall
Member Type : Header
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.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Factored	
1 - Trimmer - DF	1.50"	1.50"	1.50"	401	791	1192	None
2 - Trimmer - DF	1.50"	1.50"	1.50"	401	791	1192	None

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	2' 9" o/c	
Bottom Edge (Lu)	2' 9" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Loads	Location	Tributary Width	Dead (0.90)	Floor Live (1.00)	Comments
0 - Self Weight (PLF)	0 to 2' 9"	N/A	4.2	--	
1 - Uniform (PSF)	0 to 2' 9"	14' 4 1/2"	20.0	40.0	Default Load

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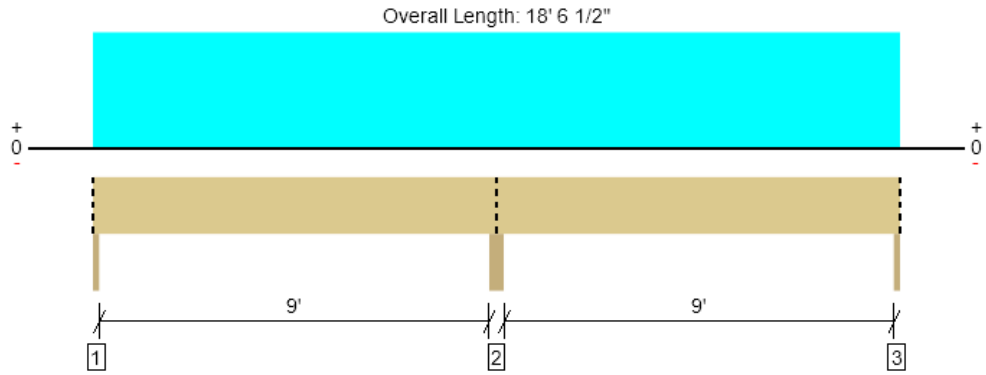
Weyerhaeuser

MAIN FLOOR, FLOOR GIRDER TYP.

1 piece(s) 4 x 8 DF No.2



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Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	2160 @ 9' 3 1/4"	7656 (3.50")	Passed (28%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	940 @ 10' 1/4"	3045	Passed (31%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	-2003 @ 9' 3 1/4"	2989	Passed (67%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.079 @ 4' 4 9/16"	0.309	Passed (L/999+)	--	1.0 D + 1.0 L (Alt Spans)
Total Load Defl. (in)	0.104 @ 4' 3"	0.464	Passed (L/999+)	--	1.0 D + 1.0 L (Alt Spans)

Member Length : 18' 6 1/2"
System : Floor
Member Type : Drop 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.
- Applicable calculations are based on NDS.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Factored	
1 - Ledger - DF	1.50"	1.50"	1.50"	231	487/-70	718	Blocking
2 - Column - DF	3.50"	3.50"	1.50"	770	1391	2160	Blocking
3 - Ledger - DF	1.50"	1.50"	1.50"	231	487/-70	718	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)	18' 7" o/c	
Bottom Edge (Lu)	18' 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 18' 6 1/2"	N/A	6.4	--	
1 - Uniform (PSF)	0 to 18' 6 1/2" (Top)	3'	20.0	40.0	Default Load

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

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