

**COVINGTON ENGINEERING SERVICES**

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August 13<sup>th</sup>, 2025

Columbia County Building & Zoning Department  
135 NE Hernando Ave.  
Lake City, Florida 32055

**RE: Styer Remodel  
Structural Components**

To whom it may concern,

This letter addresses the structural components and construction of the proposed addition at an existing residence located at 14495 SW Tustenuggee Ave. The remodel will feature expansion of the existing 1<sup>st</sup> and 2<sup>nd</sup> floors, along with the addition of an attached garage. A portion of the roof will be hand framed. Engineered roof trusses and floor trusses to be designed by others. Structural details are listed below. All products and materials to be installed per manufacturer specifications and recommendations.

Roof Hand-Framing:

2x6 SYP #2 Rafters - 16" O.C. spacing

2x8 SYP #2 Ridge Beam

Simpson LSTA Strap - Typ. ea. rafter/ridge connection

Simpson H2.5a - Typ. ea. rafter/beam connection

Span Beams & Header Beam:

2.0E Microllam LVL - 14" 3-PLY

Simpson HHUS - Span Beams to Header Beam connection

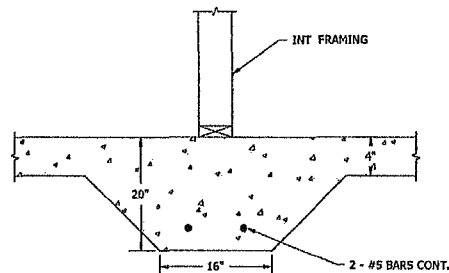
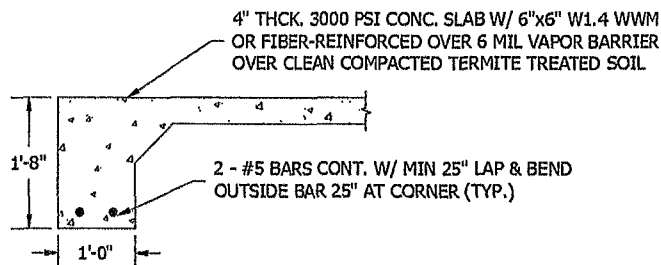
Simpson HUS - Floor Trusses to Span Beam connection

See attachments for LVL fastener requirements.

Interior Bearing Walls & Beam Bearing Locations:

2x6 SYP #2 Studs - 16" O.C. spacing

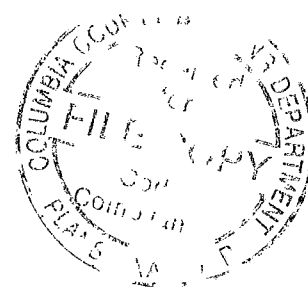
Min. 4-stud pack 2x4/6 SYP #2 - beam bearing locations (intermediate and ends)

Monolithic Slab & Int. Bearing Ftg.:

Please contact me if you have any questions.

Respectfully,

Travis Covington, P.E.  
License No. 89637



Architectural floor plan of a building. The plan includes dimensions for rooms and overall sections, as well as structural annotations.

**Structural Annotations:**

- SPAN BEAM
- 2x6 BEARING WALL (TYP.)
- HEADER BEAM

**Room Dimensions (Approximate):**

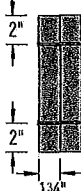
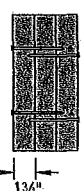


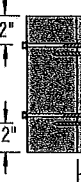
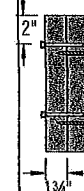
- Top Left Room: 10'-0" x 10'-0"
- Top Middle Room: 10'-0" x 10'-0"
- Top Right Room: 10'-0" x 10'-0"
- Middle Left Room: 10'-0" x 10'-0"
- Middle Right Room: 10'-0" x 10'-0"
- Bottom Left Room: 10'-0" x 10'-0"
- Bottom Middle Room: 10'-0" x 10'-0"
- Bottom Right Room: 10'-0" x 10'-0"

**Overall Dimensions:**

- Overall Width: 26'-0"
- Overall Depth: 43'-0"

# MULTIPLE-MEMBER CONNECTIONS FOR SIDE-LOADED BEAMS

## L17 Uniform Load—Maximum Uniform Load Applied to Either Outside Member (PLF)

Fastener Type	Placement	Number of Rows	Fastener On-Center Spacing	Fastener Pattern					
				Assembly A	Assembly B	Assembly C	Assembly D	Assembly E	Assembly F
									
3 1/2" wide, 2-ply	5 1/4" wide, 3-ply	5 1/4" wide, 2-ply	7" wide, 3-ply	7" wide, 2-ply	7" wide, 4-ply				
10d (0.128" x 3") or (0.131" x 3") Nail <sup>(1)</sup>	As shown	2 <sup>(6)</sup>	12"	370	280	280	250		
		3	12"	560	420	420	370		
1/2" A307 Through Bolt <sup>(2)(3)</sup>	—	2	24"	510	380	525	465	860	340
			19.2"	635	475	655	580	1075	425
			16"	760	570	785	700	1290	510
Screw Length ▶				3 1/2"	3 1/2"	3 1/2"	3 1/2"	6"	6"
Simpson Strong-Tie® SDS <sup>(4)</sup>	As shown	2	24"	680	510	510	455	1,360	555
			19.2"	850	640	640	565	1,700	695
			16"	1,020	765	765	680	2,040	835
MiTek® WS <sup>(5)</sup>	As shown	2	24"	640	480	480	425		475 <sup>(7)</sup>
			19.2"	800	600	600	530		595 <sup>(7)</sup>
			16"	955	720	720	640		715 <sup>(7)</sup>
Screw Length ▶				3 3/4"	5"	3 3/4"	6 3/4"	6 3/4"	6 3/4"
Simpson Strong-Tie® SDW22 <sup>(3)(4)</sup>	One face	2	24"	800	450	600	400	800	400
			19.2"	1,000	565	750	500	1,000	500
			16"	1,200	675	900	600	1,200	600
MiTek® WSWH <sup>(5)</sup>	One face	2	24"	600	430	480	380	830	380
			19.2"	750	535	600	475	1,040	475
			16"	905	645	720	575	1,245	575

(1) Nailed connection values may be doubled for 6" on-center or tripled for 4" on-center nail spacing

(2) Washers required. Bolt holes to be 3/16" maximum

(3) 24" on-center bolted or screwed connection values may be doubled for 12" on-center spacing.

(4) When loading the head side of a SDW22 screw, assemblies B, D, and F can be increased by 30%

(5) When loading the head side of a WSWH screw, assemblies B, D, and F can be increased by 25%

(6) For beams up to 14" deep, maximum

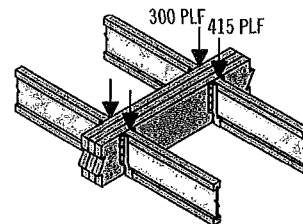
(7) Assembly F is not recommended for TimberStrand® LSL or Parallam® PSL.

• **Bold italic** loads indicate assemblies that require fastener placement on both faces. Stagger fasteners on the second face so they fall halfway between fasteners on the first face.

### General Notes for Side-Loaded Beam Tables

- Connections are based on NDS® or manufacturer's test or code reports
- Use specific gravity of 0.5 for design of lateral connections
- Values listed are for 100% stress level. Increase 15% for snow-loaded roof conditions or 25% for non-snow roof conditions, where code allows.
- Minimum end distance for bolts and screws is 6"
- Verify adequacy of beam in allowable load tables on pages 6–23
- 7" wide beams should be side-loaded only when loads are applied to both faces of the members (to minimize rotation)
- Beams wider than 7" require special consideration by the design professional of record

### Uniform Load Design Example

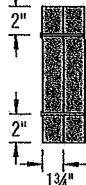


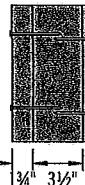
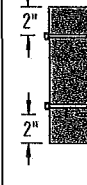



First, check allowable load tables on pages 6–23 to verify that three pieces can carry the total load of 715 plf with proper live load deflection criteria. Maximum load applied to either outside member is 415 plf. For an assembly of three 1 3/4" plies (Assembly B), two rows of (0.131" x 3") nails on both faces at 12" on-center are good for only 280 plf. Therefore, use three rows of (0.131" x 3") nails on both faces at 12" on-center (good for 420 plf).

**Alternative:** Two rows of 1/2" A307 bolts at 19.2" on-center or two rows of 5" SDW22 screws on one face at 24" on-center

# MULTIPLE-MEMBER CONNECTIONS FOR SIDE-LOADED BEAMS

## L18 Point Load—Maximum Point Load Applied to Either Outside Member (lbs)

Fastener Type	Placement	Number of Fasteners per Face	Fastener Pattern					
			Assembly A	Assembly B	Assembly C	Assembly D	Assembly E	Assembly F
								
3 1/2" wide, 2-ply	5 1/4" wide, 3-ply	5 1/4" wide, 2-ply	7" wide, 3-ply	7" wide, 2-ply	7" wide, 4-ply			
10d (0.128" x 3") or (0.131" x 3") Nail	As shown	6	1,115	835	835	745		
		12	2,230	1,675	1,675	1,490		
		18	3,350	2,510	2,510	2,230		
		24	4,465	3,350	3,350	2,975		
Screw Length ▶		3 1/2"	3 1/2"	3 1/2"	3 1/2"	6"	6"	
Simpson Strong-Tie® SDS	As shown	4	2,720	2,040	2,040	1,815	5,440	2,225
		6	4,080	3,060	3,060	2,720	8,160	3,335
		8	5,440	4,080	4,080	3,625	10,880	4,450
MiTek® WS	As shown	4	2,550	1,915	1,915	1,700		1,910 <sup>(3)</sup>
		6	3,830	2,870	2,870	2,550		2,865 <sup>(3)</sup>
		8	5,105	3,830	3,830	3,405		3,820 <sup>(3)</sup>
Screw Length ▶		3 3/4"	5"	3 3/4"	6 3/4"	6 3/4"	6 3/4"	
Simpson Strong-Tie® SDW22 <sup>(1)</sup>	One face	4	3,200	1,800	2,400	1,600	3,200	1,600
		6	4,800	2,700	3,600	2,400	4,800	2,400
		8	6,400	3,600	4,800	3,200	6,400	3,200
MiTek® WSWH <sup>(2)</sup>	One face	4	2,410	1,720	1,915	1,525	3,320	1,525
		6	3,610	2,580	2,870	2,290	4,980	2,290
		8	4,815	3,435	3,830	3,055	6,640	3,055

(1) When loading the head side of a SDW22 screw, assemblies B, D, and F can be increased by 30%.

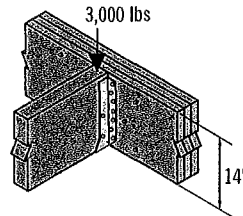
(2) When loading the head side of a WSWH screw, assemblies B, D, and F can be increased by 25%.

(3) Assembly F is not recommended for TimberStrand® LSL or Parailam® PSL.

• **Bold italic** loads indicate assemblies that require fastener placement on both faces. For screws required on both faces, refer to screw manufacturer's guidelines for minimum spacing requirements.

### Point Load Design Example

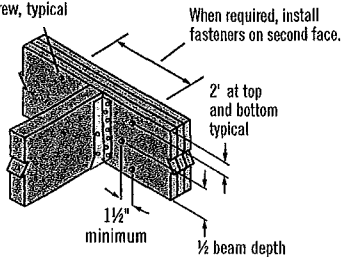
First, verify that a 3-ply, 1 3/4" x 14" beam can support a 3,000 lb point load and all other loads applied. The 3,000 lb point load is being transferred to the beam with a face mount hanger. For an assembly of three 1 3/4" plies (Assembly B), six 3 1/2" SDS screws on both faces are good for 3,060 lbs with a face mount hanger.



### Point Load Fastener Spacing

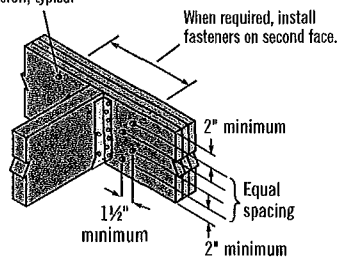
#### 4- or 6-Screws per Face Connection

SDS, WS, SDW22, or WSWH screw, typical



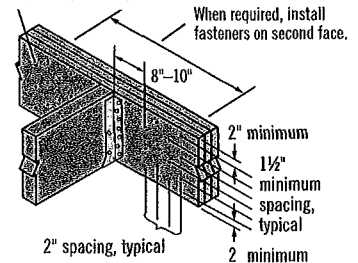
#### 8-Screws per Face Connection

SDS, WS, SDW22, or WSWH screw, typical



#### Nail Connection

10d (0.128" x 3") or (0.131" x 3") nail, typical. Stagger to prevent splitting.

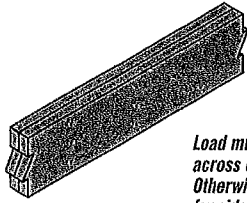


There must be an equal number of nails on each side of the point load.

See table above for placement and number of fasteners per face.

# MULTIPLE-MEMBER CONNECTIONS FOR TOP-LOADED BEAMS

When fasteners are required on both faces, stagger fasteners on the second face so they fall halfway between fasteners on the first face.



Load must be applied evenly across entire beam width. Otherwise, use connections for side-loaded beams

L6

Multiple pieces can be nailed or bolted together to form a header or beam of the required size, up to a maximum width of 7"

## Fastener Installation Requirements

Piece Width	Number of Plies	Fastener				
		Type <sup>(1)</sup>	Min. Length	Placement	# Rows	O.C. Spacing
1½"	2	10d nails	3"	One face	3 <sup>(2)</sup>	12"
		12d–16d nails	3¼"		2 <sup>(2)</sup>	
		Screws	3¾" or 3½"		2	
	3	10d nails	3"	Both faces	3 <sup>(2)</sup>	12"
		12d–16d nails	3¼"		2 <sup>(2)</sup>	
		Screws	3¾" or 3½"	Both faces	2	24"
			5"	One face		
			5"	One face (per ply)		
	4	10d nails <sup>(3)</sup>	3"	One face (per ply)	3 <sup>(2)</sup>	12"
		12d–16d nails <sup>(3)</sup>	3¼"		2 <sup>(2)</sup>	
		Screws	5" or 6"	Both faces	2	24"
			6¾"	One face		
3½"	2	Screws	5" or 6"	Both faces	2	24"
			6¾"	One face		
		½" bolts	8"	—	2	24"

(1) 10d nails are 0.128"-0.131" diameter, 12d–16d nails are 0.148"-0.162" diameter, screws are SDS, WS, SDW22, or WSWH.

(2) An additional row of nails is required with depths of 14" or greater

(3) When connecting 4-ply members, nail each ply to the other and offset nail rows by 2" from rows in the ply below.