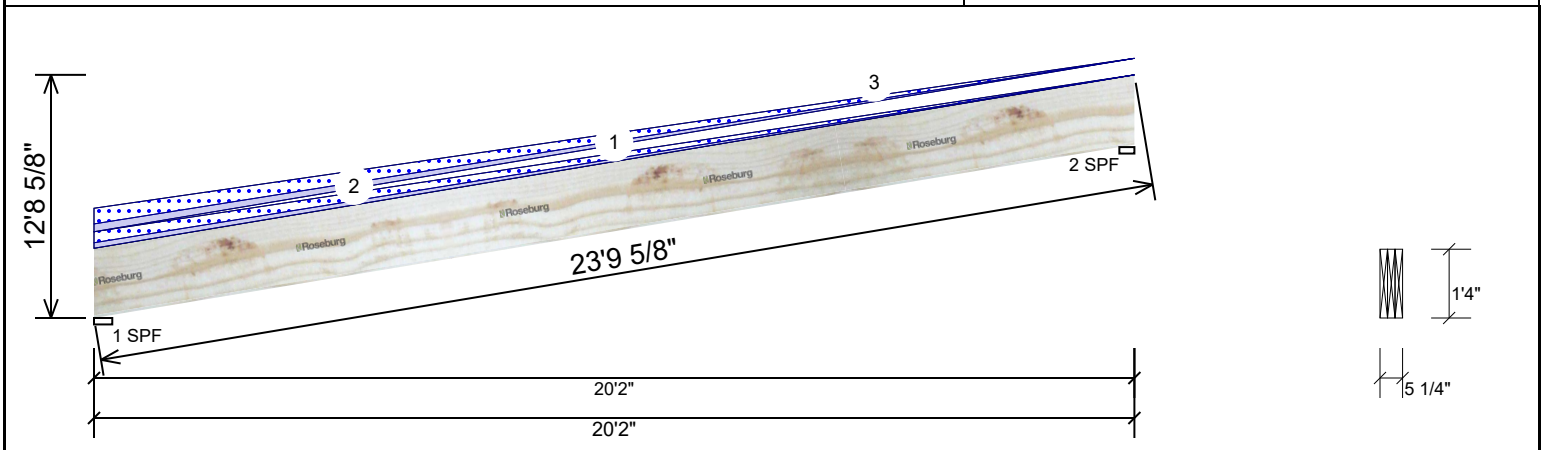
EWP Studio
Simpson Strong-Tie® Component Solutions™

Client:	Charlie D Smith Construction	Date:	9/14/2021
Project:	ROOF VALLEY - above covered porch	Input by:	RKW
Address:	200 Gilchrist Road Cameron, N.C. 28326 Harnett County	Job Name:	Chambers Residence
		Project #:	21090009

B12 2.0E Rigidlam LVL 1.750" X 16.000" 3-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Roof
Plies:	3	Slope:	6.66/12
Moisture Condition:	Dry	Design Method:	ASD
Deflection LL:	480	Building Code:	IBC/IRC 2015
Deflection TL:	240	Load Sharing:	Yes
Importance:	Normal - II	Deck:	Not Checked
Temperature:	Temp <= 100°F		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	3410	5547	0	0
2	Vertical	0	1799	2702	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	4.250"	Vert	94%	3410 / 5547	8957	L	D+S
2 - SPF	3.500"	Vert	58%	1799 / 2702	4500	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	32897 ft-lb	8'8 1/8"	66764 ft-lb	0.493 (49%)	D+S	L
Unbraced	32897 ft-lb	8'8 1/8"	33104 ft-lb	0.994 (99%)	D+S	L
Shear	6207 lb	1'8 1/4"	18676 lb	0.332 (33%)	D+S	L
LL Defl inch	0.500 (L/540)	9'8 15/16"	0.562 (L/480)	0.889 (89%)	S	L
TL Defl inch	0.816 (L/330)	9'9 1/16"	1.123 (L/240)	0.727 (73%)	D+S	L

Design Notes

1 Provide support to prevent lateral movement and rotation at the end bearings. Lateral support may also be required at the interior bearings by the building code.
2 Refer to manufacturer's literature for sloped bearing detail.
3 Attach with enough nails to prevent sliding between the joist and the sloped bearing wedge at each support.
4 Girders are designed to be supported on the bottom edge only.
5 Multiple plies must be fastened together as per manufacturer's details.
6 Top loads must be supported equally by all plies.
7 Top must be laterally braced at a maximum of 5'3 9/16" o.c. along the slope.
8 Bottom must be laterally braced at end bearings.
9 Lateral slenderness ratio based on single ply width.

ID	Load Type	Location	Trib Width	Side	Dead 0.9	Live 1	Snow 1.15	Wind 1.6	Const. 1.25	Comments
2	Tapered Start	0-0-0		Top	169 PLF	0 PLF	338 PLF	0 PLF	0 PLF	Rf Load
	End	20-2-0			0 PLF	0 PLF	0 PLF	0 PLF	0 PLF	
3	Tapered Start	0-0-0		Top	240 PLF	0 PLF	480 PLF	0 PLF	0 PLF	Rf Load
	End	20-2-0			0 PLF	0 PLF	0 PLF	0 PLF	0 PLF	
	Self Weight				22 PLF					

Notes

Calculated Structured Designs is responsible only of the structural adequacy of this component based on the design criteria and loadings shown. It is the responsibility of the customer and/or the contractor to ensure the component suitability of the intended application, and to verify the dimensions and loads.

Lumber

1. Dry service conditions, unless noted otherwise
2. LVL not to be treated with fire retardant or corrosive chemicals

Handling & Installation

1. LVL beams must not be cut or drilled
2. Refer to manufacturer's product information regarding installation requirements, multi-ply fastening details, beam strength values, and code approvals
3. Damaged Beams must not be used
4. Design assumes top edge is laterally restrained
5. Provide lateral support at bearing points to avoid lateral displacement and rotation
6. For flat roofs provide proper drainage to prevent ponding

This design is valid until 5/24/2024

Manufacturer Info

Roseburg Forest Products
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APA: PR-L289, PR-L270, ICC-ES: ESR-1210

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