



EWP Studio
Simpson Strong-Tie®
Component Solutions™

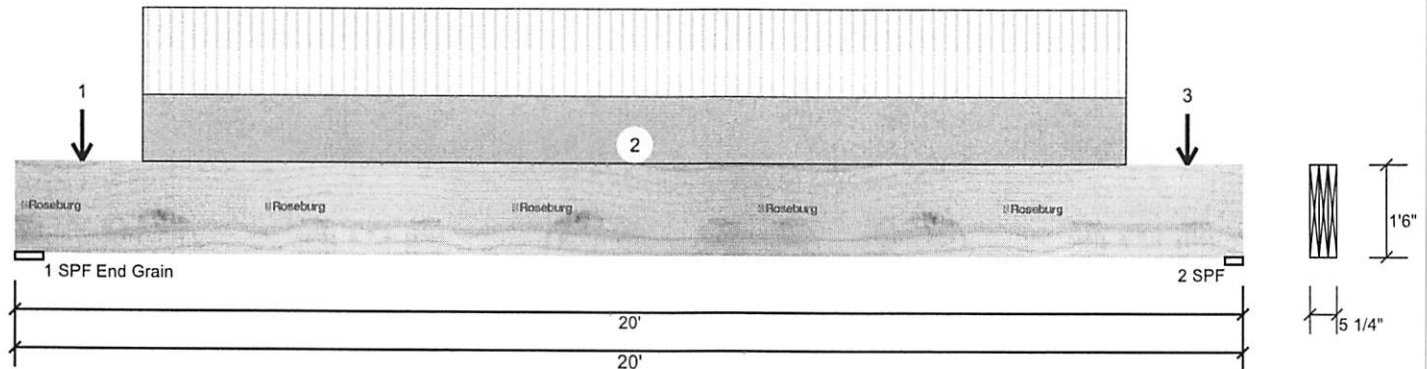
Client: 84 Lumber-Asheville
Project:
Address:

LVL Sizing Red Maple Dr
Date: 10/20/2022
Input by: Kristen Haase
Job Name: 13384-12 Red Maple Hunter
Project #: 13384

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RB1 2.1E Rigidlam LVL SP 1.750" X 18.000" 3-Ply - PASSED

Level: Ceiling & Roof



Member Information

Type:	Girder	Application:	Roof
Plies:	3	Slope:	0/12
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		
General Load			
Floor Live:	20 PSF		
Dead:	15 PSF		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	3923	3309	0	0	0
2	Vertical	3725	3150	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	5.500"	Vert	33%	3309 / 3923	7232	L	D+L
2 - SPF	3.500"	Vert	88%	3150 / 3725	6875	L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	35233 ft-lb	10' 13/16"	70234 ft-lb	0.502 (50%)	D+L	L
Unbraced	35233 ft-lb	10' 13/16"	35300 ft-lb	0.998 (100%)	D+L	L
Shear	6571 lb	1'11 1/2"	18270 lb	0.360 (36%)	D+L	L
LL Defl inch	0.263 (L/883)	10' 15/16"	0.484 (L/480)	0.543 (54%)	L	L
TL Defl inch	0.484 (L/480)	10' 15/16"	0.969 (L/240)	0.500 (50%)	D+L	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 Girders are designed to be supported on the bottom edge only.
- 3 Multiple plies must be fastened together as per manufacturer's details.
- 4 Top loads must be supported equally by all plies.
- 5 Top must be laterally braced at a maximum of 5' 3/16" o.c.
- 6 Bottom must be laterally braced at end bearings.
- 7 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
1	Point	1-1-0		Top	485 lb	627 lb	0 lb	0 lb	0 lb	R2
	Bearing Length	0-3-8								
2	Part. Uniform	2-1-0 to 18-1-0		Top	319 PLF	413 PLF	0 PLF	0 PLF	0 PLF	
3	Point	19-1-0		Top	319 lb	413 lb	0 lb	0 lb	0 lb	R2
	Bearing Length	0-3-8								
	Self Weight				28 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

Manufacturer Info

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This design is valid until 7/22/2025