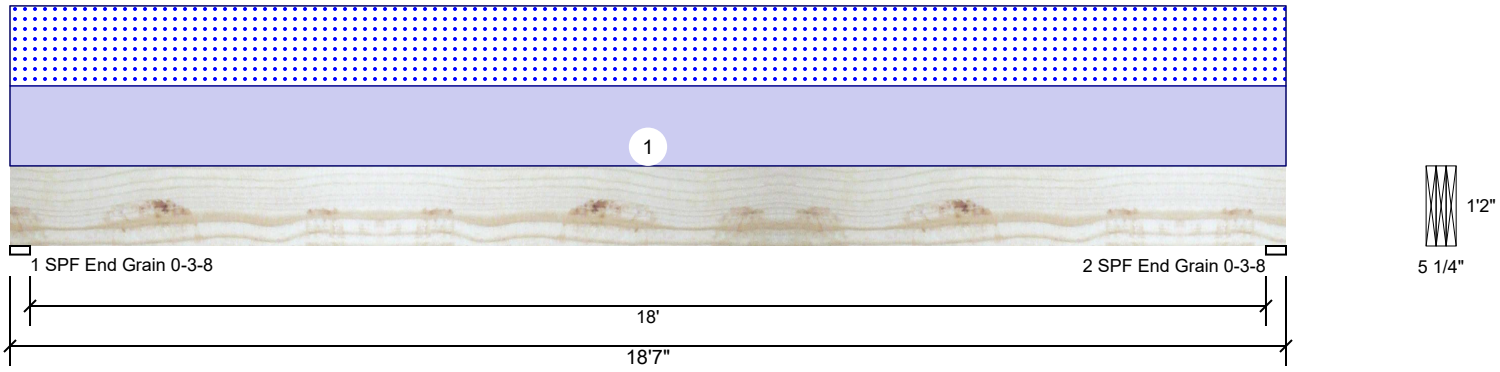
Client:		Date:	7/31/2024
Project:		Input by:	Alex Torres
Address:		Job Name:	Jonah Blakenship
		Project #:	

B1 Murphy 2.0E-3100F LVL 1.750" X 14.000" 3-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	3	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IRC 2021
Deflection LL:	360	Load Sharing:	Yes
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		
General Load			
Floor Live:	40 PSF		
Dead:	15 PSF		

Reactions PATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	0	3544	3345	0	0
2	Vertical	0	3544	3345	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF End Grain	3.500"	Vert	50%	3544 / 3345	6889	L	D+S
2 - SPF End Grain	3.500"	Vert	50%	3544 / 3345	6889	L	D+S

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Moment	30447 ft-lb	9'3 1/2"	51538 ft-lb	59%	D+S	L
Unbraced	30447 ft-lb	9'3 1/2"	30598 ft-lb	100%	D+S	L
Shear	5808 lb	17'1 1/2"	16342 lb	36%	D+S	L
LL Defl inch	0.364 (L/597)	9'3 9/16"	0.604 (L/360)	60%	S	L
TL Defl inch	0.750 (L/290)	9'3 9/16"	0.906 (L/240)	83%	D+S	L

Design Notes

1 Provide support to prevent lateral movement and rotation at the end bearings.
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 4'9 3/4" 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	Uniform			Top	360 PLF	0 PLF	360 PLF	0 PLF	0 PLF	
	Self Weight				21 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 2/14/2027

Manufacturer Info

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