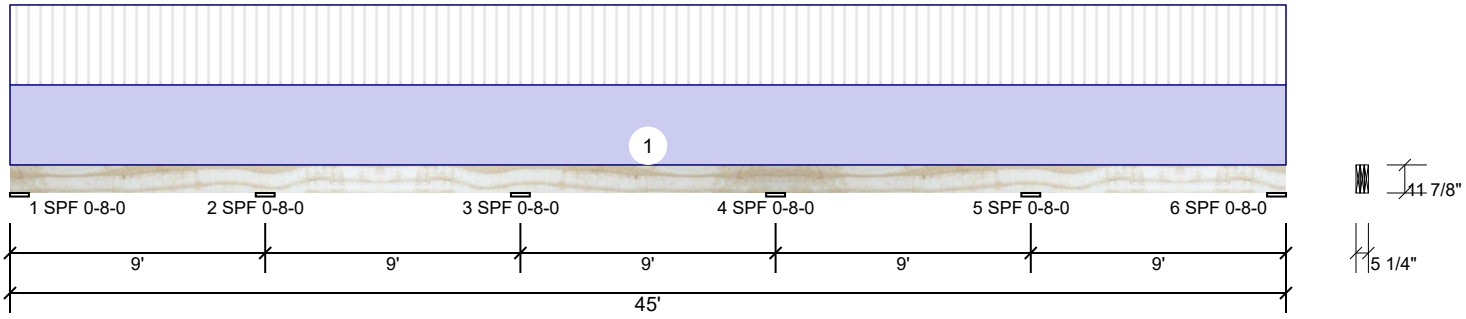
Client:	Pope Builders	Date:	2/28/2024
Project:	Pope Builders - Thompson Barn	Input by:	Joe Ciferni
Address:		Job Name:	Thompson Barn LVL Beams
		Project #:	02-22-2024

BM1-3 onCENTER 2.1E LVL 1.750" X 11.875" 3-Ply - PASSED

Level: Level



Member Information

Type:	Girder	Application:	Floor
Plies:	3	Design Method:	ASD
Moisture Condition:	Dry	Building Code:	IRC 2018
Deflection LL:	240	Load Sharing:	Yes
Deflection TL:	240	Deck:	Not Checked
Importance:	Normal - II		
Temperature:	Temp <= 100°F		
General Load			
Floor Live:	40 PSF		
Dead:	12 PSF		

Reactions UNPATTERNED lb (Uplift)

Brg	Direction	Live	Dead	Snow	Wind	Const
1	Vertical	1469	1540	0	0	0
2	Vertical	3644	3819	0	0	0
3	Vertical	3347	3508	0	0	0
4	Vertical	3347	3508	0	0	0
5	Vertical	3644	3819	0	0	0
6	Vertical	1469	1540	0	0	0

Bearings

Bearing	Length	Dir.	Cap.	React D/L lb	Total	Ld. Case	Ld. Comb.
1 - SPF	8.000"	Vert	18%	1526 / 1654	3181	L_L_L	D+L
2 - SPF	8.000"	Vert	44%	3849 / 3967	7816	LL_L_	D+L
3 - SPF	8.000"	Vert	42%	3492 / 3928	7420	_LL_L	D+L
4 - SPF	8.000"	Vert	42%	3492 / 3928	7420	L_LL_	D+L
5 - SPF	8.000"	Vert	44%	3849 / 3967	7816	_L_LL	D+L
6 - SPF	8.000"	Vert	18%	1526 / 1654	3181	L_L_L	D+L

Analysis Results

Analysis	Actual	Location	Allowed	Capacity	Comb.	Case
Neg Moment	-6453 ft-lb	9'	33194 ft-lb	0.194 (19%)	D+L	LL_L_
Unbraced	-6453 ft-lb	9'	6457 ft-lb	0.999 (100%)	D+L	LL_L_
Pos Moment	4787 ft-lb	40'10 7/16"	33194 ft-lb	0.144 (14%)	D+L	L_L_L
Unbraced	4787 ft-lb	40'10 7/16"	4790 ft-lb	0.999 (100%)	D+L	L_L_L
Shear	3001 lb	7'8 1/8"	11845 lb	0.253 (25%)	D+L	LL_L_
LL Defl inch	0.027 (L/3718)	4'8 1/16"	0.420 (L/240)	0.065 (6%)	L	L_L_L
TL Defl inch	0.047 (L/2127)	40'5 5/16"	0.420 (L/240)	0.113 (11%)	D+L	L_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 32'9 7/8" o.c.
6 Bottom must be laterally braced at a maximum of 24'3 1/8" o.c.
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	376 PLF	376 PLF	0 PLF	0 PLF	0 PLF	Roof truss load by others
	Self Weight				18 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 6/28/2026

Manufacturer Info

BlueLinx
1950 Spectrum Circle, Suite 300
Marietta, GA 30067
877-914-7770
www.buildoncenter.com
ICC-ES: ESR-2909, ESR-2913, ESR-1210

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3941 US Hwy. 421 North, NC 28401
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