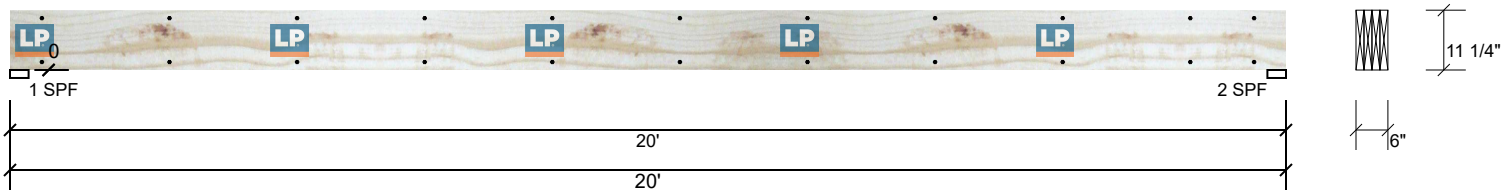
LP BUILDING SOLUTIONS

Client:
Project:
Address:

Date: 11/23/2021
Input by:
Job Name: Bucur Residence Beams
Project #:

B2 LP-LVL 2900Fb-2.0E 1.500" X 11.250" 4-Ply - PASSED

Level: Level



User Inputs

Design Method:	ASD	Load Sharing:	Yes	Spans	
Building Code:	IBC/IRC 2015	Importance:	Normal - II	Span 1:	20-0-0
Type:	Girder	Moisture Condition:	Dry	Bearings	
Application:	Floor	Temperature:	Temp <= 100°F	Brg 1:	3.5" SPF
Plies:	4	Decking:	Not Checked	Brg 2:	3.5" SPF
Material Type:	LVL	Defl. LL Span:	L / 480		
Material Name:	LP LVL 2900F-2.0E	Defl. LL Cant:	L / 240		
Depth:	11.25	Defl. TL Span:	L / 240		
Width:	1.5	Defl. TL Cant:	L / 120		

Analysis Details

Material Properties

Name	E	Fb	Fcp	Fv	G	Density
LP LVL 2900F-2.0E	2E6	2900	750	285	125000	41.2

Resistance Factors

Moment Factor	Shear Factor	Comp Perp Factor	Cr-Bending	Cr-Shear	Load Sharing	Ct	Ct (E)
0.379342277548014	1	1	1.04	1	Yes	1	1

EI (including Ct (E))

Bare EI	Composite EI	Ct (E) (temp. factor for E)
1.423828E+009	1.423828E+009	1

Load Combinations Checked for Strength (Factors include importance factor)

Comb. No.	Description	Pattern Count	Cd-Duration	D	L	S	W	C
1	D	1	0.9	1	0	0	0	0
2	D+L	1	1	1	1	0	0	0

Load Combinations Checked for Deflection (Total Loads: Dead + Live Loads)

Comb. No.	Description	Pattern Count	Cd-Duration	D	L	S	W	C
1	D	1	0.9	1	0	0	0	0
2	D+L	1	1	1	1	0	0	0

Load Combinations Checked for Deflection (Live Loads)

Comb. No.	Description	Pattern Count	Cd-Duration	D	L	S	W	C
1	L	1	1	0	1	0	0	0

B2 LP-LVL 2900Fb-2.0E 1.500" X 11.250" 4-Ply - PASSED

Level: Level

Bearing Calculation (MR: Max Reaction)

Brg. No.	Capacity	Input Length	Req'ed Length	Reaction	MR Load Comb.	MR Load Case	MR Dead	MR Live	Uplift
1	425	3.5	3.5	2443.1	D+L	L	943.1	1500	0
2	425	3.5	3.5	2443.1	D+L	L	943.1	1500	0

Maximum Moment at Each Member

Mem No.	Span No.	Combination	Load Case	Cd	CL	Resist. Factors	Moment	Span-X	Mr	Mr_orig	Ratio
1	Spn 1	D+L	L	1	0.365	0.379	11662	9-9-4	32038	7702	0.364

Maximum Shear at Each Member

Mem No.	Span No.	Brg No.	Max	Combination	Load Case	Cd	Res… Fac…	Max Shear	Vr	Ratio
1	Spn 1	1	Yes	D+L	L	1	1	2161	12825	0.1685

Maximum Deflection on Span and Cantilever for Total Load (Dead + Live)

Def. Span Desc.	Combination	Load Case	Max Deflection	Span ID	Span-X	Span Analog Length	L / Allowable	L / Actual	Ratio
Critical Span	D+L	L	0.5829	Spn 1	9-9-5	19-6-8	240	402.3	0.5966

Maximum Deflection on Span and Cantilever for Live Load Only

Def. Span Desc.	Combination	Load Case	Max Deflection	Span ID	Span-X	Span Analog Length	L / Allowable	L / Actual	Ratio
Critical Span	L	L	0.3579	Spn 1	9-9-5	19-6-8	480	655.2	0.7326