LOUISIANA-PACIFIC CORPORATION / WOOD-E DESIGN 2016.1 09/18/18 09:48:36

WARNING

*** THIS DESIGN IS VALID FOR THE PROJECT NAMED BELOW (JOB ID) ONLY

*** WOOD-E DESIGN 2016.1 EXPIRES ON 3/31/2018. LP WILL MAKE AVAILABLE TO ALL REGISTERED USERS AN UPDATED VERSION OF THE WOOD-E DESIGN SOFTWARE IN THE CONTINUING EFFORT TO MAINTAIN COMPLIANCE WITH CHANGING BUILDING CODES, INDUSTRY PRACTICES, CODE EVALUATION REPORTS AND/OR METHODS OF ANALYSIS.

COMPANY:
JOB ID: Krutsinger BE2
STATE: FL CODE: FBC '10
PRODUCT: 2-PLY 1-3/4" X 11-1/4" LP LSL 1.55E

DESIGN CRITERIA FOR ROOF BEAM (UNFACTORED LOADS)

LIVE (PSF)	DEAD (PSF)	SPAN (L) CARRIED	SPAN (R) CARRIED	SLOPE	LOADING	ALLOWABLE DEFLECTION LIVE	TOTAL
20	20	0.000'	0.000'	0.00	TOP	L/240	L/180

SPAN CARRIED IS NOT CONTINUOUS.

ALLOWABLE / WORKING STRESS DESIGN DATA	**REACTION**	**MOMENT**	**SHEAR**	**DEFLECTION LIVE LOAD**	**TOTAL LOAD**
ACTUAL	**3973**	**17274**	**3973**	**0.422**	**0.860**
ALLOWABLE	**4594**	**18291**	**13453**	**0.677**	**0.903**
STRESS INDICES	**0.86**	**0.94**	**0.30**	**L/385**	**L/189**
LOAD CASE	**1**	**1**	**1**	**1**	**1**

**** THE REACTION, MOMENT AND SHEAR DATA ABOVE ARE BASED ON THE MAXIMUM STRESS INDICES AND MAY NOT REFLECT THE ABSOLUTE MAXIMUM ACTUALS.

**** ALLOWABLE DEFLECTIONS ARE BASED ON THE DESIGN SPAN LENGTH (L) OR TWICE THE LENGTH FOR CANTILEVERS (2L).

CONNECTION

*** DESIGN ASSUMES ALL "TOP" LOADS ARE APPLIED TO TOP EDGE OF BEAM, SUCH THAT LOAD IS DISTRIBUTED EQUALLY TO EACH PLY.

***ATTACH THE TWO PLIES WITH 2 ROWS OF 16d (3-1/2") NAILS AT 12" OC. STAGGER ROWS. NAILS CAN BE DRIVEN FROM ONE FACE OR HALF FROM EACH FACE. NAILS MAY BE COMMON OR BOX NAILS WITH A MINIMUM SHANK DIAMETER OF 0.131" 16d SINKERS (3-1/4") MAY BE USED, BUT HALF MUST BE DRIVEN FROM EACH FACE.

*** CONCENTRATED LOADS MUST BE EQUALLY DISTRIBUTED TO ALL PLIES. ADDITIONAL FASTENERS MAY BE REQUIRED.

NOTES

*** COMPRESSION EDGE BRACING REQUIRED AT 24" O.C. OR LESS.

*** THIS LSL BEAM HAS BEEN DESIGNED TO SUPPORT A 300 LBS CONCENTRATED LOAD ACTING OVER 2.5 X 2.5 FT (6.25 SQ.FT)

STRUCTURAL GEOMETRY

SPAN 1

13.670'

TOTAL SPAN: 13.67 FT

LOAD PATTERNS

CASE	SPAN	SHAPE	TYPE	SOURCE	LOADING	W1	W2	X1 (FT)	X2 (FT)
+ALL	1	UNIF	WEIGHT	BEAM		12.6 PLF		0.000	13.670

ALL	1	CONC	DEAD	ROOF	TOP	1680.0	LBS	7.000	
ALL	1	CONC	DEAD	ROOF	TOP	468.0	LBS	1.500	
ALL	1	CONC	DEAD	ROOF	TOP	468.0	LBS	3.500	
ALL	1	CONC	DEAD	ROOF	TOP	468.0	LBS	5.500	
ALL	1	CONC	DEAD	ROOF	TOP	174.0	LBS	9.500	
ALL	1	CONC	DEAD	ROOF	TOP	140.0	LBS	11.500	
ALL	1	CONC	DEAD	ROOF	TOP	80.0	LBS	13.000	
1	1	CONC	LIVE	ROOF	TOP	1680.0	LBS	7.000	
1	1	CONC	LIVE	ROOF	TOP	468.0	LBS	5.500	
1	1	CONC	LIVE	ROOF	TOP	468.0	LBS	3.500	
1	1	CONC	LIVE	ROOF	TOP	468.0	LBS	1.500	
1	1	CONC	LIVE	ROOF	TOP	174.0	LBS	9.500	
1	1	CONC	LIVE	ROOF	TOP	140.0	LBS	11.500	
1	1	CONC	LIVE	ROOF	TOP	80.0	LBS	13.000	
2	1	CONC	LIVE	ROOF	TOP	0.0	LBS	7.000	
2	1	CONC	LIVE	ROOF	TOP	0.0	LBS	1.500	
2	1	CONC	LIVE	ROOF	TOP	0.0	LBS	3.500	
2	1	CONC	LIVE	ROOF	TOP	0.0	LBS	5.500	
2	1	CONC	LIVE	ROOF	TOP	0.0	LBS	9.500	
2	1	CONC	LIVE	ROOF	TOP	0.0	LBS	11.500	
2	1	CONC	LIVE	ROOF	TOP	0.0	LBS	13.000	
3	1	UNIF	LIVE	ROOF	TOP	48.0	PLF	0.125	2.625
4	1	UNIF	LIVE	ROOF	TOP	48.0	PLF	11.045	13.545
5	1	UNIF	LIVE	ROOF	TOP	48.0	PLF	5.585	8.085

+ INDICATES LOAD IS BASED ON SPAN CARRIED AND INPUT LIVE OR DEAD LOAD PSF.

SECTION FORCES

CASE	MOMENT (LB-FT)	SHEAR (LBS)	LDF	LOAD COMBINATIONS
1	17274	3973	1.25	D+Lr
2	8781	2029	0.90	D
3	8860	2137	1.25	D+Lr
4	8860	2041	1.25	D+Lr
5	9150	2089	1.25	D+Lr

UNFACTORED SUPPORT REACTIONS (LBS) USE THESE VALUES WHEN DESIGNING CONNECTORS

REACTIONS FOR TOTAL LOADS

CASE	BRG#1	BRG#2
1	3973	3155
2	2029	1620
3	2137	1633
4	2042	1728
5	2089	1680

REACTIONS FOR DEAD LOAD

CASE	BRG#1	BRG#2
1	2029	1620
2	2029	1620
3	2029	1620
4	2029	1620
5	2029	1620

REACTIONS FOR LIVE LOAD

CASE	BRG#1	BRG#2
1	1943	1535
2	0	0
3	108	12
4	12	108
5	60	60

MINIMUM BEARING SIZES (IN)

BRG# 1	BRG# 2
1.500	1.500

CONCENTRATED LOADS

SPAN	TYPE	W1 (LBS)	X1 (FT)	MIN BRG (IN)
1	DEAD	1680.0	7.000	3.000
1	DEAD	468.0	1.500	3.000
1	DEAD	468.0	3.500	3.000
1	DEAD	468.0	5.500	3.000
1	DEAD	174.0	9.500	3.000
1	DEAD	140.0	11.500	3.000
1	DEAD	80.0	13.000	3.000
1	LIVE	1680.0	7.000	3.000
1	LIVE	468.0	5.500	3.000
1	LIVE	468.0	3.500	3.000
1	LIVE	468.0	1.500	3.000
1	LIVE	174.0	9.500	3.000
1	LIVE	140.0	11.500	3.000
1	LIVE	80.0	13.000	3.000

		LIVE LOAD DEFLECTION			TOTAL LOAD DEFLECTION			DEAD LOAD DEFLECTION	
CASE	SPAN	ACTUAL	ALLOW.	L/?	ACTUAL	ALLOW.	L/?	INSTANT	LONG-TERM
1	1	0.422	0.677	L/385	0.860	0.903	L/189		
2	1	0.000	0.677		0.438	0.903	L/371	0.438	0.657
3	1	0.005	0.677	L/31335	0.443	0.903	L/367		
4	1	0.005	0.677	L/31335	0.443	0.903	L/367		
5	1	0.018	0.677	L/9127	0.456	0.903	L/356		

**** FOR DEAD LOAD DEFLECTION DATA SEE LOAD CASE 2 ****
**** TOTAL LOAD DEFLECTION SHOWN IS INSTANTANEOUS. ****

**** ALLOWABLE DEFLECTIONS ARE BASED ON THE DESIGN SPAN LENGTH (L) OR TWICE THE LENGTH FOR CANTILEVERS (2L).

STRESS INDICES	CASE	MSI	VSI
	1	0.94	0.30
	2	0.67	0.21
	3	0.48	0.16
	4	0.48	0.15
	5	0.50	0.16

SLENDERNESS RATIO = 3.21 LIMIT = 10.00

2016.1 Allowable Stress Design

NOTE:
1. THIS COMPONENT IS DESIGNED TO SUPPORT ONLY THE VERTICAL LOADS SHOWN VERIFICATION OF LOADING, DEFLECTION LIMITATIONS, FRAMING METHODS, WIND AND SEISMIC BRACING, AND OTHER LATERAL BRACING THAT IS ALWAYS REQUIRED IS THE RESPONSIBILITY OF THE PROJECT ENGINEER OR ARCHITECT.
2. PROVIDE RESTRAINT AT SUPPORTS TO ENSURE LATERAL STABILITY.
3. DO NOT CUT, NOTCH OR DRILL LP LSL.
4. SHIM ALL BEARINGS FOR FULL CONTACT.
5. VERIFY DIMENSIONS BEFORE CUTTING LP LSL TO SIZE.
6. THIS LP LSL IS TO BE USED AS A ROOF BEAM ONLY. MAKE PROVISION FOR ADEQUATE DRAINAGE.
7. COMPRESSION EDGE BRACING REQUIRED AT 24" O.C. OR LESS.

DESIGN ASSUMES ALL "TOP" LOADS ARE APPLIED TO TOP EDGE OF LP LSL, SUCH THAT LOAD IS DISTRIBUTED EQUALLY TO EACH PLY. ATTACH THE TWO PLIES WITH 2 ROWS OF 16d (3-1/2") NAILS AT 12" OC. STAGGER ROWS. NAILS CAN BE DRIVEN FROM ONE FACE OR HALF FROM EACH FACE. NAILS MAY BE COMMON OR BOX NAILS WITH A MINIMUM SHANK DIAMETER OF 0.131". 16d SINKERS (3-1/4") MAY BE USED, BUT HALF MUST BE DRIVEN FROM EACH FACE.

CONCENTRATED LOADS MUST BE EQUALLY DISTRIBUTED TO ALL PLIES. ADDITIONAL FASTENERS MAY BE REQUIRED.

LOAD TABLE

NOTE: LOADS SHOWN ARE FOR INPUT LOAD CASE (1). OTHER LOAD CASES FOR PATTERN LIVE LOADING ARE CHECKED AS REQUIRED.
(DIMENSIONS MEASURED FROM LEFT END OF SPAN OR CANTILEVER.)

DISTRIBUTION	SOURCE	TYPE	TOP/SIDE	LOAD	FROM FT-IN-SX	TO FT-IN-SX	LDF	LABEL
UNIFORM	BEAM	WEIGHT		13 PLF	00-00-00	13-08-01	0.90	
CONCENTRATED	ROOF	DEAD	TOP	468 LBS	01-06-00	MINBRG=3.00"	0.90	
CONCENTRATED	ROOF	LIVE	TOP	468 LBS	01-06-00	MINBRG=3.00"	1.25	
CONCENTRATED	ROOF	LIVE	TOP	468 LBS	03-06-00	MINBRG=3.00"	1.25	
CONCENTRATED	ROOF	DEAD	TOP	468 LBS	03-06-00	MINBRG=3.00"	0.90	
CONCENTRATED	ROOF	LIVE	TOP	468 LBS	05-06-00	MINBRG=3.00"	1.25	
CONCENTRATED	ROOF	DEAD	TOP	468 LBS	05-06-00	MINBRG=3.00"	0.90	
CONCENTRATED	ROOF	LIVE	TOP	1680 LBS	07-00-00	MINBRG=3.00"	1.25	Girder
CONCENTRATED	ROOF	DEAD	TOP	1680 LBS	07-00-00	MINBRG=3.00"	0.90	Girder
CONCENTRATED	ROOF	LIVE	TOP	174 LBS	09-06-00	MINBRG=3.00"	1.25	
CONCENTRATED	ROOF	DEAD	TOP	174 LBS	09-06-00	MINBRG=3.00"	0.90	
CONCENTRATED	ROOF	LIVE	TOP	140 LBS	11-06-00	MINBRG=3.00"	1.25	Rafter 1
CONCENTRATED	ROOF	DEAD	TOP	140 LBS	11-06-00	MINBRG=3.00"	0.90	Rafter 1
CONCENTRATED	ROOF	DEAD	TOP	80 LBS	13-00-00	MINBRG=3.00"	0.90	
CONCENTRATED	ROOF	LIVE	TOP	80 LBS	13-00-00	MINBRG=3.00"	1.25	

2 PLIES 1.750 X 11.250 LP LSL 1.55E
DESIGN CONSISTS OF 2 - PLIES FASTENED TOGETHER (REFER TO NOTES).

DESIGN CRITERIA :

MSI: 0.94
VSI: 0.30
RSI: 0.86

LIVE LOAD	=	20 PSF
DEAD LOAD	=	20 PSF
TOTAL LOAD	=	40 PSF

ROOF LEFT SPAN CARR. : 0.00 FT
ROOF RIGHT SPAN CARR. : 0.00 FT

DEFLECTION CRITERIA :
LIVE LOAD DEFL: L / 240
TOTAL LOAD DEFL: L / 180

CODE COMPLIANCES :

	REPORT #
APA	PR-L280
ICC-ES	ESR-2403
LADBS	RR-25783
CCMC	13319-R
Florida	FL15228

WARNING NOTES:

THIS COMPONENT DESIGN IS SPECIFICALLY FOR L-P ENGINEERED WOOD PRODUCTS. USE OF THIS DESIGN FOR ANYTHING OTHER THAN LP LVL OR LP LSL OR LP I-JOISTS IS STRICTLY PROHIBITED. ANY MODIFICATION OF THIS DOCUMENT REQUIRES REVIEW BY A DESIGN PROFESSIONAL.

PROVIDE RESTRAINT AT CONCENTRATED LOAD TO ENSURE LATERAL STABILITY.

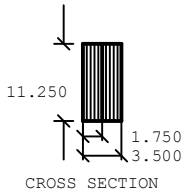
MINIMUM BEARING SIZES ARE SUFFICIENT TO PREVENT CRUSHING OF THE LP LSL BEAM AS DESIGNED. IT IS THE RESPONSIBILITY OF THE PROJECT ENGINEER, ARCHITECT OR DESIGNER TO VERIFY THAT THE SUPPORT STRUCTURE FOR THIS BEAM IS CAPABLE OF SUPPORTING THE REACTIONS.

ANCHOR LP LSL ROOF BEAM SECURELY TO BEARINGS OR HANGERS.

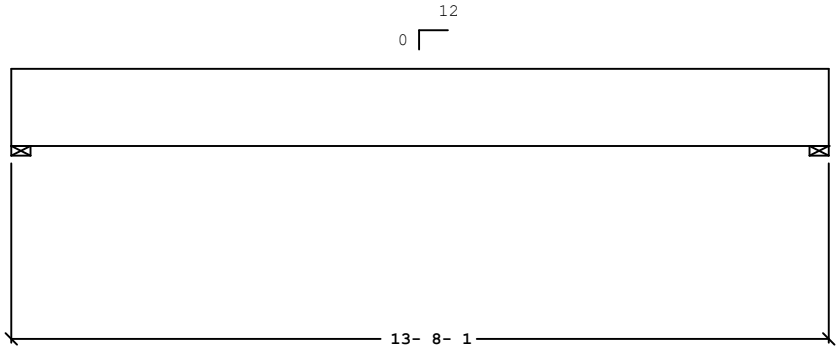
THIS COMPONENT MEETS CODE ALLOWED DEFLECTION CRITERIA; CALCULATED DEFLECTION EXCEEDS 3/4" AND SHOULD BE REVIEWED BY PROJECT DESIGNER FOR ADEQUACY.

LP LSL ROOF BEAMS ARE MANUFACTURED WITHOUT CAMBER, THEREFORE, IN ADDITION TO COMPLYING WITH THE DEFLECTION LIMITS OF LOCAL BUILDING CODES, OTHER DEFLECTION CONSIDERATIONS SHOULD BE EVALUATED BY THE PROJECT ENGINEER OR ARCHITECT SUCH AS PONDING, CRACKING AND AESTHETICS. (POSITIVE DRAINAGE IS ESSENTIAL)

THIS LSL BEAM HAS BEEN DESIGNED TO SUPPORT A 300 LBS CONCENTRATED LOAD ACTING OVER 2.5 X 2.5 FT (6.25 SQ FT)



CROSS SECTION



*** THIS DRAWING IS NOT TO SCALE ***

SUPPORT REACTIONS (LBS):

MAXIMUM BEARING NUMBER	1	2
DOWN	3973	3155
UPLIFT	---	---

MIN BEARING SIZES (IN-SX)
1- 8 1- 8

	MAXIMUM DEFLECTIONS CALCULATED	ALLOWABLE
LIVE LOAD	0.42"(L/385)	0.68"
*DEAD LOAD	0.66"	
TOTAL LOAD	0.86"(L/189)	0.90"

See also sheet 1 of

Handling & Erection

Temporary and permanent bracing for holding component plumb and for resisting lateral forces shall be designed and installed by others. No loads are to be applied to the component until after all the framing and fastening are completed. At no time shall loads greater than design loads be applied to the component.

Design Criteria

The design and material specified are in substantial conformity with the latest revisions of NDS.* Dead load deflection includes adjustment factor for creep. Total load deflection is instantaneous.

LP® SolidStart® LSL, LVL and I-Joist Specifications

Do not cut, notch, drill or alter LP SolidStart LSL, LVL and I-Joists except as shown in published material from LP. Any use of LP SolidStart LSL, LVL and I-Joists contrary to the limits set forth hereon, negates any express warranty of the product and LP disclaims all implied warranties including the implied warranties of merchantability and fitness for a particular use.

A COPY OF THIS DRAWING IS TO BE GIVEN TO THE INSTALLING CONTRACTOR.

LP and SolidStart are registered trademarks of Louisiana-Pacific Corporation.

Cal. Prop 65 Warning: Use of this product may result in exposure to wood dust, known to the State of California to cause cancer.

User Notes (User is responsible for the accuracy of these notes)

Software Provided By:
LP Engineered Wood Products
414 Union Street, Suite 2000
Nashville, TN 37219
Phone 800.515.7570
Fax 866.753.4369

09/18/18 FBC '10

DWG #_____

SHEET #_____

LOAD TABLE

DISTRIBUTION	SOURCE	TYPE	TOP/SIDE	LOAD	FROM FT-IN-SX	TO FT-IN-SX	LOAD	LDF	LABEL

Software Provided By:
LP Engineered Wood Products
414 Union Street, Suite 2000
Nashville, TN 37219
Phone 800.515.7570
Fax 866.753.4369

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