Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP — Roof Beam\B1

Boise Cascade

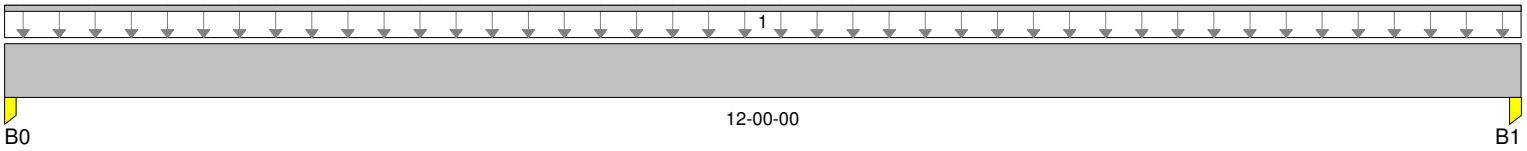
BC CALC® Design Report

Dry | 1 span | No cantilevers | 0/12 slope

December 29, 2018 17:59:45

Build 6536
Job Name: 23 LEIGH LAUREL
Address: 221 WILLOWCROFT CT.
City, State, Zip: DUNN, NC
Customer: STURTZ HOMES
Code reports: ESR-1040

File Name: 1625532 BC CALC Project.bcc
Description: Designs\B1
Specifier:
Designer: SCOTT GUTSHALL
Company: BUILDERS FIRSTSOURCE
Misc:



Total Horizontal Product Length = 12-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B0, 3-1/2"		1,662 / 0	1,590 / 0		
B1, 3-1/2"		1,662 / 0	1,590 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 100%	Dead 90%	Snow 115%	Wind 160%	Roof Live 125%	Trib.
1	ROOF LOAD	Unf. Lin. (lb/ft)	L	00-00-00	12-00-00		265	265			n/a

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	9,026 ft-lbs	36.9%	115%	4	06-00-00
End Shear	2,558 lbs	28.2%	115%	4	01-03-06
Total Load Defl.	L/625 (0.222")	38.4%	n/a	4	06-00-00
Live Load Defl.	L/999 (0.108")	n/a	n/a	5	06-00-00
Max Defl.	0.222"	22.2%	n/a	4	06-00-00
Span / Depth	11.7	n/a	n/a	0	00-00-00

Bearing Supports

		Dim. (L x W)	Value	% Allow Support	% Allow Member	Material
B0	Post	3-1/2" x 3-1/2"	3,252 lbs	36.6%	35.4%	Spruce Pine Fir
B1	Post	3-1/2" x 3-1/2"	3,252 lbs	36.6%	35.4%	Spruce Pine Fir

Cautions

For roof members with slope (1/4)/12 or less final design must ensure that ponding instability will not occur.
For roof members with slope (1/2)/12 or less final design must account for Rain-on-Snow surcharge load.

Notes

Design meets User specified (L/240) Total load deflection criteria.
Design meets User specified (L/360) Live load deflection criteria.
Design meets arbitrary (1") Maximum Total load deflection criteria.
Calculations assume member is fully braced.
BC CALC® analysis is based on IBC 2009.
Design based on Dry Service Condition.

Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP — Roof Beam\B1

Boise Cascade

BC CALC® Design Report

Dry | 1 span | No cantilevers | 0/12 slope

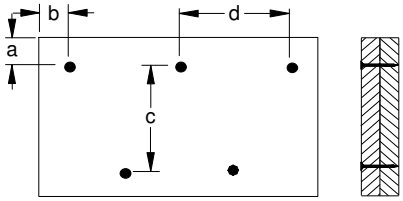
December 29, 2018 17:59:45

Build 6536

Job Name:	23 LEIGH LAUREL
Address:	221 WILLOWCROFT CT.
City, State, Zip:	DUNN, NC
Customer:	STURTZ HOMES
Code reports:	ESR-1040

File Name:	1625532 BC CALC Project.bcc
Description:	Designs\B1
Specifier:	
Designer:	SCOTT GUTSHALL
Company:	BUILDERS FIRSTSOURCE
Misc:	

Connection Diagram



a minimum = 2" c = 7-7/8"
b minimum = 3" d = 24"

Member has no side loads.
Connectors are: 16d Sinker Nails

Disclosure

Completeness and accuracy of input must be verified by anyone who would rely on output as evidence of suitability for particular application. Output here based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

Double 1-3/4" x 16" VERSA-LAM® 2.0 3100 SP — Roof Beam\B2

Boise Cascade

BC CALC® Design Report

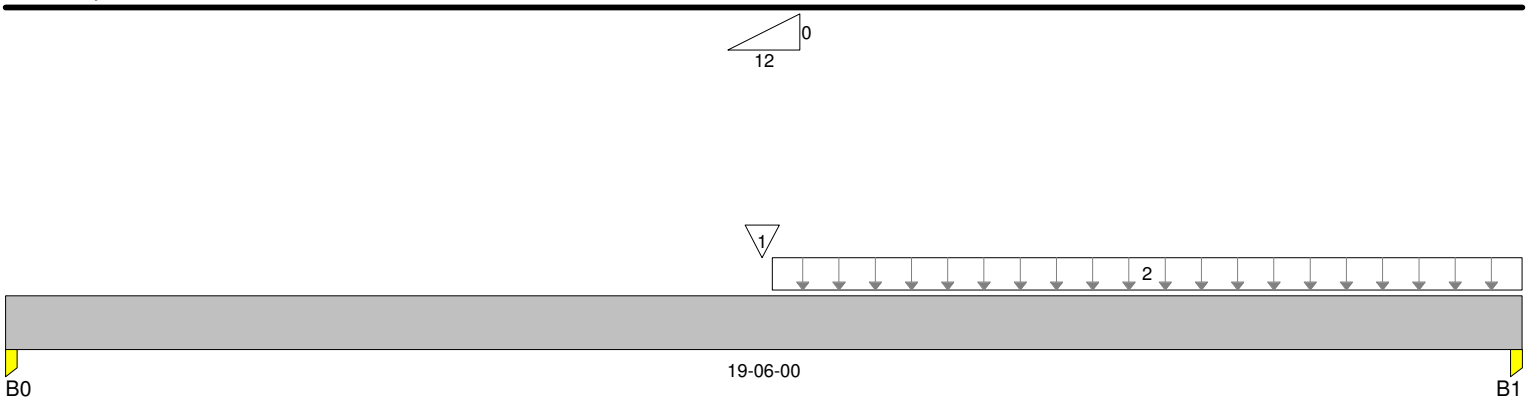
Dry | 1 span | No cantilevers | 0/12 slope

December 29, 2018 18:05:04

Build 6536

Job Name: 23 LEIGH LAUREL
Address: 221 WILLOWCROFT CT.
City, State, Zip: DUNN, NC
Customer: STURTZ HOMES
Code reports: ESR-1040

File Name: 1625532 BC CALC Project.bcc
Description: Designs\B2
Specifier:
Designer: SCOTT GUTSHALL
Company: BUILDERS FIRSTSOURCE
Misc:



Total Horizontal Product Length = 19-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B0, 3-1/2"		1,174 / 0	1,016 / 0		
B1, 3-1/2"		2,120 / 0	1,962 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 100%	Dead 90%	Snow 115%	Wind 160%	Roof Live 125%	Trib.
1	BG01 GIRDER	Conc. Pt. (lbs)	L	09-08-12	09-08-12		1,145	1,145			n/a
2	RAFTER FRAMING	Unf. Area (lb/ft^2)	L	09-10-04	19-06-00		20	20			09-06-00

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	20,043 ft-lbs	46.6%	115%	4	09-08-12
End Shear	3,437 lbs	28.1%	115%	4	17-10-08
Total Load Defl.	L/466 (0.49")	51.5%	n/a	4	10-01-10
Live Load Defl.	L/972 (0.235")	37%	n/a	5	10-01-10
Max Defl.	0.49"	49%	n/a	4	10-01-10
Span / Depth	14.3	n/a	n/a	0	00-00-00

Bearing Supports

		Dim. (L x W)	Value	% Allow Support	% Allow Member	Material
B0	Post	3-1/2" x 3-1/2"	2,190 lbs	24.7%	23.8%	Spruce Pine Fir
B1	Post	3-1/2" x 3-1/2"	4,081 lbs	46%	44.4%	Spruce Pine Fir

Cautions

For roof members with slope (1/4)/12 or less final design must ensure that ponding instability will not occur.
For roof members with slope (1/2)/12 or less final design must account for Rain-on-Snow surcharge load.

Notes

Design meets User specified (L/240) Total load deflection criteria.
Design meets User specified (L/360) Live load deflection criteria.
Design meets arbitrary (1") Maximum Total load deflection criteria.
Calculations assume member is fully braced.
BC CALC® analysis is based on IBC 2009.
Design based on Dry Service Condition.

Double 1-3/4" x 16" VERSA-LAM® 2.0 3100 SP — Roof Beam\B2

Boise Cascade

BC CALC® Design Report

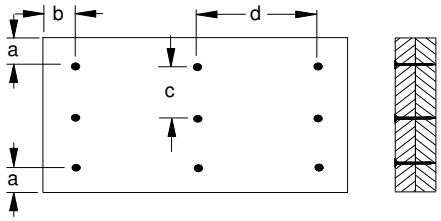
Dry | 1 span | No cantilevers | 0/12 slope

December 29, 2018 18:05:04

Build 6536

Job Name:	23 LEIGH LAUREL	File Name:	1625532 BC CALC Project.bcc
Address:	221 WILLOWCROFT CT.	Description:	Designs\B2
City, State, Zip:	DUNN, NC	Specifier:	
Customer:	STURTZ HOMES	Designer:	SCOTT GUTSHALL
Code reports:	ESR-1040	Company:	BUILDERS FIRSTSOURCE
		Misc:	

Connection Diagram



a minimum = 2" c = 6"
b minimum = 3" d = 24"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
Member has no side loads.
Connectors are: 16d Sinker Nails

Disclosure

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Boise Cascade

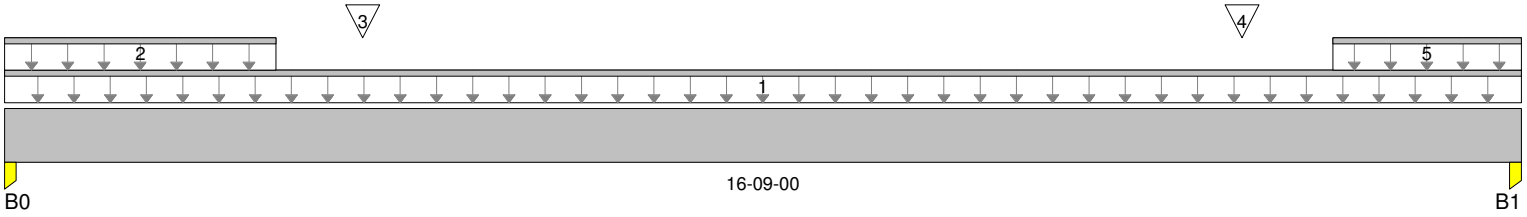
Double 1-3/4" x 18" VERSA-LAM® 2.0 3100 SP — Floor Beam\GDH

Dry | 1 span | No cantilevers | 0/12 slope — December 29, 2018 18:05:43

BC CALC® Design Report

Build 6536
Job Name: 23 LEIGH LAUREL
Address: 221 WILLOWCROFT CT.
City, State, Zip: DUNN, NC
Customer: STURTZ HOMES
Code reports: ESR-1040

File Name: 1625532 BC CALC Project.bcc
Description: Designs\GDH
Specifier:
Designer: SCOTT GUTSHALL
Company: BUILDERS FIRSTSOURCE
Misc:



Total Horizontal Product Length = 16-09-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B0, 4-1/2"		4,104 / 0	3,281 / 0		
B1, 4-1/2"		4,108 / 0	3,285 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Live 100%	Dead 90%	Snow 115%	Wind 160%	Roof Live 125%	Trib.
1	BRICK	Unf. Lin. (lb/ft)	L	00-00-00	16-09-00		80				n/a
2	ATTIC LOAD	Unf. Lin. (lb/ft)	L	00-00-00	03-00-00		375	375			n/a
3	ATTIC GIRDER	Conc. Pt. (lbs)	L	03-11-08	03-11-08		2,330	2,330			n/a
4	ATTIC GIRDER	Conc. Pt. (lbs)	L	13-08-00	13-08-00		2,330	2,330			n/a
5	ATTIC LOAD	Unf. Lin. (lb/ft)	L	14-08-00	16-09-00		375	375			n/a

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	20,700 ft-lbs	38.6%	115%	1	04-10-07
End Shear	5,802 lbs	42.2%	115%	1	14-10-08
Total Load Defl.	L/627 (0.309")	57.4%	n/a	1	08-02-08
Live Load Defl.	L/1,462 (0.132")	32.8%	n/a	2	08-02-08
Max Defl.	0.309"	30.9%	n/a	1	08-02-08
Span / Depth	10.7	n/a	n/a	0	00-00-00

Bearing Supports

		Dim. (L x W)	Value	% Allow Support	% Allow Member	Material
B0	Post	4-1/2" x 3-1/2"	7,385 lbs	64.7%	62.5%	Spruce Pine Fir
B1	Post	4-1/2" x 3-1/2"	7,393 lbs	64.7%	62.6%	Spruce Pine Fir

Notes

Design meets User specified (L/360) Total load deflection criteria.
Design meets User specified (L/480) Live load deflection criteria.
Design meets arbitrary (1") Maximum Total load deflection criteria.
Calculations assume member is fully braced.
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Design based on Dry Service Condition.

Double 1-3/4" x 18" VERSA-LAM® 2.0 3100 SP Floor Beam\GDH

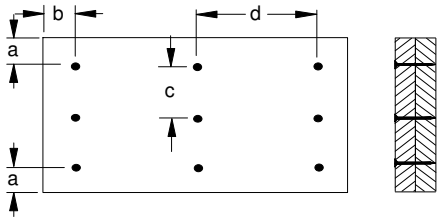
Dry | 1 span | No cantilevers | 0/12 slope December 29, 2018 18:05:43

BC CALC® Design Report

Build 6536

Job Name:	23 LEIGH LAUREL	File Name:	1625532 BC CALC Project.bcc
Address:	221 WILLOWCROFT CT.	Description:	Designs\GDH
City, State, Zip:	DUNN, NC	Specifier:	
Customer:	STURTZ HOMES	Designer:	SCOTT GUTSHALL
Code reports:	ESR-1040	Company:	BUILDERS FIRSTSOURCE
		Misc:	

Connection Diagram



a minimum = 2" c = 7"
b minimum = 3" d = 24"

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