



# Single 5-1/4" x 7" VERSA-LAM® 1.8 2750 SP

CL01

Dry | 7' 0" Column Freestanding

September 8, 2017 14:11:02

BC CALC® Design Report



Build 6080  
 Job Name: 20' RIDGE BEAM-LEFT SIDE  
 Address: 5 Monument Street  
 City, State, Zip: PORTLAND, ME  
 Customer: HANCOCK LUMBER  
 Code reports: ESR-1040

File Name: BC CALC Project  
 Description: Designs\CL01  
 Specifier:  
 Designer: GUY DOYON  
 Company: HANCOCK LUMBER COMPANY  
 Misc:



### Load Summary

Tag	Description	Load Type	Start	End	100%	90%	115%	160%	125%
1		Conc. Pt. (lbs)	00-00-00	00-00-00	2,000	2,320	11,960		

### Bracing

	Elevation	Sheathing
Top	07-00-00	
Base	00-00-00	

### Controls Summary

	Value	% Allowable	Duration	Load Case
Axial Compression	n/a	15.9%	115%	2
Slenderness Ratio	16	32%	n/a	0

### Cautions

Design does not consider perpendicular to grain stress on the sill plate or other supporting member.

### Notes

A generic column cap was used in the analysis of the column. Make sure to install and size the cap. BC Calc does not perform shear wall or connection design for in-plane load transfer.

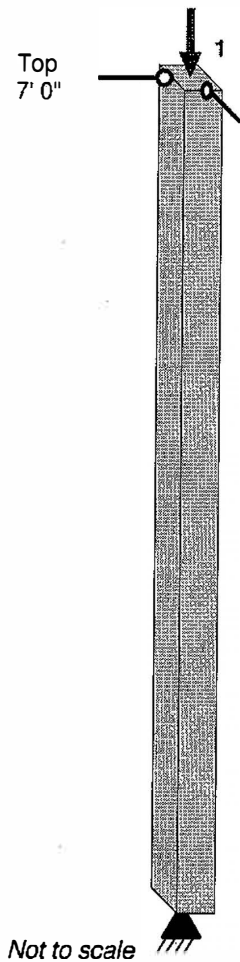
### User Notes

COLUMN WHERE 2 RIDGES JOIN AT WALL

### 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.

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*Column*



# Triple 1-3/4" x 16" VERSA-LAM® 2.0 3100 SP

## Roof Beam\RB02

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

September 8, 2017 14:02:05

BC CALC® Design Report



Build 6080

File Name: BC CALC Project

Description: Designs\RB02

Specifier:

Designer: GUY DOYON

Company: HANCOCK LUMBER COMPANY

Misc:

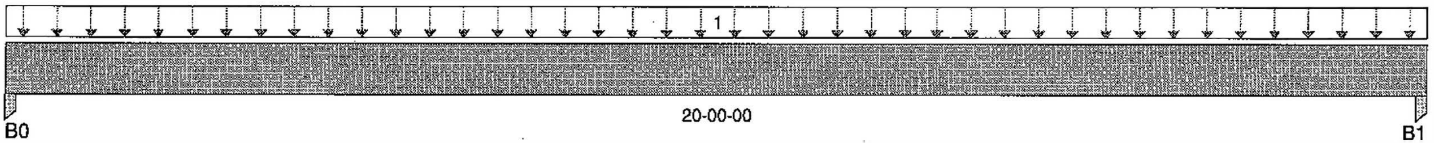
Job Name: 20' RIDGE BEAM-LEFT SIDE

Address: 5 Monument Street ER-C

City, State, Zip: PORTLAND, ME

Customer: HANCOCK LUMBER

Code reports: ESR-1040



Total Horizontal Product Length = 20-00-00

### Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B0, 5-1/8"		1,243 / 0	8,000 / 0		
B1, 5-1/8"		1,243 / 0	8,000 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	100%	90%	115%	160%	125%	Trib.
1	Standard Load	Unf. Area (lb/ft^2)	L	00-00-00	20-00-00		10	80			10-00-00

### Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	42,908 ft-lbs	66.6%	115%	4	10-00-00
End Shear	7,616 lbs	41.5%	115%	4	01-09-02
Total Load Defl.	L/289 (0.8")	62.3%	n/a	4	10-00-00
Live Load Defl.	L/334 (0.693")	71.9%	n/a	5	10-00-00
Max Defl.	0.8"	80%	n/a	4	10-00-00
Span / Depth	14.5	n/a	n/a	0	00-00-00
Squash Blocks	Valid				

### Bearing Supports

	Dim. (L x W)	Value	% Allow Support	% Allow Member	Material
B0 Post	5-1/8" x 5-1/4"	9,243 lbs	11.5%	45.8%	Versa-Lam 1.7
B1 Post	5-1/8" x 5-1/4"	9,243 lbs	11.5%	45.8%	Versa-Lam 1.7

### 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 Code minimum (L/180) Total load deflection criteria.

Design meets Code minimum (L/240) Live load deflection criteria.

Design meets arbitrary (1") Maximum Total load deflection criteria.

Calculations assume member is fully braced.

Design based on Dry Service Condition.



# Triple 1-3/4" x 16" VERSA-LAM® 2.0 3100 SP

# Roof Beam\RB02

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

September 8, 2017 14:02:05

BC CALC® Design Report



Build 6080

Job Name: 20' RIDGE BEAM-LEFT SIDE

Address: 5 Monument Street

City, State, Zip: PORTLAND, ME

Customer: HANCOCK LUMBER

Code reports: ESR-1040

File Name: BC CALC Project

Description: Designs\RB02

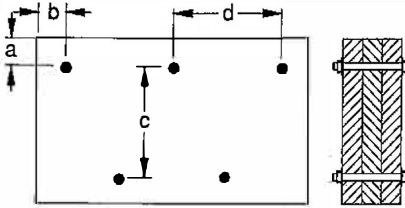
Specifier:

Designer: GUY DOYON

Company: HANCOCK LUMBER COMPANY

Misc:

## Connection Diagram



a minimum = 2"    c = 12"

b minimum = 2-1/2"    d = 24"

Bolts are assumed to be Grade A307 or Grade 2 or higher.

Member has no side loads.

Connectors are: 1/2 in. Staggered Through Bolt

## 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.

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# Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

## Roof Beam\RB01

BC CALC® Design Report

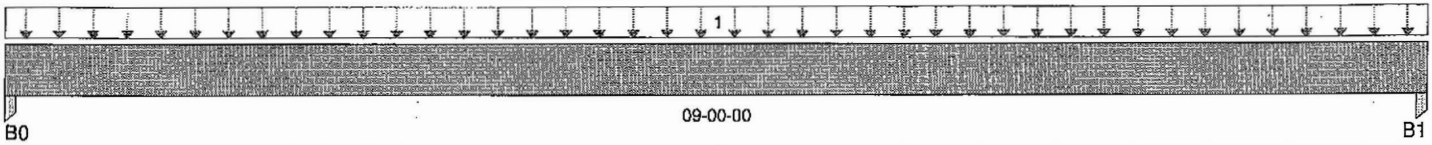


Dry | 1 span | No cantilevers | 0/12 slope

September 8, 2017 13:57:17

Build 6080  
 Job Name: 9' RIDGE BEAM-RIGHT SIDE  
 Address: 5 Monument Street  
 City, State, Zip: PORTLAND, ME  
 Customer: HANCOCK LUMBER  
 Code reports: ESR-1040

File Name: BC CALC Project  
 Description: Designs\RB01  
 Specifier:  
 Designer: GUY DOYON  
 Company: HANCOCK LUMBER COMPANY  
 Misc:



Total Horizontal Product Length = 09-00-00

### Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B0, 3-1/2"		538 / 0	3,960 / 0		
B1, 3-1/2"		538 / 0	3,960 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	100%	90%	115%	160%	125%	Trib.
1	Standard Load	Unf. Area (lb/ft^2)	L	00-00-00	09-00-00		10	80			11-00-00

### Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	9,117 ft-lbs	56.8%	115%	4	04-06-00
End Shear	3,415 lbs	47%	115%	4	01-01-00
Total Load Defl.	L/428 (0.239")	42%	n/a	4	04-06-00
Live Load Defl.	L/486 (0.211")	49.3%	n/a	5	04-06-00
Max Defl.	0.239"	23.9%	n/a	4	04-06-00
Span / Depth	10.8	n/a	n/a	0	00-00-00
Squash Blocks	Valid				

### Bearing Supports

	Dim. (L x W)	Value	% Allow Support	% Allow Member	Material
B0 Post	3-1/2" x 3-1/2"	4,498 lbs	n/a	49%	Unspecified
B1 Post	3-1/2" x 3-1/2"	4,498 lbs	n/a	49%	Unspecified

### 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 Code minimum (L/180) Total load deflection criteria.  
 Design meets Code minimum (L/240) Live load deflection criteria.  
 Design meets arbitrary (1") Maximum Total load deflection criteria.  
 Calculations assume member is fully braced.  
 Design based on Dry Service Condition.



# Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP

# Roof Beam\RB01

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

September 8, 2017 13:57:17

BC CALC® Design Report



Build 6080

Job Name: 9' RIDGE BEAM-RIGHT SIDE

Address: 5 Monument Street

City, State, Zip: PORTLAND, ME

Customer: HANCOCK LUMBER

Code reports: ESR-1040

File Name: BC CALC Project

Description: Designs\RB01

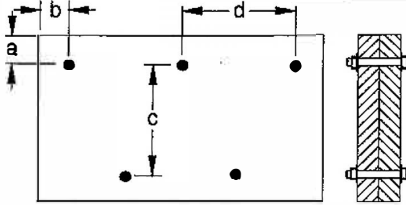
Specifier:

Designer: GUY DOYON

Company: HANCOCK LUMBER COMPANY

Misc:

## Connection Diagram



a minimum = 2"    c = 5-1/2"

b minimum = 2-1/2"    d = 24"

Bolts are assumed to be Grade A307 or Grade 2 or higher.

Member has no side loads.

Connectors are: 1/2 in. Staggered Through Bolt

## 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.

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# Triple 2 x 8 SPF #2

# Wall Header\FB02

BC CALC® Design Report

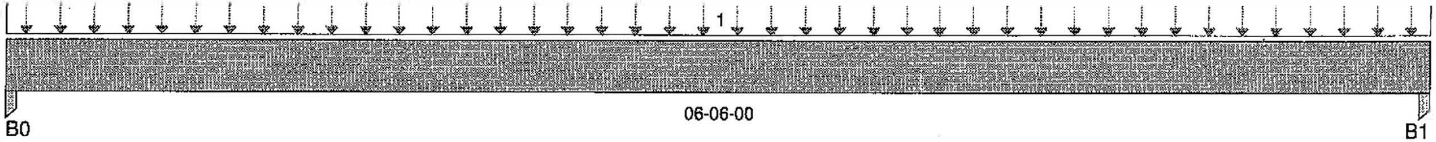


Dry | 1 span | No cantilevers | 0/12 slope

September 8, 2017 13:44:22

Build 6080  
 Job Name: 6'-4" HEADER FOR WINDOWS  
 Address: 5 Monument Street  
 City, State, Zip: PORTLAND, ME  
 Customer: HANCOCK LUMBER  
 Code reports: NLGA

File Name: BC CALC Project  
 Description: Designs\FB02  
 Specifier:  
 Designer: GUY DOYON  
 Company: HANCOCK LUMBER COMPANY  
 Misc:



Total Horizontal Product Length = 06-06-00

### Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B0, 3-1/2"		317 / 0	2,340 / 0		
B1, 3-1/2"		317 / 0	2,340 / 0		

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	100%	90%	115%	160%	125%	Trib.
1	Standard Load	Unf. Area (lb/ft^2)	L	00-00-00	06-06-00		10	80			09-00-00

### Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	3,730 ft-lbs	94%	115%	1	03-03-00
End Shear	1,924 lbs	57%	115%	1	00-10-12
Total Load Defl.	L/999 (0.122")	n/a	n/a	1	03-03-00
Live Load Defl.	L/999 (0.108")	n/a	n/a	2	03-03-00
Max Defl.	0.122"	n/a	n/a	1	03-03-00
Span / Depth	10	n/a	n/a	0	00-00-00
Squash Blocks	Valid				

### 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.

### Bearing Supports

	Dim. (L x W)	Value	% Allow Support	% Allow Member	Material
B0 Post	3-1/2" x 3-1/2"	2,657 lbs	n/a	51%	Unspecified
B1 Post	3-1/2" x 3-1/2"	2,657 lbs	n/a	51%	Unspecified

### Cautions

Member is not fully supported at post B0. A connector is required at this bearing.  
 Member is not fully supported at post B1. A connector is required at this bearing.

### Notes

Design meets Code minimum (L/240) Total load deflection criteria.  
 Design meets Code minimum (L/360) Live load deflection criteria.  
 Design meets arbitrary (0.5") Maximum Total load deflection criteria.  
 Calculations assume member is fully braced.  
 Design based on Dry Service Condition.  
 The analysis of solid sawn wood members is in accordance with the NDS and is limited to the output shown above. All other support and design for these products, including but not limited to notching, connections, installation, and engineer/architect certification is the responsibility of the project's design professional of record.

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