



# Double 1-3/4" x 14" VERSA-LAM® 2.0 3100 SP

**PASSED**

## Roof\Dropped Beams\BM2(i21) (Dropped Beam)

BC CALC® Member Report

Dry | 3 spans | No cant.

April 26, 2021 15:10:40

Build 7968

Job name:

File name: 2100485A.mmdl

Address:

Description: Roof\Dropped Beams\BM2(i21)

City, State, Zip:

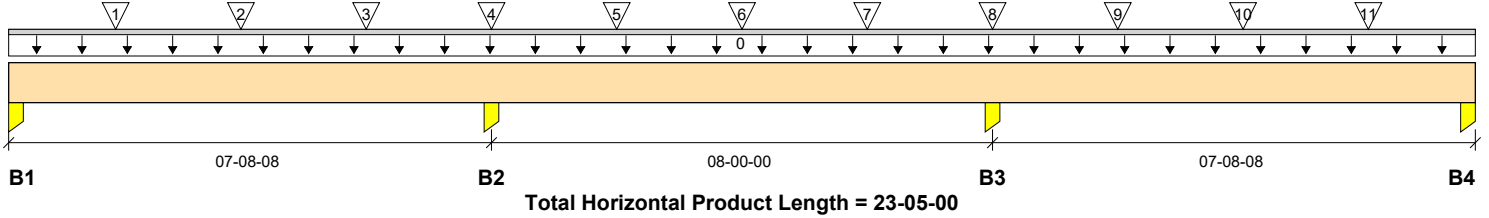
Specifier:

Customer:

Designer:

Code reports: ESR-1040

Company:



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

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 2"		143 / 0		51 / 117	131 / 17
B2, 5-1/2"		459 / 0		168 / 411	405 / 0
B3, 5-1/2"		459 / 0		168 / 411	405 / 0
B4, 2"		143 / 0		51 / 117	131 / 17

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 100%	Dead 90%	Snow 115%	Wind 160%	Roof Live 125%	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	23-05-00	Top		14				00-00-00
1	BE(c1)	Conc. Pt. (lbs)	L	01-08-08	01-08-08	Top		85			96	n/a
2	BE(c1)	Conc. Pt. (lbs)	L	03-08-08	03-08-08	Top		77			91	n/a
3	BE(c1)	Conc. Pt. (lbs)	L	05-08-08	05-08-08	Top		79			89	n/a
4	BE(c1)	Conc. Pt. (lbs)	L	07-08-08	07-08-08	Top		79			88	n/a
5	BE(c1)	Conc. Pt. (lbs)	L	09-08-08	09-08-08	Top		79			87	n/a
6	BE(c1)	Conc. Pt. (lbs)	L	11-08-08	11-08-08	Top		73			75	n/a
7	BE(c1)	Conc. Pt. (lbs)	L	13-08-08	13-08-08	Top		79			87	n/a
8	BE(c1)	Conc. Pt. (lbs)	L	15-08-08	15-08-08	Top		79			88	n/a
9	BE(c1)	Conc. Pt. (lbs)	L	17-08-08	17-08-08	Top		79			89	n/a
10	BE(c1)	Conc. Pt. (lbs)	L	19-08-08	19-08-08	Top		77			91	n/a
11	BE(c1)	Conc. Pt. (lbs)	L	21-08-08	21-08-08	Top		85			96	n/a

### Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	528 ft-lbs	6.9%	125%	2	03-08-08
Neg. Moment	-557 ft-lbs	6.2%	125%	1	07-08-08
End Shear	255 lbs	2.2%	125%	2	01-04-00
Cont. Shear	355 lbs	3.0%	125%	4	06-03-12
Total Load Deflection	L/999 (0.003")	n/a	n/a	2	03-07-00
Live Load Deflection	L/999 (0.002")	n/a	n/a	259	03-08-08
Total Neg. Defl.	L/999 (-0.001")	n/a	n/a	2	11-08-08
Max Defl.	0.003"	n/a	n/a	2	03-07-00
Span / Depth	6.9				

### Bearing Supports

	Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1	Column 2" x 3-1/2"	274 lbs	5.4%	5.2%	Unspecified
B2	Column 5-1/2" x 3-1/2"	864 lbs	6.2%	6.0%	Unspecified
B3	Column 5-1/2" x 3-1/2"	864 lbs	6.2%	6.0%	Unspecified
B4	Column 2" x 3-1/2"	274 lbs	5.4%	5.2%	Unspecified



BC CALC® Member Report

Build 7968

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**Notes**

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

Design meets Code minimum (L/360) Live load deflection criteria.

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

Design meets arbitrary (0.75") Maximum live load deflection criteria.

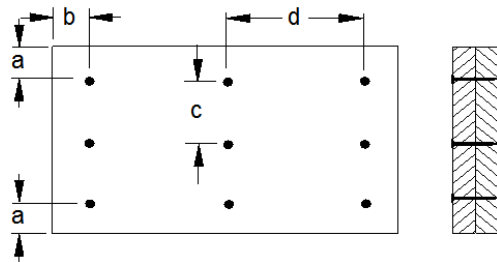
BC CALC® analysis is based on IBC 2012.

Wind loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

Calculations assume unbraced length of Top: 23-05-00, Bottom: 23-05-00.

**Connection Diagram: Full Length of Member**



a minimum = 2"      c = 5"  
b minimum = 3"      d = 24"

Calculated Side Load = 0.0 lb/ft

Connectors are: 3-1/4 in. Pneumatic Gun Nails

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BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,



Roof/Dropped Beams\GDH(i12) (Dropped Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

April 26, 2021 15:10:40

Build 7968

Job name:

File name: 2100485A.mmdl

Address:

Description: Roof/Dropped Beams\GDH(i12)

City, State, Zip:

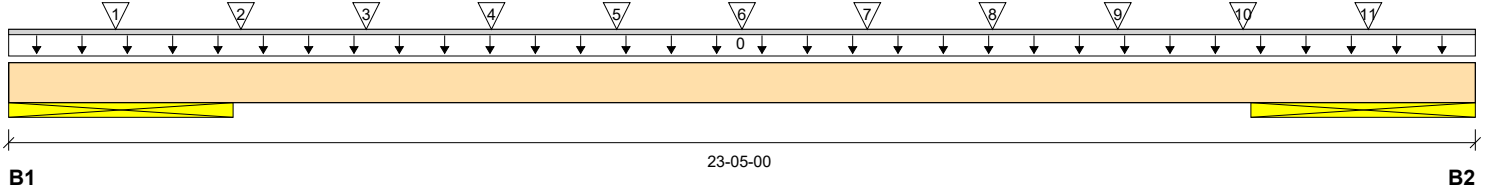
Specifier:

Customer:

Designer:

Code reports: ESR-1040

Company:



Total Horizontal Product Length = 23-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 43"		571 / 0		183 / 454	476 / 0
B2, 43"		571 / 0		183 / 454	476 / 0

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	100%	90%	115%	160%	Roof Live 125%	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	23-05-00	Top		12				00-00-00
1	CE(c1)	Conc. Pt. (lbs)	L	01-08-08	01-08-08	Top		83			94	n\ a
2	CE(c1)	Conc. Pt. (lbs)	L	03-08-08	03-08-08	Top		78			90	n\ a
3	CE(c1)	Conc. Pt. (lbs)	L	05-08-08	05-08-08	Top		79			88	n\ a
4	CE(c1)	Conc. Pt. (lbs)	L	07-08-08	07-08-08	Top		79			87	n\ a
5	CE(c1)	Conc. Pt. (lbs)	L	09-08-08	09-08-08	Top		78			86	n\ a
6	CE(c1)	Conc. Pt. (lbs)	L	11-08-08	11-08-08	Top		67			62	n\ a
7	CE(c1)	Conc. Pt. (lbs)	L	13-08-08	13-08-08	Top		78			86	n\ a
8	CE(c1)	Conc. Pt. (lbs)	L	15-08-08	15-08-08	Top		79			87	n\ a
9	CE(c1)	Conc. Pt. (lbs)	L	17-08-08	17-08-08	Top		79			88	n\ a
10	CE(c1)	Conc. Pt. (lbs)	L	19-08-08	19-08-08	Top		78			90	n\ a
11	CE(c1)	Conc. Pt. (lbs)	L	21-08-08	21-08-08	Top		83			94	n\ a

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	3007 ft-lbs	49.9%	125%	1	11-08-08
End Shear	647 lbs	6.6%	125%	1	04-06-14
Total Load Deflection	L/1325 (0.148")	18.1%	n\ a	1	11-08-08
Live Load Deflection	L/999 (0.066")	n\ a	n\ a	110	11-08-08
Max Defl.	0.148"	14.8%	n\ a	1	11-08-08
Span / Depth	16.5				
Conc. Load (B1)	177 lbs	1.9%	100%		
Conc. Load (B2)	177 lbs	1.9%	100%		

Bearing Supports

	Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1	Wall/Plate 43" x 3-1/2"	1047 lbs	1.6%	0.9%	Spruce-Pine-Fir
B2	Wall/Plate 43" x 3-1/2"	1047 lbs	1.6%	0.9%	Spruce-Pine-Fir



Roof/Dropped Beams\GDH(i12) (Dropped Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

April 26, 2021 15:10:40

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Description: Roof/Dropped Beams\GDH(i12)

City, State, Zip:

Specifier:

Customer:

Designer:

Code reports: ESR-1040

Company:

**Notes**

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

Design meets Code minimum (L/360) Live load deflection criteria.

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

Design meets arbitrary (0.75") Maximum live load deflection criteria.

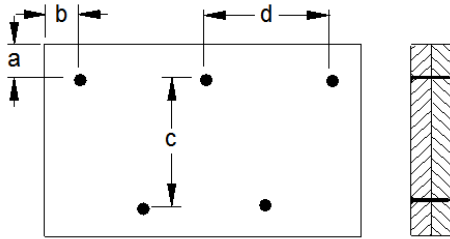
BC CALC® analysis is based on IBC 2012.

Wind loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

Calculations assume unbraced length of Top: 23-05-00, Bottom: 23-05-00.

**Connection Diagram: Full Length of Member**



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 24"

Calculated Side Load = 0.0 lb/ft

Connectors are: 3-1/4 in. Pneumatic Gun Nails

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# Double 1-3/4" x 14" VERSA-LAM® 2.0 3100 SP

**PASSED**

## RoofFlush Beams\BM1(i20) (Flush Beam)

Dry | 2 spans | No cant.

April 26, 2021 15:10:40

BC CALC® Member Report

Build 7968

Job name:

File name: 2100485A.mmdl

Address:

Description: RoofFlush Beams\BM1(i20)

City, State, Zip:

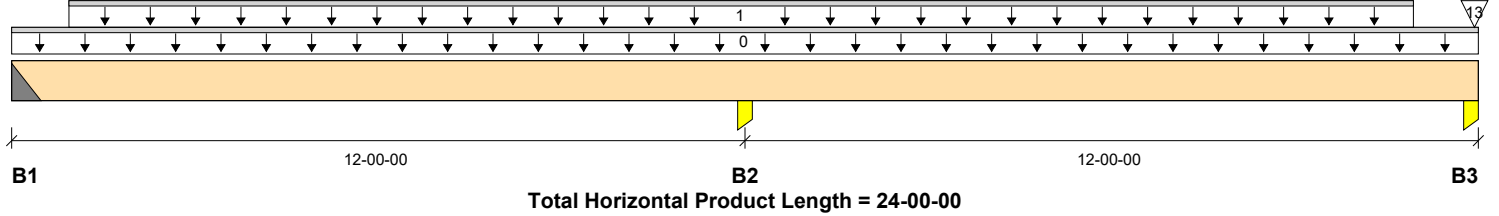
Specifier:

Customer:

Designer:

Code reports: ESR-1040

Company:



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

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 2"		980 / 0		392 / 725	1136 / 177
B2, 5-1/2"		3838 / 0		1548 / 2799	3792 / 0
B3, 5-1/2"		1028 / 0		426 / 818	1224 / 194

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 100%	Dead 90%	Snow 115%	Wind 160%	Roof Live 125%	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	24-00-00	Top		14				00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-11-04	22-11-04	Top		248			259	n/a
13	BE(c1)	Conc. Pt. (lbs)	L	23-11-04	23-11-04	Top					83	n/a

### Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	5962 ft-lbs	16.8%	125%	2	05-05-04
Neg. Moment	-6679 ft-lbs	80.1%	125%	2	12-00-00
End Shear	2097 lbs	18.0%	125%	2	01-04-00
Cont. Shear	3291 lbs	28.3%	125%	1	13-04-12
Total Load Deflection	L/999 (0.081")	n/a	n/a	2	05-05-04
Live Load Deflection	L/999 (0.05")	n/a	n/a	165	05-08-04
Total Neg. Defl.	L/999 (-0.008")	n/a	n/a	2	13-09-10
Max Defl.	0.081"	n/a	n/a	2	05-05-04
Span / Depth	10.2				

### Bearing Supports

	Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1	Hanger 2" x 3-1/2"	2116 lbs	n/a	40.3%	Hanger
B2	Column 5-1/2" x 3-1/2"	7629 lbs	54.7%	52.8%	Unspecified
B3	Column 5-1/2" x 3-1/2"	2252 lbs	16.1%	15.6%	Unspecified

### Cautions

Hanger model Hanger was not found. Hanger has not been analyzed for adequate capacity.

### Notes

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

Design meets Code minimum (L/360) Live load deflection criteria.

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

Design meets arbitrary (0.75") Maximum live load deflection criteria.

Hanger Manufacturer: Unassigned

BC CALC® analysis is based on IBC 2012.

Wind loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

Calculations assume unbraced length of Top: 01-10-08, Bottom: 23-08-08.

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Job name:

File name: 2100485A.mmdl

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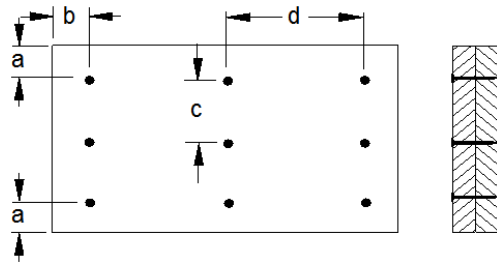
Customer:

Designer:

Code reports: ESR-1040

Company:

**Connection Diagram: Full Length of Member**



a minimum = 2"      c = 5"  
b minimum = 3"      d = 24"

Calculated Side Load = 0.0 lb/ft

Connectors are: 3-1/4 in. Pneumatic Gun Nails

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# Double 1-3/4" x 14" VERSA-LAM® 2.0 3100 SP

**PASSED**

## RoofFlush Beams\BM1(i22) (Flush Beam)

Dry | 2 spans | No cant.

April 26, 2021 15:10:40

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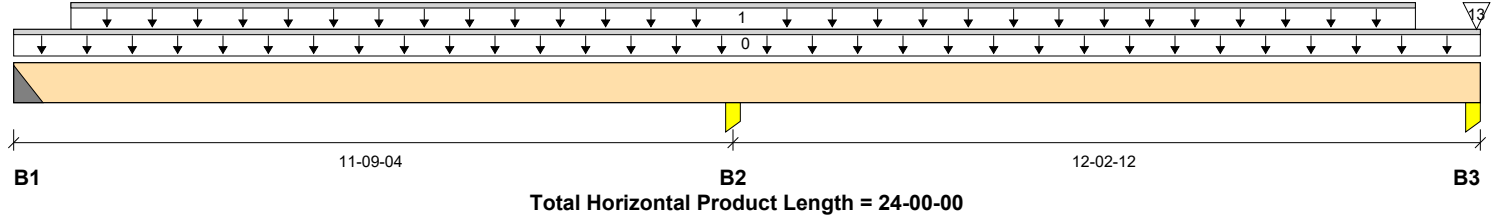
Specifier:

Customer:

Designer:

Code reports: ESR-1040

Company:



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

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 2"		947 / 0		379 / 705	1116 / 189
B2, 5-1/2"		3837 / 0		1548 / 2800	3791 / 0
B3, 5-1/2"		1061 / 0		439 / 841	1243 / 182

### Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 100%	Dead 90%	Snow 115%	Wind 160%	Roof Live 125%	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	24-00-00	Top		14				00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-11-04	22-11-04	Top		248			259	n/a
13	BE(c1)	Conc. Pt. (lbs)	L	23-11-04	23-11-04	Top					83	n/a

### Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	5944 ft-lbs	16.8%	125%	3	17-11-04
Neg. Moment	-6629 ft-lbs	78.9%	125%	3	11-09-04
End Shear	2143 lbs	18.4%	125%	3	22-04-08
Cont. Shear	3348 lbs	28.8%	125%	1	10-04-08
Total Load Deflection	L/999 (0.079")	n/a	n/a	3	18-03-12
Live Load Deflection	L/999 (0.049")	n/a	n/a	166	18-00-12
Total Neg. Defl.	L/999 (-0.007")	n/a	n/a	3	09-11-04
Max Defl.	0.079"	n/a	n/a	3	18-03-12
Span / Depth	10.1				

### Bearing Supports

Bearing	Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1	Hanger 2" x 3-1/2"	2064 lbs	n/a	39.3%	Hanger
B2	Column 5-1/2" x 3-1/2"	7629 lbs	54.7%	52.8%	Unspecified
B3	Column 5-1/2" x 3-1/2"	2304 lbs	16.5%	16.0%	Unspecified

### Cautions

Hanger model Hanger was not found. Hanger has not been analyzed for adequate capacity.

### Notes

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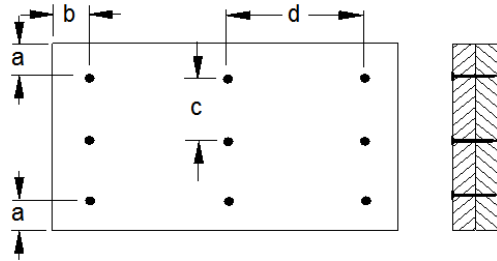
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Connectors are: 3-1/4 in. Pneumatic Gun Nails

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