



Roof/Dropped Beams\BM1(i43) (Dropped Beam)

BC Design Engine Member Report

Dry | 4 spans | No cant.

August 1, 2025 10:52:52

Build 8898

Job name:

File name: 250437528480.mmdl

Address:

Description: Roof/Dropped Beams\BM1(i43)

City, State, Zip:

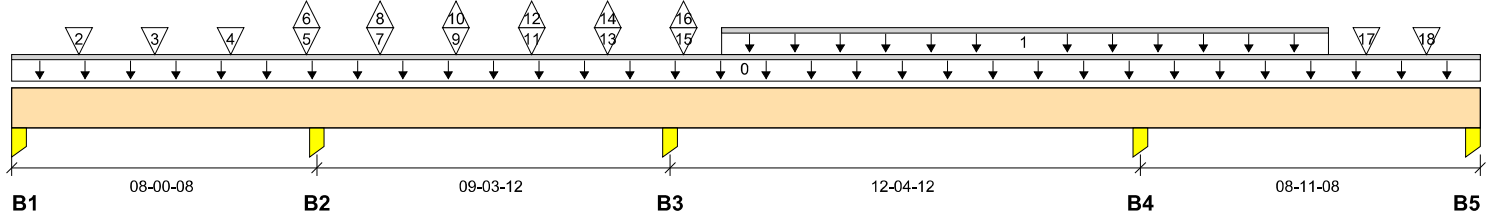
Specifier:

Customer:

Designer: [Designer Alias]

Code reports: ESR-1040

Company:



Total Horizontal Product Length = 38-08-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 4-1/2"		135 / 0	60 / 0	34 / 207	171 / 51
B2, 8"		617 / 0	305 / 18	143 / 559	822 / 314
B3, 8"		870 / 0	420 / 21	213 / 578	1036 / 281
B4, 8"		1205 / 0	548 / 0	307 / 859	1130 / 43
B5, 8"		329 / 0	172 / 0	83 / 391	395 / 97

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	38-08-08	Top		9				00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	18-08-08	34-08-08	Top		91	45		90	n/a
2	J1(c01)	Conc. Pt. (lbs)	L	01-09-04	01-09-04	Top		84	53		106	n/a
3	J1(c02)	Conc. Pt. (lbs)	L	03-09-04	03-09-04	Top		64	32		64	n/a
4	J1(c03)	Conc. Pt. (lbs)	L	05-09-04	05-09-04	Top		64	32		64	n/a
5	A4(c01)	Conc. Pt. (lbs)	L	07-09-04	07-09-04	Top		335	151		319	n/a
6	A4(c01)	Conc. Pt. (lbs)	L	07-09-04	07-09-04	Top					-19	n/a
7	A3(c01)	Conc. Pt. (lbs)	L	09-08-08	09-08-08	Top		67	46		151	n/a
8	A3(c01)	Conc. Pt. (lbs)	L	09-08-08	09-08-08	Top					-82	n/a
9	A2(c01)	Conc. Pt. (lbs)	L	11-08-08	11-08-08	Top		92	55		156	n/a
10	A2(c01)	Conc. Pt. (lbs)	L	11-08-08	11-08-08	Top					-63	n/a
11	A1(c01)	Conc. Pt. (lbs)	L	13-08-08	13-08-08	Top		94	55		157	n/a
12	A1(c01)	Conc. Pt. (lbs)	L	13-08-08	13-08-08	Top					-64	n/a
13	A1(c02)	Conc. Pt. (lbs)	L	15-08-08	15-08-08	Top		94	55		157	n/a
14	A1(c02)	Conc. Pt. (lbs)	L	15-08-08	15-08-08	Top					-63	n/a
15	A1(c03)	Conc. Pt. (lbs)	L	17-08-08	17-08-08	Top		87	48		157	n/a
16	A1(c03)	Conc. Pt. (lbs)	L	17-08-08	17-08-08	Top					-76	n/a
17	M1(c09)	Conc. Pt. (lbs)	L	35-08-08	35-08-08	Top		172	81		162	n/a
18	M1(c38)	Conc. Pt. (lbs)	L	37-03-08	37-03-08	Top		192	101		201	n/a

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	1875 ft-lbs	11.5%	125%	3	23-08-08
Neg. Moment	-1974 ft-lbs	56.3%	125%	3	29-09-00
End Shear	700 lbs	9.1%	125%	4	37-03-04
Cont. Shear	1048 lbs	13.6%	125%	7	28-07-12
Total Load Deflection	L/999 (0.095")	n/a	n/a	3	23-05-08
Live Load Deflection	L/999 (0.054")	n/a	n/a	826	23-07-00
Total Neg. Defl.	L/999 (-0.023")	n/a	n/a	3	13-08-08
Max Defl.	0.095"	n/a	n/a	3	23-05-08
Span / Depth	16.1				

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City, State, Zip:

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Designer: [Designer Alias]

Code reports: ESR-1040

Company:

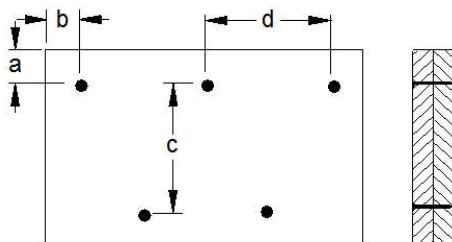
Bearing Supports		Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1	Column	4-1/2" x 3-1/2"	306 lbs	2.7%	2.6%	Unspecified
B2	Column	8" x 3-1/2"	1439 lbs	7.1%	6.9%	Unspecified
B3	Column	8" x 3-1/2"	1906 lbs	9.4%	9.1%	Unspecified
B4	Column	8" x 3-1/2"	2335 lbs	11.5%	11.1%	Unspecified
B5	Column	8" x 3-1/2"	725 lbs	3.6%	3.5%	Unspecified

Cautions

Member is not fully supported at post B1. A connector is required at this bearing.
 Member is not fully supported at post B2. A connector is required at this bearing.
 Member is not fully supported at post B3. A connector is required at this bearing.
 Member is not fully supported at post B4. A connector is required at this bearing.
 Member is not fully supported at post B5. A connector is required at this bearing.

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.
 Design meets arbitrary (0.75") Maximum live load deflection criteria.
 Wind loads determined from building geometry were used in selected product's verification.
 Unbalanced snow loads determined from building geometry were used in selected product's verification.
 Design based on Dry Service Condition.
 BC CALC® analysis is based on IBC 2021.
 Calculations assume unbraced length of Top: 01-10-08, Bottom: 38-08-08.

Connection Diagram: Full Length of Member


a minimum = 2" c = 5-1/4"
 b minimum = 3" d = 24"

Calculated Side Load = 0.0 lb/ft

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

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is 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.

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

RoofDropped Beams\BM2(i45) (Dropped Beam)

BC Design Engine Member Report

Dry | 4 spans | No cant.

August 1, 2025 10:52:52

Build 8898

Job name:

File name: 250437528480.mmdl

Address:

Description: RoofDropped Beams\BM2(i45)

City, State, Zip:

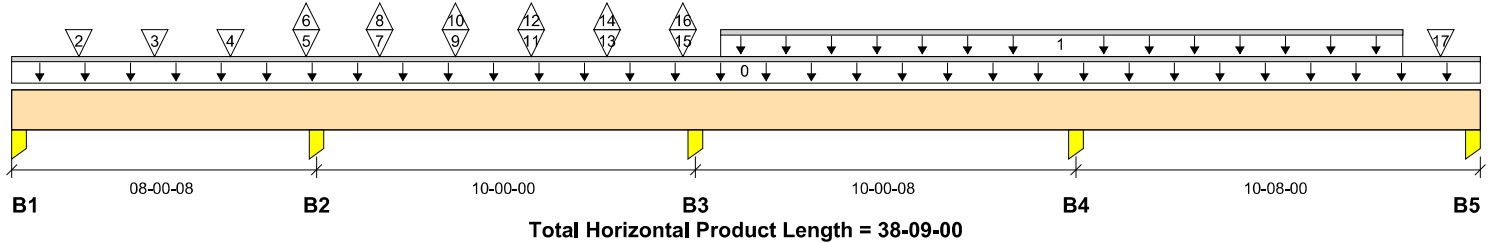
Specifier:

Customer:

Designer: [Designer Alias]

Code reports: ESR-1040

Company:


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 4-1/2"		119 / 0	57 / 0	30 / 202	165 / 59
B2, 8"		698 / 0	326 / 20	162 / 586	852 / 274
B3, 8"		718 / 0	363 / 21	174 / 479	947 / 329
B4, 8"		1181 / 0	538 / 0	302 / 1007	1119 / 53
B5, 4-1/2"		419 / 0	190 / 0	101 / 448	406 / 46

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Roof Live	Tributary
							100%	90%	115%	160%	125%	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	38-09-00	Top		9				00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	18-08-08	36-08-08	Top		91	45		90	n/a
2	J1(c04)	Conc. Pt. (lbs)	L	01-09-04	01-09-04	Top		84	53		106	n/a
3	J1(c05)	Conc. Pt. (lbs)	L	03-09-04	03-09-04	Top		64	32		64	n/a
4	J1(c06)	Conc. Pt. (lbs)	L	05-09-04	05-09-04	Top		64	32		64	n/a
5	A4(c01)	Conc. Pt. (lbs)	L	07-09-04	07-09-04	Top		335	151		318	n/a
6	A4(c01)	Conc. Pt. (lbs)	L	07-09-04	07-09-04	Top					-17	n/a
7	A3(c01)	Conc. Pt. (lbs)	L	09-08-08	09-08-08	Top		65	44		151	n/a
8	A3(c01)	Conc. Pt. (lbs)	L	09-08-08	09-08-08	Top					-86	n/a
9	A2(c01)	Conc. Pt. (lbs)	L	11-08-08	11-08-08	Top		91	54		156	n/a
10	A2(c01)	Conc. Pt. (lbs)	L	11-08-08	11-08-08	Top					-64	n/a
11	A1(c01)	Conc. Pt. (lbs)	L	13-08-08	13-08-08	Top		94	55		157	n/a
12	A1(c01)	Conc. Pt. (lbs)	L	13-08-08	13-08-08	Top					-64	n/a
13	A1(c02)	Conc. Pt. (lbs)	L	15-08-08	15-08-08	Top		94	55		157	n/a
14	A1(c02)	Conc. Pt. (lbs)	L	15-08-08	15-08-08	Top					-63	n/a
15	A1(c03)	Conc. Pt. (lbs)	L	17-08-08	17-08-08	Top		87	48		157	n/a
16	A1(c03)	Conc. Pt. (lbs)	L	17-08-08	17-08-08	Top					-76	n/a
17	M1(c19)	Conc. Pt. (lbs)	L	37-08-08	37-08-08	Top		165	74		147	n/a

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	1814 ft-lbs	11.1%	125%	4	33-08-08
Neg. Moment	-1795 ft-lbs	54.3%	125%	9	28-01-00
End Shear	772 lbs	10.0%	125%	4	37-07-04
Cont. Shear	1074 lbs	14.0%	125%	7	29-02-04
Total Load Deflection	L/999 (0.07")	n/a	n/a	4	33-08-08
Live Load Deflection	L/999 (0.039")	n/a	n/a	827	33-07-00
Total Neg. Defl.	L/999 (-0.013")	n/a	n/a	3	14-01-00
Max Defl.	0.07"	n/a	n/a	4	33-08-08
Span / Depth	13.4				

Bearing Supports

Bearing Supports		Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1	Column	4-1/2" x 3-1/2"	285 lbs	2.5%	2.4%	Unspecified

Roof\Dropped Beams\BM2(i45) (Dropped Beam)

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File name: 250437528480.mmdl

Address:

Description: Roof\Dropped Beams\BM2(i45)

City, State, Zip:

Specifier:

Customer:

Designer: [Designer Alias]

Code reports: ESR-1040

Company:

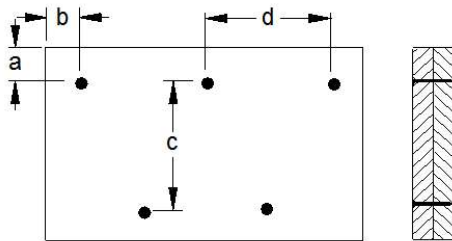
Bearing Supports		Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B2	Column	8" x 3-1/2"	1550 lbs	7.6%	7.4%	Unspecified
B3	Column	8" x 3-1/2"	1665 lbs	8.2%	7.9%	Unspecified
B4	Column	8" x 3-1/2"	2300 lbs	11.3%	11.0%	Unspecified
B5	Column	4-1/2" x 3-1/2"	825 lbs	7.2%	7.0%	Unspecified

Cautions

Member is not fully supported at post B1. A connector is required at this bearing.
 Member is not fully supported at post B2. A connector is required at this bearing.
 Member is not fully supported at post B3. A connector is required at this bearing.
 Member is not fully supported at post B4. A connector is required at this bearing.
 Member is not fully supported at post B5. A connector is required at this bearing.

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.
 Design meets arbitrary (0.75") Maximum live load deflection criteria.
 Wind loads determined from building geometry were used in selected product's verification.
 Unbalanced snow loads determined from building geometry were used in selected product's verification.
 Design based on Dry Service Condition.
 BC CALC® analysis is based on IBC 2021.
 Calculations assume unbraced length of Top: 01-10-08, Bottom: 38-09-00.

Connection Diagram: Full Length of Member


a minimum = 2"
 b minimum = 3"
 c = 5-1/4"
 d = 24"

Calculated Side Load = 0.0 lb/ft
 Connectors are: 3-1/4 in. Pneumatic Gun Nails

Disclosure

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Roof\Dropped Beams\BM3(i48) (Dropped Beam)

BC Design Engine Member Report

Dry | 3 spans | No cant.

August 1, 2025 10:52:52

Build 8898

Job name:

File name: 250437528480.mmdl

Address:

Description: Roof\Dropped Beams\BM3(i48)

City, State, Zip:

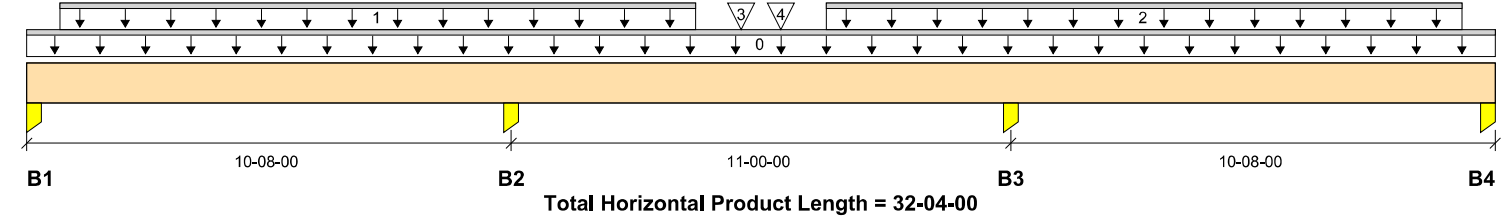
Specifier:

Customer:

Designer: [Designer Alias]

Code reports: ESR-1040

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 4"		367 / 0	201 / 0	93 / 265	383 / 54
B2, 8"		1207 / 0	649 / 0	300 / 761	1146 / 0
B3, 8"		1207 / 0	648 / 0	300 / 761	1146 / 0
B4, 4"		367 / 0	201 / 0	93 / 265	383 / 54

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	32-04-00	Top		9				00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-08-12	14-08-12	Top		90	45		90	n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	17-07-04	31-07-04	Top		90	45		90	n/a
3	M2(c28)	Conc. Pt. (lbs)	L	15-08-12	15-08-12	Top		155	65		130	n/a
4	M2(c37)	Conc. Pt. (lbs)	L	16-07-04	16-07-04	Top		155	65		130	n/a

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	1804 ft-lbs	11.1%	125%	2	28-07-04
Neg. Moment	-1658 ft-lbs	44.6%	125%	2	21-08-00
End Shear	740 lbs	9.6%	125%	2	01-01-04
Cont. Shear	1136 lbs	14.8%	125%	5	22-09-04
Total Load Deflection	L/999 (0.073")	n/a	n/a	2	27-02-12
Live Load Deflection	L/999 (0.042")	n/a	n/a	496	26-11-12
Total Neg. Defl.	L/999 (-0.011")	n/a	n/a	2	18-01-04
Max Defl.	0.073"	n/a	n/a	2	27-02-12
Span / Depth	14.3				

Bearing Supports	Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1	Column 4" x 3-1/2"	750 lbs	7.4%	7.1%	Unspecified
B2	Column 8" x 3-1/2"	2353 lbs	11.6%	11.2%	Unspecified
B3	Column 8" x 3-1/2"	2353 lbs	11.6%	11.2%	Unspecified
B4	Column 4" x 3-1/2"	750 lbs	7.4%	7.1%	Unspecified

Cautions

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

Member is not fully supported at post B2. A connector is required at this bearing.

Member is not fully supported at post B3. A connector is required at this bearing.

Member is not fully supported at post B4. A connector is required at this bearing.

Roof\Dropped Beams\BM3(i48) (Dropped Beam)

BC Design Engine Member Report

Dry | 3 spans | No cant.

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Designer: [Designer Alias]

Code reports: ESR-1040

Company:

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.

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

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

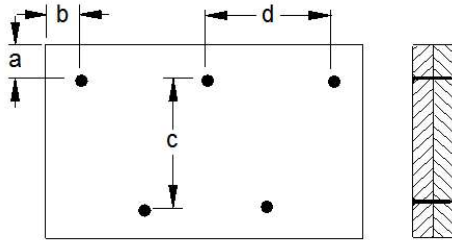
Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

BC CALC® analysis is based on IBC 2021.

Calculations assume unbraced length of Top: 01-10-08, Bottom: 32-04-00.

Connection Diagram: Full Length of Member



a minimum = 2"

c = 5-1/4"

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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Roof/Dropped Beams\GDH(i73) (Dropped Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

August 1, 2025 10:52:52

Build 8898

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Description: Roof/Dropped Beams\GDH(i73)

City, State, Zip:

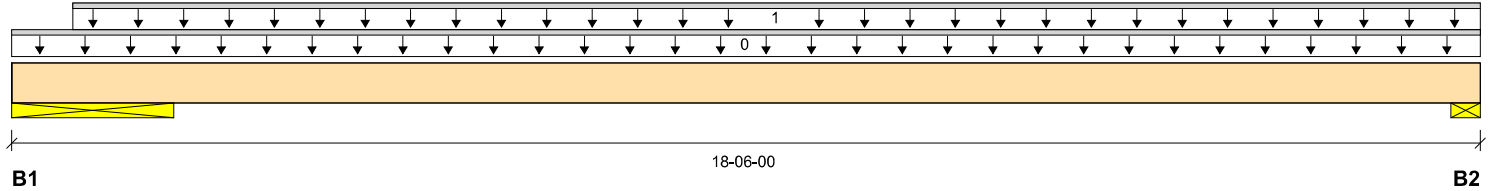
Specifier:

Customer:

Designer: [Designer Alias]

Code reports: ESR-1040

Company:



Total Horizontal Product Length = 18-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 24-1/2"		2825 / 0	923 / 0	1095 / 3034	2667 / 0
B2, 5-1/2"		2641 / 0	868 / 0	1029 / 2187	2508 / 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	18-06-00	Top		16				00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-09-04	18-06-00	Top		291	101		292	n/a

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	19311 ft-lbs	43.0%	125%	1	09-09-04
Neg. Moment	-225 ft-lbs	1.2%	160%	259	05-09-04
End Shear	4289 lbs	32.2%	125%	1	03-04-08
Total Load Deflection	L/490 (0.395")	73.4%	n/a	1	10-00-04
Live Load Deflection	L/1008 (0.192")	47.6%	n/a	263	10-00-04
Max Defl.	0.395"	39.5%	n/a	1	10-00-04
Span / Depth	12.1				
Conc. Load (B1)	1149 lbs	13.4%	100%		

Bearing Supports

	Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1	Wall/Plate 24-1/2" x 3-1/2"	5492 lbs	n/a	8.5%	Unspecified
B1	Uplift	125 lbs			
B2	Wall/Plate 5-1/2" x 3-1/2"	5149 lbs	36.9%	35.7%	Unspecified

Cautions

Uplift of -125 lbs found at bearing B1.

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.

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

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

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

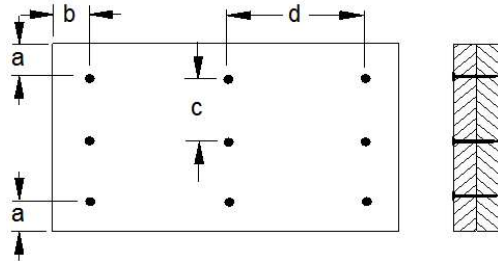
Design based on Dry Service Condition.

BC CALC® analysis is based on IBC 2021.

Calculations assume unbraced length of Top: 01-10-08, Bottom: 18-06-00.



Connection Diagram: Full Length of Member



a minimum = 2"

c = 6"

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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Roof\Dropped Beams\GDH1(i41) (Dropped Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

August 1, 2025 10:52:52

Build 8898

Job name:

File name: 250437528480.mmdl

Address:

Description: Roof\Dropped Beams\GDH1(i41)

City, State, Zip:

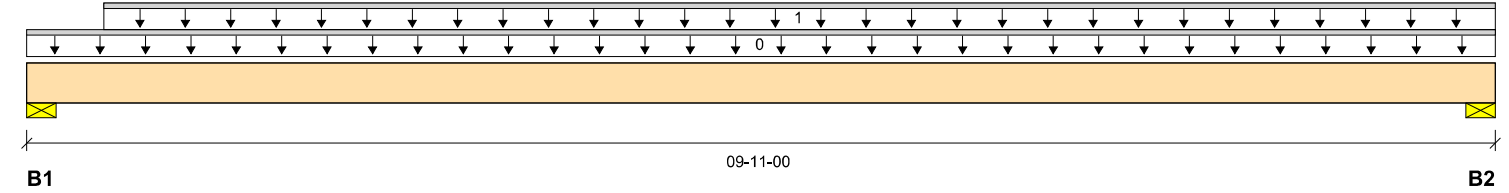
Specifier:

Customer:

Designer: [Designer Alias]

Code reports: ESR-1040

Company:



Total Horizontal Product Length = 09-11-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 5-1/2"		1318 / 0	437 / 0	517 / 852	1261 / 0
B2, 5-1/2"		1677 / 0	563 / 0	668 / 1111	1624 / 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	09-11-00	Top		12				00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-06-04	09-11-00	Top		306	106		307	n/a

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	6142 ft-lbs	23.7%	125%	1	05-06-04
End Shear	2562 lbs	26.0%	125%	1	01-05-06
Total Load Deflection	L/999 (0.104")	n/a	n/a	1	05-00-04
Live Load Deflection	L/999 (0.051")	n/a	n/a	263	05-00-04
Max Defl.	0.104"	n/a	n/a	1	05-00-04
Span / Depth	9.2				

Bearing Supports

	Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	2579 lbs	18.5%	17.9%	Unspecified
B2	Wall/Plate 5-1/2" x 3-1/2"	3301 lbs	23.7%	22.9%	Unspecified

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.
 Design meets arbitrary (0.75") Maximum live load deflection criteria.
 Wind loads determined from building geometry were used in selected product's verification.
 Unbalanced snow loads determined from building geometry were used in selected product's verification.
 Design based on Dry Service Condition.
 BC CALC® analysis is based on IBC 2021.
 Calculations assume unbraced length of Top: 01-10-08, Bottom: 09-11-00.



Roof/Dropped Beams\GDH1(i41) (Dropped Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

August 1, 2025 10:52:52

Build 8898

Job name:

File name: 250437528480.mmdl

Address:

Description: Roof/Dropped Beams\GDH1(i41)

City, State, Zip:

Specifier:

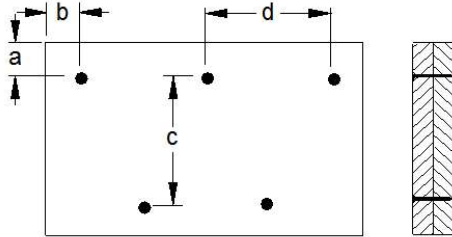
Customer:

Designer: [Designer Alias]

Code reports: ESR-1040

Company:

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

Disclosure

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

Roof\Flush Beams\BM4(i47) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

August 1, 2025 10:52:52

Build 8898

Job name:

File name: 250437528480.mmdl

Address:

Description: Roof\Flush Beams\BM4(i47)

City, State, Zip:

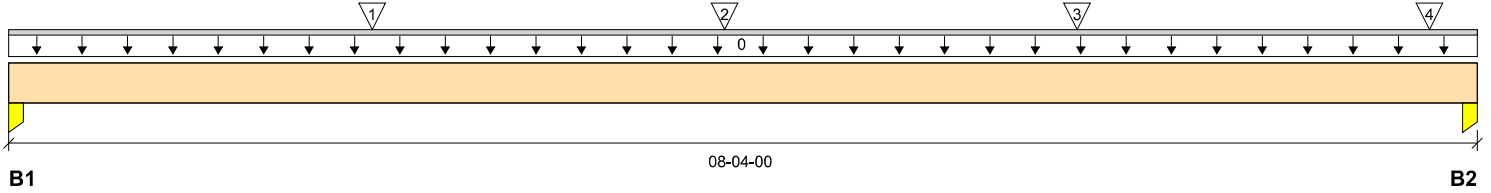
Specifier:

Customer:

Designer: [Designer Alias]

Code reports: ESR-1040

Company:



Total Horizontal Product Length = 08-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 8"		402 / 0	186 / 0	104 / 486	370 / 0
B2, 4"		489 / 0	251 / 0	128 / 550	457 / 0

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Roof Live	Tributary
							100%	90%	115%	160%	125%	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-04-00	Top		9				00-00-00
1	M5(c02)	Conc. Pt. (lbs)	L	02-00-12	02-00-12	Top		267	139		277	n/a
2	M4(c02)	Conc. Pt. (lbs)	L	04-00-12	04-00-12	Top		182	92		183	n/a
3	M3(c02)	Conc. Pt. (lbs)	L	06-00-12	06-00-12	Top		182	91		183	n/a
4	M2(c20)	Conc. Pt. (lbs)	L	08-00-12	08-00-12	Top		182	92		184	n/a

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	1505 ft-lbs	9.2%	125%	1	04-00-12
Neg. Moment	-84 ft-lbs	0.5%	160%	275	02-00-12
End Shear	758 lbs	9.9%	125%	1	01-05-04
Total Load Deflection	L/999 (0.035")	n/a	n/a	1	04-02-04
Live Load Deflection	L/999 (0.017")	n/a	n/a	279	04-02-04
Max Defl.	0.035"	n/a	n/a	1	04-02-04
Span / Depth	9.7				

Bearing Supports

Bearing Supports			Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1	Column	8" x 3-1/2"	772 lbs	3.8%	3.7%	Unspecified	
B2	Column	4" x 3-1/2"	946 lbs	9.3%	9.0%	Unspecified	

Cautions

Uplift of -50 lbs found at bearing B1.

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

Member is not fully supported at post B2. A connector is required at this bearing.

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.

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

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

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

Design based on Dry Service Condition.

BC CALC® analysis is based on IBC 2021.

Calculations assume unbraced length of Top: 01-10-08, Bottom: 08-00-08.



Roof\Flush Beams\BM4(i47) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

August 1, 2025 10:52:52

Build 8898

Job name:

File name: 250437528480.mmdl

Address:

Description: Roof\Flush Beams\BM4(i47)

City, State, Zip:

Specifier:

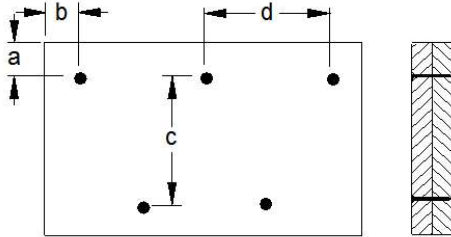
Customer:

Designer: [Designer Alias]

Code reports: ESR-1040

Company:

Connection Diagram: Full Length of Member



a minimum = 2" c = 5-1/4"
b minimum = 3" d = 24"

Calculated Side Load = 0.0 lb/ft

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

Disclosure

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Roof\Flush Beams\BM5(i49) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

August 1, 2025 10:52:52

Build 8898

Job name:

File name: 250437528480.mmdl

Address:

Description: Roof\Flush Beams\BM5(i49)

City, State, Zip:

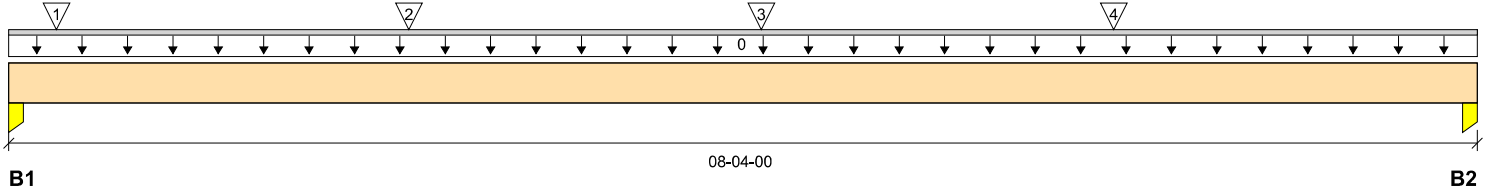
Specifier:

Customer:

Designer: [Designer Alias]

Code reports: ESR-1040

Company:



Total Horizontal Product Length = 08-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 4"		489 / 0	251 / 0	128 / 550	457 / 0
B2, 8"		402 / 0	185 / 0	104 / 486	370 / 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	08-04-00	Top		9				00-00-00
1	M2(c29)	Conc. Pt. (lbs)	L	00-03-04	00-03-04	Top		182	92		184	n/a
2	M3(c01)	Conc. Pt. (lbs)	L	02-03-04	02-03-04	Top		182	92		183	n/a
3	M4(c01)	Conc. Pt. (lbs)	L	04-03-04	04-03-04	Top		182	91		183	n/a
4	M5(c01)	Conc. Pt. (lbs)	L	06-03-04	06-03-04	Top		267	138		277	n/a

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	1506 ft-lbs	9.2%	125%	1	04-03-04
Neg. Moment	-84 ft-lbs	0.5%	160%	277	06-03-04
End Shear	758 lbs	9.9%	125%	1	06-10-12
Total Load Deflection	L/999 (0.035")	n/a	n/a	1	04-01-12
Live Load Deflection	L/999 (0.017")	n/a	n/a	279	04-01-12
Max Defl.	0.035"	n/a	n/a	1	04-01-12
Span / Depth	9.7				

Bearing Supports

Bearing Supports		Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1	Column	4" x 3-1/2"	946 lbs	9.3%	9.0%	Unspecified
B2	Column	8" x 3-1/2"	772 lbs	3.8%	3.7%	Unspecified

Cautions

Uplift of -50 lbs found at bearing B2.

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

Member is not fully supported at post B2. A connector is required at this bearing.

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.

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

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

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

Design based on Dry Service Condition.

BC CALC® analysis is based on IBC 2021.

Calculations assume unbraced length of Top: 01-10-08, Bottom: 08-00-08.

Roof\Flush Beams\BM5(i49) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

August 1, 2025 10:52:52

Build 8898

Job name:

File name: 250437528480.mmdl

Address:

Description: Roof\Flush Beams\BM5(i49)

City, State, Zip:

Specifier:

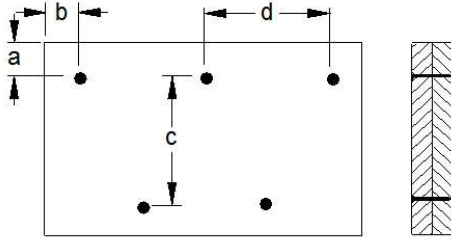
Customer:

Designer: [Designer Alias]

Code reports: ESR-1040

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 5-1/4"

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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Roof\Flush Beams\BM6(i46) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

August 1, 2025 10:52:52

Build 8898

Job name:

File name: 250437528480.mmdl

Address:

Description: Roof\Flush Beams\BM6(i46)

City, State, Zip:

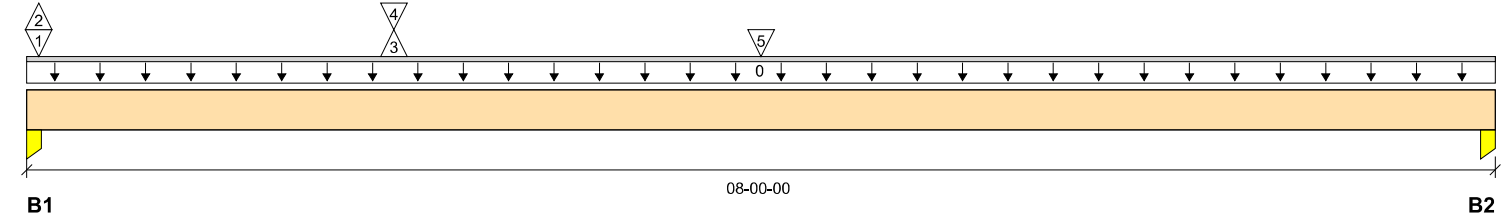
Specifier:

Customer:

Designer: [Designer Alias]

Code reports: ESR-1040

Company:



Total Horizontal Product Length = 08-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 8"		325 / 0	382 / 17	1965 / 889	681 / 38
B2, 8"		242 / 0	99 / 4	55 / 359	206 / 9

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	08-00-00	Top		9				00-00-00
1	-	Conc. Pt. (lbs)	L	00-00-13	00-00-13	Top		110	132		450	n/a
2	-	Conc. Pt. (lbs)	L	00-00-13	00-00-13	Top					-4	n/a
3	M1E(c01)	Conc. Pt. (lbs)	L	02-00-00	02-00-00	Top		-47	-21		-42	n/a
4	M1E(c01)	Conc. Pt. (lbs)	L	02-00-00	02-00-00	Top					42	n/a
5	M1E(c01)	Conc. Pt. (lbs)	L	04-00-00	04-00-00	Top		429	198		395	n/a

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	1450 ft-lbs	10.6%	125%	1	04-00-00
Neg. Moment	-283 ft-lbs	1.6%	160%	787	04-00-00
End Shear	435 lbs	5.7%	125%	1	06-06-12
Total Load Deflection	L/999 (0.025")	n/a	n/a	1	04-00-00
Live Load Deflection	L/999 (-0.015")	n/a	n/a	828	04-00-00
Total Neg. Defl.	L/999 (-0.001")	n/a	n/a	757	04-00-00
Max Defl.	0.025"	n/a	n/a	1	04-00-00
Span / Depth	8.8				

Bearing Supports

	Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1 Column	8" x 3-1/2"	1719 lbs	8.5%	8.2%	Unspecified
B1 Uplift		338 lbs			
B2 Column	8" x 3-1/2"	448 lbs	2.2%	2.1%	Unspecified

Cautions

Uplift of -338 lbs found at bearing B1.

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

Member is not fully supported at post B2. A connector is required at this bearing.

Roof\Flush Beams\BM6(i46) (Flush Beam)

BC Design Engine Member Report

Dry | 1 span | No cant.

August 1, 2025 10:52:52

Build 8898

Job name:

File name: 250437528480.mmdl

Address:

Description: Roof\Flush Beams\BM6(i46)

City, State, Zip:

Specifier:

Customer:

Designer: [Designer Alias]

Code reports: ESR-1040

Company:

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.

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

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

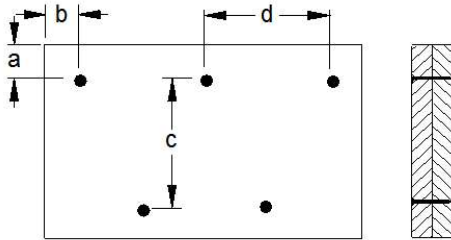
Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

BC CALC® analysis is based on IBC 2021.

Calculations assume unbraced length of Top: 07-07-14, Bottom: 07-08-08.

Connection Diagram: Full Length of Member



a minimum = 2"

c = 5-1/4"

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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