

FB01 (Floor Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

April 2, 2019 09:33:12

Build 7133

Job name: JOB#2019-012

File name: P19-03028

Address:

Description: BEAM FB01

City, State, Zip:

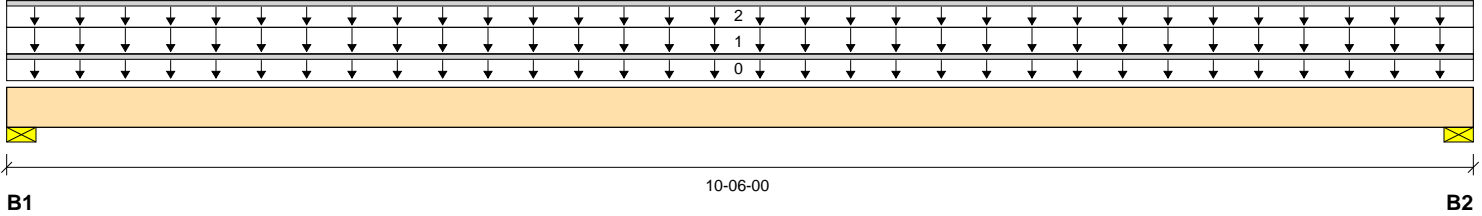
Specifier:

Builder: VALUE BUILD CONST.

Designer: Mark Lovelace

Code reports: ESR-1040

Company: LongLeaf



Total Horizontal Product Length = 10-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 3-1/2"	3255 / 0	1820 / 0			
B2, 3-1/2"	3255 / 0	1820 / 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	10-06-00	Top		14				00-00-00
1	Standard Load	Unf. Area (lb/ft²)	L	00-00-00	10-06-00	Front	40	15				15-06-00
2		Unf. Lin. (lb/ft)	L	00-00-00	10-06-00	Top		100				n/a

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	12185 ft-lbs	42.0%	100%	1	05-03-00
End Shear	3665 lbs	39.4%	100%	1	01-05-08
Total Load Deflection	L/872 (0.138")	41.3%	n/a	1	05-03-00
Live Load Deflection	L/999 (0.089")	n/a	n/a	2	05-03-00
Max Defl.	0.138"	13.8%	n/a	1	05-03-00
Span / Depth	8.6				

Bearing Supports

	Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1	Wall/Plate 3-1/2" x 3-1/2"	5075 lbs	n/a	55.2%	Unspecified
B2	Wall/Plate 3-1/2" x 3-1/2"	5075 lbs	n/a	55.2%	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.
 Calculations assume member is fully braced.
 BC CALC® analysis is based on IBC 2018.
 Design based on Dry Service Condition.

User Notes

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BC CALC® Member Report

Build 7133

Job name: JOB#2019-012

File name: P19-03028

Address:

Description: BEAM FB01

City, State, Zip:

Specifier:

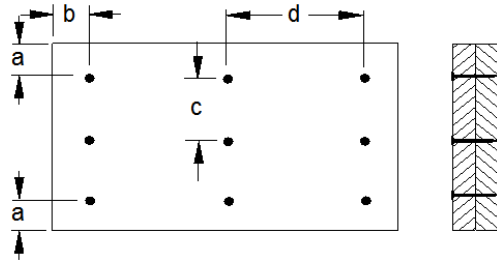
Builder: VALUE BUILD CONST.

Designer: Mark Lovelace

Code reports: ESR-1040

Company: LongLeaf

Connection Diagram: Full Length of Member



a minimum = 2" c = 5"
 b minimum = 3" d = 12"

Calculated Side Load = 513.3 lb/ft
 Connectors are: 16d Box Nails

Disclosure

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FB02 (Floor Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

April 2, 2019 09:33:12

Build 7133

Job name: JOB#2019-012

File name: P19-03028

Address:

Description: BEAM FB02

City, State, Zip:

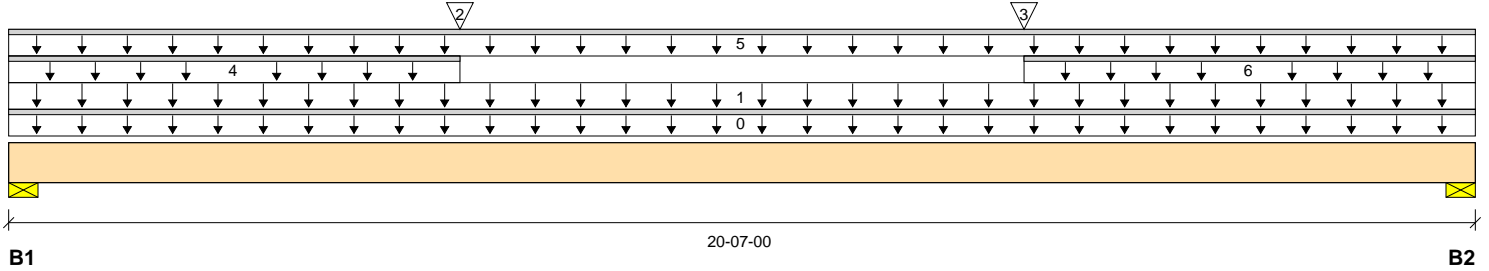
Specifier:

Builder: VALUE BUILD CONST.

Designer: Mark Lovelace

Code reports: ESR-1040

Company: LongLeaf



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 3-1/2"	823 / 0	5955 / 0	3808 / 0		
B2, 3-1/2"	823 / 0	5955 / 0	3808 / 0		

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	20-07-00	Top		36				00-00-00
1	Standard Load	Unf. Area (lb/ft²)	L	00-00-00	20-07-00	Top	40	15				02-00-00
2		Conc. Pt. (lbs)	L	06-04-00	06-04-00	Top		1898	1465			n/a
3		Conc. Pt. (lbs)	R	06-04-00	06-04-00	Top		1898	1465			n/a
4		Unf. Lin. (lb/ft)	L	00-00-00	06-04-00	Top		370	370			n/a
5		Unf. Lin. (lb/ft)	L	00-00-00	20-07-00	Top		100				n/a
6		Unf. Lin. (lb/ft)	R	00-00-00	06-04-00	Top		370	370			n/a

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	42744 ft-lbs	39.8%	115%	2	10-03-08
End Shear	8139 lbs	29.6%	115%	2	01-09-08
Total Load Deflection	L/495 (0.488")	72.8%	n/a	2	10-03-08
Live Load Deflection	L/1312 (0.184")	36.6%	n/a	5	10-03-08
Max Defl.	0.488"	48.8%	n/a	2	10-03-08
Span / Depth	13.4				

Bearing Supports

	Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1	Wall/Plate 3-1/2" x 7"	9763 lbs	n/a	53.1%	Unspecified
B2	Wall/Plate 3-1/2" x 7"	9763 lbs	n/a	53.1%	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.
- Calculations assume member is fully braced.
- BC CALC® analysis is based on IBC 2018.
- Design based on Dry Service Condition.
- 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.
- Beams 7 inches wide will be assumed to be either top-loaded only, or equally loaded from each side.
- Bolts are assumed to be Grade A307 or Grade 2 or higher.
- Member has no side loads.

FB02 (Floor Beam)

Dry | 1 span | No cant.

April 2, 2019 09:33:12

BC CALC® Member Report

Build 7133

Job name: JOB#2019-012

File name: P19-03028

Address:

Description: BEAM FB02

City, State, Zip:

Specifier:

Builder: VALUE BUILD CONST.

Designer: Mark Lovelace

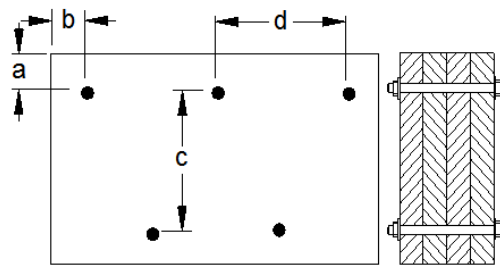
Code reports: ESR-1040

Company: LongLeaf

User Notes

This design is provided as a courtesy to the builder and does NOT guarantee a complete structural review of this project. Neither lateral nor seismic analysis has been considered. All bearing conditions, connections, spans, o.c. spacing, loading and product usages shall be verified by the builder and engineer of record. This design shall be reviewed, verified and approved by the builder, project engineer and local building department prior to ordering materials.

Connection Diagram: Full Length of Member



a minimum = 2" c = 14"
 b minimum = 2-1/2" 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.

Beams 7 inches wide will be assumed to be either top-loaded only, or equally loaded from each side.

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

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FB03 (Floor Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

April 2, 2019 09:33:12

Build 7133

Job name: JOB#2019-012

File name: P19-03028

Address:

Description: BEAM FB03

City, State, Zip:

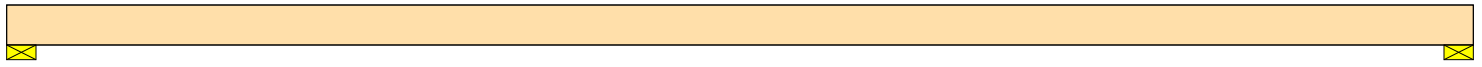
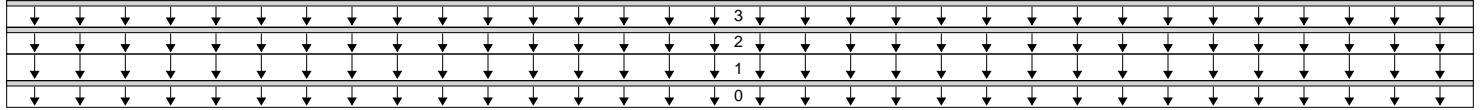
Specifier:

Builder: VALUE BUILD CONST.

Designer: Mark Lovelace

Code reports: ESR-1040

Company: LongLeaf



B1 17-00-00 B2

Total Horizontal Product Length = 17-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 3-1/2"	340 / 0	1420 / 0	340 / 0		
B2, 3-1/2"	340 / 0	1420 / 0	340 / 0		

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	17-00-00	Top		12				00-00-00
1	Standard Load	Unf. Area (lb/ft²)	L	00-00-00	17-00-00	Top	40	15				01-00-00
2		Unf. Lin. (lb/ft)	L	00-00-00	17-00-00	Top		40	40			n/a
3		Unf. Lin. (lb/ft)	L	00-00-00	17-00-00	Top		100				n/a

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	7081 ft-lbs	33.3%	100%	1	08-06-00
End Shear	1495 lbs	18.9%	100%	1	01-03-06
Total Load Deflection	L/507 (0.392")	71.0%	n/a	3	08-06-00
Live Load Deflection	L/999 (0.103")	n/a	n/a	6	08-06-00
Max Defl.	0.392"	39.2%	n/a	3	08-06-00
Span / Depth	16.7				

Bearing Supports

	Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1	Wall/Plate 3-1/2" x 3-1/2"	1930 lbs	n/a	21.0%	Unspecified
B2	Wall/Plate 3-1/2" x 3-1/2"	1930 lbs	n/a	21.0%	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.
 Calculations assume member is fully braced.
 BC CALC® analysis is based on IBC 2018.
 Design based on Dry Service Condition.
 Member has no side loads.

User Notes

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FB03 (Floor Beam)

Dry | 1 span | No cant.

April 2, 2019 09:33:12

BC CALC® Member Report

Build 7133

Job name: JOB#2019-012

File name: P19-03028

Address:

Description: BEAM FB03

City, State, Zip:

Specifier:

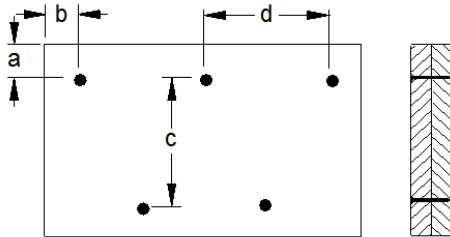
Builder: VALUE BUILD CONST.

Designer: Mark Lovelace

Code reports: ESR-1040

Company: LongLeaf

Connection Diagram: Full Length of Member



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

Member has no side loads.

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

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RB01 (Roof Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

April 2, 2019 09:33:12

Build 7133

Job name: JOB#2019-012

File name: P19-03028

Address:

Description: BEAM RB01

City, State, Zip:

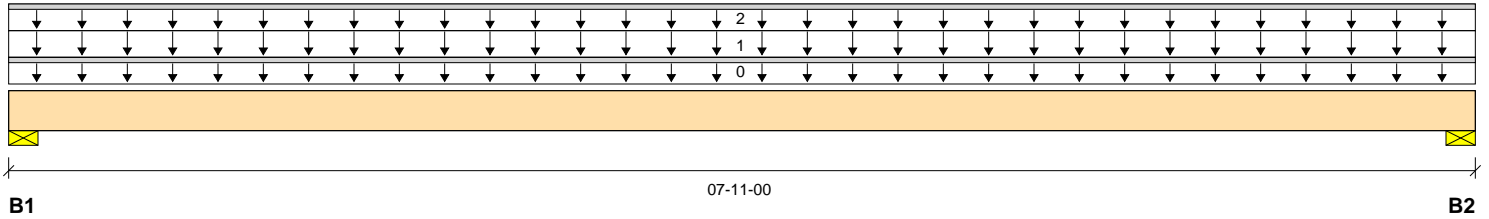
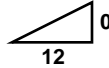
Specifier:

Builder: VALUE BUILD CONST.

Designer: Mark Lovelace

Code reports: ESR-1040

Company: LongLeaf



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind	Roof Live
B1, 3-1/2"		1898 / 0	1465 / 0		
B2, 3-1/2"		1898 / 0	1465 / 0		

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	07-11-00	Top	9					00-00-00
1	Standard Load	Unf. Area (lb/ft²)	L	00-00-00	07-11-00	Back		20	20			18-06-00
2		Unf. Lin. (lb/ft)	L	00-00-00	07-11-00	Back		100				n/a

Controls Summary

	Value	% Allowable	Duration	Case	Location
Pos. Moment	5906 ft-lbs	38.7%	115%	4	03-11-08
End Shear	2460 lbs	34.8%	115%	4	01-00-12
Total Load Deflection	L/699 (0.128")	25.8%	n/a	4	03-11-08
Live Load Deflection	L/999 (0.056")	n/a	n/a	5	03-11-08
Max Defl.	0.128"	12.8%	n/a	4	03-11-08
Span / Depth	9.7				

Bearing Supports

	Dim. (LxW)	Value	% Allow Support	% Allow Member	Material
B1	Wall/Plate 3-1/2" x 3-1/2"	3362 lbs	n/a	36.6%	Unspecified
B2	Wall/Plate 3-1/2" x 3-1/2"	3362 lbs	n/a	36.6%	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.
- BC CALC® analysis is based on IBC 2018.
- Design based on Dry Service Condition.

RB01 (Roof Beam)

Dry | 1 span | No cant.

April 2, 2019 09:33:12

BC CALC® Member Report

Build 7133

Job name: JOB#2019-012

File name: P19-03028

Address:

Description: BEAM RB01

City, State, Zip:

Specifier:

Builder: VALUE BUILD CONST.

Designer: Mark Lovelace

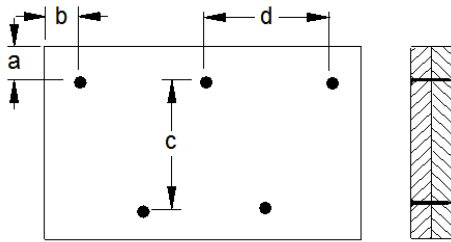
Code reports: ESR-1040

Company: LongLeaf

User Notes

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Connection Diagram: Full Length of Member



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

Calculated Side Load = 840.0 lb/ft
 Connectors are: 16d Common Nails

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