

BM1 (Floor Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

February 25, 2019 14:31:20

Build 7082

Job name: The Hampton Plan

File name:

Address:

Description:

City, State, Zip:

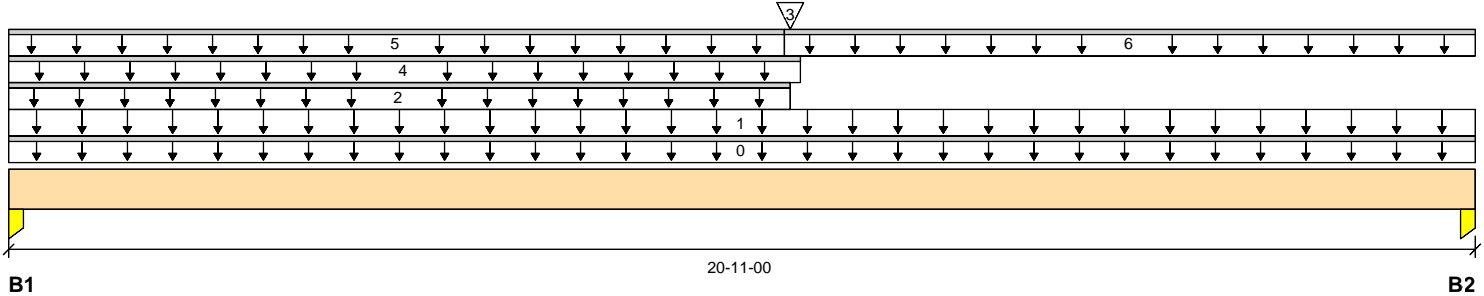
Specifier:

Builder: Ivercon Construction

Designer: Russell Culbreth

Code reports: ESR-1040

Company: Builders FirstSource



Total Horizontal Product Length = 20-11-00

Reaction Summary (Down / Uplift) (lbs)

| Bearing | Live | Dead | Snow | Wind | Roof Live |
|------------|---------|----------|----------|------|-----------|
| B1, 3-1/2" | 418 / 0 | 5366 / 0 | 4031 / 0 | | |
| B2, 3-1/2" | 418 / 0 | 3940 / 0 | 3114 / 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 | 20-11-00 | Top | | 36 | | | | 00-00-00 |
| 1 | Standard Load | Unf. Area (lb/ft ²) | L | 00-00-00 | 20-11-00 | Top | 40 | 15 | | | | 01-00-00 |
| 2 | A02 | Unf. Lin. (lb/ft) | L | 00-00-00 | 11-01-12 | Top | | 313 | 313 | | | n/a |
| 3 | C01 | Conc. Pt. (lbs) | L | 11-01-12 | 11-01-12 | Top | | 1710 | 1710 | | | n/a |
| 4 | WALL | Unf. Lin. (lb/ft) | L | 00-00-00 | 11-03-08 | Top | | 96 | | | | n/a |
| 5 | D04 | Unf. Lin. (lb/ft) | L | 00-00-00 | 11-00-12 | Top | | 37 | 37 | | | n/a |
| 6 | D03 | Unf. Lin. (lb/ft) | L | 11-00-12 | 20-11-00 | Top | | 156 | 156 | | | n/a |

Controls Summary

| | Value | % Allowable | Duration | Case | Location |
|-----------------------|----------------|-------------|----------|------|----------|
| Pos. Moment | 49967 ft-lbs | 46.5 % | 115% | 2 | 11-00-12 |
| End Shear | 7879 lbs | 28.6 % | 115% | 2 | 01-09-08 |
| Total Load Deflection | L/471 (0.521") | 76.4 % | n/a | 2 | 10-02-05 |
| Live Load Deflection | L/1068 (0.23") | 45.0 % | n/a | 5 | 10-05-12 |
| Max Defl. | 0.521" | 52.1 % | n/a | 2 | 10-02-05 |
| Span / Depth | 13.6 | | | | |

Bearing Supports

| | Dim. (LxW) | Value | % Allow Support | % Allow Member | Material |
|----|--------------------|----------|-----------------|----------------|-----------------|
| B1 | Column 3-1/2" x 7" | 9397 lbs | 52.9 % | 51.1 % | Spruce-Pine-Fir |
| B2 | Column 3-1/2" x 7" | 7054 lbs | 39.7 % | 38.4 % | 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.

BC CALC® analysis is based on IBC 2015.

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.

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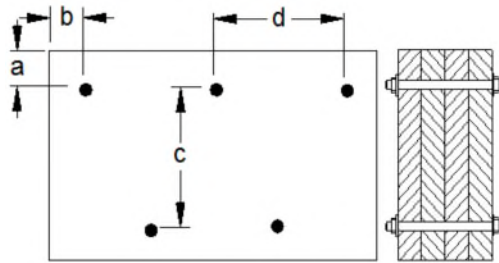
Specifier:

Builder: Ivercon Construction

Designer: Russell Culbreth

Code reports: ESR-1040

Company: Builders FirstSource

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

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®,

GDH (RoofHeader)

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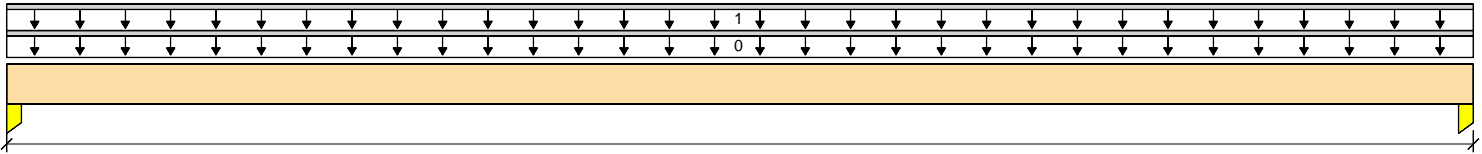
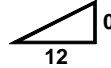
Specifier:

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Total Horizontal Product Length = 17-03-00

Reaction Summary (Down / Uplift) (lbs)

| Bearing | Live | Dead | Snow | Wind | Roof Live |
|---------|------|----------|----------|------|-----------|
| B1, 6" | | 1208 / 0 | 1104 / 0 | | |
| B2, 6" | | 1208 / 0 | 1104 / 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 | 17-03-00 | Top | | 12 | | | | 00-00-00 |
| 1 | D03 | Unf. Lin. (lb/ft) | L | 00-00-00 | 17-03-00 | Top | | 128 | 128 | | | n/a |

Controls Summary

| | Value | % Allowable | Duration | Case | Location |
|-----------------------|----------------|-------------|----------|------|----------|
| Pos. Moment | 8984 ft-lbs | 36.7 % | 115% | 4 | 08-07-08 |
| End Shear | 1913 lbs | 21.1 % | 115% | 4 | 01-05-14 |
| Total Load Deflection | L/443 (0.444") | 54.2 % | n/a | 4 | 08-07-08 |
| Live Load Deflection | L/927 (0.212") | 38.8 % | n/a | 5 | 08-07-08 |
| Max Defl. | 0.444" | 44.4 % | n/a | 4 | 08-07-08 |
| Span / Depth | 16.5 | | | | |

Bearing Supports

| | Dim. (LxW) | Value | % Allow Support | % Allow Member | Material |
|----|--------------------|----------|-----------------|----------------|-----------------|
| B1 | Column 6" x 3-1/2" | 2312 lbs | 15.2 % | 14.7 % | Spruce-Pine-Fir |
| B2 | Column 6" x 3-1/2" | 2312 lbs | 15.2 % | 14.7 % | 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 2015.
- Design based on Dry Service Condition.
- Member has no side loads.

GDH (RoofHeader)

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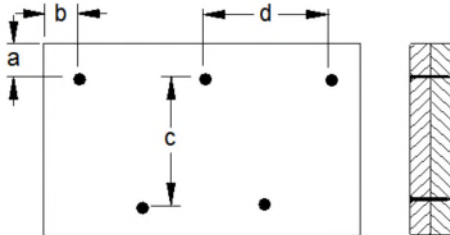
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Designer: Russell Culbreth

Code reports: ESR-1040

Company: Builders FirstSource

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

Disclosure

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