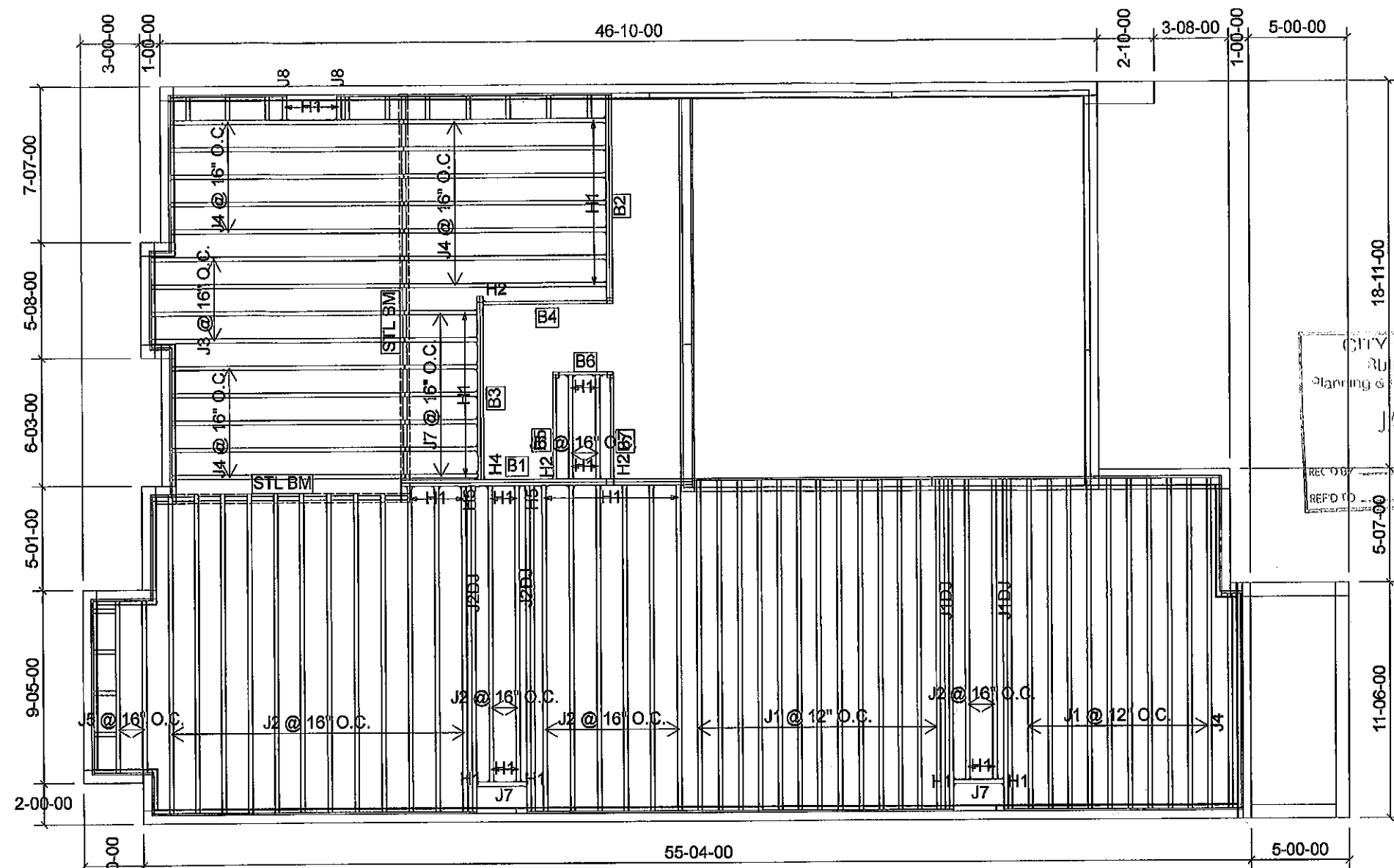




| Products |          |                                        |       |         |          |
|----------|----------|----------------------------------------|-------|---------|----------|
| PlotID   | Length   | Product                                | Plies | Net Qty | Fab Type |
| J1       | 18-00-00 | 9 1/2" NI-40x                          | 1     | 23      | MFD      |
| J1DJ     | 18-00-00 | 9 1/2" NI-40x                          | 2     | 4       | MFD      |
| J2       | 16-00-00 | 9 1/2" NI-40x                          | 1     | 22      | MFD      |
| J2DJ     | 16-00-00 | 9 1/2" NI-40x                          | 2     | 4       | MFD      |
| J3       | 14-00-00 | 9 1/2" NI-40x                          | 1     | 4       | MFD      |
| J4       | 12-00-00 | 9 1/2" NI-40x                          | 1     | 18      | MFD      |
| J5       | 10-00-00 | 9 1/2" NI-40x                          | 1     | 2       | MFD      |
| J6       | 6-00-00  | 9 1/2" NI-40x                          | 1     | 2       | MFD      |
| J7       | 4-00-00  | 9 1/2" NI-40x                          | 1     | 9       | MFD      |
| J8       | 2-00-00  | 9 1/2" NI-40x                          | 1     | 2       | MFD      |
| B1       | 16-00-00 | 1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP | 2     | 2       | MFD      |
| B2       | 12-00-00 | 1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP | 2     | 2       | MFD      |
| B3       | 10-00-00 | 1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP | 2     | 2       | MFD      |
| B4       | 8-00-00  | 1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP | 1     | 1       | MFD      |
| B5       | 6-00-00  | 1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP | 1     | 1       | MFD      |
| B7       | 6-00-00  | 1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP | 1     | 1       | MFD      |
| B6       | 4-00-00  | 1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP | 1     | 1       | MFD      |

| Connector Summary |       |             |
|-------------------|-------|-------------|
| Qty               | Manuf | Product     |
| 2                 | H1    | IUS2.56/9.5 |
| 27                | H1    | IUS2.56/9.5 |
| 4                 | H1    | IUS2.56/9.5 |
| 6                 | H1    | IUS2.56/9.5 |
| 3                 | H2    | HUS1.81/10  |
| 1                 | H4    | HGUS410     |
| 2                 | H5    | HU312-2     |



FROM PLAN DATED:

BUILDER: GREEN PARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: MOUNTAINASH 6

ELEVATION: 2

LOT: 9

CITY: WATERDOWN

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

NOTES:

REFER TO THE **NORDIC INSTALLATION GUIDE** FOR PROPER STORAGE AND INSTALLATION.

**SQUASH BLOCKS** OF 2x4, 2x6, 2x8 #2 S.P.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK** REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 7, TABLES 1 & 2. **CERAMIC TILE** APPLICATION AS PER O.B.C 9.30.6.

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft<sup>2</sup>

DEAD LOAD: 20.0 lb/ft<sup>2</sup>

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2020-11-25

**1st FLOOR**



FROM PLAN DATED:

BUILDER: GREEN PARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: MOUNTAINASH 6

ELEVATION: 2

LOT: 9

CITY: WATERDOWN

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

NOTES:

REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION. **SQUASH BLOCKS** OF 2x4, 2x6, 2x8 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK** REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURE 7 TABLES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR **HOLES** INCLUDING **DUCT CHASE** AND **FIELD CUT OPENINGS** SEE FIGURE 7 TABLES 1 & 2 OF THE INSTALLATION GUIDE. **CERAMIC TILE** APPLICATION AS PER O.B.C. 9.30.6

LOADING:

DESIGN LOADS: L/480.000

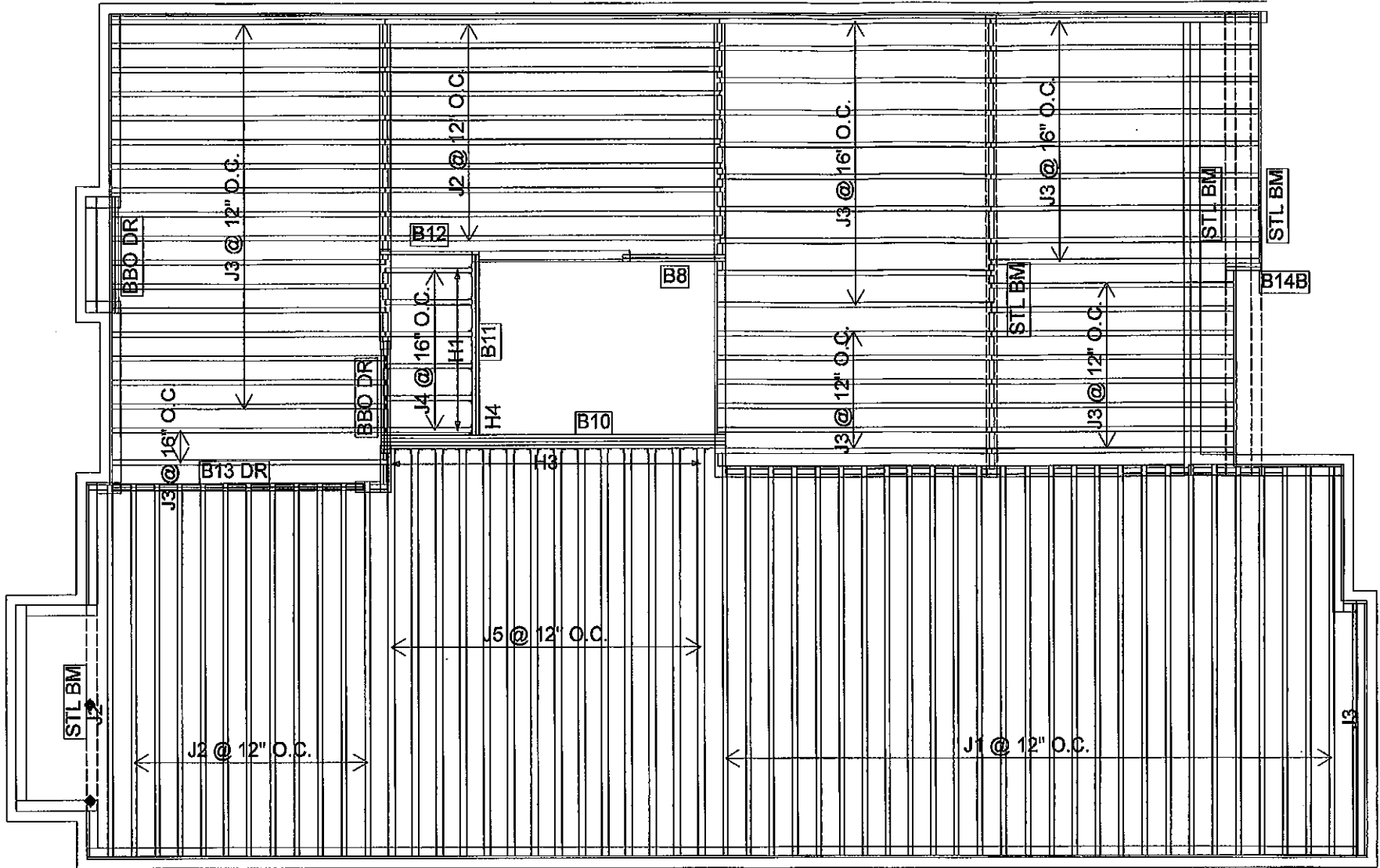
LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

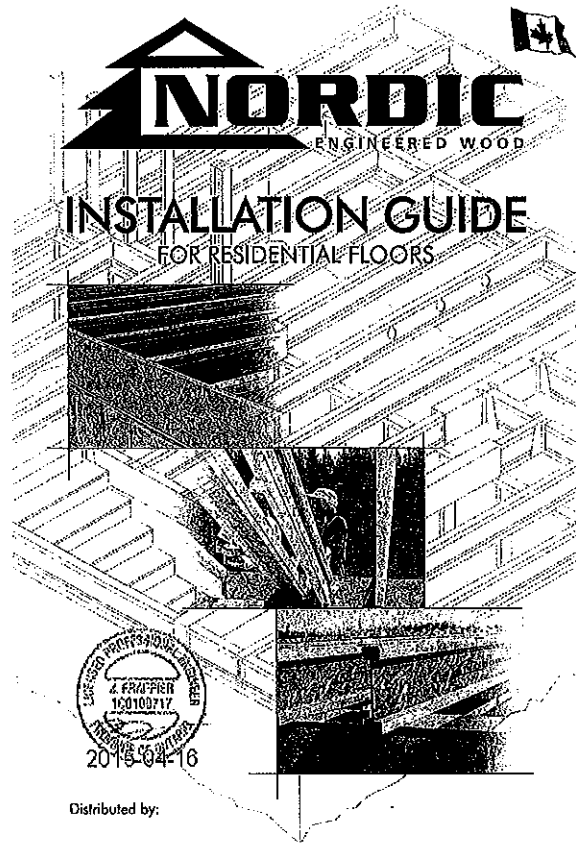
DATE: 2020-11-25

2nd FLOOR



| Products |          |                                        |       |         |          |
|----------|----------|----------------------------------------|-------|---------|----------|
| PlotID   | Length   | Product                                | Plies | Net Qty | Fab Type |
| J1       | 18-00-00 | 9 1/2" NI-40x                          | 1     | 27      | MFD      |
| J2       | 16-00-00 | 9 1/2" NI-40x                          | 1     | 22      | MFD      |
| J3       | 12-00-00 | 9 1/2" NI-40x                          | 1     | 53      | MFD      |
| J4       | 4-00-00  | 9 1/2" NI-40x                          | 1     | 6       | MFD      |
| J5       | 18-00-00 | 9 1/2" NI-80                           | 1     | 14      | MFD      |
| B10      | 16-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 4     | 4       | MFD      |
| B13 DR   | 12-00-00 | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2     | 2       | MFD      |
| B11      | 8-00-00  | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2     | 2       | MFD      |
| B12      | 6-00-00  | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 1     | 1       | MFD      |
| B8       | 6-00-00  | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2     | 2       | MFD      |
| B14B     | 2-00-00  | 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP | 2     | 2       | MFD      |

| Connector Summary |       |             |
|-------------------|-------|-------------|
| Qty               | Manuf | Product     |
| 6                 | H1    | IUS2.56/9.5 |
| 14                | H3    | IUS3.56/9.5 |
| 1                 | H4    | HGUS410     |



Distributed by:



## SAFETY AND CONSTRUCTION PRECAUTIONS



### WARNING

I-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed.

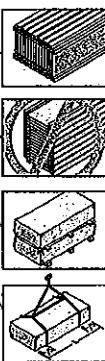
Avoid Accidents by Following these Important Guidelines:

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-briding at joist ends. When I-joists are applied continuously over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joist. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
3. Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on center, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral vertical at the end of each bay. Top ends of adjoining bracing over at least two I-joists.
4. Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
5. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-briding.
6. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
7. Never install a damaged I-joist.

Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.

## STORAGE AND HANDLING GUIDELINES

1. Bundle wrap can be slippery when wet. Avoid walking on wrapped bundles.
2. Store, stack, and handle I-joists vertically and level only.
3. Always stack and handle I-joists in the upright position only.
4. Do not store I-joists in direct contact with the ground and/or flatwise.
5. Protect I-joists from weather, and use spacers to separate bundles.
6. Bundled units should be kept intact until time of installation.
7. When handling I-joists with a crane on the job site, take a few simple precautions to prevent damage to the I-joists and injury to your work crew.
8. Pick I-joists in bundles or shipped by the supplier.
9. Orient the bundles so that the webs of the I-joists are vertical.
10. Pick the bundles at the 6" points, using a spreader bar if necessary.
11. Do not handle I-joists in a horizontal orientation.
12. NEVER USE OR TRY TO REPAIR A DAMAGED I-JOIST.



## MAXIMUM FLOOR SPANS

1. Maximum clear spans applicable to single-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate live loads are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGS-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.
3. Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
5. This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
6. Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NRC 2010.
7. SI units conversion: 1 inch = 25.4 mm  
1 foot = 0.305 m

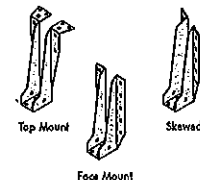
## MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS

| Joist Depth | Joist Series | Single spans      |        |         |         | Multiple spans    |        |         |         |
|-------------|--------------|-------------------|--------|---------|---------|-------------------|--------|---------|---------|
|             |              | On center spacing |        |         |         | On center spacing |        |         |         |
|             |              | 12"               | 16"    | 19.2"   | 24"     | 12"               | 16"    | 19.2"   | 24"     |
| 9-1/2"      | N-40         | 15'-1"            | 14'-2" | 13'-9"  | 12'-5"  | 15'-3"            | 14'-1" | 13'-10" | 12'-5"  |
|             | N-40S        | 16'-1"            | 15'-2" | 14'-9"  | 13'-5"  | 16'-3"            | 15'-1" | 14'-10" | 13'-5"  |
|             | N-40L        | 16'-3"            | 15'-4" | 14'-10" | 14'-11" | 17'-3"            | 16'-2" | 16'-0"  | 14'-11" |
|             | N-40S        | 17'-1"            | 16'-1" | 15'-8"  | 15'-1"  | 18'-3"            | 17'-4" | 16'-9"  | 16'-10" |
|             | N-40L        | 17'-3"            | 16'-3" | 15'-9"  | 15'-3"  | 18'-10"           | 17'-6" | 16'-11" | 17'-2"  |
| 11-7/8"     | N-42         | 16'-11"           | 16'-0" | 15'-5"  | 13'-6"  | 16'-4"            | 15'-3" | 14'-8"  | 13'-7"  |
|             | N-42S        | 18'-1"            | 17'-0" | 16'-5"  | 14'-6"  | 18'-0"            | 16'-9" | 16'-2"  | 15'-7"  |
|             | N-42L        | 18'-3"            | 17'-3" | 16'-7"  | 14'-9"  | 18'-3"            | 17'-2" | 16'-5"  | 15'-9"  |
|             | N-42S        | 19'-0"            | 18'-0" | 17'-4"  | 15'-1"  | 19'-0"            | 18'-0" | 17'-1"  | 16'-11" |
|             | N-42L        | 19'-2"            | 18'-2" | 17'-6"  | 15'-3"  | 19'-2"            | 18'-2" | 17'-3"  | 16'-11" |
|             | N-42S        | 20'-2"            | 19'-2" | 18'-7"  | 16'-1"  | 20'-2"            | 19'-2" | 18'-3"  | 17'-3"  |
|             | N-42L        | 20'-4"            | 19'-4" | 18'-9"  | 16'-3"  | 20'-4"            | 19'-4" | 18'-5"  | 17'-5"  |
| 14"         | N-44         | 18'-0"            | 17'-0" | 16'-5"  | 14'-6"  | 18'-0"            | 16'-9" | 16'-2"  | 15'-7"  |
|             | N-44S        | 19'-0"            | 18'-0" | 17'-4"  | 15'-1"  | 19'-0"            | 18'-0" | 17'-1"  | 16'-11" |
|             | N-44L        | 19'-2"            | 18'-2" | 17'-6"  | 15'-3"  | 19'-2"            | 18'-2" | 17'-3"  | 16'-11" |
|             | N-44S        | 20'-2"            | 19'-2" | 18'-7"  | 16'-1"  | 20'-2"            | 19'-2" | 18'-3"  | 17'-3"  |
|             | N-44L        | 20'-4"            | 19'-4" | 18'-9"  | 16'-3"  | 20'-4"            | 19'-4" | 18'-5"  | 17'-5"  |
| 16"         | N-46         | 18'-0"            | 17'-0" | 16'-5"  | 14'-6"  | 18'-0"            | 16'-9" | 16'-2"  | 15'-7"  |
|             | N-46S        | 19'-0"            | 18'-0" | 17'-4"  | 15'-1"  | 19'-0"            | 18'-0" | 17'-1"  | 16'-11" |
|             | N-46L        | 19'-2"            | 18'-2" | 17'-6"  | 15'-3"  | 19'-2"            | 18'-2" | 17'-3"  | 16'-11" |
|             | N-46S        | 20'-2"            | 19'-2" | 18'-7"  | 16'-1"  | 20'-2"            | 19'-2" | 18'-3"  | 17'-3"  |
|             | N-46L        | 20'-4"            | 19'-4" | 18'-9"  | 16'-3"  | 20'-4"            | 19'-4" | 18'-5"  | 17'-5"  |

CMC EVALUATION REPORT 13032-R

## 1-JOIST HANGERS

1. Hangers shown illustrate the three most commonly used metal hangers to support I-joists.
2. All nailing must meet the hanger manufacturer's recommendations.
3. Hangers should be selected based on the joist depth, flange width and load capacity based on the maximum spans.
4. Web stiffeners are required when the sides of the hangers do not laterally brace the top flange of the I-joist.



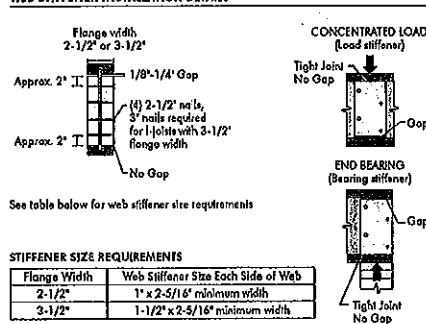
## WEB STIFFENERS

### RECOMMENDATIONS:

- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found in the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.
- A bearing stiffener is required when the I-joist is supported in a hanger and the sides of the hanger do not extend up, and support, the top flange. The gap between the stiffener and flange is at the top.
- A load stiffener is required at locations where a factored concentrated load greater than 2,870 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the cantilever tip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

SI units conversion: 1 inch = 25.4 mm

FIGURE 2 WEB STIFFENER INSTALLATION DETAILS



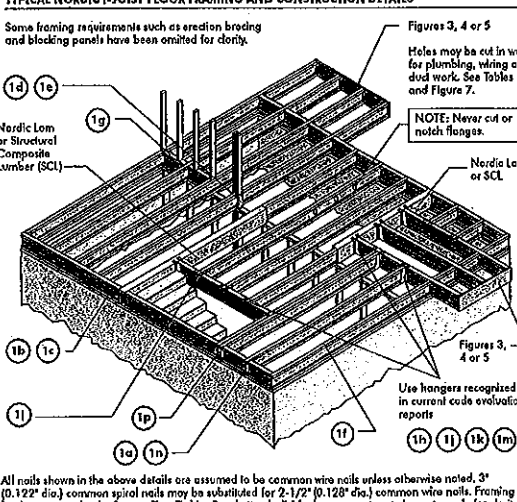
### STIFFENER SIZE REQUIREMENTS

| Flange Width | Web Stiffener Size Each Side of Web |
|--------------|-------------------------------------|
| 2-1/2"       | 1" x 2-5/16" minimum width          |
| 3-1/2"       | 1-1/2" x 2-5/16" minimum width      |

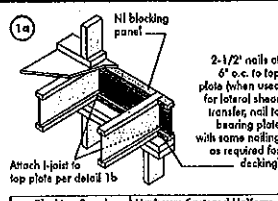
## INSTALLING NORDIC I-JOISTS

1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, consult supplier.
2. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. I-joists must be anchored securely to supports before floor sheathing is attached, and supports for multiple-span construction must be level.
5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings.
6. When using hangers, seat I-joists firmly in hanger bottoms to minimize settlement.
7. Leave a 1/16-inch gap between the I-joist end and a header.
8. Concentrated loads greater than those that can normally be expected in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include track lighting fixtures, audio equipment and security cameras. Never suspend unusual or heavy loads from the I-joist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the I-joist webs.
9. Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with concrete or masonry.
10. Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
11. For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squish blocks (rippler members) to transfer gravity loads through the floor system to the wall or foundation below.
12. Due to shrinkage, common framing lumber set on edge may never be used as blocking or rim boards. I-joist blocking panels or other engineered wood products - such as rim board - must be cut to fit between the I-joists, and an I-joist-compatible depth selected.
13. Provide permanent lateral support of the bottom flange of all I-joists at interior supports of multiple-span joists. Similarly, support the bottom flange of all cantilevered I-joists at the end support next to the cantilever extension. In the completed structure, the gypsum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, temporary bracing or struts must be used.
14. If square-edge panels are used, edges must be supported between I-joists with 2x4 blocking. Glue panels to blocking to minimize squeaks. Blocking is not required under structural finish flooring, such as wood strip flooring, or if a separate underlayment layer is installed.
15. Nail spacing: Space nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

FIGURE 1 TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS

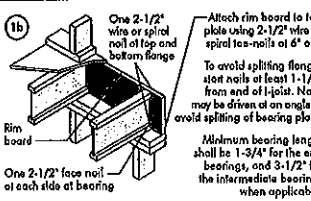


All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.125" dia.) common spiral nails may be substituted for 2-1/2" (0.125" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.



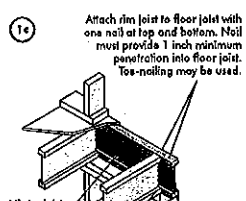
| Blocking Panel or Rim Joist | Maximum Factored Uniform Vertical Load* (pl) |
|-----------------------------|----------------------------------------------|
| NI Joist                    | 3,300                                        |

\*The uniform vertical load is limited to a joist depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a blocking member, such as joist, header, or rafter. For concentrated vertical load transfers, see detail 1d.



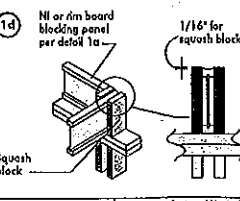
| Blocking Panel or Rim Joist | Maximum Factored Uniform Vertical Load* (pl) |
|-----------------------------|----------------------------------------------|
| 1-1/8" Rim Board Plus       | 8,050                                        |

\*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a blocking member, such as joist, header, or rafter. For concentrated vertical load transfers, see detail 1d.



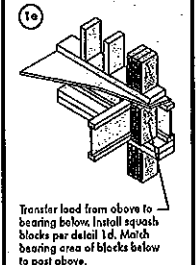
| Pair of Squish Blocks | Maximum Factored Uniform Vertical Load* (pl) |
|-----------------------|----------------------------------------------|
| 2x Lumber             | 5,500                                        |
| 1-1/8" Rim Board Plus | 4,300                                        |

Provide lateral bracing per detail 1a, 1b, or 1c

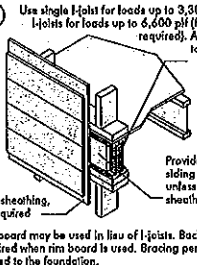


| Pair of Squish Blocks | Maximum Factored Uniform Vertical Load* (pl) |
|-----------------------|----------------------------------------------|
| 2x Lumber             | 5,500                                        |
| 1-1/8" Rim Board Plus | 4,300                                        |

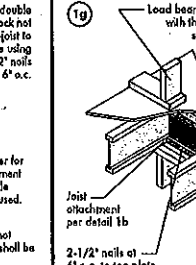
Provide lateral bracing per detail 1a, 1b, or 1c



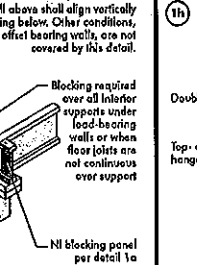
Transfer load from above to bearing below. Install squish blocks per detail 1d. Match bearing area of blocks below to post above.



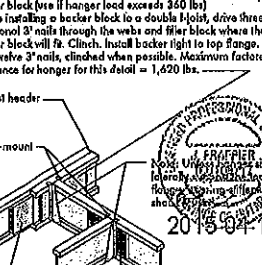
Wall sheathing, as required. Rim board may be used in lieu of I-joists. Backer is not required when rim board is used. Bracing per code shall be carried by this detail.



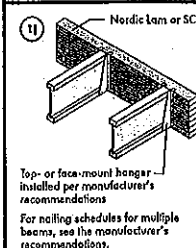
Load bearing wall above shall align vertically with the bearing below. Other conditions, such as offset bearing walls, are not covered by this detail.



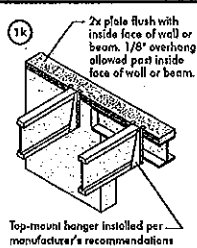
Blocking required over all interior supports under load-bearing walls or when floor joists are not continuous over support.



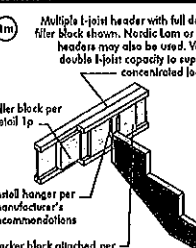
Backer block (use if hanger load exceeds 350 lbs). Before installing a backer block to a double I-joist, drive three additional 3" nails through the webs and filler block where the backer block will fit. Clinch. Install backer right to top flange. Use twelve 3" nails, clinched when possible. Maximum factored resistance for hanger for this detail = 1,420 lbs.



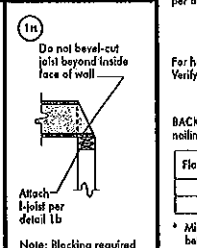
Top- or face-mount hanger installed per manufacturer's recommendations.



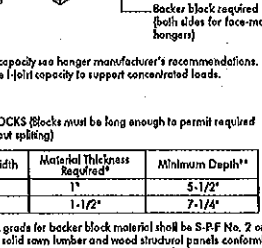
Top-mount hanger installed per manufacturer's recommendations.



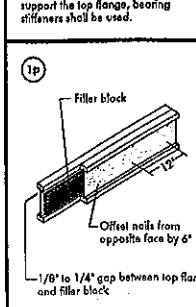
For nailing schedules for multiple beams, see the manufacturer's recommendations.



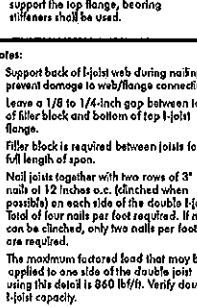
Note: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.



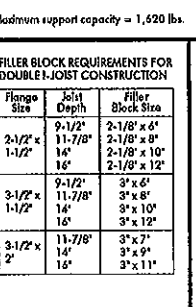
Note: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.



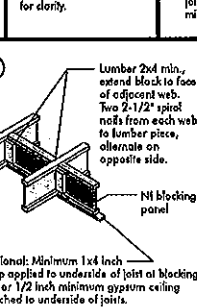
1/8" to 1/4" gap between top flange and filler block



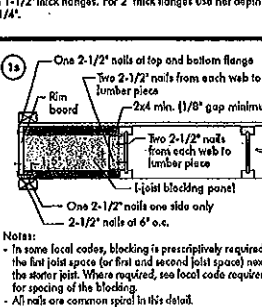
Notes:



Notes:



Optional: Minimum 1x4 inch strip applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joist.



Notes:





Refer to the Installation Guide for Residential Floors for additional information.  
CCMC EVALUATION REPORT 13032-R

## WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- The distance between the inside edge of the support and the centerline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- I-joint top and bottom flanges must NEVER be cut, notched, or otherwise modified.
- Whenever possible, field-cut holes should be centered on the middle of the web.
- The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-joint web shall equal the clear distance between the flanges of the I-joint minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joint flange.
- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the longest side of the longest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
- A knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
- Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.
- A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
- All holes and duct chase openings shall be cut in a workmanlike manner in accordance with the restrictions listed above and as illustrated in Figure 7.
- Limit three maximum size holes per span, of which one may be a duct chase opening.
- A group of round holes of approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

**TABLE 1**  
**LOCATION OF CIRCULAR HOLES IN JOIST WEBS**  
Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf

| Joist Depth | Joist Series | Minimum Distance from Inside Face of Any Support to Centre of Hole (ft - in.) |      |       |      |      |      |      |      |      |      |       |       |
|-------------|--------------|-------------------------------------------------------------------------------|------|-------|------|------|------|------|------|------|------|-------|-------|
|             |              | Round Hole Diameter (in.)                                                     |      |       |      |      |      |      |      |      |      |       |       |
| 9-1/2"      | N1-20        | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
|             | N1-40x       | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
|             | N1-60        | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
|             | N1-70        | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
|             | N1-80        | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
| 11-7/8"     | N1-20        | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
|             | N1-40x       | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
|             | N1-60        | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
|             | N1-70        | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
|             | N1-80        | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
| 14"         | N1-20        | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
|             | N1-40x       | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
|             | N1-60        | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
|             | N1-70        | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
|             | N1-80        | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
| 16"         | N1-20        | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
|             | N1-40x       | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
|             | N1-60        | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
|             | N1-70        | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |
|             | N1-80        | 0-7"                                                                          | 1-6" | 2-10" | 3-0" | 4-0" | 5-0" | 6-0" | 7-0" | 8-0" | 9-0" | 10-0" | 11-0" |

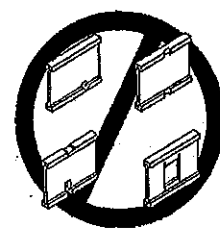
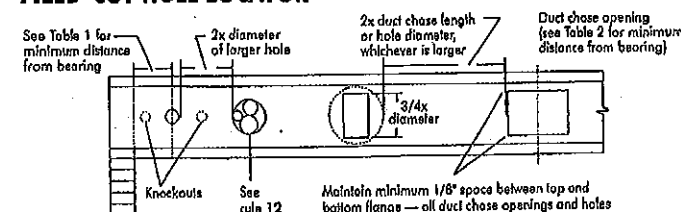
- Above table may be used for I-joint spacing of 24 inches on center or less.
- Hole location distance is measured from inside face of supports to centre of hole.
- Distances in this chart are based on uniformly loaded joists.
- The above table is based on the I-joints being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

**TABLE 2**  
**DUCT CHASE OPENING SIZES AND LOCATIONS**  
Simple Span Only

| Joist Depth | Joist Series | Minimum Distance from Inside Face of Supports to Centre of Opening (ft - in.) |      |       |      |      |      |      |      |      |      |       |       |
|-------------|--------------|-------------------------------------------------------------------------------|------|-------|------|------|------|------|------|------|------|-------|-------|
|             |              | Duct Chase Length (in.)                                                       |      |       |      |      |      |      |      |      |      |       |       |
| 9-1/2"      | N1-20        | 4-1"                                                                          | 4-5" | 4-10" | 5-4" | 5-8" | 6-1" | 6-6" | 7-1" | 7-5" | 8-0" | 8-4"  | 8-8"  |
|             | N1-40x       | 4-1"                                                                          | 4-5" | 4-10" | 5-4" | 5-8" | 6-1" | 6-6" | 7-1" | 7-5" | 8-0" | 8-4"  | 8-8"  |
|             | N1-60        | 4-1"                                                                          | 4-5" | 4-10" | 5-4" | 5-8" | 6-1" | 6-6" | 7-1" | 7-5" | 8-0" | 8-4"  | 8-8"  |
|             | N1-70        | 4-1"                                                                          | 4-5" | 4-10" | 5-4" | 5-8" | 6-1" | 6-6" | 7-1" | 7-5" | 8-0" | 8-4"  | 8-8"  |
|             | N1-80        | 4-1"                                                                          | 4-5" | 4-10" | 5-4" | 5-8" | 6-1" | 6-6" | 7-1" | 7-5" | 8-0" | 8-4"  | 8-8"  |
| 11-7/8"     | N1-20        | 5-9"                                                                          | 6-2" | 6-6"  | 7-1" | 7-5" | 7-9" | 8-3" | 8-7" | 9-1" | 9-5" | 9-9"  | 10-3" |
|             | N1-40x       | 5-9"                                                                          | 6-2" | 6-6"  | 7-1" | 7-5" | 7-9" | 8-3" | 8-7" | 9-1" | 9-5" | 9-9"  | 10-3" |
|             | N1-60        | 5-9"                                                                          | 6-2" | 6-6"  | 7-1" | 7-5" | 7-9" | 8-3" | 8-7" | 9-1" | 9-5" | 9-9"  | 10-3" |
|             | N1-70        | 5-9"                                                                          | 6-2" | 6-6"  | 7-1" | 7-5" | 7-9" | 8-3" | 8-7" | 9-1" | 9-5" | 9-9"  | 10-3" |
|             | N1-80        | 5-9"                                                                          | 6-2" | 6-6"  | 7-1" | 7-5" | 7-9" | 8-3" | 8-7" | 9-1" | 9-5" | 9-9"  | 10-3" |
| 14"         | N1-20        | 6-1"                                                                          | 6-5" | 6-9"  | 7-3" | 7-7" | 8-1" | 8-5" | 8-9" | 9-3" | 9-7" | 10-1" | 10-5" |
|             | N1-40x       | 6-1"                                                                          | 6-5" | 6-9"  | 7-3" | 7-7" | 8-1" | 8-5" | 8-9" | 9-3" | 9-7" | 10-1" | 10-5" |
|             | N1-60        | 6-1"                                                                          | 6-5" | 6-9"  | 7-3" | 7-7" | 8-1" | 8-5" | 8-9" | 9-3" | 9-7" | 10-1" | 10-5" |
|             | N1-70        | 6-1"                                                                          | 6-5" | 6-9"  | 7-3" | 7-7" | 8-1" | 8-5" | 8-9" | 9-3" | 9-7" | 10-1" | 10-5" |
|             | N1-80        | 6-1"                                                                          | 6-5" | 6-9"  | 7-3" | 7-7" | 8-1" | 8-5" | 8-9" | 9-3" | 9-7" | 10-1" | 10-5" |
| 16"         | N1-20        | 6-1"                                                                          | 6-5" | 6-9"  | 7-3" | 7-7" | 8-1" | 8-5" | 8-9" | 9-3" | 9-7" | 10-1" | 10-5" |
|             | N1-40x       | 6-1"                                                                          | 6-5" | 6-9"  | 7-3" | 7-7" | 8-1" | 8-5" | 8-9" | 9-3" | 9-7" | 10-1" | 10-5" |
|             | N1-60        | 6-1"                                                                          | 6-5" | 6-9"  | 7-3" | 7-7" | 8-1" | 8-5" | 8-9" | 9-3" | 9-7" | 10-1" | 10-5" |
|             | N1-70        | 6-1"                                                                          | 6-5" | 6-9"  | 7-3" | 7-7" | 8-1" | 8-5" | 8-9" | 9-3" | 9-7" | 10-1" | 10-5" |
|             | N1-80        | 6-1"                                                                          | 6-5" | 6-9"  | 7-3" | 7-7" | 8-1" | 8-5" | 8-9" | 9-3" | 9-7" | 10-1" | 10-5" |

- Above table may be used for I-joint spacing of 24 inches on center or less.
- Duct chase opening location distance is measured from inside face of supports to centre of opening.
- The above table is based on simple-span joists only. For other applications, contact your local distributor.
- Distances are based on uniformly loaded floor joists that meet the span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480.
- The above table is based on the I-joints being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

**FIGURE 7**  
**FIELD-CUT HOLE LOCATOR**



Knockouts are predrilled holes provided for the contractor's convenience to install electrical or small plumbing lines. They are 1-1/2 inches in diameter, and are spaced 15 inches on center along the length of the I-joint. Where possible, it is preferable to use knockouts instead of field-cut holes.

Never drill, cut or notch the flange, or over-cut the web.

Holes in webs should be cut with a sharp saw.

For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joint.

## SAFETY AND CONSTRUCTION PRECAUTIONS

- WARNING:** I-joints are not stable until completely installed, and will not carry any load until fully braced and sheathed.
- AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:**
- Brace and nail each I-joint as it is installed, using hangers, blocking panels, rim board, and/or cross-bracing at joint ends. When I-joints are applied continuously over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
  - When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joints. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joint rollover or buckling.
    - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on center, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joint. Nail the bracing to a lateral restraint at the end of each bay. Top ends of adjoining bracing over at least two I-joints.
    - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joints at the end of the bay.
  - For cantilevered I-joints, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bracing.
  - Install and fully nail permanent sheathing to each I-joint before placing loads on the floor system. Then, stack building materials over beams or walls only.
  - Never install a damaged I-joint.
- Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joints, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.

**PRODUCT WARRANTY**

Charters Chibongwan guarantees that, in accordance with our specifications, Nordic products are free from manufacturing defects in material and workmanship.

Furthermore, Charters Chibongwan warrants that our products, when utilized in accordance with our handling and installation instructions, will meet or exceed our specifications for the lifetime of the structure.

**1a** NI blocking panel

Blocking Panel or Rim Joist  
NI Joists

Maximum Factored Uniform Vertical Load\* (plf)

3,300

\*The uniform vertical load is limited to a joist depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

2-1/2" nails at 6" o.c. to top plate (when used for lateral shear transfer, nail to bearing plate with same nailing as required for decking)

Attach I-joint to top plate per detail 1b

**1b** Rim board

Blocking Panel or Rim Joist  
NI Joists

Maximum Factored Uniform Vertical Load\* (plf)

8,090

\*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

One 2-1/2" wire or spiral nail at top and bottom flange

Attach rim board to top plate using 2-1/2" wire or spiral toe-nails at 6" o.c.

To avoid splitting flange, start nails at least 1-1/2" from end of I-joint. Nails may be driven at an angle to avoid splitting of bearing plate.

Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.

**1d** NI or rim board blocking panel per detail 1a

Pair of Squash Blocks

Maximum Factored Uniform Vertical Load\* (plf)

3-1/2" wide  
2x Lumber  
5,500

5-1/2" wide  
2x Lumber  
8,500

1-1/8" Rim Board Plus  
4,300

6,600

Provide lateral bracing per detail 1a or 1b

**1e** Transfer load from above to bearing below. Install squash blocks per detail 1d. Match bearing area of blocks below to post above.

**1f** Joist attachment per detail 1b

Load bearing wall above shall align vertically with the bearing below. Other conditions, such as offset bearing walls, are not covered by this detail.

Blocking required over all interior supports under load-bearing walls or when floor joists are not continuous over support

2-1/2" nails at 6" o.c. to top plate

NI blocking panel per detail 1a

**1h** Backer block (use if hanger load exceeds 360 lbs). Before installing a backer block to a double I-joint, drive three additional 3" nails through the webs and filler block where the backer block will fit. Clinch. Install backer tight to top flange. Use twelve 3" nails, clinched when possible. Maximum factored resistance for hanger for this detail = 1,620 lbs.

**BACKER BLOCKS** (Blocks must be long enough to permit required nailing without splitting)

| Flange Width | Material Thickness Required* | Minimum Depth** |
|--------------|------------------------------|-----------------|
| 2-1/2"       | 1"                           | 5-1/2"          |
| 3-1/2"       | 1-1/2"                       | 7-1/4"          |

\* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-Q325 or CAN/CSA-Q437 Standard.  
\*\* For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".

**1i** Top- or face-mount hanger

Double I-joint header

NOTE: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

Backer block required (both sides for face-mount hangers)

For hanger capacity see hanger manufacturer's recommendations. Verify double I-joint capacity to support concentrated loads.

**1j** Nordic Lom or Structural Composite Lumber (SCL)

For nailing schedules for multiple beams, see the manufacturer's recommendations.

Top- or face-mount hanger installed per manufacturer's recommendations

NOTE: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

**1k** 2x plate flush with inside face of wall or beam. 1/8" overhang allowed past inside face of wall or beam.

NOTE: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

Top-mount hanger installed per manufacturer's recommendations

**1m** Multiple I-joint header with full depth filler block shown. Nordic Lom or SCL headers may also be used. Verify double I-joint capacity to support concentrated loads.

Backer block attached per detail 1h. Nail with twelve 3" nails, clinch when possible.

Install hanger per manufacturer's recommendations

Maximum support capacity = 1,620 lbs.

**1n** Do not bevel-cut joist beyond inside face of wall

Attach I-joint per detail 1b

**1o** Lumber 2x4 min., extend block to face of adjacent web. Two 2-1/2" spiral nails from each web to lumber piece, alternate on opposite side.

NI blocking panel

OPTIONAL: Minimum 1x4 inch strap applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joists.

**1p** FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

Filler block

Offset nails from opposite face by 6"

1/8" to 1/4" gap between top flange and filler block

**NOTES:**

- Support back of I-joint web during nailing to prevent damage to web/flange connection.
- Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joint flange.
- Filler block is required between joists for full length of span.
- Nail joists together with two rows of 3" nails at 12 inches o.c. (clinched when possible) on each side of the double I-joint. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
- The maximum factored load that may be applied to one side of the double joist using this detail is 360 lbs/ft. Verify double I-joint capacity.

**1s** One 2-1/2" nail at top and bottom flange

2x4 min. (1/8" gap minimum)

Two 2-1/2" nails from each web to lumber piece in lumber place

One 2-1/2" nail one side only

**NOTES:**

- In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.
- All nails are common spiral in this detail.

All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.125" dia.) common spiral nails may be substituted for 2-1/2" (0.125" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.

## WEB STIFFENERS

- RECOMMENDATIONS:**
- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joint properties table found at the I-joint Construction Detail (C101). The gap between the stiffener and the flange is at the top.
  - A bearing stiffener is required when the I-joint is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.
  - A load stiffener is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the cantilever tip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

**FIGURE 2**  
**WEB STIFFENER INSTALLATION DETAILS**

**CONCENTRATED LOAD (Load stiffener)**

**END BEARING (Bearing stiffener)**

**STIFFENER SIZE REQUIREMENTS**

| Flange Width | Web Stiffener Size Each Side of Web |
|--------------|-------------------------------------|
| 2-1/2"       | 1" x 2-5/16" minimum width          |
| 3-1/2"       | 1-1/2" x 2-5/16" minimum width      |

## CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

**4a** SHEATHING REINFORCEMENT ONE SIDE

Rim board or wood structural panel closure (3/4" minimum thickness); attach per detail 1b

2-1/2" nails

3-1/2" min. bearing required

**4b** SHEATHING REINFORCEMENT TWO SIDES

Use same installation as Method 1 but reinforce both sides of I-joint with sheathing.

Use nailing pattern shown for Method 1 with opposite face nailing offset by 3".

**NOTE:** Condition solidwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c. top and bottom flange. Install with face grain horizontal. Attach I-joint to plate of all supports per detail 1b. Verify reinforced I-joint capacity.

## RIM BOARD INSTALLATION DETAILS

**4a** ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

Rim Board Joint Between Floor Joists

2-1/2" nails at 6" o.c. (typical)

Rim board joint

2-1/2" toe-nails at 6" o.c. (typical)

Rim Board Joint at Corner

1-1/2" nails

Rim board joint

1-1/2" nails

**4b** TOE-NAIL CONNECTION AT RIM BOARD

Rim board

Top or sole plate

80°

# NORDIC STRUCTURES

COMPANY  
Apr. 9, 2020 10:01

PROJECT  
J1 1ST FLOOR.wwb

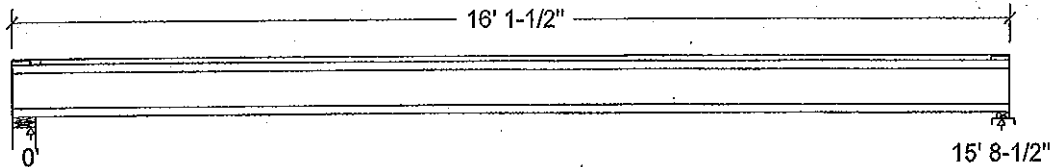
## Design Check Calculation Sheet

Nordic Sizer - Canada 7.2

### Loads:

| Load  | Type | Distribution | Pat-<br>tern | Location [ft]<br>Start End | Magnitude<br>Start End | Unit |
|-------|------|--------------|--------------|----------------------------|------------------------|------|
| Load1 | Dead | Full Area    |              |                            | 20.00                  | psf  |
| Load2 | Live | Full Area    |              |                            | 40.00                  | psf  |

### Maximum Reactions (lbs) and Support Bearing (in):



|             |       |  |       |
|-------------|-------|--|-------|
| Unfactored: |       |  |       |
| Dead        | 157   |  | 157   |
| Live        | 314   |  | 314   |
| Factored:   |       |  |       |
| Total       | 668   |  | 668   |
| Bearing:    |       |  |       |
| Capacity    |       |  |       |
| Joist       | 1893  |  | 1865  |
| Support     | 7744  |  | 3971  |
| Des ratio   |       |  |       |
| Joist       | 0.35  |  | 0.36  |
| Support     | 0.09  |  | 0.17  |
| Load case   | #2    |  | #2    |
| Length      | 4-3/8 |  | 2-3/8 |
| Min req'd   | 1-3/4 |  | 1-3/4 |
| Stiffener   | No    |  | No    |
| KD          | 1.00  |  | 1.00  |
| KB support  | -     |  | 1.00  |
| fcg sup     | 769   |  | 769   |
| Kzcg sup    | -     |  | 1.09  |

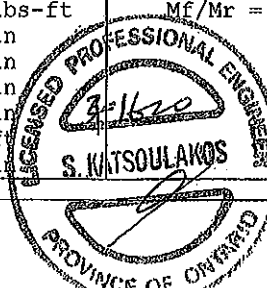
Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

### Nordic 9-1/2" NI-40x Floor joist @ 12" o.c.

Supports: 1 - Lumber Wall, No.1/No.2; 2 - Lumber Sill plate, No.1/No.2;  
Total length: 16' 1-1/2"; Clear span: 15' 6-3/4"; 3/4" nailed and glued OSB sheathing  
This section **PASSES** the design code check.

### Limit States Design using CSA O86-14 and Vibration Criterion:

| Criterion    | Analysis Value | Design Value | Unit   | Analysis/Design |
|--------------|----------------|--------------|--------|-----------------|
| Shear        | Vf = 668       | Vr = 1895    | lbs    | Vf/Vr = 0.35    |
| Moment (+)   | Mf = 2622      | Mr = 4824    | lbs-ft | Mf/Mr = 0.54    |
| Perm. Defl'n | 0.12 = < L/999 | 0.52 = L/360 | in     | 0.22            |
| Live Defl'n  | 0.23 = L/817   | 0.39 = L/480 | in     | 0.59            |
| Total Defl'n | 0.35 = L/545   | 0.79 = L/240 | in     | 0.44            |
| Bare Defl'n  | 0.28 = L/684   | 0.52 = L/360 | in     | 0.53            |
| Vibration    | Lmax = 15'-8.5 | Lv = 17'-1.8 | ft     | 0.92            |
| Defl'n       | = 0.031        | = 0.041      | in     | 0.76            |



ENG NO. 7446078 -20  
STRUCTURAL  
COMPONENT ONLY

P6 1/2

**Additional Data:**

| FACTORS: | f/E           | KD   | KH   | KZ | KL    | KT | KS | KN | LC# |
|----------|---------------|------|------|----|-------|----|----|----|-----|
| Vr       | 1895          | 1.00 | 1.00 | -  | -     | -  | -  | -  | #2  |
| Mr+      | 4824          | 1.00 | 1.00 | -  | 1.000 | -  | -  | -  | #2  |
| EI       | 218.1 million | -    | -    | -  | -     | -  | -  | -  | #2  |

**CRITICAL LOAD COMBINATIONS:**

Shear : LC #2 = 1.25D + 1.5L

Moment(+) : LC #2 = 1.25D + 1.5L

Deflection: LC #1 = 1.0D (permanent)

LC #2 = 1.0D + 1.0L (live)

LC #2 = 1.0D + 1.0L (total)

LC #2 = 1.0D + 1.0L (bare joist)

Bearing : Support 1 - LC #2 = 1.25D + 1.5L

Support 2 - LC #2 = 1.25D + 1.5L

Load Types: D=dead W=wind S=snow H=earth,groundwater E=earthquake

L=live(use,occupancy) Ls=live(storage,equipment) f=fire

Load Patterns: s=S/2 L=L+Ls =no pattern load in this span

All Load Combinations (LCs) are listed in the Analysis output

**CALCULATIONS:**E<sub>ieff</sub> = 265.29 lb-in<sup>2</sup> K= 4.94e06 lbs

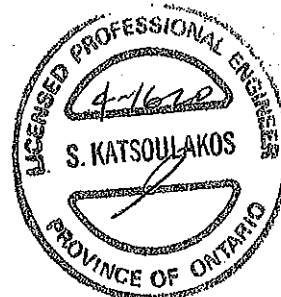
"Live" deflection is due to all non-dead loads (live, wind, snow...)

CONFORMS TO OBC 2012

AMENDED 2020

**Design Notes:**

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



SWD NO. TAM607B-20  
STRUCTURAL  
COMPONENT ONLY

# NORDIC STRUCTURES

COMPANY  
Apr. 9, 2020 09:59

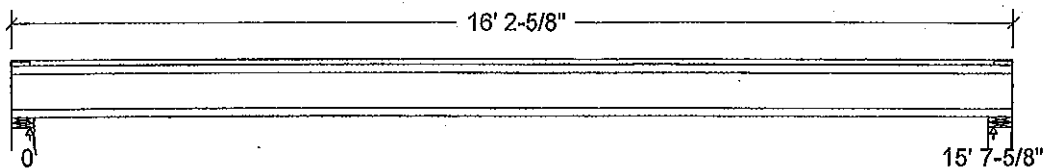
PROJECT  
J1 2ND FLOOR.wwb

## Design Check Calculation Sheet Nordic Sizer - Canada 7.2

### Loads:

| Load  | Type | Distribution | Pat-tern | Location [ft]<br>Start End | Magnitude<br>Start End | Unit |
|-------|------|--------------|----------|----------------------------|------------------------|------|
| Load1 | Dead | Full Area    |          |                            | 20.00                  | psf  |
| Load2 | Live | Full Area    |          |                            | 40.00                  | psf  |

### Maximum Reactions (lbs) and Support Bearing (in):



|             |       |  |       |
|-------------|-------|--|-------|
| Unfactored: |       |  |       |
| Dead        | 156   |  | 156   |
| Live        | 313   |  | 313   |
| Factored:   |       |  |       |
| Total       | .664  |  | .664  |
| Bearing:    |       |  |       |
| Capacity    |       |  |       |
| Joist       | 1893  |  | 1893  |
| Support     | 7744  |  | 7744  |
| Des ratio   |       |  |       |
| Joist       | 0.35  |  | 0.35  |
| Support     | 0.09  |  | 0.09  |
| Load case   | #2    |  | #2    |
| Length      | 4-3/8 |  | 4-3/8 |
| Min req'd   | 1-3/4 |  | 1-3/4 |
| Stiffener   | No    |  | No    |
| KD          | 1.00  |  | 1.00  |
| KB support  | -     |  | -     |
| fcp sup     | 769   |  | 769   |
| Kzcp sup    | -     |  | -     |

Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

### Nordic 9-1/2" NI-40x Floor joist @ 12" o.c.

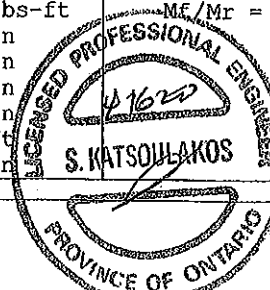
Supports: All - Lumber Wall, No.1/No.2

Total length: 16' 2-5/8"; Clear span: 15' 5-7/8"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section PASSES the design code check.

### Limit States Design using CSA O86-14 and Vibration Criterion:

| Criterion    | Analysis Value | Design Value | Unit   | Analysis/Design |
|--------------|----------------|--------------|--------|-----------------|
| Shear        | Vf = 664       | Vr = 1895    | lbs    | Vf/Vr = 0.35    |
| Moment (+)   | Mf = 2597      | Mr = 4824    | lbs-ft | Mf/Mr = 0.54    |
| Perm. Defl'n | 0.12 = < L/999 | 0.52 = L/360 | in     | 0.22            |
| Live Defl'n  | 0.23 = L/808   | 0.39 = L/480 | in     | 0.59            |
| Total Defl'n | 0.35 = L/539   | 0.78 = L/240 | in     | 0.45            |
| Bare Defl'n  | 0.27 = L/694   | 0.52 = L/360 | in     | 0.52            |
| Vibration    | Lmax = 15'-7.6 | Lv = 16'-8.5 | ft     | 0.94            |
| Defl'n       | = 0.034        | = 0.041      | in     | 0.81            |



DESIGN NO. TAM 6079 -20  
STRUCTURAL  
EXAMINATION ONLY

**Additional Data:**

| FACTORS: | f/E           | KD   | KH   | KZ | KL    | KT | KS | KN | LC# |
|----------|---------------|------|------|----|-------|----|----|----|-----|
| Vr       | 1895          | 1.00 | 1.00 | -  | -     | -  | -  | -  | #2  |
| Mr+      | 4824          | 1.00 | 1.00 | -  | 1.000 | -  | -  | -  | #2  |
| EI       | 218.1 million | -    | -    | -  | -     | -  | -  | -  | #2  |

**CRITICAL LOAD COMBINATIONS:**

Shear : LC #2 = 1.25D + 1.5L

Moment(+) : LC #2 = 1.25D + 1.5L

Deflection: LC #1 = 1.0D (permanent)

LC #2 = 1.0D + 1.0L (live)

LC #2 = 1.0D + 1.0L (total)

LC #2 = 1.0D + 1.0L (bare joist)

Bearing : Support 1 - LC #2 = 1.25D + 1.5L

Support 2 - LC #2 = 1.25D + 1.5L

Load Types: D=dead W=wind S=snow H=earth,groundwater E=earthquake  
L=live(use,occupancy) Ls=live(storage,equipment) f=fire

Load Patterns: s=S/2 L=L+Ls \_=no pattern load in this span

All Load Combinations (LCs) are listed in the Analysis output

**CALCULATIONS:**E<sub>I</sub>eff = 258.29 lb-in<sup>2</sup> K= 4.94e06 lbs

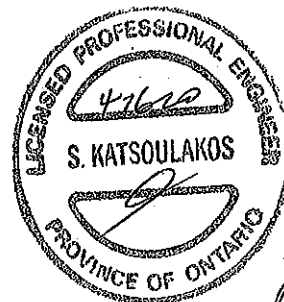
"Live" deflection is due to all non-dead loads (live, wind, snow...)

CONFORMS TO OBC 2012

AMENDED 2020

**Design Notes:**

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



DWG NO. YAW 6079 -20  
STRUCTURAL  
COMPONENT ONLY

# NORDIC STRUCTURES

COMPANY  
Apr. 9, 2020 10:02

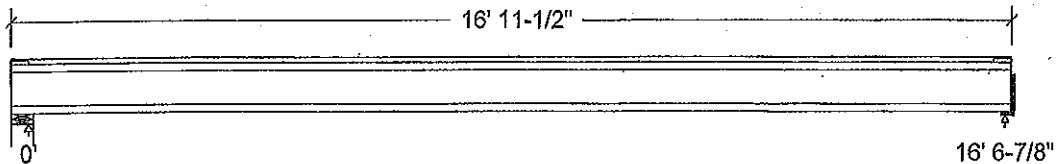
PROJECT  
J6 2ND FLOOR.wwb

## Design Check Calculation Sheet Nordic Sizer -- Canada 7.2

### Loads:

| Load  | Type | Distribution | Pat-tern | Location [ft]<br>Start End | Magnitude<br>Start End | Unit |
|-------|------|--------------|----------|----------------------------|------------------------|------|
| Load1 | Dead | Full Area    |          |                            | 20.00                  | psf  |
| Load2 | Live | Full Area    |          |                            | 40.00                  | psf  |

### Maximum Reactions (lbs) and Support Bearing (in):



|             |       |  |       |
|-------------|-------|--|-------|
| Unfactored: |       |  |       |
| Dead        | 166   |  | 166   |
| Live        | 331   |  | 331   |
| Factored:   |       |  |       |
| Total       | 704   |  | 704   |
| Bearing:    |       |  |       |
| Capacity    |       |  |       |
| Joist       | 1893  |  | 1893  |
| Support     | 10841 |  | -     |
| Des ratio   |       |  |       |
| Joist       | 0.37  |  | 0.37  |
| Support     | 0.06  |  | -     |
| Load case   | #2    |  | #2    |
| Length      | 4-3/8 |  | 2     |
| Min req'd   | 1-3/4 |  | 1-3/4 |
| Stiffener   | No    |  | No    |
| KD          | 1.00  |  | 1.00  |
| KB support  | -     |  | -     |
| fcp sup     | 769   |  | -     |
| Kzcp sup    | -     |  | -     |

Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

### Nordic 9-1/2" NI-80 Floor joist @ 12" o.c.

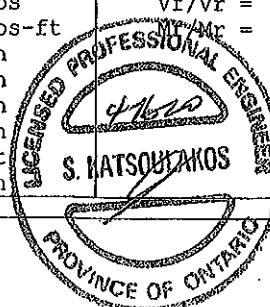
Supports: 1 - Lumber Wall, No.1/No.2; 2 - Hanger;

Total length: 16' 11-1/2"; Clear span: 16' 5-1/8"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section PASSES the design code check.

### Limit States Design using CSA O86-14 and Vibration Criterion:

| Criterion    | Analysis Value | Design Value | Unit   | Analysis/Design |
|--------------|----------------|--------------|--------|-----------------|
| Shear        | Vf = 704       | Vr = 1895    | lbs    | Vf/Vr = 0.37    |
| Moment(+)    | Mf = 2918      | Mr = 8958    | lbs-ft | Mf/Mr = 0.33    |
| Perm. Defl'n | 0.11 = < L/999 | 0.55 = L/360 | in     | 0.19            |
| Live Defl'n  | 0.21 = L/940   | 0.41 = L/480 | in     | 0.51            |
| Total Defl'n | 0.32 = L/626   | 0.83 = L/240 | in     | 0.38            |
| Bare Defl'n  | 0.24 = L/841   | 0.55 = L/360 | in     | 0.43            |
| Vibration    | Lmax = 16'-6.9 | Lv = 17'-9.5 | ft     | 0.93            |
| Defl'n       | = 0.031        | = 0.038      | in     | 0.80            |



OWB NO. 7AM 6080-20  
STRUCTURAL  
COMPONENT ONLY

**Additional Data:**

| FACTORS: | f/E           | KD   | KH   | KZ | KL    | KT | KS | KN | LC# |
|----------|---------------|------|------|----|-------|----|----|----|-----|
| Vr       | 1895          | 1.00 | 1.00 | -  | -     | -  | -  | -  | #2  |
| Mr+      | 8958          | 1.00 | 1.00 | -  | 1.000 | -  | -  | -  | #2  |
| EI       | 324.1 million | -    | -    | -  | -     | -  | -  | -  | #2  |

**CRITICAL LOAD COMBINATIONS:**

Shear : LC #2 = 1.25D + 1.5L

Moment(+) : LC #2 = 1.25D + 1.5L

Deflection: LC #1 = 1.0D (permanent)

LC #2 = 1.0D + 1.0L (live)

LC #2 = 1.0D + 1.0L (total)

LC #2 = 1.0D + 1.0L (bare joist)

Bearing : Support 1 - LC #2 = 1.25D + 1.5L

Support 2 - LC #2 = 1.25D + 1.5L

Load Types: D=dead W=wind S=snow H=earth,groundwater E=earthquake  
L=live(use,occupancy) Ls=live(storage,equipment) f=fire

Load Patterns: s=S/2 L=L+Ls =no pattern load in this span

All Load Combinations (LCs) are listed in the Analysis output

**CALCULATIONS:**E<sub>IEff</sub> = 367.27 lb-in<sup>2</sup> K= 4.94e06 lbs

"Live" deflection is due to all non-dead loads (live, wind, snow...)

CONFORMS TO OBC 2012

AMENDED 2020

**Design Notes:**

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



DWG NO. YAW 6080-20  
STRUCTURAL  
COMPONENT ONLY



Boise Cascade



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

PASSED

2ND FLR FRAMING\Dropped Beams\B13 DR(1726) (Dropped Beam)

Dry | 1 span | No cant.

February 10, 2020 11:38:52

BC CALC® Member Report

Build 7239

Job name:

File name: MOUNTAINASH 6 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B13 DR(1726)

City, Province, Postal Code:

Specifier:

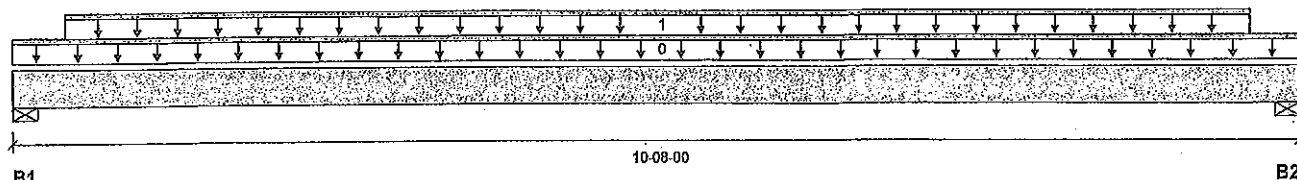
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 10-08-00

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

| Bearing | Live     | Dead    | Snow | Wind |
|---------|----------|---------|------|------|
| B1, 4"  | 1619 / 0 | 861 / 0 |      |      |
| B2, 4"  | 1618 / 0 | 861 / 0 |      |      |

## Load Summary

| Tag | Description   | Load Type         | Ref. | Start    | End      | Loc. | Live | Dead | Snow | Wind | Tributary |
|-----|---------------|-------------------|------|----------|----------|------|------|------|------|------|-----------|
| 0   | Self-Weight   | Unf. Lin. (lb/ft) | L    | 00-00-00 | 10-08-00 | Top  | 1.00 | 0.65 | 1.00 | 1.15 | 00-00-00  |
| 1   | Smoothed Load | Unf. Lin. (lb/ft) | L    | 00-05-04 | 10-02-12 | Top  | 313  | 156  |      |      | n/a       |

## Controls Summary

|                       | Factored Demand | Factored Resistance | Demand/Resistance | Case | Location |
|-----------------------|-----------------|---------------------|-------------------|------|----------|
| Pos. Moment           | 8926 ft-lbs     | 23220 ft-lbs        | 38.4%             | 1    | 05-08-12 |
| End Shear             | 3236 lbs        | 11571 lbs           | 28.0%             | 1    | 01-01-08 |
| Total Load Deflection | L/523 (0.232")  | n/a                 | 45.9%             | 4    | 04-11-04 |
| Live Load Deflection  | L/800 (0.152")  | n/a                 | 45.0%             | 5    | 04-11-04 |
| Max Defl.             | 0.232"          | n/a                 | n/a               | 4    | 04-11-04 |
| Span / Depth          | 12.8            |                     |                   |      |          |

## Bearing Supports

|    | Dim. (LxW)             | Demand   | Demand/Resistance Support | Demand/Resistance Member | Material        |
|----|------------------------|----------|---------------------------|--------------------------|-----------------|
| B1 | Wall/Plate 4" x 3-1/2" | 3504 lbs | 18.8%                     | 20.5%                    | Spruce-Pine-Fir |
| B2 | Wall/Plate 4" x 3-1/2" | 3503 lbs | 18.8%                     | 20.5%                    | Spruce-Pine-Fir |

## Notes

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

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

Calculations assume unbraced length of Top: 00-02-08, Bottom: 00-02-08.

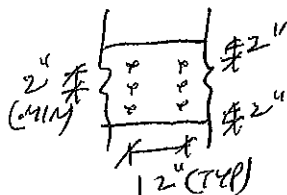
Resistance Factor phi has been applied to all presented results per CSA O86. AMENDED 2020

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012



PROVIDE 3 ROWS OF 3/2" ARDOX  
SPIRAL NAILS @ 12" O/C FOR  
MULTI-PLY NAILING. MAINTAIN  
A MIN. 2" LUMBER EDGE/END  
DISTANCE. DO NOT USE AIR NAILS



ENG NO. TAM6001-20  
STRUCTURAL  
COMPONENT ONLY

## 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®, AJST™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,



Boise Cascade

**Quadruple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Flush Beams\B10(i2111) (Flush Beam)**

Dry | 1 span | No cant.

February 10, 2020 11:38:52

BC CALC® Member Report

Build 7239

Job name:

File name: MOUNTAINASH 6 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B10(i2111)

City, Province, Postal Code:

Specifier:

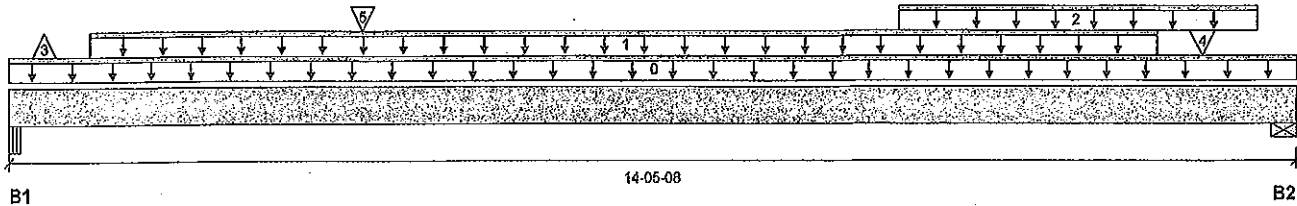
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 14-05-08

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

| Bearing    | Live       | Dead     | Snow | Wind |
|------------|------------|----------|------|------|
| B1, 4-1/2" | 2574 / 597 | 1313 / 0 |      |      |
| B2, 5-1/2" | 2883 / 0   | 1649 / 0 |      |      |

**Load Summary**

| Tag | Description   | Load Type         | Ref. | Start    | End      | Loc. | Live | Dead | Snow | Wind | Tributary |
|-----|---------------|-------------------|------|----------|----------|------|------|------|------|------|-----------|
| 0   | Self-Weight   | Unf. Lin. (lb/ft) | L    | 00-00-00 | 14-05-08 | Top  | 1.00 | 0.65 | 1.00 | 1.15 | 00-00-00  |
| 1   | Smoothed Load | Unf. Lin. (lb/ft) | L    | 00-11-00 | 12-11-00 | Top  | 353  | 176  |      |      | n/a       |
| 2   | STAIR         | Unf. Lin. (lb/ft) | L    | 10-00-00 | 14-00-00 | Top  | 120  | 60   |      |      | n/a       |
| 3   | J6(i1586)     | Conc. Pt. (lbs)   | L    | 00-05-00 | 00-05-00 | Top  | -597 | -282 |      |      | n/a       |
| 4   | J6(i2121)     | Conc. Pt. (lbs)   | L    | 13-05-00 | 13-05-00 | Top  | 338  | 169  |      |      | n/a       |
| 5   | B11(i2153)    | Conc. Pt. (lbs)   | L    | 03-11-10 | 03-11-10 | Top  | 305  | 406  |      |      | n/a       |

**Controls Summary**

|                       | Factored Demand | Factored Resistance | Demand/Resistance | Case | Location |
|-----------------------|-----------------|---------------------|-------------------|------|----------|
| Pos. Moment           | 21228 ft-lbs    | 48297 ft-lbs        | 44.0%             | 1    | 07-05-00 |
| End Shear             | 5935 lbs        | 23142 lbs           | 25.6%             | 1    | 13-02-08 |
| Total Load Deflection | L/317 (0.52")   | n/a                 | 75.6%             | 6    | 07-02-00 |
| Live Load Deflection  | L/508 (0.325")  | n/a                 | 70.9%             | 8    | 07-02-00 |
| Max Defl.             | 0.52"           | n/a                 | n/a               | 6    | 07-02-00 |
| Span / Depth          | 17.4            |                     |                   |      |          |

**Bearing Supports**

|    | Dim. (LxW)             | Demand   | Demand/Resistance Support | Demand/Resistance Member | Material        |
|----|------------------------|----------|---------------------------|--------------------------|-----------------|
| B1 | Beam 4-1/2" x 7"       | 5502 lbs | 28.4%                     | 14.3%                    | Spruce-Pine-Fir |
| B2 | Wall/Plate 5-1/2" x 7" | 6387 lbs | 27.0%                     | 13.6%                    | Spruce-Pine-Fir |

**Notes**

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

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

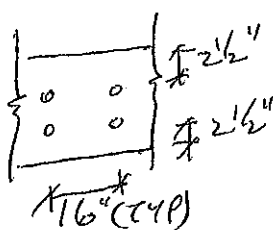
Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86. **AMENDED 2020**

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

**CONFORMS TO OBC 2012**

BOLT MULTI-PLY MEMBERS USING

2 ROWS 1/2" Ø A307 BOLTS

CLW WASHERS / NUTS @ 16" O.C.



UWG NO. TAM 6082-20

**STRUCTURAL COMPONENT ONLY Disclosure**

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

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

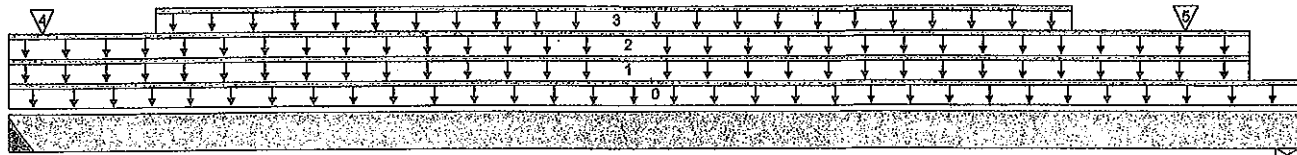
File name: MOUNTAINASH 6 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B11(i2153)

Specifier:

Designer:

Company:



B1

07-06-02

B2

Total Horizontal Product Length = 07-06-02

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

| Bearing    | Live    | Dead    | Snow | Wind |
|------------|---------|---------|------|------|
| B1, 2"     | 307 / 0 | 409 / 0 |      |      |
| B2, 3-3/4" | 290 / 0 | 393 / 0 |      |      |

### Load Summary

| Tag | Description        | Load Type         | Ref. | Start    | End      | Loc. | Live | Dead | Snow | Wind | Tributary |
|-----|--------------------|-------------------|------|----------|----------|------|------|------|------|------|-----------|
| 0   | Self-Weight        | Unf. Lin. (lb/ft) | L    | 00-00-00 | 07-06-02 | Top  | 1.00 | 0.85 | 1.00 | 1.15 | 00-00-00  |
| 1   | WALL               | Unf. Lin. (lb/ft) | L    | 00-00-00 | 07-02-06 | Top  |      | 60   |      |      | n/a       |
| 2   | FC2 Floor Material | Unf. Lin. (lb/ft) | L    | 00-00-00 | 07-02-06 | Top  | 6    | 3    |      |      | n/a       |
| 3   | Smoothed Load      | Unf. Lin. (lb/ft) | L    | 00-10-06 | 06-02-06 | Top  | 76   | 38   |      |      | n/a       |
| 4   | J5(i1619)          | Conc. Pt. (lbs)   | L    | 00-02-06 | 00-02-06 | Top  | 70   | 35   |      |      | n/a       |
| 5   | J5(i1506)          | Conc. Pt. (lbs)   | L    | 06-10-06 | 06-10-06 | Top  | 77   | 39   |      |      | n/a       |

### Controls Summary

|                       | Factored Demand | Factored Resistance | Demand/Resistance | Case | Location |
|-----------------------|-----------------|---------------------|-------------------|------|----------|
| Pos. Moment           | 1645 ft-lbs     | 23220 ft-lbs        | 7.1%              | 1    | 03-11-06 |
| End Shear             | 744 lbs         | 11571 lbs           | 6.4%              | 1    | 06-04-14 |
| Total Load Deflection | L/999 (0.022")  | n/a                 | n/a               | 4    | 03-08-06 |
| Live Load Deflection  | L/999 (0.009")  | n/a                 | n/a               | 5    | 03-08-06 |
| Max Defl.             | 0.022"          | n/a                 | n/a               | 4    | 03-08-06 |
| Span / Depth          | 9.0             |                     |                   |      |          |

### Bearing Supports

|    | Dim. (LxW)                 | Demand  | Demand/Resistance Support | Demand/Resistance Member | Material        |
|----|----------------------------|---------|---------------------------|--------------------------|-----------------|
| B1 | Hanger 2" x 3-1/2"         | 972 lbs | n/a                       | 11.4%                    | Hanger          |
| B2 | Wall/Plate 3-3/4" x 3-1/2" | 926 lbs | 11.5%                     | 5.8%                     | Spruce-Pine-Fir |

### 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.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

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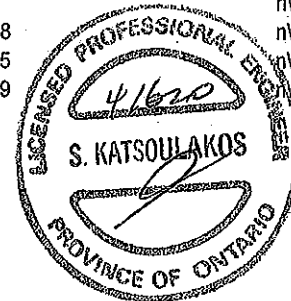
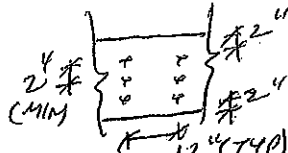
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

AMENDED 2020

PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 12" O/C FOR MULTI-PLY NAILING, MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



DWG NO. YAM 6083-20

STRUCTURAL COMPONENT ONLY

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BC CALC® Member Report

Build 7239

Job name:

File name: MOUNTAINASH 6 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B12(i1651)

City, Province, Postal Code:

Specifier:

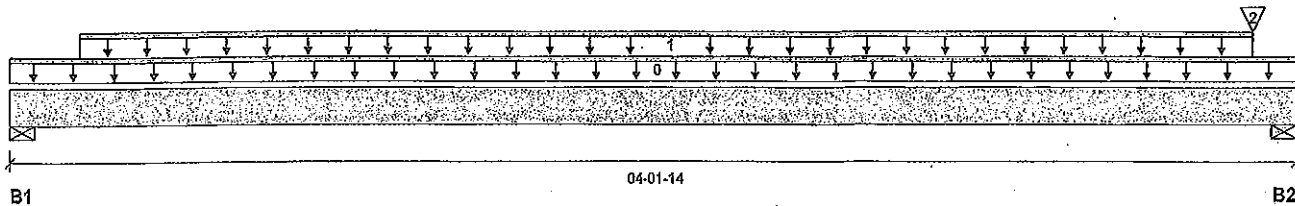
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 04-01-14

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

| Bearing    | Live   | Dead   | Snow | Wind |
|------------|--------|--------|------|------|
| B1, 5-1/2" | 52 / 0 | 36 / 0 |      |      |
| B2, 3-1/2" | 51 / 0 | 35 / 0 |      |      |

**Load Summary**

| Tag | Description        | Load Type         | Ref. | Start    | End      | Loc. | Live | Dead | Snow | Wind | Tributary |
|-----|--------------------|-------------------|------|----------|----------|------|------|------|------|------|-----------|
| 0   | Self-Weight        | Unf. Lin. (lb/ft) | L    | 00-00-00 | 04-01-14 | Top  | 1.00 | 0.65 | 1.00 | 1.15 | 00-00-00  |
| 1   | FC2 Floor Material | Unf. Lin. (lb/ft) | L    | 00-02-12 | 04-00-02 | Top  | 27   | 13   |      |      | n/a       |
| 2   | FC2 Floor Material | Conc. Pt. (lbs)   | L    | 04-00-02 | 04-00-02 | Top  | 2    | 1    |      |      | n/a       |

**Controls Summary**

|                       | Factored Demand | Factored Resistance | Demand/Resistance | Case | Location |
|-----------------------|-----------------|---------------------|-------------------|------|----------|
| Pos. Moment           | 98 ft-lbs       | 11610 ft-lbs        | 0.8%              | 1    | 02-01-15 |
| End Shear             | 57 lbs          | 5785 lbs            | 1.0%              | 1    | 01-03-00 |
| Total Load Deflection | L/999 (0.001")  | n/a                 | n/a               | 4    | 02-01-15 |
| Live Load Deflection  | L/999 (0")      | n/a                 | n/a               | 5    | 02-01-15 |
| Max Defl.             | 0.001"          | n/a                 | n/a               | 4    | 02-01-15 |
| Span / Depth          | 4.5             |                     |                   |      |          |

| Bearing Supports | Dim. (LxW)                 | Demand  | Demand/Resistance Support | Demand/Resistance Member | Material        |
|------------------|----------------------------|---------|---------------------------|--------------------------|-----------------|
| B1               | Wall/Plate 5-1/2" x 1-3/4" | 123 lbs | 2.1%                      | 1.0%                     | Spruce-Pine-Fir |
| B2               | Wall/Plate 3-1/2" x 1-3/4" | 121 lbs | 3.2%                      | 1.6%                     | Spruce-Pine-Fir |

**Notes**

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

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

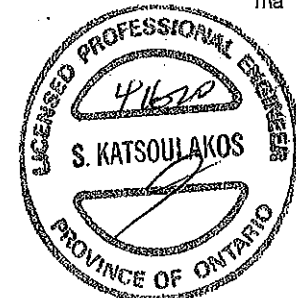
Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

**CONFORMS TO OBC 2012**
**AMENDED 2020**

 DWG NO. TAM 6004-20  
**STRUCTURAL**  
**COMPONENT ONLY**
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BC CALC® Member Report

Build 7239

Job name:

File name: MOUNTAINASH 6 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B14(i2151)

City, Province, Postal Code:

Specifier:

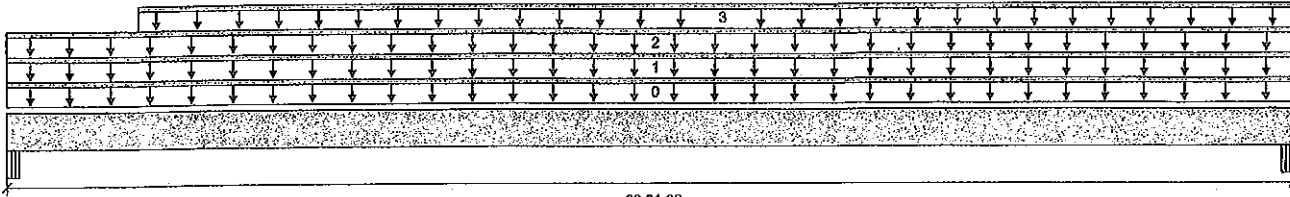
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



B1 Total Horizontal Product Length = 02-01-08 B2

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

| Bearing    | Live   | Dead    | Snow   | Wind |
|------------|--------|---------|--------|------|
| B1, 2-5/8" | 43 / 0 | 120 / 0 | 42 / 0 |      |
| B2, 4-1/8" | 55 / 0 | 138 / 0 | 47 / 0 |      |

### Load Summary

| Tag | Description        | Load Type         | Ref. | Start    | End      | Loc. | Live | Dead | Snow | Wind | Tributary |
|-----|--------------------|-------------------|------|----------|----------|------|------|------|------|------|-----------|
| 0   | Self-Weight        | Unf. Lin. (lb/ft) | L    | 00-00-00 | 02-01-08 | Top  | 1.00 | 0.65 | 1.00 | 1.15 | 00-00-00  |
| 1   | SNOW               | Unf. Lin. (lb/ft) | L    | 00-00-00 | 02-01-08 | Top  | 22   | 20   | 42   |      | n/a       |
| 2   | WALL               | Unf. Lin. (lb/ft) | L    | 00-00-00 | 02-01-08 | Top  |      | 80   |      |      | n/a       |
| 3   | FC2 Floor Material | Unf. Lin. (lb/ft) | L    | 00-02-10 | 02-01-08 | Top  | 27   | 13   |      |      | n/a       |

### Controls Summary

|                       | Factored Demand | Factored Resistance | Demand/Resistance | Case | Location |
|-----------------------|-----------------|---------------------|-------------------|------|----------|
| Pos. Moment           | 96 ft-lbs       | 23220 ft-lbs        | 0.4%              | 1    | 01-00-02 |
| End Shear             | 2 lbs           | 7521 lbs            | n/a               | 0    | 01-00-02 |
| Total Load Deflection | L/999 (0")      | n/a                 | n/a               | 35   | 01-00-02 |
| Max Defl.             | 0"              | n/a                 | n/a               | 35   | 01-00-02 |
| Span / Depth          | 2.1             |                     |                   |      |          |

| Bearing Supports | Dim. (LxW)      | Demand  | Demand/Resistance Support | Demand/Resistance Member | Material    |
|------------------|-----------------|---------|---------------------------|--------------------------|-------------|
| B1 Beam          | 2-5/8" x 3-1/2" | 168 lbs | 5.3%                      | 2.3%                     | Unspecified |
| B2 Beam          | 4-1/8" x 3-1/2" | 302 lbs | 3.9%                      | 1.7%                     | Unspecified |

### Notes

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86. **AMENDED 2020**

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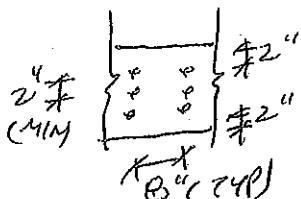
Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

PROVIDE 3 ROWS OF 3x" ARDOX SPIRAL NAILS @ 8" O/C FOR MULTI-PLY NAILING, MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



ENG NO. TAM 6085-20

STRUCTURAL COMPONENT ONLY

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BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

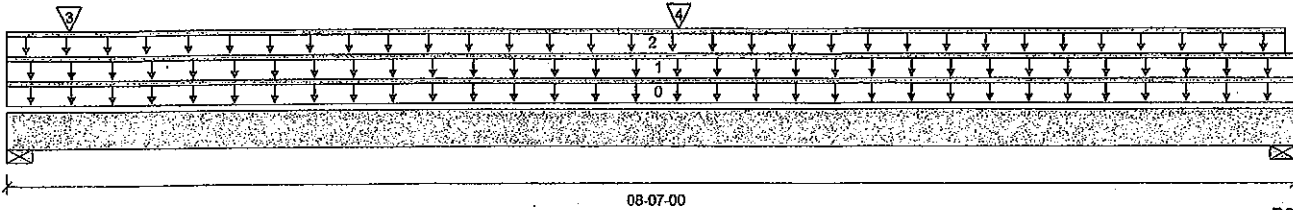
File name: MOUNTAINASH 6 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B16(i2154)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 08-07-00

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

| Bearing    | Live    | Dead    | Snow    | Wind |
|------------|---------|---------|---------|------|
| B1, 5-1/2" | 184 / 0 | 517 / 0 | 187 / 0 |      |
| B2, 5-1/2" | 120 / 0 | 452 / 0 | 65 / 0  |      |

### Load Summary

| Tag | Description        | Load Type         | Ref. | Start    | End      | Loc. | Live | Dead | Snow | Wind | Tributary |
|-----|--------------------|-------------------|------|----------|----------|------|------|------|------|------|-----------|
| 0   | Self-Weight        | Unf. Lin. (lb/ft) | L    | 00-00-00 | 08-07-00 | Top  | 10   |      |      |      | 00-00-00  |
| 1   | FC2 Floor Material | Unf. Lin. (lb/ft) | L    | 00-00-00 | 08-07-00 | Top  | 20   | 10   |      |      | n/a       |
| 2   | WALL               | Unf. Lin. (lb/ft) | L    | 00-00-00 | 08-06-01 | Top  | 80   |      |      |      | n/a       |
| 3   | WINDOW             | Conc. Pt. (lbs)   | L    | 00-05-00 | 00-05-00 | Top  | 66   | 60   | 126  |      | n/a       |
| 4   | WINDOW             | Conc. Pt. (lbs)   | L    | 04-05-00 | 04-05-00 | Top  | 66   | 60   | 126  |      | n/a       |

### Controls Summary

|                       | Factored Demand | Factored Resistance | Demand/Resistance | Case | Location |
|-----------------------|-----------------|---------------------|-------------------|------|----------|
| Pos. Moment           | 1221 ft-lbs     | 15093 ft-lbs        | 8.1%              | 0    | 04-05-00 |
| End Shear             | 468 lbs         | 7521 lbs            | 6.2%              | 0    | 07-04-00 |
| Total Load Deflection | L/999 (0.028")  | n/a                 | n/a               | 35   | 04-03-13 |
| Live Load Deflection  | L/999 (0.01")   | n/a                 | n/a               | 51   | 04-03-13 |
| Max Defl.             | 0.028"          | n/a                 | n/a               | 35   | 04-03-13 |
| Span / Depth          | 9.8             |                     |                   |      |          |

### Bearing Supports

|    | Dim. (LxW)                 | Demand  | Demand/Resistance Support | Demand/Resistance Member | Material        |
|----|----------------------------|---------|---------------------------|--------------------------|-----------------|
| B1 | Wall/Plate 5-1/2" x 3-1/2" | 723 lbs | 9.4%                      | 4.7%                     | Spruce-Pine-Fir |
| B2 | Wall/Plate 5-1/2" x 3-1/2" | 633 lbs | 8.2%                      | 4.1%                     | Spruce-Pine-Fir |

### Notes

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86.

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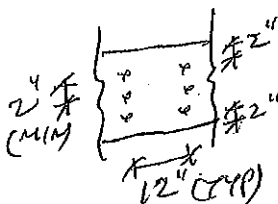
Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

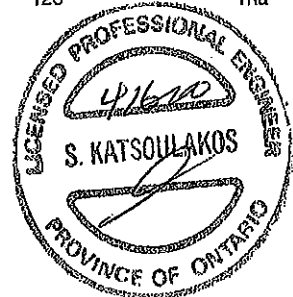
Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 12" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



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DWG NO. TAM 6086-20  
STRUCTURAL

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

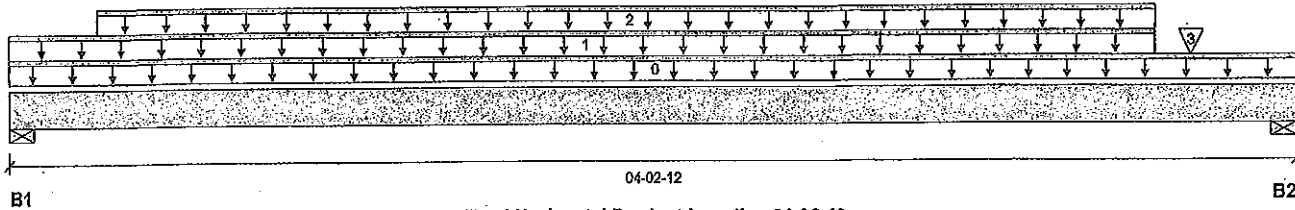
File name: MOUNTAINASH 6 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B8(i2152)

Specifier:

Designer:

Company:



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

| Bearing    | Live   | Dead    | Snow | Wind |
|------------|--------|---------|------|------|
| B1, 3-1/2" | 41 / 0 | 144 / 0 |      |      |
| B2, 5-1/2" | 36 / 0 | 143 / 0 |      |      |

### Load Summary

| Tag | Description        | Load Type         | Ref. | Start    | End      | Loc. | Live | Dead | Snow | Wind | Tributary |
|-----|--------------------|-------------------|------|----------|----------|------|------|------|------|------|-----------|
| 0   | Self-Weight        | Unf. Lin. (lb/ft) | L    | 00-00-00 | 04-02-12 | Top  | 10   | 10   |      |      | 00-00-00  |
| 1   | FC2 Floor Material | Unf. Lin. (lb/ft) | L    | 00-00-00 | 03-09-04 | Top  | 20   | 10   |      |      | n/a       |
| 2   | WALL               | Unf. Lin. (lb/ft) | L    | 00-03-08 | 03-09-04 | Top  |      | 60   |      |      | n/a       |
| 3   | FC2 Floor Material | Conc. Pt. (lbs)   | L    | 03-10-10 | 03-10-10 | Top  | 1    |      |      |      | n/a       |

### Controls Summary

|                       | Factored Demand | Factored Resistance | Demand/Resistance | Case | Location |
|-----------------------|-----------------|---------------------|-------------------|------|----------|
| Pos. Moment           | 181 ft-lbs      | 15093 ft-lbs        | 1.2%              | 0    | 02-00-06 |
| End Shear             | 106 lbs         | 7521 lbs            | 1.4%              | 0    | 01-01-00 |
| Total Load Deflection | L/999 (0.001")  | n/a                 | n/a               | 4    | 02-00-06 |
| Live Load Deflection  | L/999 (0")      | n/a                 | n/a               | 5    | 02-00-06 |
| Max Defl.             | 0.001"          | n/a                 | n/a               | 4    | 02-00-06 |
| Span / Depth          | 4.6             |                     |                   |      |          |

### Bearing Supports

|    | Dim. (LxW)                 | Demand  | Demand/Resistance Support | Demand/Resistance Member | Material        |
|----|----------------------------|---------|---------------------------|--------------------------|-----------------|
| B1 | Wall/Plate 3-1/2" x 3-1/2" | 202 lbs | 4.1%                      | 2.1%                     | Spruce-Pine-Fir |
| B2 | Wall/Plate 5-1/2" x 3-1/2" | 201 lbs | 2.6%                      | 1.3%                     | Spruce-Pine-Fir |

### Notes

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86.

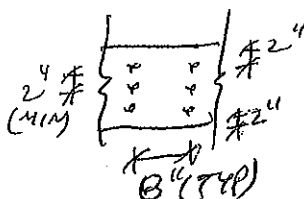
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

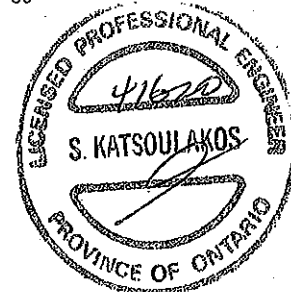
Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3/8\"/>



ENG NO. YAM 6087-20  
STRUCTURAL  
COMPONENT ONLY

### Disclosure

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

BC CALC® Member Report

Build 7239

Job name:

**Address:**

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

Dry | 2 spans | No cant.

February 10, 2020 11:38:52

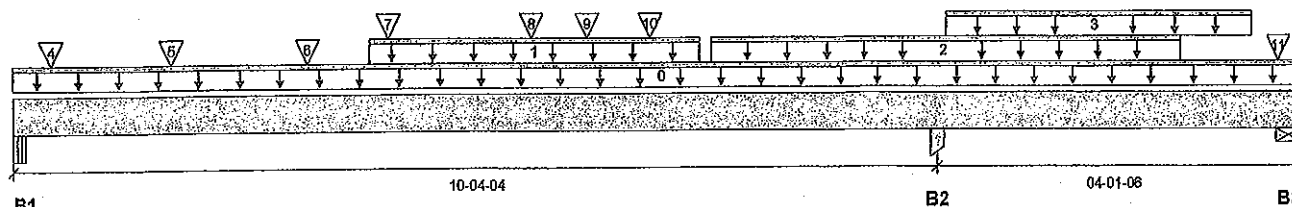
File name: MOUNTAINASH 6 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B1(i1955)

**Specifier:**

Designer:

Company:



**Total Horizontal Product Length = 14-05-10**

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

| Bearing    | Live        | Dead     | Snow | Wind |
|------------|-------------|----------|------|------|
| B1, 5-1/4" | 3149 / 27   | 1723 / 0 |      |      |
| B2, 4-1/2" | 5407 / 0    | 2876 / 0 |      |      |
| B3, 5-1/2" | 4368 / 1288 | 3245 / 0 |      |      |

### Load Summary

| Load Summary |               |                   |      |          |          |      | Live | Dead | Snow | Wind | Tributary |
|--------------|---------------|-------------------|------|----------|----------|------|------|------|------|------|-----------|
| Tag          | Description   | Load Type         | Ref. | Start    | End      | Loc. | 1.00 | 0.85 | 1.00 | 1.15 |           |
| 0            | Self-Weight   | Unf. Lin. (lb/ft) | L    | 00-00-00 | 14-05-10 | Top  |      | 10   |      |      | 00-00-00  |
| 1            | STAIR         | Unf. Lin. (lb/ft) | L    | 03-11-10 | 07-07-10 | Top  | 240  | 120  |      |      | n/a       |
| 2            | Smoothed Load | Unf. Lin. (lb/ft) | L    | 07-09-02 | 13-01-02 | Top  | 323  | 161  |      |      | n/a       |
| 3            | STAIR         | Unf. Lin. (lb/ft) | L    | 10-05-06 | 13-10-10 | Top  | 240  | 120  |      |      | n/a       |
| 4            | J2(i2040)     | Conc. Pt. (lbs)   | L    | 00-05-02 | 00-05-02 | Top  | 1454 | 789  |      |      | n/a       |
| 5            | J2(i2099)     | Conc. Pt. (lbs)   | L    | 01-09-02 | 01-09-02 | Top  | 431  | 215  |      |      | n/a       |
| 6            | -             | Conc. Pt. (lbs)   | L    | 03-03-04 | 03-03-04 | Top  | 522  | 261  |      |      | n/a       |
| 7            | -             | Conc. Pt. (lbs)   | L    | 04-02-02 | 04-02-02 | Top  | 710  | 417  |      |      | n/a       |
| 8            | J2(i2016)     | Conc. Pt. (lbs)   | L    | 05-09-02 | 05-09-02 | Top  | 295  | 147  |      |      | n/a       |
| 9            | J2DJ(i2081)   | Conc. Pt. (lbs)   | L    | 06-04-10 | 06-04-10 | Top  | 255  | 127  |      |      | n/a       |
| 10           | J2(i1959)     | Conc. Pt. (lbs)   | L    | 07-01-02 | 07-01-02 | Top  | 332  | 166  |      |      | n/a       |
| 11           | -             | Conc. Pt. (lbs)   | L    | 14-02-06 | 14-02-06 | Top  | 3733 | 3598 |      |      | n/a       |

### Controls Summary

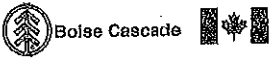
| <b>Controls Summary</b> | <b>Factored Demand</b> | <b>Factored Resistance</b> | <b>Demand/Resistance</b> | <b>Case</b> | <b>Location</b> |
|-------------------------|------------------------|----------------------------|--------------------------|-------------|-----------------|
| Pos. Moment             | 9867 ft-lbs            | 23220 ft-lbs               | 42.5%                    | 2           | 04-05-02        |
| Neg. Moment             | -10975 ft-lbs          | -23220 ft-lbs              | 47.3%                    | 1           | 10-04-04        |
| End Shear               | 3496 lbs               | 11571 lbs                  | 30.2%                    | 2           | 01-02-12        |
| Cont. Shear             | 5922 lbs               | 11571 lbs                  | 51.2%                    | 1           | 09-04-08        |
| Total Load Deflection   | L/584 (0.205")         | n/a                        | 41.1%                    | 9           | 04-11-02        |
| Live Load Deflection    | L/886 (0.135")         | n/a                        | 40.7%                    | 12          | 04-11-02        |
| Total Neg. Defl.        | L/999 (-0.021")        | n/a                        | n/a                      | 9           | 11-10-09        |
| Max Defl.               | 0.205"                 | n/a                        | n/a                      | 9           | 04-11-02        |
| Span / Depth            | 12.6                   |                            |                          |             |                 |



DWR NO. FAM 6088-20  
STRUCTURAL  
COMPONENT ONLY

## Bearing Supports

| Bearing Supports |            | Dim. (LxW)      | Demand    | Demand/<br>Resistance<br>Support | Demand/<br>Resistance<br>Member | Material        |
|------------------|------------|-----------------|-----------|----------------------------------|---------------------------------|-----------------|
| B1               | Beam       | 5-1/4" x 3-1/2" | 6878 lbs  | 70.1%                            | 30.7%                           | Unspecified     |
| B2               | Column     | 4-1/2" x 3-1/2" | 11705 lbs | 91.5%                            | 60.9%                           | Unspecified     |
| B3               | Wall/Plate | 5-1/2" x 3-1/2" | 10807 lbs | 89.6%                            | 45.2%                           | Spruce-Pine-Fir |



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

PASSED

1ST FLR FRAMING\Flush Beams\B1(i1955) (Flush Beam)

Dry | 2 spans | No cant.

February 10, 2020 11:38:52

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File name: MOUNTAINASH 6 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B1(i1955)

Specifier:

Designer:

Company:

## Notes

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86.

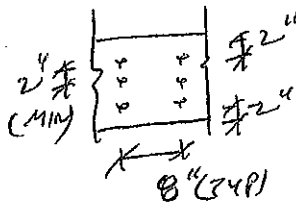
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3/4" ARDOX  
SPIRAL NAILS @ 8" O/C FOR  
MULTI-PLY NAILING. MAINTAIN  
A MIN. 2" LUMBER EDGE/END  
DISTANCE. DO NOT USE AIR NAILS

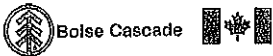


DWG NO. YAM 6000-20  
STRUCTURAL  
COMPONENT ONLY

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

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B2(I1994) (Flush Beam)**

Dry | 1 span | No cant.

February 10, 2020 11:38:52

BC CALC® Member Report

Build 7239

Job name:

File name: MOUNTAINASH 6-EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B2(I1994)

City, Province, Postal Code:

Specifier:

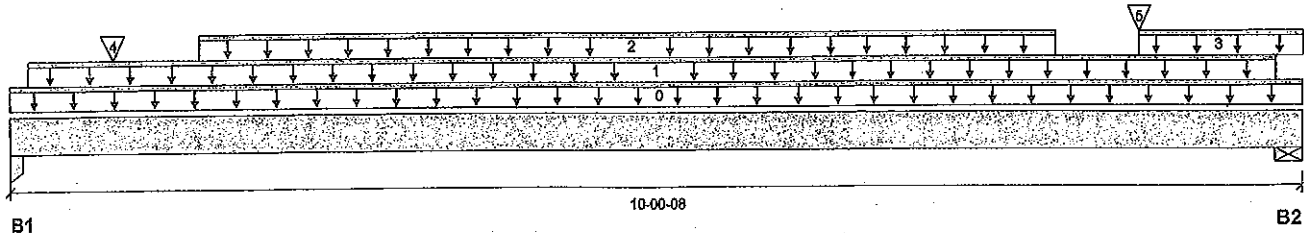
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 10-00-08

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

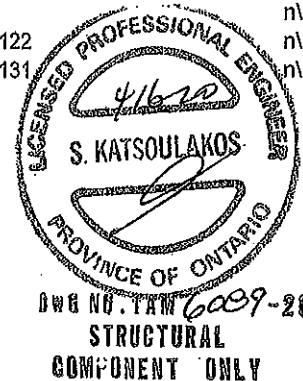
| Bearing    | Live    | Dead    | Snow | Wind |
|------------|---------|---------|------|------|
| B1, 1-3/4" | 985 / 0 | 834 / 0 |      |      |
| B2, 1-7/8" | 942 / 0 | 810 / 0 |      |      |

**Load Summary**

| Tag | Description        | Load Type         | Ref. | Start    | End      | Loc. | Live<br>1.00 | Dead<br>0.65 | Snow<br>1.00 | Wind<br>1.15 | Tributary |
|-----|--------------------|-------------------|------|----------|----------|------|--------------|--------------|--------------|--------------|-----------|
| 0   | Self-Weight        | Unf. Lin. (lb/ft) | L    | 00-00-00 | 10-00-08 | Top  |              | 10           |              |              | 00-00-00  |
| 1   | WALL               | Unf. Lin. (lb/ft) | L    | 00-01-12 | 09-10-02 | Top  |              | 60           |              |              | n/a       |
| 2   | Smoothed Load      | Unf. Lin. (lb/ft) | L    | 01-05-10 | 08-01-10 | Top  | 210          | 104          |              |              | n/a       |
| 3   | FC1 Floor Material | Unf. Lin. (lb/ft) | L    | 08-09-10 | 10-00-08 | Top  | 22           |              |              |              | n/a       |
| 4   | J4(I1985)          | Conc. Pt. (lbs)   | L    | 00-09-10 | 00-09-10 | Top  | 244          | 122          |              |              | n/a       |
| 5   | J4(I1973)          | Conc. Pt. (lbs)   | L    | 08-09-10 | 08-09-10 | Top  | 262          | 131          |              |              | n/a       |

**Controls Summary**

|                       | Factored Demand | Factored Resistance | Demand/Resistance | Case | Location |
|-----------------------|-----------------|---------------------|-------------------|------|----------|
| Pos. Moment           | 6498 ft-lbs     | 23220 ft-lbs        | 28.0%             | 1    | 04-09-10 |
| End Shear             | 2370 lbs        | 11571 lbs           | 20.5%             | 1    | 09-01-02 |
| Total Load Deflection | L/728 (0.163")  | n/a                 | 33.0%             | 4    | 05-00-10 |
| Live Load Deflection  | L/999 (0.089")  | n/a                 | n/a               | 5    | 05-00-10 |
| Max Defl.             | 0.163"          | n/a                 | n/a               | 4    | 05-00-10 |
| Span / Depth          | 12.5            |                     |                   |      |          |

**Bearing Supports**

|    | Dim. (LxW)                 | Demand   | Demand/Resistance Support | Demand/Resistance Member | Material        |
|----|----------------------------|----------|---------------------------|--------------------------|-----------------|
| B1 | Column 1-3/4" x 3-1/2"     | 2520 lbs | 50.7%                     | 33.7%                    | Unspecified     |
| B2 | Wall/Plate 1-7/8" x 3-1/2" | 2426 lbs | 60.1%                     | 30.3%                    | Spruce-Pine-Fir |

**Notes**

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86. **AMENDED 2020**

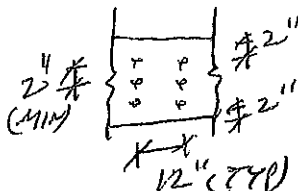
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

**CONFORMS TO OBC 2012**

PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 12" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS

**Disclosure**

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BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

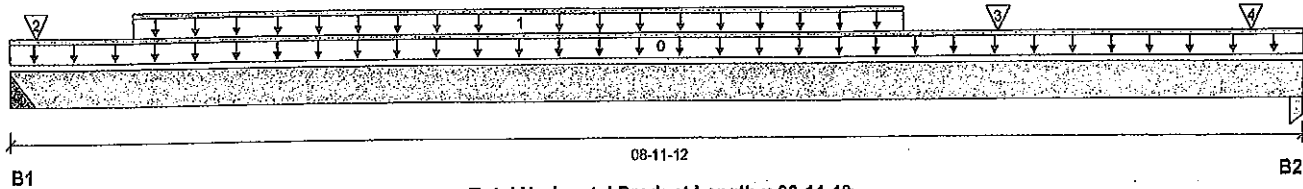
File name: MOUNTAINASH 6 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B3(i1931)

Specifier:

Designer:

Company:



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

| Bearing    | Live    | Dead    | Snow | Wind |
|------------|---------|---------|------|------|
| B1, 2"     | 358 / 0 | 222 / 0 |      |      |
| B2, 3-1/2" | 810 / 0 | 999 / 0 |      |      |

### Load Summary

| Tag | Description   | Load Type         | Ref. | Start    | End      | Loc. | Live<br>1.00 | Dead<br>0.65 | Snow<br>1.00 | Wind<br>1.15 | Tributary |
|-----|---------------|-------------------|------|----------|----------|------|--------------|--------------|--------------|--------------|-----------|
| 0   | Self-Weight   | Unf. Lin. (lb/ft) | L    | 00-00-00 | 08-11-12 | Top  |              | 10           |              |              | 00-00-00  |
| 1   | Smoothed Load | Unf. Lin. (lb/ft) | L    | 00-10-04 | 06-02-04 | Top  | 80           | 40           |              |              | n/a       |
| 2   | J7(i2069)     | Conc. Pt. (lbs)   | L    | 00-02-04 | 00-02-04 | Top  | 67           | 34           |              |              | n/a       |
| 3   | J7(i2079)     | Conc. Pt. (lbs)   | L    | 06-10-04 | 06-10-04 | Top  | 108          | 54           |              |              | n/a       |
| 4   | -             | Conc. Pt. (lbs)   | L    | 08-07-07 | 08-07-07 | Top  | 559          | 830          |              |              | n/a       |

### Controls Summary

|                       | Factored Demand | Factored Resistance | Demand/Resistance | Case | Location |
|-----------------------|-----------------|---------------------|-------------------|------|----------|
| Pos. Moment           | 1714 ft-lbs     | 23220 ft-lbs        | 7.4%              | 1    | 04-02-04 |
| End Shear             | 706 lbs         | 11571 lbs           | 6.1%              | 1    | 07-10-12 |
| Total Load Deflection | L/999 (0.032")  | n/a                 | n/a               | 4    | 04-04-04 |
| Live Load Deflection  | L/999 (0.02")   | n/a                 | n/a               | 5    | 04-04-04 |
| Max Defl.             | 0.032"          | n/a                 | n/a               | 4    | 04-04-04 |
| Span / Depth          | 10.9            |                     |                   |      |          |

### Bearing Supports

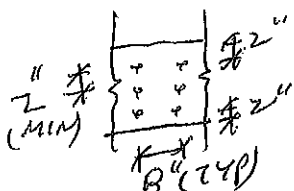
|    | Dim. (LxW)             | Demand   | Demand/Resistance Support | Demand/Resistance Member | Material    |
|----|------------------------|----------|---------------------------|--------------------------|-------------|
| B1 | Hanger 2" x 3-1/2"     | 813 lbs  | n/a                       | 9.5%                     | Hanger      |
| B2 | Column 3-1/2" x 3-1/2" | 2463 lbs | 24.8%                     | 16.5%                    | 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.  
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-00-00. **CONFORMS TO OBC 2012**  
 Hanger Manufacturer: Unassigned  
 Resistance Factor phi has been applied to all presented results per CSA O86. **AMENDED 2020**  
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.  
 Design based on Dry Service Condition.  
 Importance Factor : Normal Part code : Part 9



PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 8" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS

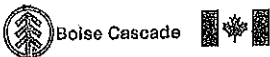


OWG NO. YAW 6090-20  
**STRUCTURAL COMPONENT ONLY**

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



**Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP**  
**1ST FLR FRAMING\Flush Beams\B4(I2084) (Flush Beam)**

**PASSED**

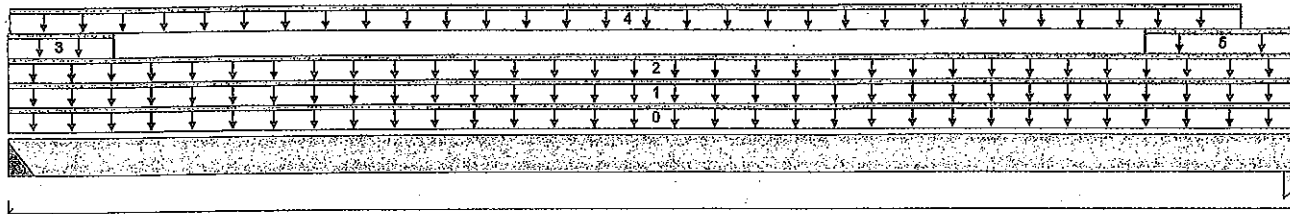
BC CALC® Member Report  
 Build 7239  
 Job name:  
 Address:  
 City, Province, Postal Code:  
 Customer:  
 Code reports:

Dry | 1 span | No cant.

February 10, 2020 11:38:52

File name: MOUNTAINASH 6 EL 1.mmdl  
 Description: 1ST FLR FRAMING\Flush Beams\B4(I2084)  
 Specifier:  
 Designer:  
 Company:

CCMC 12472-R



B1

Total Horizontal Product Length = 06-05-00

B2

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

| Bearing    | Live    | Dead    | Snow | Wind |
|------------|---------|---------|------|------|
| B1, 2"     | 344 / 0 | 618 / 0 |      |      |
| B2, 3-1/2" | 167 / 0 | 496 / 0 |      |      |

**Load Summary**

| Tag | Description        | Load Type         | Ref. | Start    | End      | Loc. | Live<br>1.00 | Dead<br>0.65 | Snow<br>1.00 | Wind<br>1.15 | Tributary |
|-----|--------------------|-------------------|------|----------|----------|------|--------------|--------------|--------------|--------------|-----------|
| 0   | Self-Weight        | Unf. Lin. (lb/ft) | L    | 00-00-00 | 06-05-00 | Top  |              | 5            |              |              | 00-00-00  |
| 1   | 3(I760)            | Unf. Lin. (lb/ft) | L    | 00-00-00 | 06-05-00 | Top  |              | 81           |              |              | n/a       |
| 2   | FC1 Floor Material | Unf. Lin. (lb/ft) | L    | 00-00-00 | 06-05-00 | Top  | 19           | 9            |              |              | n/a       |
| 3   | 3(I760)            | Unf. Lin. (lb/ft) | L    | 00-00-00 | 00-06-06 | Top  | 427          | 536          |              |              | n/a       |
| 4   | 3(I760)            | Unf. Lin. (lb/ft) | L    | 00-00-02 | 06-01-08 | Top  | 20           | 12           |              |              | n/a       |
| 5   | 3(I760)            | Unf. Lin. (lb/ft) | L    | 05-08-00 | 06-05-00 | Top  | 53           | 192          |              |              | n/a       |

| Controls Summary      | Factored Demand | Factored Resistance | Demand/Resistance | Case | Location |
|-----------------------|-----------------|---------------------|-------------------|------|----------|
| Pos. Moment           | 748 ft-lbs      | 7546 ft-lbs         | 9.9%              | 0    | 03-01-12 |
| End Shear             | 594 lbs         | 3761 lbs            | 15.8%             | 0    | 00-11-08 |
| Total Load Deflection | L/999 (0.02")   | n/a                 | n/a               | 4    | 03-01-12 |
| Live Load Deflection  | L/999 (0.006")  | n/a                 | n/a               | 5    | 03-00-15 |
| Max Defl.             | 0.02"           | n/a                 | n/a               | 4    | 03-01-12 |
| Span / Depth          | 7.7             |                     |                   |      |          |

| Bearing Supports | Dim. (LxW)      | Demand  | Demand/Resistance Support | Demand/Resistance Member | Material    |
|------------------|-----------------|---------|---------------------------|--------------------------|-------------|
| B1 Hanger        | 2" x 1-3/4"     | 865 lbs | n/a                       | 31.2%                    | Hanger      |
| B2 Column        | 3-1/2" x 1-3/4" | 694 lbs | 21.5%                     | 14.3%                    | 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.  
 Calculations assume member is fully braced.  
 Hanger Manufacturer: Unassigned  
 Resistance Factor phi has been applied to all presented results per CSA O86.  
 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.  
 Design based on Dry Service Condition.  
 Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AWENDED 2020



**STRUCTURAL COMPONENT ONLY 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®,

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

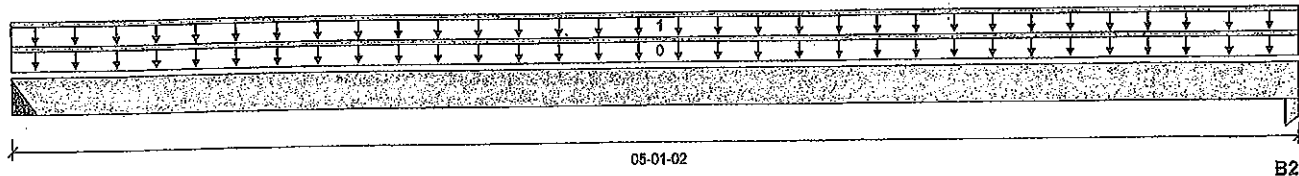
File name: MOUNTAINASH 6 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B5(i2038)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 05-01-02

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

| Bearing    | Live   | Dead   | Snow | Wind |
|------------|--------|--------|------|------|
| B1, 2"     | 44 / 0 | 34 / 0 |      |      |
| B2, 1-3/4" | 44 / 0 | 34 / 0 |      |      |

**Load Summary**

| Tag | Description        | Load Type         | Ref. | Start    | End      | Loc. | Live<br>1.00 | Dead<br>0.65 | Snow<br>1.00 | Wind<br>1.15 | Tributary |
|-----|--------------------|-------------------|------|----------|----------|------|--------------|--------------|--------------|--------------|-----------|
| 0   | Self-Weight        | Unf. Lin. (lb/ft) | L    | 00-00-00 | 05-01-02 | Top  |              | 5            |              |              | 00-00-00  |
| 1   | FC1 Floor Material | Unf. Lin. (lb/ft) | L    | 00-00-00 | 05-01-02 | Top  | 17           | 9            |              |              | n/a       |

**Controls Summary**

|                       | Factored Demand | Factored Resistance | Demand/Resistance | Case | Location |
|-----------------------|-----------------|---------------------|-------------------|------|----------|
| Pos. Moment           | 129 ft-lbs      | 11610 ft-lbs        | 1.1%              | 1    | 02-06-11 |
| End Shear             | 68 lbs          | 5785 lbs            | 1.2%              | 1    | 00-11-08 |
| Total Load Deflection | L/999 (0.002")  | n/a                 | n/a               | 4    | 02-06-11 |
| Live Load Deflection  | L/999 (0.001")  | n/a                 | n/a               | 5    | 02-06-11 |
| Max Defl.             | 0.002"          | n/a                 | n/a               | 4    | 02-06-11 |
| Span / Depth          | 6.2             |                     |                   |      |          |

**Bearing Supports**

|    | Dim. (LxW)             | Demand  | Demand/Resistance Support | Demand/Resistance Member | Material    |
|----|------------------------|---------|---------------------------|--------------------------|-------------|
| B1 | Hanger 2" x 1-3/4"     | 109 lbs | n/a                       | 2.6%                     | Hanger      |
| B2 | Column 1-3/4" x 1-3/4" | 108 lbs | 4.4%                      | 2.9%                     | Unspecified |


 DWG NO. YAM 6092-20  
**STRUCTURAL  
COMPONENT ONLY**
**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.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020

**Disclosure**

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BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

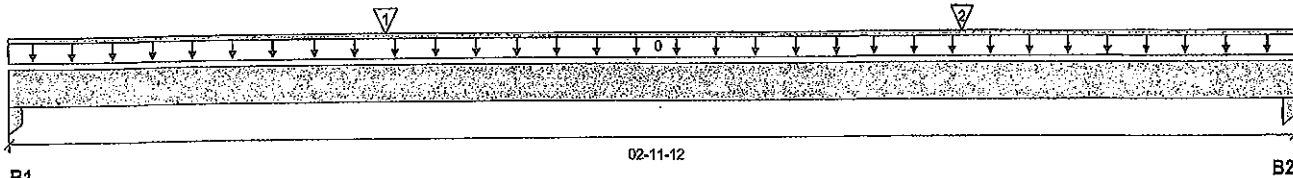
File name: MOUNTAINASH 6 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B6(i2036)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 02-11-12

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

| Bearing    | Live    | Dead   | Snow | Wind |
|------------|---------|--------|------|------|
| B1, 3-1/2" | 113 / 0 | 64 / 0 |      |      |
| B2, 3-1/2" | 119 / 0 | 67 / 0 |      |      |

**Load Summary**

| Tag | Description | Load Type         | Ref. | Start    | End      | Loc. | Live<br>1.00 | Dead<br>0.65 | Snow<br>1.00 | Wind<br>1.15 | Tributary |
|-----|-------------|-------------------|------|----------|----------|------|--------------|--------------|--------------|--------------|-----------|
| 0   | Self-Weight | Unf. Lin. (lb/ft) | L    | 00-00-00 | 02-11-12 | Top  |              | 5            |              |              | 00-00-00  |
| 1   | J6(i1935)   | Conc. Pt. (lbs)   | L    | 00-10-06 | 00-10-06 | Top  | 118          | 59           |              |              | n/a       |
| 2   | J6(i2002)   | Conc. Pt. (lbs)   | L    | 02-02-06 | 02-02-06 | Top  | 114          | 57           |              |              | n/a       |

**Controls Summary**

|                       | Factored Demand | Factored Resistance | Demand/Resistance | Case | Location |
|-----------------------|-----------------|---------------------|-------------------|------|----------|
| Pos. Moment           | 157 ft-lbs      | 11610 ft-lbs        | 1.3%              | 1    | 00-10-11 |
| End Shear             | 174 lbs         | 5785 lbs            | 3.0%              | 1    | 01-01-00 |
| Total Load Deflection | L/999 (0.001")  | n/a                 | n/a               | 4    | 01-05-14 |
| Live Load Deflection  | L/999 (0")      | n/a                 | n/a               | 5    | 01-05-14 |
| Max Defl.             | 0.001"          | n/a                 | n/a               | 4    | 01-05-14 |
| Span / Depth          | 3.2             |                     |                   |      |          |

**Bearing Supports**

|    | Dim. (LxW)             | Demand  | Demand/Resistance Support | Demand/Resistance Member | Material    |
|----|------------------------|---------|---------------------------|--------------------------|-------------|
| B1 | Column 3-1/2" x 1-3/4" | 249 lbs | 5.0%                      | 3.3%                     | Unspecified |
| B2 | Column 3-1/2" x 1-3/4" | 261 lbs | 5.3%                      | 3.5%                     | Unspecified |

**Notes**

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

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

Calculations assume member is fully braced.

 Resistance Factor phi has been applied to all presented results per CSA O86. **AMENDED 2020**

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

**CONFORMS TO OBC 2012**
**Disclosure**

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 AWS NO. TAM 6093-20  
**STRUCTURAL  
 COMPONENT ONLY**

BC CALC® Member Report

Build 7239

Job name:

File name: MOUNTAINASH 6 EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B7(I2063)

City, Province, Postal Code:

Specifier:

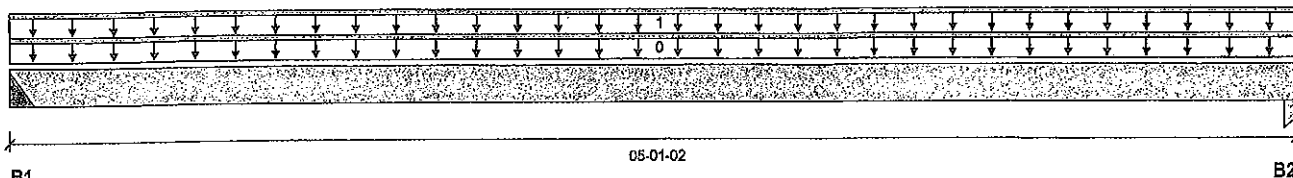
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 05-01-02

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

| Bearing    | Live   | Dead   | Snow | Wind |
|------------|--------|--------|------|------|
| B1, 2"     | 40 / 0 | 32 / 0 |      |      |
| B2, 1-3/4" | 40 / 0 | 32 / 0 |      |      |

**Load Summary**

| Tag | Description        | Load Type         | Ref. | Start    | End      | Loc. | Live | Dead | Snow | Wind | Tributary |
|-----|--------------------|-------------------|------|----------|----------|------|------|------|------|------|-----------|
| 0   | Self-Weight        | Unf. Lin. (lb/ft) | L    | 00-00-00 | 05-01-02 | Top  | 1.00 | 0.65 | 1.00 | 1.15 | 00-00-00  |
| 1   | FC1 Floor Material | Unf. Lin. (lb/ft) | L    | 00-00-00 | 05-01-02 | Top  | 16   | 8    |      |      | n/a       |

**Controls Summary**

|                       | Factored Demand | Factored Resistance | Demand/Resistance | Case | Location |
|-----------------------|-----------------|---------------------|-------------------|------|----------|
| Pos. Moment           | 118 ft-lbs      | 11610 ft-lbs        | 1.0%              | 1    | 02-06-11 |
| End Shear             | 63 lbs          | 5785 lbs            | 1.1%              | 1    | 00-11-08 |
| Total Load Deflection | L/999 (0.001")  | n/a                 | n/a               | 4    | 02-06-11 |
| Live Load Deflection  | L/999 (0.001")  | n/a                 | n/a               | 5    | 02-06-11 |
| Max Defl.             | 0.001"          | n/a                 | n/a               | 4    | 02-06-11 |
| Span / Depth          | 6.2             |                     |                   |      |          |

**Bearing Supports**

|    | Dim. (LxW)             | Demand  | Demand/Resistance Support | Demand/Resistance Member | Material    |
|----|------------------------|---------|---------------------------|--------------------------|-------------|
| B1 | Hanger 2" x 1-3/4"     | 100 lbs | n/a                       | 2.3%                     | Hanger      |
| B2 | Column 1-3/4" x 1-3/4" | 99 lbs  | 4.0%                      | 2.7%                     | 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.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020


 BWC NO. TAM 6094 -20  
**STRUCTURAL  
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BC CALC® Member Report

Dry | 1 span | No cant.

February 10, 2020 12:41:53

Build 7239

Job name:

File name: MOUNTAINASH 6 EL 2.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B14B(i2247)

City, Province, Postal Code: WATERDOWN

Specifier:

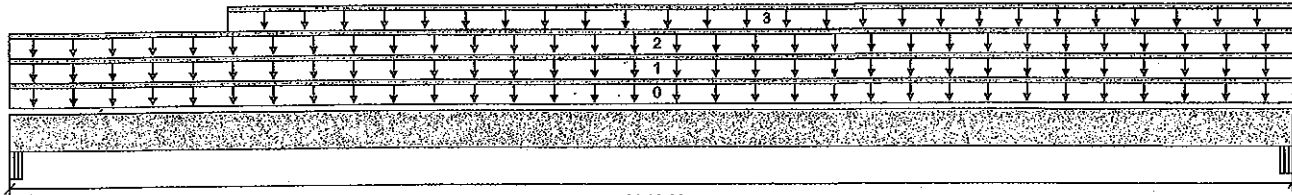
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



B1

Total Horizontal Product Length = 01-03-08

B2

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

| Bearing    | Live   | Dead   | Snow   | Wind |
|------------|--------|--------|--------|------|
| B1, 2-5/8" | 12 / 0 | 59 / 0 | 23 / 0 |      |
| B2, 5-1/4" | 17 / 0 | 83 / 0 | 32 / 0 |      |

### Load Summary

| Tag | Description        | Load Type         | Ref. | Start    | End      | Loc. | Live | Dead | Snow | Wind | Tributary |
|-----|--------------------|-------------------|------|----------|----------|------|------|------|------|------|-----------|
| 0   | Self-Weight        | Unf. Lin. (lb/ft) | L    | 00-00-00 | 01-03-08 | Top  | 1.00 | 0.65 | 1.00 | 1.15 | 00-00-00  |
| 1   | SNOW               | Unf. Lin. (lb/ft) | L    | 00-00-00 | 01-03-08 | Top  | 22   | 20   | 42   |      | n/a       |
| 2   | WALL               | Unf. Lin. (lb/ft) | L    | 00-00-00 | 01-03-08 | Top  |      | 80   |      |      | n/a       |
| 3   | FC2 Floor Material | Unf. Lin. (lb/ft) | L    | 00-02-10 | 01-03-08 | Top  | 1    |      |      |      | n/a       |

### Controls Summary

|              | Factored Demand | Factored Resistance | Demand/Resistance | Case | Location |
|--------------|-----------------|---------------------|-------------------|------|----------|
| Pos. Moment  | 11 ft-lbs       | 15093 ft-lbs        | n/a               | 0    | 00-06-07 |
| End Shear    | 49 lbs          | 7521 lbs            | 0.6%              | 0    | 00-02-10 |
| Span / Depth | 1.0             |                     |                   |      |          |

### Bearing Supports

|    | Dim. (LxW)           | Demand  | Demand/Resistance Support | Demand/Resistance Member | Material    |
|----|----------------------|---------|---------------------------|--------------------------|-------------|
| B1 | Beam 2-5/8" x 3-1/2" | 82 lbs  | 2.6%                      | 1.1%                     | Unspecified |
| B2 | Beam 5-1/4" x 3-1/2" | 116 lbs | 1.8%                      | 0.8%                     | Unspecified |

### Notes

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86.

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

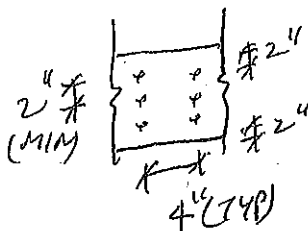
Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 4" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



OWN NO. TAM 6095 -20  
STRUCTURAL  
COMPONENT ONLY

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Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****1ST FLR FRAMING\Flush Beams\B1A(i2350) (Flush Beam)****PASSED**

BC CALC® Member Report

Dry | 1 span | No cant.

April 16, 2020 08:43:03

Build 7239

Job name:

File name: MOUNTAINASH 6 EL 1 DECK CONDITION.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B1A(i2350)

City, Province, Postal Code: WATERDOWN

Specifier:

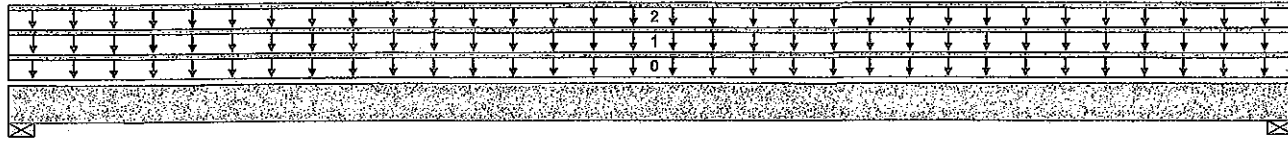
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



B1

03-01-00

B2

Total Horizontal Product Length = 03-01-00

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

| Bearing | Live   | Dead    | Snow | Wind |
|---------|--------|---------|------|------|
| B1, 3"  | 41 / 0 | 160 / 0 |      |      |
| B2, 3"  | 41 / 0 | 160 / 0 |      |      |

**Load Summary**

| Tag | Description        | Load Type         | Ref. | Start    | End      | Loc. | Live<br>1.00 | Dead<br>0.65 | Snow<br>1.00 | Wind<br>1.15 | Tributary |
|-----|--------------------|-------------------|------|----------|----------|------|--------------|--------------|--------------|--------------|-----------|
| 0   | Self-Weight        | Unf. Lin. (lb/ft) | L    | 00-00-00 | 03-01-00 | Top  |              | 10           |              |              | 00-00-00  |
| 1   | E3(i585)           | Unf. Lin. (lb/ft) | L    | 00-00-00 | 03-01-00 | Top  |              | 81           |              |              | n/a       |
| 2   | FC1 Floor Material | Unf. Lin. (lb/ft) | L    | 00-00-00 | 03-01-00 | Top  | 27           | 13           |              |              | n/a       |

**Controls Summary**

|                       | Factored Demand | Factored Resistance | Demand/Resistance | Case | Location |
|-----------------------|-----------------|---------------------|-------------------|------|----------|
| Pos. Moment           | 133 ft-lbs      | 15093 ft-lbs        | 0.9%              | 0    | 01-06-08 |
| End Shear             | 73 lbs          | 7521 lbs            | 1.0%              | 0    | 01-00-08 |
| Total Load Deflection | L/999 (0")      | n/a                 | n/a               | 4    | 01-06-08 |
| Live Load Deflection  | L/999 (0")      | n/a                 | n/a               | 5    | 01-06-08 |
| Max Defl.             | 0"              | n/a                 | n/a               | 4    | 01-06-08 |
| Span / Depth          | 3.4             |                     |                   |      |          |

**Bearing Supports**

|    | Dim. (LxW)             | Demand  | Demand/Resistance Support | Demand/Resistance Member | Material        |
|----|------------------------|---------|---------------------------|--------------------------|-----------------|
| B1 | Wall/Plate 3" x 3-1/2" | 224 lbs | 5.3%                      | 2.7%                     | Spruce-Pine-Fir |
| B2 | Wall/Plate 3" x 3-1/2" | 224 lbs | 5.3%                      | 2.7%                     | Spruce-Pine-Fir |

**Notes**

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

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

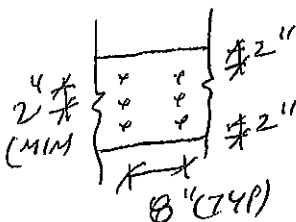
Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86. **AMENDED 2020**

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

**CONFORMS TO CBC 2012**

PROVIDE 3 ROWS OF 3/4" ARDOX  
SPIRAL NAILS @ 8" O/C FOR  
MULTI-PLY NAILING. MAINTAIN  
A MIN. 2" LUMBER EDGE/END  
DISTANCE. DO NOT USE AIR NAILS



OWN NO. TAM6096-20  
**STRUCTURAL  
COMPONENT ONLY**

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

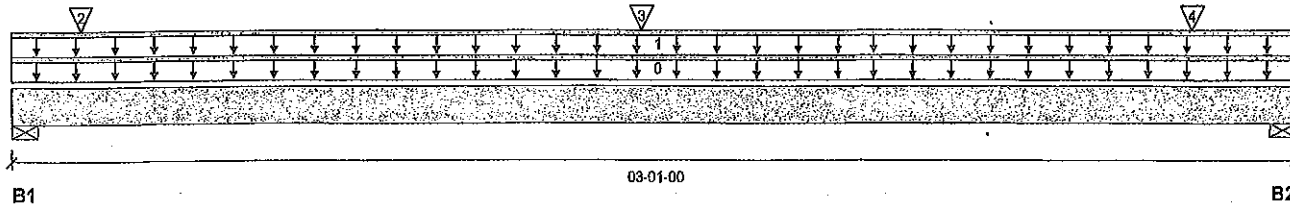
BC CALC® Member Report  
Build 7239

Dry | 1 span | No cant.

April 16, 2020 08:43:03

Job name:  
Address:  
City, Province, Postal Code: WATERDOWN  
Customer:  
Code reports: CCMC 12472-R

File name: MOUNTAINASH 6 EL 1 DECK CONDITION.mmdl  
Description: 1ST FLR FRAMING\Flush Beams\B1B(I2351)  
Specifier:  
Designer: AJ  
Company:



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

| Bearing | Live    | Dead    | Snow | Wind |
|---------|---------|---------|------|------|
| B1, 3"  | 938 / 0 | 610 / 0 |      |      |
| B2, 3"  | 928 / 0 | 604 / 0 |      |      |

### Load Summary

| Tag | Description | Load Type         | Ref. | Start    | End      | Loc. | Live<br>1.00 | Dead<br>0.65 | Snow<br>1.00 | Wind<br>1.15 | Tributary |
|-----|-------------|-------------------|------|----------|----------|------|--------------|--------------|--------------|--------------|-----------|
| 0   | Self-Weight | Unf. Lin. (lb/ft) | L    | 00-00-00 | 03-01-00 | Top  |              | 10           |              |              | 00-00-00  |
| 1   | E9(I588)    | Unf. Lin. (lb/ft) | L    | 00-00-00 | 03-01-00 | Top  | 270          | 216          |              |              | n/a       |
| 2   | J3(I2302)   | Conc. Pt. (lbs)   | L    | 00-02-00 | 00-02-00 | Top  | 345          | 173          |              |              | n/a       |
| 3   | J3(I2284)   | Conc. Pt. (lbs)   | L    | 01-06-00 | 01-06-00 | Top  | 345          | 173          |              |              | n/a       |
| 4   | J3(I2227)   | Conc. Pt. (lbs)   | L    | 02-10-00 | 02-10-00 | Top  | 345          | 173          |              |              | n/a       |

### Controls Summary

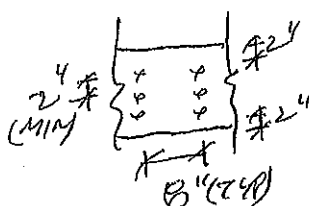
|                       | Factored Demand | Factored Resistance | Demand/Resistance | Case | Location |
|-----------------------|-----------------|---------------------|-------------------|------|----------|
| Pos. Moment           | 1125 ft-lbs     | 23220 ft-lbs        | 4.8%              | 1    | 01-06-00 |
| End Shear             | 721 lbs         | 11571 lbs           | 6.2%              | 1    | 01-00-08 |
| Total Load Deflection | L/999 (0.002")  | n/a                 | n/a               | 4    | 01-06-07 |
| Live Load Deflection  | L/999 (0.001")  | n/a                 | n/a               | 5    | 01-06-07 |
| Max Defl.             | 0.002"          | n/a                 | n/a               | 4    | 01-06-07 |
| Span / Depth          | 3.4             |                     |                   |      |          |

### Bearing Supports

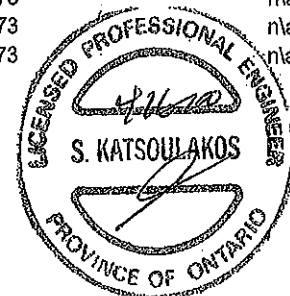
|    | Dim. (LxW)             | Demand   | Demand/Resistance Support | Demand/Resistance Member | Material        |
|----|------------------------|----------|---------------------------|--------------------------|-----------------|
| B1 | Wall/Plate 3" x 3-1/2" | 2170 lbs | 33.6%                     | 16.9%                    | Spruce-Pine-Fir |
| B2 | Wall/Plate 3" x 3-1/2" | 2147 lbs | 33.2%                     | 16.8%                    | Spruce-Pine-Fir |

### Notes

Design meets Code minimum (L/240) Total load deflection criteria.  
Design meets Code minimum (L/360) Live load deflection criteria.  
Calculations assume member is fully braced.  
Resistance Factor phi has been applied to all presented results per CSA O86. **AMENDED 2020**  
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.  
Design based on Dry Service Condition.  
Importance Factor : Normal Part code : Part 9



PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 8" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS

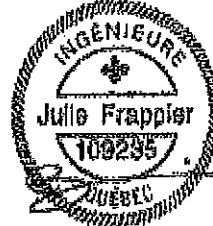


OWE NO. TAM6097-20  
STRUCTURAL  
COMPONENT ONLY

### 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®,



### Maximum Floor Spans

Live Load = 40 psf, Dead Load = 30 psf  
Simple Spans, L/480 Deflection Limit  
3/4" OSB G&N Sheathing

| Depth   | Series | Bare              |         |         |         | 1/2" Gypsum Ceiling |         |         |         |
|---------|--------|-------------------|---------|---------|---------|---------------------|---------|---------|---------|
|         |        | On Centre Spacing |         |         |         | On Centre Spacing   |         |         |         |
|         |        | 12"               | 16"     | 19.2"   | 24"     | 12"                 | 16"     | 19.2"   | 24"     |
| 9-1/2"  | NI-20  | 15'-7"            | 14'-2"  | 13'-4"  | 12'-4"  | 15'-7"              | 14'-2"  | 13'-4"  | 12'-4"  |
|         | NI-40x | 17'-0"            | 16'-0"  | 15'-1"  | 13'-11" | 17'-5"              | 16'-1"  | 15'-1"  | 13'-11" |
|         | NI-60  | 17'-2"            | 16'-2"  | 15'-5"  | 14'-3"  | 17'-6"              | 16'-5"  | 15'-5"  | 14'-3"  |
|         | NI-70  | 18'-0"            | 16'-11" | 16'-3"  | 15'-6"  | 18'-5"              | 17'-3"  | 16'-7"  | 15'-6"  |
|         | NI-80  | 18'-3"            | 17'-1"  | 16'-5"  | 15'-9"  | 18'-8"              | 17'-5"  | 16'-9"  | 15'-10" |
| 11-7/8" | NI-20  | 17'-10"           | 16'-10" | 16'-0"  | 14'-10" | 18'-6"              | 17'-1"  | 16'-0"  | 14'-10" |
|         | NI-40x | 19'-4"            | 17'-11" | 17'-3"  | 15'-10" | 19'-11"             | 18'-6"  | 17'-9"  | 15'-10" |
|         | NI-60  | 19'-7"            | 18'-2"  | 17'-5"  | 16'-9"  | 20'-2"              | 18'-9"  | 17'-11" | 17'-1"  |
|         | NI-70  | 20'-9"            | 19'-2"  | 18'-3"  | 17'-5"  | 21'-4"              | 19'-9"  | 18'-10" | 17'-10" |
|         | NI-80  | 21'-1"            | 19'-5"  | 18'-6"  | 17'-7"  | 21'-7"              | 20'-0"  | 19'-0"  | 18'-0"  |
| 14"     | NI-90x | 21'-8"            | 20'-0"  | 19'-1"  | 18'-0"  | 22'-2"              | 20'-6"  | 19'-6"  | 18'-6"  |
|         | NI-40x | 21'-5"            | 19'-10" | 18'-11" | 17'-5"  | 22'-1"              | 20'-6"  | 19'-6"  | 17'-5"  |
|         | NI-60  | 21'-10"           | 20'-2"  | 19'-3"  | 18'-2"  | 22'-5"              | 20'-10" | 19'-11" | 18'-10" |
|         | NI-70  | 23'-0"            | 21'-3"  | 20'-3"  | 19'-2"  | 23'-8"              | 21'-11" | 20'-10" | 19'-9"  |
|         | NI-80  | 23'-5"            | 21'-7"  | 20'-7"  | 19'-5"  | 24'-0"              | 22'-3"  | 21'-2"  | 20'-0"  |
| 16"     | NI-90x | 24'-1"            | 22'-3"  | 21'-2"  | 20'-0"  | 24'-8"              | 22'-10" | 21'-9"  | 20'-7"  |
|         | NI-60  | 23'-9"            | 22'-0"  | 20'-11" | 19'-10" | 24'-6"              | 22'-9"  | 21'-8"  | 20'-6"  |
|         | NI-70  | 25'-1"            | 23'-2"  | 22'-0"  | 20'-10" | 25'-9"              | 23'-10" | 22'-9"  | 21'-6"  |
|         | NI-80  | 25'-6"            | 23'-6"  | 22'-4"  | 21'-2"  | 26'-1"              | 24'-2"  | 23'-1"  | 21'-10" |
|         | NI-90x | 26'-4"            | 24'-3"  | 23'-1"  | 21'-10" | 26'-11"             | 24'-11" | 23'-8"  | 22'-5"  |

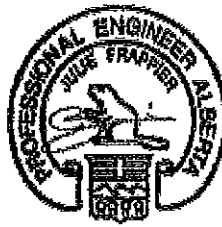
  

| Depth   | Series | Mid-Span Blocking |         |        |         | Mid-Span Blocking and 1/2" Gypsum Ceiling |         |         |         |
|---------|--------|-------------------|---------|--------|---------|-------------------------------------------|---------|---------|---------|
|         |        | On Centre Spacing |         |        |         | On Centre Spacing                         |         |         |         |
|         |        | 12"               | 16"     | 19.2"  | 24"     | 12"                                       | 16"     | 19.2"   | 24"     |
| 9-1/2"  | NI-20  | 15'-7"            | 14'-2"  | 13'-4" | 12'-4"  | 15'-7"                                    | 14'-2"  | 13'-4"  | 12'-4"  |
|         | NI-40x | 17'-9"            | 16'-1"  | 15'-1" | 13'-11" | 17'-9"                                    | 16'-1"  | 15'-1"  | 13'-11" |
|         | NI-60  | 18'-1"            | 16'-5"  | 15'-5" | 14'-3"  | 18'-1"                                    | 16'-5"  | 15'-5"  | 14'-3"  |
|         | NI-70  | 19'-10"           | 17'-11" | 16'-9" | 15'-6"  | 19'-10"                                   | 17'-11" | 16'-9"  | 15'-6"  |
|         | NI-80  | 20'-2"            | 18'-3"  | 17'-1" | 15'-10" | 20'-2"                                    | 18'-3"  | 17'-1"  | 15'-10" |
| 11-7/8" | NI-20  | 18'-10"           | 17'-1"  | 16'-0" | 14'-10" | 18'-10"                                   | 17'-1"  | 16'-0"  | 14'-10" |
|         | NI-40x | 21'-3"            | 19'-3"  | 17'-9" | 15'-10" | 21'-3"                                    | 19'-3"  | 17'-9"  | 15'-10" |
|         | NI-60  | 21'-9"            | 19'-8"  | 18'-5" | 17'-1"  | 21'-9"                                    | 19'-8"  | 18'-5"  | 17'-1"  |
|         | NI-70  | 23'-4"            | 21'-5"  | 20'-1" | 18'-6"  | 23'-8"                                    | 21'-5"  | 20'-1"  | 18'-6"  |
|         | NI-80  | 23'-7"            | 21'-10" | 20'-5" | 18'-11" | 24'-1"                                    | 21'-10" | 20'-5"  | 18'-11" |
| 14"     | NI-90x | 24'-3"            | 22'-6"  | 21'-3" | 19'-7"  | 24'-8"                                    | 22'-7"  | 21'-3"  | 19'-7"  |
|         | NI-40x | 24'-2"            | 21'-5"  | 19'-6" | 17'-5"  | 24'-2"                                    | 21'-5"  | 19'-6"  | 17'-5"  |
|         | NI-60  | 24'-9"            | 22'-5"  | 21'-0" | 19'-6"  | 24'-9"                                    | 22'-5"  | 21'-0"  | 19'-6"  |
|         | NI-70  | 26'-1"            | 24'-3"  | 22'-9" | 21'-0"  | 26'-8"                                    | 24'-3"  | 22'-9"  | 21'-0"  |
|         | NI-80  | 26'-6"            | 24'-7"  | 23'-3" | 21'-6"  | 27'-1"                                    | 24'-10" | 23'-3"  | 21'-6"  |
| 16"     | NI-90x | 27'-3"            | 25'-4"  | 24'-1" | 22'-4"  | 27'-9"                                    | 25'-10" | 24'-3"  | 22'-4"  |
|         | NI-60  | 27'-3"            | 24'-11" | 23'-5" | 21'-7"  | 27'-6"                                    | 24'-11" | 23'-5"  | 21'-7"  |
|         | NI-70  | 28'-8"            | 26'-8"  | 25'-3" | 23'-4"  | 29'-3"                                    | 26'-11" | 25'-3"  | 23'-4"  |
|         | NI-80  | 29'-1"            | 27'-0"  | 25'-9" | 23'-10" | 29'-8"                                    | 27'-6"  | 25'-10" | 23'-10" |
|         | NI-90x | 29'-11"           | 27'-10" | 26'-6" | 24'-10" | 30'-6"                                    | 28'-5"  | 26'-11" | 24'-10" |

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-1274C.

## Maximum Floor Spans

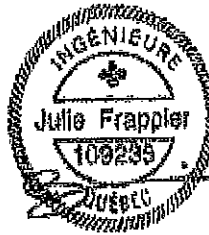
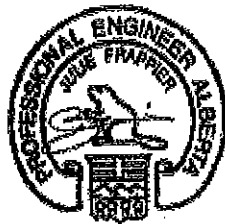
Live Load = 40 psf, Dead Load = 15 psf  
Simple Spans, L/480 Deflection Limit  
5/8" OSB G&N Sheathing



| Depth   | Series | Bare              |         |         |     | 1/2" Gypsum Ceiling |         |         |     |
|---------|--------|-------------------|---------|---------|-----|---------------------|---------|---------|-----|
|         |        | On Centre Spacing |         |         |     | On Centre Spacing   |         |         |     |
|         |        | 12"               | 16"     | 19.2"   | 24" | 12"                 | 16"     | 19.2"   | 24" |
| 9-1/2"  | NI-20  | 15'-1"            | 14'-2"  | 13'-9"  | N/A | 15'-7"              | 14'-8"  | 14'-2"  | N/A |
|         | NI-40x | 16'-1"            | 15'-2"  | 14'-8"  | N/A | 16'-7"              | 15'-7"  | 15'-1"  | N/A |
|         | NI-60  | 16'-3"            | 15'-4"  | 14'-10" | N/A | 16'-8"              | 15'-9"  | 15'-3"  | N/A |
|         | NI-70  | 17'-1"            | 16'-1"  | 15'-6"  | N/A | 17'-5"              | 16'-5"  | 15'-10" | N/A |
|         | NI-80  | 17'-3"            | 16'-3"  | 15'-8"  | N/A | 17'-8"              | 16'-7"  | 16'-0"  | N/A |
| 11-7/8" | NI-20  | 16'-11"           | 16'-0"  | 15'-5"  | N/A | 17'-6"              | 16'-6"  | 16'-0"  | N/A |
|         | NI-40x | 18'-1"            | 17'-0"  | 16'-5"  | N/A | 18'-9"              | 17'-6"  | 16'-11" | N/A |
|         | NI-60  | 18'-4"            | 17'-3"  | 16'-7"  | N/A | 19'-0"              | 17'-8"  | 17'-1"  | N/A |
|         | NI-70  | 19'-6"            | 18'-0"  | 17'-4"  | N/A | 20'-1"              | 18'-7"  | 17'-9"  | N/A |
|         | NI-80  | 19'-9"            | 18'-3"  | 17'-6"  | N/A | 20'-4"              | 18'-10" | 17'-11" | N/A |
| 14"     | NI-90x | 20'-4"            | 18'-9"  | 17'-11" | N/A | 20'-10"             | 19'-3"  | 18'-5"  | N/A |
|         | NI-40x | 20'-1"            | 18'-7"  | 17'-10" | N/A | 20'-10"             | 19'-4"  | 18'-6"  | N/A |
|         | NI-60  | 20'-5"            | 18'-11" | 18'-1"  | N/A | 21'-2"              | 19'-7"  | 18'-9"  | N/A |
|         | NI-70  | 21'-7"            | 20'-0"  | 19'-1"  | N/A | 22'-3"              | 20'-7"  | 19'-8"  | N/A |
|         | NI-80  | 21'-11"           | 20'-3"  | 19'-4"  | N/A | 22'-7"              | 20'-11" | 20'-0"  | N/A |
| 16"     | NI-90x | 22'-7"            | 20'-11" | 19'-11" | N/A | 23'-3"              | 21'-6"  | 20'-6"  | N/A |
|         | NI-60  | 22'-3"            | 20'-8"  | 19'-9"  | N/A | 23'-1"              | 21'-5"  | 20'-6"  | N/A |
|         | NI-70  | 23'-6"            | 21'-9"  | 20'-9"  | N/A | 24'-3"              | 22'-5"  | 21'-5"  | N/A |
|         | NI-80  | 23'-11"           | 22'-1"  | 21'-1"  | N/A | 24'-8"              | 22'-10" | 21'-9"  | N/A |
|         | NI-90x | 24'-8"            | 22'-9"  | 21'-9"  | N/A | 25'-4"              | 23'-5"  | 22'-4"  | N/A |

| Depth   | Series | Mid-Span Blocking |         |         |     | Mid-Span Blocking and 1/2" Gypsum Ceiling |         |         |     |
|---------|--------|-------------------|---------|---------|-----|-------------------------------------------|---------|---------|-----|
|         |        | On Centre Spacing |         |         |     | On Centre Spacing                         |         |         |     |
|         |        | 12"               | 16"     | 19.2"   | 24" | 12"                                       | 16"     | 19.2"   | 24" |
| 9-1/2"  | NI-20  | 16'-8"            | 15'-3"  | 14'-5"  | N/A | 16'-8"                                    | 15'-3"  | 14'-5"  | N/A |
|         | NI-40x | 17'-11"           | 16'-11" | 16'-1"  | N/A | 18'-5"                                    | 17'-1"  | 16'-1"  | N/A |
|         | NI-60  | 18'-2"            | 17'-1"  | 16'-4"  | N/A | 18'-7"                                    | 17'-4"  | 16'-4"  | N/A |
|         | NI-70  | 19'-2"            | 17'-10" | 17'-2"  | N/A | 19'-7"                                    | 18'-3"  | 17'-7"  | N/A |
|         | NI-80  | 19'-5"            | 18'-0"  | 17'-4"  | N/A | 19'-10"                                   | 18'-5"  | 17'-8"  | N/A |
| 11-7/8" | NI-20  | 19'-6"            | 18'-1"  | 17'-3"  | N/A | 19'-11"                                   | 18'-3"  | 17'-3"  | N/A |
|         | NI-40x | 21'-0"            | 19'-6"  | 18'-8"  | N/A | 21'-7"                                    | 20'-2"  | 19'-2"  | N/A |
|         | NI-60  | 21'-4"            | 19'-9"  | 18'-11" | N/A | 21'-11"                                   | 20'-4"  | 19'-6"  | N/A |
|         | NI-70  | 22'-6"            | 20'-10" | 19'-11" | N/A | 23'-0"                                    | 21'-5"  | 20'-5"  | N/A |
|         | NI-80  | 22'-8"            | 21'-1"  | 20'-1"  | N/A | 23'-3"                                    | 21'-7"  | 20'-8"  | N/A |
| 14"     | NI-90x | 23'-4"            | 21'-8"  | 20'-8"  | N/A | 23'-10"                                   | 22'-2"  | 21'-2"  | N/A |
|         | NI-40x | 23'-7"            | 21'-11" | 20'-11" | N/A | 24'-3"                                    | 22'-7"  | 21'-7"  | N/A |
|         | NI-60  | 24'-0"            | 22'-3"  | 21'-3"  | N/A | 24'-8"                                    | 22'-11" | 21'-11" | N/A |
|         | NI-70  | 25'-3"            | 23'-4"  | 22'-3"  | N/A | 25'-10"                                   | 24'-0"  | 22'-11" | N/A |
|         | NI-80  | 25'-7"            | 23'-8"  | 22'-7"  | N/A | 26'-2"                                    | 24'-4"  | 23'-2"  | N/A |
| 16"     | NI-90x | 26'-4"            | 24'-4"  | 23'-3"  | N/A | 26'-10"                                   | 24'-11" | 23'-9"  | N/A |
|         | NI-60  | 26'-5"            | 24'-6"  | 23'-4"  | N/A | 27'-2"                                    | 25'-3"  | 24'-2"  | N/A |
|         | NI-70  | 27'-9"            | 25'-8"  | 24'-6"  | N/A | 28'-5"                                    | 26'-5"  | 25'-2"  | N/A |
|         | NI-80  | 28'-2"            | 26'-1"  | 24'-10" | N/A | 28'-10"                                   | 26'-9"  | 25'-6"  | N/A |
|         | NI-90x | 29'-0"            | 26'-10" | 25'-7"  | N/A | 29'-7"                                    | 27'-5"  | 26'-2"  | N/A |

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of  $1.50L + 1.25D$ . The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



### Maximum Floor Spans

Live Load = 40 psf, Dead Load = 15 psf  
Simple Spans, L/480 Deflection Limit  
3/4" OSB G&N Sheathing

| Depth   | Series | Bare              |         |         |         | 1/2" Gypsum Ceiling |         |         |         |
|---------|--------|-------------------|---------|---------|---------|---------------------|---------|---------|---------|
|         |        | On Centre Spacing |         |         |         | On Centre Spacing   |         |         |         |
|         |        | 12"               | 16"     | 19.2"   | 24"     | 12"                 | 16"     | 19.2"   | 24"     |
| 9-1/2"  | NI-20  | 15'-10"           | 15'-0"  | 14'-5"  | 13'-5"  | 16'-4"              | 15'-5"  | 14'-6"  | 13'-5"  |
|         | NI-40x | 17'-0"            | 16'-0"  | 15'-5"  | 14'-9"  | 17'-5"              | 16'-5"  | 15'-10" | 15'-2"  |
|         | NI-60  | 17'-2"            | 16'-2"  | 15'-7"  | 14'-11" | 17'-6"              | 16'-7"  | 15'-11" | 15'-3"  |
|         | NI-70  | 18'-0"            | 16'-11" | 16'-3"  | 15'-7"  | 18'-5"              | 17'-3"  | 16'-7"  | 15'-11" |
|         | NI-80  | 18'-3"            | 17'-1"  | 16'-5"  | 15'-9"  | 18'-8"              | 17'-5"  | 16'-9"  | 16'-1"  |
| 11-7/8" | NI-20  | 17'-10"           | 16'-10" | 16'-2"  | 15'-6"  | 18'-6"              | 17'-4"  | 16'-9"  | 16'-1"  |
|         | NI-40x | 19'-4"            | 17'-11" | 17'-3"  | 16'-6"  | 19'-11"             | 18'-6"  | 17'-9"  | 17'-0"  |
|         | NI-60  | 19'-7"            | 18'-2"  | 17'-5"  | 16'-9"  | 20'-2"              | 18'-9"  | 17'-11" | 17'-2"  |
|         | NI-70  | 20'-9"            | 19'-2"  | 18'-3"  | 17'-5"  | 21'-4"              | 19'-9"  | 18'-10" | 17'-10" |
|         | NI-80  | 21'-1"            | 19'-5"  | 18'-6"  | 17'-7"  | 21'-7"              | 20'-0"  | 19'-0"  | 18'-0"  |
| 14"     | NI-90x | 21'-8"            | 20'-0"  | 19'-1"  | 18'-0"  | 22'-2"              | 20'-6"  | 19'-6"  | 18'-6"  |
|         | NI-40x | 21'-5"            | 19'-10" | 18'-11" | 17'-11" | 22'-1"              | 20'-6"  | 19'-7"  | 18'-7"  |
|         | NI-60  | 21'-10"           | 20'-2"  | 19'-3"  | 18'-2"  | 22'-5"              | 20'-10" | 19'-11" | 18'-10" |
|         | NI-70  | 23'-0"            | 21'-3"  | 20'-3"  | 19'-2"  | 23'-8"              | 21'-11" | 20'-10" | 19'-9"  |
|         | NI-80  | 23'-5"            | 21'-7"  | 20'-7"  | 19'-5"  | 24'-0"              | 22'-3"  | 21'-2"  | 20'-0"  |
| 16"     | NI-90x | 24'-1"            | 22'-3"  | 21'-2"  | 20'-0"  | 24'-8"              | 22'-10" | 21'-9"  | 20'-7"  |
|         | NI-60  | 23'-9"            | 22'-0"  | 20'-11" | 19'-10" | 24'-6"              | 22'-9"  | 21'-8"  | 20'-6"  |
|         | NI-70  | 25'-1"            | 23'-2"  | 22'-0"  | 20'-10" | 25'-9"              | 23'-10" | 22'-9"  | 21'-6"  |
|         | NI-80  | 25'-6"            | 23'-6"  | 22'-4"  | 21'-2"  | 26'-1"              | 24'-2"  | 23'-1"  | 21'-10" |
|         | NI-90x | 26'-4"            | 24'-3"  | 23'-1"  | 21'-10" | 26'-11"             | 24'-11" | 23'-8"  | 22'-5"  |

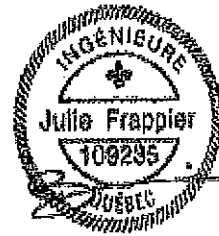
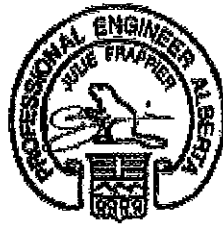
  

| Depth   | Series | Mid-Span Blocking |         |         |         | Mid-Span Blocking and 1/2" Gypsum Ceiling |         |         |         |
|---------|--------|-------------------|---------|---------|---------|-------------------------------------------|---------|---------|---------|
|         |        | On Centre Spacing |         |         |         | On Centre Spacing                         |         |         |         |
|         |        | 12"               | 16"     | 19.2"   | 24"     | 12"                                       | 16"     | 19.2"   | 24"     |
| 9-1/2"  | NI-20  | 16'-10"           | 15'-5"  | 14'-6"  | 13'-5"  | 16'-10"                                   | 15'-5"  | 14'-6"  | 13'-5"  |
|         | NI-40x | 18'-8"            | 17'-2"  | 16'-3"  | 15'-2"  | 18'-10"                                   | 17'-2"  | 16'-3"  | 15'-2"  |
|         | NI-60  | 18'-11"           | 17'-6"  | 16'-6"  | 15'-5"  | 19'-2"                                    | 17'-6"  | 16'-6"  | 15'-5"  |
|         | NI-70  | 20'-0"            | 18'-7"  | 17'-9"  | 16'-7"  | 20'-5"                                    | 18'-11" | 17'-10" | 16'-7"  |
|         | NI-80  | 20'-3"            | 18'-10" | 17'-11" | 16'-10" | 20'-8"                                    | 19'-3"  | 18'-2"  | 16'-10" |
| 11-7/8" | NI-20  | 20'-1"            | 18'-5"  | 17'-5"  | 16'-2"  | 20'-1"                                    | 18'-5"  | 17'-5"  | 16'-2"  |
|         | NI-40x | 21'-10"           | 20'-4"  | 19'-4"  | 17'-8"  | 22'-5"                                    | 20'-6"  | 19'-4"  | 17'-8"  |
|         | NI-60  | 22'-1"            | 20'-7"  | 19'-7"  | 18'-4"  | 22'-8"                                    | 20'-10" | 19'-8"  | 18'-4"  |
|         | NI-70  | 23'-4"            | 21'-8"  | 20'-8"  | 19'-7"  | 23'-10"                                   | 22'-3"  | 21'-2"  | 19'-9"  |
|         | NI-80  | 23'-7"            | 21'-11" | 20'-11" | 19'-9"  | 24'-1"                                    | 22'-6"  | 21'-5"  | 20'-0"  |
| 14"     | NI-90x | 24'-3"            | 22'-6"  | 21'-6"  | 20'-4"  | 24'-8"                                    | 23'-0"  | 22'-0"  | 20'-9"  |
|         | NI-40x | 24'-5"            | 22'-9"  | 21'-8"  | 19'-5"  | 25'-1"                                    | 23'-2"  | 21'-9"  | 19'-5"  |
|         | NI-60  | 24'-10"           | 23'-1"  | 22'-0"  | 20'-10" | 25'-6"                                    | 23'-8"  | 22'-4"  | 20'-10" |
|         | NI-70  | 26'-1"            | 24'-3"  | 23'-2"  | 21'-10" | 26'-8"                                    | 24'-11" | 23'-9"  | 22'-4"  |
|         | NI-80  | 26'-6"            | 24'-7"  | 23'-5"  | 22'-2"  | 27'-1"                                    | 25'-3"  | 24'-1"  | 22'-9"  |
| 16"     | NI-90x | 27'-3"            | 25'-4"  | 24'-1"  | 22'-9"  | 27'-9"                                    | 25'-11" | 24'-8"  | 23'-4"  |
|         | NI-60  | 27'-3"            | 25'-5"  | 24'-2"  | 22'-10" | 28'-0"                                    | 26'-2"  | 24'-9"  | 23'-1"  |
|         | NI-70  | 28'-8"            | 26'-8"  | 25'-4"  | 23'-11" | 29'-3"                                    | 27'-4"  | 26'-1"  | 24'-8"  |
|         | NI-80  | 29'-1"            | 27'-0"  | 25'-9"  | 24'-4"  | 29'-8"                                    | 27'-9"  | 26'-5"  | 25'-0"  |
|         | NI-90x | 29'-11"           | 27'-10" | 26'-6"  | 25'-0"  | 30'-6"                                    | 28'-5"  | 27'-2"  | 25'-8"  |

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.

### Maximum Floor Spans

Live Load = 40 psf; Dead Load = 30 psf  
Simple Spans, L/480 Deflection Limit  
5/8" OSB G&N Sheathing



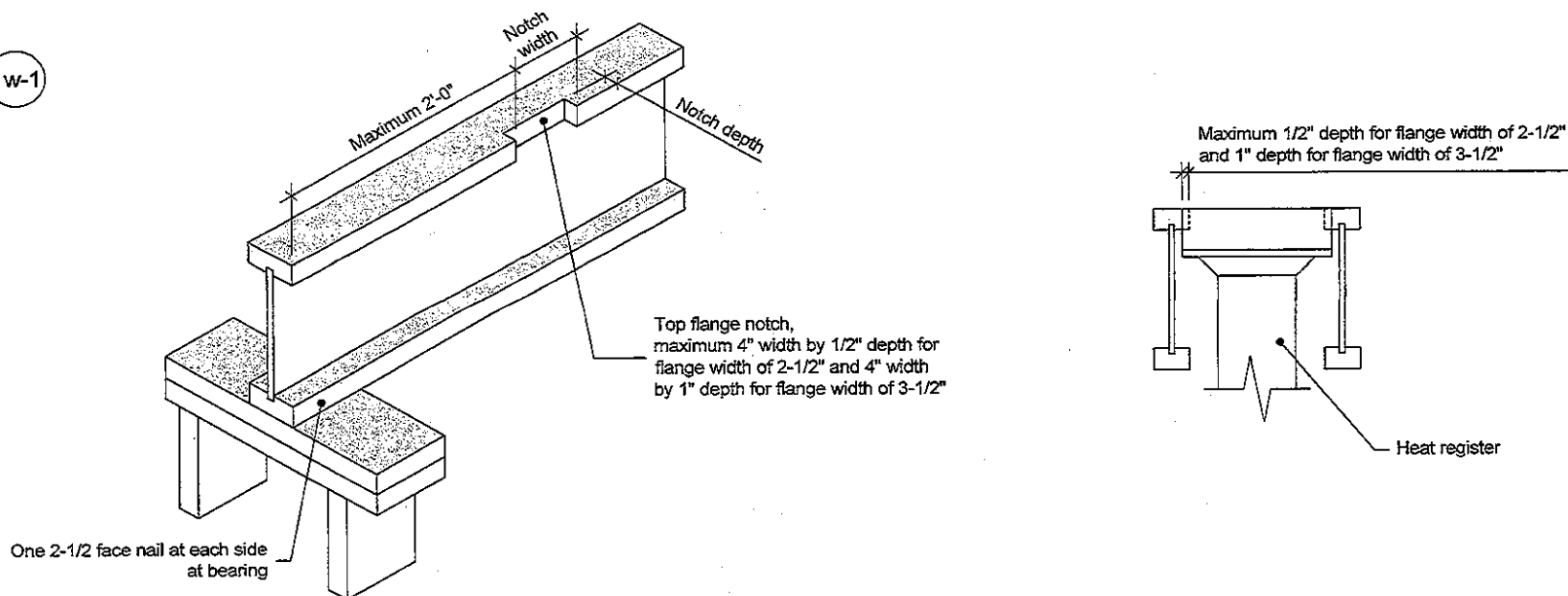
| Depth   | Series | Bare              |         |         |     | 1/2" Gypsum Ceiling |         |         |     |
|---------|--------|-------------------|---------|---------|-----|---------------------|---------|---------|-----|
|         |        | On Centre Spacing |         |         |     | On Centre Spacing   |         |         |     |
|         |        | 12"               | 16"     | 19.2"   | 24" | 12"                 | 16"     | 19.2"   | 24" |
| 9-1/2"  | NI-20  | 15'-1"            | 14'-1"  | 13'-3"  | N/A | 15'-7"              | 14'-1"  | 13'-3"  | N/A |
|         | NI-40x | 16'-1"            | 15'-2"  | 14'-8"  | N/A | 16'-7"              | 15'-7"  | 15'-1"  | N/A |
|         | NI-60  | 16'-3"            | 15'-4"  | 14'-10" | N/A | 16'-8"              | 15'-9"  | 15'-3"  | N/A |
|         | NI-70  | 17'-1"            | 16'-1"  | 15'-6"  | N/A | 17'-5"              | 16'-5"  | 15'-10" | N/A |
|         | NI-80  | 17'-3"            | 16'-3"  | 15'-8"  | N/A | 17'-8"              | 16'-7"  | 16'-0"  | N/A |
| 11-7/8" | NI-20  | 16'-11"           | 16'-0"  | 15'-5"  | N/A | 17'-6"              | 16'-6"  | 16'-0"  | N/A |
|         | NI-40x | 18'-1"            | 17'-0"  | 16'-5"  | N/A | 18'-9"              | 17'-6"  | 16'-11" | N/A |
|         | NI-60  | 18'-4"            | 17'-3"  | 16'-7"  | N/A | 19'-0"              | 17'-8"  | 17'-1"  | N/A |
|         | NI-70  | 19'-6"            | 18'-0"  | 17'-4"  | N/A | 20'-1"              | 18'-7"  | 17'-9"  | N/A |
|         | NI-80  | 19'-9"            | 18'-3"  | 17'-6"  | N/A | 20'-4"              | 18'-10" | 17'-11" | N/A |
| 14"     | NI-90x | 20'-4"            | 18'-9"  | 17'-11" | N/A | 20'-10"             | 19'-3"  | 18'-5"  | N/A |
|         | NI-40x | 20'-1"            | 18'-7"  | 17'-10" | N/A | 20'-10"             | 19'-4"  | 18'-6"  | N/A |
|         | NI-60  | 20'-5"            | 18'-11" | 18'-1"  | N/A | 21'-2"              | 19'-7"  | 18'-9"  | N/A |
|         | NI-70  | 21'-7"            | 20'-0"  | 19'-1"  | N/A | 22'-3"              | 20'-7"  | 19'-8"  | N/A |
|         | NI-80  | 21'-11"           | 20'-3"  | 19'-4"  | N/A | 22'-7"              | 20'-11" | 20'-0"  | N/A |
| 16"     | NI-90x | 22'-7"            | 20'-11" | 19'-11" | N/A | 23'-3"              | 21'-6"  | 20'-6"  | N/A |
|         | NI-60  | 22'-3"            | 20'-8"  | 19'-9"  | N/A | 23'-1"              | 21'-5"  | 20'-6"  | N/A |
|         | NI-70  | 23'-6"            | 21'-9"  | 20'-9"  | N/A | 24'-3"              | 22'-5"  | 21'-5"  | N/A |
|         | NI-80  | 23'-11"           | 22'-1"  | 21'-1"  | N/A | 24'-8"              | 22'-10" | 21'-9"  | N/A |
|         | NI-90x | 24'-8"            | 22'-9"  | 21'-9"  | N/A | 25'-4"              | 23'-5"  | 22'-4"  | N/A |

| Depth   | Series | Mid-Span Blocking |         |         |     | Mid-Span Blocking and 1/2" Gypsum Ceiling |         |        |     |
|---------|--------|-------------------|---------|---------|-----|-------------------------------------------|---------|--------|-----|
|         |        | On Centre Spacing |         |         |     | On Centre Spacing                         |         |        |     |
|         |        | 12"               | 16"     | 19.2"   | 24" | 12"                                       | 16"     | 19.2"  | 24" |
| 9-1/2"  | NI-20  | 15'-7"            | 14'-1"  | 13'-3"  | N/A | 15'-7"                                    | 14'-1"  | 13'-3" | N/A |
|         | NI-40x | 17'-9"            | 16'-1"  | 15'-1"  | N/A | 17'-9"                                    | 16'-1"  | 15'-1" | N/A |
|         | NI-60  | 18'-1"            | 16'-4"  | 15'-4"  | N/A | 18'-1"                                    | 16'-4"  | 15'-4" | N/A |
|         | NI-70  | 19'-2"            | 17'-10" | 16'-9"  | N/A | 19'-7"                                    | 17'-10" | 16'-9" | N/A |
|         | NI-80  | 19'-5"            | 18'-0"  | 17'-1"  | N/A | 19'-10"                                   | 18'-3"  | 17'-1" | N/A |
| 11-7/8" | NI-20  | 18'-9"            | 17'-0"  | 16'-0"  | N/A | 18'-9"                                    | 17'-0"  | 16'-0" | N/A |
|         | NI-40x | 21'-3"            | 19'-3"  | 17'-9"  | N/A | 21'-3"                                    | 19'-3"  | 17'-9" | N/A |
|         | NI-60  | 21'-4"            | 19'-8"  | 18'-5"  | N/A | 21'-8"                                    | 19'-8"  | 18'-5" | N/A |
|         | NI-70  | 22'-6"            | 20'-10" | 19'-11" | N/A | 23'-0"                                    | 21'-4"  | 20'-0" | N/A |
|         | NI-80  | 22'-9"            | 21'-1"  | 20'-1"  | N/A | 23'-3"                                    | 21'-7"  | 20'-5" | N/A |
| 14"     | NI-90x | 23'-4"            | 21'-8"  | 20'-8"  | N/A | 23'-10"                                   | 22'-2"  | 21'-2" | N/A |
|         | NI-40x | 23'-7"            | 21'-5"  | 19'-6"  | N/A | 24'-1"                                    | 21'-5"  | 19'-6" | N/A |
|         | NI-60  | 24'-0"            | 22'-3"  | 21'-0"  | N/A | 24'-8"                                    | 22'-5"  | 21'-0" | N/A |
|         | NI-70  | 25'-3"            | 23'-4"  | 22'-3"  | N/A | 25'-10"                                   | 24'-0"  | 22'-9" | N/A |
|         | NI-80  | 25'-7"            | 23'-8"  | 22'-7"  | N/A | 26'-2"                                    | 24'-4"  | 23'-2" | N/A |
| 16"     | NI-90x | 26'-4"            | 24'-4"  | 23'-3"  | N/A | 26'-10"                                   | 24'-11" | 23'-9" | N/A |
|         | NI-60  | 26'-5"            | 24'-6"  | 23'-4"  | N/A | 27'-2"                                    | 24'-10" | 23'-4" | N/A |
|         | NI-70  | 27'-9"            | 25'-8"  | 24'-6"  | N/A | 28'-5"                                    | 26'-5"  | 25'-2" | N/A |
|         | NI-80  | 28'-2"            | 26'-1"  | 24'-10" | N/A | 28'-10"                                   | 26'-9"  | 25'-6" | N/A |
|         | NI-90x | 29'-0"            | 26'-10" | 25'-7"  | N/A | 29'-7"                                    | 27'-5"  | 26'-2" | N/A |

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.

1w-1



Notes:

1. Blocking required at bearing for lateral support, not shown for clarity.
2. The maximum dimensions for a notch on the side of the top flange are 4-inch width by 1/2-inch depth for flange width of 2-1/2 inches, and 4-inch width by 1-inch depth for flange width of 3-1/2 inches.
3. This detail applies to simple-span joists and multiple-span joists where the notch is located at the end half-span.
4. For other applications, contact Nordic Structures.

This document supersedes all previous versions. If the document has been in effect for more than one year, consult [nordic.ca](http://nordic.ca) or contact Nordic Structures.

All nails shown in the details are assumed to be common nails unless otherwise noted. Nails shall have a diameter not less than 0.128 inch for 2-1/2-inch nails, or 0.144 inch for 3-inch nails. Individual components not shown to scale for clarity.

**NORDIC**  
**STRUCTURES**

T 514-871-8526  
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[nordic.ca](http://nordic.ca)

TITLE

Notch in I-joist for Heat Register

CATEGORY

I-joist - Typical Floor Framing and Construction Details

DOCUMENT

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DATE

2018-04-10

NUMBER

1w-1

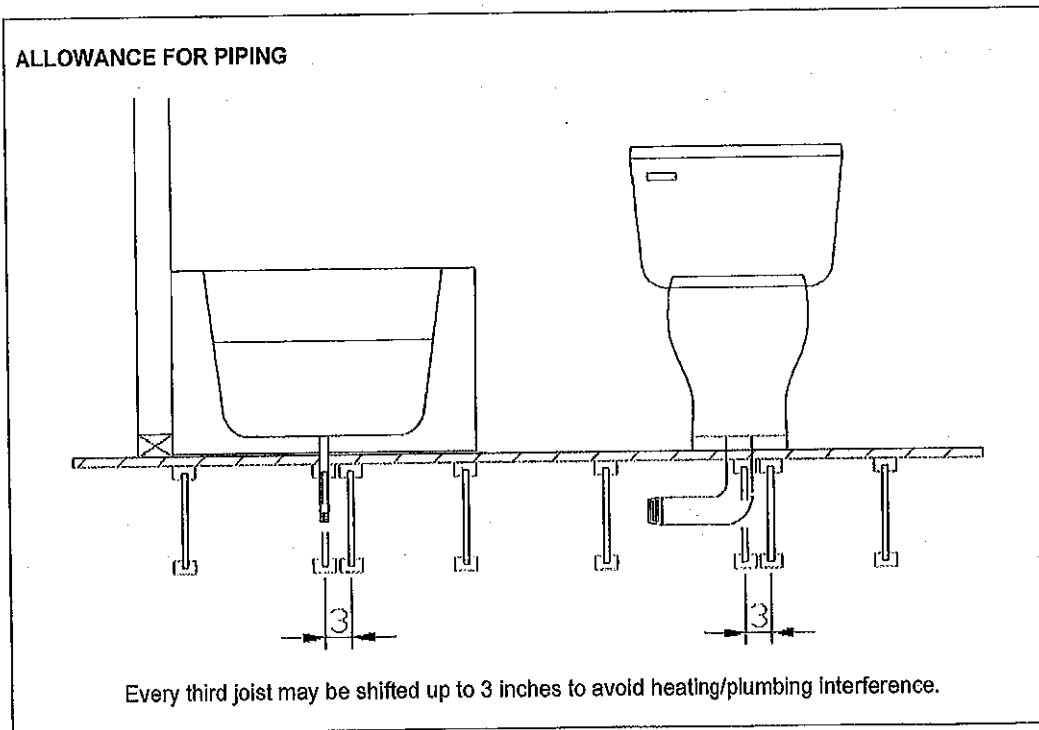


### Allowance for Piping (Installation Notes)

The floor layouts have usually not been checked for heating and/or plumbing interference. On-site adjustment of joists of up to 3 inches is permitted to avoid interferences. When moving a joist, the subfloor thickness shall be checked with code requirements when the joist spacing exceeds 19.2 inches. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.

Installation of Nordic I-joists shall be as per *Nordic Joist Installation Guide for Residential Floors*. Refer to Tables 1 and 2 for maximum web hole and duct chase openings, respectively. These tables are based on the I-joists being used at their maximum spans. The minimum distance given may be reduced for shorter spans; contact your distributor for additional information.

The detail below shows the 3-inch allowance for piping. Every third joist may be shifted up to 3 inches to avoid heating/plumbing interference. For other applications, please contact your distributor.



Revised April 12, 2012