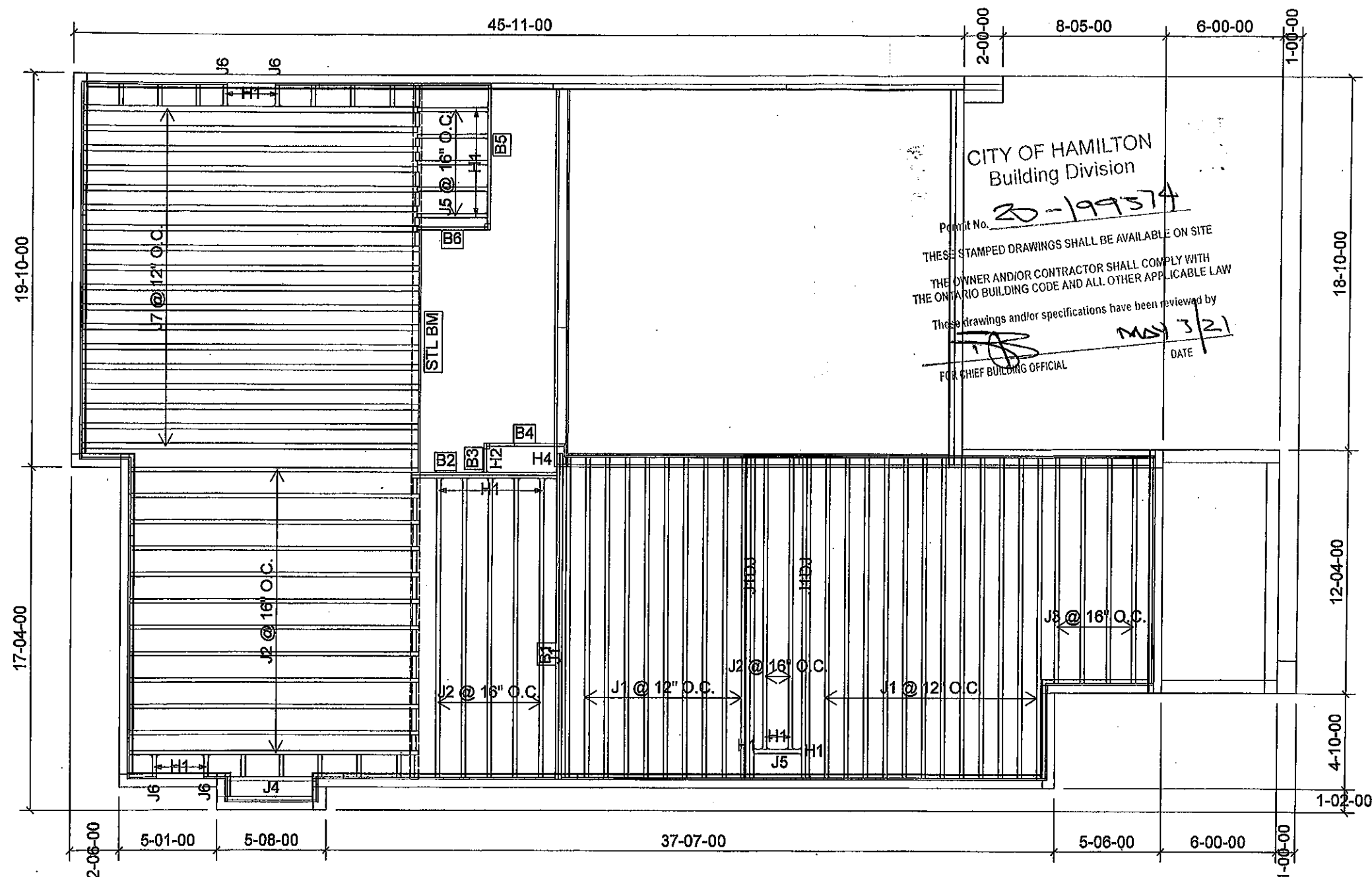


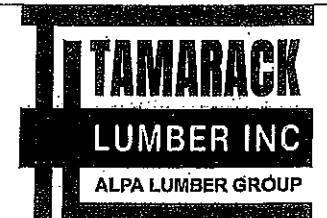


Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	18-00-00	9 1/2" NI-40x	1	22	MFD
J1DJ	18-00-00	9 1/2" NI-40x	2	4	MFD
J2	16-00-00	9 1/2" NI-40x	1	19	MFD
J3	12-00-00	9 1/2" NI-40x	1	4	MFD
J4	6-00-00	9 1/2" NI-40x	1	1	MFD
J5	4-00-00	9 1/2" NI-40x	1	6	MFD
J6	2-00-00	9 1/2" NI-40x	1	4	MFD
J7	18-00-00	9 1/2" NI-80	1	18	MFD
B1	18-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B2	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B4	4-00-00	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
B3	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD

Connector Summary		
Qty	Manuf	Product
5	H1	IUS2.56/9.5
5	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
1	H2	HUS1.81/10
1	H4	HGUS410

DATE: 2020-08-20

1st FLOOR



FROM PLAN DATED: JAN 2019

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: MOUNTAINASH 7

ELEVATION: 1

LOT: 18

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** RE: 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:

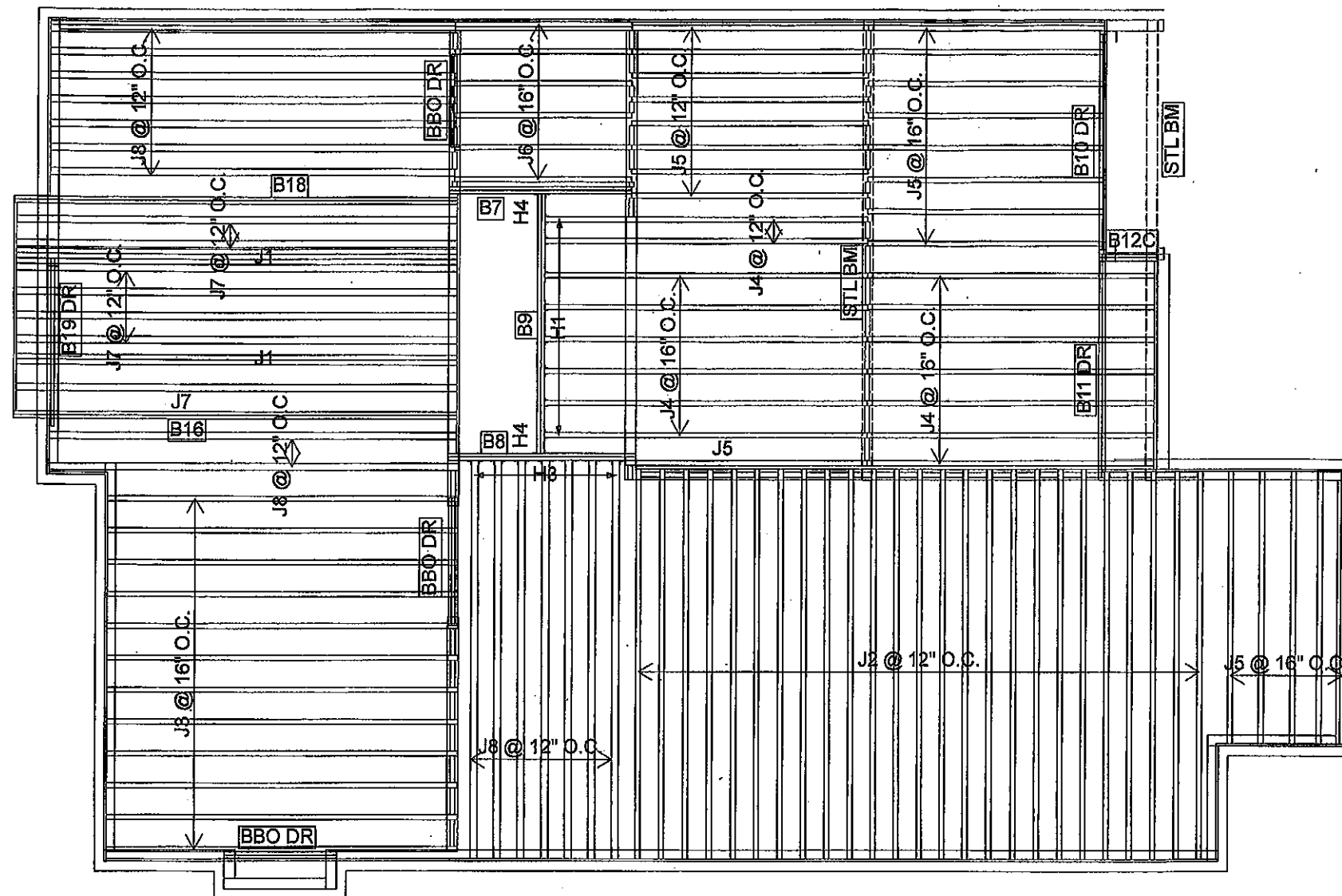
DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 15.0 lb/ft²

TILE LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

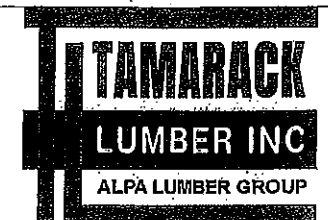


Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	20-00-00	9 1/2" NI-40x	2	4	MFD
J2	18-00-00	9 1/2" NI-40x	1	25	MFD
J3	16-00-00	9 1/2" NI-40x	1	12	MFD
J4	14-00-00	9 1/2" NI-40x	1	15	MFD
J5	12-00-00	9 1/2" NI-40x	1	22	MFD
J6	8-00-00	9 1/2" NI-40x	1	6	MFD
J7	20-00-00	9 1/2" NI-80	1	7	MFD
J8	18-00-00	9 1/2" NI-80	1	16	MFD
B16	20-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B18	20-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B9	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B10 DR	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B11 DR	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B19 DR	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B7	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B8	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B12C	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD

Connector Summary		
Qty	Manuf	Product
8	H1	IUS2.56/9.5
7	H3	IUS3.56/9.5
2	H4	HGUS410

DATE: 2020-08-20

2ND FLOOR



FROM PLAN DATED: JAN 2019
 BUILDER: GREENPARK HOMES
 SITE: RUSSELL GARDENS PH 3
 MODEL: MOUNTAINASH 7
 ELEVATION: 1
 LOT: 18
 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. 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** RE 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 TI** APPLICATION AS PER O.B.C 9.30.6.

LOADING:
 DESIGN LOADS: L/480.000
 LIVE LOAD: 40.0 lb/ft²
 DEAD LOAD: 15.0 lb/ft²
 TILE LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

Notes:

- In some local codes, blocking is prescriptively required in the first joist space (or first end second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.



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 centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified.
- Whenever possible, field-cut holes should be centred 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-joist web shall equal the clear distance between the flanges of the I-joist minus 1/8 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-joist 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 (twice the length of the longest side of the largest 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 workman-like 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 at 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"	NI-20	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---	---
	NI-40x	0-7"	1-6"	4-4"	4-4"	6-0"	6-4"	---	---	---	---	---	---	---
	NI-60	1-3"	2-6"	4-0"	5-4"	7-0"	7-5"	---	---	---	---	---	---	---
	NI-70	2-0"	3-4"	4-9"	6-3"	8-0"	8-4"	---	---	---	---	---	---	---
	NI-80	2-3"	3-6"	5-0"	6-6"	8-2"	8-8"	---	---	---	---	---	---	---
11-7/8"	NI-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-4"	7-9"	---	---	---	---
	NI-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-5"	7-0"	8-4"	---	---	---	---
	NI-60	0-7"	1-8"	3-0"	4-3"	5-9"	6-0"	7-3"	8-10"	10-0"	---	---	---	---
	NI-70	1-3"	2-6"	4-0"	5-4"	6-9"	7-2"	8-4"	10-0"	11-2"	---	---	---	---
	NI-80	1-6"	2-10"	4-2"	5-6"	7-0"	7-5"	8-6"	10-3"	11-4"	---	---	---	---
14"	NI-20	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---	---
	NI-40x	0-7"	0-8"	0-9"	2-5"	4-4"	4-9"	6-3"	---	---	---	---	---	---
	NI-60	0-7"	0-8"	1-8"	3-0"	4-3"	4-8"	5-8"	7-2"	8-0"	10-4"	11-9"	---	---
	NI-70	0-8"	1-10"	3-0"	4-5"	5-10"	6-0"	7-3"	8-9"	9-9"	10-4"	12-0"	13-5"	---
	NI-80	0-10"	2-0"	2-4"	4-9"	6-2"	6-5"	7-6"	9-0"	10-8"	12-4"	13-9"	---	---
16"	NI-20	0-7"	0-8"	0-9"	2-5"	4-4"	4-9"	6-3"	---	---	---	---	---	---
	NI-40x	0-7"	0-8"	0-8"	2-0"	3-9"	4-2"	5-5"	7-3"	8-3"	---	---	---	---
	NI-60	0-7"	0-8"	1-6"	3-0"	4-3"	4-8"	5-8"	7-0"	8-4"	10-2"	12-2"	13-5"	---
	NI-70	0-7"	1-0"	2-3"	3-6"	4-10"	5-3"	6-3"	7-8"	8-6"	9-2"	10-8"	12-4"	14-0"
	NI-80	0-7"	1-4"	2-6"	3-10"	5-3"	5-6"	6-6"	8-0"	9-0"	9-5"	11-0"	12-3"	14-5"

- Above table may be used for I-joist spacing of 24 inches on centre 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-joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

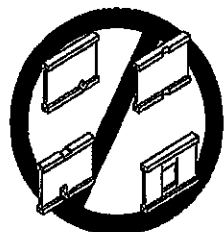
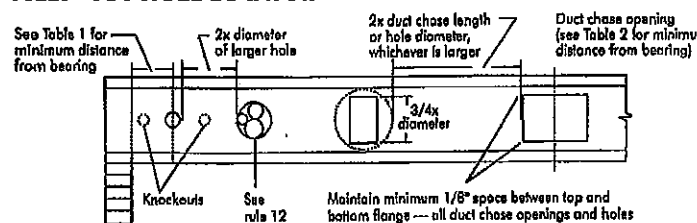
NI-20	NI-40x	NI-60	NI-70	NI-80	NI-90	NI-90x
OSB 3/4" x 9-1/2"	OSB 3/4" x 9-1/2"	OSB 3/4" x 9-1/2"	OSB 3/4" x 9-1/2"	OSB 3/4" x 9-1/2"	OSB 3/4" x 9-1/2"	OSB 3/4" x 9-1/2"
33 pieces per unit	33 pieces per unit	33 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit
S-PF No.2	1950F MSR	2100F MSR	1950F MSR	2100F MSR	2400F MSR	NPG Lumber

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"	NI-20	4-1"	4-5"	4-10"	5-4"	5-8"	6-1"	6-6"	7-1"	7-5"	7-9"	8-4"	8-8"	9-2"
	NI-40x	5-3"	5-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-3"	8-8"	9-3"	9-8"	10-3"	10-8"
	NI-60	5-4"	5-9"	6-2"	6-7"	7-1"	7-5"	8-0"	8-5"	9-0"	9-5"	10-0"	10-5"	11-0"
	NI-70	5-1"	5-5"	5-10"	6-3"	6-7"	7-1"	7-6"	8-1"	8-6"	9-1"	9-6"	10-1"	10-6"
	NI-80	5-3"	5-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-3"	8-8"	9-3"	9-8"	10-3"	10-8"
11-7/8"	NI-20	5-9"	6-2"	6-6"	7-1"	7-5"	7-9"	8-3"	8-7"	9-1"	9-5"	10-0"	10-4"	10-8"
	NI-40x	6-8"	7-2"	7-6"	8-1"	8-5"	9-0"	9-4"	9-8"	10-3"	10-7"	11-2"	11-6"	12-0"
	NI-60	7-3"	7-8"	8-0"	8-6"	9-0"	9-4"	9-8"	10-3"	10-7"	11-2"	11-6"	12-0"	12-4"
	NI-70	7-1"	7-4"	7-9"	8-3"	8-7"	9-1"	9-5"	10-0"	10-4"	10-8"	11-2"	11-6"	12-0"
	NI-80	7-2"	7-7"	8-0"	8-5"	9-0"	9-4"	9-8"	10-2"	10-6"	11-0"	11-4"	11-8"	12-2"
14"	NI-20	7-6"	7-11"	8-4"	8-9"	9-2"	9-7"	10-1"	10-6"	11-0"	11-4"	11-8"	12-2"	12-6"
	NI-40x	7-7"	8-1"	8-5"	9-0"	9-4"	9-8"	10-2"	10-6"	11-0"	11-4"	11-8"	12-2"	12-6"
	NI-60	8-1"	8-7"	9-0"	9-6"	10-0"	10-4"	10-8"	11-2"	11-6"	12-0"	12-4"	12-8"	13-2"
	NI-70	8-0"	8-5"	9-0"	9-5"	10-0"	10-4"	10-8"	11-2"	11-6"	12-0"	12-4"	12-8"	13-2"
	NI-80	8-7"	9-1"	9-5"	10-0"	10-4"	10-8"	11-2"	11-6"	12-0"	12-4"	12-8"	13-2"	13-6"
16"	NI-20	9-0"	9-3"	9-9"	10-1"	10-7"	11-1"	11-5"	11-9"	12-3"	12-7"	13-1"	13-5"	13-9"
	NI-40x	9-4"	9-8"	10-0"	10-6"	11-0"	11-4"	11-8"	12-2"	12-6"	13-0"	13-4"	13-8"	14-2"
	NI-60	10-3"	10-8"	11-2"	11-6"	12-1"	12-5"	12-9"	13-3"	13-7"	14-1"	14-5"	14-9"	15-3"
	NI-70	10-1"	10-5"	11-0"	11-4"	11-8"	12-3"	12-7"	13-1"	13-5"	13-9"	14-3"	14-7"	15-1"
	NI-80	10-4"	10-9"	11-3"	11-7"	12-1"	12-5"	12-9"	13-3"	13-7"	14-1"	14-5"	14-9"	15-3"

- Above table may be used for I-joist spacing of 24 inches on centre 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-joists 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 preformed 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 centre along the length of the I-joist. 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-joist.

SAFETY AND CONSTRUCTION PRECAUTIONS



Do not walk on I-joists until fully fastened and braced, or serious injuries can result.



Never stack building materials over unfastened I-joists. Once sheathed, do not over-stress I-joists with concentrated loads from building materials.

WARNINGS: 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:

- Brace and nail each I-joist as it is installed, using hangers, blocking, rim board, and/or cross-bracing at joist ends. When I-joists are applied continuous 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-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist 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 centre, 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 restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.
 - 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.
- For cantilevered I-joists, 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-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
- 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.

PRODUCT WARRANTY

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

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

Blocking Panel or Rim Joist

NI Joists

Maximum Factored Uniform Vertical Load* (psf)

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-joist to top plate per detail 1b

NI or rim board blocking panel per detail 1a

Pair of Squash Blocks

2x Lumber

1-1/8" Rim Board Plus

Maximum Factored Vertical Load per Pair of Squash Blocks (lbs)

3-1/2" wide	5-1/2" wide
5,500	8,500
4,300	6,600

Provide lateral bracing per detail 1a or 1b

Backer block (use if hanger load exceeds 360 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 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-PF No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-C325 or CAN/CSA-C437 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".

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

Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify double I-joist 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.

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-joist 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-joist 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-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
- The minimum factored load that may be applied to one side of the double joist using this detail is 860 lb/ft. Verify double I-joist capacity.

Flange Size	Net Depth	Filler Block Size
2-1/2" x 1-1/2"	9-1/2"	2-1/8" x 6"
	11-7/8"	2-1/8" x 8"
	14"	2-1/8" x 10"
	16"	2-1/8" x 12"
3-1/2" x 1-1/2"	9-1/2"	3" x 6"
	11-7/8"	3" x 8"
	14"	3" x 10"
	16"	3" x 12"
3-1/2" x 2"	11-7/8"	3" x 7"
	14"	3" x 9"
	16"	3" x 11"

Rim board

One 2-1/2" face nail at each side of bearing

Blocking Panel or Rim Joist

1-1/8" Rim Board Plus

Maximum Factored Uniform Vertical Load* (psf)

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-joist. 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.

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

Joist attachment per detail 1b

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

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

NI blocking panel per detail 1a

Nordic Lam 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.

Do not bevel-cut joist beyond inside face of wall

Attach I-joist per detail 1b

NOTE: Blocking required at bearing for lateral support, not shown for clarity.

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.

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, alternate on opposite side

NI blocking panel

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.

NORDIC STRUCTURES

COMPANY
Apr. 9, 2020 10:10

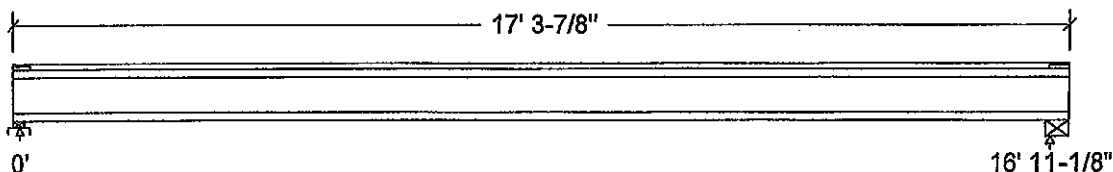
PROJECT
J7 1ST FLOOR.wwb

Design Check Calculation Sheet Nordic Sizer - Canada 7.2

Loads:

Load	Type	Distribution	Pat- tern	Location [ft] Start End	Magnitude 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	169		169
Live	339		339
Factored:			
Total	719		719
Bearing:			
Capacity			
Joist	1893		1893
Support	5559		-
Des ratio			
Joist	0.38		0.38
Support	0.13		-
Load case	#2		#2
Length	2-3/8		4-1/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		-
fcp sup	769		-
Kzcp sup	1.09		-

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

Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Steel Beam, W;
Total length: 17' 3-7/8"; Clear span: 16' 9-3/8"; 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 = 719	Vr = 1895	lbs	Vf/Vr = 0.38
Moment(+)	Mf = 3044	Mr = 8958	lbs-ft	Mf/Mr = 0.34
Perm. Defl'n	0.11 = < L/999	0.56 = L/360	in	0.20
Live Defl'n	0.22 = L/904	0.42 = L/480	in	0.53
Total Defl'n	0.34 = L/602	0.85 = L/240	in	0.40
Bare Defl'n	0.26 = L/793	0.56 = L/360	in	0.46
Vibration	Lmax = 16'-11.1	Lv = 18'-4.9	ft	0.92
Defl'n	= 0.029	= 0.037	in	0.78



BY: NO. 12127/20
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_Ieff = 375.38 lb-in² K= 4.94e06 lbs

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

CONFORMS TO OBC 2012

Design Notes:

AMENDED 2020

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.



804 NO. YAM 12/29-20
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
Aug. 20, 2020 14:07

PROJECT
J7 2ND FLOOR.wwb

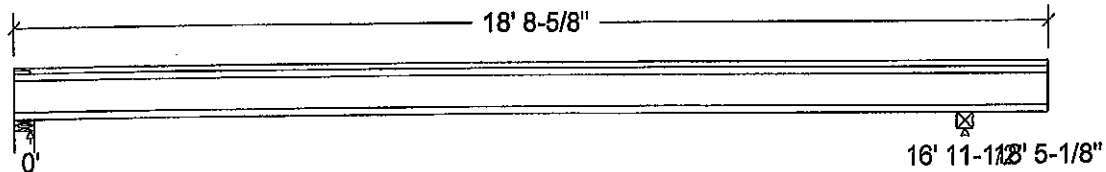
Design Check Calculation Sheet Nordic Sizer – Canada 7.2

Loads:

Load	Type	Distribution	Pat- tern	Location [ft] Start End	Magnitude Start End	Unit
Load1	Dead	Full Area	No		20.00	psf
Load2	Live	Full Area	Yes		40.00	psf
Load3	Dead	Point	No	18.67	100	lbs
Load4	Snow	Point	Yes	18.67	69	lbs

Load magnitude does not include Normal Importance factor from O86 Table 5.2.3.2,
which is applied during analysis.

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



Unfactored:				
Dead	160		309	
Live	339		400	
Snow	-6		75	
Factored:				
Total	709		1061	
Bearing:				
Capacity				
Joist	1893		3813	
Support	10841		7533	
Des ratio				
Joist	0.37		0.28	
Support	0.07		0.14	
Load case	#10		#4	
Length	4-3/8		3-1/2	
Min req'd	1-3/4		3-1/2	
Stiffener	No		No	
KD	1.00		1.00	
KB support	-		1.00	
fcp sup	769		769	
Kzcp sup	-		1.00	

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 - Lumber Beam, No.1/No.2;

Total length: 18' 8-5/8"; Clear span: 16' 8-7/8", 1' 3-7/8"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section PASSES the design code check.



NO. 74112/30-20
STRUCTURAL
COMPONENT ONLY

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 742	Vr = 1895	lbs	Vf/Vr = 0.39
Moment(+)	Mf = 2954	Mr = 8958	lbs-ft	Mf/Mr = 0.33
Moment(-)	Mf = 394	Mr = 8348	lbs-ft	Mf/Mr = 0.05
Deflection:				
Interior Perm	0.10 = < L/999	0.57 = L/360	in	0.18
Live	0.23 = L/882	0.42 = L/480	in	0.54
Total	0.33 = L/616	0.85 = L/240	in	0.39
Cantil. Perm	-0.02 = L/832	0.10 = L/180	in	0.22
Live	-0.06 = L/313	0.07 = L/240	in	0.76
Total	-0.08 = L/227	0.15 = L/120	in	0.53
Bare Defl'n	-0.06 = L/276	0.10 = L/180	in	0.65
Vibration	Lmax = 16'-11.5	Lv = 17'-9.5	ft	0.95
Defl'n	= 0.032	= 0.037	in	0.86

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#4
Mr+	8958	1.00	1.00	-	1.000	-	-	-	#10
Mr-	8958	0.93	1.00	-	1.000	-	-	-	#5
EI	324.1 million	-	-	-	-	-	-	-	#10

CRITICAL LOAD COMBINATIONS:

Shear : LC #4 = 1.25D + 1.5L + (1.0)1.0S
 Moment(+) : LC #10 = 1.25D + 1.5L (pattern: L₋)
 Moment(-) : LC #5 = 1.25D + (1.0)1.5S + 1.0L₋
 Deflection: LC #1 = 1.0D (permanent)
 LC #10 = 1.0D + 1.0L (pattern: L₋) (live)
 LC #10 = 1.0D + 1.0L (pattern: L₋) (total)
 LC #10 = 1.0D + 1.0L (pattern: L₋) (bare joist)

Bearing : Support 1 - LC #10 = 1.25D + 1.5L (pattern: L₋)
 Support 2 - LC #4 = 1.25D + 1.5L + (1.0)1.0S

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_Ieff = 367.27 lb-in² K= 4.94e06 lbs

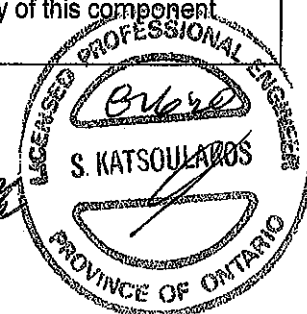
"Live" deflection is due to all non-dead loads (live, wind, snow...) **CONFORMS TO OBC 2012**

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.

WOOD NO. 1411/2130-20
 STRUCTURAL
 COMPONENT ONLY



NORDIC STRUCTURES

COMPANY
Apr. 9, 2020 10:10

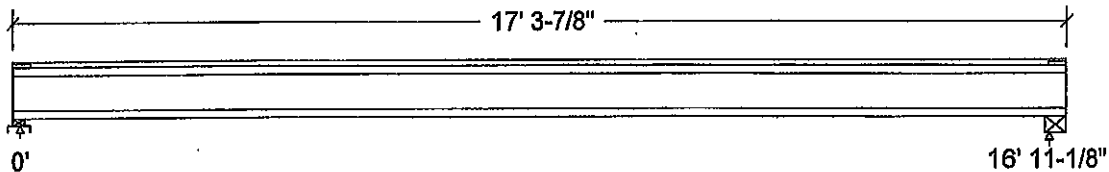
PROJECT
J7 1ST FLOOR.wwb

Design Check Calculation Sheet Nordic Sizer – Canada 7.2

Loads:

Load	Type	Distribution	Pat-tern	Location [ft] Start End	Magnitude 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	169		169
Live	339		339
Factored:			
Total	719		719
Bearing:			
Capacity			
Joist	1893		1893
Support	5559		-
Des ratio			
Joist	0.38		0.38
Support	0.13		-
Load case	#2		#2
Length	2-3/8		4-1/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		-
fcp sup	769		-
Kzcp sup	1.09		-

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

Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Steel Beam, W;
Total length: 17' 3-7/8"; Clear span: 16' 9-3/8"; 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 = 719	Vr = 1895	lbs	Vf/Vr = 0.38
Moment(+)	Mf = 3044	Mr = 8958	lbs-ft	Mf/Mr = 0.34
Perm. Defl'n	0.11 = < L/999	0.56 = L/360	in	0.20
Live Defl'n	0.22 = L/904	0.42 = L/480	in	0.53
Total Defl'n	0.34 = L/602	0.85 = L/240	in	0.40
Bare Defl'n	0.26 = L/793	0.56 = L/360	in	0.45
Vibration	Lmax = 16'-11.1	Lv = 18'-4.9	in	0.92
Defl'n	= 0.029	= 0.037	in	0.78



9WG NO. YAW 5970 #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_Ieff = 375.38 lb-in² K= 4.94e06 lbs

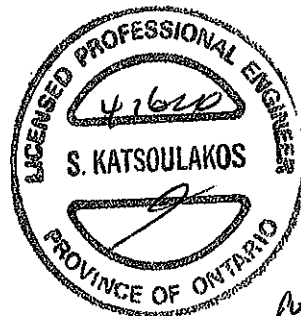
"Live" deflection is due to all non-dead loads (live, wind, snow...)

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.



ENG NO. YAW 5970 -20
STRUCTURAL
COMPONENT ONLY

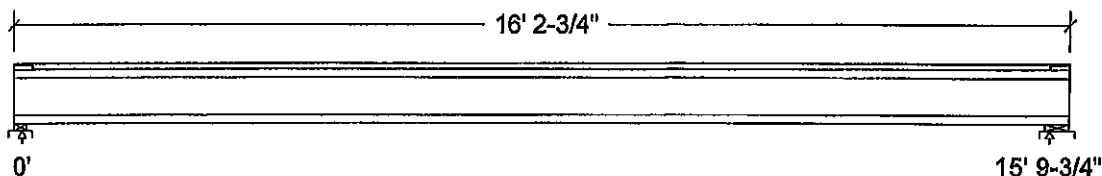
Design Check Calculation Sheet

Nordic Sizer - Canada 7.2

Loads:

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

Maximum Reactions (lbs) and Support Bearing (ln):



Unfactored:			
Dead	158		158
Live	316		316
Factored:			
Total	672		672
Bearing:			
Capacity			
Joist	1865		1893
Support	3971		7744
Des ratio			
Joist	0.36		0.36
Support	0.17		0.09
Load case	#2		#2
Length	2-3/8		4-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		1.00
fcp sup	769		769
Kzcp sup	1.09		1.15

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

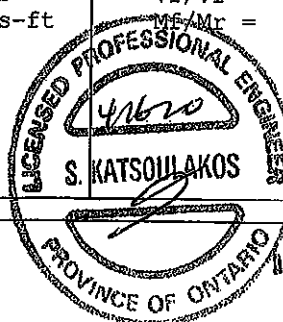
Supports: All - Lumber Sill plate, No.1/No.2

Total length: 16' 2-3/4"; Clear span: 15' 8"; 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 = 672	Vr = 1895	lbs	Vf/Vr = 0.35
Moment(+)	Mf = 2657	Mr = 4824	lbs-ft	Mf/Mr = 0.55
Perm. Defl'n	0.12 = < L/999	0.53 = L/360	in	0.22
Live Defl'n	0.24 = L/802	0.40 = L/480	in	0.60
Total Defl'n	0.35 = L/535	0.79 = L/240	in	0.45
Bare Defl'n	0.28 = L/672	0.53 = L/360	in	0.54
Vibration	Lmax = 15'-9.8	Lv = 17'-1.8	ft	0.92
Defl'n	= 0.032	= 0.041	in	0.77



NO. 5971 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+	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_{Ieff} = 265.29 lb-in² K= 4.94e06 lbs

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

COMPLIES 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 CCMG 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.



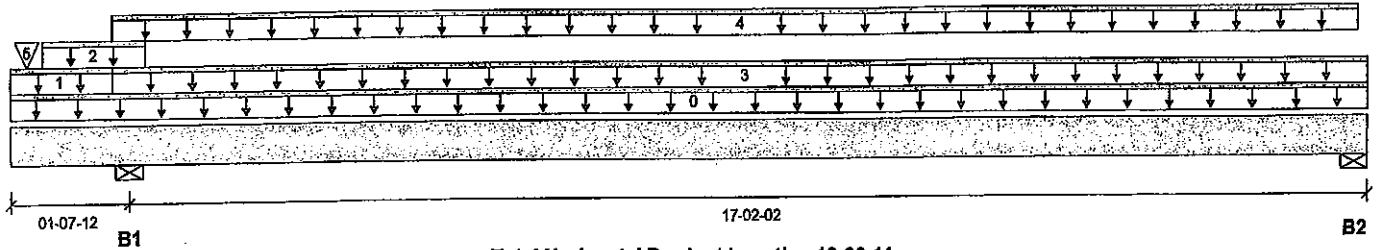
DWG NO. YAW5971-20
STRUCTURAL
COMPONENT ONLY

BC CALC® Member Report
Build 7493
Job name:
Address:
City, Province, Postal Code: WATERDOWN
Customer:
Code reports: CCMC 12472-R

Dry | 2 spans | L cant.

August 20, 2020 14:00:22

File name: MOUNTAINASH 7
Description: 2ND FLR FRAMING\Flush Beams\B18(12942)
Specifier:
Designer: AJ
Company:



Total Horizontal Product Length = 18-09-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	443 / 0	513 / 0	142 / 0	
B2, 4-3/8"	346 / 4	246 / 0	0 / 6	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	18-09-14	Top		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-05-00	Top	19	10			n/a
2	E29(i2955)	Unf. Lin. (lb/ft)	L	00-05-08	01-10-08	Top	33	111	69		n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	01-05-00	18-09-14	Top	16	8			n/a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	01-05-00	18-08-04	Top	24	12			n/a
5	E32(i2957)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	18	61	38		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3338 ft-lbs	23220 ft-lbs	14.4%	45	10-03-06
Neg. Moment	-467 ft-lbs	-23220 ft-lbs	2.0%	49	01-07-12
End Shear	722 lbs	11571 lbs	6.2%	45	17-08-00
Cont. Shear	746 lbs	11571 lbs	6.4%	13	02-08-00
Total Load Deflection	L/835 (0.243")	n/a	28.7%	108	10-02-00
Live Load Deflection	L/1387 (0.146")	n/a	26.0%	160	10-00-10
Total Neg. Defl.	2xL/1998 (-0.073")	n/a	n/a	108	00-00-00
Max Defl.	0.243"	n/a	n/a	108	10-02-00
Span / Depth	21.3				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	1448 lbs	12.2%	6.2%	Spruce-Pine-Fir
B2	Wall/Plate 4-3/8" x 3-1/2"	827 lbs	8.8%	4.4%	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.
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
Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

CONFORMS TO OBC 2012
AMENDED 2020



0406 NO. 7441/2138 -20
STRUCTURAL
COMPONENT ONLY



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

PASSED

2ND FLR FRAMING\Flush Beams\B18(I2942) (Flush Beam)

Dry | 2 spans | L cant.

August 20, 2020 14:00:22

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: WATERDOWN

Customer:

Code reports: CCMC 12472-R

File name: MOUNTAINASH 7 lot

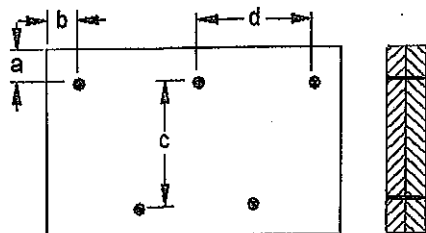
Description: 2ND FLR FRAMING\Flush Beams\B18(I2942)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

c = 5-1/2"
d = 8"

Connectors are: 1 Nails

3-1/2" ARDOX SPIRAL



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

Dry | 2 spans | L cant.

August 20, 2020 14:00:22

Build 7493

Job name:

File name: MOUNTAINASH 7

Address:

Description: 2ND FLR FRAMING\Flush Beams\B16(I2941)

City, Province, Postal Code: WATERDOWN

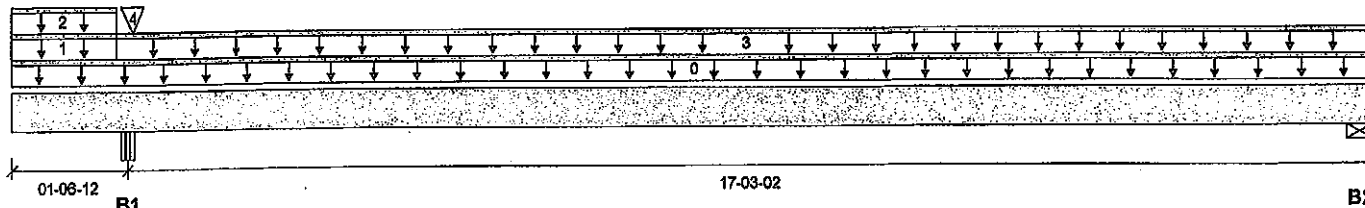
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 18-09-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	448 / 0	505 / 0	135 / 0	
B2, 4-3/8"	351 / 4	251 / 0	0 / 5	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	18-09-14	Top		10			00-00-00
1	E31(I2956)	Unf. Lin. (lb/ft)	L	00-00-00	01-05-00	Top	33	111	69		n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-05-00	Top	26	13			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	01-05-00	18-09-14	Top	40	20			n/a
4	E24(I2928)	Conc. Pt. (lbs)	L	01-07-12	01-07-12	Top	15	51	32		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3388 ft-lbs	23220 ft-lbs	14.6%	45	10-01-00
Neg. Moment	-399 ft-lbs	-23220 ft-lbs	1.7%	49	01-06-12
End Shear	728 lbs	11571 lbs	6.3%	45	17-08-00
Cont. Shear	755 lbs	11571 lbs	6.5%	1	02-06-00
Total Load Deflection	L/817 (0.249")	n/a	29.4%	108	10-01-00
Live Load Deflection	L/1367 (0.149")	n/a	26.3%	160	10-01-00
Total Neg. Defl.	2xL/1998 (-0.071")	n/a	n/a	108	00-00-00
Max Defl.	0.249"	n/a	n/a	108	10-01-00
Span / Depth	21.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 3-1/2" x 3-1/2"	1438 lbs	9.6%	9.6%	VL 2.0 3100 SP
B2	Wall/Plate 4-3/8" x 3-1/2"	840 lbs	8.9%	4.5%	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 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

Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.

CONFORMS TO OBC 2012

AMENDED 2020


NO. 12132-20
STRUCTURAL
COMPONENT ONLY

BC CALC® Member Report

Dry | 2 spans | L cant.

August 20, 2020 14:00:22

Build 7493

Job name:

File name: MOUNTAINASH 7

Address:

Description: 2ND FLR FRAMING\Flush Beams\B16(I2941)

City, Province, Postal Code: WATERDOWN

Specifier:

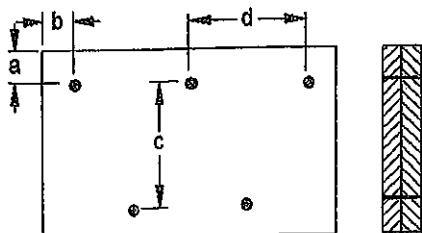
Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"

c = 5-1/2"
d = 8"

Connectors are: Nails

3-1/2" ARDOX SPIRAL



ENG NO. 74112/32-20
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®,

BC CALC® Member Report

Build 7239

Job name:

File name: MOUNTAINASH 7 EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B1(11968)

City, Province, Postal Code:

Specifier:

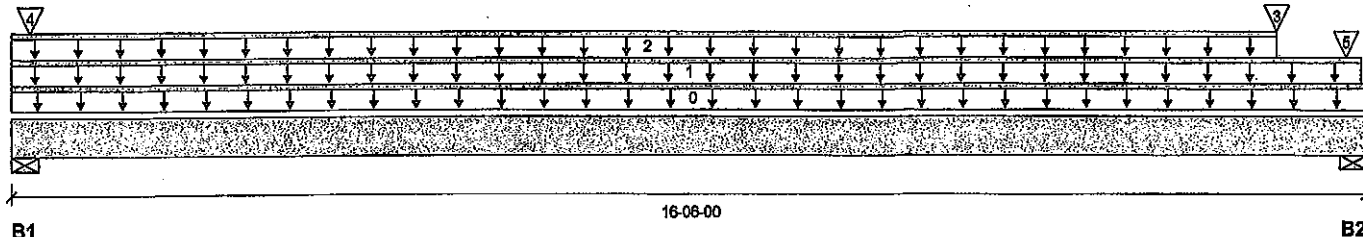
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 16-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	368 / 0	287 / 0		
B2, 6-1/2"	1537 / 0	926 / 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	16-06-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	16-05-00	Top	9	4			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	15-04-12	Top	18	9			n/a
3	B2(11938)	Conc. Pt. (lbs)	L	15-04-12	15-04-12	Top	1306	687			n/a
4	E10(1340)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	100	74			n/a
5	-	Conc. Pt. (lbs)	L	16-02-12	16-02-12	Top	79	83			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3122 ft-lbs	23220 ft-lbs	13.4%	1	09-07-13
End Shear	2385 lbs	11571 lbs	20.6%	1	15-02-00
Total Load Deflection	L/913 (0.208")	n/a	26.3%	4	08-05-04
Live Load Deflection	L/999 (0.12")	n/a	n/a	5	08-06-09
Max Defl.	0.208"	n/a	n/a	4	08-05-04
Span / Depth	20.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3" x 3-1/2"	910 lbs	14.1%	7.1%	Spruce-Pine-Fir
B2	Wall/Plate 6-1/2" x 3-1/2"	3463 lbs	24.7%	12.5%	Spruce-Pine-Fir

Notes

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

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

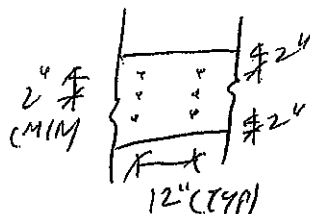
Calculations assume member is fully braced.

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

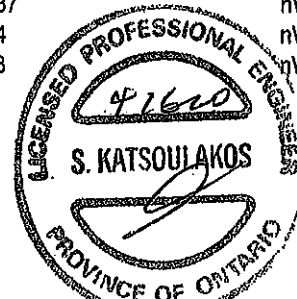
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9



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



OWN NO. TAM 5912-20

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®,



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B2(1938) (Flush Beam)**

Dry | 1 span | No cant.

February 10, 2020 15:50:38

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

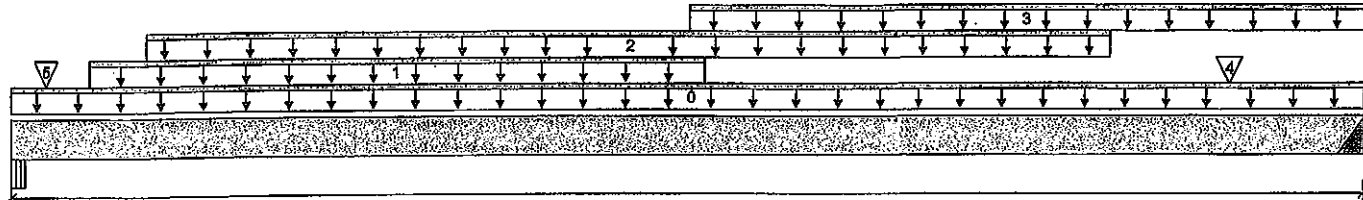
File name: MOUNTAINASH 7 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B2(1938)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 07-06-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	1579 / 0	852 / 0		
B2, 4"	1351 / 0	712 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-06-02	Top		10			00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-05-04	03-09-14	Top	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-09-02	06-01-02	Top	306	153			n/a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	03-08-14	07-06-02	Top	32	16			n/a
4	J2(1917)	Conc. Pt. (lbs)	L	06-09-02	06-09-02	Top	343	171			n/a
5	3(1485)	Conc. Pt. (lbs)	L	00-02-06	00-02-06	Top		27			n/a

Controls Summary

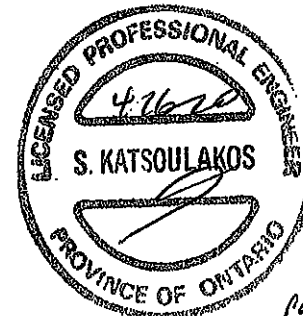
	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5672 ft-lbs	23220 ft-lbs	24.4%	1	03-07-06
End Shear	2960 lbs	11571 lbs	25.6%	1	01-02-12
Total Load Deflection	L/999 (0.068")	n/a	n/a	4	03-08-14
Live Load Deflection	L/999 (0.044")	n/a	n/a	5	03-08-14
Max Defl.	0.068"	n/a	n/a	4	03-08-14
Span / Depth	8.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 5-1/4" x 3-1/2"	3434 lbs	35.0%	15.3%	Unspecified
B2	Hanger 4" x 3-1/2"	2917 lbs	n/a	17.1%	HGUS410

Cautions

Header for the hanger HGUS410 at B2 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.



DESIGN NO. TAM 5973 -20
STRUCTURAL
COMPONENT ONLY

BC CALC® Member Report

Build 7239

Job name:

File name: MOUNTAINASH 7 EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B2(I1938)

City, Province, Postal Code:

Specifier:

Customer:

Designer:

Code reports:

CCMC 12472-R

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.

CONFORMS TO OBC 2012

Hanger Manufacturer: Unassigned

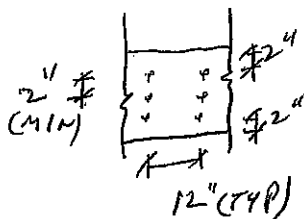
Resistance Factor phi has been applied to all presented results per CSA O86.

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



DWG NO. YAM 5913 -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.

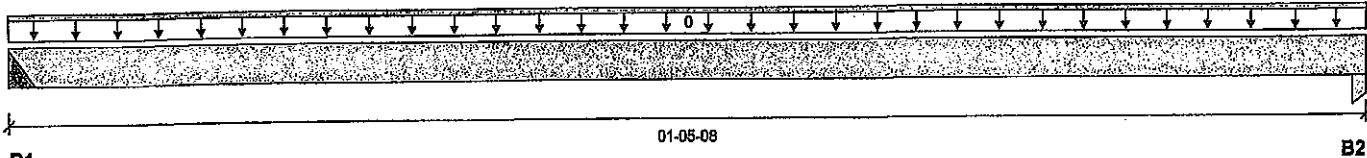
BC CALC®, BC FRAMER®, AJST®, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

BC CALC® Member Report
 Build 7239
 Job name:
 Address:
 City, Province, Postal Code:
 Customer:
 Code reports: CCMC 12472-R

Dry | 1 span | No cant.

February 10, 2020 15:50:38

File name: MOUNTAINASH 7 EL 1.mmdl
 Description: 1ST FLR FRAMING\Flush Beams\B3(11918)
 Specifier:
 Designer:
 Company:



Reaction Summary (Down / Uplift) (lbs)

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

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-05-08	Top		5			00-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1 ft-lbs	7546 ft-lbs	n/a	0	00-08-00
End Shear	2 lbs	3761 lbs	n/a	0	00-11-08
Span / Depth	1.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	4 lbs	n/a	0.2%	HUS1.81/10
B2	Column 3-1/2" x 1-3/4"	5 lbs	0.2%	0.1%	Unspecified

Cautions

Header for the hanger HUS1.81/10 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.
 Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

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

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®, AJSTM, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,



OWN NO. YAM 5974-20
 STRUCTURAL
 COMPONENT ONLY

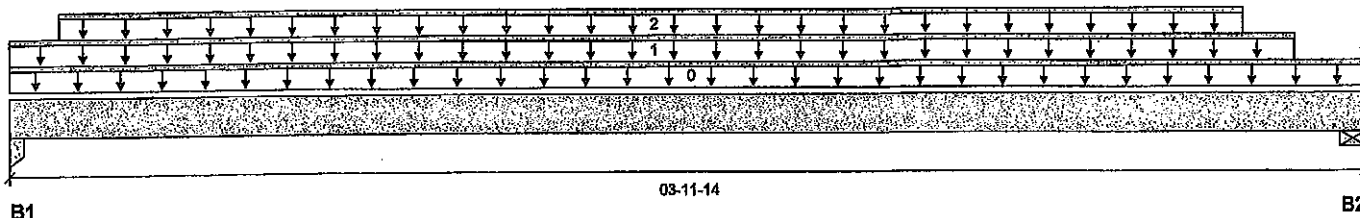
BC CALC® Member Report
 Build 7239
 Job name:
 Address:
 City, Province, Postal Code:
 Customer:
 Code reports:

Dry | 1 span | No cant.

February 10, 2020 15:50:38

File name: MOUNTAINASH 7 EL 1.mmdl
 Description: 1ST FLR FRAMING\Flush Beams\B4(1981)
 Specifier:
 Designer:
 Company:

CCMC 12472-R



Total Horizontal Product Length = 03-11-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	269 / 0	144 / 0		
B2, 4-3/8"	269 / 0	145 / 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	03-11-14	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-09-04	Top	32	16			n/a
2	STAIR	Unf. Lin. (lb/ft)	L	00-01-12	03-07-08	Top	120	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	534 ft-lbs	11610 ft-lbs	4.6%	1	01-10-10
End Shear	312 lbs	5785 lbs	5.4%	1	00-11-04
Total Load Deflection	L/999 (0.004")	n/a	n/a	4	01-10-10
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-10-10
Max Defl.	0.004"	n/a	n/a	4	01-10-10
Span / Depth	4.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 1-3/4" x 1-3/4"	584 lbs	23.5%	15.6%	Unspecified
B2	Wall/Plate 4-3/8" x 1-3/4"	585 lbs	12.4%	6.3%	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



DWG NO. TAM 5915 ~20
STRUCTURAL

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.

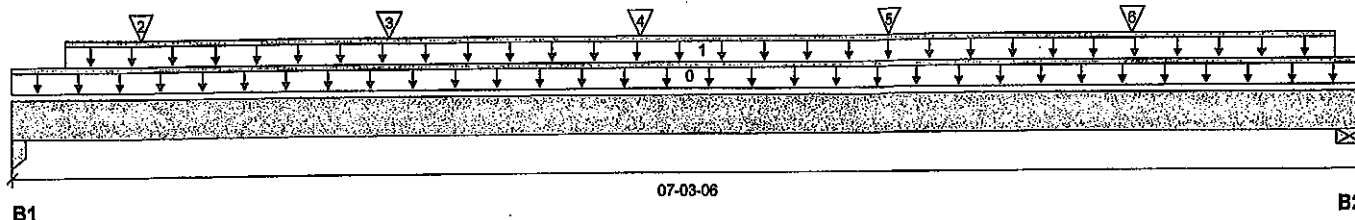
BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

BC CALC® Member Report
Build 7239
Job name:
Address:
City, Province, Postal Code:
Customer:
Code reports: CCMC 12472-R

Dry | 1 span | No cant.

February 10, 2020 15:50:38

File name: MOUNTAINASH 7 EL 1.mmdl
Description: 1ST FLR FRAMING\Flush Beams\B5(1931)
Specifier:
Designer:
Company:



Total Horizontal Product Length = 07-03-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	239 / 0	341 / 0		
B2, 1-7/8"	219 / 0	330 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-03-06	Top		5			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-03-08	07-01-08	Top		60			n/a
2	J5(1951)	Conc. Pt. (lbs)	L	00-08-08	00-08-08	Top	69	34			n/a
3	J5(1851)	Conc. Pt. (lbs)	L	02-00-08	02-00-08	Top	99	49			n/a
4	J5(1878)	Conc. Pt. (lbs)	L	03-04-08	03-04-08	Top	94	46			n/a
5	J5(1955)	Conc. Pt. (lbs)	L	04-08-08	04-08-08	Top	94				n/a
6	J5(1984)	Conc. Pt. (lbs)	L	06-00-08	06-00-08	Top	102				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1409 ft-lbs	11610 ft-lbs	12.1%	1	03-04-08
End Shear	676 lbs	5785 lbs	11.7%	1	06-04-00
Total Load Deflection	L/999 (0.036")	n/a	n/a	4	03-08-08
Live Load Deflection	L/999 (0.015")	n/a	n/a	5	03-08-08
Max Defl.	0.036"	n/a	n/a	4	03-08-08
Span / Depth	8.8				

Bearing Supports

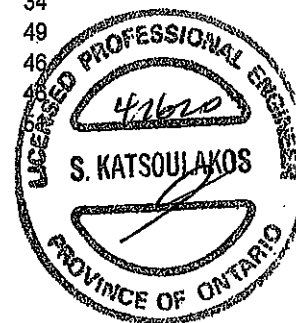
			Demand/Resistance Support	Demand/Resistance Member	Material	
Bearing Supports	Dim. (LxW)	Demand				
B1	Column	3-1/2" x 1-3/4"	785 lbs	15.8%	10.5%	Unspecified
B2	Wall/Plate	1-7/8" x 1-3/4"	741 lbs	36.7%	18.5%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume 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 5976-20
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®,

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

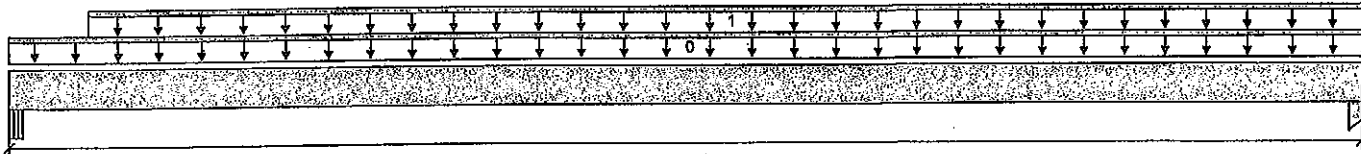
File name: MOUNTAINASH 7 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B6(11835)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 03-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	23 / 0	21 / 0		
B2, 1-3/4"	25 / 0	21 / 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	03-08-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	03-08-00	Top	14	7			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	53 ft-lbs	11610 ft-lbs	0.5%	1	01-10-07
End Shear	31 lbs	5785 lbs	0.5%	1	01-00-02
Total Load Deflection	L/999 (0")	n/a	n/a	4	01-10-07
Live Load Deflection	L/999 (0")	n/a	n/a	5	01-10-07
Max Defl.	0"	n/a	n/a	4	01-10-07
Span / Depth	4.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 2-5/8" x 1-3/4"	61 lbs	2.5%	1.1%	Unspecified
B2	Column 1-3/4" x 1-3/4"	65 lbs	2.6%	1.7%	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 UBC 2012



DWG NO. TAM 5977 -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™, BC®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

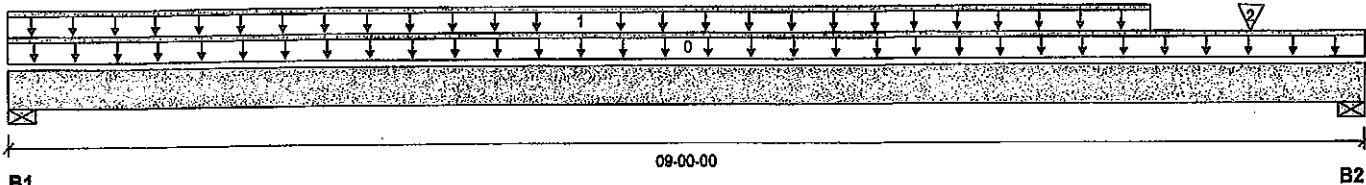
BC CALC® Member Report
Build 7239
Job name:
Address:
City, Province, Postal Code:
Customer:
Code reports:

Dry | 1 span | No cant.

February 10, 2020 15:50:38

File name: MOUNTAINASH 7 EL 1.mmdl
Description: 2ND FLR FRAMING\Dropped Beams\B10 DR(I1713)
Specifier:
Designer:
Company:

CCMC 12472-R



Total Horizontal Product Length = 09-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	3971 / 0	2029 / 0		
B2, 4"	3412 / 0	1750 / 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	09-00-00	Top	10				00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	07-07-00	Top	850	425			n/a
2	J4(I1719)	Conc. Pt. (lbs)	L	08-03-00	08-03-00	Top	939	470			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	15472 ft-lbs	23220 ft-lbs	66.6%	1	04-03-00
End Shear	6346 lbs	11571 lbs	54.8%	1	07-10-08
Total Load Deflection	L/366 (0.277")	n/a	65.6%	4	04-07-00
Live Load Deflection	L/553 (0.183")	n/a	65.1%	5	04-07-00
Max Defl.	0.277"	n/a	n/a	4	04-07-00
Span / Depth	10.7				

Bearing Supports

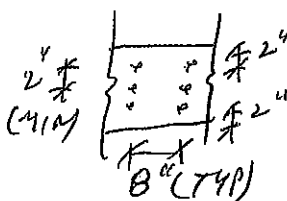
	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	8493 lbs	74.7%	49.7%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 3-1/2"	7305 lbs	64.3%	42.8%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume unbraced length of Top: 01-01-08, Bottom: 01-01-08.
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 5978-20
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®,

2ND FLR FRAMING\Dropped Beams\B11 DR(I1898) (Dropped Beam)

Dry | 1 span | No cant.

February 10, 2020 15:50:38

BC CALC® Member Report

Build 7239

Job name:

File name: MOUNTAINASH 7 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B11 DR(I1898)

City, Province, Postal Code:

Specifier:

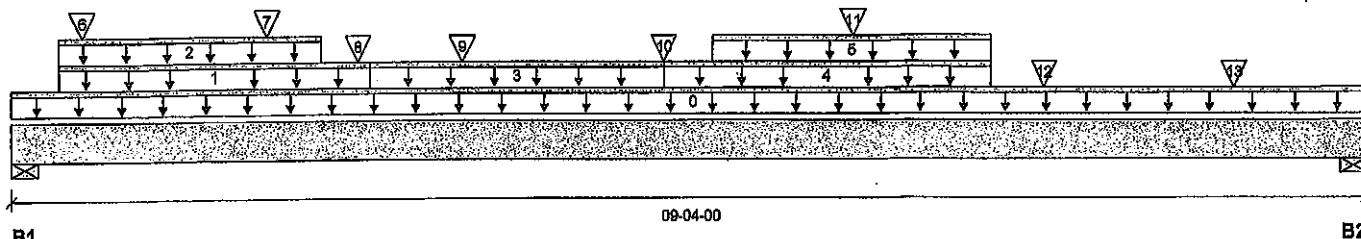
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 09-04-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1287 / 0	1127 / 0	294 / 0	
B2, 4"	2361 / 0	1504 / 0	189 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-04-00	Top		10			00-00-00
1	R1(I1710)	Unf. Lin. (lb/ft)	L	00-04-00	02-05-08	Top		81			n/a
2	R1(I1710)	Unf. Lin. (lb/ft)	L	00-04-00	02-01-08	Top	33	30	63		n/a
3	R1(I1710)	Unf. Lin. (lb/ft)	L	02-05-08	04-05-08	Top		61			n/a
4	R1(I1710)	Unf. Lin. (lb/ft)	L	04-05-08	06-08-08	Top		81			n/a
5	R1(I1710)	Unf. Lin. (lb/ft)	L	04-09-08	06-08-08	Top	33	30	63		n/a
6	-	Conc. Pt. (lbs)	L	00-05-14	00-05-14	Top	169	123	27		n/a
7	J4(I1784)	Conc. Pt. (lbs)	L	01-09-00	01-09-00	Top	257	129			n/a
8	R1(I1710)	Conc. Pt. (lbs)	L	02-04-08	02-04-08	Top	45	61	86		n/a
9	J4(I1751)	Conc. Pt. (lbs)	L	03-01-00	03-01-00	Top	274	137			n/a
10	-	Conc. Pt. (lbs)	L	04-05-07	04-05-07	Top	317	196	82		n/a
11	J4(I1751)	Conc. Pt. (lbs)	L	05-09-00	05-09-00	Top	276	138			n/a
12	-	Conc. Pt. (lbs)	L	07-01-00	07-01-00	Top	1074	627	55		n/a
13	J4(I1725)	Conc. Pt. (lbs)	L	08-05-00	08-05-00	Top	1085	533			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	9021 ft-lbs	23220 ft-lbs	38.9%	1	05-09-00
End Shear	5001 lbs	11571 lbs	43.2%	1	08-02-08
Total Load Deflection	L/566 (0.186")	n/a	42.4%	35	04-09-08
Live Load Deflection	L/999 (0.112")	n/a	n/a	51	04-09-08
Max Defl.	0.186"	n/a	n/a	35	04-09-08
Span / Depth	11.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	3633 lbs	19.4%	21.3%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 3-1/2"	5610 lbs	49.4%	32.8%	Spruce-Pine-Fir



DWG NO. YAM 5979-20
STRUCTURAL
COMPONENT ONLY

2ND FLR FRAMING\Dropped Beams\B11 DR(1898) (Dropped Beam)

Dry | 1 span | No cant.

February 10, 2020 15:50:38

BC CALC® Member Report

Build 7239

Job name:

File name: MOUNTAINASH 7 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B11 DR(1898)

City, Province, Postal Code:

Specfier:

Customer:

Designer:

Code reports: CCMC 12472-R

Company:

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: 01-01-04, Bottom: 01-01-04.

CONFORMS TO OBC 2012

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

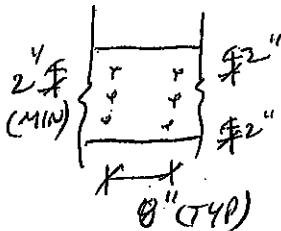
AMENDED 2020

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

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



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



HWB NO. TAM 5979-20
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™, BC®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

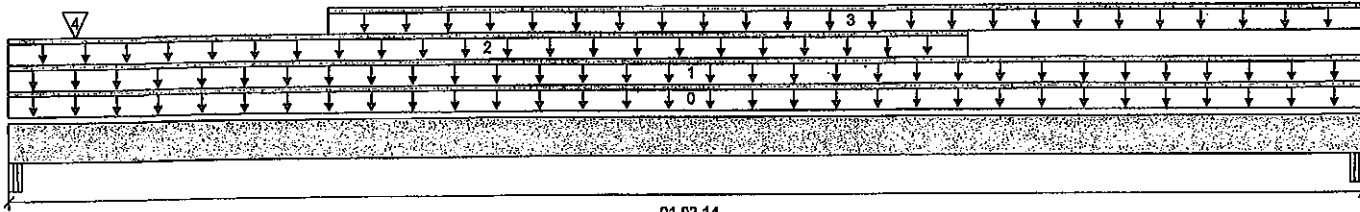
BC CALC® Member Report
Build 7239
Job name:
Address:
City, Province, Postal Code:
Customer:
Code reports:

Dry | 1 span | No cant.

February 10, 2020 15:50:38

File name: MOUNTAINASH 7 EL. 1.mmdl
Description: 2ND FLR FRAMING\Flush Beams\B12(1722)
Specifier:
Designer:
Company:

CCMC 12472-R



Total Horizontal Product Length = 01-02-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	28 / 0	78 / 0	50 / 0	
B2, 4-1/8"	19 / 0	45 / 0	27 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-02-14	Top		10			00-00-00
1	ROOF	Unf. Lin. (lb/ft)	L	00-00-00	01-02-14	Top	22	20	42		n/a
2	E20(i1704)	Unf. Lin. (lb/ft)	L	00-00-00	00-10-08	Top		81			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-03-08	01-02-14	Top	8	4			n/a
4	E20(i1704)	Conc. Pt. (lbs)	L	00-00-12	00-00-12	Top	13	12	25		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	10 ft-lbs	15093 ft-lbs	n/a	0	00-07-02
End Shear	48 lbs	7521 lbs	0.6%	0	00-03-08
Span / Depth	0.9				

Bearing Supports

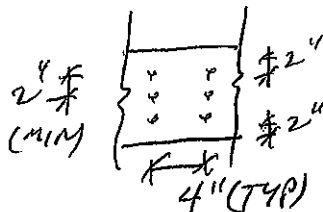
	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	3-1/2" x 3-1/2"	201 lbs	1.3%	1.3%	VL 2.0 3100 SP
B2 Beam	4-1/8" x 3-1/2"	116 lbs	1.5%	0.7%	Unspecified

Notes

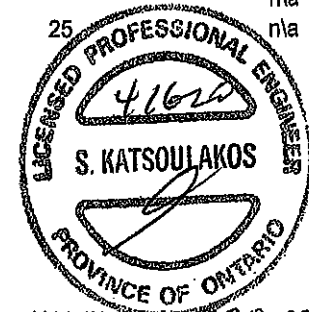
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Unbalanced snow loads determined from building geometry were used in selected product's verification.
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



DWG NO. YAM 5900-20
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®,

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

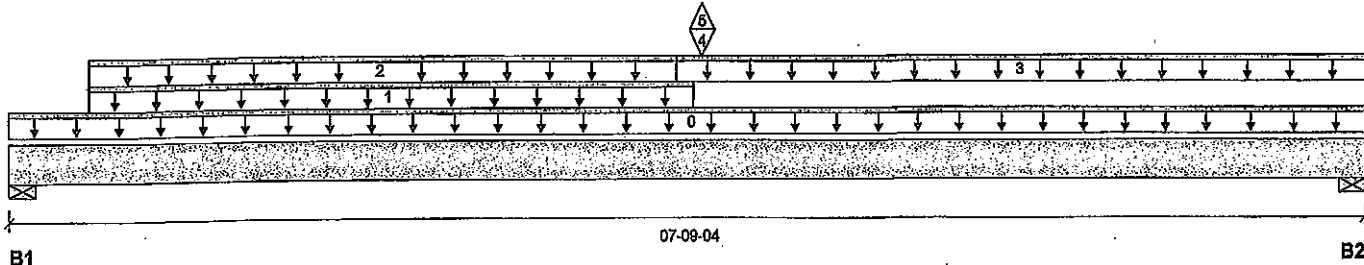
File name: MOUNTAINASH 7 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B7(11733)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 07-09-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	888 / 242	388 / 0		
B2, 2-3/4"	507 / 233	199 / 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	07-09-04	Top	10				00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-05-08	03-10-11	Top	240	120			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-05-08	03-09-08	Top	12	6			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-09-08	07-09-04	Top	33	17			n/a
4	B9(11740)	Conc. Pt. (lbs)	L	03-11-04	03-11-04	Top	398	14			n/a
5	B9(11740)	Conc. Pt. (lbs)	L	03-11-04	03-11-04	Top	-475				n/a

Controls Summary

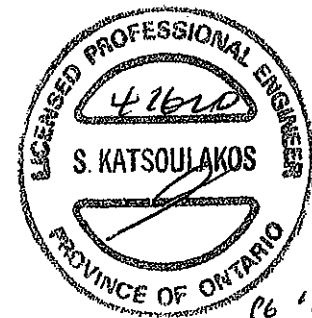
	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3101 ft-lbs	23220 ft-lbs	13.4%	1	03-09-08
Neg. Moment	-800 ft-lbs	-23220 ft-lbs	3.4%	4	03-11-04
End Shear	1375 lbs	11571 lbs	11.9%	1	01-03-00
Total Load Deflection	L/999 (0.037")	n/a	n/a	6	03-10-10
Live Load Deflection	L/999 (0.027")	n/a	n/a	8	03-10-10
Total Neg. Defl.	L/999 (-0.003")	n/a	n/a	7	04-03-08
Max Defl.	0.037"	n/a	n/a	6	03-10-10
Span / Depth	9.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	1818 lbs	15.3%	7.7%	Spruce-Pine-Fir
B2	Wall/Plate 2-3/4" x 3-1/2"	1009 lbs	17.0%	8.6%	Spruce-Pine-Fir
B2	Uplift	171 lbs			

Cautions

Uplift of 171 lbs found at bearing B2. (SIMPSON 2-L/2-5A @ D. 32)



DWG NO. TAM 5981-20
STRUCTURAL
COMPONENT ONLY

BC CALC® Member Report
Build 7239
Job name:
Address:
City, Province, Postal Code:
Customer:
Code reports: CCMC 12472-R

Dry | 1 span | No cant.

February 10, 2020 15:50:38

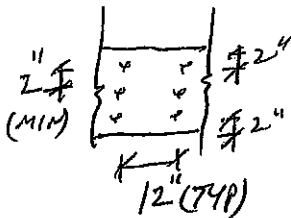
File name: MOUNTAINASH 7 EL 1.mmdl
Description: 2ND FLR FRAMING\Flush Beams\B7(11733)
Specifier:
Designer:
Company:

Notes

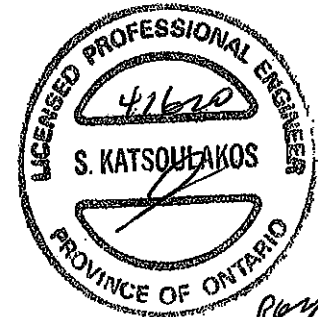
Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States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

3.11.13 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



ONE NO. YAM 5981-20
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®

BC CALC® Member Report

Build 7239

Job name:

File name: MOUNTAINASH 7 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B8(i1788)

City, Province, Postal Code:

Specifier:

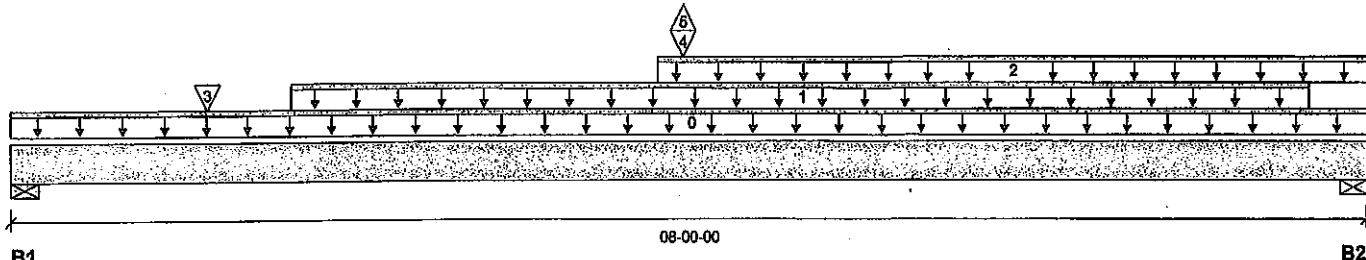
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 08-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1349 / 258	612 / 0		
B2, 5-1/2"	1474 / 248	678 / 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	08-00-00	Top	10				00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-07-12	07-07-12	Top	333	166			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-09-08	08-00-00	Top	18	9			n/a
3	J6(i892)	Conc. Pt. (lbs)	L	01-01-12	01-01-12	Top	315	158			n/a
4	B9(i1740)	Conc. Pt. (lbs)	L	03-11-04	03-11-04	Top	410				n/a
5	B9(i1740)	Conc. Pt. (lbs)	L	03-11-04	03-11-04	Top	-506				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5976 ft-lbs	23220 ft-lbs	25.7%	1	03-11-04
Neg. Moment	-290 ft-lbs	-23220 ft-lbs	1.2%	4	03-11-04
End Shear	2672 lbs	11571 lbs	23.1%	1	01-03-00
Total Load Deflection	L/999 (0.075")	n/a	n/a	6	04-00-08
Live Load Deflection	L/999 (0.053")	n/a	n/a	8	04-00-08
Max Defl.	0.075"	n/a	n/a	6	04-00-08
Span / Depth	9.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	2789 lbs	23.5%	11.9%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	3058 lbs	25.8%	13.0%	Spruce-Pine-Fir

Notes

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

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

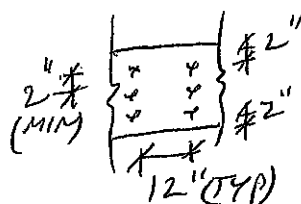
Calculations assume member is fully braced.

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



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

CONFORMS TO OBC 2012

AMENDED 2020

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

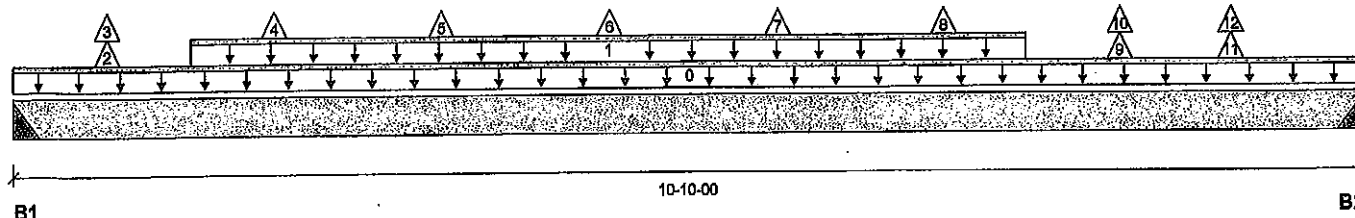
File name: MOUNTAINASH 7 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B9(11740)

Specifier:

Designer:

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	410 / 507	6 / 0		
B2, 4"	398 / 474	15 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-10-00	Top		10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-05-04	08-01-04	Top	81				n/a
2	J3(11795)	Conc. Pt. (lbs)	L	00-09-04	00-09-04	Top	90	-14			n/a
3	J3(11795)	Conc. Pt. (lbs)	L	00-09-04	00-09-04	Top	-120				n/a
4	J3(11765)	Conc. Pt. (lbs)	L	02-01-04	02-01-04	Top	-130	-11			n/a
5	J3(11773)	Conc. Pt. (lbs)	L	03-05-04	03-05-04	Top	-130	-11			n/a
6	J3(11821)	Conc. Pt. (lbs)	L	04-09-04	04-09-04	Top	-130	-11			n/a
7	J3(11757)	Conc. Pt. (lbs)	L	06-01-04	06-01-04	Top	-130	-11			n/a
8	J3(11810)	Conc. Pt. (lbs)	L	07-05-04	07-05-04	Top	-135	-12			n/a
9	J3(11778)	Conc. Pt. (lbs)	L	08-10-08	08-10-08	Top	94	-10			n/a
10	J3(11778)	Conc. Pt. (lbs)	L	08-10-08	08-10-08	Top	-114				n/a
11	J3(11731)	Conc. Pt. (lbs)	L	09-09-04	09-09-04	Top	85	-4			n/a
12	J3(11731)	Conc. Pt. (lbs)	L	09-09-04	09-09-04	Top	-92				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1607 ft-lbs	23220 ft-lbs	6.9%	1	05-03-04
Neg. Moment	-1909 ft-lbs	-23220 ft-lbs	8.2%	4	04-09-04
End Shear	752 lbs	11571 lbs	6.5%	4	01-01-08
Total Load Deflection	L/999 (0.041")	n/a	n/a	6	05-05-04
Live Load Deflection	L/999 (-0.049")	n/a	n/a	9	05-05-04
Total Neg. Defl.	L/999 (-0.048")	n/a	n/a	7	05-05-04
Max Defl.	-0.048"	n/a	n/a	7	05-05-04
Span / Depth	13.0				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	4" x 3-1/2"	622 lbs	n/a	3.6%	HGUS410
B1 Uplift		756 lbs			
B2 Hanger	4" x 3-1/2"	616 lbs	n/a	3.6%	HGUS410
B2 Uplift		697 lbs			



DWG NO. YAM 5983 -20
STRUCTURAL
COMPONENT ONLY

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

Dry | 1 span | No cant.

February 10, 2020 15:50:38

File name: MOUNTAINASH 7 EL 1.mmdl
 Description: 2ND FLR FRAMING\Flush Beams\B9(i1740)
 Specifier:
 Designer:
 Company:

CCMC 12472-R

Cautions

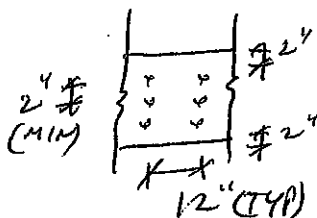
Uplift of 756 lbs found at bearing B1.
 Hanger B1 cannot handle uplift of -756 lbs.) - (SIMPSON HGUS410 @ B1)
 Header for the hanger HGUS410 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.
 Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.
 Header for the hanger HGUS410 at B2 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.

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



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



OWN NO. YAM 5983-20
 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™, BC®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

BC CALC® Member Report

Dry | 1 span | No cant.

February 10, 2020 16:46:56

Build 7239

Job name:

File name: MOUNTAINASH 7 EL 2.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B12B(I2275)

City, Province, Postal Code: WATERDOWN

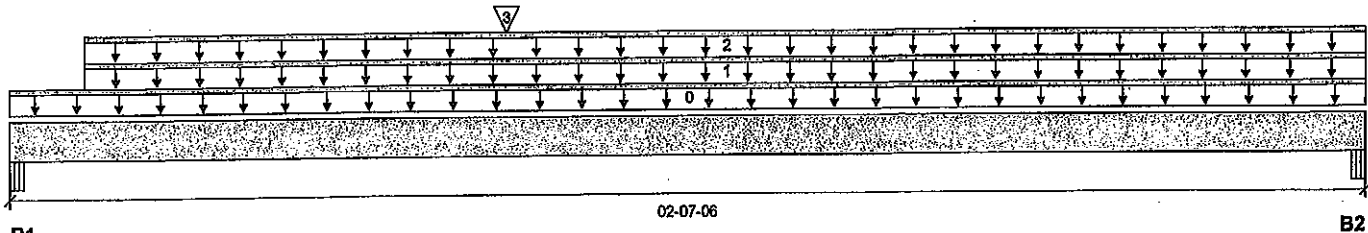
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 02-07-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	56 / 0	637 / 0	43 / 0	
B2, 5-1/4"	80 / 0	470 / 0	61 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	02-07-06	Top		10			00-00-00
1	ROOF	Unf. Lin. (lb/ft)	L	00-01-12	02-07-06	Top	22	20	42		n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-01-12	02-07-06	Top	33	17			n/a
3	-	Conc. Pt. (lbs)	L	00-11-08	00-11-08	Top		992			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	758 ft-lbs	15093 ft-lbs	5.0%	0	00-11-08
End Shear	839 lbs	7521 lbs	11.2%	0	00-11-04
Total Load Deflection	L/999 (0.001")	n/a	n/a	35	01-01-07
Live Load Deflection	L/999 (0")	n/a	n/a	51	01-02-01
Max Defl.	0.001"	n/a	n/a	35	01-01-07
Span / Depth	2.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	1-3/4" x 3-1/2"	892 lbs	18.4%	18.4%	VL 2.0 3100 SP
B2 Beam	5-1/4" x 3-1/2"	658 lbs	10.3%	4.5%	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.

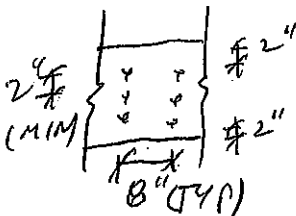
Unbalanced snow loads determined from building geometry were used in selected product's verification.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

PROVIDE 3 ROWS OF 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. TAM 5984-20

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®,

BC CALC® Member Report

Dry | 1 span | No cant.

February 10, 2020 17:18:04

Build 7239

Job name:

File name: MOUNTAINASH 7 EL 3.mxd

Address:

Description: 2ND FLR FRAMING\Flush Beams\B12C(12458)

City, Province, Postal Code: WATERDOWN

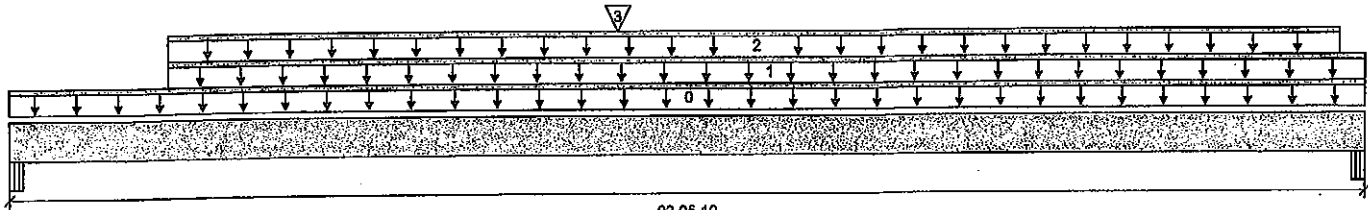
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 02-05-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	35 / 0	479 / 0	37 / 0	
B2, 5-1/4"	52 / 0	442 / 0	55 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	02-05-10	Top		10			00-00-00
1	ROOF	Unf. Lin. (lb/ft)	L	00-03-08	02-05-10	Top	22	20	42		n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-03-08	02-05-01	Top	18	9			n/a
3	E19(1702)	Conc. Pt. (lbs)	L	01-01-04	01-01-04	Top		834			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	565 ft-lbs	15093 ft-lbs	3.7%	0	01-01-04
End Shear	623 lbs	7521 lbs	8.3%	0	01-01-00
Total Load Deflection	L/999 (0")	n/a	n/a	35	01-01-11
Live Load Deflection	L/999 (0")	n/a	n/a	51	01-01-14
Max Defl.	0"	n/a	n/a	35	01-01-11
Span / Depth	2.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	3-1/2" x 3-1/2"	670 lbs	6.9%	6.9%	VL 2.0 3100 SP
B2 Beam	5-1/4" x 3-1/2"	619 lbs	9.7%	4.2%	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.

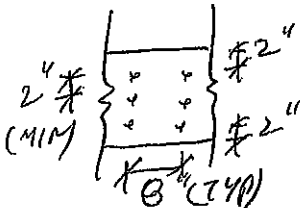
Resistance Factor phi has been applied to all presented results per CSA O86.

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



PROVIDE 2 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. TAM 5985-20

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®.

CONFORMS TO OBC 2012

AMENDED 2020

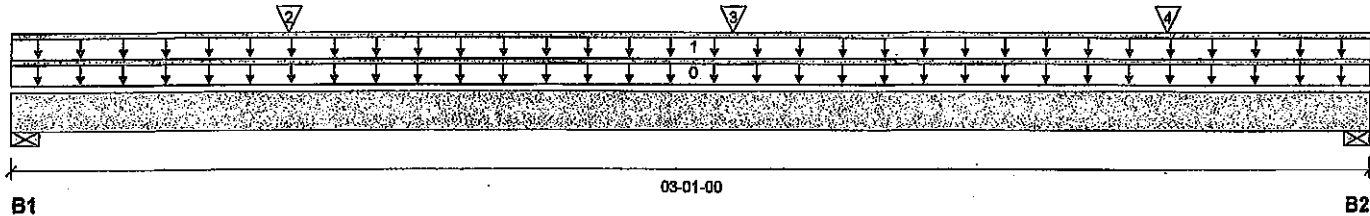
BC CALC® Member Report
Build 7239

Dry | 1 span | No cant.

April 16, 2020 09:09:55

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

File name: MOUNTAINASH 7 EL 1 DECK CONDITION.mmdl
Description: 1ST FLR FRAMING\Flush Beams\B1A(I2374)
Specifier:
Designer: AJ
Company:



Total Horizontal Product Length = 03-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	1028 / 0	653 / 0		
B2, 3"	1092 / 0	685 / 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	03-01-00	Top		10			00-00-00
1	E3(I343)	Unf. Lin. (lb/ft)	L	00-00-00	03-01-00	Top	348	255			n/a
2	J7(I1946)	Conc. Pt. (lbs)	L	00-07-08	00-07-08	Top	349	174			n/a
3	J7(I1892)	Conc. Pt. (lbs)	L	01-07-08	01-07-08	Top	349	174			n/a
4	J7(I1966)	Conc. Pt. (lbs)	L	02-07-08	02-07-08	Top	349	174			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1537 ft-lbs	23220 ft-lbs	6.6%	1	01-07-08
End Shear	1746 lbs	11571 lbs	15.1%	1	01-00-08
Total Load Deflection	L/999 (0.003")	n/a	n/a	4	01-06-10
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-06-10
Max Defl.	0.003"	n/a	n/a	4	01-06-10
Span / Depth	3.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3" x 3-1/2"	2359 lbs	36.5%	18.4%	Spruce-Pine-Fir
B2	Wall/Plate 3" x 3-1/2"	2493 lbs	38.6%	19.5%	Spruce-Pine-Fir

Notes

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

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

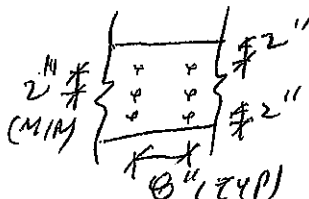
Calculations assume member is fully braced.

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



PROVIDE 3 ROWS OF 3 1/2" 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 5986-20

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.

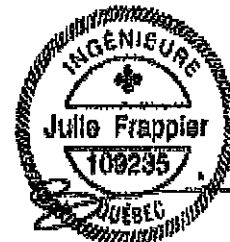
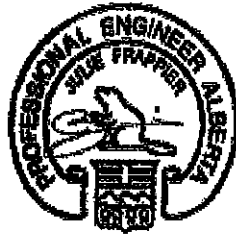
BC CALC®, BC FRAMER®, AJSTM, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

CONFORMS TO OBC 2012

AMENDED 2020

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-L274C.

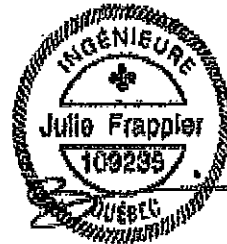
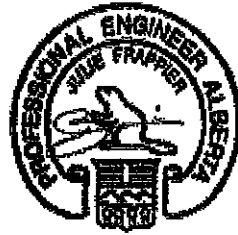


Maximum Floor Spans

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'-9"	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

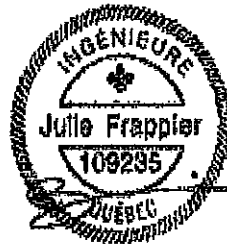
Live Load = 40 psf, Dead Load = 15 psf
Simple Spans, L/480 Deflection Limit
3/4" OSB G&N Sheathing

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

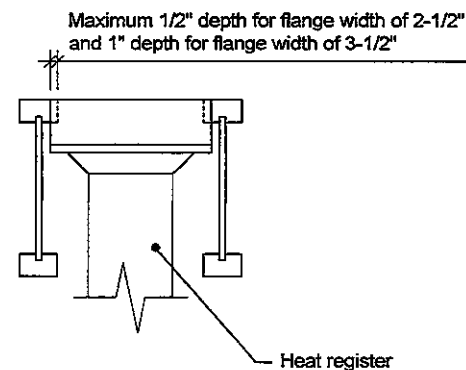
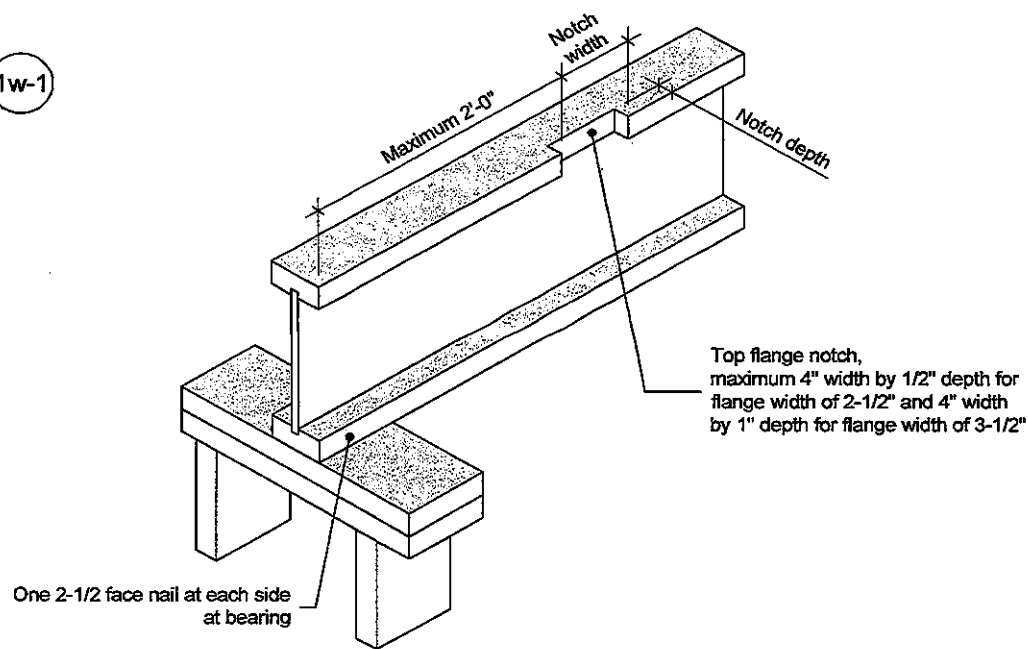


Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	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'-0"	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 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
1 866 817-3418
nordic.ca

TITLE

Notch in I-joist for Heat Register

CATEGORY

I-joist - Typical Floor Framing and Construction Details

DOCUMENT

-

DATE

2018-04-10

NUMBER

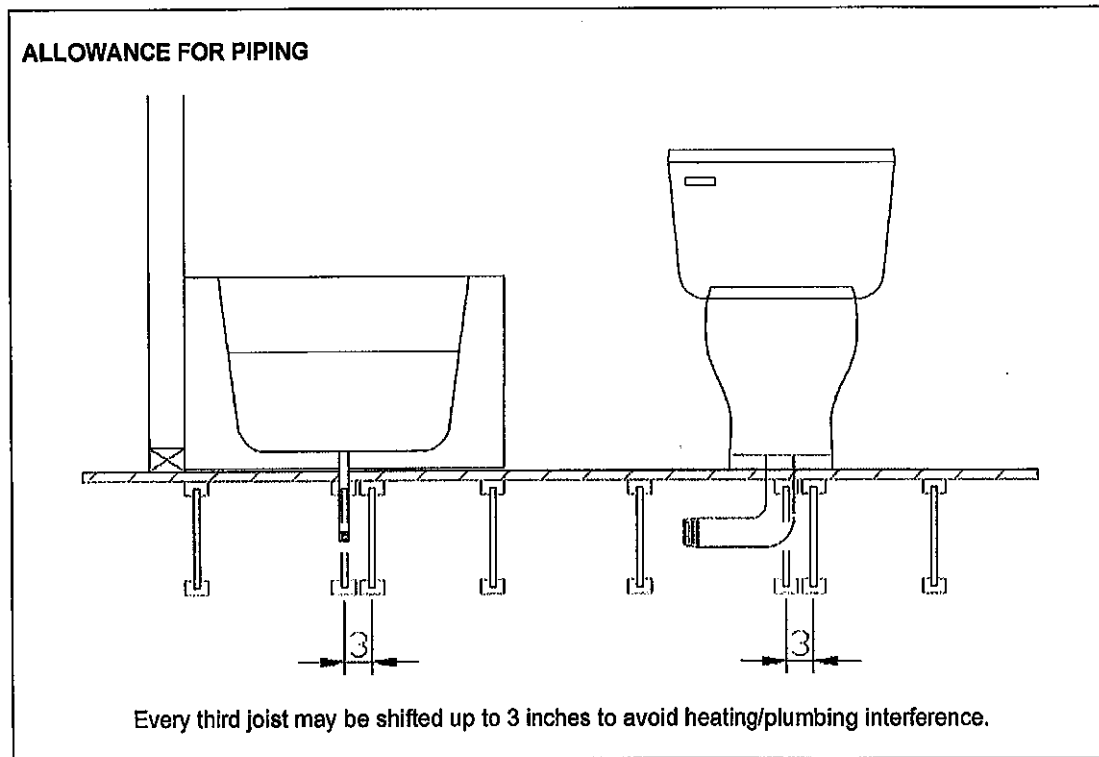
1w-1

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