

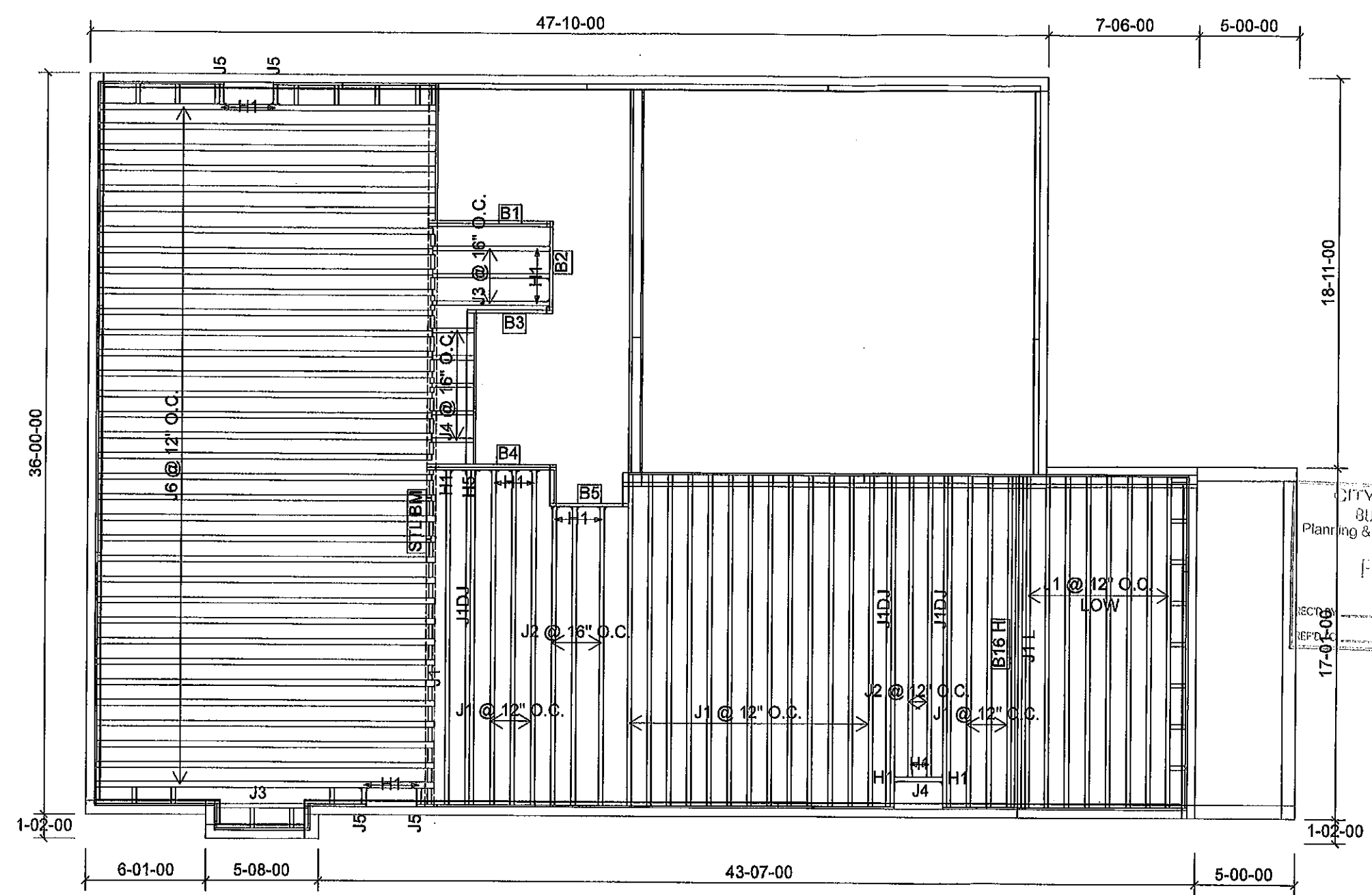


FROM PLAN DATED: AUG 28, 2020
BUILDER: GREENPARK HOMES
SITE: RUSSELL GARDENS PH 3
MODEL: MOUNTAINASH 5
ELEVATION: 2
LOT: 294
CITY: WATERDOWN
SALESMAN: MARIO DICIANO
DESIGNER: AJ
REVISION: L.D.

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

LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 20.0 lb/ft²
SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2020-09-16
1st FLOOR



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	18-00-00	9 1/2" NI-40x	1	28	MFD
J1 L	18-00-00	9 1/2" NI-40x	1	1	MFD
J1DJ	18-00-00	9 1/2" NI-40x	2	6	MFD
J2	16-00-00	9 1/2" NI-40x	1	5	MFD
J3	6-00-00	9 1/2" NI-40x	1	4	MFD
J4	4-00-00	9 1/2" NI-40x	1	6	MFD
J5	2-00-00	9 1/2" NI-40x	1	4	MFD
J6	18-00-00	9 1/2" NI-80	1	34	MFD
B16 H	18-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B2	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B3	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B1	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B5	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD

Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
1	H5	HU312-2

FROM PLAN DATED: AUG 28, 2020

BUILDER: GREENPARK HOMES

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LOADING:

DESIGN LOADS: L/480.000

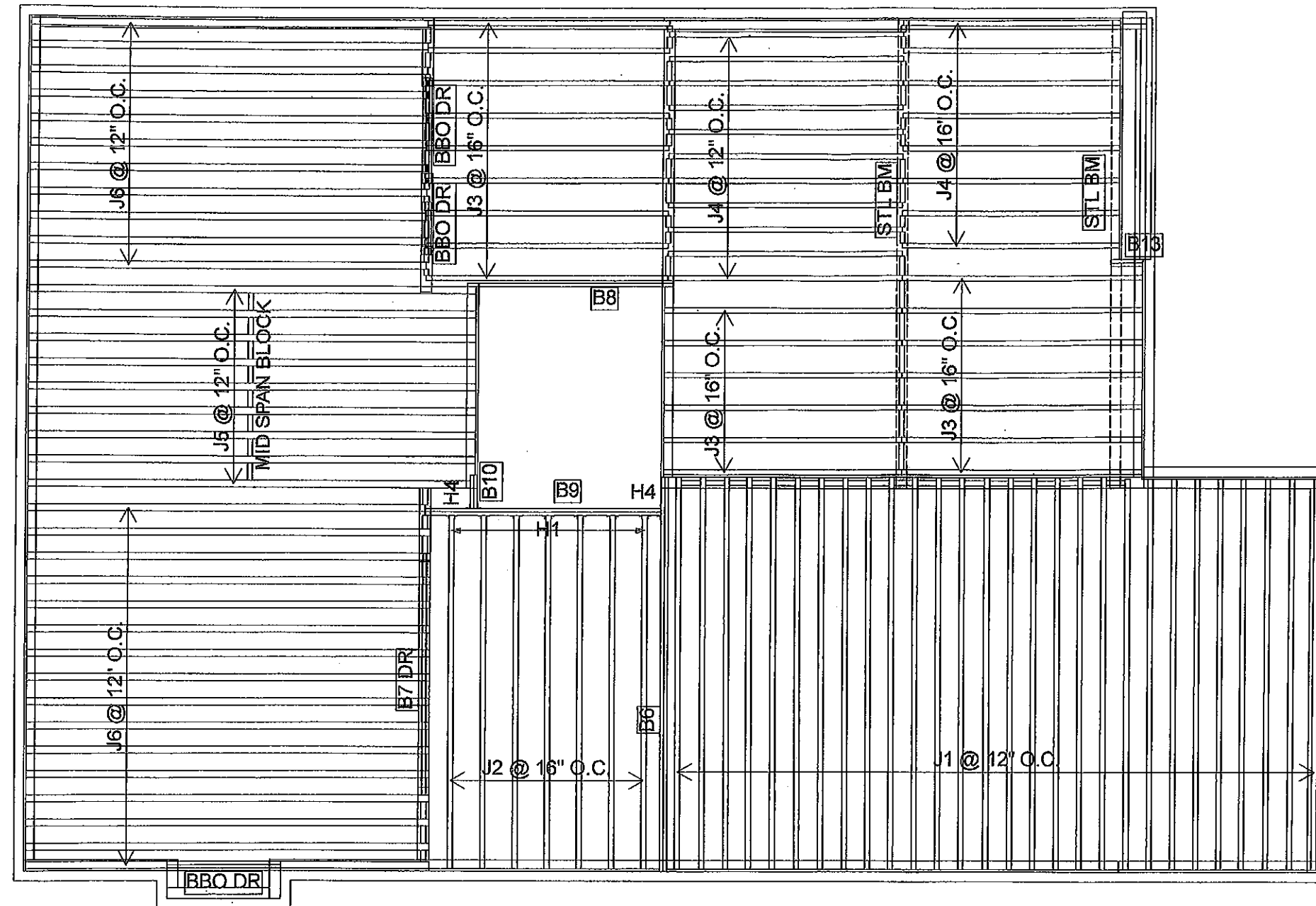
LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

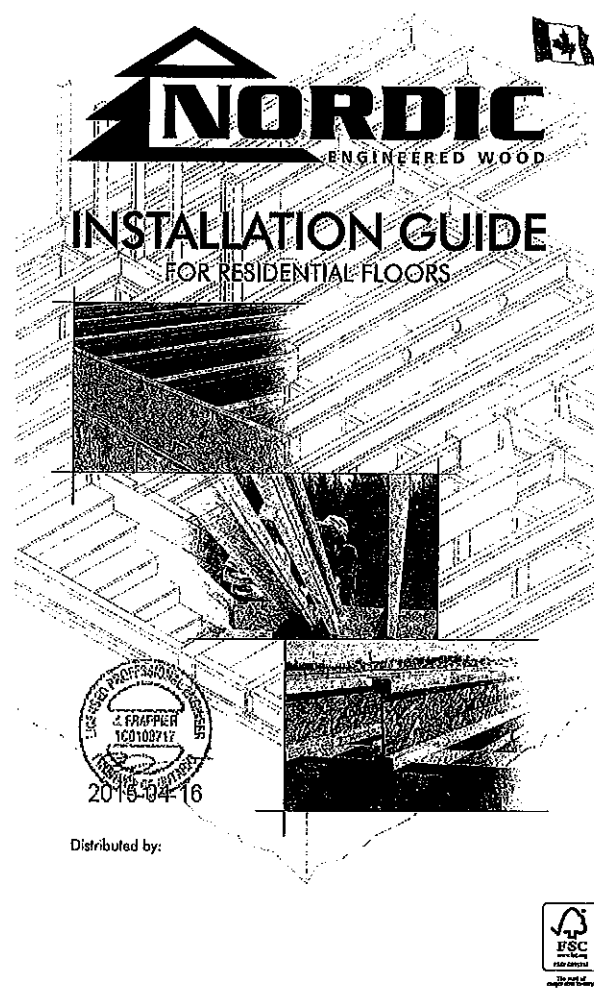
DATE: 2020-09-16

2nd FLOOR



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	18-00-00	9 1/2" NI-40x	1	28	MFD
J2	16-00-00	9 1/2" NI-40x	1	7	MFD
J3	12-00-00	9 1/2" NI-40x	1	22	MFD
J4	10-00-00	9 1/2" NI-40x	1	19	MFD
J5	20-00-00	9 1/2" NI-80	1	9	MFD
J6	18-00-00	9 1/2" NI-80	1	27	MFD
B6	18-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B8	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1	MFD
B9	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B7 DR	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3	MFD
B10	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B13	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD

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



SAFETY AND CONSTRUCTION PRECAUTIONS

WARNING

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

Avoid Accidents by Following these Important Guidelines:

1. Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-briding at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-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 center, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral 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.
3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-briding.
4. 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.
5. Never install a damaged I-joist.

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

STORAGE AND HANDLING GUIDELINES

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

MAXIMUM FLOOR SPANS

1. Maximum clear spans applicable to simple-span or multiple-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 and a live load deflection limit of 1/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.

2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CCBC-71.24 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.

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

4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

5. This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.

6. Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.

7. SI units conversion: 1 inch = 25.4 mm, 1 foot = 0.305 m

MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS SIMPLE AND MULTIPLE SPANS

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On center spacing	12"	16"	19.2"	On center spacing	12"	16"	19.2"
9-1/2"	NL-20	15'1"	14'2"	13'9"	13'5"	16'3"	15'4"	14'10"	14'7"
	NL-40	16'1"	15'2"	14'9"	14'5"	17'5"	16'5"	15'10"	15'5"
	NL-60	16'3"	15'4"	14'10"	14'11"	17'7"	16'7"	15'11"	15'6"
	NL-80	17'1"	16'1"	15'6"	15'7"	18'7"	17'4"	16'9"	16'10"
11-7/8"	NL-20	17'3"	16'3"	15'8"	15'9"	18'10"	17'4"	16'11"	17'0"
	NL-40	18'1"	17'0"	16'5"	16'6"	20'0"	18'5"	17'9"	17'2"
	NL-60	18'4"	17'3"	16'7"	16'9"	20'3"	18'9"	18'0"	18'1"
	NL-80	19'4"	18'0"	17'4"	17'5"	21'6"	19'11"	19'0"	19'1"
14"	NL-20	19'9"	18'3"	17'8"	17'9"	21'9"	20'2"	19'3"	19'4"
	NL-40	20'2"	18'7"	17'10"	17'11"	22'3"	20'7"	19'8"	19'9"
	NL-60	20'4"	18'9"	17'11"	18'0"	22'5"	20'9"	19'10"	19'11"
	NL-80	21'1"	19'7"	17'10"	17'11"	22'2"	20'5"	19'8"	19'4"
16"	NL-20	20'5"	18'11"	18'1"	18'2"	22'1"	20'11"	20'1"	20'1"
	NL-40	21'7"	20'0"	19'1"	19'2"	23'10"	22'1"	21'1"	21'2"
	NL-60	21'11"	20'3"	19'4"	19'5"	24'3"	22'5"	21'5"	21'6"
	NL-80	22'5"	20'8"	19'9"	19'10"	24'9"	22'10"	21'10"	21'10"
18"	NL-20	22'7"	20'11"	19'11"	19'11"	25'2"	23'1"	22'0"	22'0"
	NL-40	22'3"	20'8"	19'9"	19'10"	24'7"	22'9"	21'9"	21'10"
	NL-60	23'6"	21'9"	20'9"	20'10"	26'0"	24'0"	22'11"	23'0"
	NL-80	23'11"	22'1"	21'1"	21'2"	26'5"	24'5"	23'3"	23'4"
20"	NL-20	24'5"	22'6"	21'6"	21'6"	26'11"	24'10"	23'9"	23'9"
	NL-80	24'8"	22'9"	21'9"	21'10"	27'3"	25'2"	24'0"	24'1"

I-JOIST HANGERS

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

WEB STIFFENERS

RECOMMENDATIONS:

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

SI units conversion: 1 inch = 25.4 mm

FIGURE 2 WEB STIFFENER INSTALLATION DETAILS

See table below for web stiffener size requirements

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

NORDIC I-JOIST SERIES

Chantiers Chaboussou Ltd. harvests its own trees, which enables Nordic products to adhere to strict quality control procedures throughout the manufacturing process. Every phase of the operation, from forest to finished product, reflects our commitment to quality.

Nordic Engineered Wood I-joists use only finger-jointed black spruce lumber in their flanges, ensuring consistent quality, superior strength, and longer span carrying capacity.

INSTALLING NORDIC I-JOISTS

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

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

Some framing requirements such as erection bracing and blocking panels have been omitted for clarity.

Figures 3, 4 or 5

NOTE: Never cut or notch flanges.

Nordic Laminated Composite Lumber (SCL)

Use hangers recognized in current code evaluation reports

All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (76.2 mm) dia) common spiral nails may be substituted for 2-1/2" (63.5 mm) dia) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.

1a Attach I-joist to top plate per detail 1b

1b Blocking Panel or Rim Joist

1c Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

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

1e Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1f Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1g Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1h Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1i Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

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1k Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

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Some framing requirements such as erection bracing and blocking panels have been omitted for clarity.

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1a Attach I-joist to top plate per detail 1b

1b Blocking Panel or Rim Joist

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

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1z Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

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

Some framing requirements such as erection bracing and blocking panels have been omitted for clarity.

Figures 3, 4 or 5

NOTE: Never cut or notch flanges.

Nordic Laminated Composite Lumber (SCL)

Use hangers recognized in current code evaluation reports

All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (76.2 mm) dia) common spiral nails may be substituted for 2-1/2" (63.5 mm) dia) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.

1a Attach I-joist to top plate per detail 1b

1b Blocking Panel or Rim Joist

1c Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

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

1e Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1f Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1g Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1h Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1i Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1j Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1k Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1l Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1m Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1n Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1o Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1p Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1q Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1r Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1s Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1t Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1u Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1v Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1w Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1x Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1y Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1z Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

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

Some framing requirements such as erection bracing and blocking panels have been omitted for clarity.

Figures 3, 4 or 5

NOTE: Never cut or notch flanges.

Nordic Laminated Composite Lumber (SCL)

Use hangers recognized in current code evaluation reports

All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (76.2 mm) dia) common spiral nails may be substituted for 2-1/2" (63.5 mm) dia) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.

1a Attach I-joist to top plate per detail 1b

1b Blocking Panel or Rim Joist

1c Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

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

1e Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1f Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

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1i Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1j Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

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1m Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1n Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1o Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1p Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1q Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1r Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1s Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1t Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1u Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1v Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1w Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

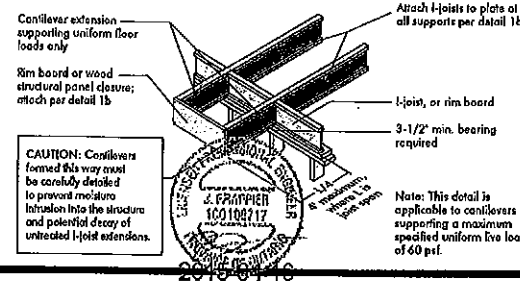
1x Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

1y Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

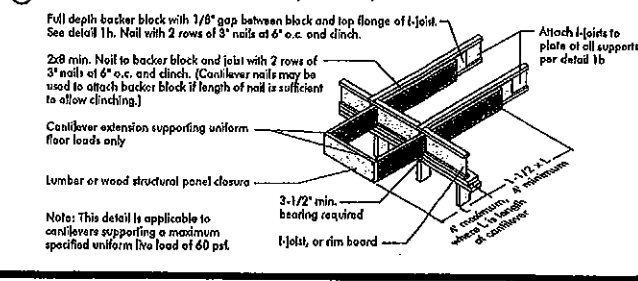
1z Attach rim joist to floor joist with one nail at top and bottom. Nail must provide 1 inch minimum penetration into floor joist. Toe-nailing may be used.

CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

3a) I-JOIST CANTILEVER DETAIL FOR BALCONIES (No Wall Load)

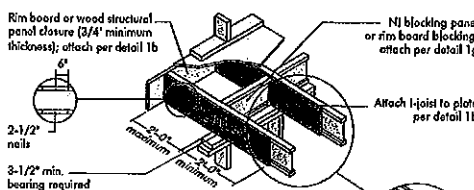


3b) LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)

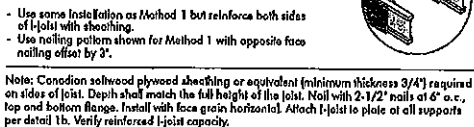


CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

4a) Method 1 — SHEATHING REINFORCEMENT ONE SIDE



Method 2 — SHEATHING REINFORCEMENT TWO SIDES



4b) Alternate Method 2 — DOUBLE I-JOIST

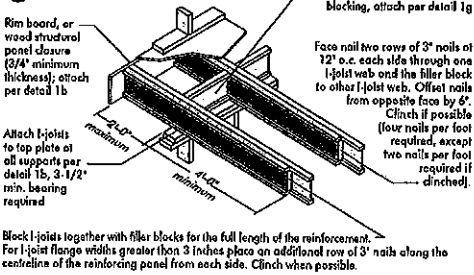
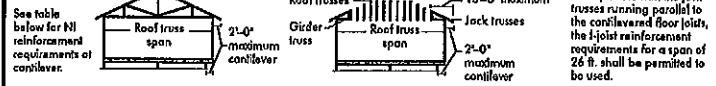


FIGURE 4 (continued)



CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	LL = 20 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf			
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
9-1/2"	26	N	N	1	2	N	N	1	2	N	N	1	2
	28	N	N	1	2	N	N	1	2	N	N	1	2
	30	N	N	1	2	N	N	1	2	N	N	1	2
	32	N	N	1	2	N	N	1	2	N	N	1	2
11-7/8"	26	N	N	1	2	N	N	1	2	N	N	1	2
	28	N	N	1	2	N	N	1	2	N	N	1	2
	30	N	N	1	2	N	N	1	2	N	N	1	2
	32	N	N	1	2	N	N	1	2	N	N	1	2
14"	26	N	N	1	2	N	N	1	2	N	N	1	2
	28	N	N	1	2	N	N	1	2	N	N	1	2
	30	N	N	1	2	N	N	1	2	N	N	1	2
	32	N	N	1	2	N	N	1	2	N	N	1	2
16"	26	N	N	1	2	N	N	1	2	N	N	1	2
	28	N	N	1	2	N	N	1	2	N	N	1	2
	30	N	N	1	2	N	N	1	2	N	N	1	2
	32	N	N	1	2	N	N	1	2	N	N	1	2

1. N = No reinforcement required.
2. N = I-joist reinforced with 2x4 wood structural panel on one side only.
3. Table applies to joists 12" to 24" o.c. that meet the floor 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. Use 12" o.c. requirements for lesser spacing.
4. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge beam, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
5. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

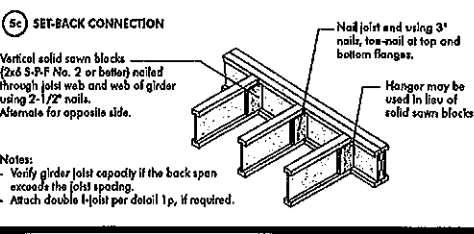
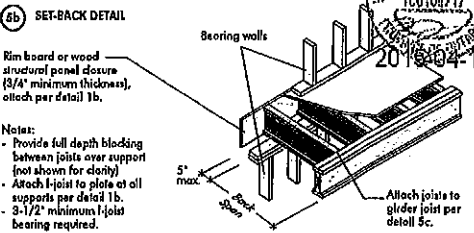
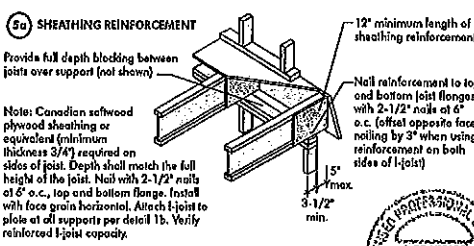
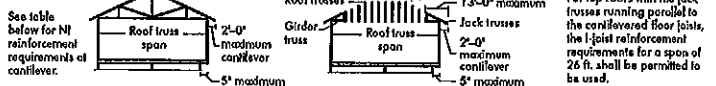


FIGURE 5 (continued)



BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	LL = 20 psf, DL = 15 psf				LL = 40 psf, DL = 15 psf				LL = 50 psf, DL = 15 psf			
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
9-1/2"	26	N	N	1	2	N	N	1	2	N	N	1	2
	28	N	N	1	2	N	N	1	2	N	N	1	2
	30	N	N	1	2	N	N	1	2	N	N	1	2
	32	N	N	1	2	N	N	1	2	N	N	1	2
11-7/8"	26	N	N	1	2	N	N	1	2	N	N	1	2
	28	N	N	1	2	N	N	1	2	N	N	1	2
	30	N	N	1	2	N	N	1	2	N	N	1	2
	32	N	N	1	2	N	N	1	2	N	N	1	2
14"	26	N	N	1	2	N	N	1	2	N	N	1	2
	28	N	N	1	2	N	N	1	2	N	N	1	2
	30	N	N	1	2	N	N	1	2	N	N	1	2
	32	N	N	1	2	N	N	1	2	N	N	1	2
16"	26	N	N	1	2	N	N	1	2	N	N	1	2
	28	N	N	1	2	N	N	1	2	N	N	1	2
	30	N	N	1	2	N	N	1	2	N	N	1	2
	32	N	N	1	2	N	N	1	2	N	N	1	2

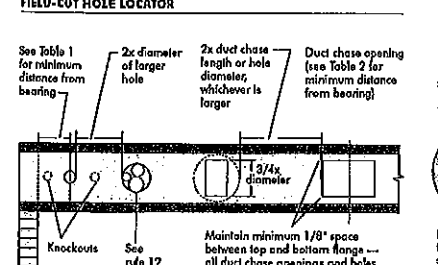
1. N = No reinforcement required.
2. N = I-joist reinforced with 2x4 wood structural panel on one side only.
3. Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
4. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge beam, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
5. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

1. The distance between the inside edge of the support and the centroid of any hole or duct chase opening shall be in compliance with the requirements of Tables 1 or 2, respectively.
2. Joist top and bottom flanges must NEVER be cut, notched, or otherwise modified.
3. Whenever possible, field-cut holes should be centered on the middle of the web.
4. 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 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joist flange.
5. The sides of square holes or long sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
6. Where more than one hole is necessary, the distance between adjacent holes shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the longest side of the longest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
7. 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.
8. Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.
9. 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.
10. 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.
11. Limit three maximum size holes per span, of which one may be a duct chase opening.
12. A group of round holes of approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

FIGURE 7 FIELD-CUT HOLE LOCATOR



A knockout is NOT considered a hole, may be utilized wherever it occurs and may be ignored for purposes of calculating minimum distances between holes.

TABLE 1 LOCATION OF CIRCULAR HOLES IN JOIST WEBS

Joist Depth	Joist Series	Minimum distance from inside face of any support to center of hole (in.)												Span Adjustment
		2	3	4	5	6	7	8	9	10	11	12	13	
9-1/2"	N100	12	12	12	12	12	12	12	12	12	12	12	12	12
	N110	12	12	12	12	12	12	12	12	12	12	12	12	12
	N120	12	12	12	12	12	12	12	12	12	12	12	12	12
	N130	12	12	12	12	12	12	12	12	12	12	12	12	12
11-7/8"	N140	12	12	12	12	12	12	12	12	12	12	12	12	12
	N150	12	12	12	12	12	12	12	12	12	12	12	12	12
	N160	12	12	12	12	12	12	12	12	12	12	12	12	12
	N170	12	12	12	12	12	12	12	12	12	12	12	12	12
14"	N180	12	12	12	12	12	12	12	12	12	12	12	12	12
	N190	12	12	12	12	12	12	12	12	12	12	12	12	12
	N200	12	12	12	12	12	12	12	12	12	12	12	12	12
	N210	12	12	12	12	12	12	12	12	12	12	12	12	12
16"	N220	12	12	12	12	12	12	12	12	12	12	12	12	12
	N230	12	12	12	12	12	12	12	12	12	12	12	12	12
	N240	12	12	12	12	12	12	12	12	12	12	12	12	12
	N250	12	12	12	12	12	12	12	12	12	12	12	12	12

1. Above table may be used for I-joist spacing of 24 inches on center or less.
2. Hole location distance is measured from inside face of supports to center of hole.
3. Distances in this chart are based on uniformly loaded joists.

OPTIONAL:

The above table is based on the I-joists used of their maximum span. If the I-joists are placed at less than their full maximum span (see Manufacturer's literature), the minimum distance from the center of the hole to the face of any support (S) as given above may be reduced as follows:

Reduced S = $\frac{S}{L} \times D$

Where:

- Reduced S = Distance from the inside face of any support to center of hole, reduced for less than maximum span application.
- S = Distance from the center of the hole to the face of the support to edge of the hole.
- L = The actual measured span distance between the inside face of supports (ft).
- D = Span Adjustment Factor given in this table.
- SF = The minimum distance from the inside face of any support to center of hole from this table.
- SF = If actual is greater than 1, use 1 in the above calculation for actual.

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

Joist Depth	Joist Series	Minimum distance from inside face of any support to center of opening (in.)											
		2	3	4	5	6	7	8	9	10	11	12	13
9-1/2"	N100	12	12	12	12	12	12	12	12	12	12	12	12
	N110	12	12	12	12	12	12	12	12	12	12	12	12
	N120	12	12	12	12	12	12	12	12	12	12	12	12
	N130	12	12	12	12	12	12	12	12	12	12	12	12
11-7/8"	N140	12	12	12	12	12	12	12	12	12	12	12	12
	N150	12	12	12	12	12	12	12	12	12	12	12	12
	N160	12	12	12	12	12	12	12	12	12	12	12	12
	N170	12	12	12	12	12	12	12	12	12	12	12	12
14"	N180	12	12	12	12	12	12	12	12	12	12	12	12
	N190	12	12	12	12	12	12	12	12	12	12	12	12
	N200	12	12	12	12	12	12	12	12	12	12	12	12
	N210	12	12	12	12	12	12	12	12	12	12	12	12
16"	N220	12	12	12	12	12	12	12	12	12	12	12	12
	N230	12	12	12	12	12	12	12	12	12	12	12	12
	N240	12	12	12	12	12	12	12	12	12	12	12	12
	N250	12	12	12	12	12	12	12	12	12	12	12	12

1. Above table may be used for I-joist spacing of 24 inches on center or less.
2. Duct chase opening location distance is measured from inside face of supports to center of opening.
3. The above table is based on simple span joists only. For other applications, consult your local distributor.
4. 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. For other applications, consult your local distributor.

INSTALLING THE GLUED FLOOR SYSTEM

1. Wipe any mud, dirt, water, or ice from I-joist flanges before gluing.
2. Snap a chalk line across the joists four feet in from the wall for panel edge alignment and as a boundary for spreading glue.
3. Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.
4. Lay the first panel with tongue side to the wall, and nail in place. This protects the tongue of the next panel from damage when tapped into place with a block and sledgehammer.
5. Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists.
6. Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.
7. After the first row of panels is in place, spread glue in the groove of one or two panels at a time before laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) then used on I-joist flanges.
8. Tap the second row of panels into place, using a block to protect groove edges.
9. Stagger end joints in each succeeding row of panels. A 1/8-inch space between ends and joints and 1/8-inch at all edges, including TAG edges, is recommended. (Use a spacer tool or on 2-1/2" common nail to assure accurate and consistent spacing.)
10. Complete all nailing of each panel before glue sets. Check the manufacturer's recommendations for cure time. (Warm weather accelerates glue setting.) Use 2" ring- or screw-shank nails for panels 3/4-inch thick or less, and 2-1/2" ring- or screw-shank nails for thicker panels. Space nails per the table below. Closer nail spacing may be required by some codes, or for diaphragm construction. The finished deck can be walked on right away and will carry construction loads without damage to the glue bond.

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

Minimum Joist Spacing (in.)	Minimum Panel Thickness (in.)	Nail Size and Type			Maximum Spacing of Fasteners	
		Common Wire or Spiral Nails	Ring Headed Nail or Screw	Staples	Edges	Interior Supports
16	5/8	2"	1-3/4"	2"	6"	12"
20	5/8	2"	1-3/4"	2"	6"	12"
24	3/4	2"	1-2 1/4"	2"	6"	12"



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:

- 1. 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.
- 2. I-joint top and bottom flanges must NEVER be cut, notched, or otherwise modified.
- 3. Whenever possible, field-cut holes should be centred on the middle of the web.
- 4. The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-joint web shall equal the clear distance between the flanges of the I-joint minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joint flange.

- 5. 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.
- 6. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the longest side of the 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.
- 7. 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.
- 8. 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.

- 9. 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.
- 10. 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.
- 11. Limit three maximum size holes per span, of which one may be a duct chase opening.
- 12. 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.

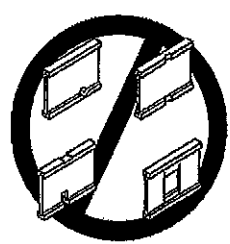
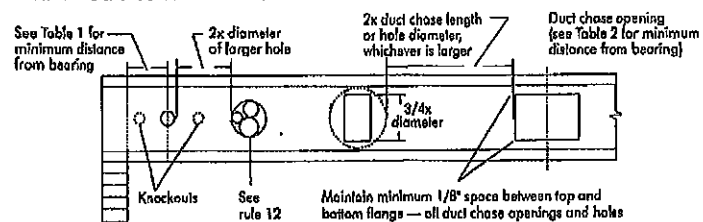
TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS

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.)													
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12-3/4
9-1/2"	NI-20	0-7"	1-5"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---	---	---
	NI-40x	0-7"	1-5"	2-10"	4-3"	5-8"	6-0"	---	---	---	---	---	---	---	---
	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	2-5"	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"	6-6"	7-5"	---	---	---	---	---
	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"	7-3"	8-6"	10-3"	11-4"	---	---	---	---	---
14"	NI-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-5"	---	---	---	---	---
	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"	7-3"	8-6"	10-3"	11-4"	---	---	---	---	---
16"	NI-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-5"	---	---	---	---	---
	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"	7-3"	8-6"	10-3"	11-4"	---	---	---	---	---

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

FIGURE 7
FIELD-CUT HOLE LOCATOR



Knockouts are pre-drilled 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-joint. Where possible, it is preferable to use knockouts instead of field-cut holes.

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

Holes in webs should be cut with a shop saw.

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

SAFETY AND CONSTRUCTION PRECAUTIONS



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

AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

- 1. Brace and nail each I-joint as it is installed, using hangers, blocking panels, rim board, and/or cross-briding at joist ends. When I-joints are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
- 2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joints. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joint rollover or buckling.
 - a. 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-joint. Nail the bracing to a lateral restraint at the end of each bay. End of adjoining bracing over at least two I-joints.
 - b. Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joints at the end of the bay.
- 3. For cantilevered I-joints, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-briding.
- 4. Install and fully nail permanent sheathing to each I-joint before placing loads on the floor system. Then, stack building materials over beams or walls only.
- 5. Never install a damaged I-joint.

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

CHANTRE CHIBONGMANU
PRODUCT WARRANTY
Chantre Chibongmanu guarantees that, in accordance with our specifications, Nordic products are free from manufacturing defects in material and workmanship.
Furthermore, Chantre Chibongmanu warrants that our products, when utilized in accordance with our handling and installation instructions, will meet or exceed our specifications for the lifetime of the structure.

1a) NI blocking panel. Attach 1-joint to top plate per detail 1b. 2-1/2" nails at 6" o.c. to top plate (when used for lateral shear transfer, nail to bearing plate with some nailing as required for decking).

1b) Rim board. One 2-1/2" face nail at each side at bearing. Attach rim board to top plate using 2-1/2" wire or spiral toe-nails at 6" o.c. To avoid splitting flange, start nails at least 1-1/2" from end of I-joint. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.

1c) Pair of Squash Blocks. Maximum Factored Vertical Load per Pair of Squash Blocks (lbs). 2x Lumber: 5,500; 1-1/8" Rim Board Plus: 4,300. Provide lateral bracing per detail 1a or 1b.

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

1e) Joist attachment per detail 1b. Load bearing wall above shall align vertically with the bearing below. Other conditions, such as offset bearing walls, are not covered by this detail. Blocking required over all interior supports under load-bearing walls or when floor joists are not continuous over support. NI blocking panel per detail 1a.

1f) 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.

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

1h) Backer blocks (Blocks must be long enough to permit required nailing without splitting). Flange Width: 2-1/2" (1"), 3-1/2" (1-1/2"). Material Thickness Required: 1", 1-1/2". Minimum Depth: 5-1/2", 7-1/4".

1i) Top- or face-mount hanger. Double I-joint header. Filler block per detail 1p. Backer block required (both sides for face-mount hangers). NOTE: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

1j) Do not bevel-cut joint beyond inside face of wall. Attach I-joint per detail 1b.

1k) 2x plate flush with inside face of wall or beam. 1/8" overhang allowed past inside face of wall or beam. NOTE: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

1l) Multiple I-joint header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify double I-joint capacity to support concentrated loads. Backer block attached per detail 1h. Nail with twelve 3" nails, clinched when possible. Install hanger per manufacturer's recommendations. Maximum support capacity = 1,620 lbs.

1m) Filler block requirements for double I-joint construction. Flange Size: 2-1/2" x 1-1/2", 3-1/2" x 1-1/2", 3-1/2" x 2". Net Depth: 9-1/2", 11-7/8", 14". Filler Block Size: 2-1/8" x 6", 2-1/8" x 8", 2-1/8" x 10", 2-1/8" x 12".

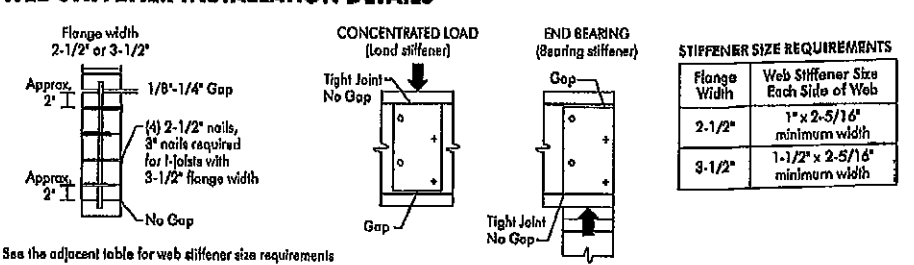
1n) One 2-1/2" nail at top and bottom flange. 2x4 min. (1/8" gap minimum). Two 2-1/2" spiral nails from each web to lumber plate. One 2-1/2" nail one side only. All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.125" dia.) common spiral nails may be substituted for 2-1/2" (0.125" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.

WEB STIFFENERS

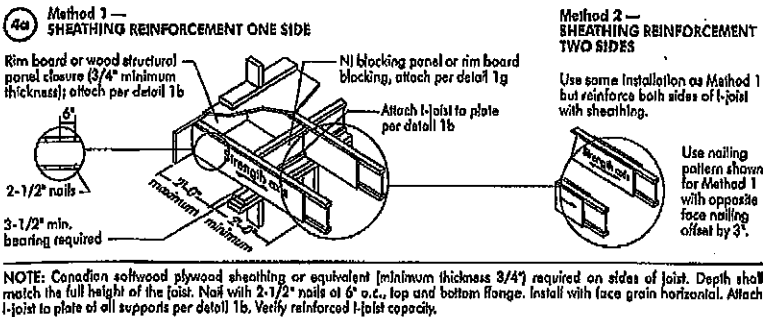
RECOMMENDATIONS:

- 1. A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joint properties table found of the I-joint Construction Guide (C10). The gap between the stiffener and the flange is at the top.
- 2. A bearing stiffener is required when the I-joint is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.
- 3. A load stiffener is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the cantilever tip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

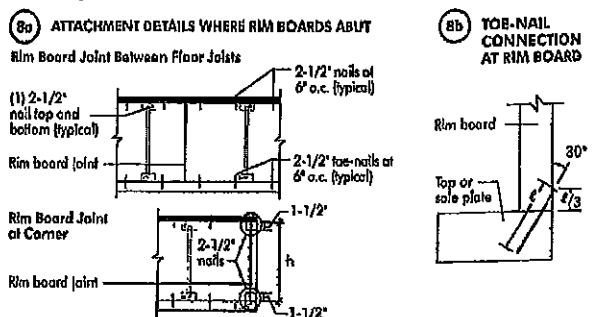
FIGURE 2
WEB STIFFENER INSTALLATION DETAILS



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET



RIM BOARD INSTALLATION DETAILS



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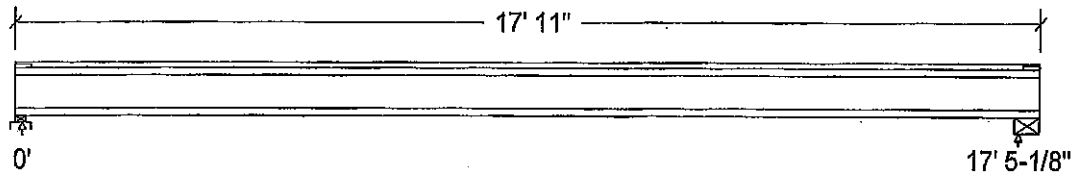
PROJECT
J7 1ST FLOOR.wwb

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	174		174
Live	349		349
Factored:			
Total	741		741
Bearing:			
Capacity			
Joist	1893		1893
Support	5573		-
Des ratio			
Joist	0.39		0.39
Support	0.13		-
Load case	#2		#2
Length	2-3/8		5-1/4
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' 11"; Clear span: 17' 3-3/8"; 3/4" nailed and glued OSB sheathing
This section PASSES the design code check.



86112
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Limit States Design using CSA O86-14 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$V_f = 741$	$V_r = 1895$	lbs	$V_f/V_r = 0.39$
Moment (+)	$M_f = 3227$	$M_r = 8958$	lbs-ft	$M_f/M_r = 0.36$
Perm. Defl'n	$0.13 = < L/999$	$0.58 = L/360$	in	0.22
Live Defl'n	$0.25 = L/834$	$0.44 = L/480$	in	0.58
Total Defl'n	$0.38 = L/556$	$0.87 = L/240$	in	0.43
Bare Defl'n	$0.29 = L/732$	$0.58 = L/360$	in	0.49
Vibration	$L_{max} = 17'-5.1$	$L_v = 18'-4.9$	ft	0.95
Defl'n	$= 0.031$	$= 0.036$	in	0.85

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
V_r	1895	1.00	1.00	-	-	-	-	-	#2
M_r	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: $EI_{eff} = 375.38 \text{ lb-in}^2$ $K = 4.94e06 \text{ lbs}$ "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.



WWG NO. TAM12124-20
STRUCTURAL
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COMPANY
Aug. 20, 2020 09:28

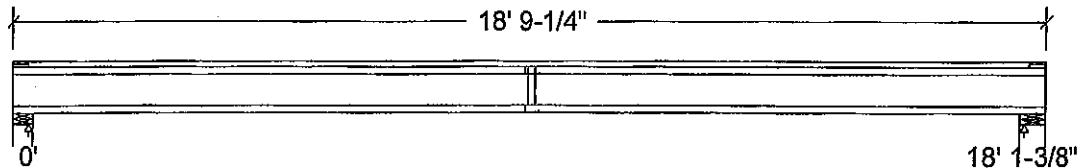
PROJECT
J9 2ND FLOOR.wwb

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			20.00	psf
Load2	Live	Full Area			40.00	psf

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



Unfactored:			
Dead	181		181
Live	362		362
Factored:			
Total	770		770
Bearing:			
Capacity			
Joist	1893		1893
Support	10841		12995
Des ratio			
Joist	0.41		0.41
Support	0.07		0.06
Load case	#2		#2
Length	4-3/8		5-1/4
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	769		769
Kzcp sup	-		-

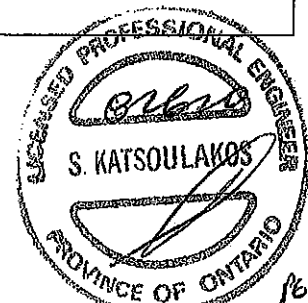
Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

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

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

Total length: 18' 9-1/4"; Clear span: 17' 11-5/8"; 5/8" nailed and glued OSB sheathing with 1 row of blocking and 1/2" gypsum ceiling

This section PASSES the design code check.



BBB NO. TAM 12125-20
STRUCTURAL
COMPLIMENT ONLY

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$V_f = 770$	$V_r = 1895$	lbs	$V_f/V_r = 0.41$
Moment(+)	$M_f = 3486$	$M_r = 8958$	lbs-ft	$M_f/M_r = 0.39$
Perm. Defl'n	$0.15 = < L/999$	$0.60 = L/360$	in	0.24
Live Defl'n	$0.30 = L/735$	$0.45 = L/480$	in	0.65
Total Defl'n	$0.44 = L/490$	$0.91 = L/240$	in	0.49
Bare Defl'n	$0.33 = L/656$	$0.60 = L/360$	in	0.55
Vibration	$L_{max} = 18'-1.4$	$L_v = 20'-0.5$	ft	0.90
Defl'n	$= 0.027$	$= 0.034$	in	0.80

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

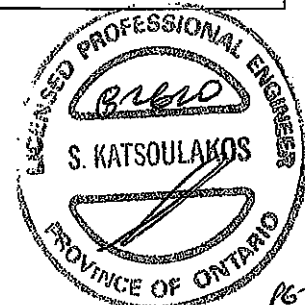
Load Patterns: s=S/2 L=L+Ls =no pattern load in this span

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

CALCULATIONS:E_{ieff} = 367.27 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.



1622
 DWG NO. YAW12125-20
 STRUCTURAL
 COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
Aug. 20, 2020 09:27

PROJECT
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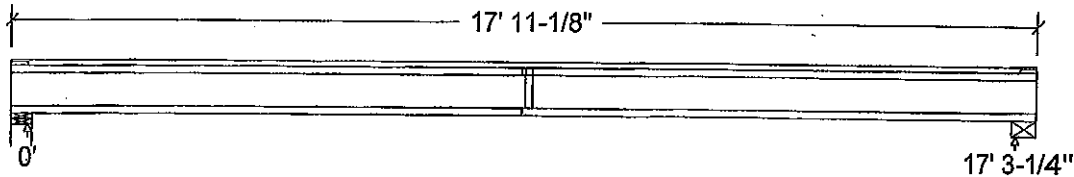
Design Check Calculation Sheet

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	173		173
Live	345		345
Factored:			
Total	734		734
Bearing:			
Capacity			
Joist	1893		1893
Support	10841		-
Des ratio			
Joist	0.39		0.39
Support	0.07		-
Load case	#2		#2
Length	4-3/8		5-1/4
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	769		-
Kzcp sup	-		-

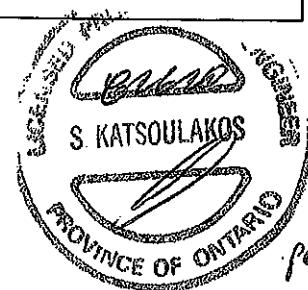
Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

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

Supports: 1 - Lumber Wall, No.1/No.2; 2 - Steel Beam, W;

Total length: 17' 11-1/8"; Clear span: 17' 1-1/2"; 5/8" nailed and glued OSB sheathing with 1 row of blocking and 1/2" gypsum ceiling

This section PASSES the design code check.



DWG NO. YAM/2126-20
STRUCTURAL
COMPONENT ONLY

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$V_f = 734$	$V_r = 1895$	lbs	$V_f/V_r = 0.39$
Moment (+)	$M_f = 3169$	$M_r = 8958$	lbs-ft	$M_f/M_r = 0.35$
Perm. Defl'n	$0.12 = < L/999$	$0.58 = L/360$	in	0.21
Live Defl'n	$0.25 = L/839$	$0.43 = L/480$	in	0.57
Total Defl'n	$0.37 = L/559$	$0.86 = L/240$	in	0.43
Bare Defl'n	$0.28 = L/750$	$0.58 = L/360$	in	0.48
Vibration	$L_{max} = 17'-3.3$	$L_v = 20'-0.5$	ft	0.86
Defl'n	$= 0.025$	$= 0.036$	in	0.70

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 = 367.27 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.



NO. NO. TAM/2126-20
 STRUCTURAL
 COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
Apr. 9, 2020 09:52

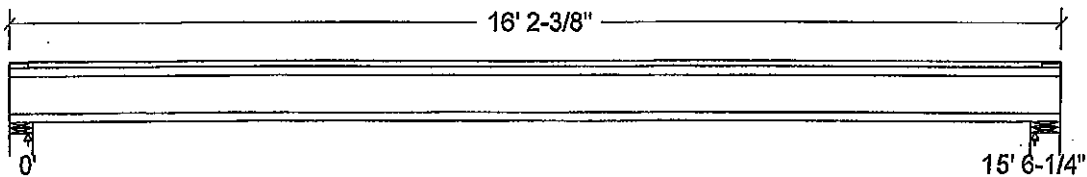
PROJECT
J1 2ND FLOOR.wwb

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			20.00	psf
Load2	Live	Full Area			40.00	psf

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



Unfactored:			
Dead	155		155
Live	310		310
Factored:			
Total	660		660
Bearing:			
Capacity			
Joist	1893		1893
Support	7744		9724
Des ratio			
Joist	0.35		0.35
Support	0.09		0.07
Load case	#2		#2
Length	4-3/8		5-1/2
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	769		769
Kzcp sup	-		-

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

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

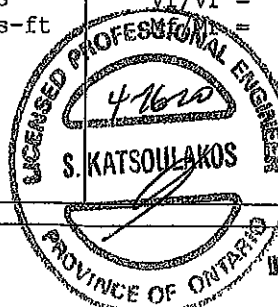
Supports: All - Lumber Wall, No.1/No.2

Total length: 16' 2-3/8"; Clear span: 15' 4-1/2"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section **PASSES** the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 660	Vr = 1895	lbs	Vf/Vr = 0.35
Moment(+)	Mf = 2559	Mr = 4824	lbs-ft	Mf/Mr = 0.53
Perm. Defl'n	0.11 = < L/999	0.52 = L/360	in	0.22
Live Defl'n	0.23 = L/825	0.39 = L/480	in	0.58
Total Defl'n	0.34 = L/550	0.78 = L/240	in	0.44
Bare Defl'n	0.26 = L/708	0.52 = L/360	in	0.51
Vibration	Lmax = 15'-6.3	Lv = 16'-8.5	ft	20.93
Defl'n	= 0.033	= 0.042	in	0.79



Drawn by: JAM 6063 -20
STRUCTURAL

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 = 258.29 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.



OWG NO. YAM 6063 -20
STRUCTURAL
COMPONENT ONLY

NORDIC STRUCTURES

COMPANY
Apr. 9, 2020 09:51

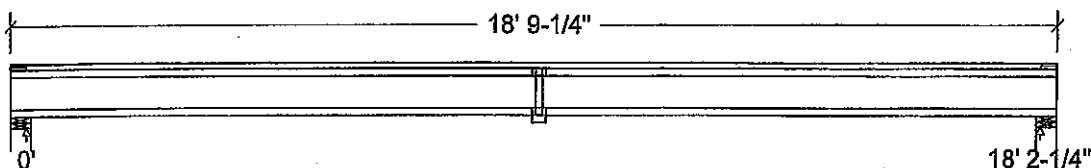
PROJECT
J6 2ND FLOOR.wwb

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			20.00	psf
Load2	Live	Full Area			40.00	psf

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



Unfactored:			
Dead	182		182
Live	364		364
Factored:			
Total	773		773
Bearing:			
Capacity			
Joist	1893		1893
Support	10841		10841
Des ratio			
Joist	0.41		0.41
Support	0.07		0.07
Load case	#2		#2
Length	4-3/8		4-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	769		769
Kzcp sup	-		-

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

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

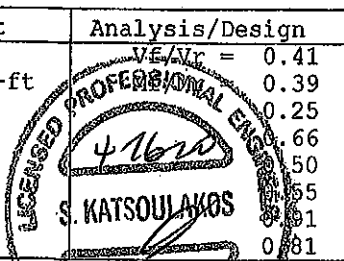
Supports: All - Lumber Wall, No.1/No.2

Total length: 18' 9-1/4"; Clear span: 18' 1/2"; 5/8" nailed and glued OSB sheathing with 1 row of blocking; strapping at blocking locations and 1/2" gypsum ceiling

This section PASSES the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 773	Vr = 1895	lbs	VE/Vr = 0.41
Moment (+)	Mf = 3514	Mr = 8958	lbs-ft	0.39
Perm. Defl'n	0.15 = < L/999	0.61 = L/360	in	0.25
Live Defl'n	0.30 = L/726	0.45 = L/480	in	0.66
Total Defl'n	0.45 = L/484	0.91 = L/240	in	0.50
Bare Defl'n	0.34 = L/649	0.61 = L/360	in	0.55
Vibration	Lmax = 18'-2.3	Lv = 20'-0.5	ft	0.91
Defl'n	= 0.028	= 0.034	in	0.81



DWG NO. TAM 6064-20
STRUCTURAL

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} = 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.



DWG NO. TAN 6064-20
 STRUCTURAL
 COMPONENT ONLY

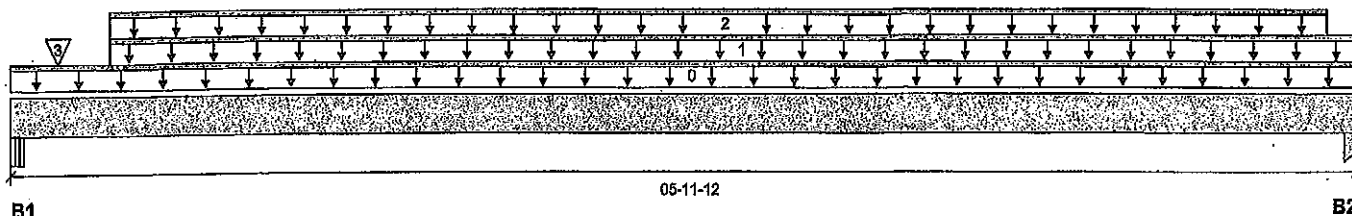
BC CALC® Member Report
Build 7239
Job name:
Address:
City, Province, Postal Code:
Customer:
Code reports:

Dry | 1 span | No cant.

February 7, 2020 09:30:29

File name: MOUNTAINASH 5 EL 1.mmdl
Description: 1ST FLR FRAMING\Flush Beams\B1(1498)
Specifier:
Designer:
Company:

CCMC 12472-R



Total Horizontal Product Length = 05-11-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	147 / 0	289 / 0		
B2, 1-3/4"	77 / 0	228 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	05-11-12	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-05-04	05-11-12	Top	27	14			n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-05-04	05-10-00	Top		60			n/a
3	12(1619)	Conc. Pt. (lbs)	L	00-02-08	00-02-08	Top	72	60			n/a

Controls Summary

Pos. Moment	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
End Shear	222 lbs	7521 lbs	3.0%	0	01-02-12
Total Load Deflection	L/999 (0.005")	n/a	n/a	4	03-01-10
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	03-01-10
Max Defl.	0.005"	n/a	n/a	4	03-01-10
Span / Depth	7.0				

Bearing Supports

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	5-1/4" x 3-1/2"	405 lbs	7.9%	2.8%	Unspecified
B2 Column	1-3/4" x 3-1/2"	319 lbs	12.3%	6.6%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

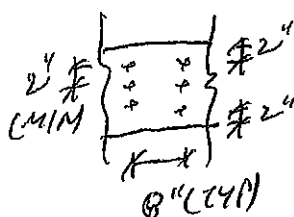
Resistance Factor phi has been applied to all presented results per CSA O86. **AMENDED 2020**

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012



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



BWB NO. YAM 6065-20

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®,



PASSED

1ST FLR FRAMING\Flush Beams\B1A(i1996) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

April 16, 2020 08:25:38

Build 7239

Job name:

Address:

City, Province, Postal Code: WATERDOWN

Customer:

Code reports: CCMC 12472-R

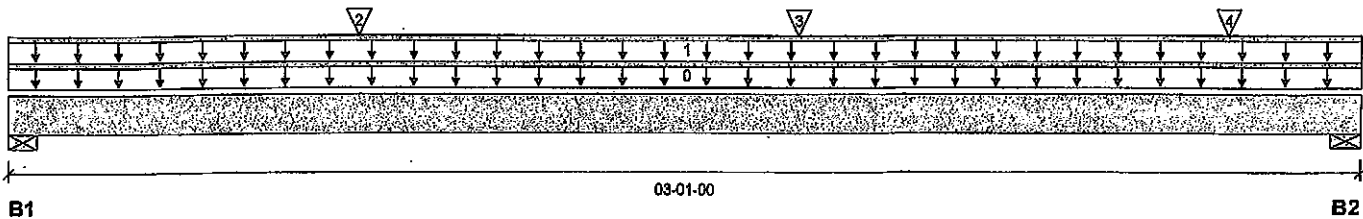
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Description: 1ST FLR FRAMING\Flush Beams\B1A(i1996)

Specifier:

Designer: AJ

Company:



Total Horizontal Product Length = 03-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	WInd
B1, 3"	923 / 0	601 / 0		
B2, 3"	1134 / 0	706 / 0		

Load Summary

Load Summary							Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-01-00	Top		10			00-00-00
1	E1(I402)	Unf. Lin. (lb/ft)	L	00-00-00	03-01-00	Top	337	250			n/a
2	J1(I1927)	Conc. Pt. (lbs)	L	00-09-08	00-09-08	Top	339	169			n/a
3	J1(I1877)	Conc. Pt. (lbs)	L	01-09-08	01-09-08	Top	339	169			n/a
4	J1(I1942)	Conc. Pt. (lbs)	L	02-09-08	02-09-08	Top	339	169			n/a

Controls Summary

Controls Summary	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1386 ft-lbs	23220 ft-lbs	6.0%	1	01-08-06
End Shear	1690 lbs	11571 lbs	14.6%	1	01-00-08
Total Load Deflection	L/999 (0.003")	n/a	n/a	4	01-06-11
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-06-11
Max Defl.	0.003"	n/a	n/a	4	01-06-11
Span / Depth	3.4				



Bearing Supports

				Demand/ Resistance Support	Demand/ Resistance Member	
Bearing Supports		Dim. (LxW)	Demand			Material
B1	Wall/Plate	3" x 3-1/2"	2135 lbs	33.1%	16.7%	Spruce-Pine-Fir
B2	Wall/Plate	3" x 3-1/2"	2583 lbs	40.0%	20.2%	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 ϕ 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.

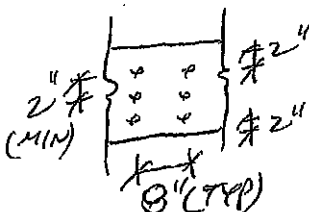
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020

PROVIDE 3 ROWS OF 3 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



OWG NO. YAM 6077-20
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™, BCJ®,
BOISE GLULAM™, BC FloorValue®,
VERSA-LAM®, VERSA-RIM PLUS®.

BC CALC® Member Report

Build 7493

Job name:

File name: MOUNTAINASH 5

Address:

Description: 1ST FLR FRAMING\Flush Beams\B2(i3190)

City, Province, Postal Code: WATERDOWN

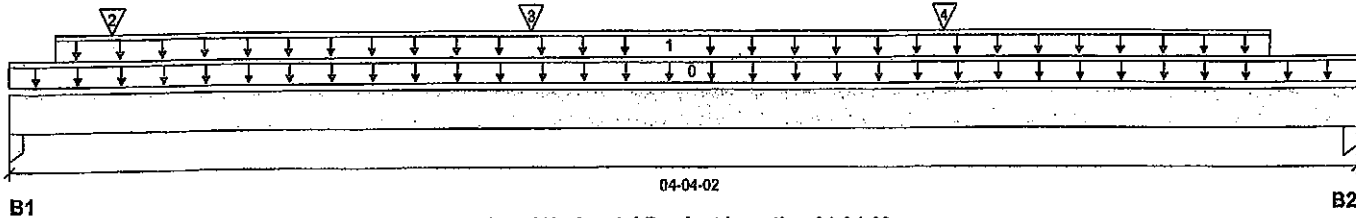
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:


Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	239 / 0	246 / 0		
B2, 3-1/2"	182 / 0	219 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-04-02	Top	1.00	0.65	1.00	1.15	00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-01-12	04-00-10	Top		60			n/a
2	J3(i3276)	Conc. Pt. (lbs)	L	00-03-14	00-03-14	Top	105	52			n/a
3	J3(i3245)	Conc. Pt. (lbs)	L	01-07-14	01-07-14	Top	158	79			n/a
4	J3(i2942)	Conc. Pt. (lbs)	L	02-11-14	02-11-14	Top	158	79			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	658 ft-lbs	11610 ft-lbs	5.7%	1	01-07-14
End Shear	480 lbs	5785 lbs	8.3%	1	03-03-02
Total Load Deflection	L/999 (0.006")	n/a	n/a	4	02-01-06
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	02-01-06
Max Defl.	0.006"	n/a	n/a	4	02-01-06
Span / Depth	5.1				

			Demand/Resistance Support	Demand/Resistance Member	
Bearing Supports	Dim. (LxW)	Demand			Material
B1	Column	1-3/4" x 1-3/4"	667 lbs	26.8%	17.9%
B2	Column	3-1/2" x 1-3/4"	546 lbs	11.0%	7.3%
					Unspecified
					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.
 Design based on Dry Service Condition.
 Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012
AMENDED 2020


DWG NO. 14M/2891-20

STRUCTURAL COMPONENT ONLY
Disclosure

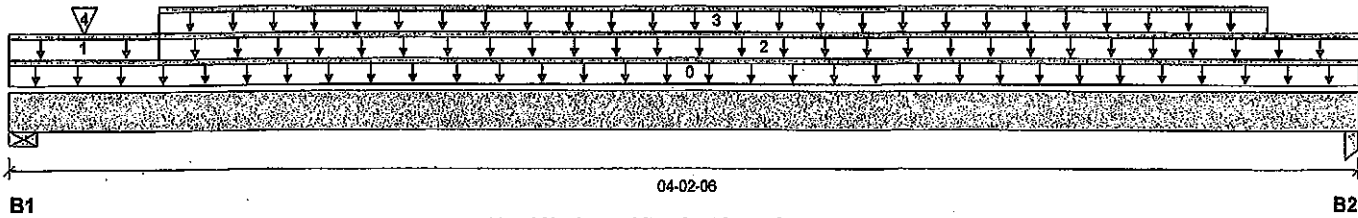
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 Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

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 5 EL 1.mmdl
 Description: 1ST FLR FRAMING\Flush Beams\B3(I1455)
 Specifier:
 Designer:
 Company:



Total Horizontal Product Length = 04-02-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	32 / 0	188 / 0		
B2, 3-1/2"	19 / 0	123 / 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	04-02-06	Top		5			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-05-08	Top	8				n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-05-08	04-02-06	Top	9	5			n/a
3	WALL	Unf. Lin. (lb/ft)	L	00-05-08	03-10-14	Top		60			n/a
4	10(I544)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	12	64			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	155 ft-lbs	7546 ft-lbs	2.1%	0	02-02-03
End Shear	91 lbs	3761 lbs	2.4%	0	01-03-00
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	02-02-03
Live Load Deflection	L/999 (0")	n/a	n/a	5	02-02-03
Max Defl.	0.001"	n/a	n/a	4	02-02-03
Span / Depth	4.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 1-3/4"	263 lbs	6.8%	3.4%	Spruce-Pine-Fir
B2	Column 3-1/2" x 1-3/4"	172 lbs	6.6%	3.5%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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. YAM 6067-20
STRUCTURAL COMPONENT ONLY

Disclosure

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BC CALC®, BC FRAMER®, AJSTM, 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 5 EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B4(1440)

City, Province, Postal Code:

Specifier:

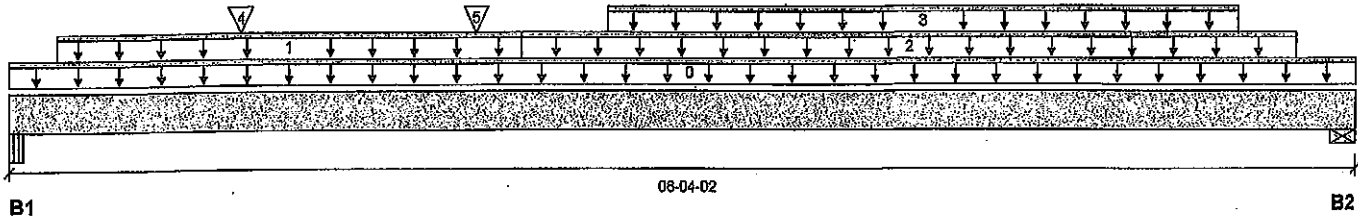
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 06-04-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	1442 / 0	799 / 0		
B2, 3-1/2"	1552 / 0	826 / 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	06-04-02	Top	10	0.65	1.00	1.15	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	02-04-10	Top	26	13			n/a
2	STAIR	Unf. Lin. (lb/ft)	L	02-04-10	06-00-10	Top	240	120			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	02-09-06	05-09-06	Top	341	170			n/a
4	J1(1486)	Conc. Pt. (lbs)	L	01-00-14	01-00-14	Top	316	158			n/a
5	-	Conc. Pt. (lbs)	L	02-02-01	02-02-01	Top	695	415			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5363 ft-lbs	23220 ft-lbs	23.1%	1	03-03-06
End Shear	2948 lbs	11571 lbs	25.5%	1	01-02-12
Total Load Deflection	L/999 (0.044")	n/a	n/a	4	03-03-06
Live Load Deflection	L/999 (0.029")	n/a	n/a	5	03-03-06
Max Defl.	0.044"	n/a	n/a	4	03-03-06
Span / Depth	7.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 5-1/4" x 3-1/2"	3161 lbs	40.3%	14.1%	Unspecified
B2	Wall/Plate 3-1/2" x 3-1/2"	3360 lbs	44.6%	22.5%	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.

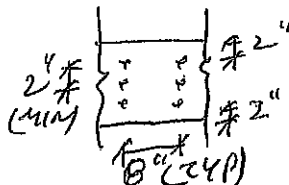
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



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 6068-20

STRUCTURAL COMPONENT ONLY

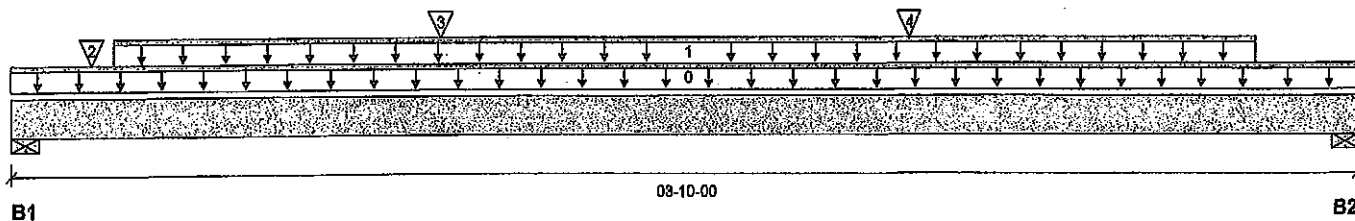
Disclosure

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

Build 7239
Job name:
File name: MOUNTAINASH 5 EL 1.mmdl

Address:
Description: 1ST FLR FRAMING\Flush Beams\B5(i1548)

City, Province, Postal Code:
Specifier:
Customer:
Designer:
Code reports:
CCMC 12472-R
Company:

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1050 / 0	535 / 0		
B2, 3-1/2"	766 / 0	392 / 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	03-10-00	Top		5			00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-03-08	03-06-08	Top	240	120			n/a
2	J2(i1488)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	289	145			n/a
3	J2(i1439)	Conc. Pt. (lbs)	L	01-02-08	01-02-08	Top	341	171			n/a
4	J2(i1540)	Conc. Pt. (lbs)	L	02-06-08	02-06-08	Top	403	201			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1549 ft-lbs	11610 ft-lbs	13.3%	1	02-00-08
End Shear	1228 lbs	5785 lbs	21.2%	1	02-09-00
Total Load Deflection	L/999 (0.009")	n/a	n/a	4	01-11-00
Live Load Deflection	L/999 (0.006")	n/a	n/a	5	01-11-00
Max Defl.	0.009"	n/a	n/a	4	01-11-00
Span / Depth	4.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 1-3/4"	2244 lbs	59.6%	30.0%	Spruce-Pine-Fir
B2	Wall/Plate 3-1/2" x 1-3/4"	1639 lbs	43.5%	21.9%	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
ONE NO. TAM 6069-20
STRUCTURAL
COMPONENT ONLY
Disclosure

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

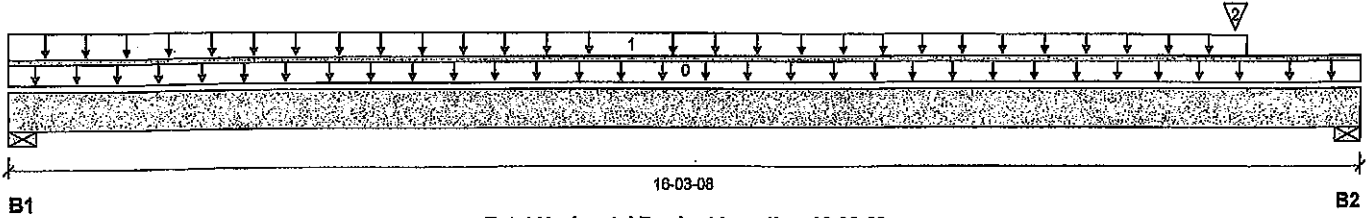
BC CALC® Member Report
Build 7239
Job name:
Address:
City, Province, Postal Code:
Customer:
Code reports:

Dry | 1 span | No cant.

February 7, 2020 09:30:29

File name: MOUNTAINASH 5 EL 1.mmdl
Description: 2ND FLR FRAMING\Flush Beams\B6(11574)
Specifier:
Designer:
Company:

CCMC 12472-R



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	332 / 0	247 / 0		
B2, 5-1/2"	1753 / 0	999 / 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	16-03-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Trapezoidal (lb/ft)	L	00-00-00	15-00-00	Top	29	15			n/a
2	B9(11577)	Conc. Pt. (lbs)	L	14-10-04	14-10-04	Top	1686	890			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4312 ft-lbs	23220 ft-lbs	18.6%	1	11-08-00
End Shear	3844 lbs	11571 lbs	33.2%	1	15-00-08
Total Load Deflection	L/703 (0.265")	n/a	34.1%	4	08-08-04
Live Load Deflection	L/1176 (0.158")	n/a	30.6%	5	08-08-04
Max Defl.	0.265"	n/a	n/a	4	08-08-04
Span / Depth	19.6				

Bearing Supports

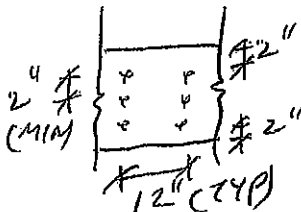
	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	807 lbs	6.8%	3.4%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	3877 lbs	32.7%	16.5%	Spruce-Pine-Fir

Notes

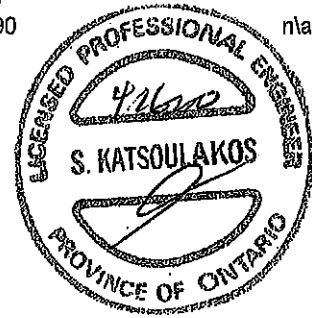
Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume member is fully braced.
Resistance Factor phi has been applied to all presented results per CSA O86.
BC CALC® analysis is based on Canadian Limit States 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



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



OWB NO. TAM 6073-20
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.

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Boise Cascade

**Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****2ND FLR FRAMING\Dropped Beams\B7 DR(1989) (Dropped Beam)**

BC CALC® Member Report

Dry | 1 span | No cant.

February 7, 2020 09:30:29

Build 7239

Job name:

File name: MOUNTAINASH 5 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B7 DR(1989)

City, Province, Postal Code:

Specifier:

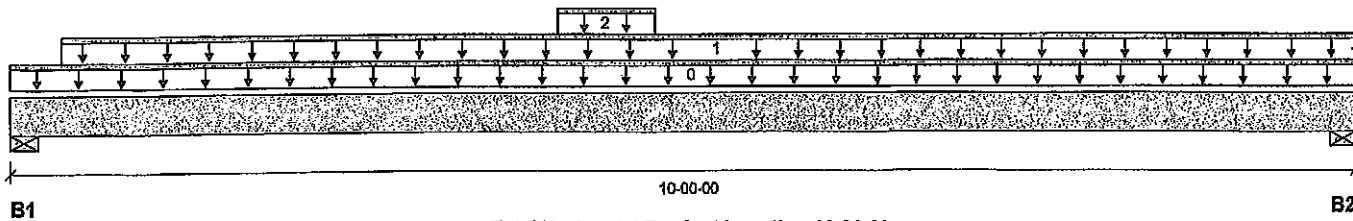
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:

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

Bearing	Live	Dead	Snow	Wind
B1, 4"	1592 / 0	868 / 0		
B2, 4"	1824 / 0	984 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-00-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-04-08	10-00-00	Top	341	170			n/a
2	Bk2(11151)	Unf. Lin. (lb/ft)	L	04-00-04	04-08-12	Top	136	68			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8666 ft-lbs	36222 ft-lbs	23.9%	1	04-10-08
End Shear	3250 lbs	17356 lbs	18.7%	1	08-10-08
Total Load Deflection	L/875 (0.13")	n/a	27.4%	4	05-00-00
Live Load Deflection	L/999 (0.084")	n/a	n/a	5	05-00-00
Max Defl.	0.13"	n/a	n/a	4	05-00-00
Span / Depth	11.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 5-1/4"	3474 lbs	12.4%	13.6%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 5-1/4"	3967 lbs	14.2%	15.5%	Spruce-Pine-Fir

Notes

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

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

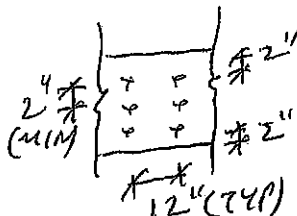
Calculations assume unbraced length of Top: 00-02-04, Bottom: 00-02-04.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

PROVIDE 3 ROWS OF 3x5/8" ARDOX SPIRAL NAILS @ 12" O/C FOR MULTI-PLY NAILING, MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS. SPACER NAILS 6" BETWEEN PLYS



DWG NO. TAM 6070-20
STRUCTURAL COMPONENT ONLY

Disclosure

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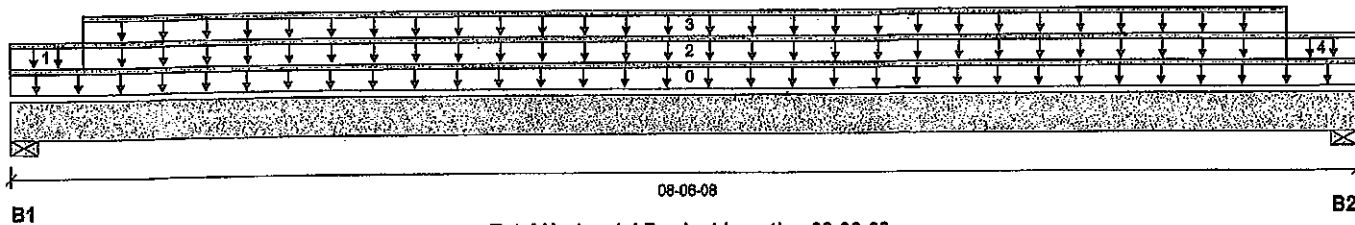
BC CALC®, BC FRAMER®, AJST™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

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

Dry | 1 span | No cant.

February 7, 2020 09:30:29

File name: MOUNTAINASH 5 EL 1.mmdl
 Description: 2ND FLR FRAMING\Flush Beams\B8(11569)
 Specifier:
 Designer:
 Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	32 / 0	265 / 0		
B2, 5-1/2"	30 / 0	264 / 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	08-06-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-05-08	Top	10				n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-05-08	08-01-00	Top		60			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-05-08	08-01-00	Top	7	4			n/a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	08-01-00	08-06-08	Top	6				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	718 ft-lbs	7546 ft-lbs	9.5%	0	04-03-04
End Shear	289 lbs	3761 lbs	7.7%	0	01-03-00
Total Load Deflection	L/999 (0.024")	n/a	n/a	4	04-03-04
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	04-03-04
Max Defl.	0.024"	n/a	n/a	4	04-03-04
Span / Depth	9.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 1-3/4"	371 lbs	9.6%	4.9%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 1-3/4"	370 lbs	9.6%	4.8%	Spruce-Pine-Fir

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume member is fully braced.
 Resistance Factor phi has been applied to all presented results per CSA O86.
 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



BWG NO. TAM 6074-20
STRUCTURAL
COMPONENT ONLY

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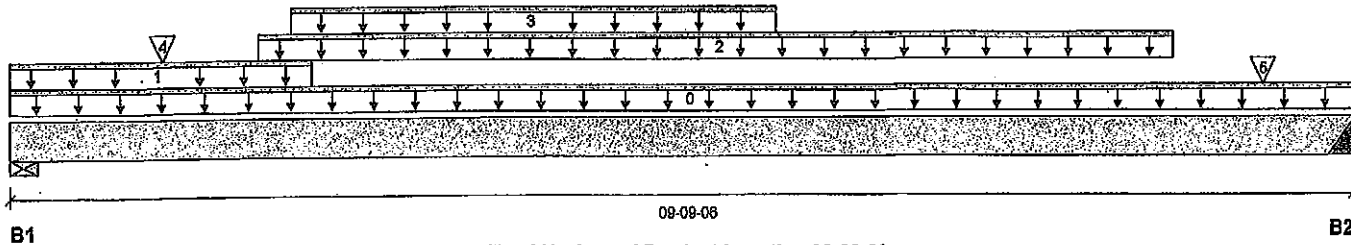
BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

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 7, 2020 09:30:29

File name: MOUNTAINASH 5 EL 1.mmdl
 Description: 2ND FLR FRAMING\Flush Beams\B9(i1577)
 Specifier:
 Designer:
 Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/4"	1918 / 0	1008 / 0		
B2, 4"	1730 / 0	914 / 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	09-09-06	Top		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-01-14	Top	23	11			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-09-04	08-05-04	Top	298	149			n/a
3	STAIR	Unf. Lin. (lb/ft)	L	02-00-01	05-06-01	Top	240	120			n/a
4	J2(i675)	Conc. Pt. (lbs)	L	01-01-04	01-01-04	Top	451	225			n/a
5	J2(i673)	Conc. Pt. (lbs)	L	09-01-04	09-01-04	Top	321	161			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	10250 ft-lbs	23220 ft-lbs	44.1%	1	04-07-04
End Shear	4076 lbs	11571 lbs	35.2%	1	01-00-04
Total Load Deflection	L/501 (0.224")	n/a	47.9%	4	04-09-04
Live Load Deflection	L/763 (0.147")	n/a	47.2%	5	04-09-04
Max Defl.	0.224"	n/a	n/a	4	04-09-04
Span / Depth	11.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/4" x 3-1/2"	4138 lbs	69.9%	35.2%	Spruce-Pine-Fir
B2	Hanger 4" x 3-1/2"	3738 lbs	n/a	21.9%	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.



HWB NO. TAM 6075-20
 STRUCTURAL
 COMPONENT ONLY

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

File name: MOUNTAINASH 5 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B9(I1577)

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.

Hanger Manufacturer: Unassigned

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

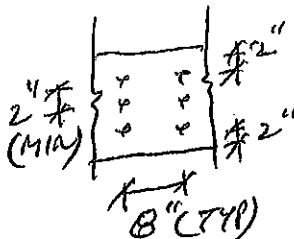
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3/2" 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 6075-20
STRUCTURAL
COMPONENT ONLY

Disclosure

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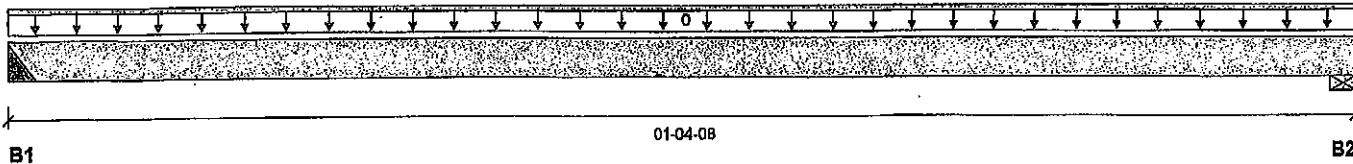
BC CALC®, BC FRAMER®, AJST™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

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

Dry | 1 span | No cant.

February 7, 2020 09:30:29

File name: MOUNTAINASH 5 EL 1.mmdl
Description: 2ND FLR FRAMING\Flush Beams\B10(I1567)
Specifier:
Designer:
Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"		6 / 0		
B2, 6-1/2"		8 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-04-08	Top	1.00	0.66	1.00	1.15	00-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1 ft-lbs	15093 ft-lbs	n/a	0	00-07-00
End Shear	3 lbs	7521 lbs	n/a	0	00-04-00
Span / Depth	0.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 4" x 3-1/2"	8 lbs	n/a	n/a	HGUS410
B2	Wall/Plate 6-1/2" x 3-1/2"	11 lbs	0.1%	n/a	Spruce-Pine-Fir

Cautions

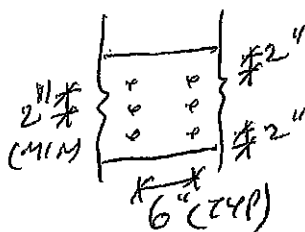
Header for the hanger HGUS410 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

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



PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 6" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



SWG NO. YAW 6071-20
STRUCTURAL
COMPONENT ONLY

Disclosure

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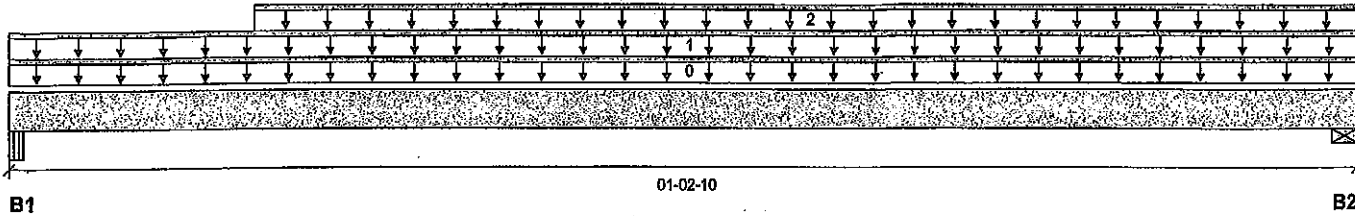
BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

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

Dry | 1 span | No cant.

February 7, 2020 09:30:29

File name: MOUNTAINASH 5 EL 1.mmdl
 Description: 2ND FLR FRAMING\Flush Beams\B13(i625)
 Specifier:
 Designer:
 Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	42 / 0	41 / 0	72 / 0	
B2, 5-1/2"	66 / 0	63 / 0	107 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-02-10	Top	1.00	0.65	1.00	1.15	00-00-00
1	ROOF	Unf. Lin. (lb/ft)	L	00-00-00	01-02-10	Top	77	70	147		n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	01-02-10	Top	14	7			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	23 ft-lbs	23220 ft-lbs	0.1%	13	00-05-14
End Shear	114 lbs	11571 lbs	1.0%	13	00-02-10
Span / Depth	0.8				

Bearing Supports

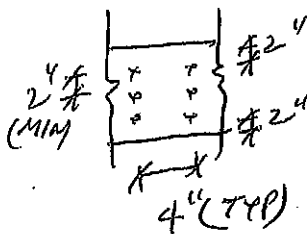
	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 2-5/8" x 3-1/2"	201 lbs	5.1%	1.8%	Unspecified
B2	Wall/Plate 5-1/2" x 3-1/2"	306 lbs	2.6%	1.3%	Spruce-Pine-Fir

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 1/2" ARDOX SPIRAL NAILS @ 4" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



OWB NO. TAM 6072-20
STRUCTURAL COMPONENT ONLY

Disclosure

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 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®,

Build 7239

Dry | 2 spans | No cant.

February 7, 2020 10:01:17

Job name:

File name: MOUNTAINASH 5 EL 3.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B15(i1694)

City, Province, Postal Code: WATERDOWN

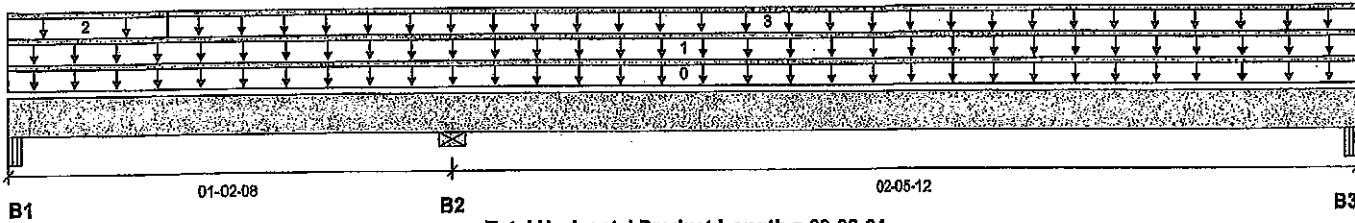
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	77 / 47	27 / 0	77 / 14	
B2, 5-1/2"	215 / 0	197 / 0	320 / 0	
B3, 5-1/4"	122 / 1	111 / 0	181 / 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	03-08-04	Top		10			00-00-00
1	ROOF	Unf. Lin. (lb/ft)	L	00-00-00	03-08-04	Top	77	70	147		n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-05-04	Top	27	13			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-05-04	03-08-04	Top	22	11			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	159 ft-lbs	23220 ft-lbs	0.7%	66	02-05-08
Neg. Moment	-182 ft-lbs	-23220 ft-lbs	0.8%	49	01-02-08
End Shear	134 lbs	11571 lbs	1.2%	18	00-05-04
Cont. Shear	299 lbs	11571 lbs	2.6%	67	00-11-12
Total Load Deflection	L/999 (0")	n/a	n/a	126	02-04-05
Live Load Deflection	L/999 (0")	n/a	n/a	178	02-04-05
Max Defl.	0"	n/a	n/a	126	02-04-05
Span / Depth	2.7				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	5-1/4" x 3-1/2"	227 lbs	2.3%	1.0%	Unspecified
B2 Wall/Plate	5-1/2" x 3-1/2"	940 lbs	7.9%	4.0%	Spruce-Pine-Fir
B3 Beam	5-1/4" x 3-1/2"	533 lbs	5.4%	2.4%	Unspecified

Cautions

Uplift of 60 lbs found at bearing B1. (SIMPSON 2-H254 @ ST. B1)



DWG NO. TAM 6076-20
STRUCTURAL
COMPONENT ONLY



Boise Cascade



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B15(I1694) (Flush Beam)

PASSED

BC CALC® Member Report
Build 7239

Dry | 2 spans | No cant.

February 7, 2020 10:01:17

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

File name: MOUNTAINASH 5 EL 3.mmdl
Description: 2ND FLR FRAMING\Flush Beams\B15(I1694)
Specifier:
Designer: AJ
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.

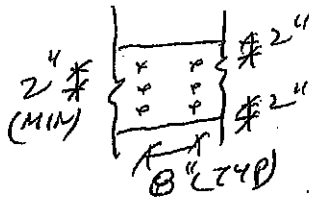
Unbalanced snow loads determined from building geometry were used in selected product's verification.

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



OWN NO. YAW 6076-20
STRUCTURAL
COMPONENT ONLY

Disclosure

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

BC CALC® Member Report

Dry | 1 span | No cant.

September 16, 2020 07:50:45

Build 7493

Job name:

File name: MOUNTAINASH 5

Address:

Description: 1ST FLR FRAMING\Flush Beams\B16 H(i2851)

City, Province, Postal Code: WATERDOWN

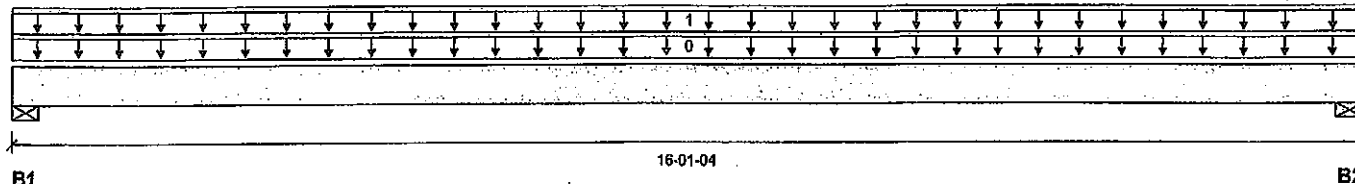
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 16-01-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-7/8"	70 / 0	73 / 0		
B2, 4-3/8"	71 / 0	75 / 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	16-01-04	Top		5			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	16-01-04	Top	9	4			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	759 ft-lbs	11610 ft-lbs	6.5%	1	07-11-06
End Shear	172 lbs	5785 lbs	3.0%	1	00-11-06
Total Load Deflection	L/999 (0.098")	n/a	n/a	4	07-11-06
Live Load Deflection	L/999 (0.048")	n/a	n/a	5	07-11-06
Max Defl.	0.098"	n/a	n/a	4	07-11-06
Span / Depth	19.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 1-7/8" x 1-3/4"	196 lbs	9.7%	4.9%	Spruce-Pine-Fir
B2	Wall/Plate 4-3/8" x 1-3/4"	201 lbs	4.3%	2.1%	Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced.

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

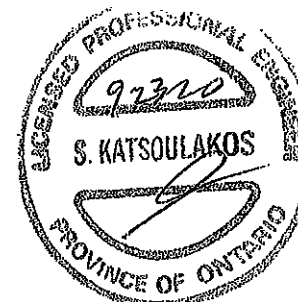
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO UBC 2012

AMENDED 2020



DWG NO. TAM12890-20
STRUCTURAL
COMPONENT ONLY

Disclosure

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



Bolse Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****2ND FLR FRAMING\Flush Beams\B17(I3303) (Flush Beam)**

Dry | 2 spans | L cant.

PASSED

BC CALC® Member Report

August 20, 2020 08:59:00

Build 7493

Job name:

File name: MOUNTAINASH 5

Address:

Description: 2ND FLR FRAMING\Flush Beams\B17(I3303)

City, Province, Postal Code: WATERDOWN

Specifier:

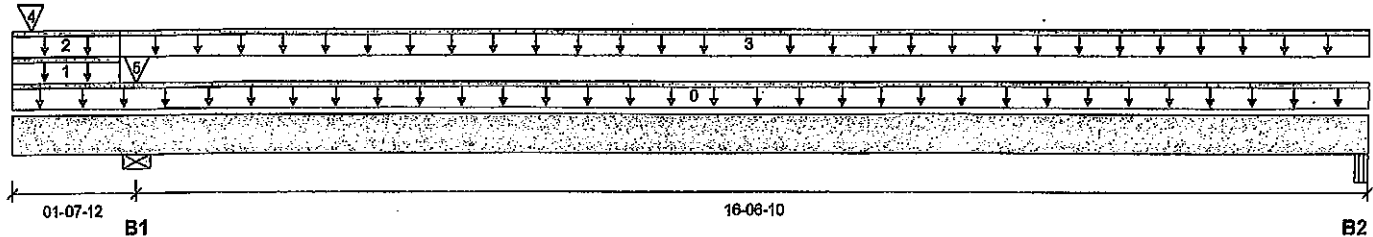
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:

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

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	364 / 0	445 / 0	46 / 0	
B2, 2-1/4"	306 / 4	223 / 0	0 / 4	

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	18-02-06	Top	1.00	0.66	1.00	1.15	00-00-00
1	E38(12888)	Unf. Lin. (lb/ft)	L	00-00-00	01-05-00	Top		81			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-05-00	Top	22	11			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	01-05-00	18-02-06	Top	37	18			n/a
4	E38(12888)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	20	18	42		n/a
5	E26(12880)	Conc. Pt. (lbs)	L	01-07-12	01-07-12	Top	37				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2934 ft-lbs	23220 ft-lbs	12.6%	33	09-11-05
Neg. Moment	-348 ft-lbs	-23220 ft-lbs	1.5%	37	01-07-12
End Shear	650 lbs	11571 lbs	5.6%	33	17-02-10
Cont. Shear	668 lbs	11571 lbs	5.8%	1	02-08-00
Total Load Deflection	L/974 (0.202")	n/a	24.6%	80	09-11-05
Live Load Deflection	L/999 (0.12")	n/a	n/a	118	09-09-15
Total Neg. Defl.	2xL/1998 (-0.062")	n/a	n/a	80	00-00-00
Max Defl.	0.202"	n/a	n/a	80	09-11-05
Span / Depth	20.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	1147 lbs	9.7%	4.9%	Spruce-Pine-Fir
B2	Beam 2-1/4" x 3-1/2"	738 lbs	15.2%	7.7%	Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced.

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

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



12128-20
STRUCTURAL
COMPONENT ONLY

BC CALC® Member Report

Dry | 2 spans | L cant.

August 20, 2020 08:59:00

Build 7493

Job name:

File name: MOUNTAINASH 5

Address:

Description: 2ND FLR FRAMING\Flush Beams\B17(I3303)

City, Province, Postal Code: WATERDOWN

Specifier:

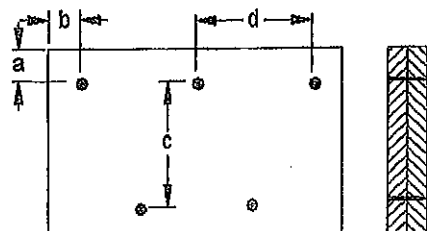
Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 5-1/2"

b minimum = 3"

d = 2" @ 1"

Connectors are: 3-1/2" ARDOX SPIRAL Nails

3-1/2" ARDOX SPIRAL



0000 NO. 4111 1212B-20

STRUCTURAL

COMPONENT ONLY

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

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.

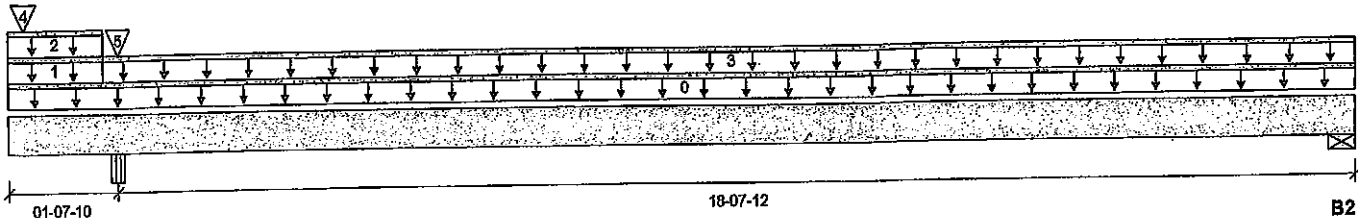
File name: MOUNTAINASH 5

Description: 2ND FLR FRAMING\Flush Beams\B18(I3287)

Specifier:

Designer: AJ

Company:



Total Horizontal Product Length = 20-03-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	340 / 0	441 / 0	45 / 0	
B2, 4-3/8"	284 / 3	225 / 0	0 / 3	

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	20-03-06	Top		10			00-00-00
1	E36(I2887)	Unf. Lin. (lb/ft)	L	00-00-00	01-05-00	Top		81			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-05-00	Top	25	13			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	01-05-00	20-03-06	Top	30	15			n/a
4	E36(I2887)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	20	18	42		n/a
5	E22(I2883)	Conc. Pt. (lbs)	L	01-07-12	01-07-12	Top		37			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3088 ft-lbs	23220 ft-lbs	13.3%	33	10-10-12
Neg. Moment	-353 ft-lbs	-23220 ft-lbs	1.5%	1	01-07-10
End Shear	619 lbs	11571 lbs	5.4%	33	19-01-08
Cont. Shear	638 lbs	11571 lbs	5.5%	1	02-07-12
Total Load Deflection	L/826 (0.267")	n/a	29.1%	80	10-10-12
Live Load Deflection	L/1440 (0.153")	n/a	25.0%	118	10-09-03
Total Neg. Defl.	2xL/1998 (-0.073")	n/a	n/a	80	00-00-00
Max Defl.	0.267"	n/a	n/a	80	10-10-12
Span / Depth	23.2				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	5-1/4" x 3-1/2"	1107 lbs	4.9%	4.9%	VL 2.0 3100 SP
B2 Wall/Plate	4-3/8" x 3-1/2"	707 lbs	7.5%	3.8%	Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced.

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

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



861/2
DWG NO. TAW12/127 -20
STRUCTURAL
COMPONENT ONLY



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****2ND FLR FRAMING\Flush Beams\B18(i3287) (Flush Beam)**

Dry | 2 spans | L cant.

PASSED

August 20, 2020 08:59:00

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: WATERDOWN

Customer:

Code reports: CCMC 12472-R

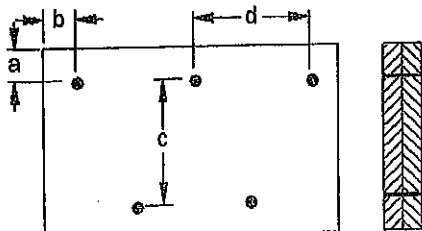
File name: MOUNTAINASH 5

Description: 2ND FLR FRAMING\Flush Beams\B18(i3287)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member

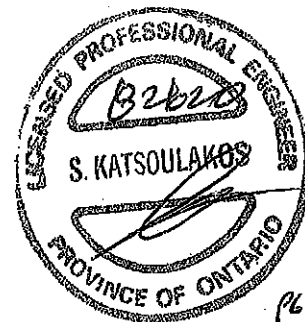
a minimum = 2"

b minimum = 3"

c = 5-1/2"

d = 8"

Connectors are: 1 Nails

3-1/2" ARDOX SPIRAL

OWN NO. 12127-20

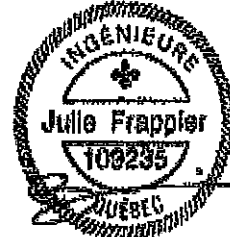
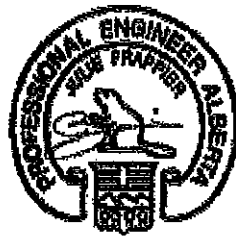
STRUCTURAL**COMPONENT ONLY****Disclosure**

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

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

Maximum Floor Spans

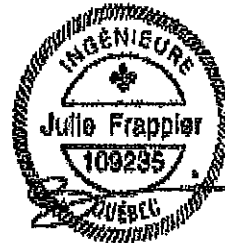
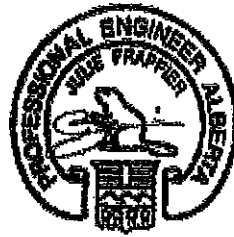
Live Load = 40 psf, Dead Load = 30 psf
Simple Spans, L/480 Deflection Limit
3/4" OSB G&N Sheathing



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

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

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



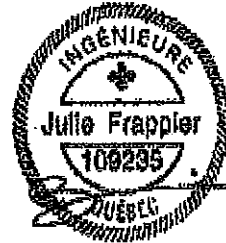
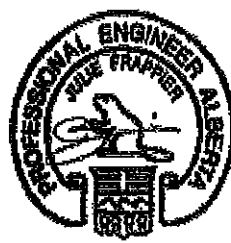
Maximum Floor Spans

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-1274C.



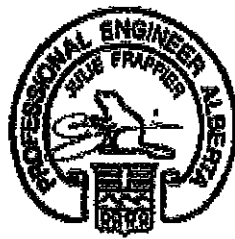
Maximum Floor Spans

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 CMC evaluation report 13032-R and APA Product Report PR-L274C.



Maximum Floor Spans

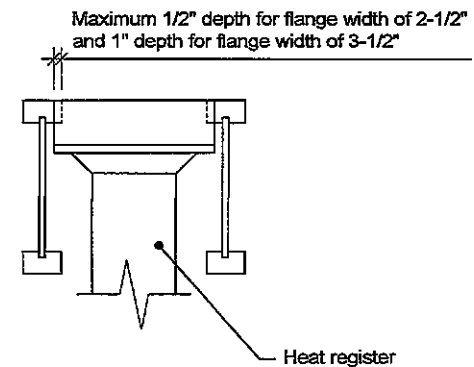
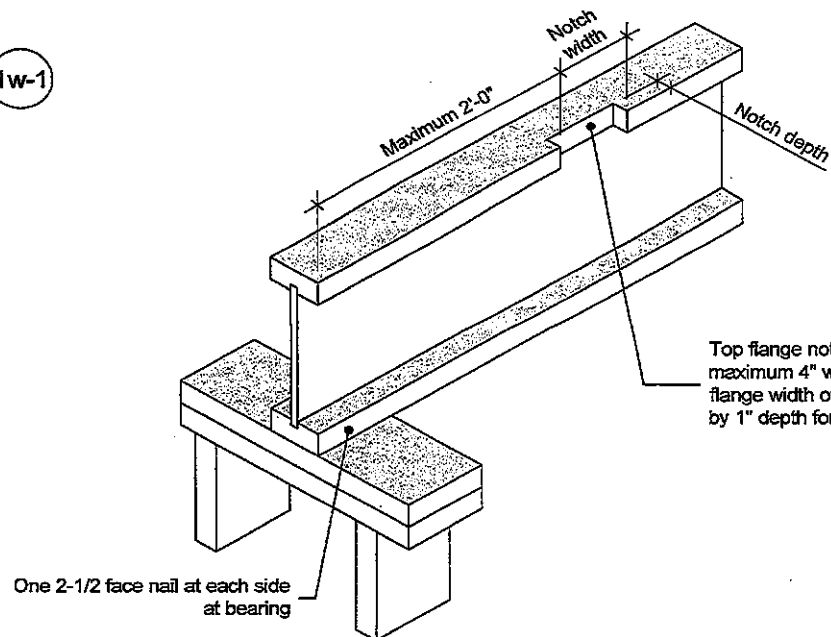
Live Load = 40 psf, Dead Load = 30 psf
Simple Spans, L/480 Deflection Limit
5/8" OSB G&N Sheathing

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 QBC 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
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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

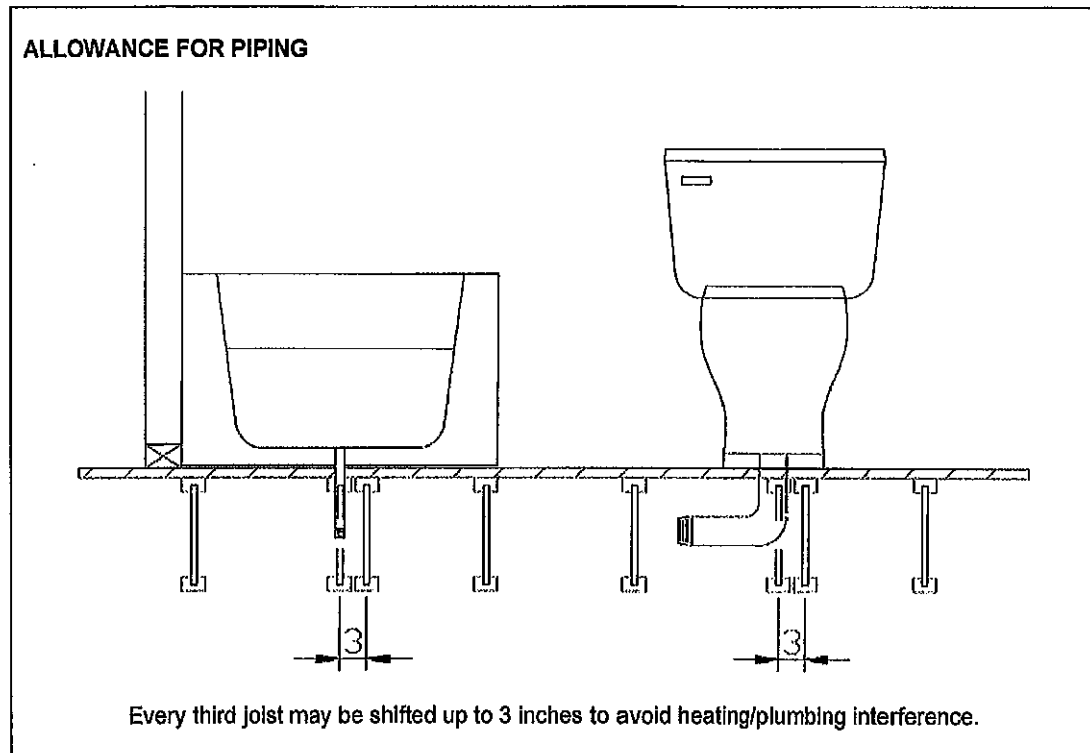
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Allowance for Piping (Installation Notes)

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