

FROM PLAN DATED:

BUILDER: BAYVIEW WELLINGTON

SITE: PASSAGE ON THE CANAL

MODEL: TH9C

ELEVATION: B

LOT: 1

CITY: ST CATHERINES

SALESMAN: M D

DESIGNER: AJ

REVISION:

NOTES:

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

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

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 15.0 lb/ft²

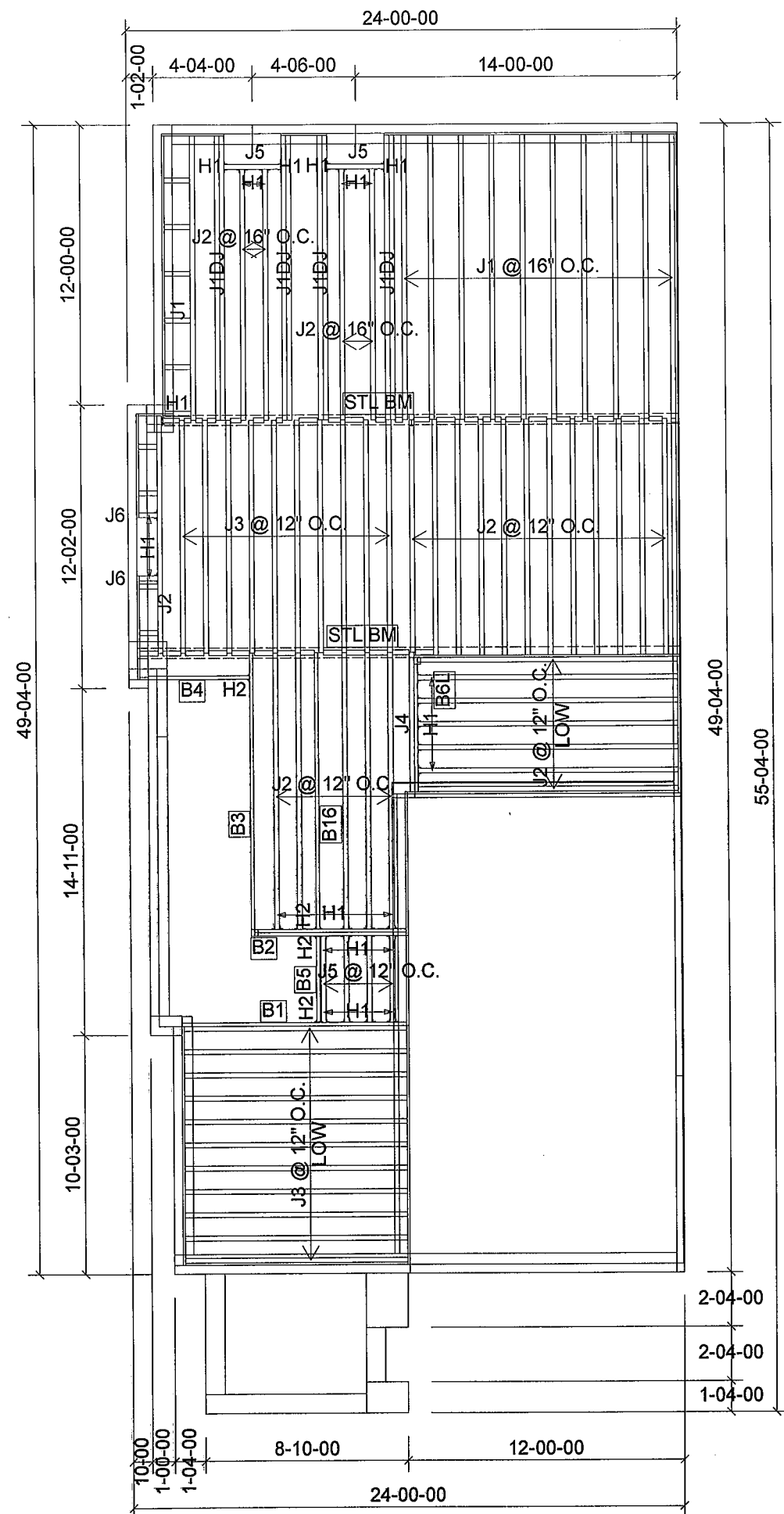
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2019-01-29

1st FLOOR

SUNKEN OPTION



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	11
J1DJ	14-00-00	9 1/2" NI-40x	2	8
J2	12-00-00	9 1/2" NI-40x	1	29
J3	10-00-00	9 1/2" NI-40x	1	21
J4	6-00-00	9 1/2" NI-40x	1	1
J5	4-00-00	9 1/2" NI-40x	1	6
J6	2-00-00	9 1/2" NI-40x	1	2
B3	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B16	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B4	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6L	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
9	H1	IUS2.56/9.5
9	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
2	H2	HUS1.81/10
2	H2	HUS1.81/10

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LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

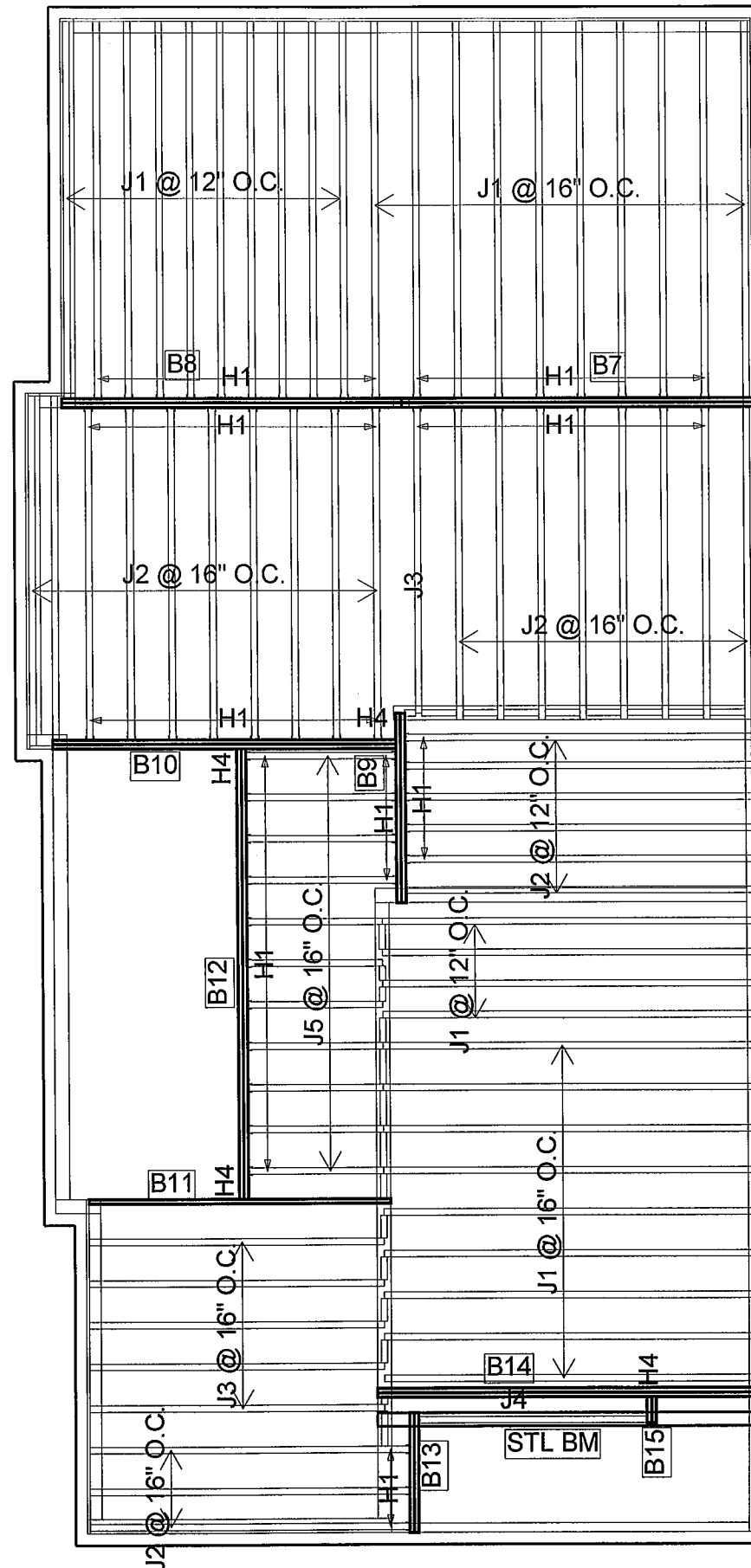
DEAD LOAD: 15.0 lb/ft

TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 10/30/2018

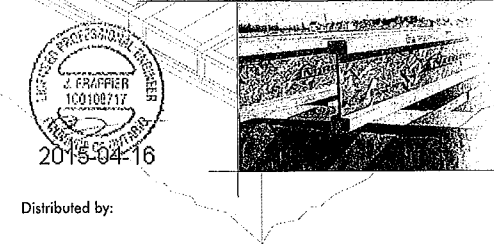
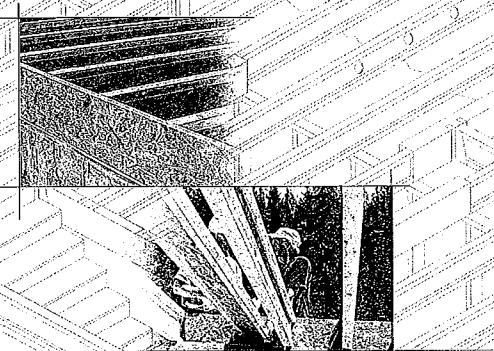
2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	33
J2	12-00-00	9 1/2" NI-40x	1	27
J3	10-00-00	9 1/2" NI-40x	1	6
J4	8-00-00	9 1/2" NI-40x	1	1
J5	6-00-00	9 1/2" NI-40x	1	11
B12	16-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B14	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B10	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B7	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B11	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	1	1
B9	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B13	4-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B15	2-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
65	H1	IUS2.56/9.5
1	H4	HGUS410
3	H4	HGUS410

INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



Distributed by:

SAFETY AND CONSTRUCTION PRECAUTIONS

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

Avoid Accidents by Following these Important Guidelines:

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

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

STORAGE AND HANDLING GUIDELINES

- Bundle wrap can be slippery when wet. Avoid walking on wrapped bundles.
- Store, stack, and handle I-joists vertically and level only.
- Always stack and handle I-joists in the upright position only.
- Do not store I-joists in direct contact with the ground and/or flatwise.
- Protect I-joists from weather, and use spacers to separate bundles.
- Bundled units should be kept intact until time of installation.
- 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.
- Do not handle I-joists in a horizontal orientation.
- 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 L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.

2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGIBS-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a row of blocking at mid-span.

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

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

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

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

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

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On centre spacing	On centre spacing	On centre spacing	On centre spacing				
9-1/2"	Ni-20	15'-1"	14'-2"	13'-9"	13'-5"	16'-3"	15'-4"	14'-10"	14'-7"
	Ni-40x	16'-1"	15'-2"	14'-8"	14'-5"	17'-5"	16'-5"	15'-10"	15'-5"
	Ni-60	16'-3"	15'-4"	14'-10"	14'-11"	17'-7"	16'-7"	16'-0"	15'-7"
	Ni-80	17'-1"	16'-1"	15'-6"	15'-7"	18'-7"	17'-4"	16'-9"	16'-10"
11-7/8"	Ni-20	16'-11"	16'-0"	15'-5"	15'-6"	18'-4"	17'-3"	16'-8"	16'-7"
	Ni-40x	18'-1"	17'-0"	16'-5"	16'-6"	20'-0"	18'-6"	17'-9"	17'-7"
	Ni-60	18'-4"	17'-3"	16'-7"	16'-9"	20'-3"	18'-9"	18'-0"	18'-1"
	Ni-80	19'-6"	18'-0"	17'-4"	17'-5"	21'-6"	19'-11"	19'-0"	19'-1"
14"	Ni-20	19'-9"	18'-3"	17'-4"	17'-7"	21'-9"	20'-2"	19'-3"	19'-4"
	Ni-40x	20'-2"	18'-7"	17'-10"	17'-11"	22'-3"	20'-7"	19'-8"	19'-9"
	Ni-60	20'-4"	18'-9"	17'-11"	18'-0"	22'-5"	20'-9"	19'-10"	19'-11"
	Ni-80	20'-1"	18'-7"	17'-10"	17'-11"	22'-2"	20'-6"	19'-8"	19'-4"
16"	Ni-20	20'-5"	18'-11"	18'-1"	18'-2"	22'-7"	20'-11"	20'-0"	20'-1"
	Ni-40x	21'-7"	20'-0"	19'-1"	19'-2"	23'-10"	22'-1"	21'-1"	21'-2"
	Ni-60	21'-11"	20'-3"	19'-4"	19'-5"	24'-3"	22'-5"	21'-5"	21'-6"
	Ni-80	22'-5"	20'-8"	19'-9"	19'-10"	24'-9"	22'-10"	21'-10"	21'-10"

I-JOIST HANGERS

- Hangers shown illustrate the three most commonly used metal hangers to support I-joists.
- All nailing must meet the hanger manufacturer's recommendations.
- Hangers should be selected based on the joist depth, flange width, and load capacity based on the maximum spans.
- 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

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

S-PF No.2	1950I MSR	2100I MSR	1950I MSR	2100I MSR	2400I MSR	NPG Lumber
33 pieces per unit	33 pieces per unit	33 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit	23 pieces per unit

Chantiers Chibougamou 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 lumber and structural lumber in their flanges, ensuring consistent quality, superior strength, and longer span carrying capacity.

INSTALLING NORDIC I-JOISTS

- Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact your supplier.
- Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
- Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
- I-joists must be anchored securely to supports before floor sheathing is attached, and supports for multiple-span joists must be level.
- Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings.
- When using hangers, seal I-joists firmly in hanger bottoms to minimize settlement.
- Leave a 1/16-inch gap between the I-joist end and a header.
- 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.
- Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with concrete or masonry.
- Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
- 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.
- 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.
- 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.
- 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.
- Nail spacing: Space nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

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

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

Figures 3, 4 or 5
Holes may be cut in web for plumbing, wiring and duct work. See Tables 1, 2 and Figure 7.

NOTE: Never cut or notch flanges.

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" (1.22" dia.) common spiral nails may be substituted for 2-1/2" (0.128" 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 Attach rim board to top plate using 2-1/2" wire or spiral toe-nails at 6" o.c. to top and bottom flange. To avoid splitting flange, start nails at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.

Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
Ni Joists	3,300
1-1/8" Rim Board Plus	8,090

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

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.

Pair of Squash Blocks	Maximum Factored Vertical per Pair of Squash Blocks (lbs)
2x Lumber	5,500
1-1/8" Rim Board Plus	4,300

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

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

1e NI blocking panel

1f Use single I-joist for loads up to 3,300 plf, double I-joists for loads up to 6,600 plf (filler block not required). Attach I-joist to top plate using 2-1/2" nails at 6" o.c.

1g Load bearing wall above shall align vertically with the bearing below. Other conditions, such as offset bearing walls, are not covered by this detail.

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

1i Top- or face-mount hanger installed per manufacturer's recommendations

1j Top-mount hanger installed per manufacturer's recommendations

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

1l Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify double I-joist capacity to support concentrated loads.

1m Do not bevel-cut joist beyond inside face of wall.

1n Attach I-joist per detail 1b

1o Note: Blocking required at bearing for lateral support, not shown for clarity.

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

1q One 2-1/2" nails at top and bottom flange to lumber piece. Two 2-1/2" nails from each web to lumber piece. One 2-1/2" nails one side only 2-1/2" nails at 6" o.c.

1r Note: - In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blocking.
- All nails are common spiral in this detail.

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

1b Wall sheathing, as required

1c Rim board may be used in lieu of I-joists. Backer is not required when rim board is used. Bracing per code shall be carried to the foundation.

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

1e NI blocking panel per detail 1a

1f Top- or face-mount hanger installed per manufacturer's recommendations

1g Top-mount hanger installed per manufacturer's recommendations

1h Backer block attached per detail 1h. Nail with twelve 3" nails, clinch when possible. Maximum support capacity = 1,620 lbs.

1i Filler block per detail 1p

1j Install hanger per manufacturer's recommendations

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

1l Note: Blocking required at bearing for lateral support, not shown for clarity.

1m Note: Blocking required at bearing for lateral support, not shown for clarity.

1n Note: Blocking required at bearing for lateral support, not shown for clarity.

1o Note: Blocking required at bearing for lateral support, not shown for clarity.

1p Note: Blocking required at bearing for lateral support, not shown for clarity.

1q Note: Blocking required at bearing for lateral support, not shown for clarity.

1r Note: Blocking required at bearing for lateral support, not shown for clarity.

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

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



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

WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the longest side of the longest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
- A knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
- Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.

- A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
- All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
- Limit three maximum size holes per span, of which one may be a duct chase opening.
- A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

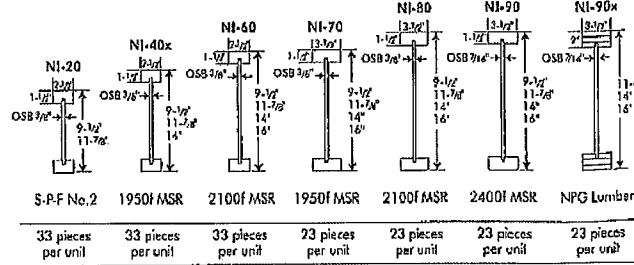


TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS

Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf

Joist Depth	Joist Series	Minimum Distance from Inside Face of Any Support to Centre of Hole (ft - in.)															
		Round Hole Diameter (in.)															
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4	
9-1/2"	NI-20	0-7"	1-6"	2-10"	4-3"	5-8"	6-0"	...	...	...	...	...	...	...	...	...	...
	NI-40x	0-7"	1-6"	3-0"	4-4"	6-0"	6-4"	...	...	...	...	...	...	...	...	...	...
	NI-60	1-3"	2-6"	4-0"	5-4"	7-0"	7-5"	...	...	...	...	...	...	...	...	...	...
	NI-70	2-0"	3-4"	4-9"	6-3"	8-0"	8-4"	...	...	...	...	...	...	...	...	...	...
	NI-80	2-3"	3-6"	5-0"	6-6"	8-2"	8-8"	...	...	...	...	...	...	...	...	...	...

TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS

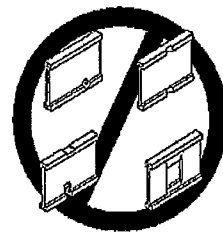
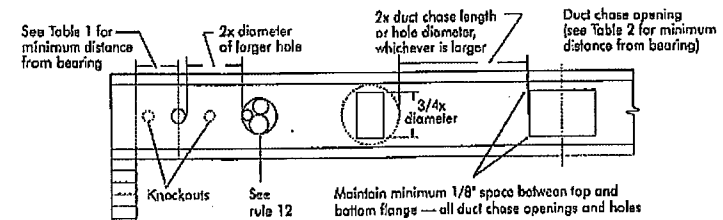
Simple Span Only

Joist Depth	Joist Series	Minimum distance from inside face of supports to centre of opening (ft - in.)											
		Duct Chase Length (in.)											
		8	10	12	14	16	18	20	22	24			
9-1/2"	NI-20	4-1"	4-5"	4-10"	5-4"	5-8"	6-1"	6-6"	7-1"	7-5"	7-8"	8-2"	8-6"
	NI-40x	5-3"	5-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-2"	8-6"	8-9"	8-9"	8-9"
	NI-60	5-4"	5-9"	6-2"	6-7"	7-1"	7-5"	8-0"	8-3"	8-9"	8-9"	8-9"	8-9"
	NI-70	5-1"	5-5"	5-10"	6-3"	6-7"	7-1"	7-6"	8-1"	8-4"	8-4"	8-4"	8-4"
	NI-80	6-3"	6-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-2"	8-6"	8-6"	8-6"	8-6"

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

- Above table may be used for I-joint spacing of 24 inches on centre or less.
- Duct chase opening location distance is measured from inside face of supports to centre of opening.
- The above table is based on simple-span joists only. For other applications, contact your local distributor.
- Distances are based on uniformly loaded floor joists that meet the span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of 1/480.
- The above table is based on the I-joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

FIGURE 7
FIELD-CUT HOLE LOCATOR



Knockouts are pre-cored 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 sharp saw.

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

SAFETY AND CONSTRUCTION PRECAUTIONS



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



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

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:

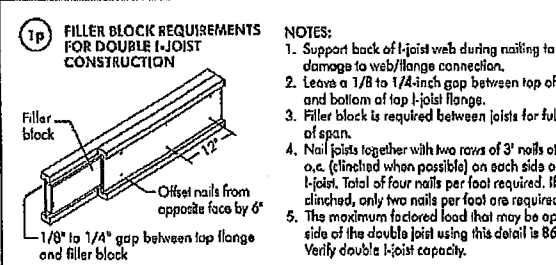
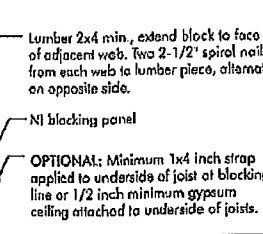
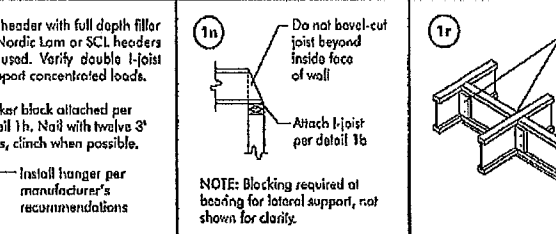
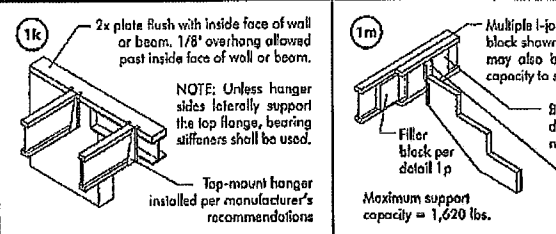
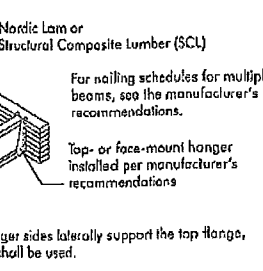
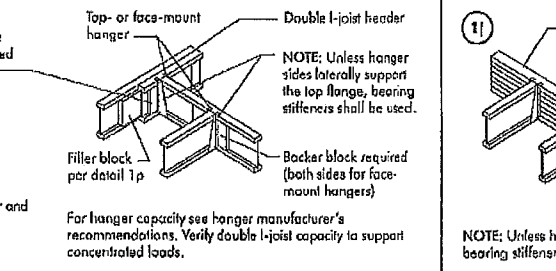
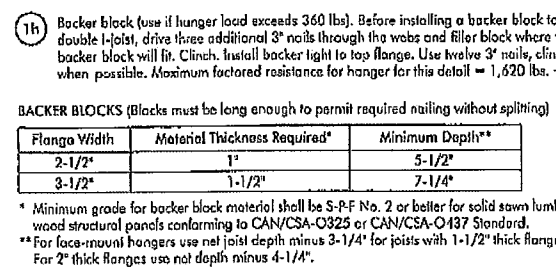
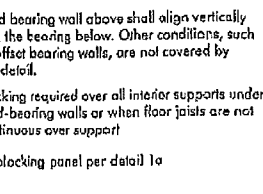
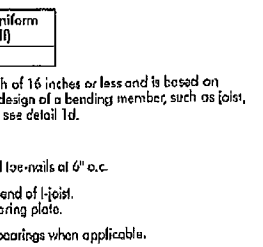
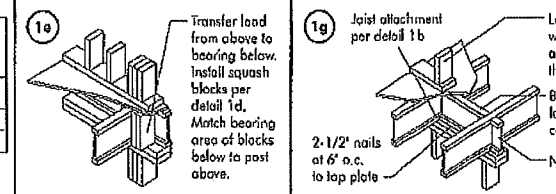
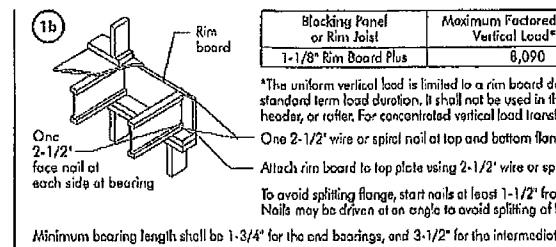
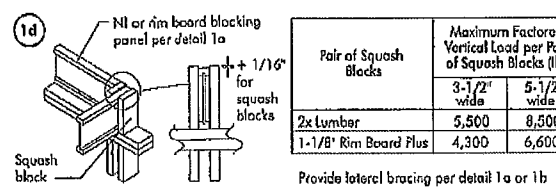
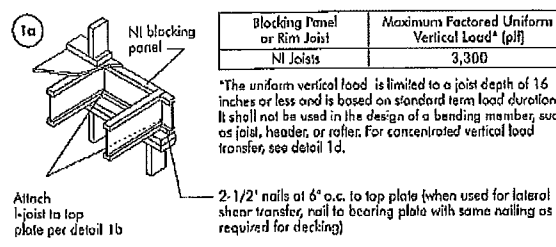
- Brace and nail each I-joint as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
- When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

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

PRODUCT WARRANTY

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

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



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

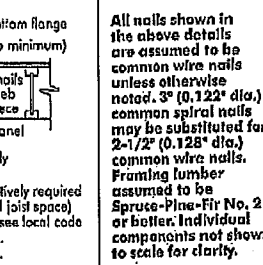


FIGURE 2
WEB STIFFENER INSTALLATION DETAILS

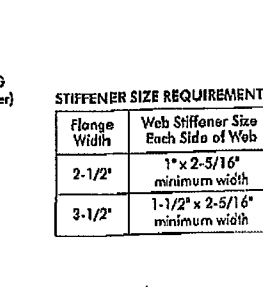
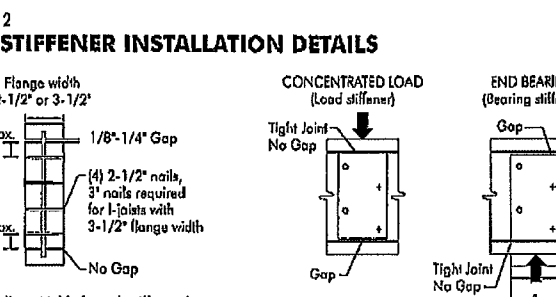
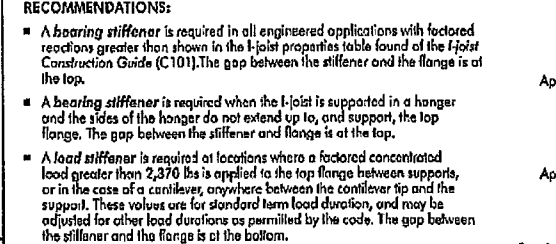


FIGURE 3
CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

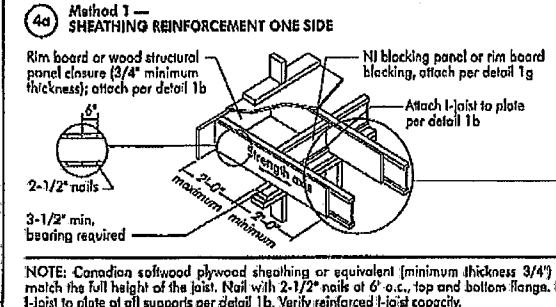


FIGURE 4
RIM BOARD INSTALLATION DETAILS

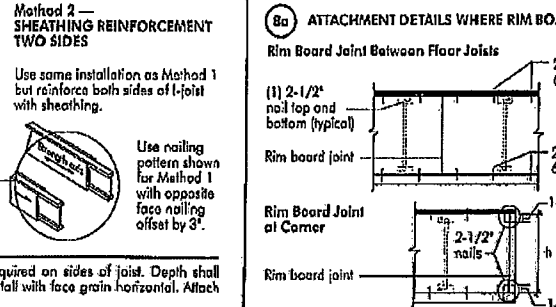
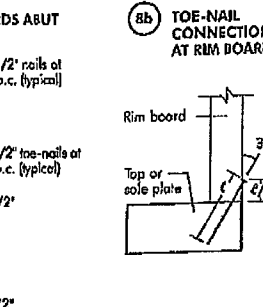


FIGURE 5
TOE-NAIL CONNECTION AT RIM BOARD





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

PASSED

1ST FLOOR FRAMING\Flush Beams\B1(13738)

January 29, 2019 15:52:18

BC CALC® Member Report

Dry | 1 span | No cant.

Build 6475

Job name:

File name: TH9C LOT1 SUNKEN.mmdl

Address:

Description: 1ST FLOOR FRAMING\Flush Beams\B1(13738)

City, Province, Postal Code: ST...NES

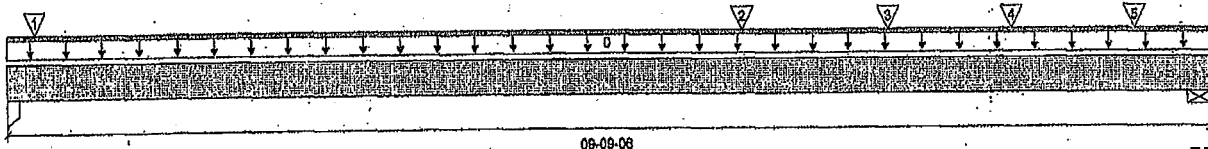
Specifier:

Customer:

Designer:

Code reports: CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

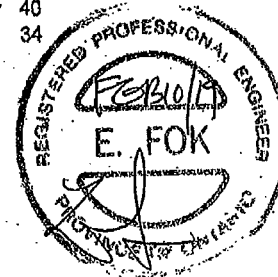
Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	778 / 0	508 / 0		
B2, 4-3/8"	508 / 0	283 / 0		

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	08-09-08	Top	1.00	0.66	1.00	1.15	00-00-00
1	E2(11665)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	547	365			n/a
2		Conc. Pt. (lbs)	L	05-11-10	05-11-10	Top	510	264			n/a
3	J5(13803)	Conc. Pt. (lbs)	L	07-02-00	07-02-00	Top	80	40			n/a
4	J5(13705)	Conc. Pt. (lbs)	L	08-02-00	08-02-00	Top	80	40			n/a
5	J5(13707)	Conc. Pt. (lbs)	L	09-02-00	09-02-00	Top	69	34			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2,816 ft-lbs	7,533 ft-lbs	37.4%	1	05-11-08
End Shear	1,009 lbs	5,785 lbs	17.4%	1	08-07-08
Total Load Deflection	L/999 (0.097")	n/a	n/a	4	05-02-08
Live Load Deflection	L/999 (0.062")	n/a	n/a	5	05-02-08
Max Defl.	0.097"	n/a	n/a	4	05-02-08
Span / Depth	11.5				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 5-1/4" x 1-3/4"	1,801 lbs	24.1%	16.1%	Unspecified
B2	Wall/Plate 4-3/8" x 1-3/4"	1,116 lbs	27.3%	11.9%	Unspecified

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.

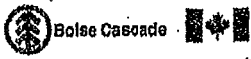
Notes

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: 05-05-00; Bottom: 05-05-00. **CONFORMS TO OBC 2012**
 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

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

DWG NO. TAM2292-18H
STRUCTURAL COMPONENT ONLY

T-1902866



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B16(13765)

Dry | 1 span | No cant

January 29, 2019 16:52:18

BC CALC® Member Report

Build 6476

Job name:

File name: TH9C LOT1 SUNKEN.mmdl

Address:

Description: 1ST FLOOR FRAMING\Flush Beams\B16(13765)

City, Province, Postal Code: ST...NES

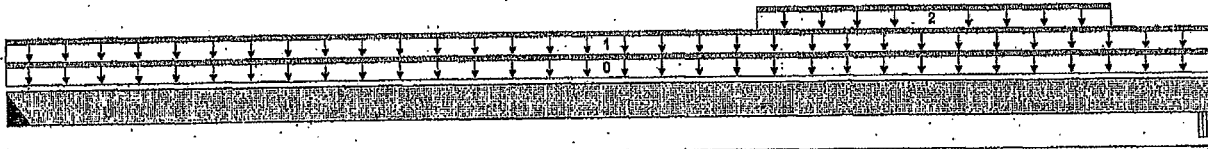
Specifier:

Customer:

Designer:

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 11-10-10

Reaction Summary (Down / Uplift) (lbs)

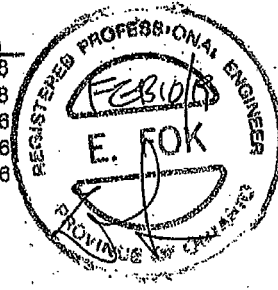
Bearing	Live	Dead	Snow	Wind
B1, 2"	330 / 0	193 / 0		
B2, 2-5/8"	566 / 0	312 / 0		

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	11-10-10	Top	5				00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	11-10-10	Top	40	20			n/a
2	STAIR	Unf. Lin. (lb/ft)	L	07-04-14	10-10-14	Top	120	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2,883 ft-lbs	11,610 ft-lbs	24.8%	1	07-07-08
End Shear	1,146 lbs	5,786 lbs	19.8%	1	10-10-08
Total Load Deflection	L/724 (0.193")	n/a	33.1%	4	06-02-08
Live Load Deflection	L/999 (0.123")	n/a	n/a	5	06-02-08
Max Defl.	0.193"	n/a	n/a	4	06-02-08
Span / Depth	14.7				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	736 lbs	n/a	17.2%	HUS1.81/10
B2	Beam 2-5/8" x 1-3/4"	1,238 lbs	50.5%	22.1%	Unspecified

Cautions

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

Notes

- 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

Disclosure

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

DWG NO. TAM 229318H
STRUCTURAL
COMPONENT ONLY

T-1902367



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
1ST FLOOR FRAMING\Flush Beams\B2(13748)

PASSED

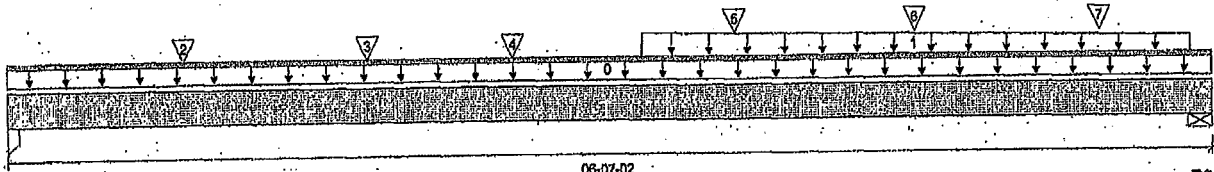
BC CALC® Member Report
 Build 6475

Dry | 1 span | No cant.

January 29, 2019 15:52:18

Job name:
 Address:
 City, Province, Postal Code: ST ...NES
 Customer:
 Code reports: CCMC 12472-R

File name: TH9C LOT1 SUNKEN.mmdl
 Description: 1ST FLOOR FRAMING\Flush Beams\B2(13748)
 Specifier:
 Designer:
 Company:



Reaction Summary (Down / Uplift) (lbs)

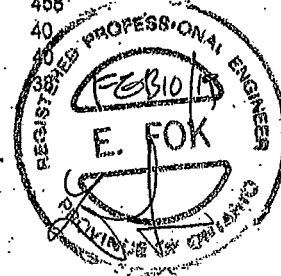
Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	1,067 / 0	586 / 0		
B2, 4-3/8"	1,212 / 0	655 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
							1.00	0.86	1.00	1.15	
0	Self-Weight	Unf. LIn. (lb/ft)	L	00-00-00	06-07-02	Top		10			00-00-00
1	Smoothed Load	Trapezoidal (lb/ft)	L	03-05-12	06-05-12	Top	280	140			n/a
2	J2(13761)	Conc. Pt. (lbs)	L	00-11-12	00-11-12	Top	262	131			n/a
3	J2(13790)	Conc. Pt. (lbs)	L	01-11-12	01-11-12	Top	217	109			n/a
4		Conc. Pt. (lbs)	L	02-09-04	02-09-04	Top	842	458			n/a
5	J5(13803)	Conc. Pt. (lbs)	L	03-11-12	03-11-12	Top	80	40			n/a
6	J5(13705)	Conc. Pt. (lbs)	L	04-11-12	04-11-12	Top	80				n/a
7	J5(13707)	Conc. Pt. (lbs)	L	05-11-12	05-11-12	Top	66				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4,843 ft-lbs	23,220 ft-lbs	20.9%	1	02-09-02
End Shear	2,321 lbs	11,571 lbs	20.1%	1	00-11-04
Total Load Deflection	L/999 (0.044")	n/a	n/a	4	03-02-00
Live Load Deflection	L/999 (0.029")	n/a	n/a	5	03-02-00
Max Defl.	0.044"	n/a	n/a	4	03-02-00
Span / Depth	7.8				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 1-3/4" x 3-1/2"	2,333 lbs	46.9%	31.2%	Unspecified
B2	Wall/Plate 4-3/8" x 3-1/2"	2,638 lbs	32.3%	14.1%	Unspecified

Notes

- Design meets Code minimum (L/240) Total load deflection criteria.
- Design meets Code minimum (L/360) Live load deflection criteria.
- Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-00-00.
- 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
- Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

CONFORMS TO OBC 2012

DWG NO. YAM2294-1814
STRUCTURAL COMPONENT ONLY

T-1902868



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
1ST FLOOR FRAMING\Flush Beams\B2(13748)

PASSED

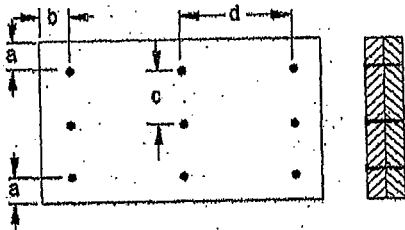
BC CALC® Member Report
 Build 6476
 Job name:
 Address:
 City, Province, Postal Code: ST ...NES
 Customer:
 Code reports: CCMC 12472-R

Dry | 1 span | No cant.

January 29, 2019 15:52:18

File name: TH9C LOT1 SUNKEN.mmdl
 Description: 1ST FLOOR FRAMING\Flush Beams\B2(13748)
 Specifier:
 Designer:
 Company:

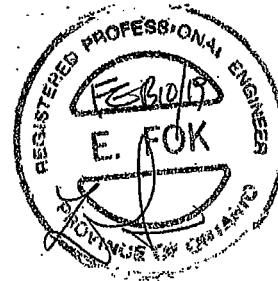
Connection Diagram: Full Length of Member



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

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
 Connectors are: 1 nails

3/2" ARDOX SPIRAL



Disclosure

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

DWG NO. TAN2194-18H
 STRUCTURAL
 COMPONENT ONLY

T-19023686



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B3(13745)

January 29, 2019 15:52:18

BC CALC® Member Report

Dry | 1 span | No cant.

Build 6476

Job name:

File name: TH9C LOT1 SUNKEN.mmdl

Address:

Description: 1ST FLOOR FRAMING\Flush Beams\B3(13745)

City, Province, Postal Code: ST ...NES

Specifier:

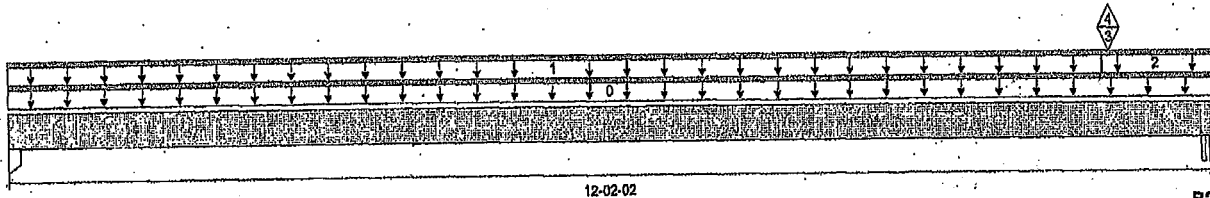
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 12-02-02

Reaction Summary (Down / Uplift) (lbs)

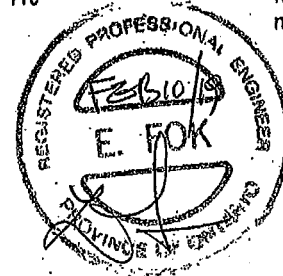
Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	141 / 0	107 / 0		
B2, 2-5/8"	176 / 2	208 / 0		

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	12-02-02	Top		5			00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	11-00-10	Top	23	11			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	11-00-10	12-02-02	Top	24	12			n/a
3	B4(13736)	Conc. Pt. (lbs)	L	11-01-08	11-01-08	Top	41	110			n/a
4	B4(13736)	Conc. Pt. (lbs)	L	11-01-08	11-01-08	Top	-2				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,033 ft-lbs	11,610 ft-lbs	8.9%	1	06-04-09
End Shear	466 lbs	5,785 lbs	8.1%	1	11-02-00
Total Load Deflection	L/999 (0.076")	n/a	n/a	6	06-02-11
Live Load Deflection	L/999 (0.041")	n/a	n/a	8	06-02-11
Max Defl.	0.076"	n/a	n/a	6	06-02-11
Span / Depth	14.9				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	346 lbs	7.0%	4.6%	Unspecified
B2	Beam 2-5/8" x 1-3/4"	523 lbs	21.3%	9.3%	Unspecified

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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

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

DWG NO. FWH-2019-5184
STRUCTURAL COMPONENT ONLY

T-1902369



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B4\I3736

Dry | 1 span | No cant.

January 29, 2019 15:52:18

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: ST ...NES

Customer:

Code reports: CCMC 12472-R

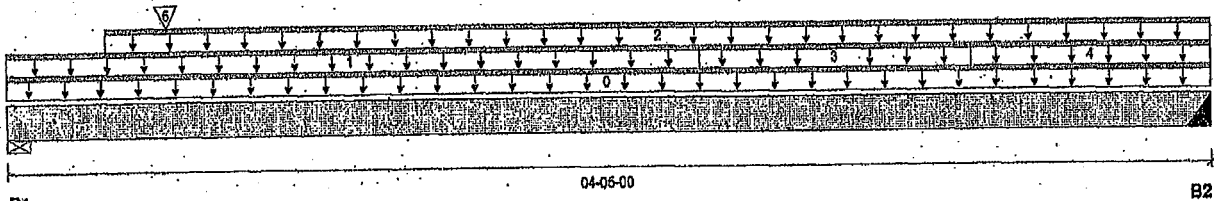
File name: TH9C LOT1 SUNKEN.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B4\I3736

Specifier:

Designer:

Company:



Total Horizontal Product Length = 04-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 10"	1,803 / 0	3,359 / 0		
B2, 2"	42 / 0	135 / 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	04-05-00	Top		5			00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-06-08	Top	23				n/a
2	WALL	Unf. Lin. (lb/ft)	L	00-04-08	04-05-00	Top		56			n/a
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	02-06-08	03-06-08	Top	22				n/a
4	FC3 Floor Material	Unf. Lin. (lb/ft)	L	03-06-08	04-05-00	Top	23				n/a
5	-	Conc. Pt. (lbs)	L	00-07-03	00-07-03	Top	1,541	3,197			



Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	188 ft-lbs	7,546 ft-lbs	2.1%	0	02-06-08
End Shear	167 lbs	3,761 lbs	4.4%	0	01-07-08
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	02-06-08
Live Load Deflection	L/999 (0")	n/a	n/a	5	02-06-08
Max Def.	0.001"	n/a	n/a	4	02-06-08
Span / Depth	4.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Support	Demand/Resistance Member	Material
B1	Wall/Plate 10" x 1-3/4"	4,702 lbs	77.4%	33.9%	Unspecified
B2	Hanger 2" x 1-3/4"	189 lbs	n/a	6.8%	HUS1.81/10

Disclosure

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Cautions

Header for the hanger HUS1.81/10 at B2 is a Single 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

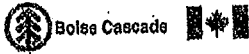
Notes

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

DWYNDU YAM 202618H
 STRUCTURAL
 COMPONENT ONLY

TL902370



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
1ST FLOOR FRAMING\Flush Beams\B5\B5(13795)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

January 29, 2019 15:52:18

Buld 6475

Job name:

File name: TH9C LOT1 SUNKEN.mmdl

Address:

Description: 1ST FLOOR FRAMING\Flush Beams\B5\B5(13795)

City, Province, Postal Code: ST ...NES

Specifier:

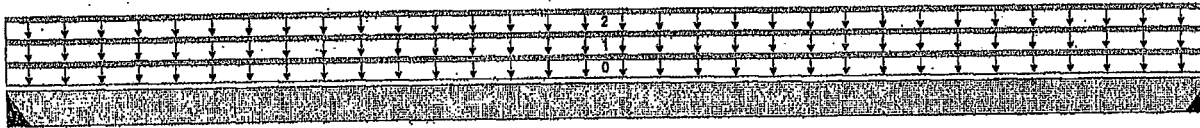
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



B1 03-08-10 B2
 Total Horizontal Product Length = 03-08-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	457 / 0	237 / 0		
B2, 2"	457 / 0	237 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-08-10	Top	1.00	0.65	1.00	1.15	00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-08-10	Top	240	120			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-08-10	Top	6	3			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	814 ft-lbs	11,610 ft-lbs	7.0%	1	01-10-05
End Shear	476 lbs	5,785 lbs	8.2%	1	00-11-08
Total Load Deflection	L/999 (0.005")	n/a	n/a	4	01-10-05
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	01-10-05
Max Defl.	0.005"	n/a	n/a	4	01-10-05
Span / Depth	4.4				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	983 lbs	n/a	23.0%	HUS1.81/10
B2	Hanger 2" x 1-3/4"	983 lbs	n/a	23.0%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 at B1 is a Single 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.
 Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.
 Header for the hanger HUS1.81/10 at B2 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.

Notes

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

CONFORMS TO OBC 2012

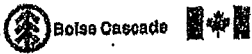
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DWG NO. YAW 2092-184
STRUCTURAL COMPONENT ONLY

T-1902371



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
1ST FLOOR FRAMING\Flush Beams\B6L(I2913)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

January 29, 2019 15:52:18

Buld 6475

Job name:

File name: TH9C LOT1 SUNKEN.mmdl

Address:

Description: 1ST FLOOR FRAMING\Flush Beams\B6L(I2913)

City, Province, Postal Code: .ST...NES

Specifier:

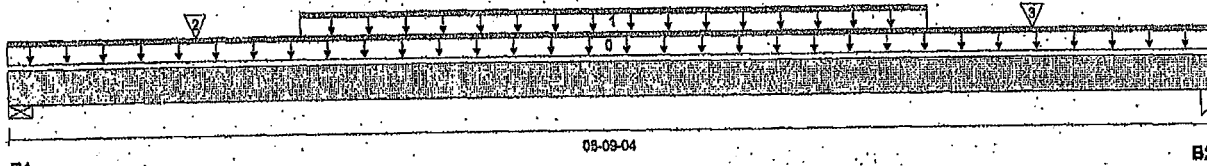
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 08-09-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	556 / 0	292 / 0		
B2, 3-1/2"	555 / 0	291 / 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	05-09-04	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-14	04-04-14	Top	230	115			n/a
2	J2(I3239)	Conc. Pt. (lbs)	L	00-10-14	00-10-14	Top	207	103			n/a
3	J2(I3243)	Conc. Pt. (lbs)	L	04-10-14	04-10-14	Top	214	107			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,729 ft-lbs	11,610 ft-lbs	14.9%	1	02-10-14
End Shear	1,084 lbs	5,785 lbs	18.4%	1	04-08-04
Total Load Deflection	L/999 (0.024")	n/a	n/a	4	02-10-14
Live Load Deflection	L/999 (0.016")	n/a	n/a	5	02-10-14
Max Defl.	0.024"	n/a	n/a	4	02-10-14
Span / Depth	6.6				

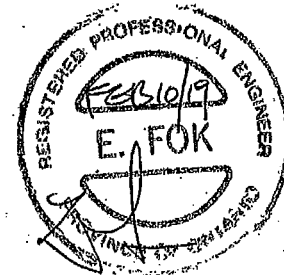
Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4-3/8" x 1-3/4"	1,199 lbs	29.3%	12.8%	Unspecified
B2	Column 3-1/2" x 1-3/4"	1,196 lbs	24.1%	16.0%	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 Q86.
- BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA Q86.
- Design based on Dry Service Condition.
- Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012



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

DWG NO. TAN 2090-18H
 STRUCTURAL
 COMPONENT ONLY

T-1902372



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B10\I3232

Dry | 1 span | No cant.

January 29, 2019 15:52:18

BC CALC® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: ST ...NES

Customer:

Code reports: CCMC 12472-R

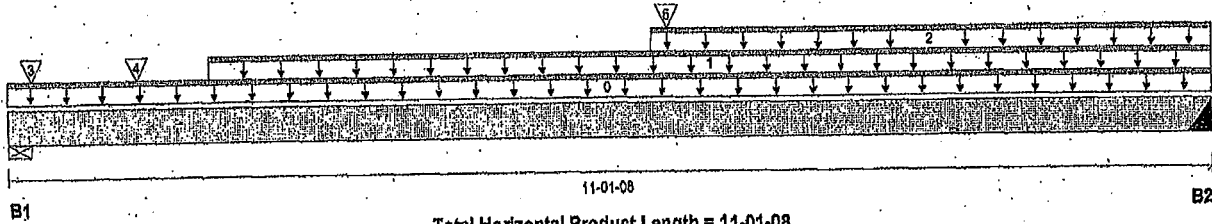
File name: TH9C LOT1 SUNKEN.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B10\I3232

Specifier:

Designer:

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1,525 / 0	2,043 / 0		
B2, 3"	1,711 / 0	946 / 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	11-01-08	Top		10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-10-10	11-01-08	Top	222	111			n/a
2	FC4 Floor Material	Unf. Lin. (lb/ft)	L	05-11-08	11-01-08	Top	7				n/a
3	E14(2117)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top		1,194			n/a
4	J2(I3105)	Conc. Pt. (lbs)	L	01-02-10	01-02-10	Top	275	138			n/a
5	B12(I3231)	Conc. Pt. (lbs)	L	06-01-04	06-01-04	Top	866	501			n/a

Controls Summary

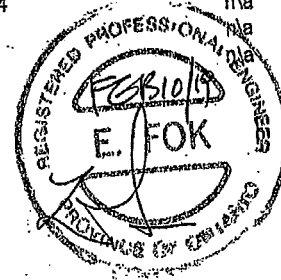
	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	11,796 ft-lbs	23,220 ft-lbs	50.8%	1	06-01-04
End Shear	3,366 lbs	11,571 lbs	29.1%	1	10-01-00
Total Load Deflection	L/411 (0.307")	n/a	58.3%	4	05-09-04
Live Load Deflection	L/640 (0.198")	n/a	56.2%	5	05-09-04
Max Defl.	0.307"	n/a	n/a	4	05-09-04
Span / Depth	13.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 6-1/2" x 3-1/2"	4,842 lbs	47.1%	20.8%	Unspecified
B2	Hanger 3" x 3-1/2"	3,747 lbs	n/a	29.3%	HGUS410

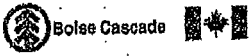
Cautions

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.



DWG NO. YAW 2019-1874
STRUCTURAL
COMPONENT ONLY

T-1902373



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING\Flush Beams\B10(3232)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

January 29, 2019 15:52:18

Build 6476

Job name:

Address:

City, Province, Postal Code: ST ...NES

Customer:

Code reports: CCMC 12472-R

File name: TH9C LOT1 SUNKEN.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B10(3232)

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 Q86.

CONFORMS TO OBC 2012

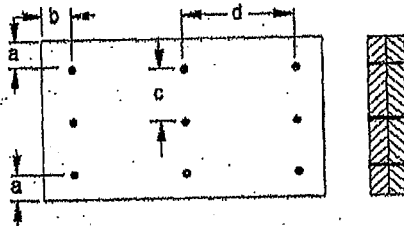
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connection Diagram: Full Length of Member



a minimum = 2"
 b minimum = 3"

c = 2-3/4" //
 d = 4"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are: Nails
 3/4" ARDOX SPIRAL



Disclosure

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

DWG NO. YAW 229818H
 STRUCTURAL
 COMPONENT ONLY

T-1902374



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B11(13092)

Dry | 1 span | No cant.

January 29, 2019 15:52:18

BC CALC® Member Report

Build 0475

Job name:

Address:

City, Province, Postal Code: ST ...NES

Customer:

Code reports: CCMC 12472-R

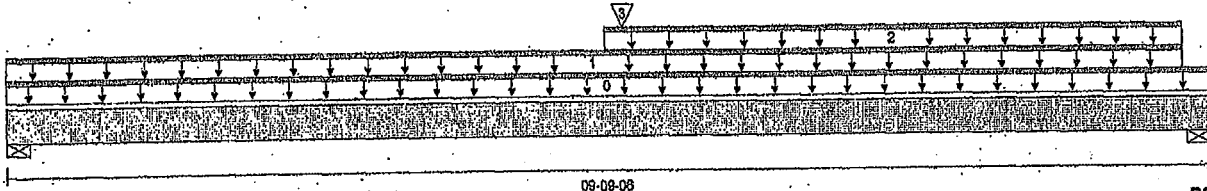
File name: TH9C LOT1 SUNKEN.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B11(13092)

Specifier:

Designer:

Company:



B1

Total Horizontal Product Length = 09-09-06

B2

Reaction Summary (Down / Uplift) (lbs)

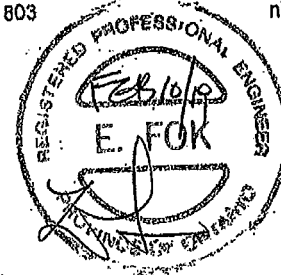
Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	868 / 0	490 / 0		
B2, 5-1/2"	956 / 0	537 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-09-06	Top		5			00-00-00
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	09-06-10	Top	26	13			n/a
2	FC4 Floor Material	Unf. Lin. (lb/ft)	L	04-10-06	09-06-10	Top	19	10			n/a
3	B12(13231)	Conc. Pt. (lbs)	L	05-00-02	05-00-02	Top	1,469	803			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8,156 ft-lbs	11,610 ft-lbs	70.2%	1	05-00-02
End Shear	2,000 lbs	5,785 lbs	34.6%	1	08-06-06
Total Load Deflection	L/387 (0.282")	n/a	62.0%	4	04-10-06
Live Load Deflection	L/802 (0.181")	n/a	59.8%	5	04-10-06
Max Defl.	0.282"	n/a	n/a	4	04-10-06
Span / Depth	11.5				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4-3/8" x 1-3/4"	1,911 lbs	46.6%	20.5%	Unspecified
B2	Wall/Plate 5-1/2" x 1-3/4"	2,106 lbs	41.0%	17.9%	Unspecified

Disclosure

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 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.

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

DWR NO. YAW 2300-18H
STRUCTURAL
COMPONENT ONLY

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

T-1902375



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING Flush Beams B12(I3231)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

January 29, 2019 15:52:18

Buld 6475

Job name:

File name: TH9C LOT1 SUNKEN.mmdl

Address:

Description: 2ND FLOOR FRAMING Flush Beams B12(I3231)

City, Province, Postal Code: ST ...NES

Specifier:

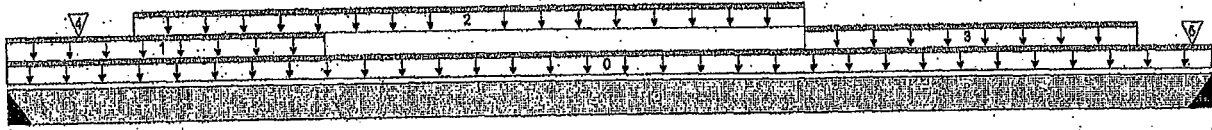
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



14-05-08

Total Horizontal Product Length = 14-05-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	1,475 / 0	806 / 0		
B2, 3"	860 / 0	499 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
							1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	14-05-08	Top		10			00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-10-00	Top	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-06-12	09-06-12	Top	97	48			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	09-06-12	13-06-12	Top	110	54			n/a
4	J5(I3140)	Conc. Pt. (lbs)	L	00-10-12	00-10-12	Top	111	56			n/a
5	J5(I3214)	Conc. Pt. (lbs)	L	14-02-12	14-02-12	Top	93	47			n/a

Controls Summary

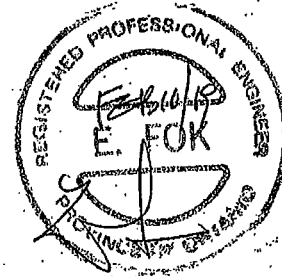
	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	7,346 ft-lbs	23,220 ft-lbs	31.6%	1	06-02-12
End Shear	2,632 lbs	11,571 lbs	22.7%	1	01-00-08
Total Load Deflection	L/447 (0.378")	n/a	53.7%	4	07-00-12
Live Load Deflection	L/701 (0.241")	n/a	51.4%	5	07-00-12
Max Defl.	0.378"	n/a	n/a	4	07-00-12
Span / Depth	17.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 3" x 3-1/2"	3,219 lbs	n/a	25.1%	HGUS410
B2	Hanger 3" x 3-1/2"	1,913 lbs	n/a	14.9%	HGUS410

Cautions

Header for the hanger HGUS410 at B1 is a Single 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.
Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.
Header for the hanger HGUS410 at B2 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.



OWN NO. 2307-19H
STRUCTURAL COMPONENT ONLY

T-1902376



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING\Flush Beams\B12\I3231

PASSED

BC CALC® Member Report
 Build 6475
 Job name:
 Address:
 City, Province, Postal Code: ST ...NES
 Customer:
 Code reports: CCMC 12472-R

Dry | 1 span | No cant.

January 29, 2019 15:52:18

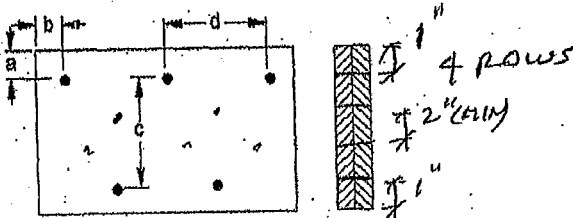
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 Description: 2ND FLOOR FRAMING\Flush Beams\B12\I3231
 Specifier:
 Designer:
 Company:

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
 Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

CONFORMS TO QBC 2012

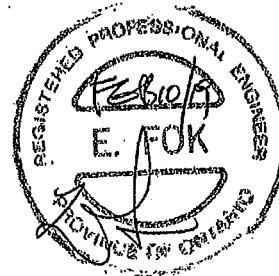
Connection Diagram: Full Length of Member



a minimum = 2"
 b minimum = 3"
 c = 7-1/2"
 d = 2" 1/2"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
 Connectors are: Nails

3/8" ARDOX SPIRAL



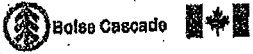
Disclosure

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

DWG NO, YAM 2307-18 H
 STRUCTURAL
 COMPONENT ONLY

T.1902376(2)



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING\Flush Beams\B13(12825)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

January 29, 2019 15:52:18

Buld 6475

Job name:

File name: TH9C LOT1 SUNKEN.mmdl

Address:

Description: 2ND FLOOR FRAMING\Flush Beams\B13(12825)

City, Province, Postal Code: ST ...NES

Specifier:

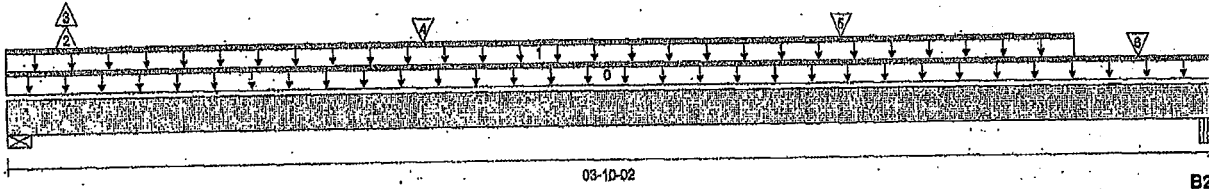
Customer:

Designer:

Code reports:

CGMC 12472-R

Company:



Total Horizontal Product Length = 03-10-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	423 / 78	398 / 0	272 / 0	
B2, 6-1/4"	469 / 0	480 / 0	298 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
							1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-10-02	Top		10			00-00-00
1	E23(12126)	Unf. Lin. (lb/ft)	L	00-00-00	03-04-14	Top	77	151	147		n/a
2	J2(13212)	Conc. Pt. (lbs)	L	00-02-06	00-02-06	Top	43	-18			n/a
3	J2(13212)	Conc. Pt. (lbs)	L	00-02-06	00-02-06	Top	-78				n/a
4	J2(13132)	Conc. Pt. (lbs)	L	01-04-00	01-04-00	Top	263	132			n/a
5	J2(13133)	Conc. Pt. (lbs)	L	02-08-00	02-08-00	Top	256	128			n/a
6		Conc. Pt. (lbs)	L	03-07-05	03-07-05	Top	62	83	67		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,140 ft-lbs	23,220 ft-lbs	4.9%	1	01-08-13
End Shear	927 lbs	11,671 lbs	8.0%	1	02-07-06
Total Load Deflection	L/999 (0.003")	n/a	n/a	58	01-10-04
Live Load Deflection	L/999 (0.002")	n/a	n/a	85	01-10-04
Max Defl.	0.003"	n/a	n/a	58	01-10-04
Span / Depth	4.1				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 3-1/2"	1,403 lbs	21.4%	9.4%	Unspecified
B2	Beam 6-1/4" x 3-1/2"	1,599 lbs	16.3%	7.1%	Unspecified

Notes

- Design meets Code minimum (L/240) Total load deflection criteria.
- Design meets Code minimum (L/360) Live load deflection criteria.
- Calculations assume member is fully braced.
- Resistance Factor phi has been applied to all presented results per CSA O86.
- BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
- Unbalanced snow loads determined from building geometry were used in selected product's verification.
- Design based on Dry Service Condition.
- Importance Factor: Normal Part code: Part 9
- Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

CONFORMS TO OBC 2012

DWM NO. 2019-0184
STRUCTURAL COMPONENT ONLY

T-190237



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100.SP
2ND FLOOR FRAMING\Flush Beams\B13(12825)

PASSED

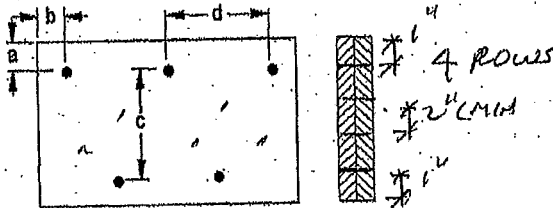
BC CALC® Member Report
 Build 6476
 Job name:
 Address:
 City, Province, Postal Code: ST...NES
 Customer:
 Code reports: CCMC 12472-R

Dry | 1 span | No cant.

January 29, 2019 15:52:18

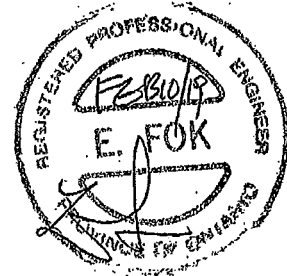
File name: TH9C LOT1 SUNKEN.mmdl
 Description: 2ND FLOOR FRAMING\Flush Beams\B13(12825)
 Specifier:
 Designer:
 Company:

Connection Diagram: Full Length of Member



a minimum = 1"
 b minimum = 3"
 c = 7-1/2"
 d = 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
 Connectors are: 3/2" ARDOX SPIRAL Nails.



Disclosure

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

16-2
 DWG NO. TAW 2302-18H
STRUCTURAL COMPONENT ONLY

T: 190237760



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING\Flush Beams\B14\I2179

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

January 29, 2019 15:52:18

Build 6476

Job name:

File name: TH9C LOT1 SUNKEN.mmdl

Address:

Description: 2ND FLOOR FRAMING\Flush Beams\B14\I2179

City, Province, Postal Code: ST ...NES

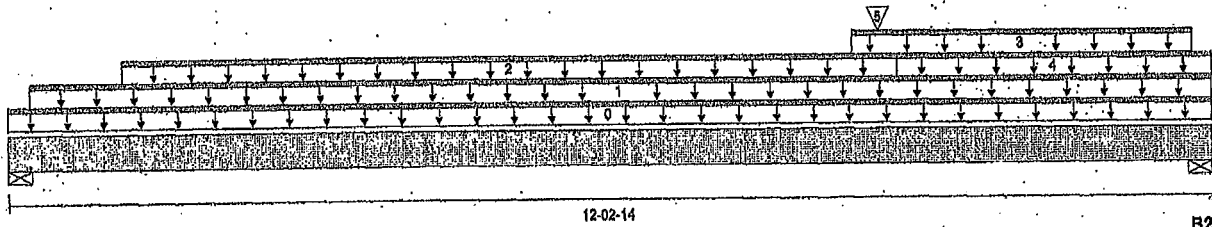
Specifier:

Customer:

Designer:

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 12-02-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	170 / 0	206 / 0	57 / 0	
B2, 2-3/8"	273 / 0	508 / 0	279 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-02-14	Top		10			00-00-00
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-02-12	12-02-14	Top	9	5			n/a
2	FC4 Floor Material	Unf. Lin. (lb/ft)	L	01-02-04	09-00-08	Top	18	9			n/a
3	E23(I2119)	Unf. Lin. (lb/ft)	L	08-07-00	12-00-08	Top	44	121	84		n/a
4	FC4 Floor Material	Unf. Lin. (lb/ft)	L	09-00-08	12-02-14	Top	6	3			n/a
5		Conc. Pt. (lbs)	L	08-10-04	08-10-04	Top	24	45			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2,521 ft-lbs	23,220 ft-lbs	10.9%	1	08-07-00
End Shear	1,051 lbs	11,571 lbs	9.1%	1	11-03-00
Total Load Deflection	L/999 (0.093")	n/a	n/a	35	06-09-00
Live Load Deflection	L/999 (0.049")	n/a	n/a	51	06-09-00
Max Def.	0.093"	n/a	n/a	35	06-09-00
Span / Depth	14.8				



Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	569 lbs	5.5%	2.4%	Unspecified
B2	Wall/Plate 2-3/8" x 3-1/2"	1,325 lbs	29.9%	13.1%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-00-00.
 Resistance Factor phi has been applied to all presented results per CSA O86. **CONFORMS TO OBC 2012**
 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
 Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

BWB NO. FAM 230318A
 STRUCTURAL COMPONENT ONLY

T-1902378



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING\Flush Beams\B14(12179)

PASSED

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: ST ...NES

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

January 29, 2019 15:52:18

File name: TH9C LOT1 SUNKEN.mmdl

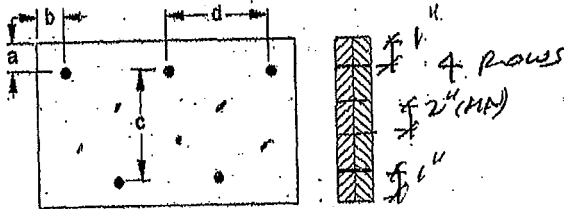
Description: 2ND FLOOR FRAMING\Flush Beams\B14(12179)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



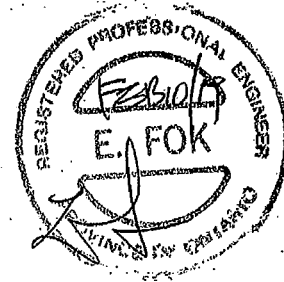
a minimum = 1/2"
 b minimum = 3"

c = 1-1/2"
 d = 12"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are: Nails

3/4" ARDOX SPIRAL



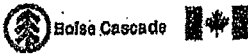
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BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®

STRUCTURAL COMPONENT ONLY

T. 19023786



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING Flush Beams B15(12064)

PASSED

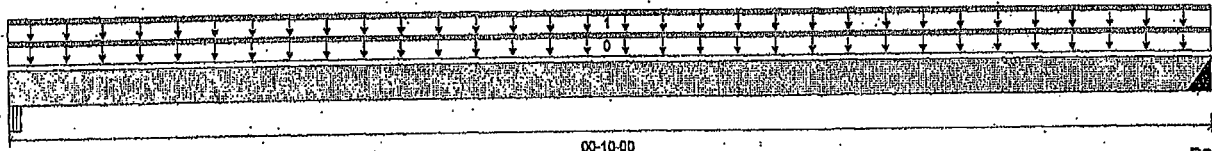
BC CALC® Member Report
 Bullid 6476

Dry | 1. span | No cant.

January 29, 2019 16:52:18

Job name:
 Address:
 City, Province, Postal Code: ST ...NES
 Customer:
 Code reports: CCMC 12472-R

File name: TH9C LOT1 SUNKEN.mmdl
 Description: 2ND FLOOR FRAMING Flush Beams B15(12064)
 Specifier:
 Designer:
 Company:



Total Horizontal Product Length = 00-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-1/8"	15 / 0	56 / 0	29 / 0	
B2, 3"	12 / 0	45 / 0	23 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
							1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	00-10-00	Top		10			00-00-00
1	E24(12124)	Unf. Lin. (lb/ft)	L	00-00-00	00-10-00	Top	33	111	63		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	6 ft-lbs	23,220 ft-lbs	n/a	13	00-05-09
End Shear	33 lbs	11,571 lbs	0.3%	13	00-04-02
Span / Depth	0.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 4-1/8" x 3-1/2"	129 lbs	1.7%	0.7%	Unspecified
B2	Hanger 3" x 3-1/2"	103 lbs	n/a	0.8%	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.

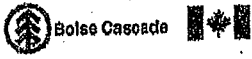
Notes

Calculations assume member is fully braced.
 Hanger Manufacturer: Unassigned
 Resistance Factor phi has been applied to all presented results per CSA O86. **CONFORMS TO OBC 2012**
 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
 Member has no side loads.



OWNED BY 2350418 M
STRUCTURAL
COMPONENT ONLY

T-1902379



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING Flush Beams B15 (I2064)

PASSED

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: ST...NES

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

January 29, 2019 16:52:18

File name: TH9C LOT1 SUNKEN.mmdl

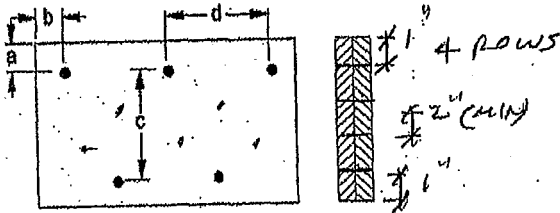
Description: 2ND FLOOR FRAMING Flush Beams B15 (I2064)

Specifier:

Designer:

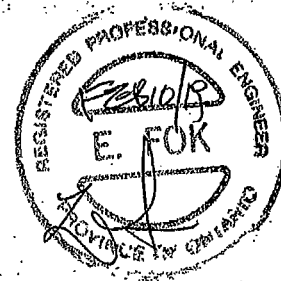
Company:

Connection Diagram: Full Length of Member



a minimum = 2"
 b minimum = 3"
 c = 7-1/2"
 d = 4"

Member has no side loads.
 Connectors are: 3/8" ARDOX SPIRAL Nails



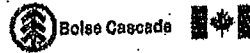
Disclosure

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

DWG NO. YAM 2304-18 H
 STRUCTURAL
 COMPONENT ONLY

T-19023796



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B7(13268)

Dry | 1 span | No cant.

January 29, 2019 15:52:18

BC CALC® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: ST...NES

Customer:

Code reports: CCMC 12472-R

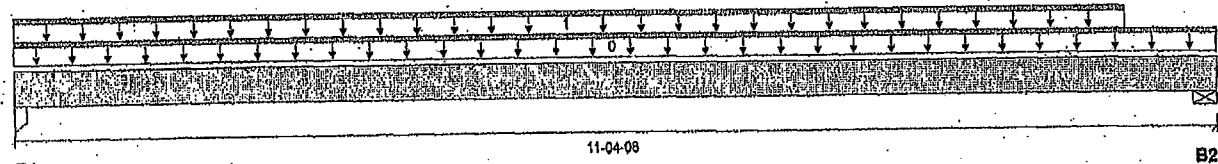
File name: TH9C LOT1 SUNKEN.mxd

Description: 2ND FLOOR FRAMING\Flush Beams\B7(13268)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 11-04-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	2,576 / 0	1,342 / 0		
B2, 3-1/2"	2,156 / 0	1,152 / 0		

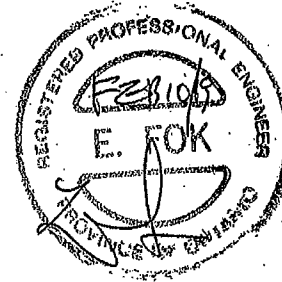
Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-04-08	Top	1.00	0.85	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	10-08-02	Top	450	225			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	14,412 ft-lbs	23,220 ft-lbs	62.1%	1	05-10-02
End Shear	4,691 lbs	11,571 lbs	40.5%	1	01-00-08
Total Load Deflection	L/301 (0.436")	n/a	79.6%	4	05-08-02
Live Load Deflection	L/489 (0.287")	n/a	78.5%	5	05-08-02
Max Defl.	0.436"	n/a	n/a	4	05-08-02
Span / Depth	13.8				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3" x 3-1/2"	5,542 lbs	65.0%	43.3%	Unspecified
B2	Wall/Plate 3-1/2" x 3-1/2"	4,674 lbs	71.5%	31.3%	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. **CONFORMS TO OBC 2012**
 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
 Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

BWG NO. TAM2805-18W
STRUCTURAL
COMPONENT ONLY

T-190280



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING\Flush Beams\B7(13268)

PASSED

BC CALCO® Member Report
 Build 6476

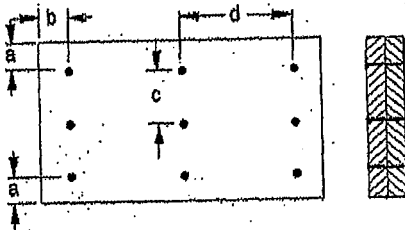
Dry | 1 span | No cant.

January 29, 2019 15:52:18

Job name:
 Address:
 City, Province, Postal Code: ST...NES
 Customer:
 Code reports: CCMC 12472-R

File name: TH9C LOT1 SUNKEN.mmdl
 Description: 2ND FLOOR FRAMING\Flush Beams\B7(13268)
 Specifier:
 Designer:
 Company:

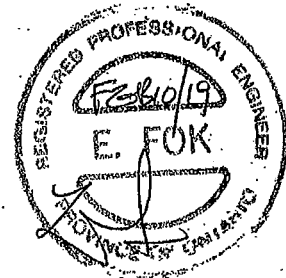
Connection Diagram: Full Length of Member



a minimum = 2" c = 2-3/4"
 b minimum = 3" d = 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
 Connectors are: Nails

3/4" ARDXX SPIRAL



Disclosure

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OWE NO. FAN 2305-186
STRUCTURAL COMPONENT ONLY

T-1902806



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING\Flush Beams\B8(12910)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

January 29, 2019 16:52:18

Build 6475

Job name:

File name: TH9C LOT1 SUNKEN.mmdl

Address:

Description: 2ND FLOOR FRAMING\Flush Beams\B8(12910)

City, Province, Postal Code: ST ...NES

Specifier:

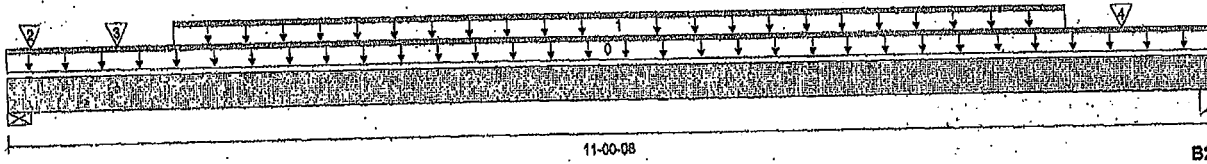
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 11-00-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6-1/2"	2,367 / 0	1,270 / 0		
B2, 3"	2,419 / 0	1,262 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
							1.00	0.65	1.00	1.16	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-00-08	Top		10			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-06-10	09-08-06	Top	453	226			n/a
2	E17(12120)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top		37			n/a
3	-	Conc. Pt. (lbs)	L	01-00-06	01-00-06	Top	510	255			n/a
4	-	Conc. Pt. (lbs)	L	10-02-10	10-02-10	Top	576	288			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	13,658 ft-lbs	23,220 ft-lbs	58.4%	1	06-02-06
End Shear	4,855 lbs	11,571 lbs	42.0%	1	10-00-00
Total Load Deflection	L/331 (0.379")	n/a	72.5%	4	05-08-06
Live Load Deflection	L/504 (0.249")	n/a	71.5%	5	05-08-06
Max Defl.	0.379"	n/a	n/a	4	05-08-06
Span / Depth	13.2				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 6-1/2" x 3-1/2"	5,123 lbs	49.8%	21.8%	Unspecified
B2	Column 3" x 3-1/2"	5,206 lbs	61.1%	40.6%	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. **CONFORMS TO OBC 2012**
- BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2016 and CSA O86.
- Design based on Dry Service Condition.
- Importance Factor : Normal Part code : Part 9.
- Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

DWG NO. TAM 2306-18H
STRUCTURAL
COMPONENT ONLY.

T-1902381



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING\Flush Beams\B8(12910)
 Dry | 1 span | No cant.

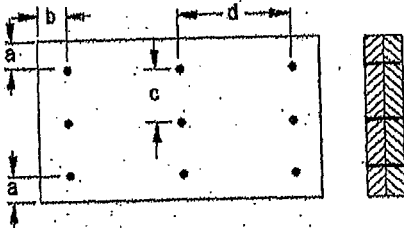
PASSED

January 29, 2019 15:52:18

BC CALC® Member Report
 Build 6475
 Job name:
 Address:
 City, Province, Postal Code: ST ...NES
 Customer:
 Code reports: CCMC 12472-R

File name: TH9C LOT1 SUNKEN.mmdl
 Description: 2ND FLOOR FRAMING\Flush Beams\B8(12910)
 Specifier:
 Designer:
 Company:

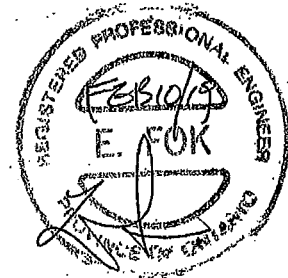
Connection Diagram: Full Length of Member



a minimum = 2"
 b minimum = 3"
 c = 2-3/4"
 d = 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
 Connectors are: 1 Nails

3/4" ARDOX SPIRAL



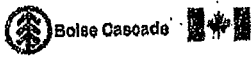
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BC CALC®, BC FRAMER®, AJS™, ALL-JOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®

DWG NO. TAM 2306-184
STRUCTURAL COMPONENT ONLY

T-190238(1)



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING\Flush Beams\B9(I3034)

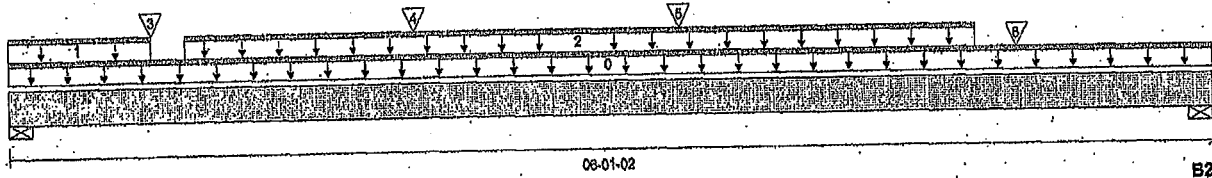
PASSED

BC CALC® Member Report
 Build 6476
 Job name:
 Address:
 City, Province, Postal Code: ST ...NES
 Customer:
 Code reports: CCMC 12472-R

Dry | 1 span | No cant.

January 29, 2019 15:52:18

File name: TH9C LOT1 SUNKEN.mmdl
 Description: 2ND FLOOR FRAMING\Flush Beams\B9(I3034)
 Specifier:
 Designer:
 Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6-1/2"	1,096 / 0	584 / 0		
B2, 2-3/4"	2,218 / 0	1,176 / 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	06-01-02	Top		10			00-00-00
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-08-12	Top	46				n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-10-12	04-10-12	Top	226	112			n/a
3	J5(I3144)	Conc. Pt. (lbs)	L	00-08-12	00-08-12	Top	122	61			n/a
4	J5(I3145)	Conc. Pt. (lbs)	L	02-00-12	02-00-12	Top	138	69			n/a
5	J5(I3146)	Conc. Pt. (lbs)	L	03-04-12	03-04-12	Top	138	69			n/a
6		Conc. Pt. (lbs)	L	05-01-05	05-01-05	Top	1,945	1,018			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4,306 ft-lbs	23,220 ft-lbs	18.5%	1	03-04-12
End Shear	4,505 lbs	11,571 lbs	38.9%	1	05-00-14
Total Load Deflection	L/999 (0.034")	n/a	n/a	4	03-03-04
Live Load Deflection	L/999 (0.022")	n/a	n/a	6	03-03-04
Max Defl.	0.034"	n/a	n/a	4	03-03-04
Span / Depth	7.0				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	2,372 lbs	23.1%	10.1%	Unspecified
B2	Wall/Plate 2-3/4" x 3-1/2"	4,797 lbs	93.3%	40.9%	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.
CONFORMS TO OBC 2012
 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
 Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

DWG NO. FAN 2307-18H
 STRUCTURAL
 COMPONENT ONLY

T-190238



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B9(13034)

Dry | 1 span | No cant.

January 29, 2019 15:52:18

BC CALC® Member Report

Buld 6475

Job name:

Address:

City, Province, Postal Code: ST...NES

Customer:

Code reports: CCMC 12472-R

File name: TH9C LOT1 SUNKEN.mmdt

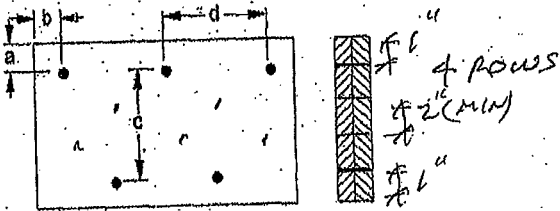
Description: 2ND FLOOR FRAMING\Flush Beams\B9(13034)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



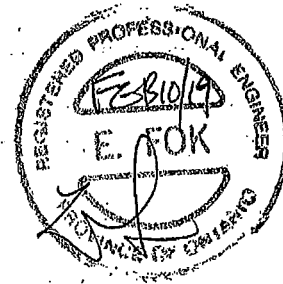
a. minimum = 2"
b minimum = 3"

c = 1 1/2"
d = 6"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.

Connectors are: 3/4" Nails

3/4" ARDOX SPIRAL



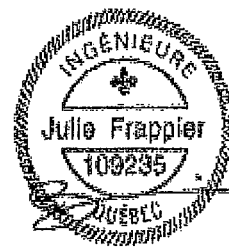
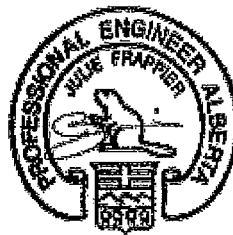
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BC CALC®, BC FRAMER®, AJST™, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

DWG NO. TAW 2307-18 H
STRUCTURAL
COMPONENT ONLY

T-1902382(v)



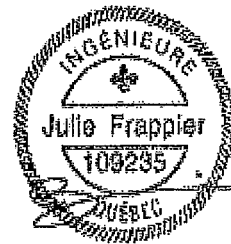
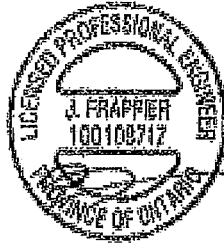
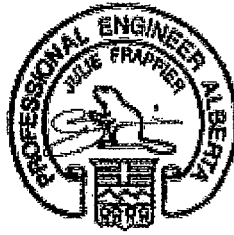
Maximum Floor Spans

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-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"
	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"
16"	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-40x	24'-2"	22'-6"	21'-3"	19'-7"	24'-8"	22'-7"	21'-3"	19'-7"
	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"
	NI-90x	27'-3"	25'-4"	24'-1"	22'-4"	27'-9"	25'-10"	24'-3"	22'-4"
16"	NI-60	27'-3"	24'-11"	23'-5"	21'-7"	27'-6"	24'-11"	23'-5"	21'-7"
	NI-70	28'-8"	26'-8"	25'-3"	23'-4"	29'-3"	26'-11"	25'-3"	23'-4"
	NI-80	29'-1"	27'-0"	25'-9"	23'-10"	29'-8"	27'-6"	25'-10"	23'-10"
	NI-90x	29'-11"	27'-10"	26'-6"	24'-10"	30'-6"	28'-5"	26'-11"	24'-10"

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



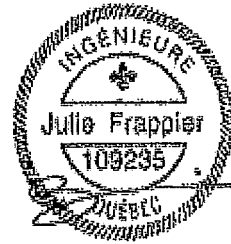
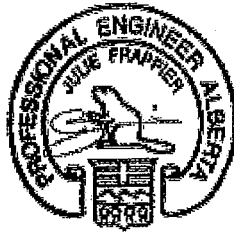
Maximum Floor Spans

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

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

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

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



Maximum Floor Spans

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

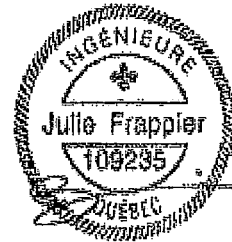
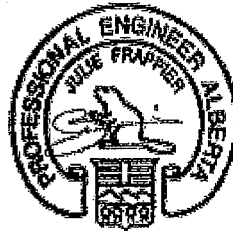
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-9"	17'-5"	16'-5"	15'-10"	15'-2"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-6"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

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

Maximum Floor Spans

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



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

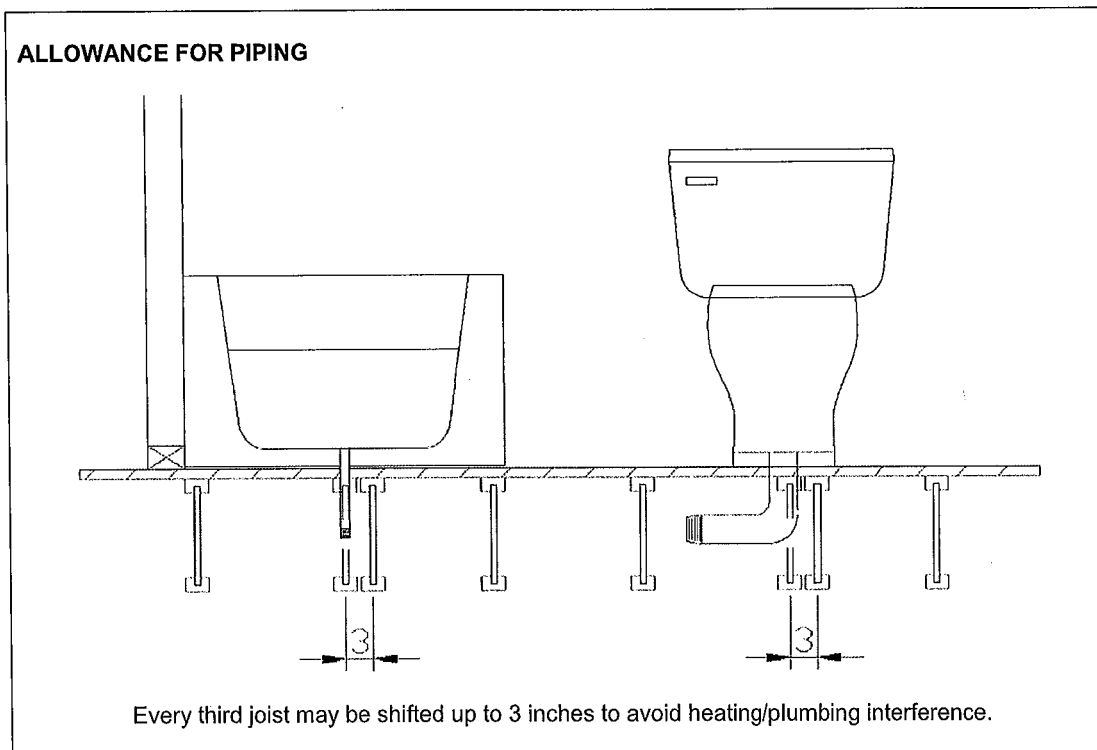
- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load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

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.

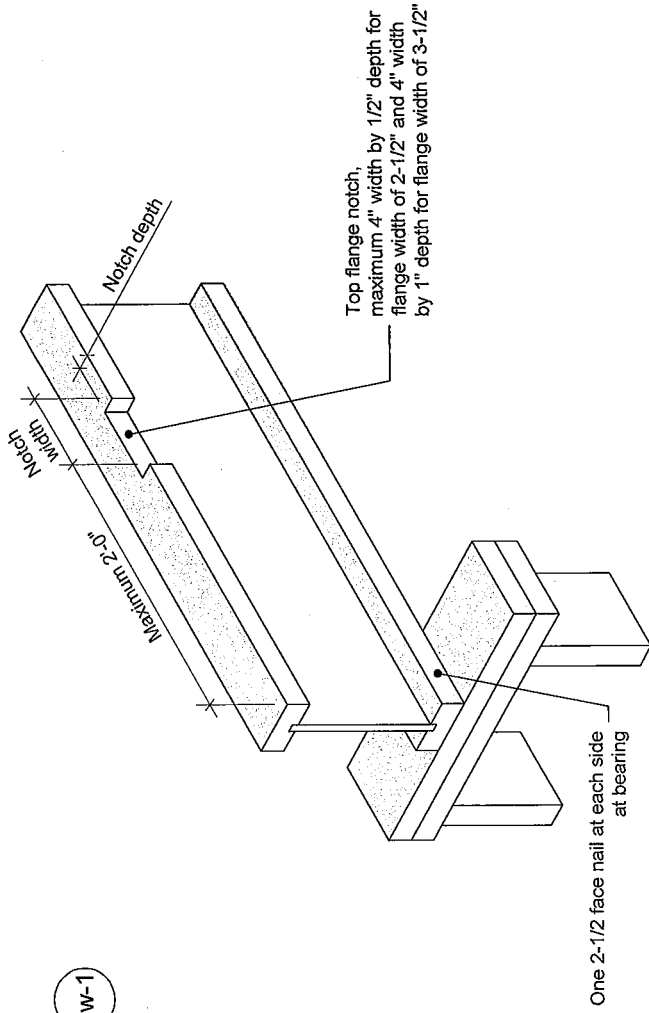
Installation of Nordic I-joists shall be as per *Nordic Joist Installation Guide for Residential Floors*. Refer to Tables 1 and 2 for maximum web hole and duct chase openings, respectively. These tables are based on the I-joists being used at their maximum spans. The minimum distance given may be reduced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

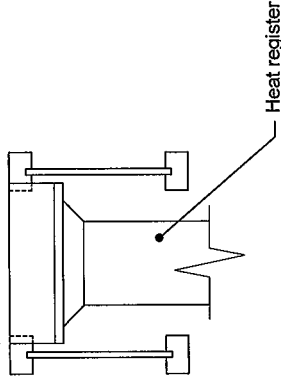


Revised April 12, 2012

1W-1



Maximum 1/2" depth for flange width of 2-1/2"
and 1" depth for flange width of 3-1/2"



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	DOCUMENT	-
	1 866 817-3418	DATE	2018-04-10
nordic.ca	CATEGORY	I-joist - Typical Floor Framing and Construction Details	
	TITLE	Notch in I-joist for Heat Register	
	NUMBER	1W-1	