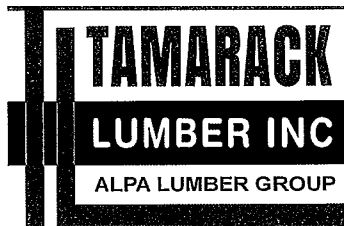


Products				
PlotID	Length	Product	Plies	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	42
J2	10-00-00	9 1/2" NI-40x	1	6
J3	8-00-00	9 1/2" NI-40x	1	10
J4	6-00-00	9 1/2" NI-40x	1	8
J5	4-00-00	9 1/2" NI-40x	1	1
J6	2-00-00	9 1/2" NI-40x	1	4
B5	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4L	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B8	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
17	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
3	H2	HUS1.81/10



FROM PLAN DATED:

BUILDER: BAYVIEW WELLINGTON

SITE: PASSAGE ON THE CANAL

MODEL: TH3

ELEVATION: A,A2,B

LOT:

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/ft

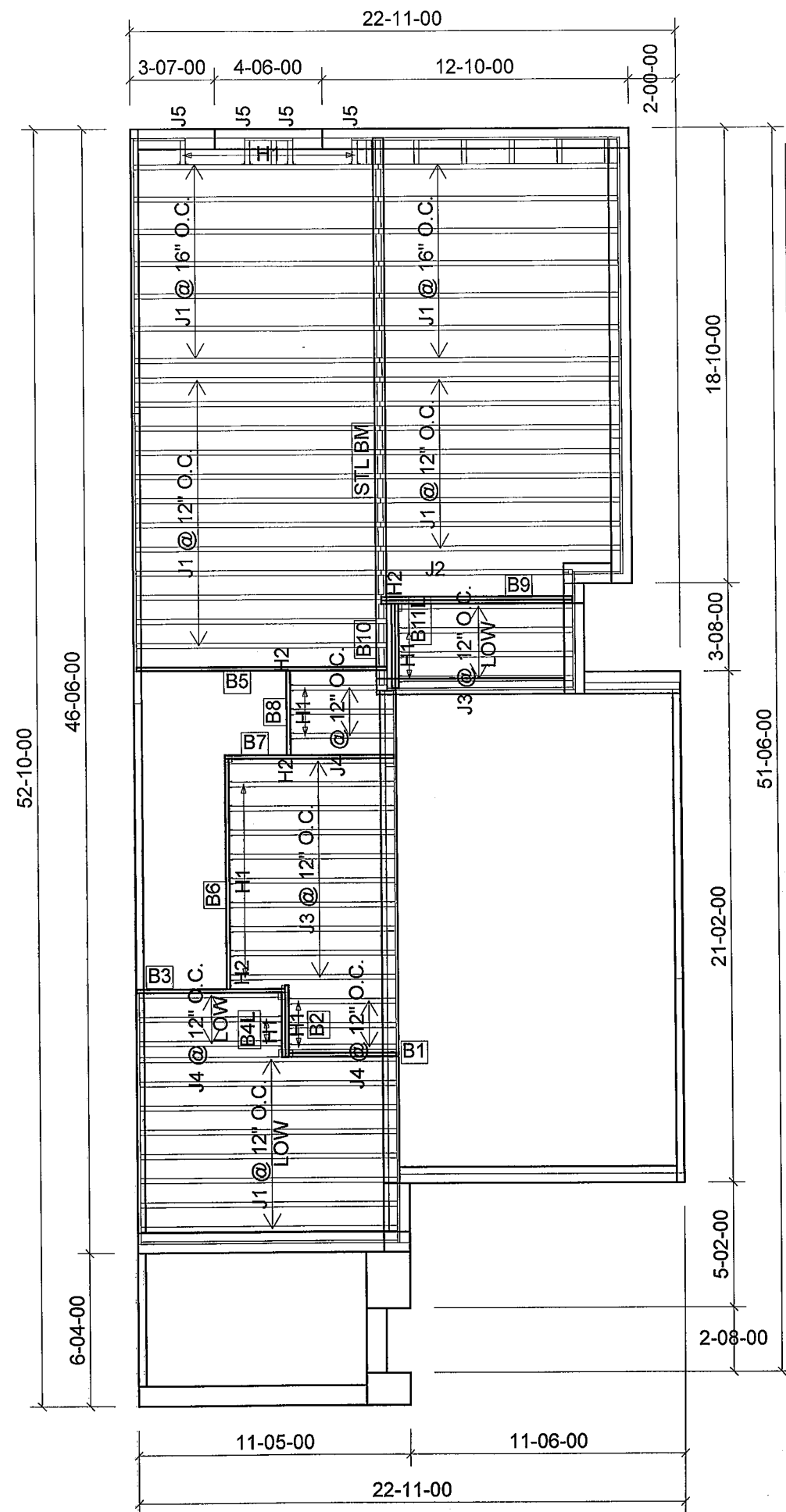
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 10/27/2018

1st FLOOR

STANDARD



Products				
PlotID	Length	Product	Plies	Net Qty
J1	12-00-00	9 1/2" NI-40x	1	42
J2	10-00-00	9 1/2" NI-40x	1	1
J3	8-00-00	9 1/2" NI-40x	1	14
J4	6-00-00	9 1/2" NI-40x	1	9
J5	2-00-00	9 1/2" NI-40x	1	4
B5	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B9	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B1	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B10	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B11L	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4L	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B8	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
20	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5
3	H2	HUS1.81/10
1	H2	HUS1.81/10



FROM PLAN DATED:
BUILDER: BAYVIEW WELLINGTON
SITE: PASSAGE ON THE CANAL
MODEL: TH3
ELEVATION: A,A2,B
LOT:
CITY: ST CATHERINES
SALESMAN: M D
DESIGNER: AJ
REVISION:

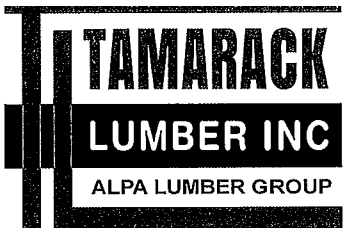
NOTES:
REFER TO THE NORDIC
INSTALLATION GUIDE FOR PROPER
STORAGE AND INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2
S.P.F REQ'D UNDER INTERIOR
UNIFORM LOAD BEARING WALLS.
MULTIPLE SQUASH BLOCKS REQ'D
UNDER CONCENTRATED LOADS. SEE
FIGURE 1. CANTILEVERED JOISTS
INCLUDING CANT' OVER BRICK REQ.
I-JOIST 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/ft
TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 10/27/2018

1st FLOOR

SUNKEN



FROM PLAN DATED:

BUILDER: BAYVIEW WELLINGTON

SITE: PASSAGE ON THE CANAL

MODEL: TH3

ELEVATION: A,A2,B

LOT:

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
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FIGURE 1. CANTILEVERED JOISTS
INCLUDING CANT' OVER BRICK REQ.
I-JOIST BLOCKING ALONG BEARING
AND RIMBOARD CLOSURE AT ENDS.
SEE FIGURE 7 TABLES 4 & 5 FOR
REINFORCEMENT REQUIREMENTS.
FOR HOLES INCLUDING DUCT
CHASE AND FIELD CUT OPENINGS
SEE FIGURE 7 TABLES 1 & 2 OF THE
INSTALLATION GUIDE. CERAMIC TILE
APPLICATION AS PER O.B.C. 9.30.6

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

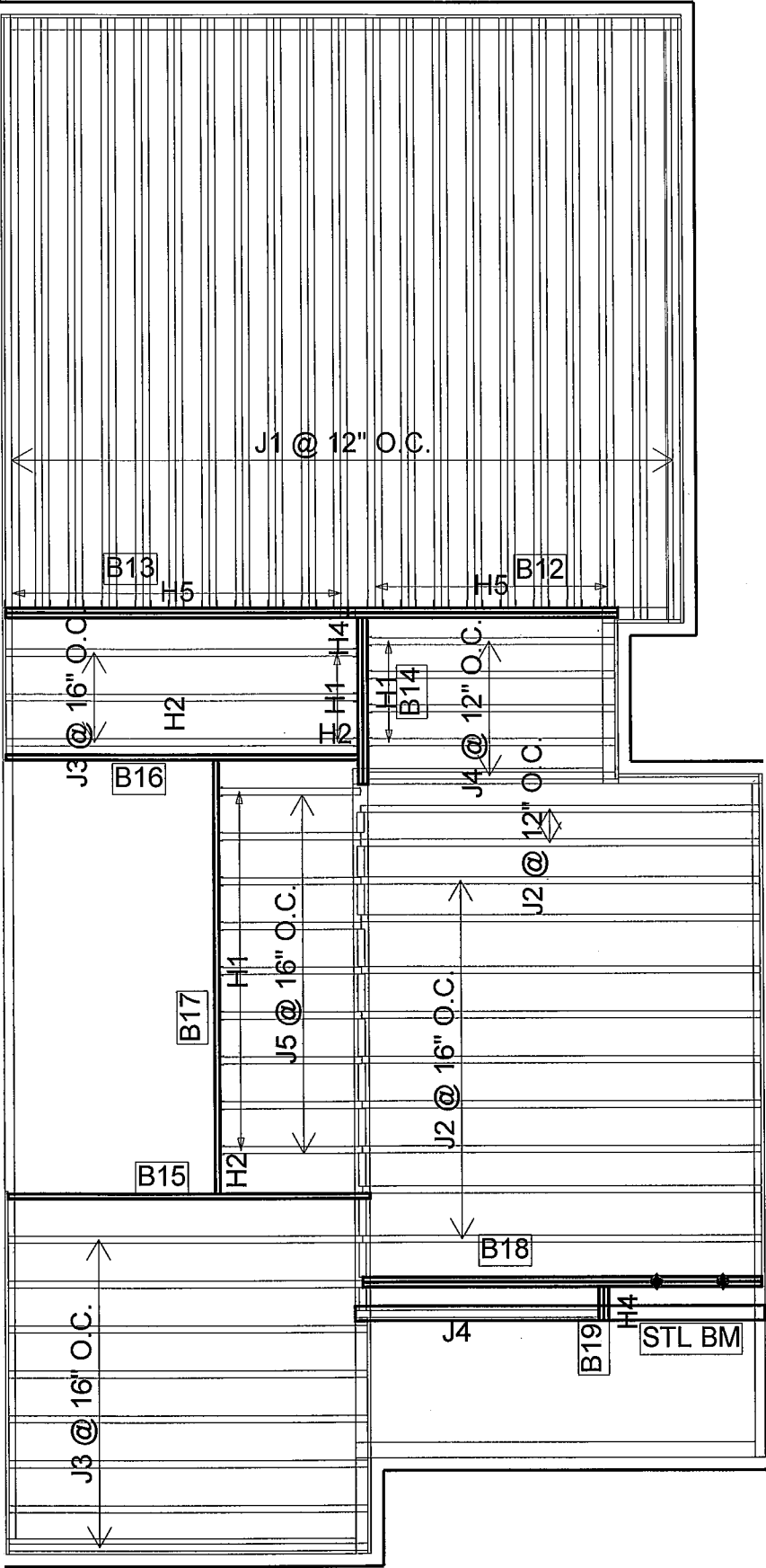
DEAD LOAD: 15.0 lb/ft

TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED


DATE: 10/27/2018

2nd FLOOR



Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	2	42
J2	14-00-00	9 1/2" NI-40x	1	11
J3	12-00-00	9 1/2" NI-40x	1	11
J4	8-00-00	9 1/2" NI-40x	1	6
J5	6-00-00	9 1/2" NI-40x	1	9
B17	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B18	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15	12-00-00	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
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B19	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
9	H1	IUS2.56/9.5
7	H1	IUS2.56/9.5
2	H2	HUS1.81/10
1	H2	HUS1.81/10
2	H4	HGUS410
19	H5	HU310-2

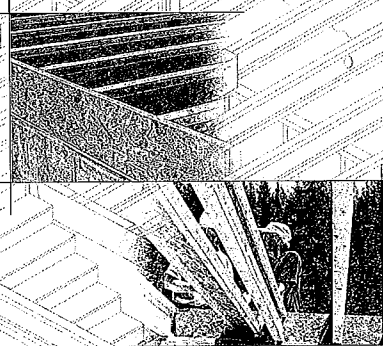
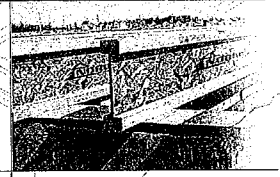



NORDIC

ENGINEERED WOOD

INSTALLATION GUIDE


FOR RESIDENTIAL FLOORS

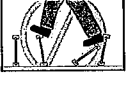


2015-04-16

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SAFETY AND CONSTRUCTION PRECAUTIONS




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

Avoid Accidents by Following these Important Guidelines:

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

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







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

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

STORAGE AND HANDLING GUIDELINES

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

MAXIMUM FLOOR SPANS

1. Maximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.

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

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

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

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

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

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

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

Joist Depth	Joist Series	Simple spans On centre spacing				Multiple spans On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-2"	13'-5"	12'-5"	16'-3"	15'-4"	14'-10"	14'-7"
	NI-40x	16'-1"	15'-2"	14'-8"	14'-9"	17'-5"	16'-5"	15'-10"	15'-5"
	NI-60	16'-3"	15'-4"	14'-10"	14'-11"	17'-7"	16'-7"	15'-10"	15'-5"
	NI-70	17'-1"	16'-1"	15'-6"	15'-7"	18'-7"	17'-4"	16'-9"	16'-10"
	NI-80	17'-3"	16'-3"	15'-8"	15'-9"	18'-10"	17'-6"	16'-11"	17'-0"
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-70	19'-6"	18'-0"	17'-4"	17'-5"	21'-6"	19'-11"	19'-0"	19'-1"
	NI-80	19'-9"	18'-3"	17'-6"	17'-7"	21'-9"	20'-2"	19'-3"	19'-4"
14"	NI-20	20'-2"	18'-7"	17'-10"	17'-11"	22'-2"	20'-7"	19'-8"	19'-9"
	NI-40x	20'-4"	18'-9"	17'-11"	18'-0"	22'-5"	20'-9"	19'-10"	19'-11"
	NI-60	20'-6"	19'-1"	18'-1"	18'-2"	22'-7"	21'-1"	20'-4"	20'-1"
	NI-70	21'-7"	20'-0"	19'-1"	19'-2"	23'-10"	21'-4"	20'-9"	21'-2"
	NI-80	21'-11"	20'-3"	19'-4"	19'-5"	24'-3"	22'-5"	21'-5"	21'-6"
16"	NI-20	22'-5"	20'-8"	19'-9"	19'-10"	24'-9"	22'-10"	21'-10"	21'-10"
	NI-40x	22'-7"	20'-11"	19'-11"	20'-0"	25'-0"	23'-1"	22'-0"	22'-2"
	NI-60	23'-0"	21'-2"	20'-3"	20'-4"	25'-3"	23'-4"	22'-1"	22'-3"
	NI-70	23'-6"	21'-9"	20'-9"	20'-10"	26'-0"	24'-0"	23'-0"	23'-0"
	NI-80	23'-11"	22'-1"	21'-1"	21'-2"	26'-5"	24'-5"	23'-3"	23'-4"
NI-90x	24'-5"	22'-6"	21'-5"	21'-6"	26'-11"	24'-10"	23'-9"	23'-9"	
NI-90x	24'-8"	22'-9"	21'-9"	21'-10"	27'-3"	25'-2"	24'-0"	24'-1"	

WEB STIFFENERS

RECOMMENDATIONS:

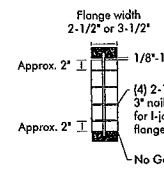
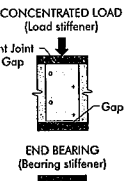
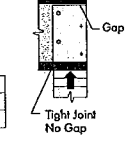
■ A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found in the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.

■ 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

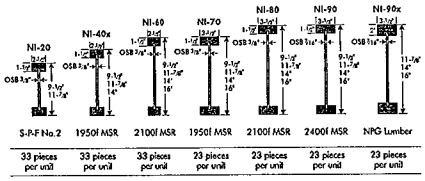
I-JOIST HANGERS

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


Top Mount Face Mount Skewed

NORDIC I-JOIST SERIES



Choniers 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 the raw log to the finished product, reflects our commitment to quality.

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



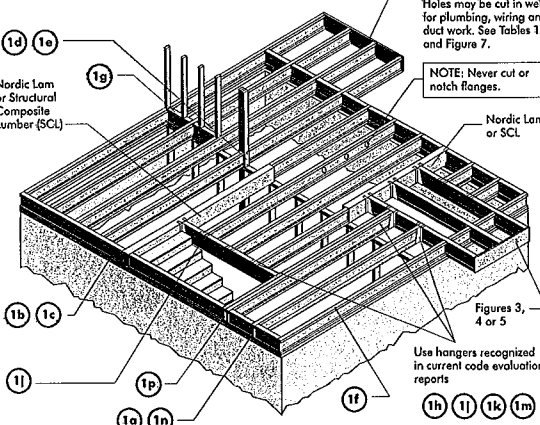
2015-04-16

INSTALLING NORDIC I-JOISTS

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

NOTE: Never cut or notch flanges.

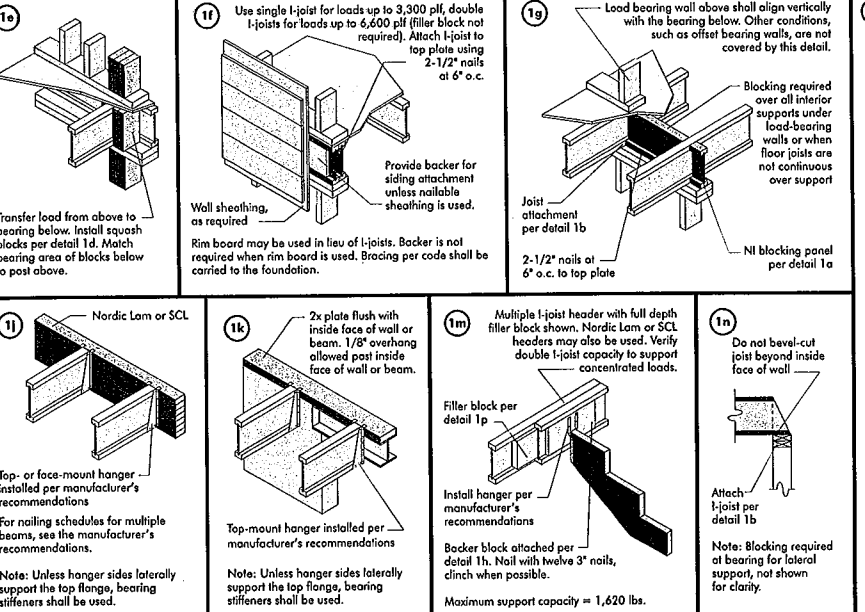
Nordic Lam or Structural Composite Lumber (SCL)

Figures 3, 4 or 5

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" (0.122" 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.

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS



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

Wall sheathing, as required.

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

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

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.

Filler block per detail 1p.

Install hanger per manufacturer's recommendations.

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

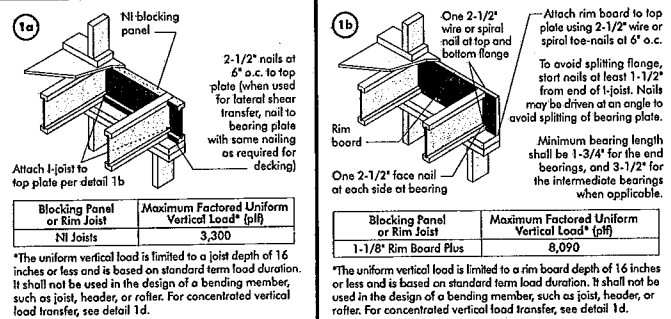
Maximum support capacity = 1,620 lbs.

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

Attach I-joist per detail 1b.

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

FIGURE 3
INSTALLING NORDIC I-JOISTS



Attach I-joist to top plate per detail 1b

Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
NI Joists	3,300

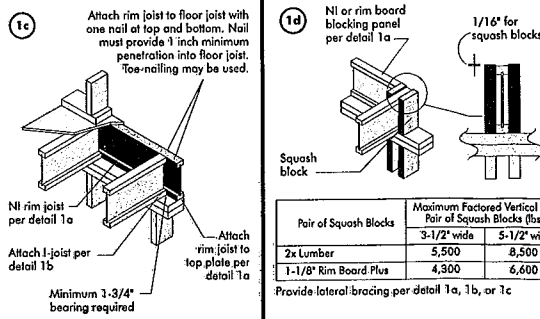
*The uniform vertical load is limited to a joist depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

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

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

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

FIGURE 4
INSTALLING NORDIC I-JOISTS



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.

NI or rim board blocking panel per detail 1a

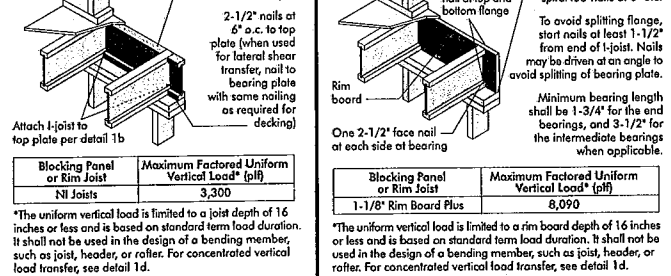
Squash block

1/16" for squash blocks

Pair of Squash Blocks	Maximum Factored Vertical per Pair of Squash Blocks (lbs)
3-1/2" wide	5,500
5-1/2" wide	8,500
2x Lumber	4,300
1-1/8" Rim Board Plus	6,600

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

FIGURE 5
INSTALLING NORDIC I-JOISTS



Attach I-joist to top plate per detail 1b

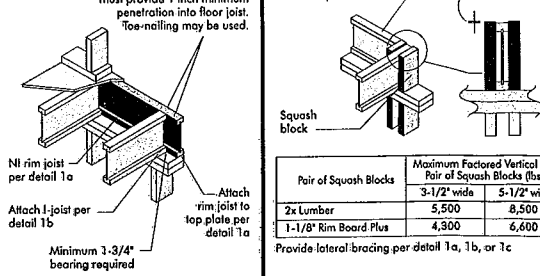
Offset nails from opposite face by 6"

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

Notes:

1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
3. Filler block is required between joists for full length of span.
4. Nail joists together with two rows of 3" nails at 12 inches o.c. (clinch when possible) on each side of the double I-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
5. The maximum factored load that may be applied to one side of the double joist using this detail is 860 lb/ft. Verify double I-joist capacity.

FIGURE 6
INSTALLING NORDIC I-JOISTS



One 2-1/2" nails at top and bottom flange

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

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

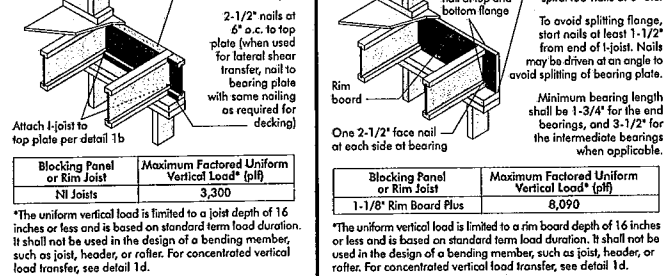
Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.

Attach rim joist to top plate per detail 1a

Attach I-joist per detail 1b

Minimum 3-3/4" bearing required

FIGURE 7
INSTALLING NORDIC I-JOISTS



Attach I-joist to top plate per detail 1b

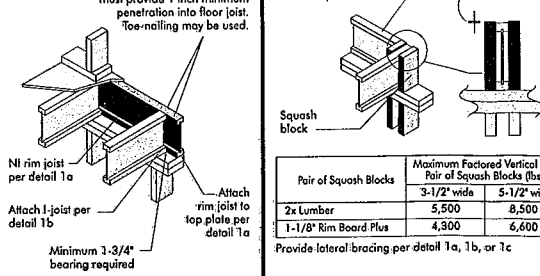
Offset nails from opposite side by 6"

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

Notes:

1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
3. Filler block is required between joists for full length of span.
4. Nail joists together with two rows of 3" nails at 12 inches o.c. (clinch when possible) on each side of the double I-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
5. The maximum factored load that may be applied to one side of the double joist using this detail is 860 lb/ft. Verify double I-joist capacity.

FIGURE 8
INSTALLING NORDIC I-JOISTS



One 2-1/2" nails at top and bottom flange

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

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

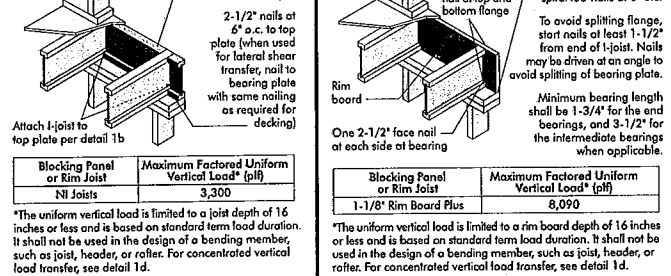
Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.

Attach rim joist to top plate per detail 1a

Attach I-joist per detail 1b

Minimum 3-3/4" bearing required

FIGURE 9
INSTALLING NORDIC I-JOISTS



Attach I-joist to top plate per detail 1b

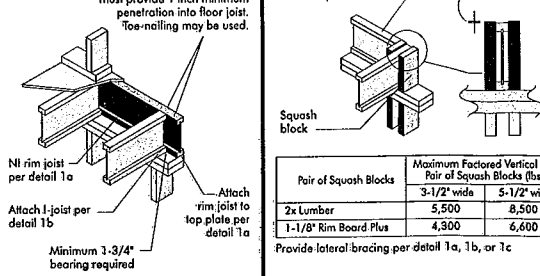
Offset nails from opposite side by 6"

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

Notes:

1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
3. Filler block is required between joists for full length of span.
4. Nail joists together with two rows of 3" nails at 12 inches o.c. (clinch when possible) on each side of the double I-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
5. The maximum factored load that may be applied to one side of the double joist using this detail is 860 lb/ft. Verify double I-joist capacity.

FIGURE 10
INSTALLING NORDIC I-JOISTS



One 2-1/2" nails at top and bottom flange

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

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

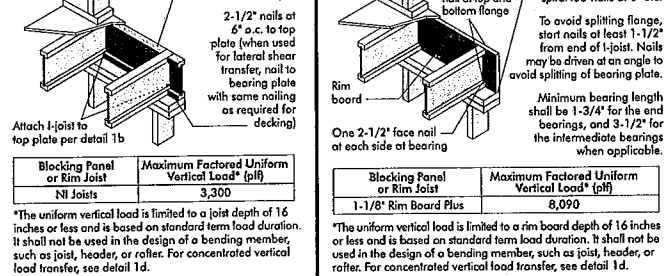
Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.

Attach rim joist to top plate per detail 1a

Attach I-joist per detail 1b

Minimum 3-3/4" bearing required

FIGURE 11
INSTALLING NORDIC I-JOISTS



Attach I-joist to top plate per detail 1b

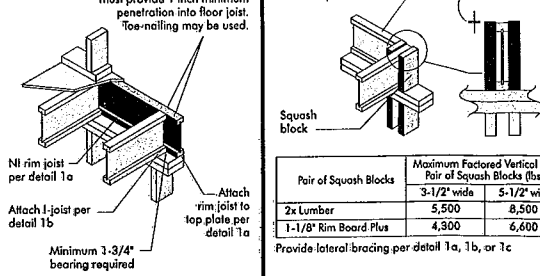
Offset nails from opposite side by 6"

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

Notes:

1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
3. Filler block is required between joists for full length of span.
4. Nail joists together with two rows of 3" nails at 12 inches o.c. (clinch when possible) on each side of the double I-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
5. The maximum factored load that may be applied to one side of the double joist using this detail is 860 lb/ft. Verify double I-joist capacity.

FIGURE 12
INSTALLING NORDIC I-JOISTS



One 2-1/2" nails at top and bottom flange

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

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

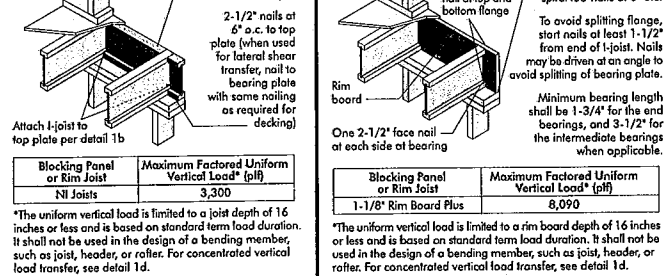
Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.

Attach rim joist to top plate per detail 1a

Attach I-joist per detail 1b

Minimum 3-3/4" bearing required

FIGURE 13
INSTALLING NORDIC I-JOISTS



Attach I-joist to top plate per detail 1b

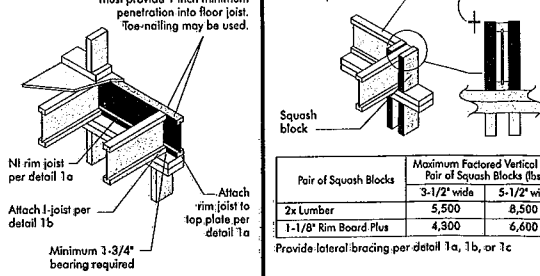
Offset nails from opposite side by 6"

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

Notes:

1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
3. Filler block is required between joists for full length of span.
4. Nail joists together with two rows of 3" nails at 12 inches o.c. (clinch when possible) on each side of the double I-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
5. The maximum factored load that may be applied to one side of the double joist using this detail is 860 lb/ft. Verify double I-joist capacity.

FIGURE 14
INSTALLING NORDIC I-JOISTS



One 2-1/2" nails at top and bottom flange

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

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

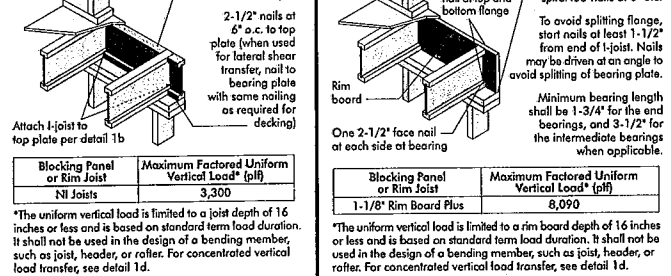
Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.

Attach rim joist to top plate per detail 1a

Attach I-joist per detail 1b

Minimum 3-3/4" bearing required

FIGURE 15
INSTALLING NORDIC I-JOISTS



Attach I-joist to top plate per detail 1b

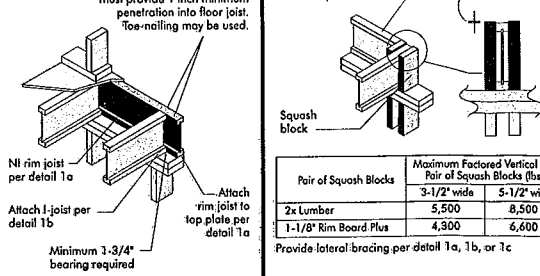
Offset nails from opposite side by 6"

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

Notes:

1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
3. Filler block is required between joists for full length of span.
4. Nail joists together with two rows of 3" nails at 12 inches o.c. (clinch when possible) on each side of the double I-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
5. The maximum factored load that may be applied to one side of the double joist using this detail is 860 lb/ft. Verify double I-joist capacity.

FIGURE 16
INSTALLING NORDIC I-JOISTS



One 2-1/2" nails at top and bottom flange

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

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

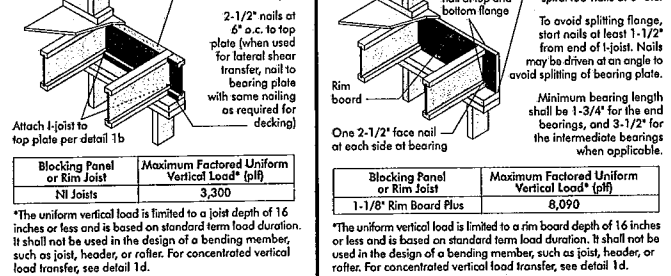
Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.

Attach rim joist to top plate per detail 1a

Attach I-joist per detail 1b

Minimum 3-3/4" bearing required

FIGURE 17
INSTALLING NORDIC I-JOISTS



Attach I-joist to top plate per detail 1b

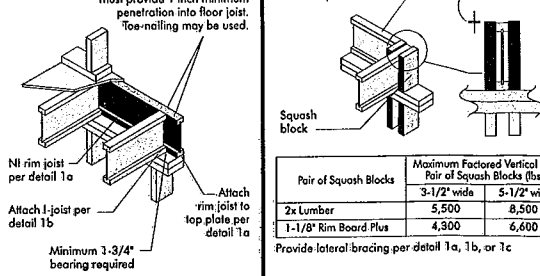
Offset nails from opposite side by 6"

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

Notes:

1. Support back of I-joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange.
3. Filler block is required between joists for full length of span.
4. Nail joists together with two rows of 3" nails at 12 inches o.c. (clinch when possible) on each side of the double I-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
5. The maximum factored load that may be applied to one side of the double joist using this detail is 860 lb/ft. Verify double I-joist capacity.

FIGURE 18
INSTALLING NORDIC I-JOISTS



One 2-1/2" nails at top and bottom flange

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

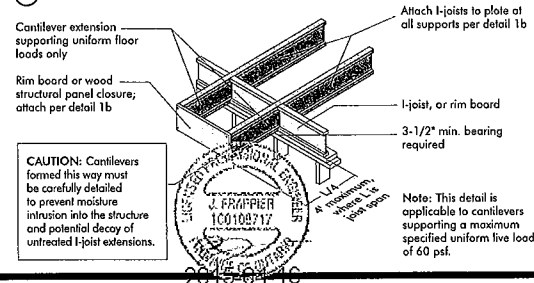
To avoid splitting flange, start nails at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate.

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

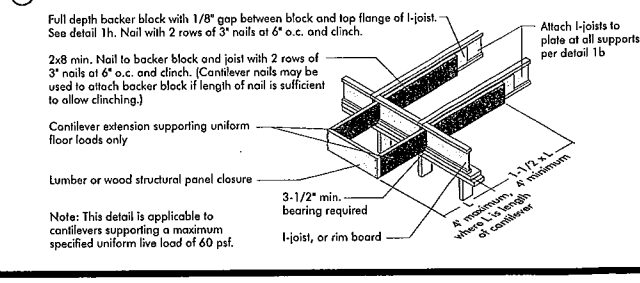
Attach rim joist to top plate per detail 1a

CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

1a 1-JOIST CANTILEVER DETAIL FOR BALCONIES (No Wall Load)

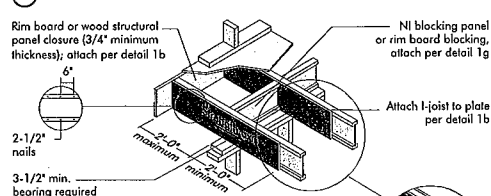


1b LUMBER CANTILEVER DETAIL FOR BALCONIES (No Wall Load)

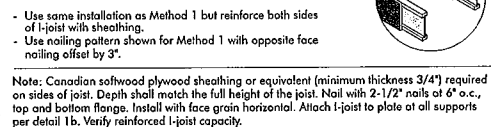


CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

4a Method 1 — SHEATHING REINFORCEMENT ONE SIDE



Method 2 — SHEATHING REINFORCEMENT TWO SIDES



4b Alternate Method 2 — DOUBLE I-JOIST

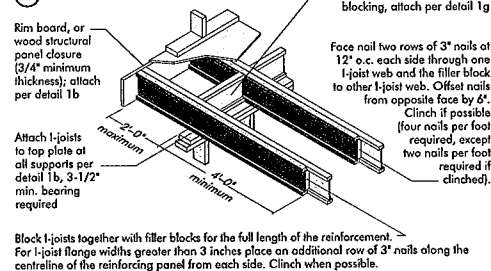


FIGURE 4 (continued)



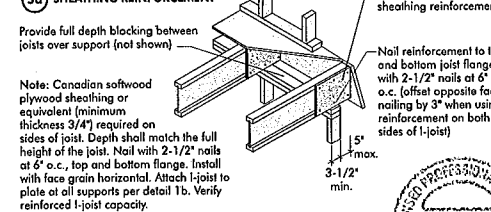
CANTILEVER REINFORCEMENT METHODS ALLOWED

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

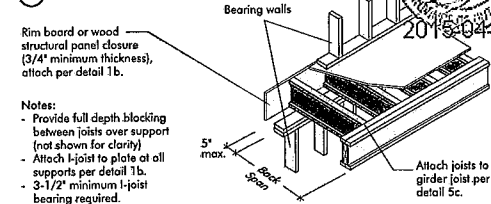
1. N = No reinforcement required.
2. N = Reinforced with 3/4" wood structural panel on one side only.
3. N = Reinforced with 3/4" wood structural panel on both sides, or double I-joist.
4. N = Try a deeper joist or closer spacing.
5. Maximum design load shall be: 15 psf roof dead load, 55 psf floor total load, and 80 psf wall load. Wall load is based on 3'-0" maximum width window or door openings.
6. For larger openings, or multiple 3'-0" wide openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
7. Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
8. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
9. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

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

5a SHEATHING REINFORCEMENT



5b SET-BACK DETAIL



5c SET-BACK CONNECTION

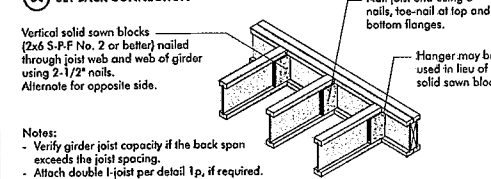
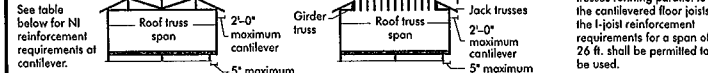


FIGURE 5 (continued)



BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

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

1. N = No reinforcement required.
2. N = Reinforced with 3/4" wood structural panel on one side only.
3. N = Reinforced with 3/4" wood structural panel on both sides, or double I-joist.
4. N = Try a deeper joist or closer spacing.
5. Maximum design load shall be: 15 psf roof dead load, 55 psf floor total load, and 80 psf wall load. Wall load is based on 3'-0" maximum width window or door openings.
6. For larger openings, or multiple 3'-0" wide openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
7. Table applies to joists 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12" o.c. requirements for lesser spacing.
8. For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
9. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

LOCATION OF CIRCULAR HOLES IN JOIST WEBS																	
Single 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.)														Span adjustment Factor	
		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"	N-20	0-7	1-0	2-10	4-3	5-8	6-0	...	...	...	...	...	...	...	...	13-6
	N-40x	0-7	1-0	2-10	4-4	6-0	6-4	...	...	...	...	...	...	...	...	14-9
	N-60	0-7	1-0	2-10	4-4	6-0	6-4	...	...	...	...	...	...	...	...	15-11
	N-80	2-0	3-4	4-9	6-3	6-0	8-4	...	...	...	...	...	...	...	...	15-7
11-7/8"	N-20	0-7	1-0	2-10	4-3	5-8	6-0	...	...	...	...	...	...	...	...	14-6
	N-40x	0-7	1-0	2-10	4-3	5-8	6-0	...	...	...	...	...	...	...	...	15-2
	N-60	0-7	1-0	2-10	4-3	5-8	6-0	...	...	...	...	...	...	...	...	16-6
	N-80	0-7	1-0	2-10	4-3	5-8	6-0	...	...	...	...	...	...	...	...	17-5
14"	N-20	0-7	1-0	2-10	4-3	5-8	6-0	...	...	...	...	...	...	...	...	15-0
	N-40x	0-7	1-0	2-10	4-3	5-8	6-0	...	...	...	...	...	...	...	...	16-2
	N-60	0-7	1-0	2-10	4-3	5-8	6-0	...	...	...	...	...	...	...	...	17-11
	N-80	0-7	1-0	2-10	4-3	5-8	6-0	...	...	...	...	...	...	...	...	18-9
16"	N-20	0-7	1-0	2-10	4-3	5-8	6-0	...	...	...	...	...	...	...	...	15-0
	N-40x	0-7	1-0	2-10	4-3	5-8	6-0	...	...	...	...	...	...	...	...	16-2
	N-60	0-7	1-0	2-10	4-3	5-8	6-0	...	...	...	...	...	...	...	...	17-11
	N-80	0-7	1-0	2-10	4-3	5-8	6-0	...	...	...	...	...	...	...	...	18-9

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

OPTIONAL:

The above table is based on the I-joists used at their maximum span. If the I-joists are placed at less than their full maximum span (see Maximum Span Table), the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows:

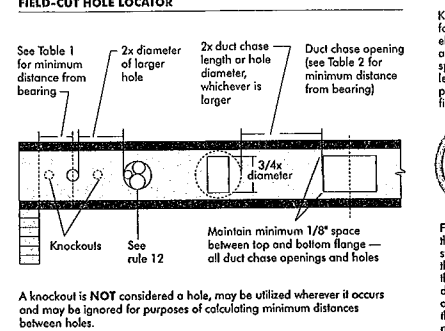
Reduced = $\frac{L_{actual}}{L_{max}} \times D$

Where:

- Reduced = Distance from the inside face of any support to centre of hole, reduced for less-than-maximum span application.
- L_{actual} = The actual measured span distance between the inside faces of supports (ft).
- S_{AF} = Span Adjustment Factor given in this table.
- D = The minimum distance from the inside face of any support to centre of hole from this table.

If L_{actual} is greater than 1, use 1 in the above calculation for L_{actual}.

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-joist. Where possible, it is preferable to use knockouts instead of field-cut holes.

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

Holes in webs should be cut with a sharp saw.

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

INSTALLING THE GLUED FLOOR SYSTEM

1. Wipe any mud, dirt, water, or ice from I-joist flanges before gluing.
2. Snap a chalk line across the I-joists four feet in from the wall for panel edge alignment and as a boundary for spreading glue.
3. Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.
4. Lay the first panel with tongue side to the wall, and nail in place. This protects the tongue of the next panel from damage when lapped into place with a block and sledgehammer.
5. Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists.
6. Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.
7. After the first row of panels is in place, spread glue in the groove of one or two panels at a time before laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) than used on I-joist flanges.
8. Top the second row of panels into place, using a block to protect groove edges.
9. Slogger end joints in each succeeding row of panels. A 1/8-inch space between all end joints and 1/8-inch at all edges, including T&G edges, is recommended. (Use a spacer tool or an 1-1/2" common nail to assure accurate and consistent spacing.)
10. Complete all nailing of each panel before glue sets. Check the manufacturer's recommendations for cure time. (Warm weather accelerates glue setting.) Use 2" ring- or screw-shank nails for panels 3/4-inch thick or less, and 2-1/2" ring- or screw-shank nails for thicker panels. Space nails per the table below. Closer nail spacing may be required by some codes, or for diaphragm construction. The finished deck can be walked on right away and will carry construction loads without damage to the glue bond.

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

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

1. Fasteners of sheathing and subflooring shall conform to the above table.
2. Staples shall not be less than 1-1/8-inch in diameter or thickness, with not less than a 3/8-inch crown driven with the crown parallel to framing.
3. Flooring screws shall not be less than 1-1/8-inch in diameter.
4. Special conditions may impose heavy traffic and concentrated loads that require construction in excess of the minimums shown.
5. Use only adhesives conforming to CAN/CGSB-71.26 Standard, Adhesives for Field-Gluing Plywood to Lumber Framing for Floor System, applied in accordance with the manufacturer's recommendations. If OSB panels with sealed surfaces and edges are to be used, use only solvent-based glues; check with panel manufacturer.

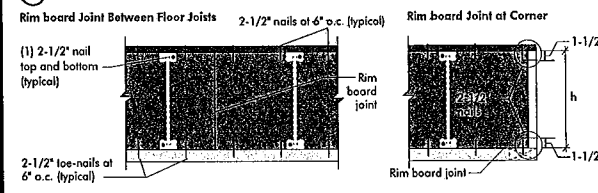
Ref.: NRC-CNRC, National Building Code of Canada 2010, Table 9.23.3.5.

IMPORTANT NOTE:

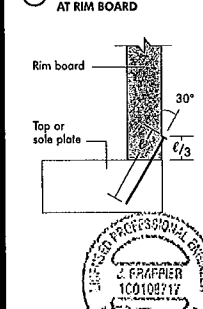
Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS

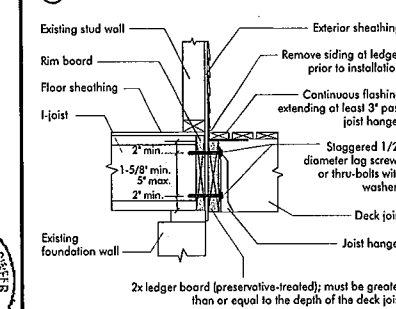
8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT



8b TOE-NAIL CONNECTION AT RIM BOARD



8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL



PRODUCT WARRANTY

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

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



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

WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

- The sides of square holes or longest sides of rectangular holes shall 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 largest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
- A knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
- Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.

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

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

Joist Depth	Joist Series	Minimum Distance from Inside Face of Any Support to Centre of Hole (ft - in.)											
		Round Hole Diameter (in.)											
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4
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"	---	---	---	---	---	---
11-7/8"	NI-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---	---
	NI-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-5"	7-0"	8-4"	---	---	---
	NI-60	0-7"	1-8"	3-0"	4-3"	5-9"	6-0"	7-3"	8-10"	10-0"	---	---	---
	NI-70	1-3"	2-6"	4-0"	5-4"	6-9"	7-2"	8-4"	10-0"	11-2"	---	---	---
	NI-80	1-6"	2-10"	4-2"	5-6"	7-0"	7-5"	8-6"	10-3"	11-4"	---	---	---
14"	NI-20	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---
	NI-40x	0-7"	0-8"	0-9"	2-5"	4-4"	4-9"	6-3"	---	---	---	---	---
	NI-60	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---	---
	NI-70	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---	---
	NI-80	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---	---
16"	NI-20	0-7"	0-8"	1-6"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	12-2"	13-6"	---
	NI-40x	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-6"	7-9"	---	---	---
	NI-60	0-7"	1-0"	2-3"	3-6"	4-10"	5-3"	6-6"	8-0"	9-2"	10-3"	12-4"	14-0"
	NI-70	0-7"	1-3"	2-6"	3-10"	5-3"	5-6"	6-6"	8-0"	9-2"	10-3"	12-4"	14-0"
	NI-80	0-7"	1-6"	2-6"	3-10"	5-3"	5-6"	6-6"	8-0"	9-2"	10-3"	12-4"	14-0"

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

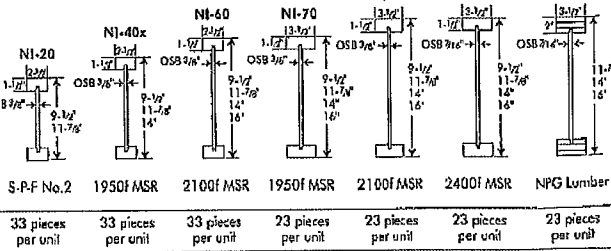
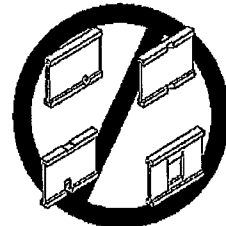
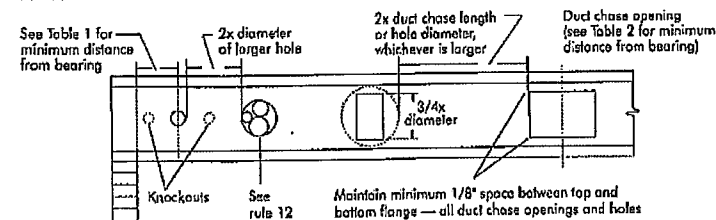


TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS
Simple Span Only

Joist Depth	Joist Series	Minimum distance from inside face of supports to centre of opening (ft - in.)											
		Duct Chase Length (in.)											
		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"			
	NI-40x	5-3"	5-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-2"	8-6"			
	NI-60	5-4"	5-9"	6-2"	6-7"	7-1"	7-5"	8-0"	8-3"	8-9"			
	NI-70	5-1"	5-5"	5-10"	6-3"	6-7"	7-1"	7-6"	8-1"	8-4"			
	NI-80	5-3"	5-8"	6-0"	6-5"	6-10"	7-3"	7-8"	8-2"	8-6"			
11-7/8"	NI-20	5-9"	6-2"	6-6"	7-1"	7-5"	7-9"	8-3"	8-9"	9-4"			
	NI-40x	6-8"	7-2"	7-6"	8-1"	8-6"	9-1"	9-6"	10-1"	10-6"			
	NI-60	7-3"	7-8"	8-0"	8-6"	9-0"	9-3"	9-9"	10-3"	11-0"			
	NI-70	7-1"	7-4"	7-9"	8-3"	8-7"	9-1"	9-6"	10-1"	10-6"			
	NI-80	7-2"	7-7"	8-0"	8-5"	8-10"	9-3"	9-8"	10-2"	10-8"			
14"	NI-20	7-6"	7-11"	8-4"	8-9"	9-2"	9-7"	10-1"	10-7"	10-11"			
	NI-40x	7-7"	8-1"	8-5"	8-10"	9-4"	9-8"	10-2"	10-8"	11-2"			
	NI-60	8-1"	8-7"	9-0"	9-6"	10-1"	10-6"	11-1"	11-6"	12-0"			
	NI-70	8-9"	9-3"	9-8"	10-1"	10-6"	11-1"	11-6"	12-1"	12-6"			
	NI-80	8-7"	9-1"	9-5"	9-10"	10-4"	10-8"	11-2"	11-7"	12-3"			
16"	NI-20	9-0"	9-3"	9-9"	10-1"	10-7"	11-1"	11-6"	12-1"	12-6"			
	NI-40x	9-2"	9-6"	10-0"	10-6"	10-11"	11-5"	11-9"	12-4"	12-11"			
	NI-60	9-3"	9-7"	10-3"	10-8"	11-2"	11-7"	12-2"	12-7"	13-2"			
	NI-70	10-1"	10-5"	11-0"	11-4"	11-10"	12-3"	12-8"	13-3"	14-0"			
	NI-80	10-4"	10-9"	11-3"	11-9"	12-1"	12-7"	13-1"	13-6"	14-4"			

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

FIGURE 7
FIELD-CUT HOLE LOCATOR



Knockouts are prescored 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.

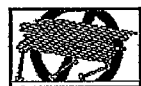
Holes in webs should be cut with a sharp saw.

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-joints until fully fastened and braced, or serious injuries can result.



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

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

AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

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

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

CHARTERS CHIBOUGANU

PRODUCT WARRANTY

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

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

Blocking Panel or Rim Joist

Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
NI Joists	3,300

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

Attach I-joint to top plate per detail 1b

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

Blocking Panel or Rim Joist

Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	6,090

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

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

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

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

Pair of Squash Blocks

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

Provide lateral bracing per detail 1a or 1b

Joist attachment per detail 1b

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

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

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

NI blocking panel per detail 1a

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

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

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

* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-C325 or CAN/CSA-C137 Standard.

** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".

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

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

Top-mount hanger installed per manufacturer's recommendations

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

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

Filler block per detail 1p

Maximum support capacity = 1,620 lbs.

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION

Filler block

Offset nails from opposite face by 6"

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

NOTES:

- Support back of I-joint web during nailing to prevent damage to web/flange connection.
- Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joint flange.
- Filler block is required between joists for full length of span.
- Nail joists together with two rows of 3" nails at 12 inches o.c. (clinched when possible) on each side of the double I-joint. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
- The maximum factored load that may be applied to one side of the double joist using this detail is 860 lb/ft. Verify double I-joint capacity.

Top- or face-mount hanger

Double I-joint header

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

Filler block per detail 1p

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

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

Do not burl-cut joist beyond inside face of wall

Attach I-joint per detail 1b

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

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

NI blocking panel

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

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

Rim board

2-1/2" nails at 6" o.c.

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

I-joint blocking panel

One 2-1/2" nail one side only

NOTES:

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

STIFFENER SIZE REQUIREMENTS

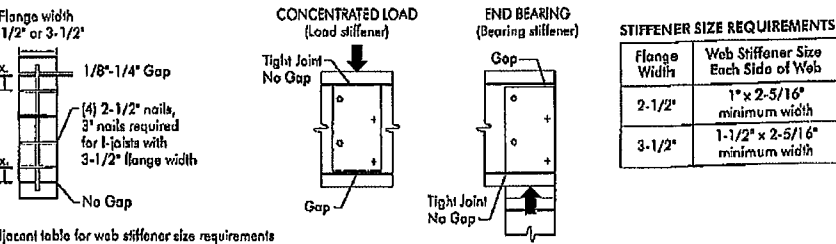
Flange Width	Web Stiffener Size Each Side of Web
2-1/2"	1" x 2-5/16" minimum width
3-1/2"	1-1/2" x 2-5/16" minimum width

WEB STIFFENERS

RECOMMENDATIONS:

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

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

Method 1 — SHEATHING REINFORCEMENT ONE SIDE

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

2-1/2" nails

3-1/2" min. bearing required

NI blocking panel or rim board blocking, attach per detail 1g

Attach I-joint to plate per detail 1b

Method 2 — SHEATHING REINFORCEMENT TWO SIDES

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

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

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

RIM BOARD INSTALLATION DETAILS

8a ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

Rim Board Joint Between Floor Joists

(1) 2-1/2" nail top and bottom (typical)

Rim board joint

Rim Board Joint at Corner

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

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

1-1/2"

2-1/2" nails

1-1/2"

8b TOE-NAIL CONNECTION AT RIM BOARD

Rim board

Top or sole plate

30°

2/3

NORDIC STRUCTURES

COMPANY
J9 1ST FLOOR
Oct. 24, 2018 16:37

PROJECT
J1 2ND FLOOR
J1 2ND FLOOR

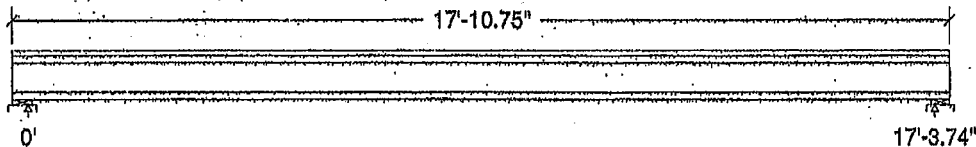
Design Check Calculation Sheet

Nordic Sizer - Canada 7.1

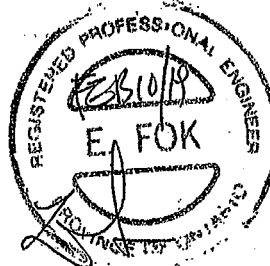
Loads:

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

Maximum Reactions (lbs), Bearing Resistances (lbs) and Bearing Lengths (in) :



Unfactored:			
Dead	173		173
Live	346		346
Factored:			
Total	736		736
Bearing:			
Resistance			
Joist	3786		3786
Support	13468		13468
Des ratio			
Joist	0.19		0.19
Support	0.05		0.05
Load case	#2		#2
Length	4-3/8		4-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		1.00
fcp sup	769		769
Kzcp sup	1.00		1.00



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

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

Total length: 17'-10.75"; Clear span: 17'-1.99"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section PASSES the design code check.

Limit States Design using CSA-O86-09 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	$V_F = 736$	$V_r = 3790$	lbs	$V_F/V_r = 0.19$
Moment (+)	$M_F = 3184$	$M_r = 9647$	lbs-ft	$M_F/M_r = 0.33$
Perm. Defl'n	$0.09 = < L/999$	$0.58 = L/360$	in	0.16
Live Defl'n	$0.18 = < L/999$	$0.43 = L/480$	in	0.42
Total Defl'n	$0.27 = L/759$	$0.87 = L/240$	in	0.32
Bare Defl'n	$0.20 = < L/999$	$0.58 = L/360$	in	0.35
Vibration	$L_{max} = 17'-3.8$	$L_v = 19'-2.6$	ft	0.90
Defl'n	$= 0.027$	$= 0.036$	in	0.75

DWONG, YAN 2018-10-24
STRUCTURAL
COMPONENT ONLY

T-190221

Additional Data:

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

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L

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

Deflection: LC #1 = 1.0D (permanent)

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

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

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

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

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

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

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

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

CALCULATIONS:Deflection: E_{eff} = 241e06 lb-in²/ply K= 4.94e06 lbs/ply

"Live" deflection = Deflection from all non-dead loads (live, wind, snow...)

Design Notes:**CONFORMS TO OBC 2012**

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-09 Engineering Design in Wood standard, which includes Update No.1
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



POZ
 DWG NO. FAK 2432618H
 STRUCTURAL
 COMPONENT ONLY

T-190222164



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
1ST FLOOR FRAMING\Flush Beams\B1(11171)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 27, 2018 09:48:58

Build 8475

Job name:

File name: TH3 SUNKEN.mmdl

Address:

Description: 1ST FLOOR FRAMING\Flush Beams\B1(11171)

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

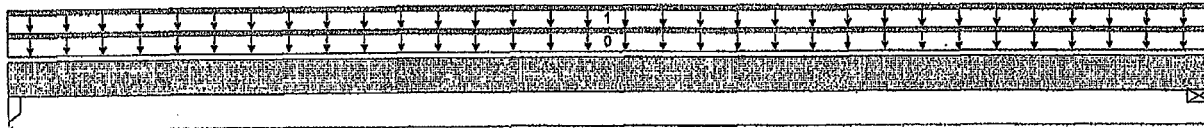
Specifier:

Customer:

Designer:

Code reports: CCMC 12472-R

Company:



B1

Total Horizontal Product Length = 04-06-02

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 1-3/4"	17 / 0	19 / 0		
B2, 4-3/8"	19 / 0	21 / 0		

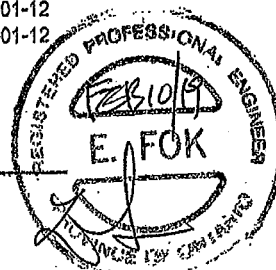
Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-06-02	Top	1.00	0.66	1.00	1.16	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-06-02	Top	8	4			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	49 ft-lbs	11,610 ft-lbs	0.4%	1	02-01-12
End Shear	28 lbs	5,785 lbs	0.5%	1	00-11-04
Total Load Deflection	L/999 (0")	n/a	n/a	4	02-01-12
Live Load Deflection	L/999 (0")	n/a	n/a	5	02-01-12
Max Defl.	0"	n/a	n/a	4	02-01-12
Span / Depth	5.2				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 1-3/4" x 1-3/4"	49 lbs	2.0%	1.3%	Unspecified
B2	Wall/Plate 4-3/8" x 1-3/4"	54 lbs	1.3%	0.6%	Unspecified



Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-00-00. **CONFORMS TO CBC 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

Disclosure

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

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STRUCTURAL
 COMPONENT ONLY

T-190222



Boise Cascade



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B10(1133)

Dry | 1 span | No cant.

October 27, 2018 09:48:58

BC CALC® Member Report

Build 6475

Job name:

Address:

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

Customer:

Code reports: CCMC 12472-R

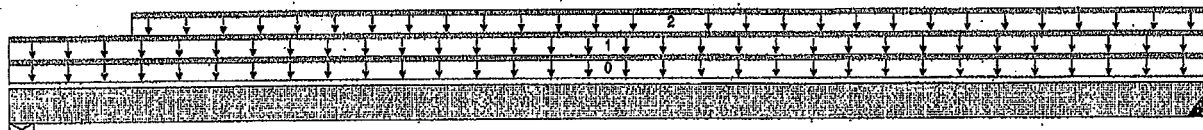
File name: TH3 SUNKEN.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B10(1133)

Specifier:

Designer:

Company:



B1

03-05-14

B2

Total Horizontal Product Length = 03-05-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	206 / 0	112 / 0		
B2, 2"	222 / 0	119 / 0		

Load Summary

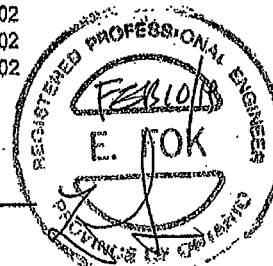
Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-05-14	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-05-14	Top	15	8			n/a
2	STAIR	Unf. Lin. (lb/ft)	L	00-04-06	03-05-14	Top	120	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	348 ft-lbs	11,610 ft-lbs	3.0%	1	01-10-02
End Shear	202 lbs	6,785 lbs	3.5%	1	01-01-14
Total Load Deflection	L/999 (0.002")	n/a	n/a	4	01-10-02
Live Load Deflection	L/999 (0.001")	n/a	n/a	6	01-10-02
Max Defl.	0.002"	n/a	n/a	4	01-10-02
Span / Depth	3.9				

Bearing Supports

	D/m. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4-3/8" x 1-3/4"	448 lbs	11.0%	4.8%	Unspecified
B2	Hanger 2" x 1-3/4"	483 lbs	n/a	11.3%	HUS1.81/10



Cautions

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.
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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BWBWD.FRM 2434.18H
STRUCTURAL
COMPONENT ONLY

T-1902223



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B11L(I774)

Dry | 1 span | No cant.

October 27, 2018 09:48:58

BC CALC® Member Report

Buld 6476

Job name:

Address:

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

Customer:

Code reports: CCMC 12472-R

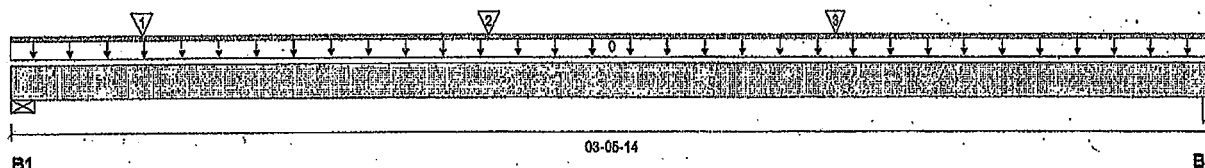
File name: TH3 SUNKEN.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B11L(I774)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 03-05-14

Reaction Summary (Down / Uplift) (lbs)

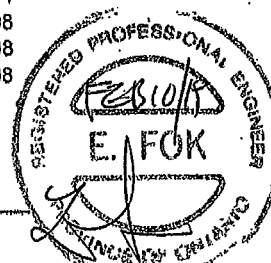
Bearing	Live	Dead	Snow	Wind
B1, 4-3/8"	243 / 0	130 / 0		
B2, 3-1/2"	165 / 0	91 / 0		

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	03-05-14	Top	6				00-00-00
1	J3(I776)	Conc. Pt. (lbs)	L	00-04-10	00-04-10	Top	108	54			n/a
2	J3(I773)	Conc. Pt. (lbs)	L	01-04-10	01-04-10	Top	148	73			n/a
3	J3(I770)	Conc. Pt. (lbs)	L	02-04-10	02-04-10	Top	154	77			n/a

Controls Summary

Pos. Moment	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	336 ft-lbs	11,610 ft-lbs	2.9%	1	01-04-10
End Shear	354 lbs	5,785 lbs	6.1%	1	02-04-14
Total Load Deflection	L/999 (0.001")	n/a	n/a	4	01-09-08
Live Load Deflection	L/999 (0.001")	n/a	n/a	5	01-09-08
Max Defl.	0.001"	n/a	n/a	4	01-09-08
Span / Depth	3.7				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4-3/8" x 1-3/4"	527 lbs	12.9%	5.6%	Unspecified
B2	Column 3-1/2" x 1-3/4"	361 lbs	7.3%	4.8%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFIRMS TO OBC 2012

Disclosure

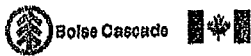
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BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®.

WWW.BC.CA 2435-18H

STRUCTURAL
COMPONENT ONLY

T-190224P



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
1ST FLOOR FRAMING\Flush Beams\B2(I1143)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 27, 2018 09:48:58

Build 6476

Job name:

File name: TH3 SUNKEN.mmd

Address:

Description: 1ST FLOOR FRAMING\Flush Beams\B2(I1143)

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

Specifier:

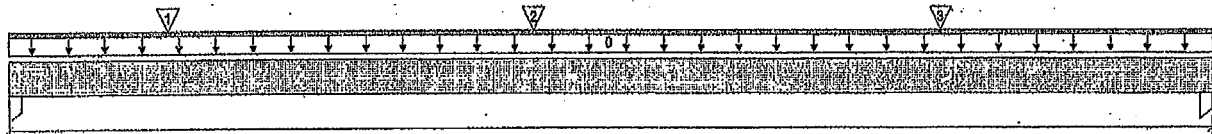
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



B1 Total Horizontal Product Length = 02-11-08 B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	119 / 0	67 / 0		
B2, 3-1/2"	115 / 0	65 / 0		

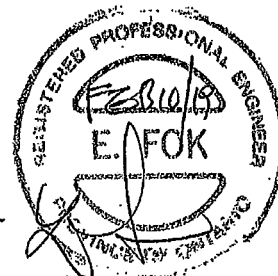
Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	02-11-08	Top	1.00	0.85	1.00	1.15	00-00-00
1	J4(I1175)	Conc. Pt. (lbs)	L	00-04-12	00-04-12	Top	58	29			n/a
2	J4(I1113)	Conc. Pt. (lbs)	L	01-03-08	01-03-08	Top	85	43			n/a
3	J4(I1159)	Conc. Pt. (lbs)	L	02-03-08	02-03-08	Top	91	46			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	103 ft-lbs	11,610 ft-lbs	1.4%	1	01-03-08
End Shear	148 lbs	6,785 lbs	2.6%	1	01-01-00
Total Load Deflection	L/999 (0")	n/a	n/a	4	01-05-11
Live Load Deflection	L/999 (0")	n/a	n/a	5	01-05-11
Max Defl.	0"	n/a	n/a	4	01-05-11
Span / Depth	3.2				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	262 lbs	5.3%	3.5%	Unspecified
B2	Column 3-1/2" x 1-3/4"	254 lbs	5.1%	3.4%	Unspecified



Disclosure

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

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 Q86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

DRUNK TAW 2436-18H
**STRUCTURAL
 COMPONENT ONLY**

T-190225



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
1ST FLOOR FRAMING\Flush Beams\B3(i1131)

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.

October 27, 2018 09:48:58

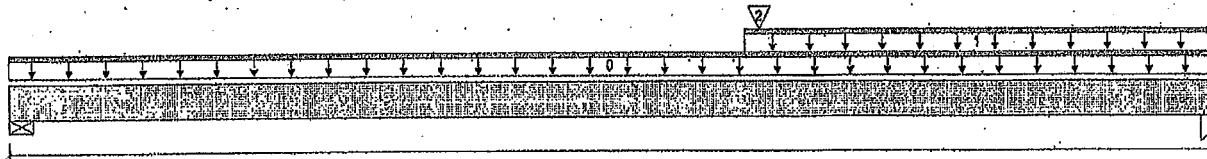
File name: TH3 SUNKEN.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B3(i1131)

Specifier:

Designer:

Company:



B1

Total Horizontal Product Length = 06-02-08

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	398 / 0	223 / 0		
B2, 1-3/4"	656 / 0	356 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-02-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-09-08	06-02-08	Top	12	6			n/a
2	B6(i1128)	Conc. Pl. (lbs)	L	03-10-08	03-10-08	Top	1,024	534			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3,141 ft-lbs	9,867 ft-lbs	31.8%	1	03-10-08
End Shear	1,398 lbs	5,785 lbs	24.2%	1	05-03-04
Total Load Deflection	L/999 (0.044")	n/a	n/a	4	03-04-07
Live Load Deflection	L/999 (0.029")	n/a	n/a	5	03-04-07
Max Defl.	0.044"	n/a	n/a	4	03-04-07
Span / Depth	7.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 1-3/4"	876 lbs	26.8%	11.7%	Unspecified
B2	Column 1-3/4" x 1-3/4"	1,429 lbs	57.6%	38.2%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume unbraced length of Top: 03-08-00, Bottom: 03-06-00. **CONFORMS TO QBC 2012**
 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



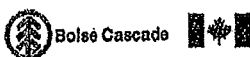
Disclosure

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

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

DOWN, TANK 2437 = 18H
STRUCTURAL COMPONENT ONLY

T-190006



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B4L(1655)

Dry | 1 span | No cant.

October 27, 2018 09:48:58

BC CALC® Member Report

Build 8475

Job name:

Address:

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

Customer:

Code reports: CCMQ 12472-R

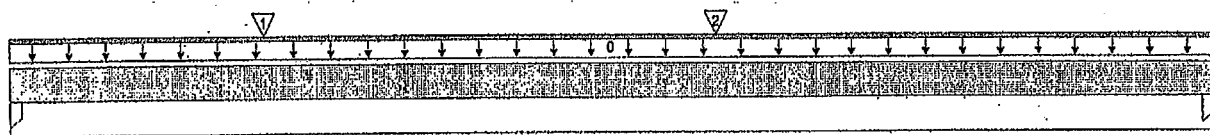
File name: TH3 SUNKEN.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B4L(1655)

Specifier:

Designer:

Company:



B1

02-08-00

B2

Total Horizontal Product Length = 02-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	138 / 0	75 / 0		
B2, 3-1/2"	93 / 0	53 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	02-08-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	J4(I716)	Conc. Pl. (lbs)	L	00-08-12	00-08-12	Top	102	51			n/a
2	J4(I717)	Conc. Pl. (lbs)	L	01-08-12	01-08-12	Top	129	65			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	177 ft-lbs	11,810 ft-lbs	1.6%	1	01-08-12
End Shear	200 lbs	5,785 lbs	3.5%	1	01-07-00
Total Load Deflection	L/999 (0")	n/a	n/a	4	01-04-04
Live Load Deflection	L/999 (0")	n/a	n/a	5	01-04-04
Max Defl.	0"	n/a	n/a	4	01-04-04
Span / Depth	2.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	301 lbs	6.1%	4.0%	Unspecified
B2	Column 3-1/2" x 1-3/4"	207 lbs	4.2%	2.8%	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 QBC 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. TAN 2438-18H

STRUCTURAL
COMPONENT ONLY

T-1902227



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B5(11136)

Dry | 1 span | No cant.

October 27, 2018 09:48:58

BC CALC® Member Report

Build 6475

Job name:

Address:

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

Customer:

Code reports: CCMC 12472-R

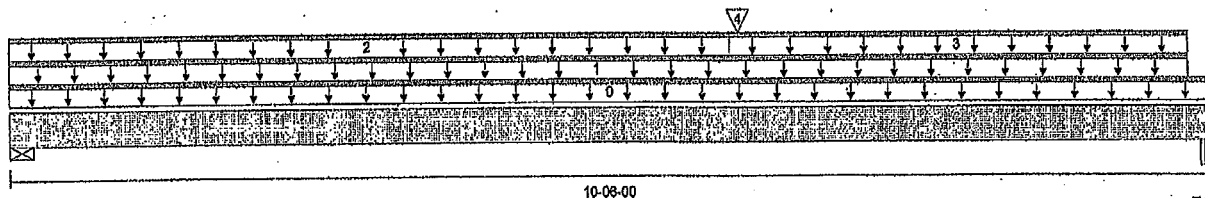
File name: TH3 SUNKEN.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B5(11136)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 10-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	328 / 0	192 / 0		
B2, 5-1/4"	493 / 0	277 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-06-00	Top	5				00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-03-06	Top	19	10			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	06-03-06	Top	3	1			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	06-03-06	10-03-06	Top	16	8			n/a
4	B8(11111)	Conc. Pt. (lbs)	L	06-04-04	06-04-04	Top	541	278			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3,472 ft-lbs	11,610 ft-lbs	29.9%	1	06-04-04
End Shear	1,003 lbs	5,785 lbs	17.3%	1	09-03-04
Total Load Deflection	L/809 (0.148")	n/a	29.7%	4	05-05-07
Live Load Deflection	L/999 (0.095")	n/a	n/a	5	05-05-07
Max Defl.	0.148"	n/a	n/a	4	05-05-07
Span / Depth	12.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 1-3/4"	732 lbs	33.0%	14.4%	Unspecified
B2	Beam 5-1/4" x 1-3/4"	1,086 lbs	22.1%	9.7%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

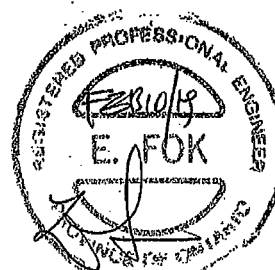
Resistance Factor phi has been applied to all presented results per CSA Q86.

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



Disclosure

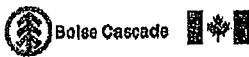
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BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®

WOOD, FAN 2439-18H

STRUCTURAL
COMPONENT ONLY

T-190228



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B6(1128)

Dry | 1 span | No cant.

October 27, 2018 09:48:58

BC CALC® Member Report

Build 6475

Job name:

Address:

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

Customer:

Code reports: CCMC 12472-R

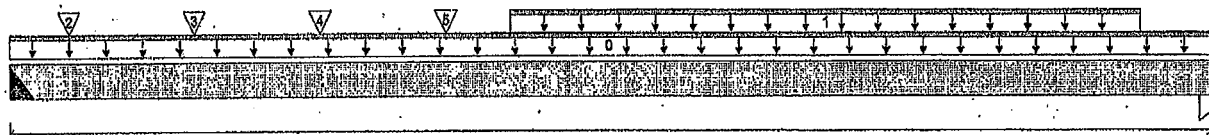
File name: TH3 SUNKEN.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B6(1128)

Specifier:

Designer:

Company:



B1

09-08-08

B2

Total Horizontal Product Length = 09-08-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	1,037 / 0	541 / 0		
B2, 1-3/4"	677 / 0	361 / 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	09-08-08	Top		5			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	03-11-12	08-11-12	Top	138	69			n/a
2	J3(11153)	Conc. Pt. (lbs)	L	00-05-12	00-05-12	Top	218	109			n/a
3	J3(11116)	Conc. Pt. (lbs)	L	01-05-12	01-05-12	Top	288	144			n/a
4	J3(11112)	Conc. Pt. (lbs)	L	02-05-12	02-05-12	Top	288	144			n/a
5	J3(11163)	Conc. Pt. (lbs)	L	03-05-12	03-05-12	Top	228	114			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4,304 ft-lbs	11,610 ft-lbs	37.1%	1	04-05-12
End Shear	1,945 lbs	5,785 lbs	33.6%	1	00-11-08
Total Load Deflection	L/585 (0.192")	n/a	41.0%	4	04-07-04
Live Load Deflection	L/893 (0.126")	n/a	40.3%	5	04-07-04
Max Defl.	0.192"	n/a	n/a	4	04-07-04
Span / Depth	11.8				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Hanger	2" x 1-3/4"	2,231 lbs	n/a	52.3%	HUS1.81/10
B2 Column	1-3/4" x 1-3/4"	1,467 lbs	59.0%	39.3%	Unspecified

Cautions

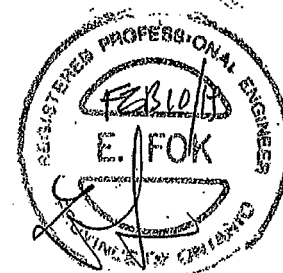
Header for the hanger HUS1.81/10 at B1 is a Single 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

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 UBC 2012

DWU.WU.TAM 2440-18H
STRUCTURAL
COMPONENT ONLY



Disclosure

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

T-1902229



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B7(I1115)

Dry | 1 span | No cant.

October 27, 2018 09:48:58

BC CALC® Member Report

Build 6476

Job name:

Address:

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

Customer:

Code reports: CCMC 12472-R

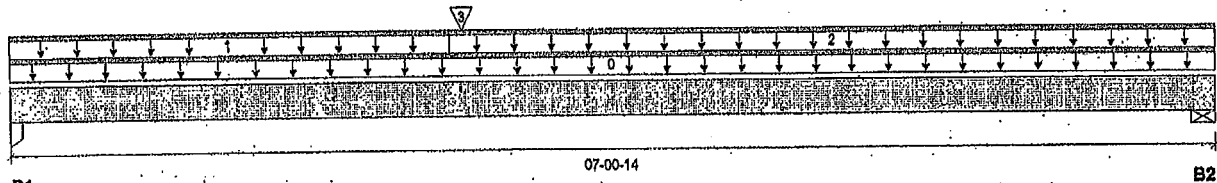
File name: TH3 SUNKEN.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B7(I1115)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 07-00-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	378 / 0	210 / 0		
B2, 4-3/8"	268 / 0	154 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-00-14	Top	6	2			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-07-00	Top	21	10			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	02-07-00	07-00-14	Top	539	277			n/a
3	B8(I1111)	Conc. Pt. (lbs)	L	02-07-14	02-07-14	Top					n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1,855 ft-lbs	11,810 ft-lbs	16.8%	1	02-07-14
End Shear	811 lbs	5,785 lbs	14.0%	1	01-01-00
Total Load Deflection	L/999 (0.035")	n/a	n/a	4	03-03-13
Live Load Deflection	L/999 (0.023")	n/a	n/a	5	03-03-13
Max Defl.	0.035"	n/a	n/a	4	03-03-13
Span / Depth	8.3				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 3-1/2" x 1-3/4"	830 lbs	16.7%	11.1%	Unspecified
B2	Wall/Plate 4-3/8" x 1-3/4"	594 lbs	14.5%	6.4%	Unspecified

Notes

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

CONFORMS TO QBC 2012



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. TAM 2441-18

STRUCTURAL
COMPONENT ONLY

T-1902230



Boise Cascade



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B8(11111)

Dry | 1 span | No cant.

October 27, 2018 09:48:58

BC CALC® Member Report

Build 6475

Job name:

Address:

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

Customer:

Code reports:

CCMC 12472-R

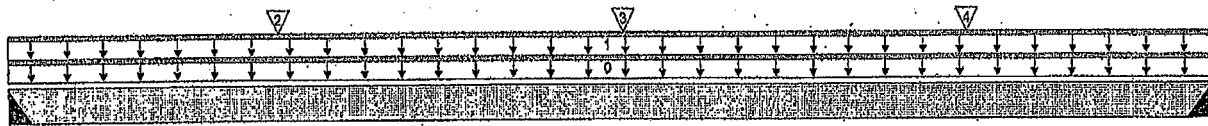
File name: TH3 SUNKEN.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B8(11111)

Specifier:

Designer:

Company:



B1

03-06-00

B2

Total Horizontal Product Length = 03-06-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	639 / 0	277 / 0		
B2, 2"	541 / 0	278 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-06-00	Top		5			00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-06-00	Top	240	120			n/a
2	J4(11139)	Conc. Pt. (lbs)	L	00-09-08	00-09-08	Top	81	40			n/a
3	J4(11148)	Conc. Pt. (lbs)	L	01-09-08	01-09-08	Top	85	42			n/a
4	J4(11135)	Conc. Pt. (lbs)	L	02-09-08	02-09-08	Top	74	36			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	952 ft-lbs	11,610 ft-lbs	8.2%	1	01-09-08
End Shear	624 lbs	5,785 lbs	10.8%	1	00-11-08
Total Load Deflection	L/999 (0.005")	n/a	n/a	4	01-08-14
Live Load Deflection	L/999 (0.003")	n/a	n/a	5	01-08-14
Max Defl.	0.005"	n/a	n/a	4	01-08-14
Span / Depth	4.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	1,155 lbs	n/a	27.1%	HUS1.81/10
B2	Hanger 2" x 1-3/4"	1,158 lbs	n/a	27.1%	HUS1.81/10

Cautions

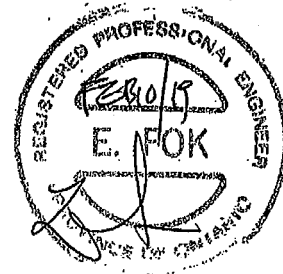
Header for the hanger HUS1.81/10 at B1 is a Single 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.
 Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.
 Header for the hanger HUS1.81/10 at B2 is a Single 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.

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 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 QBC 2012

DWONG.TAM 2442-18H
 STRUCTURAL
 COMPONENT ONLY

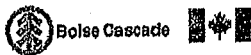


Disclosure

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

T-190223 |



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

PASSED

1ST FLOOR FRAMING\Flush Beams\B9\I1157

Dry | 1 span | No cant.

October 27, 2018 09:48:58

BC CALC® Member Report

Build 6476

Job name:

Address:

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

Customer:

Code reports: CCMC 12472-R

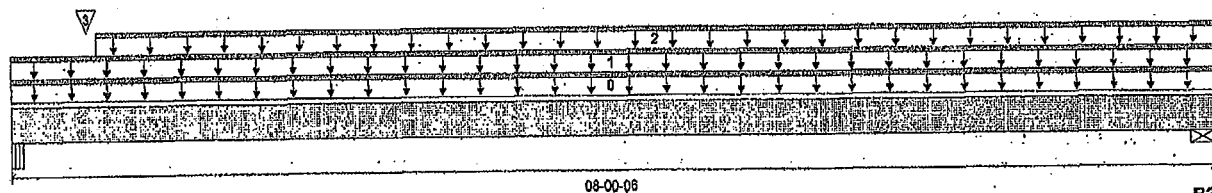
File name: TH3 SUNKEN.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B9\I1157

Specifier:

Designer:

Company:



Total Horizontal Product Length = 08-00-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	312 / 0	201 / 0		
B2, 4-3/8"	129 / 0	104 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-00-06	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-00-06	Top	23	11			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-07-00	08-00-06	Top	8	3			n/a
3	B10(I1133)	Conc. Pt. (lbs)	L	00-06-02	00-06-02	Top	212	113			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	608 ft-lbs	23,220 ft-lbs	2.6%	1	03-08-00
End Shear	388 lbs	11,571 lbs	3.2%	1	01-00-02
Total Load Deflection	L/999 (0.009")	n/a	n/a	4	03-10-03
Live Load Deflection	L/999 (0.005")	n/a	n/a	5	03-10-03
Max Defl.	0.009"	n/a	n/a	4	03-10-03
Span / Depth	9.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 2-5/8" x 3-1/2"	719 lbs	14.7%	6.4%	Unspecified
B2	Wall/Plate 4-3/8" x 3-1/2"	324 lbs	4.0%	1.7%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA Q86, CONFORMS TO Q86 2012

BC CALC® analysis is based on Canadian Limit States Design, as per NBCQ 2015 and CSA Q86.

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.



P6 1/2
DWG NO. TAM 2443-18H
STRUCTURAL
COMPONENT ONLY

T-1902232



Boise Cascade



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

1ST FLOOR FRAMING\Flush Beams\B9\11157

Dry | 1 span | No cant.

PASSED

October 27, 2018 09:48:58

BC CALC® Member Report

Build 6475

Job name:

Address:

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

Customer:

Code reports: CCMC 12472-R

File name: TH3 SUNKEN.mmdl

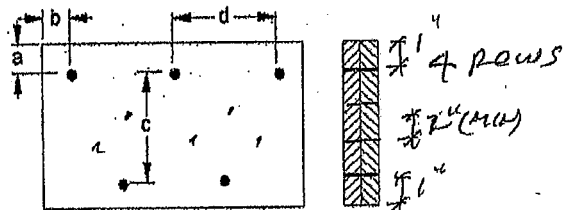
Description: 1ST FLOOR FRAMING\Flush Beams\B9\11157

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



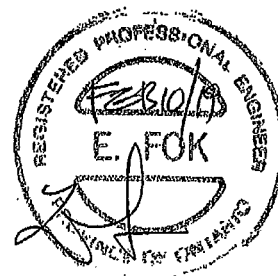
a minimum = 2"
b minimum = 3"

c = 7-1/2"
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: 1 Nails

3 1/2" ARDOX SPIRAL

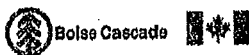


Disclosure

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

T-19022301



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B12(I1119)

Dry | 1 span | No cant.

October 27, 2018 09:48:58

BC CALC® Member Report

Build 6475

Job name:

Address:

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

Customer:

Code reports: CCMC 12472-R

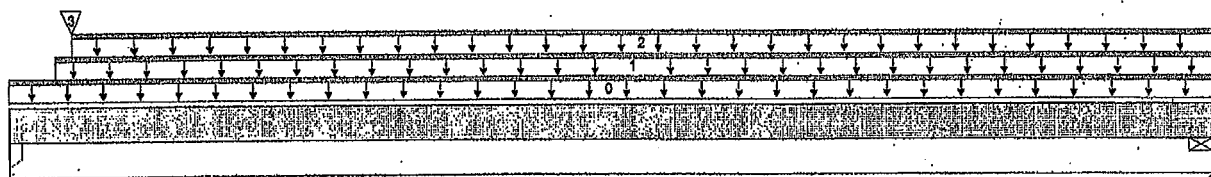
File name: TH3 SUNKEN.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B12(I1119)

Specifier:

Designer:

Company:



B1

Total Horizontal Product Length = 08-01-08

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	2,080 / 0	1,118 / 0		
B2, 5-1/2"	1,641 / 0	860 / 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	08-01-08	Top	10				00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-03-14	08-01-08	Top	360	180			n/a
2	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-05-04	08-01-08	Top	17	9			n/a
3	B14(I1147)	Conc. Pt. (lbs)	L	00-05-04	00-05-04	Top	777	431			n/a

Controls Summary

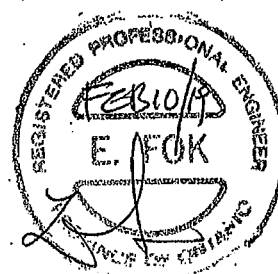
	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5,993 ft-lbs	23,220 ft-lbs	25.8%	1	03-09-14
End Shear	3,092 lbs	11,571 lbs	26.7%	1	01-00-02
Total Load Deflection	L/999 (0.087")	n/a	n/a	4	03-11-06
Live Load Deflection	L/999 (0.057")	n/a	n/a	5	03-11-06
Max Defl.	0.087"	n/a	n/a	4	03-11-06
Span / Depth	9.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Column 2-5/8" x 3-1/2"	4,517 lbs	60.5%	40.3%	Unspecified
B2	Wall/Plate 5-1/2" x 3-1/2"	3,538 lbs	34.4%	15.1%	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 Q86. **CONFIRMS TO QBC 2012**
 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
 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.



DRUWU.TAM 2474-18H
 STRUCTURAL
 COMPONENT ONLY

T-1902233



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****2ND FLOOR FRAMING\Flush Beams\B12(I1119)**

Dry | 1 span | No cant.

PASSED

October 27, 2018 09:48:58

BC CALC® Member Report

Build 6476

Job name:

Address:

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

Customer:

Code reports: CCMC 12472-R

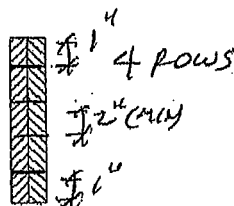
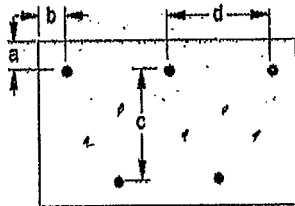
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Description: 2ND FLOOR FRAMING\Flush Beams\B12(I1119)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member

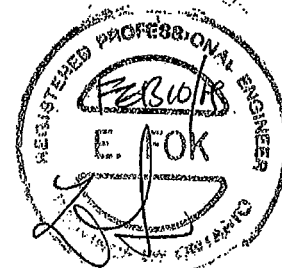
a minimum = 1/2"
b minimum = 3"

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: 1 Nails

3/4" ARDOX SPIRAL

**Disclosure**

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STRUCTURAL
COMPONENT ONLY

T-19022336m



Boles Cascade



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B13(11219)

Dry | 1 span | No cant.

October 27, 2018 09:48:58

BC CALC® Member Report

Build 6476

Job name:

Address:

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

Customer:

Code reports: CCMC 12472-R

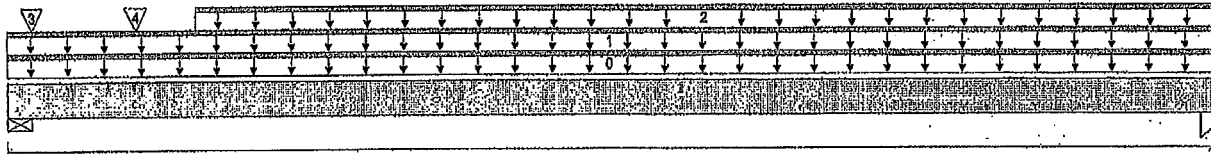
File name: TH3 SUNKEN.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B13(11219)

Specifier:

Designer:

Company:



B1

Total Horizontal Product Length = 10-03-06

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	1,902 / 0	999 / 0		
B2, 2-5/8"	2,037 / 0	1,066 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-03-06	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-03-06	Top	24	12			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	01-07-04	10-03-06	Top	363	181			n/a
3	J1(11234)	Conc. Pt. (lbs)	L	00-02-08	00-02-08	Top	209	105			n/a
4	J1(11210)	Conc. Pt. (lbs)	L	01-01-04	01-01-04	Top	332	166			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	10,086 ft-lbs	23,220 ft-lbs	43.4%	1	05-01-04
End Shear	3,600 lbs	11,571 lbs	31.1%	1	00-11-14
Total Load Deflection	L/471 (0.254")	n/a	50.9%	4	05-01-04
Live Load Deflection	L/718 (0.167")	n/a	50.1%	5	05-01-04
Max Defl.	0.254"	n/a	n/a	4	05-01-04
Span / Depth	12.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 3-1/2"	4,103 lbs	92.4%	40.6%	Unspecified
B2	Column 2-5/8" x 3-1/2"	4,388 lbs	58.8%	39.2%	Unspecified



Notes

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

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

Calculations assume member is fully braced.

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

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

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 QRC 2012

OWN NO. 12345-18H

STRUCTURAL
COMPONENT ONLY

T-1902234



Boise Cascade



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP. 2ND FLOOR FRAMING\Flush Beams\B13(11219)

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.

October 27, 2018 09:48:58

File name: TH3 SUNKEN.mmdl

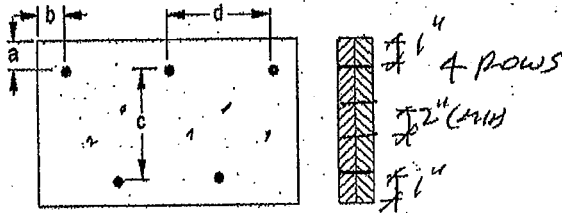
Description: 2ND FLOOR FRAMING\Flush Beams\B13(11219)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



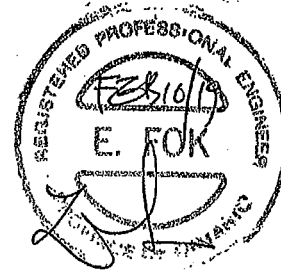
a minimum = 1/2"
b minimum = 3"

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: 1 Nails

3/4" ARDOX SPIRAL



Disclosure

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OWNED, TAM 2445-18H
STRUCTURAL
COMPONENT ONLY

1235

T. 19022461



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****2ND FLOOR FRAMING\Flush Beams\B14(I1147)****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.

October 27, 2018 09:48:58

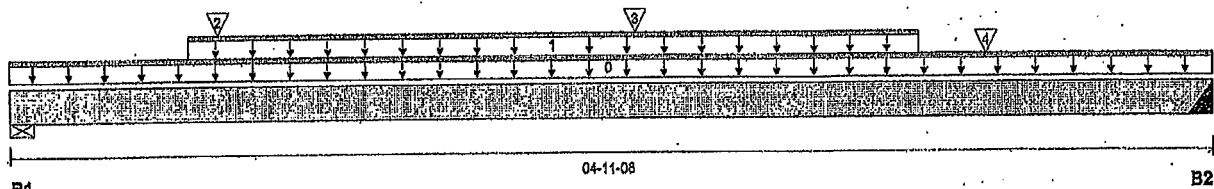
File name: TH3 SUNKEN.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B14(I1147)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 04-11-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	1,403 / 0	938 / 0		
B2, 3"	801 / 0	444 / 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	04-11-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-09-00	03-09-00	Top	149	74			n/a
2	-	Conc. Pt. (lbs)	L	00-10-08	00-10-08	Top	1,049	759			n/a
3	J3(I1209)	Conc. Pt. (lbs)	L	02-07-00	02-07-00	Top	287	143			n/a
4	-	Conc. Pt. (lbs)	L	04-00-06	04-00-06	Top	402	201			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2,290 ft-lbs	23,220 ft-lbs	9.9%	1	02-07-00
End Shear	2,064 lbs	11,571 lbs	17.8%	1	01-03-00
Total Load Deflection	L/999 (0.011")	n/a	n/a	4	02-06-00
Live Load Deflection	L/999 (0.007")	n/a	n/a	5	02-06-00
Max Defl.	0.011"	n/a	n/a	4	02-06-00
Span / Depth	5.5				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 3-1/2"	3,277 lbs	31.9%	14.0%	Unspecified
B2	Hanger 3" x 3-1/2"	1,757 lbs	n/a	13.7%	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

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. **CONFORMS TO QRC 2Q12**
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. TAM 244618H
STRUCTURAL
COMPONENT ONLY

T. 191223 J



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****2ND FLOOR FRAMING\Flush Beams\B14(11147)**

Dry | 1 span | No cant.

PASSED

October 27, 2016 09:48:58

BC CALC® Member Report

Bulld 6475

Job name:

Address:

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

Customer:

Code reports: CCMC 12472-R

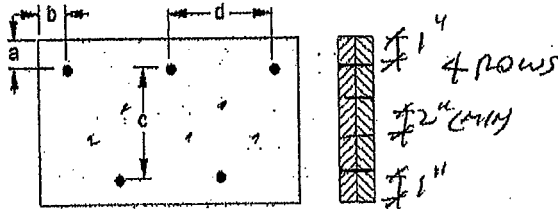
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Description: 2ND FLOOR FRAMING\Flush Beams\B14(11147)

Specifier:

Designer:

Company:

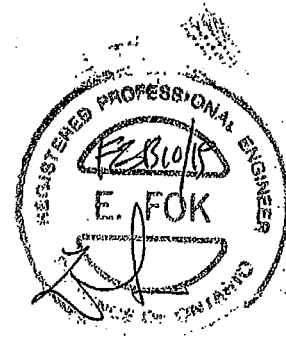
Connection Diagram: Full Length of Member

a minimum = 1/2"
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 1/2" ARDOX SPIRAL

**Disclosure**

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

STRUCTURAL
COMPONENT ONLY

T-19022856M



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING\Flush Beams\B15(11123)

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.

October 27, 2018 09:48:58

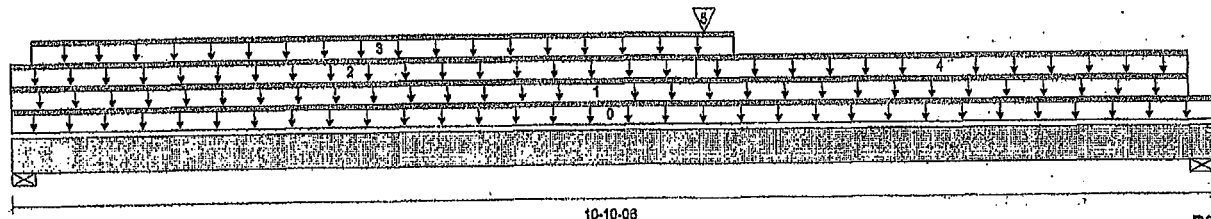
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Description: 2ND FLOOR FRAMING\Flush Beams\B15(11123)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 10-10-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	437 / 0	597 / 0		
B2, 5-1/2"	616 / 0	587 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-10-06	Top		5			00-00-00
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-07-10	Top	27	14			n/a
2	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	06-02-06	Top	3				n/a
3	WALL	Unf. Lin. (lb/ft)	L	00-02-06	06-06-06	Top		60			n/a
4	FC4 Floor Material	Unf. Lin. (lb/ft)	L	06-02-06	10-07-10	Top	25	13			n/a
5	B17(11117)	Conc. Pt. (lbs)	L	06-03-04	06-03-04	Top	632	542			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5,833 ft-lbs	11,610 ft-lbs	50.2%	1	06-03-04
End Shear	1,536 lbs	5,785 lbs	26.6%	1	09-07-06
Total Load Deflection	L/437 (0.284")	n/a	54.9%	4	05-06-09
Live Load Deflection	L/918 (0.135")	n/a	39.2%	5	05-06-09
Max Defl.	0.284"	n/a	n/a	4	05-06-09
Span / Depth	13.1				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 1-3/4"	1,401 lbs	63.1%	27.6%	Unspecified
B2	Wall/Plate 5-1/2" x 1-3/4"	1,658 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 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 QBG 2012

Disclosure

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

DRWNO, TAM 2447-18H
STRUCTURAL
COMPONENT ONLY

T-180226



Bolsa Cascade



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

2ND FLOOR FRAMING\Flush Beams\B16(I1151)

Dry | 1 span | No cant.

PASSED

October 27, 2018 09:48:58

BC CALC® Member Report

Build 6475

Job name:

Address:

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

Customer:

Code reports:

CCMC 12472-R

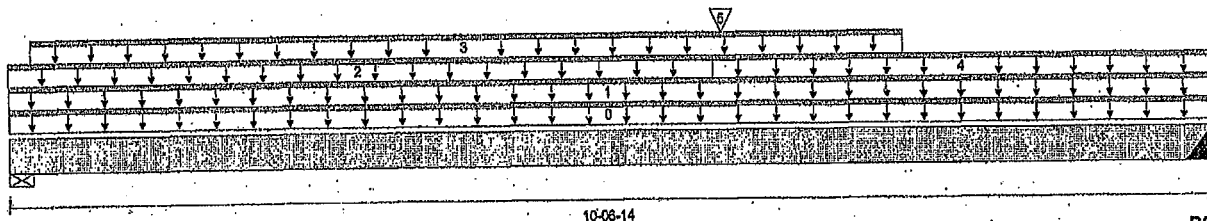
File name: TH3 SUNKEN.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B16(I1151)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 10'-06-14"

Reaction Summary (Down / Uplift) (lbs)

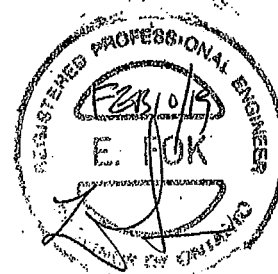
Bearing	Live	Dead	Snow	Wind
B1, 2-3/8"	589 / 0	633 / 0		
B2, 2"	872 / 0	674 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-06-14	Top		5			00-00-00
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-06-14	Top	9	4			n/a
2	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	06-02-06	Top	3				n/a
3	WALL	Unf. Lin. (lb/ft)	L	00-02-06	07-10-06	Top		60			n/a
4	FC4 Floor Material	Unf. Lin. (lb/ft)	L	06-02-06	10-06-14	Top	21	11			n/a
5	B17(I1117)	Conc. Pt. (lbs)	L	06-03-04	06-03-04	Top	1,255	693			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	8,277 ft-lbs	11,610 ft-lbs	71.3%	1	06-03-04
End Shear	2,081 lbs	5,785 lbs	36.0%	1	09-07-06
Total Load Deflection	1/325 (0.381")	n/a	73.7%	4	05-06-09
Live Load Deflection	1/593 (0.209")	n/a	60.7%	5	05-06-09
Max Defl.	0.381"	n/a	n/a	4	05-06-09
Span / Depth	13.1				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/8" x 1-3/4"	1,675 lbs	75.5%	33.0%	Unspecified
B2	Hanger 2" x 1-3/4"	2,150 lbs	n/a	50.3%	HUS1.81/10

Cautions

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. Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

NO. TAM 244818H
STRUCTURAL
COMPONENT ONLY

T-1902237



Boise Cascade



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING\Flush Beams\B16(11151)

PASSED

BC CALC® Member Report
 Build 6475

Dry | 1 span | No cant.

October 27, 2018 09:48:58

Job name:

File name: TH3 SUNKEN.mmdl

Address:

Description: 2ND FLOOR FRAMING\Flush Beams\B16(11151)

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

Specifier:

Customer:

Designer:

Code reports:

CCMC 12472-R

Company:

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

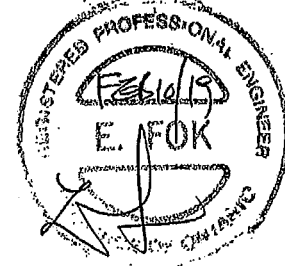
CONFORMS TO CBC 2012

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

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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-190223764



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B17(I1117)

Dry | 1 span | No cant.

October 27, 2018 09:48:58

BC CALC® Member Report

Build 6476

Job name:

Address:

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

Customer:

Code reports: CCMC 12472-R

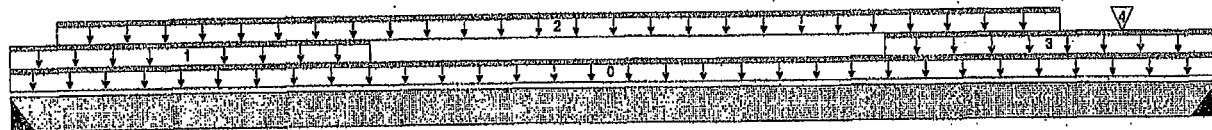
File name: TH3 SUNKEN.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B17(I1117)

Specifier:

Designer:

Company:



B1

12-10-00

B2

Total Horizontal Product Length = 12-10-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	628 / 0	642 / 0		
B2, 2"	1,259 / 0	693 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.85	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-10-00	Top		5			00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	03-10-00	Top		60			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-06-04	11-02-04	Top	88	44			n/a
3	STAIR	Unf. Lin. (lb/ft)	L	09-04-00	12-10-00	Top	240	120			n/a
4	J5(I1323)	Conc. Pt. (lbs)	L	11-10-04	11-10-04	Top	106	53			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5,669 ft-lbs	11,610 ft-lbs	49.0%	1	07-10-04
End Shear	2,260 lbs	5,785 lbs	39.1%	1	11-10-08
Total Load Deflection	L/318 (0.477")	n/a	75.5%	4	06-08-04
Live Load Deflection	L/517 (0.293")	n/a	69.6%	5	06-08-04
Max Defl.	0.477"	n/a	n/a	4	06-08-04
Span / Depth	15.9				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 1-3/4"	1,618 lbs	n/a	37.8%	HUS1.81/10
B2	Hanger 2" x 1-3/4"	2,765 lbs	n/a	64.5%	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 Single 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 DBC 2012

DRUM, TAM 2449-18H
STRUCTURAL
COMPONENT ONLY

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

T-1902238



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B18(11199)

Dry | 1 span | No cant.

October 27, 2018 09:48:58

BC CALC® Member Report

Build 6476

Job name:

Address:

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

Customer:

Code reports: CCMC 12472-R

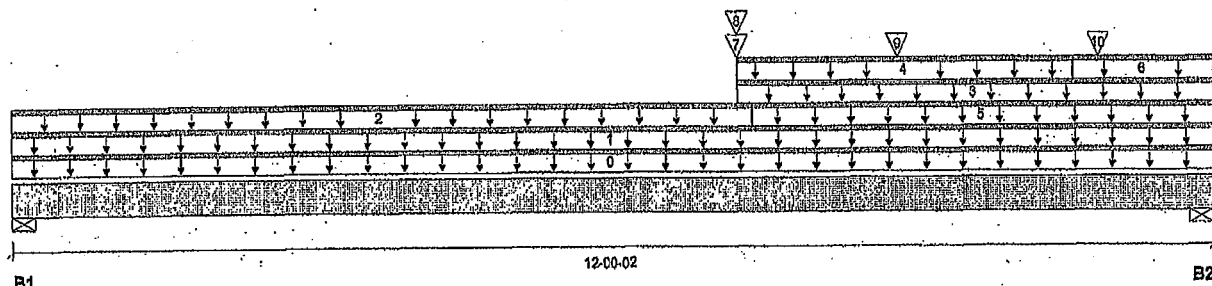
File name: TH3 SUNKEN.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B18(11199)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 12-00-02

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-3/4"	316 / 0	355 / 0	113 / 0	
B2, 2-3/8"	533 / 0	873 / 0	603 / 0	

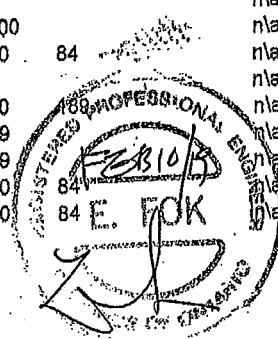
Load Summary

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	12-00-02	Top		10			00-00-00
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	12-00-02	Top	26	13			n/a
2	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-04-12	Top	19	9			n/a
3	WALL	Unf. Lin. (lb/ft)	L	07-03-00	12-00-02	Top		100			n/a
4	ROOF	Unf. Lin. (lb/ft)	L	07-03-00	10-07-04	Top	44	40	84		n/a
5	FC4 Floor Material	Unf. Lin. (lb/ft)	L	07-04-12	12-00-02	Top	6	3			n/a
6	ROOF	Unf. Lin. (lb/ft)	L	10-07-04	12-00-02	Top	99	90			n/a
7	B19(1205)	Conc. Pt. (lbs)	L	07-03-00	07-03-00	Top		29			n/a
8	WALL	Conc. Pt. (lbs)	L	07-03-00	07-03-00	Top		29			n/a
9	WINDOW	Conc. Pt. (lbs)	L	08-10-04	08-10-04	Top	44	40			n/a
10	WINDOW	Conc. Pt. (lbs)	L	10-10-04	10-10-04	Top	44	40			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4,537 ft-lbs	23,220 ft-lbs	19.5%	1	07-09-02
End Shear	1,853 lbs	11,571 lbs	16.0%	13	11-00-04
Total Load Deflection	L/845 (0.166")	n/a	28.4%	35	06-05-10
Live Load Deflection	L/899 (0.089")	n/a	n/a	51	06-05-10
Max Defl.	0.166"	n/a	n/a	35	06-05-10
Span / Depth	14.8				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 2-3/4" x 3-1/2"	1,031 lbs	20.1%	8.8%	Unspecified
B2	Wall/Plate 2-3/8" x 3-1/2"	2,529 lbs	57.0%	24.9%	Unspecified



OWNED BY 245018H
STRUCTURAL
COMPONENT ONLY

T-1902239



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

PASSED

BC CALC® Member Report

2ND FLOOR FRAMING\Flush Beams\B18(I1199)

Dry | 1 span | No cant.

October 27, 2018 09:48:58

Build 6475

Job name:

File name: TH3 SUNKEN.mmdl

Address:

Description: 2ND FLOOR FRAMING\Flush Beams\B18(I1199)

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

Specifier:

Customer:

Designer:

Code reports:

CQMC 12472-R

Company:

Notes

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

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

Calculations assume member is fully braced.

CONFORMS TO DBC 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.

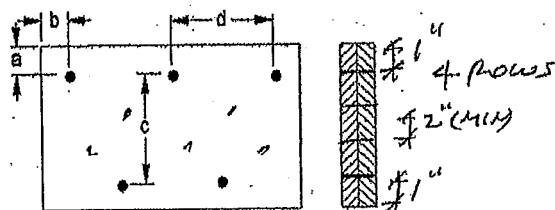
Unbalanced snow loads determined from building geometry were used in selected product's verification.

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.

Connection Diagram: Full Length of Member



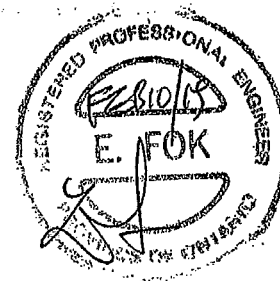
a minimum = 8"
b minimum = 3"

c = 7-1/2"
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®
DWG NO. TAM 2450-18H
STRUCTURAL
COMPONENT ONLY

T-1902239(v)



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B19(11205)

Dry | 1 span | No cant.

October 27, 2018 09:48:58

BC CALC® Member Report

Build 6475

Job name:

Address:

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

Customer:

Code reports: CCMC 12472-R

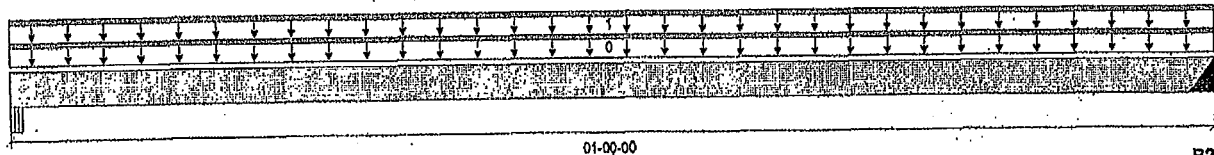
File name: TH3 SUNKEN.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B19(11205)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 01-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"		65 / 0		
B2, 3"		45 / 0		

Load Summary

Tap	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-00-00	Top	10				00-00-00
1	WALL	Unf. Lin. (lb/ft)	L	00-00-00	01-00-00	Top	100				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4 ft-lbs	15,093 ft-lbs	n/a	0	00-07-02
End Shear	24 lbs	7,521 lbs	0.3%	0	00-06-04
Span / Depth	0.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	5-1/4" x 3-1/2"	91 lbs	1.4%	0.6%	Unspecified
B2 Hanger	3" x 3-1/2"	62 lbs	n/a	0.7%	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 unbraced length of Top: 00-00-00, Bottom: 00-00-00.

Hanger Manufacturer: Unassigned

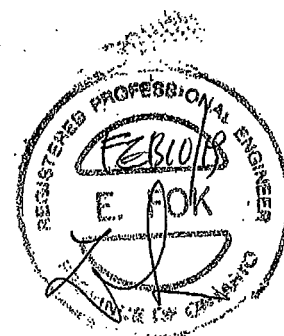
Resistance Factor phi has been applied to all presented results per CSA O86.

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

Member has no side loads.



CONFORMS TO QBC 2012

P6 1/2

DRAWING 2451-18H
STRUCTURAL
COMPONENT ONLY

T-1902240



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****2ND FLOOR FRAMING\Flush Beams\B19(11205)**

Dry | 1 span | No cant.

PASSED

October 27, 2018 09:48:58

BC CALC® Member Report

Build 6476

Job name:

Address:

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

Customer:

Code reports:

CCMC 12472-R

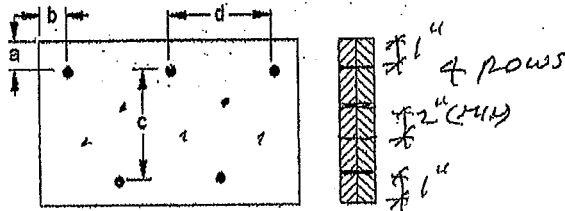
File name: TH3 SUNKEN.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B19(11205)

Specifier:

Designer:

Company:

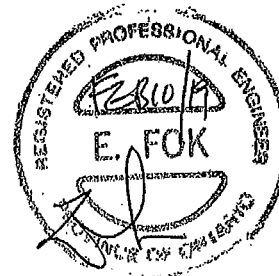
Connection Diagram: Full Length of Member

a minimum = 1"
b minimum = 3"

c = 2-1/2"
d = 4"

Member has no side loads.

Connectors are: 10d x 3" Nails

3 1/2" ARDOX SPIRAL**Disclosure**

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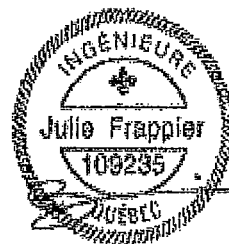
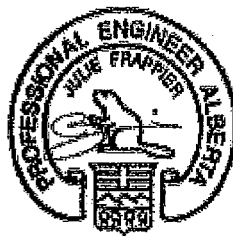
BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

DRG NO. YAM 2451-18 H
STRUCTURAL
COMPONENT ONLY

T-190224-02

Maximum Floor Spans

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



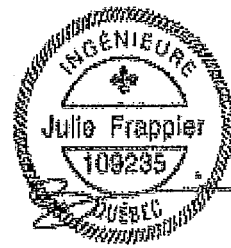
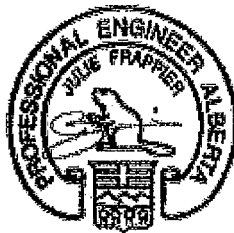
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"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

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

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

Maximum Floor Spans

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



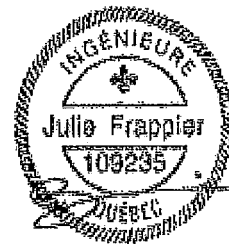
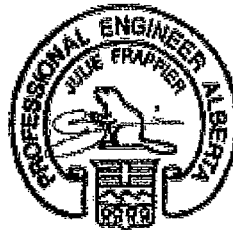
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-1"	14'-2"	13'-9"	N/A	15'-7"	14'-8"	14'-2"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"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

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

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

Maximum Floor Spans

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



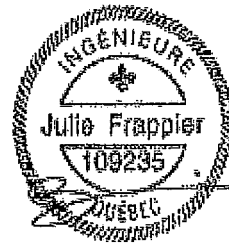
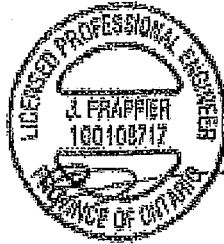
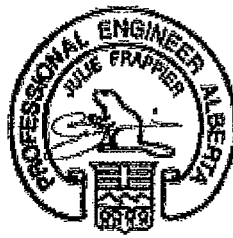
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-9"	17'-5"	16'-5"	15'-10"	15'-2"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-6"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

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

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

Maximum Floor Spans

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



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

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

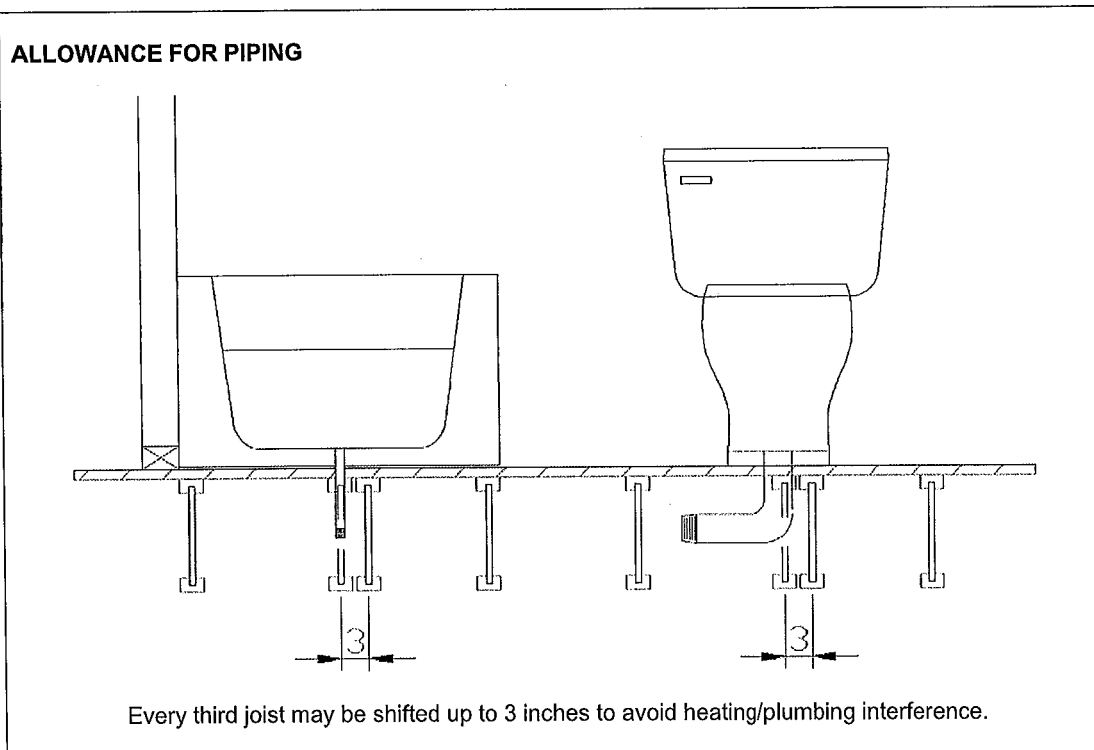
- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load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

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.

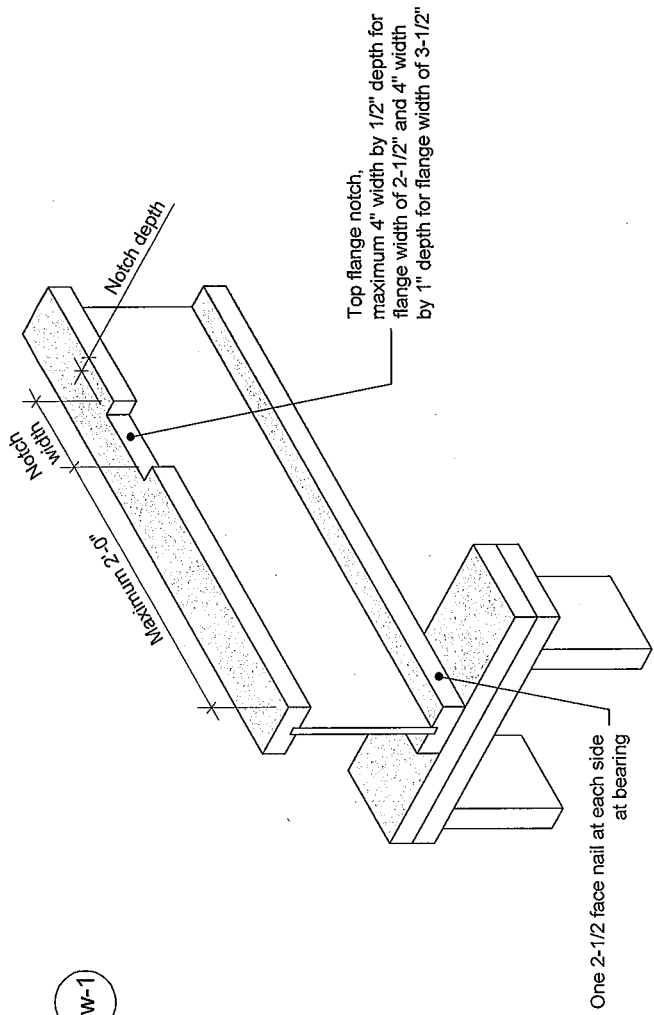
Installation of Nordic I-joists shall be as per *Nordic Joist Installation Guide for Residential Floors*. Refer to Tables 1 and 2 for maximum web hole and duct chase openings, respectively. These tables are based on the I-joists being used at their maximum spans. The minimum distance given may be reduced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

Heat register

Notes:

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

This document supersedes all previous versions. If the document has been in effect for more than one year, consult nordic.ca or contact Nordic Structures. All nails shown in the details are assumed to be common nails unless otherwise noted. Nails shall have a diameter not less than 0.128 inch for 2-1/2-inch nails, or 0.144 inch for 3-inch nails. Individual components not shown to scale for clarity.

NORDIC STRUCTURES	T 514-871-8526 1 866 817-3418		nordic.ca		DOCUMENT	
	Notch in I-joist for Heat Register		CATEGORY		DATE	
	I-joist - Typical Floor Framing and Construction Details		2018-04-10		NUMBER	

1W-1