

FROM PLAN DATED: JAN 2020

BUILDER: GREENPARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: VALLEYCREEK 4

ELEVATION: 1

LOT: 251

CITY: WATERDOWN

SALESMAN: RICK DICIANO

DESIGNER: AJ

REVISION: L.D.

NOTES:

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

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

LOADING:

DESIGN LOADS: L/480.000

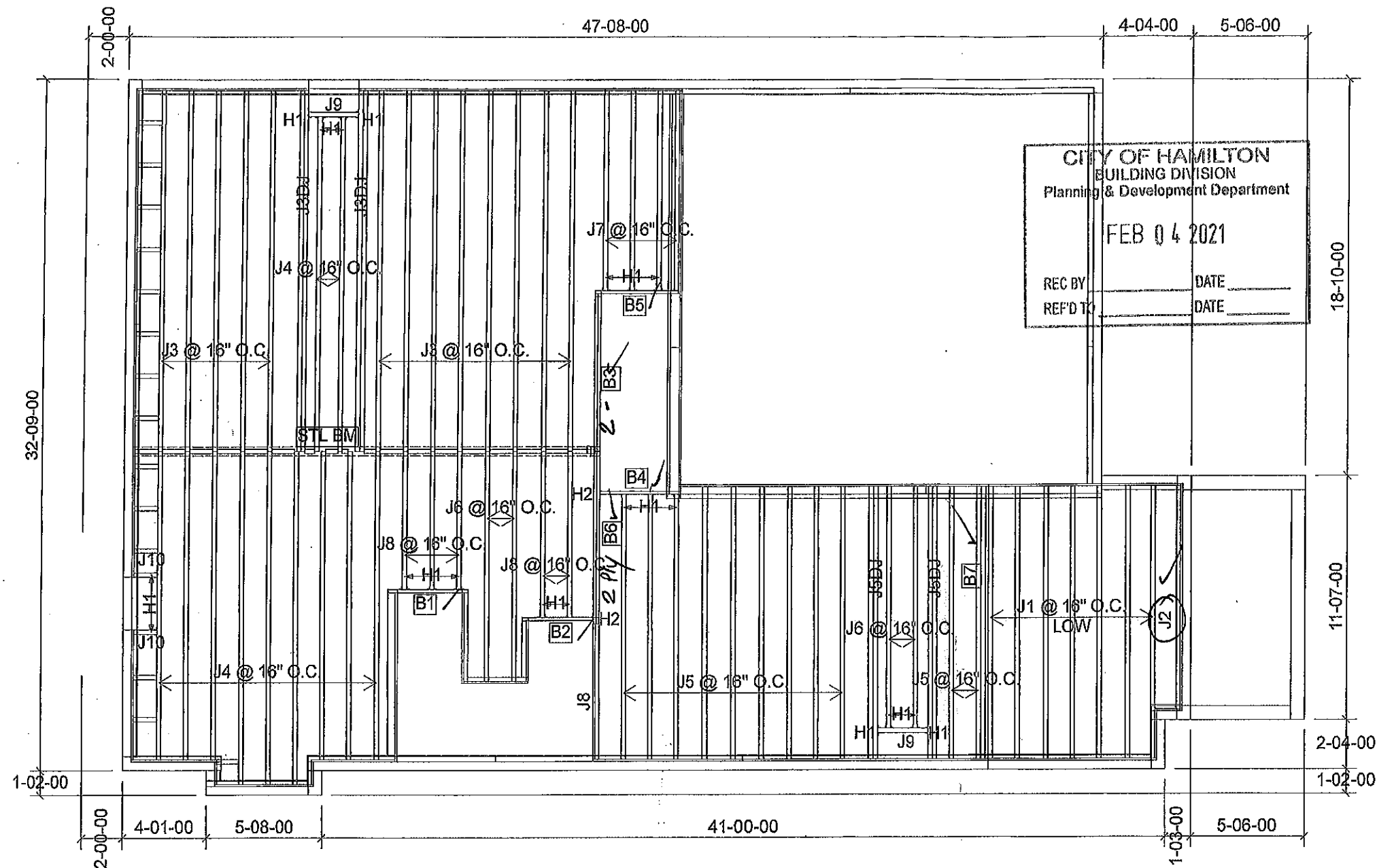
LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2020-12-14

1st FLOOR



Products				
PlotID	Length	Product	Piles	Net Qty
J1	14'-00"-00	9 1/2" NI-40x	1	7
J2	12'-00"-00	9 1/2" NI-40x	1	1
J3	18'-00"-00	11 7/8" NI-40x	1	13
J3DJ	18'-00"-00	11 7/8" NI-40x	2	4
J4	16'-00"-00	11 7/8" NI-40x	1	11
J5	14'-00"-00	11 7/8" NI-40x	1	11
J5DJ	14'-00"-00	11 7/8" NI-40x	2	4
J6	12'-00"-00	11 7/8" NI-40x	1	4
J7	10'-00"-00	11 7/8" NI-40x	1	4
J8	8'-00"-00	11 7/8" NI-40x	1	6
J9	4'-00"-00	11 7/8" NI-40x	1	2
J10	2'-00"-00	11 7/8" NI-40x	1	2
B7	14'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B6	10'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B3	8'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B5	6'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B1	4'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B2	4'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	4'-00"-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
11	H1	IUS2.56/11.88
4	H1	IUS2.56/11.88
6	H1	IUS2.56/11.88
2	H2	HUS1.81/10

CITY OF HAMILTON
Building Division

Permit No. 21-106030

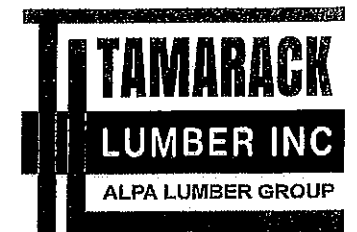
THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE

THE OWNER AND/OR CONTRACTOR SHALL COMPLY WITH
THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE LAW

These drawings and/or specifications have been reviewed and approved by
[Signature] FEB 26 2021

FOR CHIEF BUILDING OFFICIAL

DATE



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LOADING:

DESIGN LOADS: L/480.000

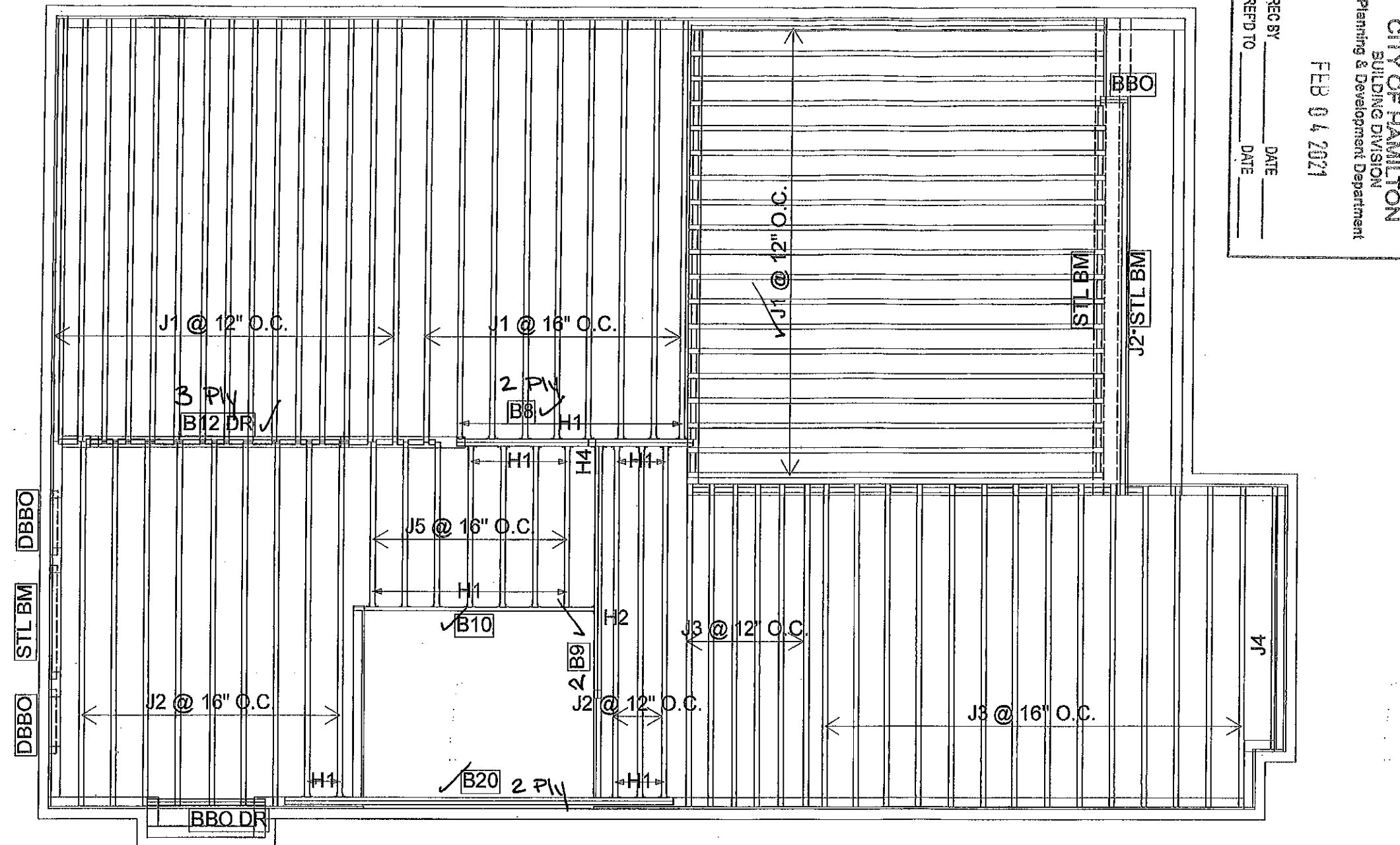
LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2020-12-14

2nd FLOOR



CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department

REC BY: _____ DATE: _____
REFD TO: _____ DATE: _____

FEB 04 2021

Products				
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	43
J2	16-00-00	11 7/8" NI-40x	1	13
J3	14-00-00	11 7/8" NI-40x	1	20
J4	12-00-00	11 7/8" NI-40x	1	1
J5	8-00-00	11 7/8" NI-40x	1	7
B12 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	3	3
B20	16-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2
B9	12-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2
B10	10-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	1	1
B8	10-00-00	1-3/4" x 11-7/8" VERSA-LAM@ 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
7	H1	IUS2.56/11.88
20	H1	IUS2.56/11.88
1	H2	HUS1.81/10
1	H4	HGUS410

CITY OF HAMILTON
Building Division

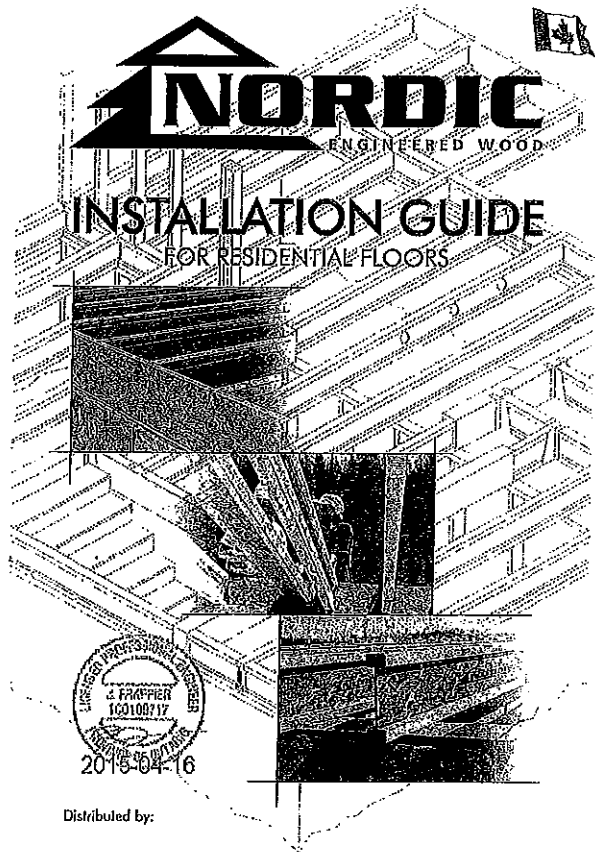
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These drawings and/or specifications have been reviewed by

 **FEB 26 2021**
FOR CHIEF BUILDING OFFICIAL DATE



NC307 November 2014

SAFETY AND CONSTRUCTION PRECAUTIONS



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



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

WARNING

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

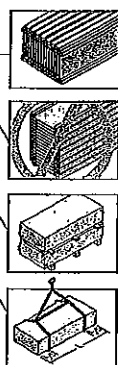
Avoid Accidents by Following these Important Guidelines:

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

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

STORAGE AND HANDLING GUIDELINES

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



MAXIMUM FLOOR SPANS

1. Maximum clear spans applicable to 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 vibrations 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 C885-71.2.6 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 or 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 Unit States Design per CAN/CSA C88-09 Standard, and NRC 2010.
7. SI units conversion: 1 inch = 25.4 mm, 1 foot = 0.305 m

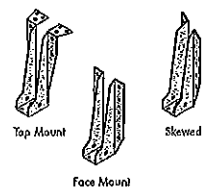
MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On center spacing				On center spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
10"	N10	16'-1"	14'-2"	13'-9"	13'-5"	16'-3"	15'-4"	14'-10"	14'-7"
12"	N12	16'-1"	14'-2"	14'-9"	14'-9"	17'-3"	16'-5"	15'-10"	15'-5"
14"	N14	17'-1"	16'-1"	15'-6"	15'-7"	18'-7"	17'-4"	16'-9"	16'-10"
16"	N16	17'-3"	16'-3"	15'-8"	15'-9"	18'-10"	17'-4"	16'-11"	17'-0"
18"	N18	18'-1"	17'-0"	16'-5"	16'-6"	19'-4"	18'-4"	17'-9"	17'-3"
20"	N20	18'-4"	17'-3"	16'-7"	16'-9"	20'-3"	18'-9"	18'-0"	18'-1"
22"	N22	19'-0"	18'-0"	17'-4"	17'-5"	21'-6"	19'-11"	19'-0"	19'-1"
24"	N24	20'-2"	18'-7"	17'-10"	17'-11"	22'-3"	20'-7"	19'-8"	19'-9"
26"	N26	20'-4"	18'-9"	17'-11"	18'-0"	22'-5"	20'-9"	19'-10"	19'-11"
28"	N28	20'-5"	18'-11"	18'-1"	18'-2"	22'-7"	20'-11"	20'-0"	20'-1"
30"	N30	21'-7"	20'-0"	19'-1"	19'-2"	23'-10"	22'-1"	21'-1"	21'-2"
32"	N32	21'-11"	20'-3"	19'-4"	19'-5"	24'-3"	22'-5"	21'-5"	21'-6"
34"	N34	22'-5"	20'-8"	19'-9"	19'-10"	24'-9"	22'-10"	21'-10"	21'-10"
36"	N36	22'-7"	20'-11"	19'-11"	20'-0"	25'-0"	23'-1"	22'-0"	22'-2"
38"	N38	22'-9"	20'-8"	19'-9"	19'-10"	24'-7"	22'-9"	21'-9"	21'-10"
40"	N40	23'-11"	22'-1"	21'-1"	21'-2"	26'-5"	24'-5"	23'-3"	23'-4"
42"	N42	24'-5"	22'-6"	21'-5"	21'-6"	26'-11"	24'-10"	23'-9"	23'-9"
44"	N44	24'-8"	22'-9"	21'-9"	21'-10"	27'-3"	25'-2"	24'-0"	24'-1"

CCMC EVALUATION REPORT 13932-R

I-JOIST HANGERS

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



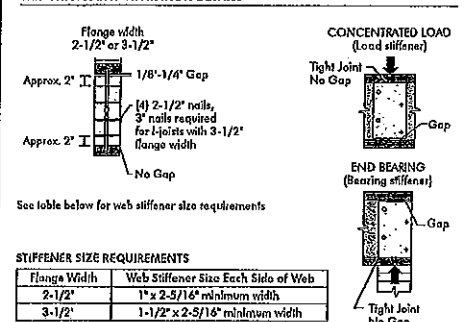
WEB STIFFENERS

RECOMMENDATIONS:

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

SI units conversion: 1 inch = 25.4 mm

FIGURE 2 WEB STIFFENER INSTALLATION DETAILS



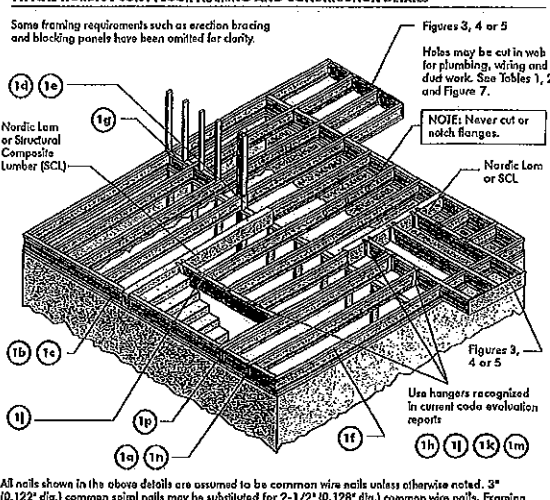
STIFFENER SIZE REQUIREMENTS

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

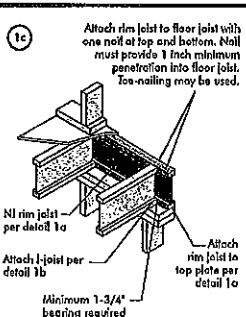
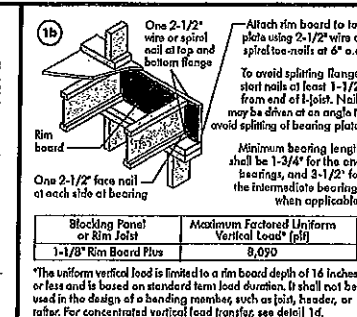
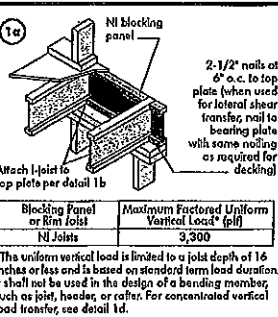
INSTALLING NORDIC I-JOISTS

1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, contact your supplier.
2. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. I-joists must be anchored securely to supports before floor sheathing is attached, and supports for multiple spans must be level.
5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearing.
6. When using hangers, seal I-joist ends 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 supported 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. Retain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
11. For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squish blocks (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 on 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 spacers: Space nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

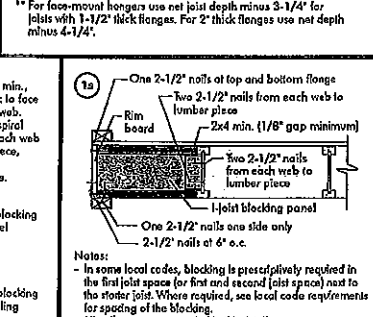
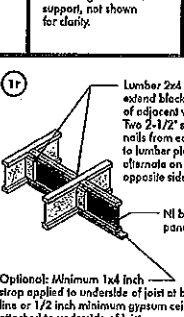
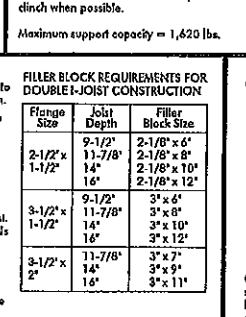
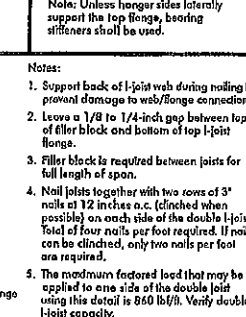
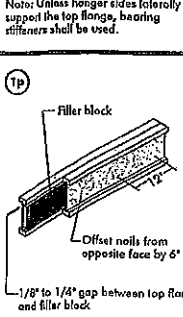
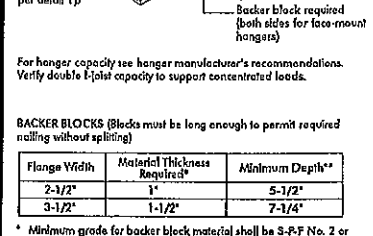
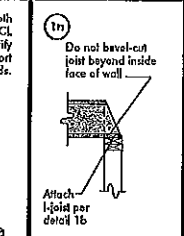
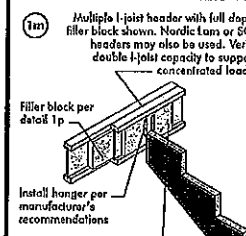
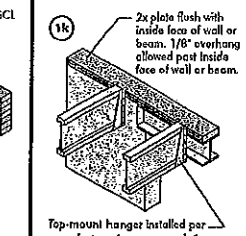
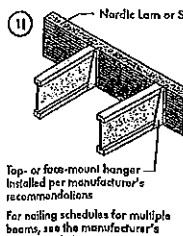
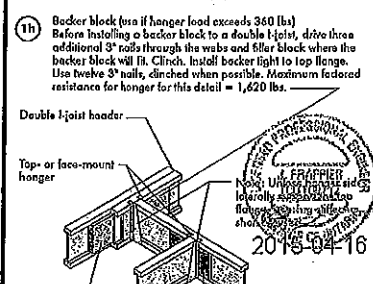
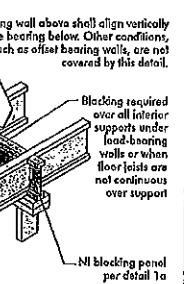
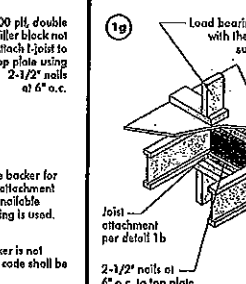
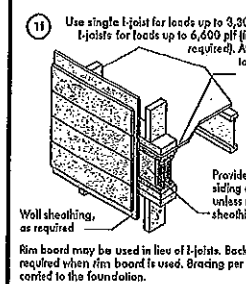
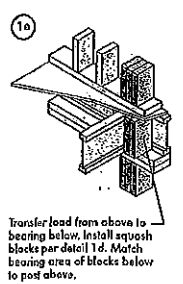
FIGURE 1 TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS



All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.122" 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.



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



CANTILEVER DETAILS FOR BALCONIES (NO WALL LOAD)

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

Can'tilever extension supporting uniform floor loads only

Attach I-joists to plate at all supports per detail 1b

Rim board or wood structural panel closure; attach per detail 1b

3-1/2" min. bearing required

Note: This detail is applicable to cantilevers supporting a maximum specified uniform live load of 60 psf.

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

Full depth backer block with 1/8" gap between block and top flange of I-joist. See detail 1b. Nail with 2 rows of 3" nails at 6" o.c. and clinch.

2x8 min. Nail to backer block and joist with 2 rows of 3" nails at 6" o.c. and clinch. (Can'tilever nails may be used to attach backer block if length of nail is sufficient to allow clinching.)

Can'tilever extension supporting uniform floor loads only

3-1/2" min. bearing required

Lumber or wood structural panel closure

Note: This detail is applicable to cantilevers supporting a maximum specified uniform live load of 60 psf.

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD)

4a) Method 1 — SHEATHING REINFORCEMENT ONE SIDE

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

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

Attach I-joist to plate per detail 1b

3-1/2" min. bearing required

Method 2 — SHEATHING REINFORCEMENT TWO SIDES

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

Use nailing pattern shown for Method 1 with opposite face nailing offset by 8".

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-joist to plate at all supports per detail 1b. Verify reinforced I-joist capacity.

4b) Alternate Method 2 — DOUBLE I-JOIST

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

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

Face nail two rows of 3" nails at 12" o.c. each side through one I-joist web and the filler block to other I-joist web. Offset nails from opposite face by 6". Clinch if possible (four nails per foot required, except two nails per foot required if clinched).

Attach I-joists to top plate at all supports per detail 1b, 3-1/2" min. bearing required

Block I-joists together with filler blocks for the full length of the reinforcement. For I-joist flange wider than 3 inches place an additional row of 3" nails along the centerline of the reinforcing panel from each side. Clinch when possible.

FIGURE 4 (continued)

See table below for NI reinforcement requirements of cantilever.

Roof truss span

2'-0" maximum cantilever

13'-0" maximum

For hip roofs with the joists running parallel to the cantilevered floor joists, the I-joist reinforcement requirements for a span of 26' shall be permitted to be used.

CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	ROOF LOADING (UNFACTORED)				ROOF LOADING (UNFACTORED)				ROOF LOADING (UNFACTORED)			
		JOIST SPACING (in.)				JOIST SPACING (in.)				JOIST SPACING (in.)			
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
12	28	N	N	1	2	N	1	2	X	N	2	X	X
12	30	N	N	1	2	N	1	2	X	N	2	X	X
12	32	N	N	1	2	N	1	2	X	N	2	X	X
12	34	N	N	1	2	N	1	2	X	N	2	X	X
12	36	N	N	1	2	N	1	2	X	N	2	X	X
12	38	N	N	1	2	N	1	2	X	N	2	X	X
12	40	N	N	1	2	N	1	2	X	N	2	X	X
12	42	N	N	1	2	N	1	2	X	N	2	X	X
12	44	N	N	1	2	N	1	2	X	N	2	X	X
12	46	N	N	1	2	N	1	2	X	N	2	X	X
12	48	N	N	1	2	N	1	2	X	N	2	X	X
12	50	N	N	1	2	N	1	2	X	N	2	X	X
12	52	N	N	1	2	N	1	2	X	N	2	X	X
12	54	N	N	1	2	N	1	2	X	N	2	X	X
12	56	N	N	1	2	N	1	2	X	N	2	X	X
12	58	N	N	1	2	N	1	2	X	N	2	X	X
12	60	N	N	1	2	N	1	2	X	N	2	X	X
16	28	N	N	1	2	N	1	2	X	N	2	X	X
16	30	N	N	1	2	N	1	2	X	N	2	X	X
16	32	N	N	1	2	N	1	2	X	N	2	X	X
16	34	N	N	1	2	N	1	2	X	N	2	X	X
16	36	N	N	1	2	N	1	2	X	N	2	X	X
16	38	N	N	1	2	N	1	2	X	N	2	X	X
16	40	N	N	1	2	N	1	2	X	N	2	X	X
16	42	N	N	1	2	N	1	2	X	N	2	X	X
16	44	N	N	1	2	N	1	2	X	N	2	X	X
16	46	N	N	1	2	N	1	2	X	N	2	X	X
16	48	N	N	1	2	N	1	2	X	N	2	X	X
16	50	N	N	1	2	N	1	2	X	N	2	X	X
16	52	N	N	1	2	N	1	2	X	N	2	X	X
16	54	N	N	1	2	N	1	2	X	N	2	X	X
16	56	N	N	1	2	N	1	2	X	N	2	X	X
16	58	N	N	1	2	N	1	2	X	N	2	X	X
16	60	N	N	1	2	N	1	2	X	N	2	X	X
19.2	28	N	N	1	2	N	1	2	X	N	2	X	X
19.2	30	N	N	1	2	N	1	2	X	N	2	X	X
19.2	32	N	N	1	2	N	1	2	X	N	2	X	X
19.2	34	N	N	1	2	N	1	2	X	N	2	X	X
19.2	36	N	N	1	2	N	1	2	X	N	2	X	X
19.2	38	N	N	1	2	N	1	2	X	N	2	X	X
19.2	40	N	N	1	2	N	1	2	X	N	2	X	X
19.2	42	N	N	1	2	N	1	2	X	N	2	X	X
19.2	44	N	N	1	2	N	1	2	X	N	2	X	X
19.2	46	N	N	1	2	N	1	2	X	N	2	X	X
19.2	48	N	N	1	2	N	1	2	X	N	2	X	X
19.2	50	N	N	1	2	N	1	2	X	N	2	X	X
19.2	52	N	N	1	2	N	1	2	X	N	2	X	X
19.2	54	N	N	1	2	N	1	2	X	N	2	X	X
19.2	56	N	N	1	2	N	1	2	X	N	2	X	X
19.2	58	N	N	1	2	N	1	2	X	N	2	X	X
19.2	60	N	N	1	2	N	1	2	X	N	2	X	X
24	28	N	N	1	2	N	1	2	X	N	2	X	X
24	30	N	N	1	2	N	1	2	X	N	2	X	X
24	32	N	N	1	2	N	1	2	X	N	2	X	X
24	34	N	N	1	2	N	1	2	X	N	2	X	X
24	36	N	N	1	2	N	1	2	X	N	2	X	X
24	38	N	N	1	2	N	1	2	X	N	2	X	X
24	40	N	N	1	2	N	1	2	X	N	2	X	X
24	42	N	N	1	2	N	1	2	X	N	2	X	X
24	44	N	N	1	2	N	1	2	X	N	2	X	X
24	46	N	N	1	2	N	1	2	X	N	2	X	X
24	48	N	N	1	2	N	1	2	X	N	2	X	X
24	50	N	N	1	2	N	1	2	X	N	2	X	X
24	52	N	N	1	2	N	1	2	X	N	2	X	X
24	54	N	N	1	2	N	1	2	X	N	2	X	X
24	56	N	N	1	2	N	1	2	X	N	2	X	X
24	58	N	N	1	2	N	1	2	X	N	2	X	X
24	60	N	N	1	2	N	1	2	X	N	2	X	X

1. N = No reinforcement required.
2. 1 = NI reinforced with 3/4" wood structural panel on one side only.
3. 2 = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
4. X = Top or deeper joist or closer spacing.
5. Maximum design load shall be: 15 psf roof dead load, 65 psf floor total load, and 80 psf live load. Wall load is based on 30" o.c. maximum width window or door openings.
6. For larger openings, or multiple 30" o.c. openings spaced less than 6'-0" o.c., additional joists beneath the opening's scribe shall 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 1/480. Use 1/2" 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 or if a truss is used.
9. Confirmed joists supporting girder trusses or roof beams may require additional reinforcing.

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

5a) SHEATHING REINFORCEMENT

Provide full depth blocking between joists over support (not shown)

12" minimum length of sheathing reinforcement

Nail reinforcement to top and bottom flange (3" o.c. offset opposite face nailing by 3" when using reinforcement on both sides of I-joist)

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-joist to plate at all supports per detail 1b. Verify reinforced I-joist capacity.

5b) SET-BACK DETAIL

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

5" max.

Attach joist to plate per detail 1b

5c) SET-BACK CONNECTION

Vertical solid sawn blocks (2x6 S&S No. 2 or better) nailed through joist web and web of girder using 2-1/2" nails. Alternate for opposite side.

Nail joist end using 3" nails, toe-nail at top and bottom flanges.

Hanger may be used in lieu of solid sawn blocks.

FIGURE 5 (continued)

See table below for NI reinforcement requirements of cantilever.

Roof truss span

2'-0" maximum cantilever

13'-0" maximum

For hip roofs with the joists running parallel to the cantilevered floor joists, the I-joist reinforcement requirements for a span of 26' shall be permitted to be used.

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST DEPTH (in.)	ROOF TRUSS SPAN (ft)	ROOF LOADING (UNFACTORED)				ROOF LOADING (UNFACTORED)				ROOF LOADING (UNFACTORED)			
		JOIST SPACING (in.)				JOIST SPACING (in.)				JOIST SPACING (in.)			
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
12	28	N	N	1	2	N	1	2	X	N	2	X	X
12	30	N	N	1	2	N	1	2	X	N	2	X	X
12	32	N	N	1	2	N	1	2	X	N	2	X	X
12	34	N	N	1	2	N	1	2	X	N	2	X	X
12	36	N	N	1	2	N	1	2	X	N	2	X	X
12	38	N	N	1	2	N	1	2	X	N	2	X	X
12	40	N	N	1	2	N	1	2	X	N	2	X	X
12	42	N	N	1	2	N	1	2	X	N	2	X	X
12	44	N	N	1	2	N	1	2	X	N	2	X	X
12	46	N	N	1	2	N	1	2	X	N	2	X	X
12	48	N	N	1	2	N	1	2	X	N	2	X	X
12	50	N	N	1	2	N	1	2	X	N	2	X	X
12	52	N	N	1	2	N	1	2	X	N	2	X	X
12	54	N	N	1	2	N	1	2	X	N	2	X	X
12	56	N	N	1	2	N	1	2	X	N	2	X	X
12	58	N	N	1	2	N	1	2	X	N	2	X	X
12	60	N	N	1	2	N	1	2	X	N	2	X	X
16	28	N	N	1	2	N	1	2	X	N	2	X	X
16	30	N	N	1	2	N	1	2	X	N	2	X	X
16	32	N	N	1	2	N	1	2	X	N	2	X	X
16	34	N	N	1	2	N	1	2	X	N	2	X	X
16	36	N	N	1	2	N	1	2	X	N	2	X	X
16	38	N	N	1	2	N	1	2	X	N	2	X	X
16	40	N	N	1	2	N	1	2	X	N	2	X	X
16	42	N	N	1	2	N	1	2	X	N	2	X	X
16	44	N	N	1	2	N	1	2	X	N	2	X	X
16	46	N	N	1	2	N	1	2	X	N	2	X	X
16	48	N	N	1	2	N	1	2	X	N	2	X	X
16	50	N	N	1	2	N	1	2	X	N	2	X	X
16	52	N	N	1	2	N	1	2	X	N	2	X	X
16	54	N	N	1	2	N	1	2	X	N	2	X	X
16	56	N	N	1	2	N	1	2	X	N	2	X	X
16	58	N	N	1	2	N	1	2	X	N	2	X	X
16	60	N	N	1	2	N	1	2	X	N	2	X	X
19.2	28	N	N	1	2	N	1	2	X	N	2	X	X
19.2	30	N	N	1	2	N	1	2	X	N	2	X	X
19.2	32	N	N	1	2	N	1	2	X	N	2	X	X
19.2	34	N	N	1	2	N	1	2	X	N	2	X	X
19.2	36	N	N	1	2	N	1	2	X	N	2	X	X
19.2	38	N	N	1	2	N	1	2	X	N	2	X	X
19.2	40	N	N	1	2	N	1	2	X	N	2	X	X
19.2	42	N	N	1	2	N	1	2	X	N	2	X	X
19.2	44	N	N	1	2	N	1	2	X	N	2	X	X
19.2	46	N	N	1	2	N	1	2	X	N	2	X	X
19.2	48	N	N	1	2	N	1	2	X	N	2	X	X
19.2	50	N	N	1	2	N	1	2	X	N	2	X	X
19.2	52	N	N	1	2	N	1	2	X	N	2	X	X
19.2	54	N	N	1	2	N	1	2	X	N	2	X	X
19.2	56	N	N	1	2	N	1	2	X	N	2	X	X
19.2	58	N	N	1	2	N	1	2	X	N	2	X	X
19.2	60	N	N	1	2	N	1	2	X	N	2	X	



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

WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

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

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

TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS

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

Joist Depth	Joist Series	Minimum Distance from Inside Face of Any Support to Centre of Hole (ft. - in.)														
		Round Hole Diameter (in.)														
		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"	NL-20	0-7 1/4	1-6 1/4	2-10 1/4	4-3 1/4	5-8 1/4	6-0 1/4	---	---	---	---	---	---	---	---	---
	NL-40x	0-7 1/4	1-6 1/4	3-0 1/4	4-4 1/4	5-0 1/4	6-4 1/4	---	---	---	---	---	---	---	---	---
	NL-60	1-3 1/4	2-6 1/4	4-0 1/4	5-4 1/4	6-0 1/4	7-0 1/4	7-5 1/4	---	---	---	---	---	---	---	---
	NL-70	2-0 1/4	3-4 1/4	4-0 1/4	5-4 1/4	6-0 1/4	7-0 1/4	8-0 1/4	---	---	---	---	---	---	---	---
	NL-80	2-3 1/4	3-6 1/4	5-0 1/4	6-4 1/4	7-0 1/4	8-0 1/4	9-0 1/4	---	---	---	---	---	---	---	---
11-7/8"	NL-20	0-7 1/4	0-8 1/4	1-0 1/4	2-4 1/4	3-8 1/4	4-0 1/4	5-0 1/4	6-4 1/4	7-0 1/4	---	---	---	---	---	---
	NL-40x	0-7 1/4	0-8 1/4	1-3 1/4	2-8 1/4	4-0 1/4	4-4 1/4	5-0 1/4	7-0 1/4	8-4 1/4	---	---	---	---	---	---
	NL-60	0-7 1/4	1-8 1/4	3-0 1/4	4-8 1/4	5-8 1/4	6-0 1/4	7-0 1/4	8-10 1/4	10-0 1/4	---	---	---	---	---	---
	NL-70	1-3 1/4	2-6 1/4	4-0 1/4	5-4 1/4	6-0 1/4	7-0 1/4	8-0 1/4	10-0 1/4	11-2 1/4	---	---	---	---	---	---
	NL-80	1-6 1/4	2-10 1/4	4-0 1/4	5-4 1/4	6-0 1/4	7-0 1/4	8-0 1/4	10-3 1/4	11-4 1/4	---	---	---	---	---	---
14"	NL-20	0-7 1/4	0-8 1/4	1-5 1/4	3-2 1/4	4-10 1/4	5-4 1/4	6-0 1/4	8-9 1/4	10-2 1/4	---	---	---	---	---	---
	NL-40x	0-7 1/4	0-8 1/4	0-9 1/4	2-5 1/4	4-4 1/4	4-9 1/4	6-3 1/4	---	---	---	---	---	---	---	---
	NL-60	0-7 1/4	0-8 1/4	1-8 1/4	3-0 1/4	4-3 1/4	4-8 1/4	5-8 1/4	7-2 1/4	8-0 1/4	8-8 1/4	10-4 1/4	11-9 1/4	---	---	---
	NL-70	0-8 1/4	1-10 1/4	3-4 1/4	4-5 1/4	5-10 1/4	6-2 1/4	7-3 1/4	8-9 1/4	10-4 1/4	12-0 1/4	13-5 1/4	---	---	---	---
	NL-80	0-10 1/4	2-0 1/4	3-4 1/4	4-9 1/4	6-2 1/4	6-5 1/4	7-6 1/4	9-0 1/4	10-6 1/4	12-4 1/4	15-9 1/4	---	---	---	---
16"	NL-20	0-7 1/4	0-8 1/4	0-10 1/4	2-5 1/4	4-0 1/4	4-5 1/4	5-9 1/4	7-5 1/4	8-8 1/4	9-4 1/4	11-4 1/4	12-11 1/4	---	---	---
	NL-40x	0-7 1/4	0-8 1/4	0-10 1/4	2-5 1/4	4-0 1/4	4-5 1/4	5-9 1/4	7-5 1/4	8-8 1/4	9-4 1/4	11-4 1/4	12-11 1/4	---	---	---
	NL-60	0-7 1/4	0-8 1/4	0-10 1/4	2-5 1/4	4-0 1/4	4-5 1/4	5-9 1/4	7-5 1/4	8-8 1/4	9-4 1/4	11-4 1/4	12-11 1/4	---	---	---
	NL-70	0-7 1/4	0-8 1/4	0-10 1/4	2-5 1/4	4-0 1/4	4-5 1/4	5-9 1/4	7-5 1/4	8-8 1/4	9-4 1/4	11-4 1/4	12-11 1/4	---	---	---
	NL-80	0-7 1/4	0-8 1/4	0-10 1/4	2-5 1/4	4-0 1/4	4-5 1/4	5-9 1/4	7-5 1/4	8-8 1/4	9-4 1/4	11-4 1/4	12-11 1/4	---	---	---

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

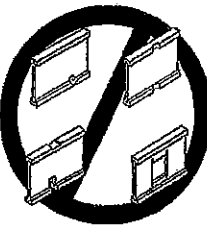
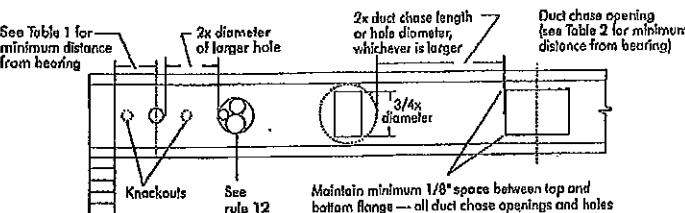
TABLE 2
DUCT CHASE OPENING SIZES AND LOCATIONS

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

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

FIGURE 7
FIELD-CUT HOLE LOCATOR



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

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

Holes in webs should be cut with a sharp saw.

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

SAFETY AND CONSTRUCTION PRECAUTIONS



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



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

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

AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

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

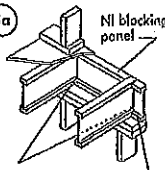
Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines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



PRODUCT WARRANTY

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

Furthermore, Chantiers Chibougamau 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.

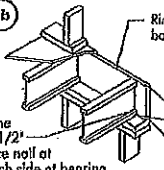


Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
Ni Joists	3,300

*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-joist 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	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" Rim Board Plus	3,000

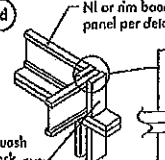
*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

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

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

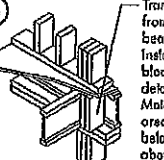
To avoid splitting flange, start nails at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate.

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

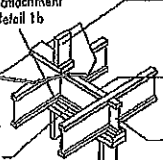


Pair of Squash Blocks	Maximum Factored Vertical Load per Pair of Squash Blocks (lbs)
2x Lumber	5,500
1-1/8" Rim Board Plus	4,900

Provide lateral bracing per detail 1a or 1b



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



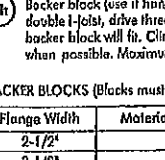
Joist attachment per detail 1b

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

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

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

Ni blocking panel per detail 1a



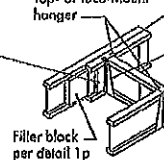
Backer block (use if hanger load exceeds 360 lbs). Before installing a backer block to a double I-joist, drive three additional 3" nails through the webs and filler block where the backer block will fit. Clinch install backer right to top flange. Use twelve 3" nails, clinched when possible. Maximum factored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

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

Flange Width	Material Thickness Required*	Minimum Depth**
2-1/2"	1"	5-1/2"
3-1/2"	1-1/4"	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-O325 or CAN/CSA-O437 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".



Top- or face-mount hanger

Double I-joist header

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

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

NORDIC STRUCTURES

COMPANY
Feb. 19, 2020 10:40

PROJECT
J1 2ND FLOOR ABOVE GARAGE.wwb

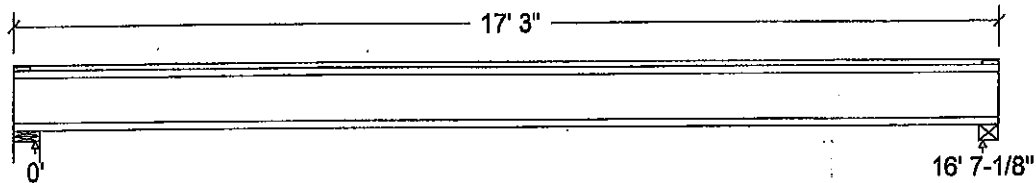
Design Check Calculation Sheet

Nordic Sizer - Canada 7.2

Loads:

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

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



Unfactored:			
Dead	166		166
Live	332		332
Factored:			
Total	705		705
Bearing:			
Capacity			
Joist	2336		2336
Support	9724		-
Des ratio			
Joist	0.30		0.30
Support	0.07		-
Load case	#2		#2
Length	5-1/2		4-1/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	769		-
Kzcp sup	-		-

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

Nordic Joist 11-7/8" NI-40x Floor joist @ 12" o.c.

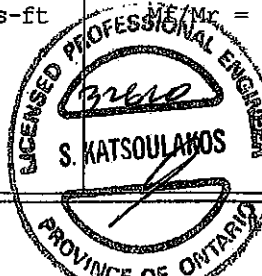
Supports: 1 - Lumber Wall, No.1/No.2; 2 - Steel Beam, W;

Total length: 17' 3"; Clear span: 16' 5-3/8"; 5/8" nailed and glued OSB sheathing

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	Vf = 705	Vr = 2336	lbs	Vf/Vr = 0.30
Moment (+)	Mf = 2926	Mr = 6255	lbs-ft	Mf/Mr = 0.47
Perm. Defl'n	0.09 = < L/999	0.55 = L/360	in	0.16
Live Defl'n	0.18 = < L/999	0.41 = L/480	in	0.43
Total Defl'n	0.27 = L/741	0.83 = L/240	in	0.32
Bare Defl'n	0.21 = L/970	0.55 = L/360	in	0.37
Vibration	Lmax = 16'-7.1	Lv = 18'-3.6	ft	0.91
Defl'n	= 0.028	= 0.038	in	0.74



NO. 5476-20
STRUCTURAL
COMPONENT ONLY

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	-	-	-	-	#2
Mr+	6255	1.00	1.00	-	1.000	-	-	-	#2
EI	371.1 million	-	-	-	-	-	-	-	#2

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L

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

Deflection: LC #1 = 1.0D (permanent)

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

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

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

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

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

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

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

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

CALCULATIONS:E_{ieff} = 432.91 lb-in² K = 6.18e06 lbs

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

CONFORMS TO OBC 2012

AMENDED 2020

Design Notes:

1. WoodWorks analysis and design are in accordance with the 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.



OWG NO. YAM5416-20
STRUCTURAL
COMPONENT ONLY



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Dropped Beams\B12 DR(i2764) (Dropped Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

February 19, 2020 10:08:06

Build 7239

Job name:

File name: VALLEYCREEK 4 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Dropped Beams\B12 DR(i2764)

City, Province, Postal Code: WATERDOWN

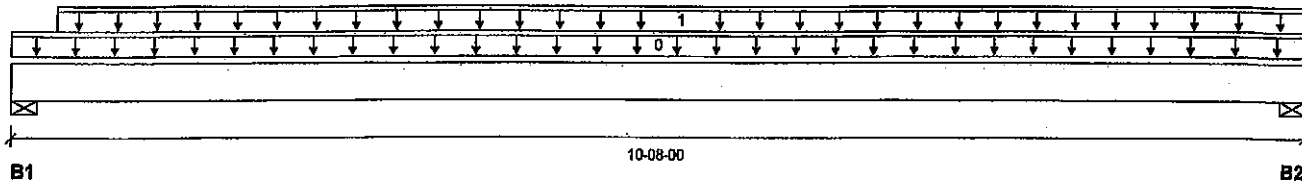
Specifier:

Customer:

Designer: AJ

Code reports: CCMC 12472-R

Company:



Total Horizontal Product Length = 10-08-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	3214 / 0	1685 / 0		
B2, 4"	3596 / 0	1876 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-08-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-04-08	10-08-00	Top	662	331			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	17365 ft-lbs	36222 ft-lbs	47.9%	1	05-00-08
End Shear	6320 lbs	17356 lbs	36.4%	1	01-01-08
Total Load Deflection	L/403 (0.302")	n/a	59.6%	4	05-03-11
Live Load Deflection	L/613 (0.198")	n/a	58.7%	5	05-03-11
Max Defl.	0.302"	n/a	n/a	4	05-03-11
Span / Depth	12.8				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 5-1/4"	6928 lbs	24.7%	27.0%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 5-1/4"	7738 lbs	27.6%	30.2%	Spruce-Pine-Fir

Notes

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

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

Calculations assume unbraced length of Top: 00-03-02, Bottom: 00-03-02.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

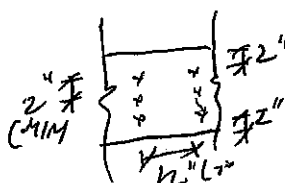
CONFORMS TO OBC 2012

AMENDED 2020

Disclosure

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

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



PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 12" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS. STAGGER NAILS 6" BETWEEN PLYS.



DWG NO. TAM 5485-20
STRUCTURAL COMPONENT ONLY



Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

PASSED

2ND FLR FRAMING\Flush Beams\B10(i2802) (Flush Beam)

Dry | 1 span | No cant.

February 19, 2020 10:08:06

BC CALC® Member Report

Build 7239

Job name:

File name: VALLEYCREEK 4 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B10(i2802)

City, Province, Postal Code: WATERDOWN

Specifier:

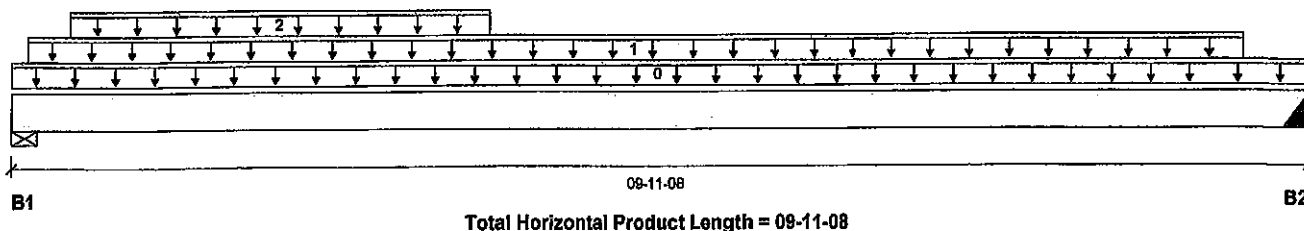
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/2"	997 / 0	531 / 0		
B2, 2"	656 / 0	358 / 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	09-11-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-01-08	09-05-08	Top	136	68			n/a
2	STAIR	Unf. Lin. (lb/ft)	L	00-05-08	03-08-03	Top	120	60			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4082 ft-lbs	17696 ft-lbs	23.1%	1	04-09-08
End Shear	1640 lbs	7232 lbs	22.7%	1	01-05-06
Total Load Deflection	L/999 (0.095")	n/a	n/a	4	04-11-08
Live Load Deflection	L/999 (0.062")	n/a	n/a	5	04-11-08
Max Defl.	0.095"	n/a	n/a	4	04-11-08
Span / Depth	9.6				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 5-1/2" x 1-3/4"	2158 lbs	36.5%	18.4%	Spruce-Pine-Fir
B2	Hanger 2" x 1-3/4"	1433 lbs	n/a	33.6%	HUS1.81/10

Cautions

Header for the hanger HUS1.81/10 at B2 is a Double 1-3/4" x 11-7/8" 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

AMENDED 2020



DWG NO. TAM 5486-20
STRUCTURAL
COMPONENT ONLY

Disclosure

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

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



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

PASSED

2ND FLR FRAMING\Flush Beams\B8(12812) (Flush Beam)

Dry | 2 spans | No cant.

February 19, 2020 10:08:06

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code: WATERDOWN

Customer:

Code reports: CCMC 12472-R

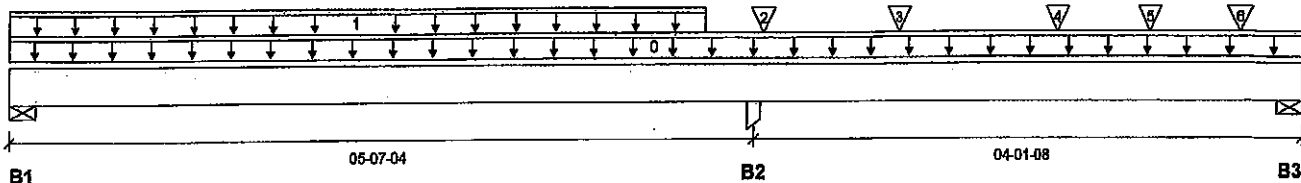
File name: VALLEYCREEK 4 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B8(12812)

Specifier:

Designer: AJ

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1411 / 102	682 / 0		
B2, 3-1/2"	3338 / 0	1807 / 0		
B3, 2-3/4"	1097 / 241	448 / 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	09-08-12	Top	1.00	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	05-03-00	Top	482	240			n/a
2	-	Conc. Pt. (lbs)	L	05-08-01	05-08-01	Top	861	500			n/a
3	-	Conc. Pt. (lbs)	L	06-08-11	06-08-11	Top	708	354			n/a
4	-	Conc. Pt. (lbs)	L	07-11-00	07-11-00	Top	714	356			n/a
5	J2(12855)	Conc. Pt. (lbs)	L	08-07-08	08-07-08	Top	349	174			n/a
6	J1(12838)	Conc. Pt. (lbs)	L	09-03-06	09-03-06	Top	345	173			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2537 ft-lbs	35392 ft-lbs	7.2%	2	02-09-06
Neg. Moment	-3232 ft-lbs	-35392 ft-lbs	9.1%	1	05-07-04
End Shear	1704 lbs	14464 lbs	11.8%	2	01-03-14
Cont. Shear	2773 lbs	14464 lbs	19.2%	1	06-08-14
Total Load Deflection	L/999 (0.008")	n/a	n/a	9	02-08-01
Live Load Deflection	L/999 (0.006")	n/a	n/a	12	02-09-06
Total Neg. Defl.	L/999 (-0.001")	n/a	n/a	9	06-10-10
Max Defl.	0.008"	n/a	n/a	9	02-08-01
Span / Depth	5.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	2970 lbs	34.5%	17.4%	Spruce-Pine-Fir
B2	Column 3-1/2" x 3-1/2"	7266 lbs	73.0%	48.6%	Unspecified
B3	Wall/Plate 2-3/4" x 3-1/2"	2206 lbs	37.3%	18.8%	Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced.

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

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

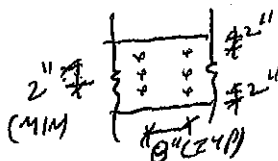
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020

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



DWG NO. TAM 5487-20
STRUCTURAL
COMPONENT ONLY

Disclosure

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



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP

2ND FLR FRAMING\Flush Beams\B9(i2771) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

February 19, 2020 10:08:06

Build 7239

Job name:

File name: VALLEYCREEK 4 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B9(i2771)

City, Province, Postal Code: WATERDOWN

Specifier:

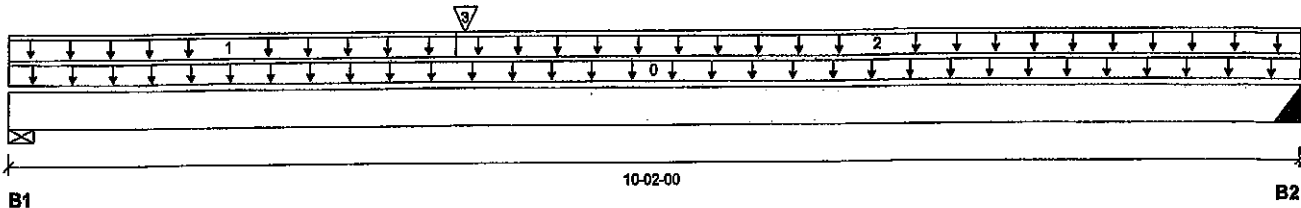
Customer:

Designer: AJ

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 10-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	583 / 0	363 / 0		
B2, 4"	419 / 0	281 / 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	10-02-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-06-04	Top	18	9			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	03-06-04	10-02-00	Top	41	20			n/a
3	B10(i2802)	Conc. Pt. (lbs)	L	03-07-02	03-07-02	Top	649	355			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3978 ft-lbs	35392 ft-lbs	11.2%	1	03-07-02
End Shear	1229 lbs	14464 lbs	8.5%	1	01-03-14
Total Load Deflection	L/999 (0.042")	n/a	n/a	4	04-09-14
Live Load Deflection	L/999 (0.026")	n/a	n/a	5	04-09-14
Max Defl.	0.042"	n/a	n/a	4	04-09-14
Span / Depth	9.7				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	1298 lbs	15.1%	7.6%	Spruce-Pine-Fir
B2	Hanger 4" x 3-1/2"	980 lbs	n/a	5.7%	HGUS410

Cautions

Header for the hanger HGUS410 at B2 is a Double 1-3/4" x 11-7/8" 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.

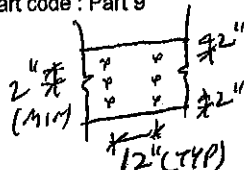
Notes

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.
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020

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



DWG NO. YAM 5468-20
STRUCTURAL
COMPONENT ONLY

Disclosure

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



Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B20(i2886) (Flush Beam)

PASSED

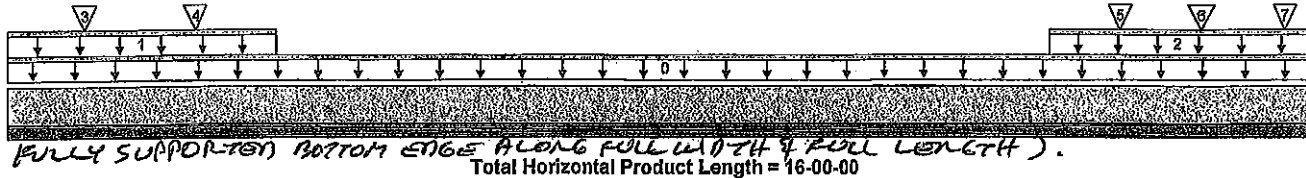
BC CALC® Member Report
Build 0

Dry | 1 span | No cant.

October 27, 2020 17:08:32

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

File name: VALLEYCREEK 4
Description: 2ND FLR FRAMING\Flush Beams\B20(i2886)
Specifier:
Designer: AJ
Company:



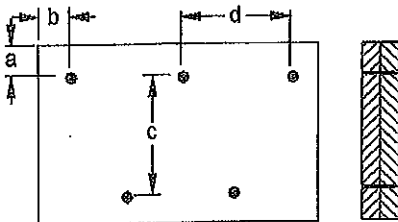
Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	16-00-00	Top	1.00	0.65	1.00	1.15	
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-03-00	Top	6	3			n/a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	12-09-00	16-00-00	Top	6	3			n/a
3	J2(i2907)	Conc. Pt. (lbs)	L	00-11-00	00-11-00	Top	386	193			n/a
4	J2(i2776)	Conc. Pt. (lbs)	L	02-03-00	02-03-00	Top	347	174			n/a
5	J2(i2814)	Conc. Pt. (lbs)	L	13-07-08	13-07-08	Top	267	133			n/a
6	J2(i2863)	Conc. Pt. (lbs)	L	14-07-08	14-07-08	Top	289	145			n/a
7	J2(i2855)	Conc. Pt. (lbs)	L	15-07-08	15-07-08	Top	253	127			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Dist. Load	13.28 lb/ft	57645.00 lb/ft	n/a		
Conc. Load	820 lbs	16813 lbs	4.9%		

Connection Diagram: Full Length of Member



a minimum = 2"
b minimum = 3"
c = 7-7/8"
d = 8"

Calculated Side Load = 410.1 lb/ft
Connectors are: 16d GRN or Nails

3-1/2" ARDOX SPIRAL



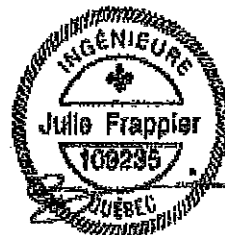
CONFORMS TO UBC 2012
AMENDED 2020

UBC NO. 14824-20
STRUCTURAL
COMPONENT ONLY

Disclosure

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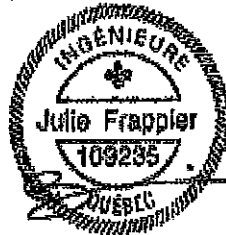
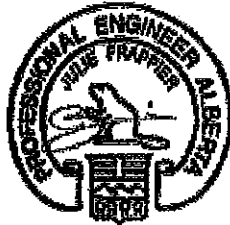
Maximum Floor Spans

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

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

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

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



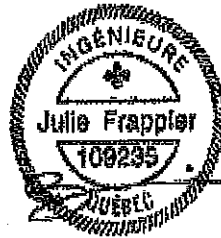
Maximum Floor Spans

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

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

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

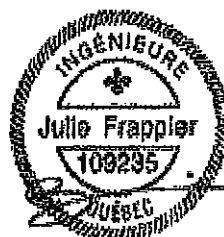
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-9"	17'-5"	16'-5"	15'-10"	15'-2"
	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-6"	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'-1"	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'-5"	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.

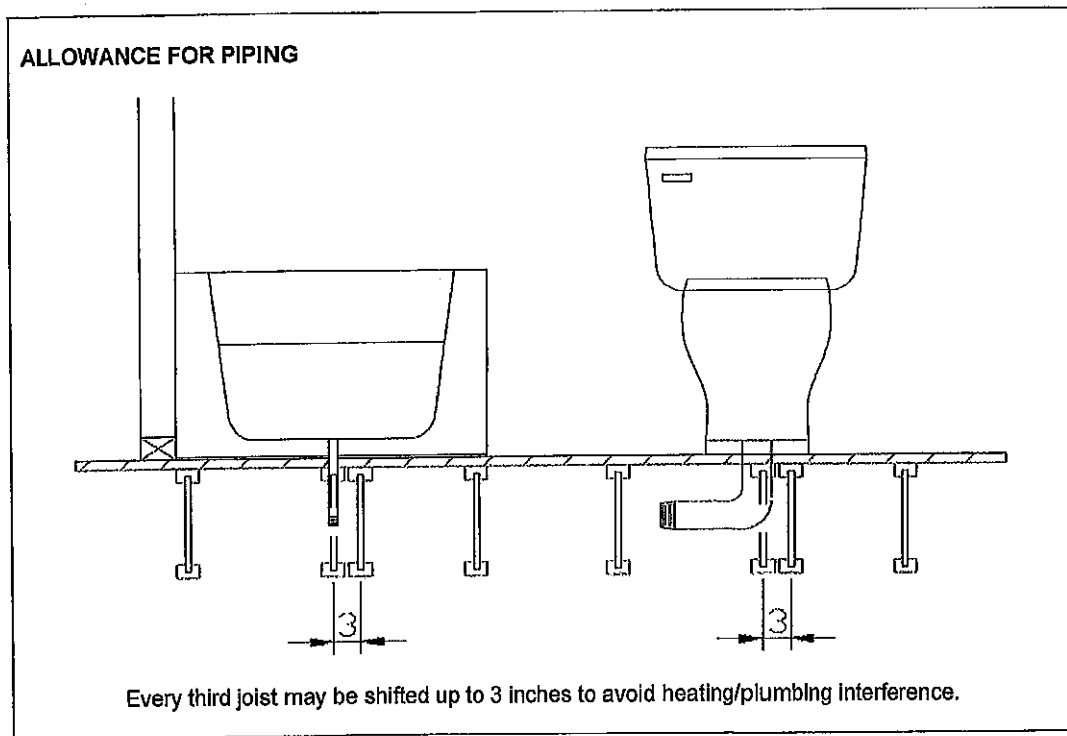


Allowance for Piping (Installation Notes)

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.

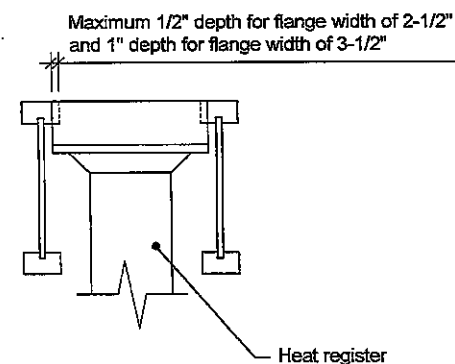
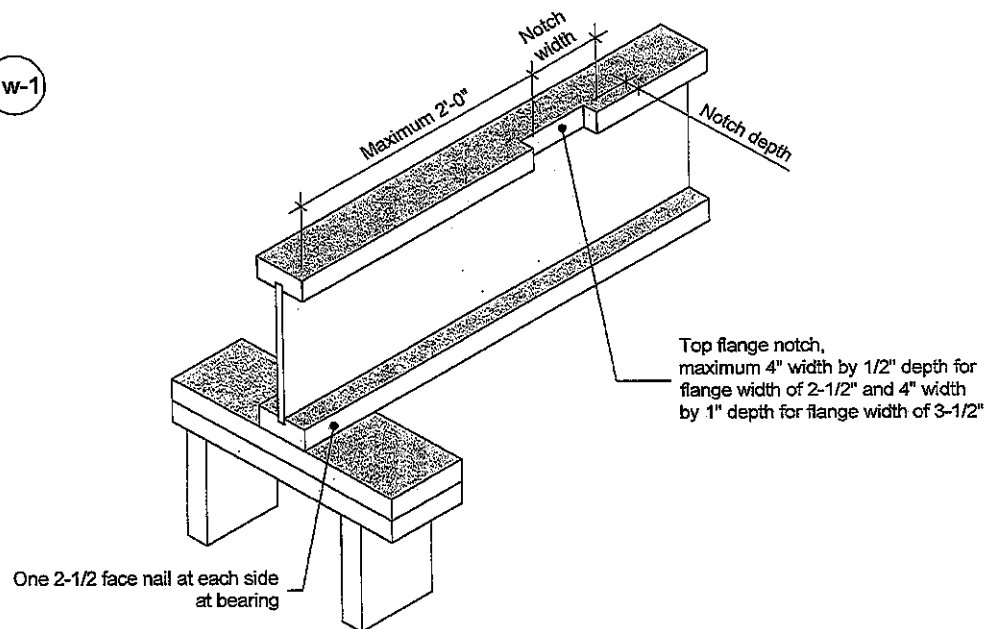
Installation of Nordic I-joists shall be as per *Nordic Joist Installation Guide for Residential Floors*. Refer to Tables 1 and 2 for maximum web hole and duct chase openings, respectively. These tables are based on the I-joists being used at their maximum spans. The minimum distance given may be reduced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



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

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1 866 817-3418
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TITLE
Notch in I-joist for Heat Register

CATEGORY
I-joist - Typical Floor Framing and Construction Details

DOCUMENT

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DATE
2018-04-10

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