

FROM PLAN DATED:

BUILDER: GREEN PARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: MOUNTAINASH 2

ELEVATION: 1

LOT:

CITY:

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

NOTES:

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

SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. **MULTIPLE SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. **CANTILEVERED JOISTS** INCLUDING **CANT' OVER BRICK** 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

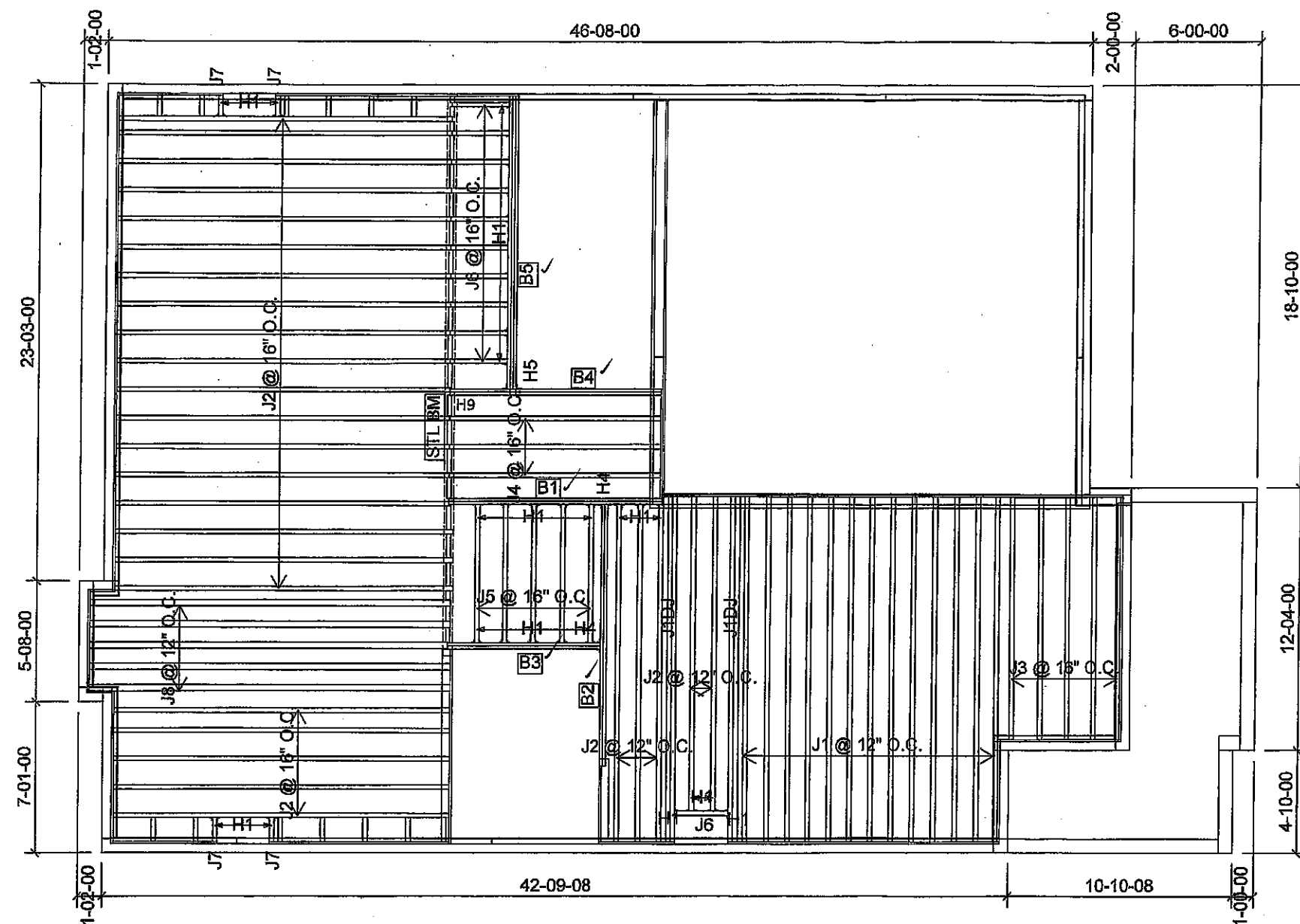
LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2020-02-07

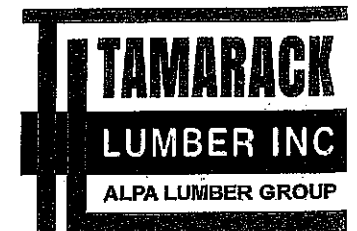
1st FLOOR



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	18-00-00	9 1/2" NI-40x	1	13	MFD
J1DJ	18-00-00	9 1/2" NI-40x	2	4	MFD
J2	16-00-00	9 1/2" NI-40x	1	28	MFD
J3	12-00-00	9 1/2" NI-40x	1	5	MFD
J4	10-00-00	9 1/2" NI-40x	1	3	MFD
J5	8-00-00	9 1/2" NI-40x	1	5	MFD
J6	4-00-00	9 1/2" NI-40x	1	11	MFD
J7	2-00-00	9 1/2" NI-40x	1	4	MFD
J8	18-00-00	9 1/2" NI-80	1	5	MFD
B2	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B5	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3	MFD
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B4	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD

Connector Summary		
Qty	Manuf	Product
13	H1	IUS2.56/9.5
2	H1	IUS2.56/9.5
10	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
2	H4	HGUS410
1	H5	HGUS5.5/10
1	H9	H2.5A*

CITY OF HAMILTON
Building Division
Permit No. 20-187720
THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE
THE OWNER IS NOT RESPONSIBLE FOR ANY CHANGES TO THE
THESE DRAWINGS AND ANY CHANGES TO THE DRAWINGS SHALL BE
THE OWNER'S RESPONSIBILITY.
Ken Smith Dec 14, 2020



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BUILDER: GREEN PARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: MOUNTAINASH 2

ELEVATION: 1

LOT:

CITY:

SALESMAN: MARIO DICIANO

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REVISION:

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DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

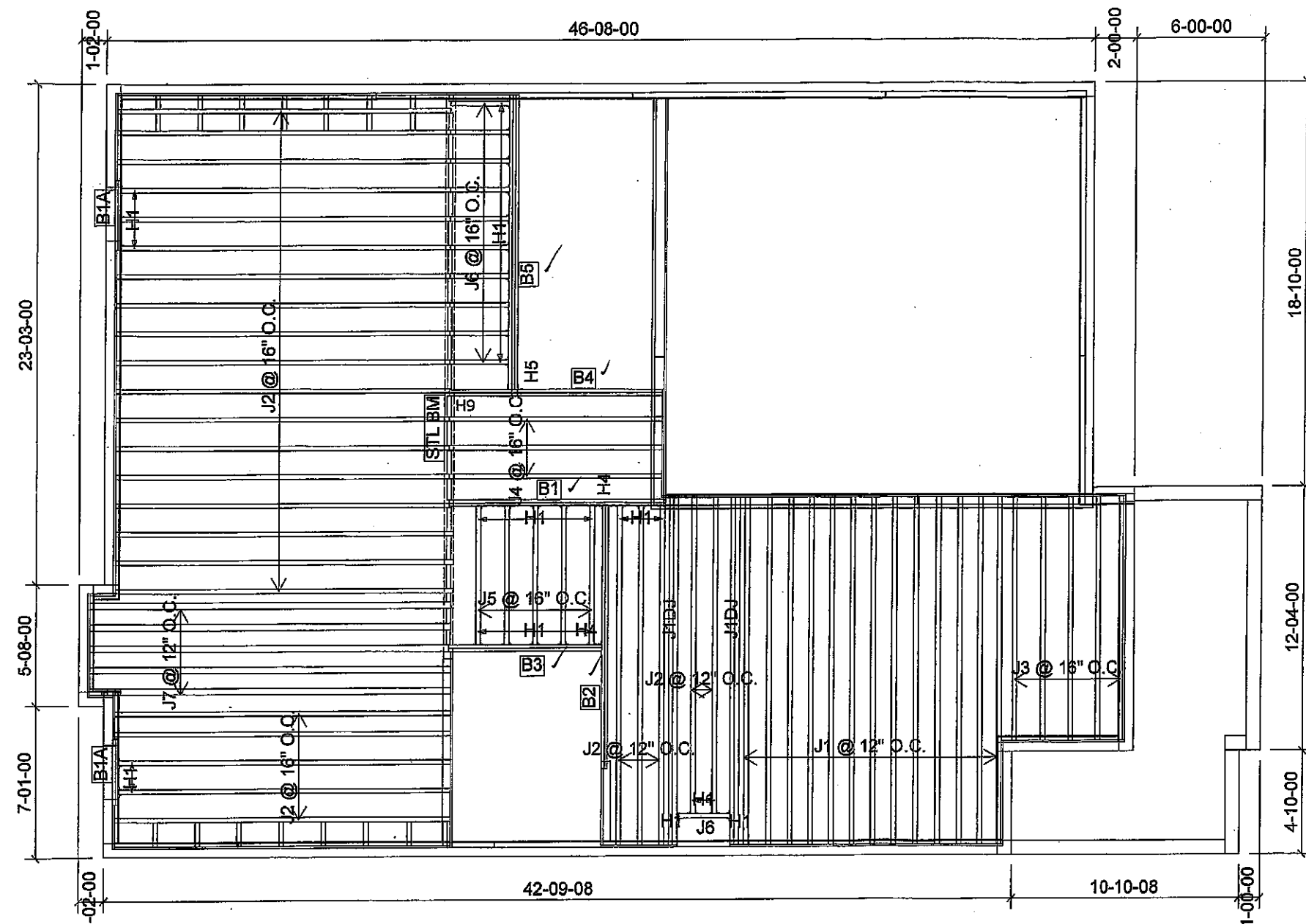
DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2020-04-15

1st FLOOR

DECK CONDITION



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	18-00-00	9 1/2" NI-40x	1	13	MFD
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J5	8-00-00	9 1/2" NI-40x	1	5	MFD
J6	4-00-00	9 1/2" NI-40x	1	11	MFD
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B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B1A	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	4	MFD

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2	H4	HGUS410
1	H5	HGUS5.5/10
1	H9	H2.5A*

CITY OF HAMILTON
Building Division

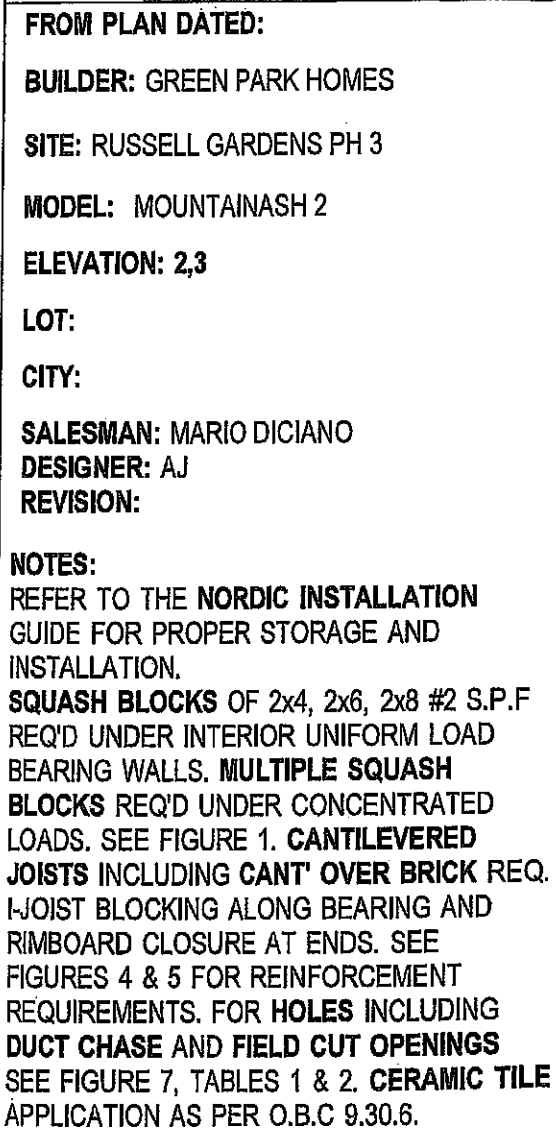
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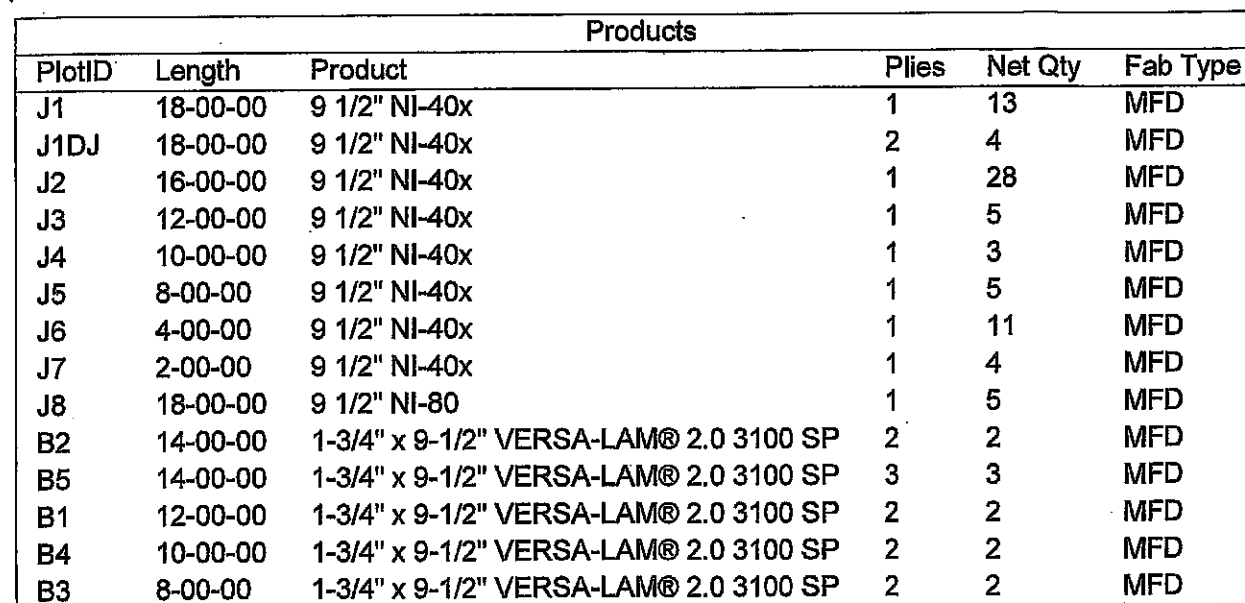
THE OWNER/ARCHITECT/CONTRACTOR SHALL COMPLY WITH
THE CITY AND PROVINCE OF ONTARIO AND ALL OTHER APPLICABLE LAW

These drawings and specifications have been reviewed by

Ken Smith Dec 14, 2020
1/2" = 1'-0" 1/8" = 1'-0" 1/16" = 1'-0"



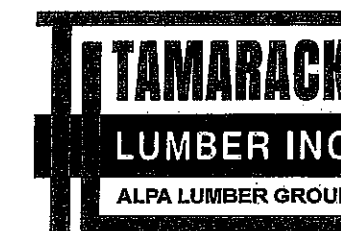
1st FLOOR



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Qty	Manuf	Product
13	H1	IUS2.56/9.5
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6	H1	IUS2.56/9.5
2	H4	HGUS410
1	H5	HGUS5.5/10
1	H9	H2.5A* CITY

Kenn Smith Dec 14, 2020

[16] F. J. Beckwith and G. L. Birkhoff	Calif.
--	--------



FROM PLAN DATED:

BUILDER: GREEN PARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: MOUNTAINASH 2

ELEVATION: 2,3

LOT:

CITY:

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

NOTES:

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LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

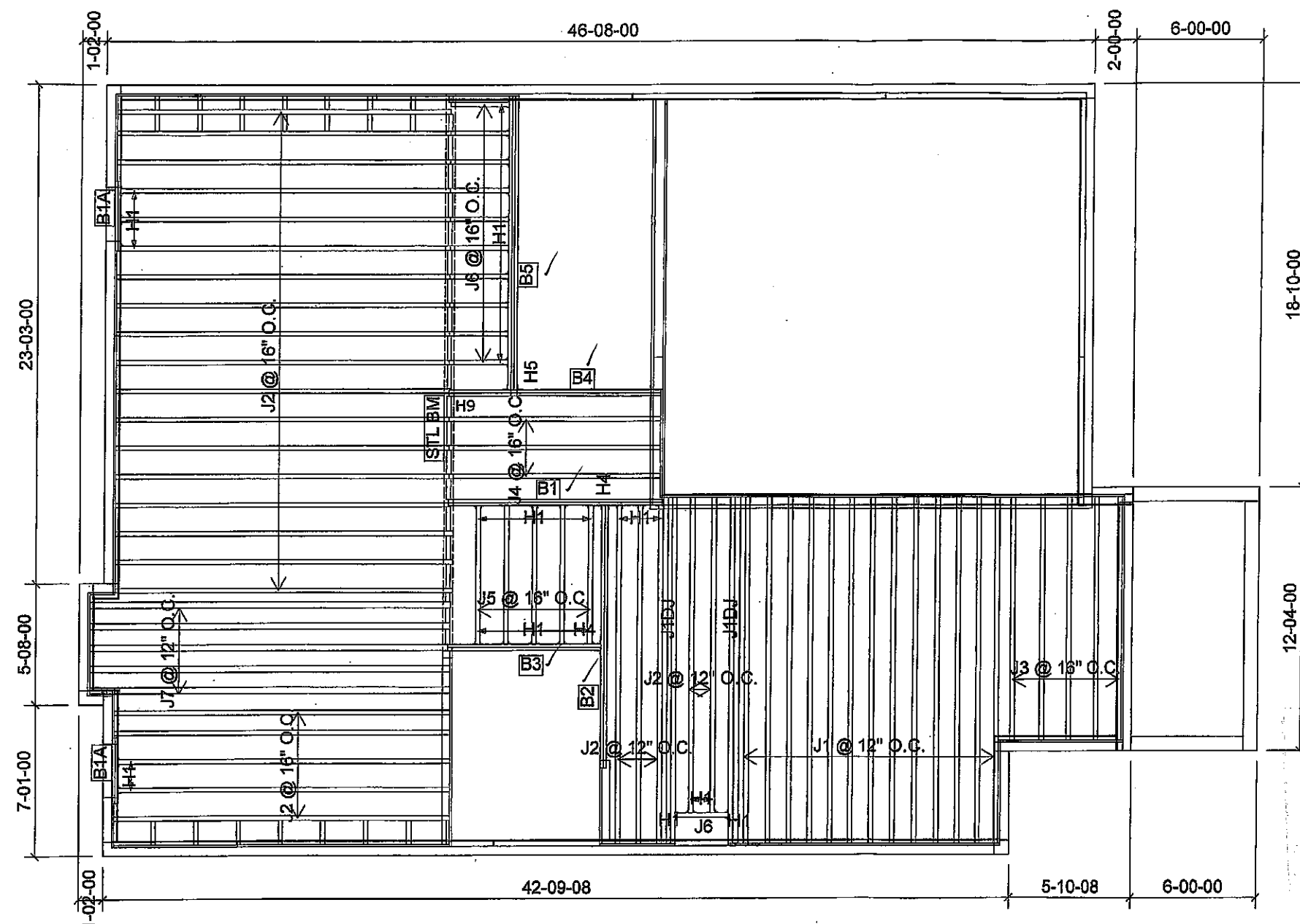
DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2020-04-15

1st FLOOR

DECK CONDITION



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
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J6	4-00-00	9 1/2" NI-40x	1	11	MFD
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2	H4	HGUS410
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1	H9	H2.5A*

CITY OF HAMILTON
Building Division

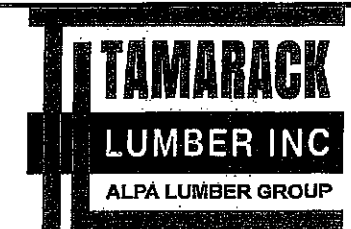
Permit No. 20-187720

THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SITE

THE OWNER/CLIENT SHALL COMPLY WITH THE APPLICABLE BUILDING CODES AND REGULATIONS

These drawings were prepared by

Ken Smith Dec 14, 2020



FROM PLAN DATED:

BUILDER: GREEN PARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: MOUNTAINASH 2

ELEVATION: 1

LOT:

CITY:

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

NOTES:

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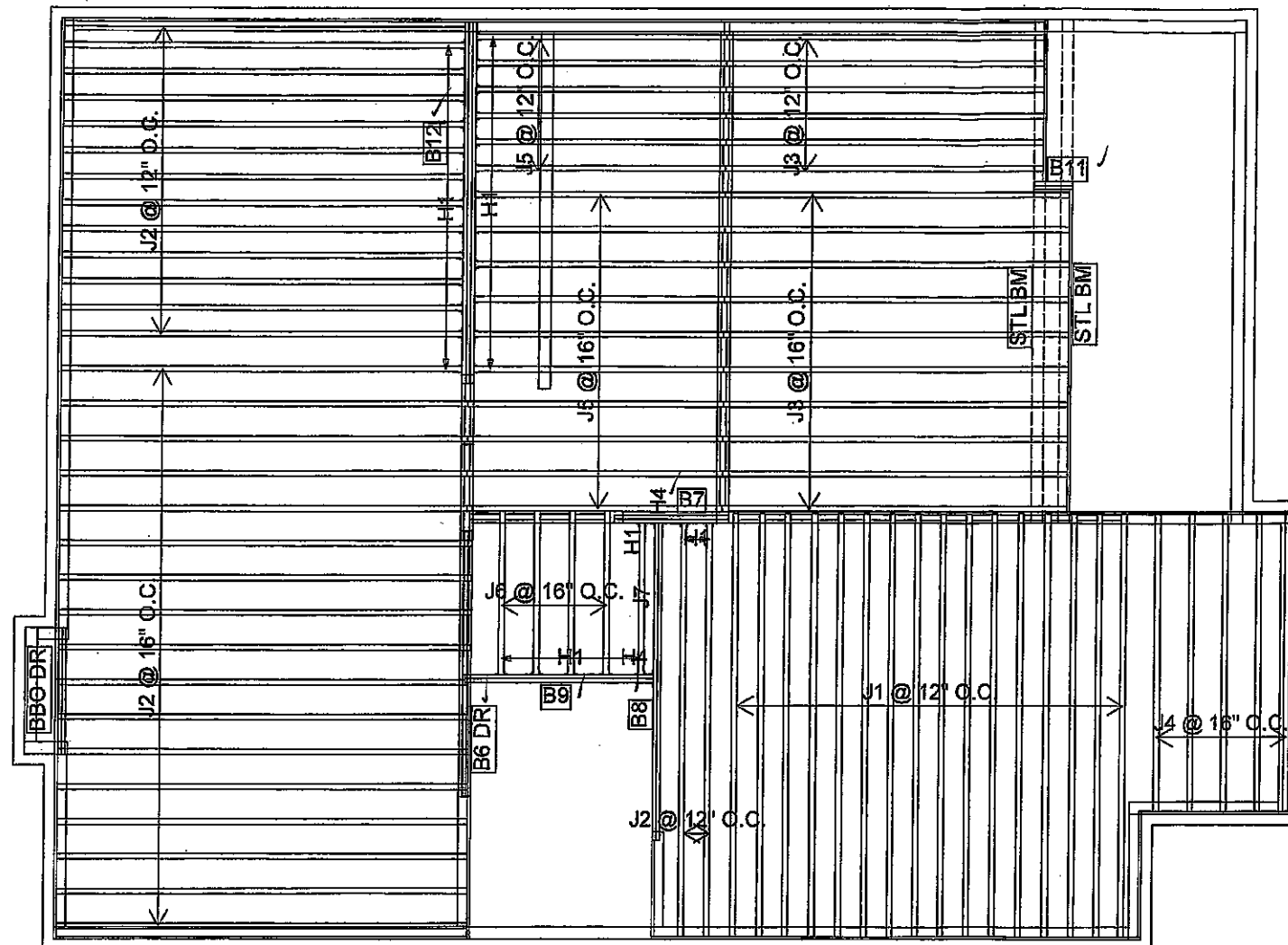
LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2020-02-07

2nd FLOOR



Products					
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	18-00-00	9 1/2" NI-40x	1	16	MFD
J2	16-00-00	9 1/2" NI-40x	1	32	MFD
J3	14-00-00	9 1/2" NI-40x	1	16	MFD
J4	12-00-00	9 1/2" NI-40x	1	5	MFD
J5	10-00-00	9 1/2" NI-40x	1	16	MFD
J6	8-00-00	9 1/2" NI-40x	1	4	MFD
J7	6-00-00	9 1/2" NI-40x	1	1	MFD
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B12	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3	MFD
B6 DR	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3	MFD
B9	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B7	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B11	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2	MFD

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

CITY OF HAMILTON
Building Division

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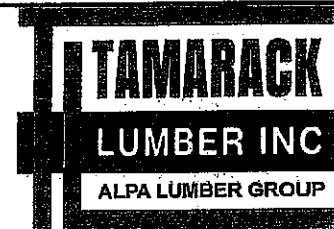
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THE OWNER AND/OR CONTRACTOR SHALL POSTIFY WITH THE CITY OF HAMILTON, ONTARIO, ALL WORKS PERFORMED IN ACCORDANCE WITH THE CITY OF HAMILTON, ONTARIO, BUILDING BY-LAW

These drawings and specifications have been reviewed by

Kem Zintl Dec 14, 2020

Drawn by: [Signature] Date: [Signature]



FROM PLAN DATED:

BUILDER: GREEN PARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: MOUNTAINASH 2

ELEVATION: 2

LOT:

CITY:

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

NOTES:

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LOADING:

DESIGN LOADS: L/480.000

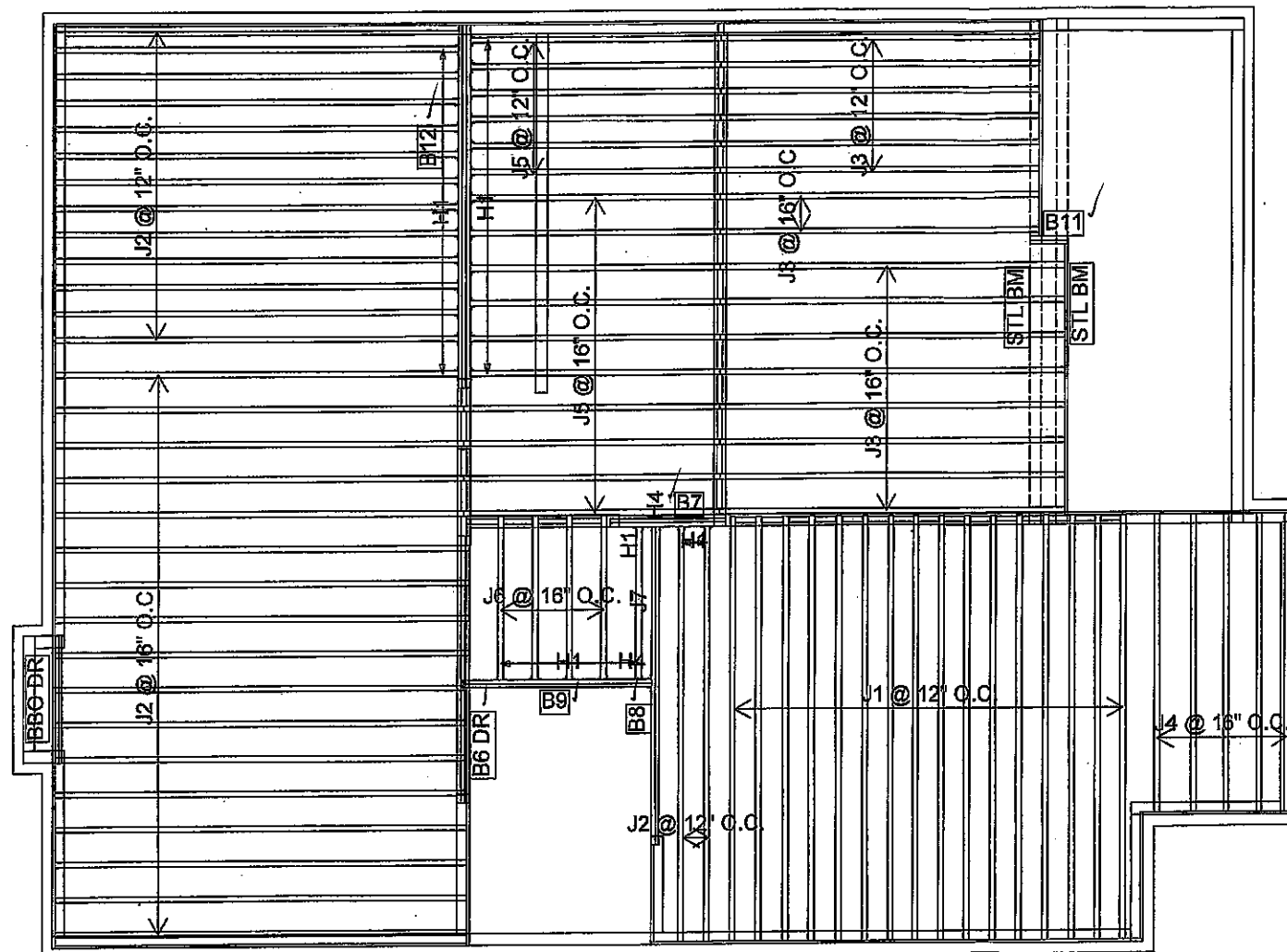
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DEAD LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2020-02-07

2nd FLOOR



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PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	18-00-00	9 1/2" NI-40x	1	16	MFD
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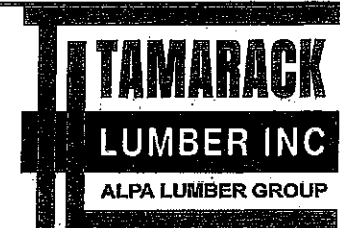
Permit No. 20-187720

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Ken Smith Dec 14, 2020
DATE



FROM PLAN DATED:

BUILDER: GREEN PARK HOMES

SITE: RUSSELL GARDENS PH 3

MODEL: MOUNTAINASH 2

ELEVATION: 3

LOT:

CITY:

SALESMAN: MARIO DICIANO

DESIGNER: AJ

REVISION:

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DESIGN LOADS: L/480.000

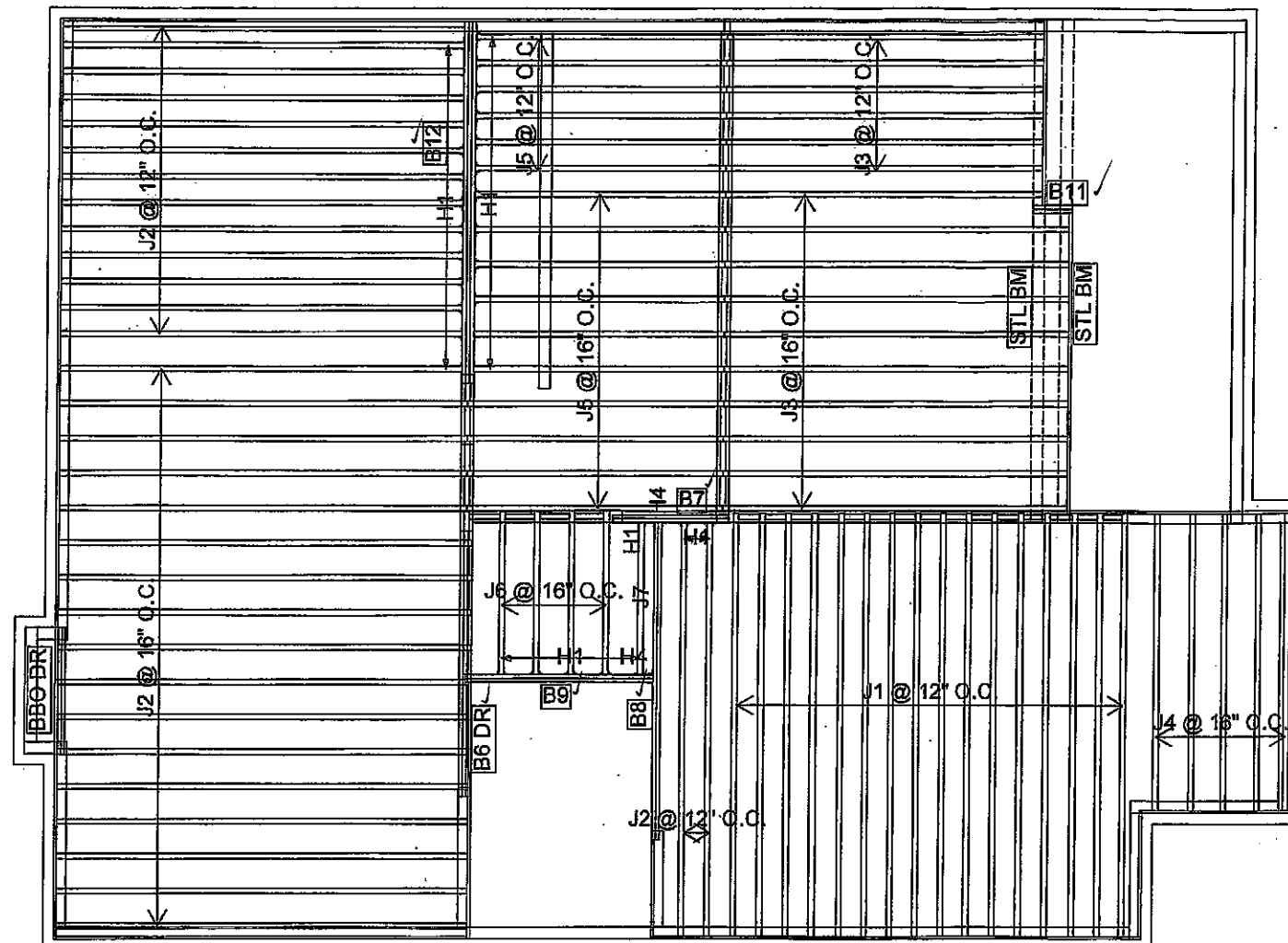
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DATE: 2020-02-07

2nd FLOOR



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Qty	Manuf	Product
8	H1	IUS2.56/9.5
25	H1	IUS2.56/9.5
2	H4	HGUS410

CITY OF LAMINGTON
Building Division

Permit No. 20-187720

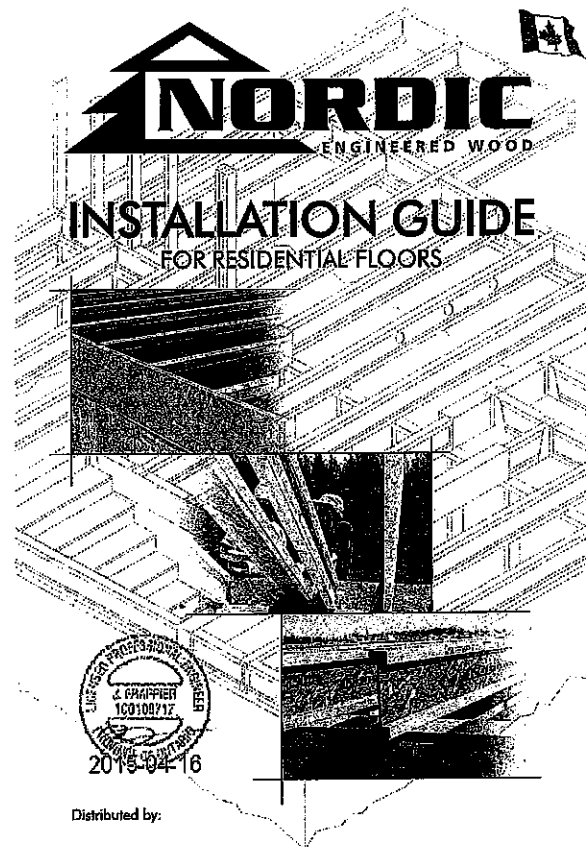
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These drawings and specifications have been prepared by

Ken Smith Dec 14, 2020

FOR CITY OF LAMINGTON



Distributed by:



SAFETY AND CONSTRUCTION PRECAUTIONS



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



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

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.

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 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.
3. 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.
4. 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.
5. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure 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.

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 floor.
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 1.5L + 1.2SD. 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 CAN/CSA-G10.6 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 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-G10.6 Standard, and NBC 2010.
7. SI units conversion: 1 inch = 25.4 mm, 1 foot = 0.305 m

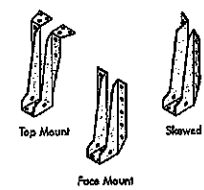
MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS

Joist Depth	Joist Series	Simple spans On centre spacing				Multiple spans On centre spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
8-1/2"	NL-20	18'1"	14'2"	13'9"	13'5"	16'5"	15'4"	14'10"	14'7"
	NL-40	16'1"	12'2"	11'9"	11'5"	14'5"	13'4"	12'10"	12'7"
	NL-60	14'1"	10'2"	9'9"	9'5"	12'5"	11'4"	10'10"	10'7"
	NL-80	12'1"	8'2"	7'9"	7'5"	10'5"	9'4"	8'10"	8'7"
11-7/8"	NL-20	18'1"	14'2"	13'9"	13'5"	16'5"	15'4"	14'10"	14'7"
	NL-40	16'1"	12'2"	11'9"	11'5"	14'5"	13'4"	12'10"	12'7"
	NL-60	14'1"	10'2"	9'9"	9'5"	12'5"	11'4"	10'10"	10'7"
	NL-80	12'1"	8'2"	7'9"	7'5"	10'5"	9'4"	8'10"	8'7"
14"	NL-20	18'1"	14'2"	13'9"	13'5"	16'5"	15'4"	14'10"	14'7"
	NL-40	16'1"	12'2"	11'9"	11'5"	14'5"	13'4"	12'10"	12'7"
	NL-60	14'1"	10'2"	9'9"	9'5"	12'5"	11'4"	10'10"	10'7"
	NL-80	12'1"	8'2"	7'9"	7'5"	10'5"	9'4"	8'10"	8'7"
16"	NL-20	18'1"	14'2"	13'9"	13'5"	16'5"	15'4"	14'10"	14'7"
	NL-40	16'1"	12'2"	11'9"	11'5"	14'5"	13'4"	12'10"	12'7"
	NL-60	14'1"	10'2"	9'9"	9'5"	12'5"	11'4"	10'10"	10'7"
	NL-80	12'1"	8'2"	7'9"	7'5"	10'5"	9'4"	8'10"	8'7"

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I-JOIST HANGERS

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

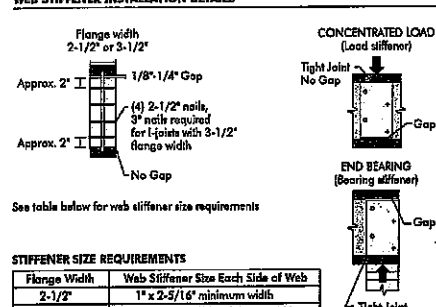


WEB STIFFENERS

RECOMMENDATIONS:

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

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS

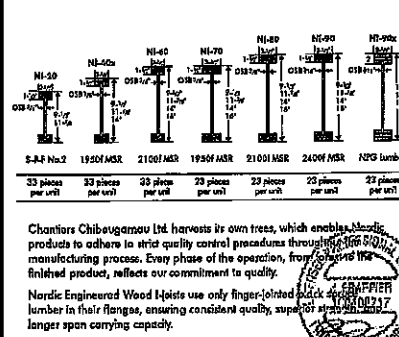


STIFFENER SIZE REQUIREMENTS

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

SI units conversion: 1 inch = 25.4 mm

NORDIC I-JOIST SERIES



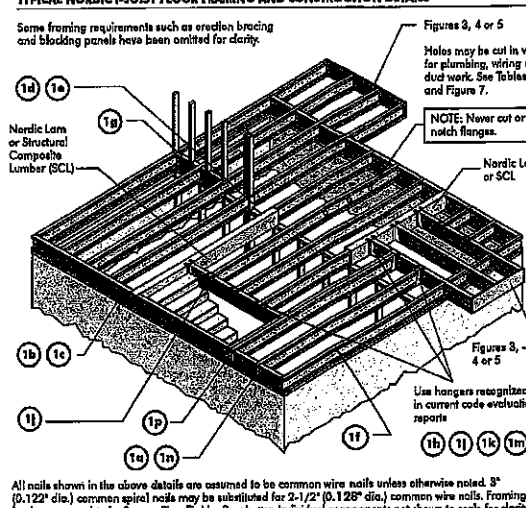
Chantiers Chibougamou Ltd. harvests its own trees, which enables Nordic products to adhere to strict quality control procedures throughout the manufacturing process. Every phase of the operation, from the selection of the raw material to the finished product, reflects our commitment to quality.

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.

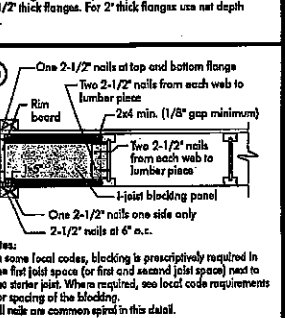
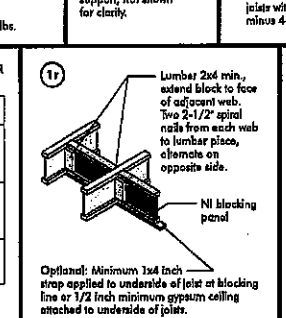
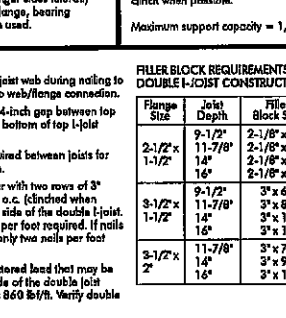
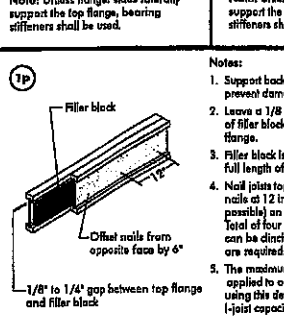
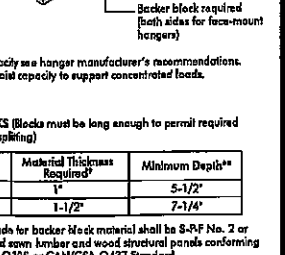
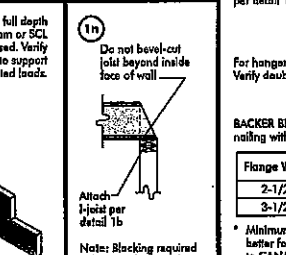
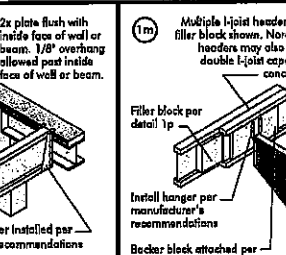
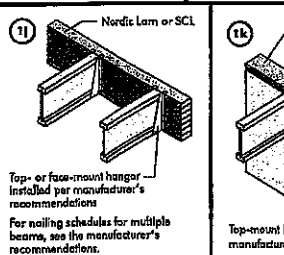
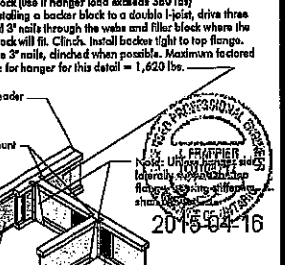
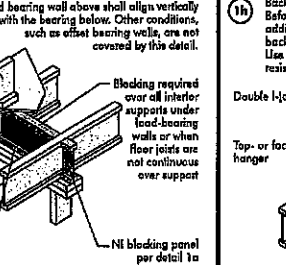
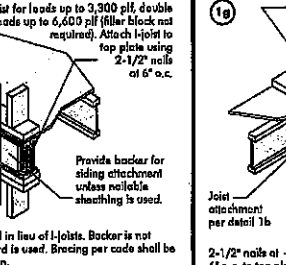
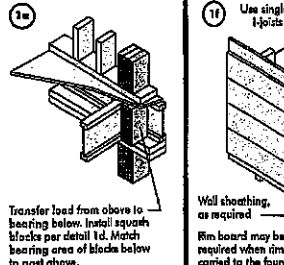
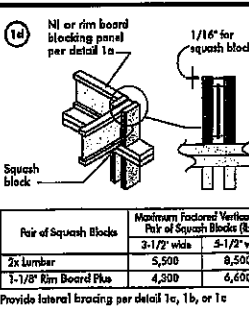
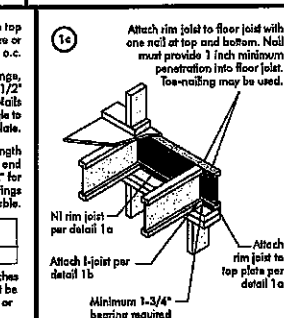
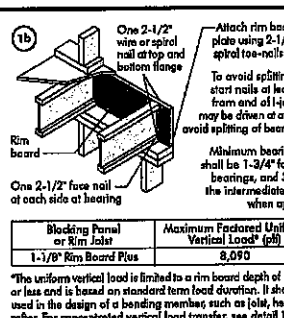
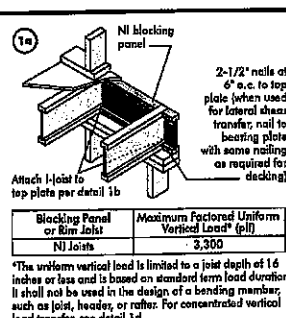
INSTALLING NORDIC I-JOISTS

1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, consult supplier.
2. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. I-joists must be anchored securely to supports before floor sheathing is attached, and supports for multiple-span I-joists must be level.
5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings.
6. When using hangers, seat I-joists firmly in hanger bottoms to minimize settlement.
7. Leave a 1/16-inch gap between the I-joist end and a header.
8. Concentrated loads greater than those that can normally be expected in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include track lighting fixtures, audio equipment and security cameras. Never suspend unusual or heavy loads from the I-joist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the I-joist webs.
9. Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with concrete or masonry.
10. Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
11. For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
12. Due to shrinkage, common framing lumber set on edge may never be used as blocking or rim boards. I-joist blocking panels or other engineered wood products – such as rim board – must be cut to fit between the I-joists, and 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 and 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



All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (10.128" dia.) common spiral nails may be substituted for 2-1/2" (6.35" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Individual components not shown to scale for clarity.



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. (skinned 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 I-joist using this detail is 860 kN/m. Verify double I-joist capacity.

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. (skinned 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 I-joist using this detail is 860 kN/m. Verify double I-joist capacity.

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. When required, use local code requirements for spacing of the blocking.
- All nails are common spiral in this detail.

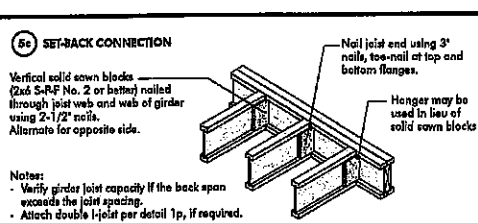
3a 1-JOIST CANTILEVER DETAIL FOR BALCONIES (No Wall Load)



1. N = No reinforcement required.
 - a. If N1 reinforced with 3/4" wood structural panel on one side only.
 - b. If N2 reinforced with 3/4" wood structural panel on both sides, or double L-joints.
 - c. If T = Ties equal panel or clear spacing.
2. Maximum design load shall be 15 psf roof dead load, 15 psf roof live load, and 0 psf wind load. Wall load is based on 3"0" maximum wall window or door openings.
3. For larger openings, or multiple 3"0" wall openings spaced less than 6'0" on center, additional joints beneath the openings' eave/s shall be provided with 3/4" wood structural panel.
4. Table 1 refers 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 10 psf, and a live load deflection limit of L/480. Live 12" o.c. requirements for larger spacing.
5. For conventional roof construction using a ridge beam, the Roof Truss Span column value is equivalent to the distance between the ridge beam and the eave/s. When the r/c is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a r/c were used.
6. Canselwood joists supporting girder trusses or roof beams may require additional nailing.



1. N = No reinforcement required.										For larger openings, or multiple 3/4" width openings spaced less than 6'-0" o.c., additional reinforcement for the openings' cripple studs may be required.										4. For conventional roof construction using a ridge beam, the roof lines span columns where it is applied in the clips between the supporting wall and the ridge beam.									
2. N1 reinforced with 3/4" wood structural members on both sides, or double L-plate. Use a clip and nail board shall be 15' or less dead load, 55 psf floor load total, and 80 psf wind load. Wind load is based on 24" exposure, 100 mph wind speed, and 100 mph gust.										3. Take clips for joists 12" to 24" o.c. that most closely match the joist size. The clips are to be used at 40' pd and dead load of 15 psf, and o.c. live load deflection limit of L/80. Use 12" o.c. live load deflection limit of L/80 spacing.										5. The roof is framed using a ridge board, and the clips are applied in the clips between the supporting walls at the ridge. The distance between the supporting walls at the ridge is to be used.									
6. Reinforced joists supporting girders, trusses or roof beams may require additional bracing or stiffening.																													



RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- FIGURE 7**
FIELD-CUT HOLE LOCATOR

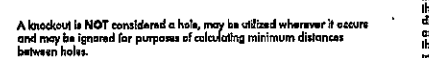


TABLE 1
LOCATION OF CIRCULAR HOLES IN JOIST WEBS
Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf

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

INSTALLING THE GLUED FLOOR SYSTEM

- ### RIM BOARD INSTALLATION DETAILS



1. Fasteners of sheathing and subflooring shall conform to the above table.
2. Staples shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/8-inch crown driven with the crown parallel to framing.
3. Floor screws shall not be less than 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 Systems, applied in accordance with the manufacturer's recommendations. If Gougeon panels with sealed surfaces and edges are to be used, use only solvent-based glues; check with manufacturer.

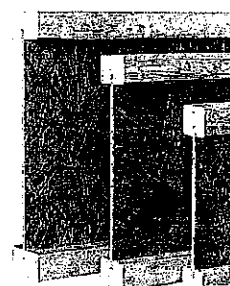
Ref.: NRC-CNRC, National Building Code of Canada 2010, Table 9.23.3.5.



PRODUCT WARRANTY

ChimneyTech Chimneysystems guarantees that, in accordance with our specifications, Herby products are free from manufacturing defects for structural and workmanship.

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





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

WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the longest side of the 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 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.)											
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"	4-8"	6-2"	8-0"	8-4"	---	---	---	---	---	---
	NI-80	2-8"	3-6"	5-0"	6-4"	8-0"	8-4"	---	---	---	---	---	---
11-7/8"	NI-20	0-7"	0-8"	1-0"	2-4"	3-8"	4-0"	5-0"	6-4"	7-9"	---	---	---
	NI-40x	0-7"	0-8"	1-3"	2-8"	4-0"	4-4"	5-5"	7-0"	8-4"	---	---	---
	NI-60	0-7"	1-8"	3-0"	4-8"	6-0"	7-3"	8-10"	10-0"	---	---	---	---
	NI-70	1-3"	2-6"	4-0"	5-4"	6-0"	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"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---
	NI-60	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---
	NI-70	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---
	NI-80	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---
16"	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"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---
	NI-60	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---
	NI-70	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---
	NI-80	0-7"	0-8"	1-5"	3-2"	4-10"	5-4"	6-9"	8-9"	10-2"	---	---	---

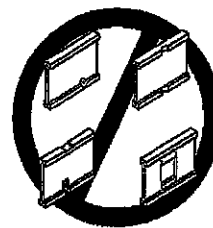
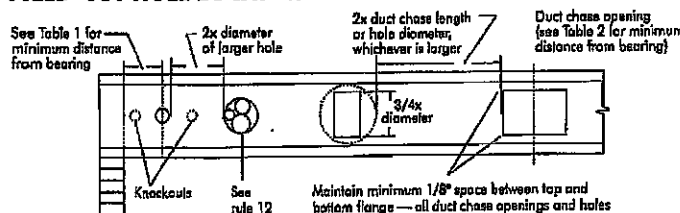
- Above table may be used for I-joint spacing of 24 inches on centre or less.
- Hole location distance is measured from inside face of supports to centre of hole.
- Distances in this chart are based on uniformly loaded joists.
- The above table is based on the I-joints being used of their maximum spans. 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.)											
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"	6-9"	6-9"	7-3"	7-8"	8-2"	8-6"	---	---	---
	NI-60	5-4"	6-0"	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"	6-4"	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"	10-9"	---	---	---
	NI-60	7-5"	7-6"	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"	10-8"	---	---	---
	NI-80	7-2"	7-7"	8-0"	8-5"	8-10"	9-3"	9-8"	10-2"	10-9"	---	---	---
14"	NI-20	7-6"	7-7"	8-4"	8-9"	9-2"	9-7"	10-1"	10-7"	10-11"	---	---	---
	NI-40x	7-7"	8-1"	8-9"	8-10"	9-4"	9-8"	10-2"	10-8"	11-2"	---	---	---
	NI-60	8-1"	8-7"	9-0"	9-6"	10-1"	10-7"	11-2"	11-8"	12-3"	---	---	---
	NI-70	8-9"	9-3"	9-8"	10-1"	10-6"	11-1"	11-6"	12-1"	12-6"	---	---	---
	NI-80	9-0"	9-3"	9-8"	10-1"	10-7"	11-1"	11-6"	12-1"	12-6"	---	---	---
16"	NI-20	9-2"	9-8"	10-0"	10-6"	10-11"	11-5"	11-9"	12-4"	12-11"	---	---	---
	NI-40x	9-2"	9-8"	10-0"	10-6"	10-11"	11-5"	11-9"	12-4"	12-11"	---	---	---
	NI-60	10-3"	10-8"	11-2"	11-6"	12-1"	12-6"	13-2"	14-1"	14-10"	---	---	---
	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"	11-8"	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 distance is measured from inside face of supports to centre of opening.
- The above table is based on simple span 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-joints being used of 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 joist. Where possible, it is preferable to use knockouts instead of field-cut holes.

Holes in webs should be cut with a sharp saw.
Never drill, cut or notch the flange, or over-cut the web.
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 unfastened 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 long-term blocking panels, rim board, and/or cross-bracing 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. Top 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-bracing.
- 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.

PRODUCT WARRANTY

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

Furthermore, Chastar Chibongman warrants that our products, when utilized in accordance with our bending 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 joint depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

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

Attach I-joint to top plate per detail 1b

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

Provide lateral bracing per detail 1a or 1b

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-C437 Standard.
** For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".

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 I-joint using this detail is 860 lb/ft. Verify double I-joint capacity.

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

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.

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-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.

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

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

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

NOTES:

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

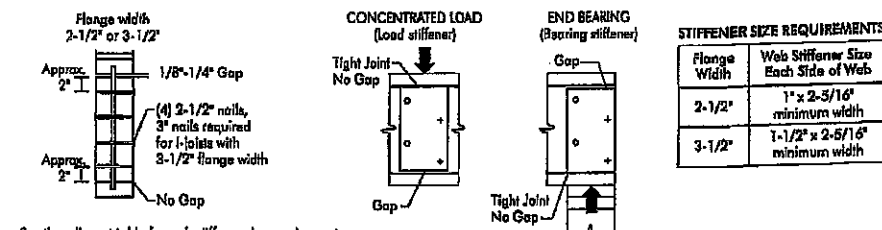
All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (0.125" dia.) common spiral nails may be substituted for 2-1/2" (0.125" dia.) common wire nails. Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better (individual components not shown to scale for clarity).

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 I-joint 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 cantilevers, 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

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

RIM BOARD INSTALLATION DETAILS

NORDIC STRUCTURES

COMPANY
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PROJECT
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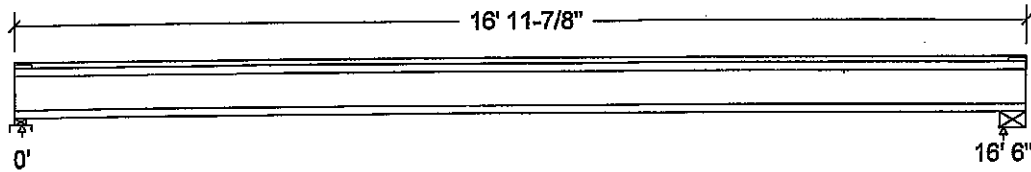
Design Check Calculation Sheet

Nordic Sizer – Canada 7.2

Loads:

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

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



Unfactored:			
Dead	165		165
Live	330		330
Factored:			
Total	701		701
Bearing:			
Capacity			
Joist	1893		1893
Support	5559		-
Des ratio			
Joist	0.37		0.37
Support	0.13		-
Load case	#2		#2
Length	2-3/8		5-1/4
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		-
fcpsup	769		-
Kzcp sup	1.09		-

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

Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Steel Beam, W;
Total length: 16' 11-7/8"; Clear span: 16' 4-1/4"; 3/4" nailed and glued OSB sheathing
This section **PASSES** the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 701	Vr = 1895	lbs	Vf/Vr = 0.37
Moment (+)	Mf = 2893	Mr = 8958	lbs-ft	Mf/Mr = 0.32
Perm. Defl'n	0.10 = < L/999	0.55 = L/360	in	0.19
Live Defl'n	0.20 = L/969	0.41 = L/480	in	0.49
Total Defl'n	0.31 = L/646	0.82 = L/240	in	0.37
Bare Defl'n	0.23 = L/852	0.55 = L/360	in	0.42
Vibration	Lmax = 16'-6	Lv = 18'-4.9	ft	0.90
Defl'n	= 0.028	= 0.039	in	0.72



4-1610
S. KATSOULAKOS
PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO
NO. 445919-20
STRUCTURAL
COMPONENT ONLY

Additional Data:

FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	1895	1.00	1.00	-	-	-	-	-	#2
Mr+	8958	1.00	1.00	-	1.000	-	-	-	#2
EI	324.1 million	-	-	-	-	-	-	-	#2

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L

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

Deflection: LC #1 = 1.0D (permanent)

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

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

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

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

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

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

Load Patterns: s=S/2 L=L+Ls _no pattern load in this span

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

CALCULATIONS:E_{ieff} = 375.38 lb-in² K= 4.94e06 lbs

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

CONFORMS TO OBC 2012**AMENDED 2020****Design Notes:**

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



OWG NO. 7AHS919-20
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NORDIC STRUCTURES

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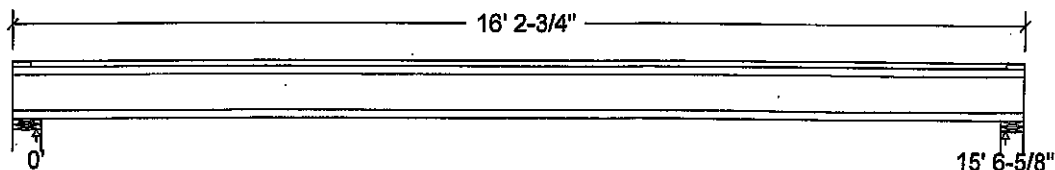
PROJECT
J1 2ND FLOOR.wwb

Design Check Calculation Sheet Nordic Sizer – Canada 7.2

Loads:

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

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



Unfactored:			
Dead	156		156
Live	311		311
Factored:			
Total	661		661
Bearing:			
Capacity			
Joist	1893		1893
Support	9724		7744
Des ratio			
Joist	0.35		0.35
Support	0.07		0.09
Load case	#2		#2
Length	5-1/2		4-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	-		-
fcp sup	769		769
Kzcp sup	-		-

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

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

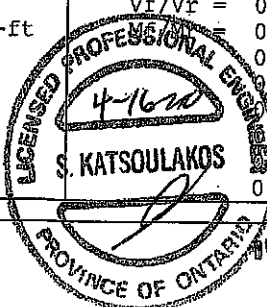
Supports: All - Lumber Wall, No.1/No.2

Total length: 16' 2-3/4"; Clear span: 15' 4-7/8"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section PASSES the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 661	Vr = 1895	lbs	Vf/Vr = 0.35
Moment (+)	Mf = 2570	Mr = 4824	lbs-ft	Mf/Mr = 0.53
Perm. Defl'n	0.11 = < L/999	0.52 = L/360	in	0.22
Live Defl'n	0.23 = L/820	0.39 = L/480	in	0.58
Total Defl'n	0.34 = L/547	0.78 = L/240	in	0.44
Bare Defl'n	0.26 = L/704	0.52 = L/360	in	0.51
Vibration	Lmax = 15'-6.6	Lv = 16'-8.5	ft	0.93
Defl'n	= 0.033	= 0.042	in	0.80



NO. TAM5920-20
STRUCTURAL
DRAWING

Additional Data:

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

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L

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

Deflection: LC #1 = 1.0D (permanent)

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

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

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

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

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

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

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

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

CALCULATIONS:E_{leff} = 258.29 lb-in² K= 4.94e06 lbs

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

CONFORMS TO OBC 2012

AMENDED 2020

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
2. Please verify that the default deflection limits are appropriate for your application.
3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
4. Nordic I-joists are listed in CCMC evaluation report 13032-R.
5. Joists shall be laterally supported at supports and continuously along the compression edge.
6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitability of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design criteria and loadings shown.



896 NO. YAM 5910-20
STRUCTURAL
COMPONENT ONLY

BC CALC® Member Report

Build 7239

Job name:

File name: MOUNTAINASH 2 EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B1(i1748)

City, Province, Postal Code:

Specifier:

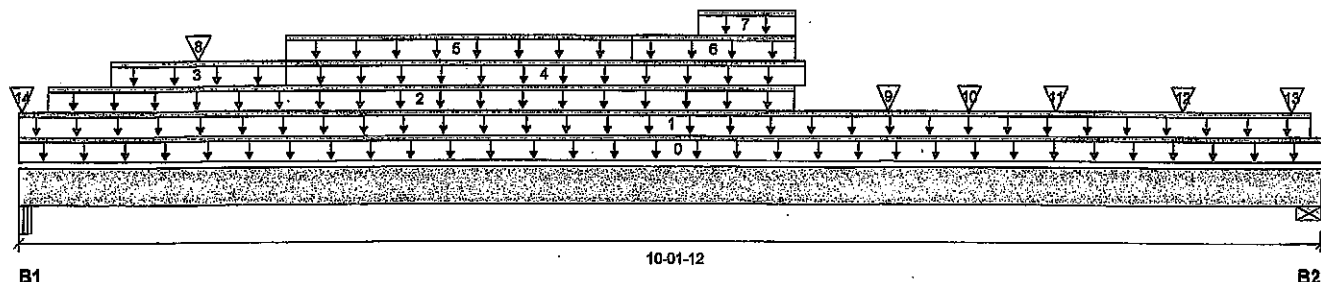
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 10-01-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	1799 / 0	1337 / 0		
B2, 6-1/4"	3299 / 0	2014 / 0		

Load Summary

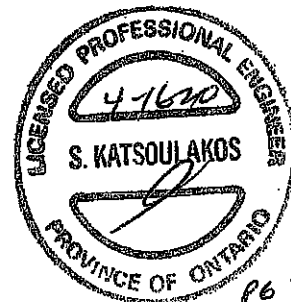
Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-01-12	Top		10			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-00-08	Top	13	7			n/a
2	11(i572)	Unf. Lin. (lb/ft)	L	00-02-12	05-11-08	Top		81			n/a
3	11(i572)	Unf. Lin. (lb/ft)	L	00-08-08	02-00-08	Top	106	53			n/a
4	Smoothed Load	Unf. Lin. (lb/ft)	L	02-00-08	06-00-08	Top	136	68			n/a
5	11(i572)	Unf. Lin. (lb/ft)	L	02-00-08	04-08-08	Top	122	61			n/a
6	11(i572)	Unf. Lin. (lb/ft)	L	04-08-08	05-11-08	Top	132	66			n/a
7	11(i572)	Unf. Lin. (lb/ft)	L	05-02-08	05-11-08	Top	921	549			n/a
8	J5(i1878)	Conc. Pt. (lbs)	L	01-04-08	01-04-08	Top	248	124			n/a
9	J5(i1700)	Conc. Pt. (lbs)	L	06-08-08	06-08-08	Top	134	67			n/a
10	B2(i1696)	Conc. Pt. (lbs)	L	07-04-04	07-04-04	Top	726	434			n/a
11	J2(i1753)	Conc. Pt. (lbs)	L	08-00-08	08-00-08	Top	280	140			n/a
12	J2(i1766)	Conc. Pt. (lbs)	L	09-00-08	09-00-08	Top	322	161			n/a
13	-	Conc. Pt. (lbs)	L	09-10-11	09-10-11	Top	1164	657			n/a
14	9(i570)	Conc. Pt. (lbs)	L	00-00-04	00-00-04	Top	129	88			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	12352 ft-lbs	23220 ft-lbs	53.2%	1	05-04-08
End Shear	4568 lbs	11571 lbs	39.5%	1	08-10-00
Total Load Deflection	L/412 (0.277")	n/a	58.2%	4	05-02-08
Live Load Deflection	L/695 (0.165")	n/a	51.8%	5	05-02-08
Max Defl.	0.277"	n/a	n/a	4	05-02-08
Span / Depth	12.0				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 2-5/8" x 3-1/2"	4370 lbs	89.1%	39.0%	Unspecified
B2	Wall/Plate 6-1/4" x 3-1/2"	7466 lbs	55.5%	28.0%	Spruce-Pine-Fir



ONE NO. YAM 5921-20
STRUCTURAL
COMPONENT ONLY



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
1ST FLR FRAMING\Flush Beams\B1(11748) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

February 7, 2020 07:58:22

Build 7239

Job name:

File name: MOUNTAINASH 2 EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B1(11748)

City, Province, Postal Code:

Specifier:

Customer:

Designer:

Code reports:

CCMC 12472-R

Company:

Notes

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

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

Calculations assume member is fully braced.

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

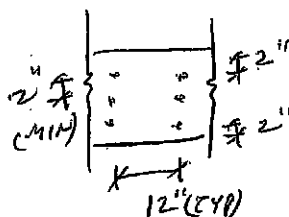
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

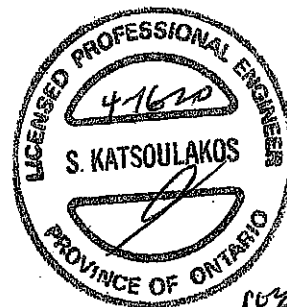
Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



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



**ENG. NO. YAM 5921-20
STRUCTURAL
COMPONENT ONLY**

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



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

PASSED

1ST FLR FRAMING\Flush Beams\B2(11696) (Flush Beam)

Dry | 1 span | No cant.

February 7, 2020 07:58:22

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

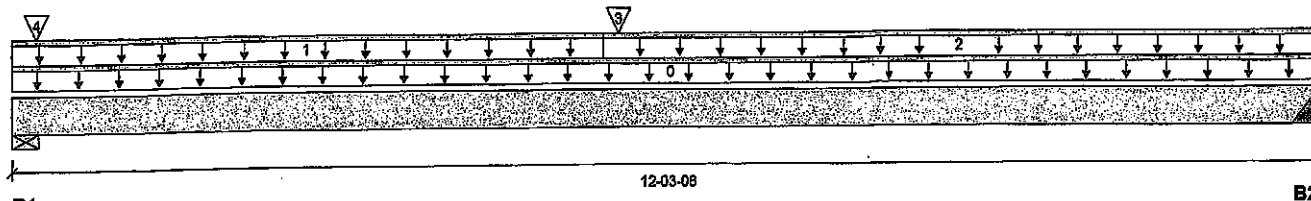
File name: MOUNTAINASH 2 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B2(11696)

Specifier:

Designer:

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	1291 / 0	809 / 0		
B2, 4"	763 / 0	456 / 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	12-03-08	Top	10				00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-06-00	Top	17	8			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	05-06-00	12-03-08	Top	27	13			n/a
3	B3(11665)	Conc. Pt. (lbs)	L	05-07-12	05-07-12	Top	1336	701			n/a
4	5(1665)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top	446	309			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	9418 ft-lbs	23220 ft-lbs	40.6%	1	05-07-12
End Shear	1840 lbs	11571 lbs	15.9%	1	01-01-08
Total Load Deflection	L/517 (0.273")	n/a	46.4%	4	05-11-14
Live Load Deflection	L/811 (0.174")	n/a	44.4%	5	05-11-14
Max Defl.	0.273"	n/a	n/a	4	05-11-14
Span / Depth	14.8				

Bearing Supports

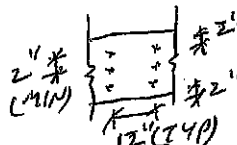
	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	2948 lbs	34.2%	17.3%	Spruce-Pine-Fir
B2	Hanger 4" x 3-1/2"	1715 lbs	n/a	10.0%	HGUS410

Cautions

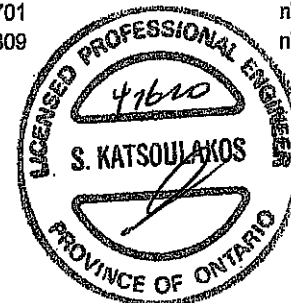
Header for the hanger HGUS410 at B2 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
Design meets Code minimum (L/360) Live load deflection criteria.
Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-00-00. **CONFORMS TO CBC 2012**
Hanger Manufacturer: Unassigned
Resistance Factor phi has been applied to all presented results per CSA O86. **AMENDED 2020**
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9



PROVIDE 3 ROWS OF 3/8\"/>



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



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B3(i1665) (Flush Beam)**

Dry | 1 span | No cant.

February 7, 2020 07:58:22

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

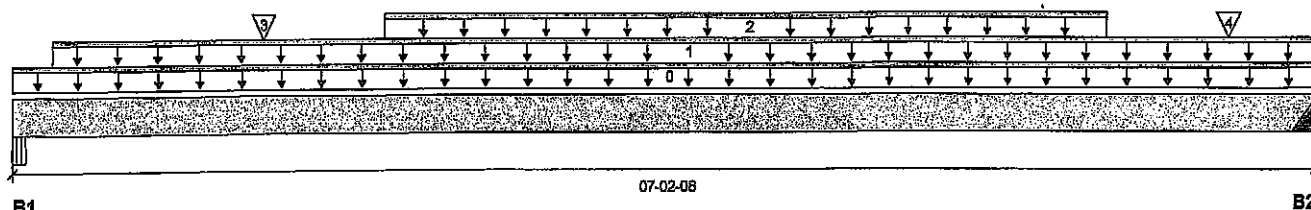
File name: MOUNTAINASH 2 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B3(i1665)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 07-02-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	1257 / 0	662 / 0		
B2, 4"	1385 / 0	727 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-02-08	Top		10			00-00-00
1	STAIR	Unf. Lin. (lb/ft)	L	00-02-10	07-02-08	Top	240	120			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	02-00-08	06-00-08	Top	142	71			n/a
3	J5(i1678)	Conc. Pt. (lbs)	L	01-04-08	01-04-08	Top	258	129			n/a
4	J5(i1700)	Conc. Pt. (lbs)	L	06-08-08	06-08-08	Top	140	70			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4774 ft-lbs	23220 ft-lbs	20.6%	1	03-07-08
End Shear	2298 lbs	11571 lbs	19.9%	1	01-00-02
Total Load Deflection	L/999 (0.056")	n/a	n/a	4	03-06-08
Live Load Deflection	L/999 (0.037")	n/a	n/a	5	03-06-08
Max Defl.	0.056"	n/a	n/a	4	03-06-08
Span / Depth	8.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 Beam	2-5/8" x 3-1/2"	2714 lbs	55.3%	24.2%	Unspecified
B2 Hanger	4" x 3-1/2"	2986 lbs	n/a	17.5%	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.

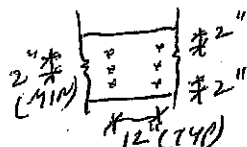
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO CBC 2012**AMENDED 2020**

PROVIDES ROWS OF 3 1/2" 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 5923 -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®,



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING\Flush Beams\B4(i1784) (Flush Beam)**

Dry | 2 spans | No cant.

February 7, 2020 07:58:22

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

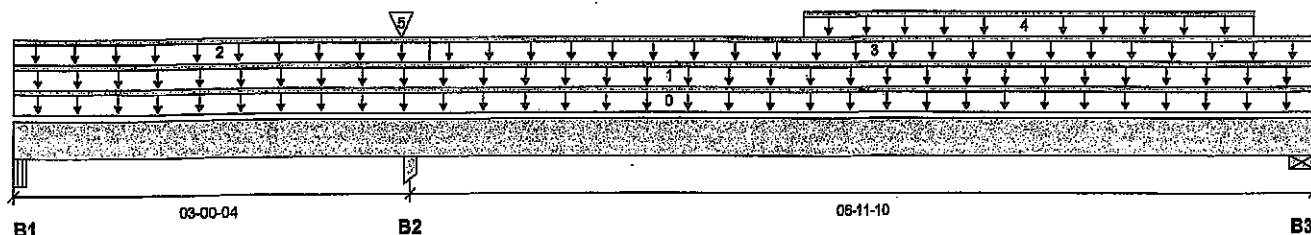
File name: MOUNTAINASH 2 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B4(i1784)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 09-11-14

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	79 / 125	0 / 22		
B2, 3-1/2"	2902 / 0	2185 / 0		
B3, 4-3/8"	355 / 2	205 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-11-14	Top		10			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	09-11-14	Top	25	12			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-02-00	Top	29	14			n/a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L	03-02-00	09-11-14	Top	6				n/a
4	STAIR	Unf. Lin. (lb/ft)	L	06-00-00	09-06-00	Top	120	60			n/a
5	-	Conc. Pt. (lbs)	L	02-11-06	02-11-06	Top	2411	1874			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	992 ft-lbs	23220 ft-lbs	4.3%	3	07-02-14
Neg. Moment	-849 ft-lbs	-23220 ft-lbs	3.7%	1	03-00-04
End Shear	700 lbs	11571 lbs	6.0%	3	08-10-00
Cont. Shear	570 lbs	11571 lbs	4.9%	1	03-11-08
Total Load Deflection	L/999 (0.009")	n/a	n/a	10	06-09-09
Live Load Deflection	L/999 (0.006")	n/a	n/a	13	06-09-09
Total Neg. Defl.	L/999 (-0.001")	n/a	n/a	10	01-10-03
Max Defl.	0.009"	n/a	n/a	10	06-09-09
Span / Depth	8.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 Beam	2-5/8" x 3-1/2"	99 lbs	2.0%	0.9%	Unspecified
B1 Uplift		216 lbs			
B2 Column	3-1/2" x 3-1/2"	7084 lbs	71.2%	47.4%	Unspecified
B3 Wall/Plate	4-3/8" x 3-1/2"	788 lbs	8.4%	4.2%	Spruce-Pine-Fir

Cautions

Uplift of 216 lbs found at bearing B1. (SIMPSON 2-H2-34 e 07.31)

DWG NO. YAM 5924-20
STRUCTURAL
COMPONENT ONLY



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

PASSED

1ST FLR FRAMING\Flush Beams\B4(1784) (Flush Beam)

Dry | 2 spans | No cant.

February 7, 2020 07:58:22

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File name: MOUNTAINASH 2 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B4(1784)

Specifier:

Designer:

Company:

Notes

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

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

Calculations assume member is fully braced.

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

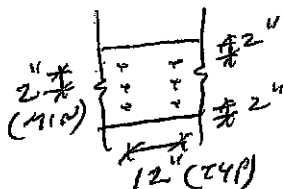
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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. YAM5924-20

STRUCTURAL

COMPONENT ONLY

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Bolse Cascade

**Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****1ST FLR FRAMING\Flush Beams\B5(I1780) (Flush Beam)****PASSED**

BC CALC® Member Report

Dry | 1 span | No cant

February 7, 2020 07:58:22

Build 7239

Job name:

File name: MOUNTAINASH 2 EL 1.mmdl

Address:

Description: 1ST FLR FRAMING\Flush Beams\B5(I1780)

City, Province, Postal Code:

Specifier:

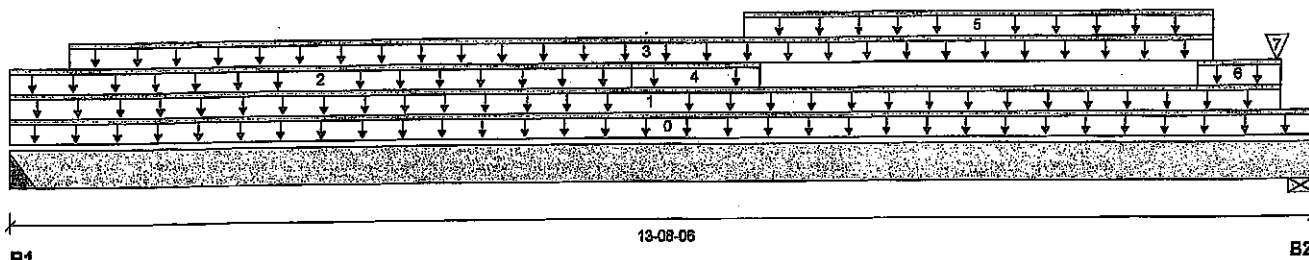
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 13-08-06

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	2378 / 0	1849 / 0		
B2, 1-7/8"	2276 / 0	1755 / 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	13-08-06	Top		14			00-00-00
1	6(I566)	Unf. Lin. (lb/ft)	L	00-00-00	13-04-00	Top		81			n/a
2	6(I566)	Unf. Lin. (lb/ft)	L	00-00-00	06-05-08	Top	280	140			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	00-07-08	12-07-08	Top	70	35			n/a
4	6(I566)	Unf. Lin. (lb/ft)	L	06-05-08	07-09-08	Top	244	122			n/a
5	6(I566)	Unf. Lin. (lb/ft)	L	07-07-08	12-07-08	Top	279	140			n/a
6	6(I566)	Unf. Lin. (lb/ft)	L	12-05-08	13-04-00	Top	265	133			n/a
7	J6(I1602)	Conc. Pt. (lbs)	L	13-03-08	13-03-08	Top	63				n/a

Controls Summary

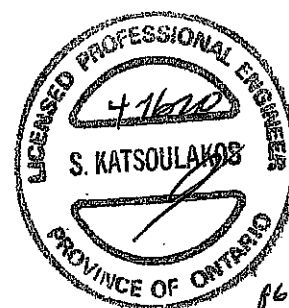
	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	19103 ft-lbs	36222 ft-lbs	52.7%	1	06-10-08
End Shear	5498 lbs	17356 lbs	31.7%	1	12-09-00
Total Load Deflection	L/273 (0.586")	n/a	88.0%	4	06-10-08
Live Load Deflection	L/484 (0.331")	n/a	74.4%	5	06-10-08
Max Defl.	0.586"	n/a	n/a	4	06-10-08
Span / Depth	16.8				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 4" x 5-1/4"	5879 lbs	n/a	22.9%	HGUS5.5/10
B2	Wall/Plate 1-7/8" x 5-1/4"	5607 lbs	92.6%	46.7%	Spruce-Pine-Fir

Cautions

Header for the hanger HGUS5.5/10 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.
 Hanger model HGUS5.5/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.



DWG NO. TAM 5925-20
 STRUCTURAL
 COMPONENT ONLY



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
1ST FLR FRAMING\Flush Beams\B5(11780) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

February 7, 2020 07:58:22

File name: MOUNTAINASH 2 EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B5(11780)

Specifier:

Designer:

Company:

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

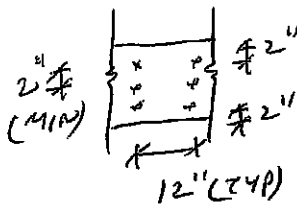
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

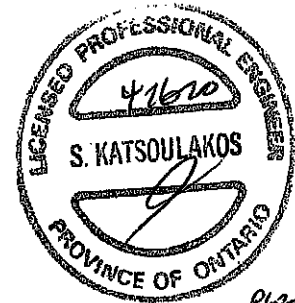
Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3/4" 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 PLIES.



ENG NO. TAM 5925-20
**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®



Boise Cascade



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

2ND FLR FRAMING\Dropped Beams\B6 DR(1583) (Dropped Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

February 7, 2020 07:58:22

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

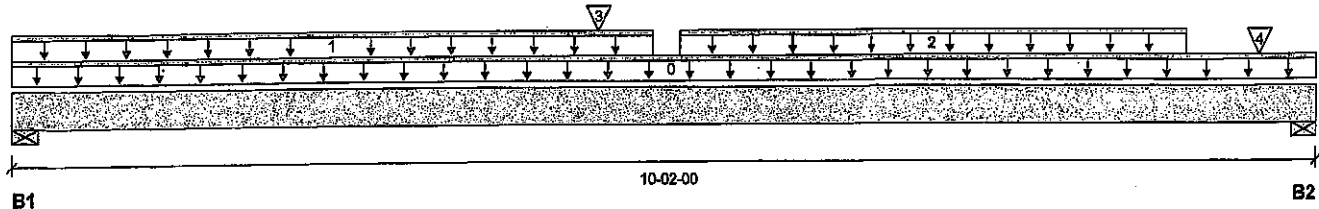
File name: MOUNTAINASH 2 EL 1.mmdl

Description: 2ND FLR FRAMING\Dropped Beams\B6 DR(1583)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 10-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	2092 / 0	1138 / 0		
B2, 4"	2007 / 0	1089 / 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	10-02-00	Top		14			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	04-11-04	Top	344	172			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	05-01-12	09-01-12	Top	313	156			n/a
3	B9(1581)	Conc. Pt. (lbs)	L	04-06-04	04-06-04	Top	606	338			n/a
4	J2(1478)	Conc. Pt. (lbs)	L	09-08-08	09-08-08	Top	411	205			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	11301 ft-lbs	36222 ft-lbs	31.2%	1	04-06-04
End Shear	3633 lbs	17356 lbs	20.9%	1	01-01-08
Total Load Deflection	L/684 (0.169")	n/a	35.1%	4	05-01-10
Live Load Deflection	L/999 (0.109")	n/a	n/a	5	05-01-10
Max Defl.	0.169"	n/a	n/a	4	05-01-10
Span / Depth	12.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate 4" x 5-1/4"	4560 lbs	16.3%	17.8%	Spruce-Pine-Fir
B2	Wall/Plate 4" x 5-1/4"	4372 lbs	15.6%	17.1%	Spruce-Pine-Fir

Notes

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

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

Calculations assume unbraced length of Top: 00-03-13, Bottom: 00-03-13.

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

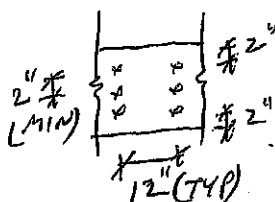
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

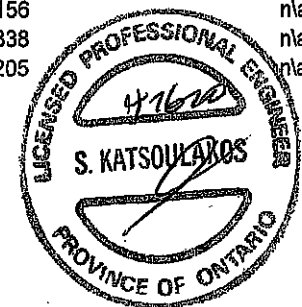
Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



PROVIDE 3 ROWS OF 3/8" 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 PLUS



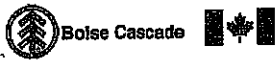
DWG NO. YAM 5924-20
STRUCTURAL
COMPONENT ONLY

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 9-1/2" VERSA-LAM® 2.0 3100 SP

2ND FLR FRAMING\Flush Beams\B11(I1134) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

February 7, 2020 07:58:22

Build 7239

Job name:

File name: MOUNTAINASH 2 EL 1.mmdl

Address:

Description: 2ND FLR FRAMING\Flush Beams\B11(I1134)

City, Province, Postal Code:

Specifier:

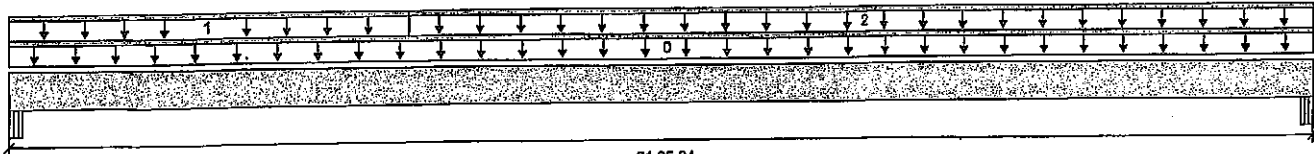
Customer:

Designer:

Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 01-05-04

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	6 / 0	10 / 0		
B2, 5-1/4"	7 / 0	11 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-05-04	Top	10				00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-05-04	Top	7	4			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-05-04	01-05-04	Top	10	5			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2 ft-lbs	23220 ft-lbs	n/a	1	00-08-10
End Shear	6 lbs	7521 lbs	n/a	0	00-05-04
Span / Depth	0.9				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	5-1/4" x 3-1/2"	14 lbs	0.2%	n/a	Unspecified
B2 Beam	5-1/4" x 3-1/2"	24 lbs	0.2%	0.1%	Unspecified

Notes

Calculations assume member is fully braced.

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

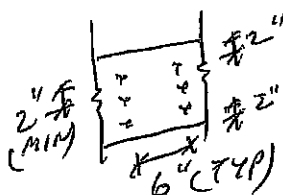
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO CBC 2012

AMENDED 2020



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



DWG NO. YAW 5927-20
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®



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B12(1421) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

February 7, 2020 07:58:22

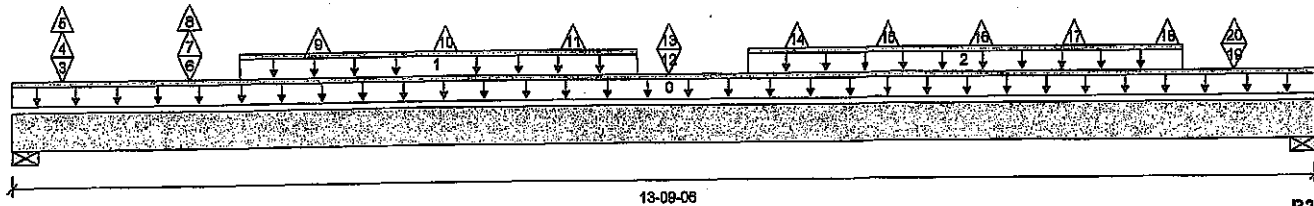
File name: MOUNTAINASH 2 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B12(1421)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 13-09-08

Reaction Summary (Down / Uplift) (lbs)

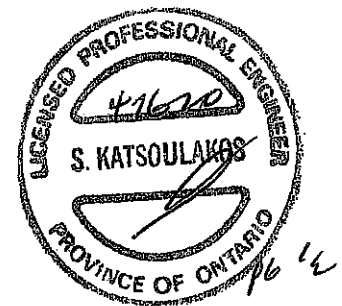
Bearing	Live	Dead	Snow	Wind
B1, 4"	2602 / 420	1187 / 0		
B2, 4-3/8"	2400 / 400	1097 / 0		

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	13-09-08	Top		14			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	02-04-08	06-06-08	Top	357	150			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	07-08-08	12-04-08	Top	399	167			n/a
3	-	Conc. Pt. (lbs)	L	00-06-08	00-06-08	Top	496	208			n/a
4	-	Conc. Pt. (lbs)	L	00-06-08	00-06-08	Top		-1			n/a
5	-	Conc. Pt. (lbs)	L	00-06-08	00-06-08	Top	-80				n/a
6	-	Conc. Pt. (lbs)	L	01-10-08	01-10-08	Top	444	182			n/a
7	-	Conc. Pt. (lbs)	L	01-10-08	01-10-08	Top		-1			n/a
8	-	Conc. Pt. (lbs)	L	01-10-08	01-10-08	Top	-80				n/a
9	J5(i1280)	Conc. Pt. (lbs)	L	03-02-08	03-02-08	Top	-80	-1			n/a
10	J5(i1280)	Conc. Pt. (lbs)	L	04-06-08	04-06-08	Top	-80	-1			n/a
11	J5(i1280)	Conc. Pt. (lbs)	L	05-10-08	05-10-08	Top	-80	-1			n/a
12	-	Conc. Pt. (lbs)	L	06-10-08	06-10-08	Top	382	156			n/a
13	-	Conc. Pt. (lbs)	L	06-10-08	06-10-08	Top	-70				n/a
14	J5(i1272)	Conc. Pt. (lbs)	L	08-02-08	08-02-08	Top	-60				n/a
15	J5(i1272)	Conc. Pt. (lbs)	L	09-02-08	09-02-08	Top	-60				n/a
16	J5(i1272)	Conc. Pt. (lbs)	L	10-02-08	10-02-08	Top	-60				n/a
17	J5(i1272)	Conc. Pt. (lbs)	L	11-02-08	11-02-08	Top	-60				n/a
18	J5(i1272)	Conc. Pt. (lbs)	L	12-02-08	12-02-08	Top	-60				n/a
19	-	Conc. Pt. (lbs)	L	12-10-15	12-10-15	Top	282	141			n/a
20	-	Conc. Pt. (lbs)	L	12-10-15	12-10-15	Top	-50				n/a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	16870 ft-lbs	36222 ft-lbs	46.6%	1	06-10-08
End Shear	4707 lbs	17356 lbs	27.1%	1	12-07-08
Total Load Deflection	L/320 (0.495")	n/a	75.0%	6	06-10-08
Live Load Deflection	L/466 (0.34")	n/a	77.2%	8	06-10-08
Max Defl.	0.495"	n/a	n/a	6	06-10-08
Span / Depth	16.7				

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance	Demand/ Resistance	Member	Material
B1	Wall/Plate	4" x 5-1/4"	5388 lbs	41.7%	21.0%	Spruce-Pine-Fir
B2	Wall/Plate	4-3/8" x 5-1/4"	4971 lbs	35.2%	17.7%	Spruce-Pine-Fir



OWN NO. YAW 592820
STRUCTURAL
COMPONENT ONLY



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLR FRAMING\Flush Beams\B12(i1421) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

February 7, 2020 07:58:22

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

File name: MOUNTAINASH 2 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B12(i1421)

Specifier:

Designer:

Company:

Notes

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

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

Calculations assume member is fully braced.

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

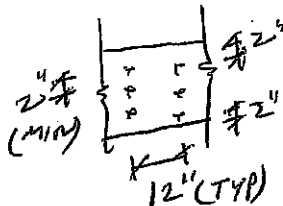
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



**PROVIDE 3 ROWS OF 3 1/2" 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 592B-20
STRUCTURAL
COMPONENT ONLY**

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



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

PASSED

2ND FLR FRAMING\Flush Beams\B7(i1580) (Flush Beam)

Dry | 1 span | No cant.

February 7, 2020 07:58:22

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

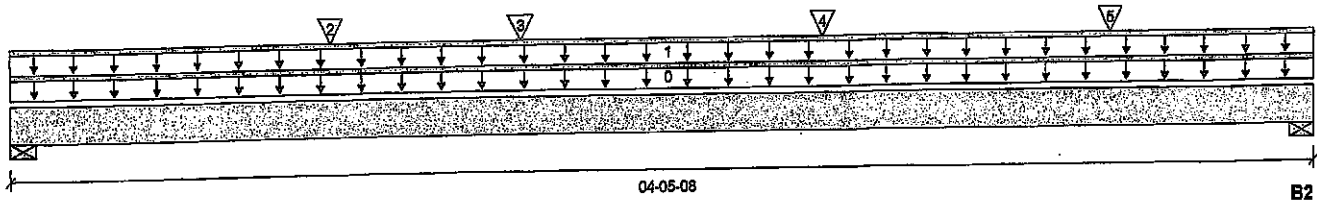
File name: MOUNTAINASH 2 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B7(i1580)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 04-05-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	689 / 0	412 / 0		
B2, 5-1/2"	824 / 0	464 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-05-08	Top	1.00	0.65	1.00	1.15	00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-05-08	Top	8	4			n/a
2	J7(i1139)	Conc. Pt. (lbs)	L	01-01-00	01-01-00	Top	121	61			n/a
3	B8(i1576)	Conc. Pt. (lbs)	L	01-08-12	01-08-12	Top	711	430			n/a
4	J2(i1157)	Conc. Pt. (lbs)	L	02-09-00	02-09-00	Top	329	165			n/a
5	J2(i1202)	Conc. Pt. (lbs)	L	03-09-00	03-09-00	Top	317	159			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	2051 ft-lbs	23220 ft-lbs	8.8%	1	01-08-12
End Shear	1503 lbs	11571 lbs	13.0%	1	01-01-08
Total Load Deflection	L/999 (0.007")	n/a	n/a	4	02-01-12
Live Load Deflection	L/999 (0.004")	n/a	n/a	5	02-01-12
Max Defl.	0.007"	n/a	n/a	4	02-01-12
Span / Depth	4.8				

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	1549 lbs	18.0%	9.1%	Spruce-Pine-Fir
B2	Wall/Plate 5-1/2" x 3-1/2"	1815 lbs	15.3%	7.7%	Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced.

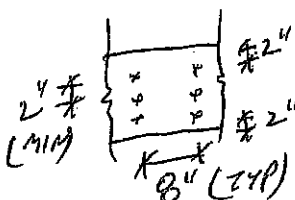
Resistance Factor phi has been applied to all presented results per CSA O86. AMENDED 2020

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012



PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 8" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS

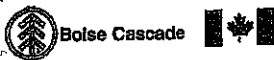


DWG NO. FAM 5929-20
STRUCTURAL
COMPONENT ONLY

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

PASSED

2ND FLR FRAMING\Flush Beams\B8(1576) (Flush Beam)

Dry | 1 span | No cant.

February 7, 2020 07:58:22

BC CALCO® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

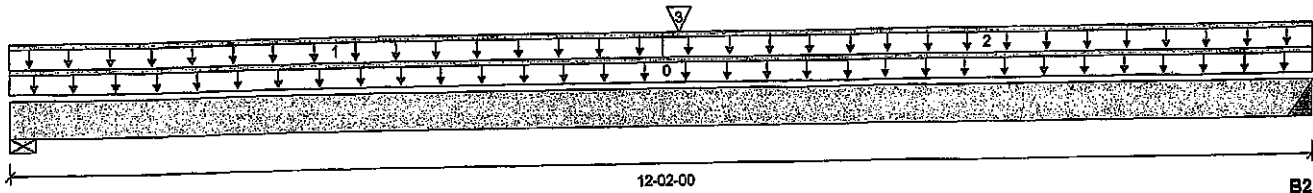
File name: MOUNTAINASH 2 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B8(1576)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 12-02-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	684 / 0	417 / 0		
B2, 4"	735 / 0	443 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-02-00	Top		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	06-00-08	Top	23	12			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	06-00-08	12-02-00	Top	33	17			n/a
3	B9(1581)	Conc. Pt. (lbs)	L	06-02-04	06-02-04	Top	1074	571			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	7980 ft-lbs	23220 ft-lbs	34.4%	1	06-02-04
End Shear	1563 lbs	11571 lbs	13.5%	1	11-00-08
Total Load Deflection	L/610 (0.229")	n/a	39.4%	4	06-02-04
Live Load Deflection	L/964 (0.145")	n/a	37.3%	5	06-02-04
Max Defl.	0.229"	n/a	n/a	4	06-02-04
Span / Depth	14.7				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 4" x 3-1/2"	1548 lbs	18.0%	9.1%	Spruce-Pine-Fir
B2	Hanger 4" x 3-1/2"	1657 lbs	n/a	9.7%	HGUS410



ONE NO. TAN 5930-20
STRUCTURAL
COMPONENT ONLY

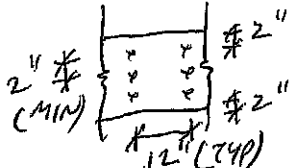
Cautions

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 unbraced length of Top: 00-00-00, Bottom: 00-00-00. **CONFORMS TO OBC 2012**
Hanger Manufacturer: Unassigned
Resistance Factor phi has been applied to all presented results per CSA O86. **AMENDED 2020**
BC CALCO analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
Design based on Dry Service Condition.
Importance Factor : Normal Part code : Part 9

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



Disclosure

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



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B9(11581) (Flush Beam)

PASSED

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

February 7, 2020 07:58:22

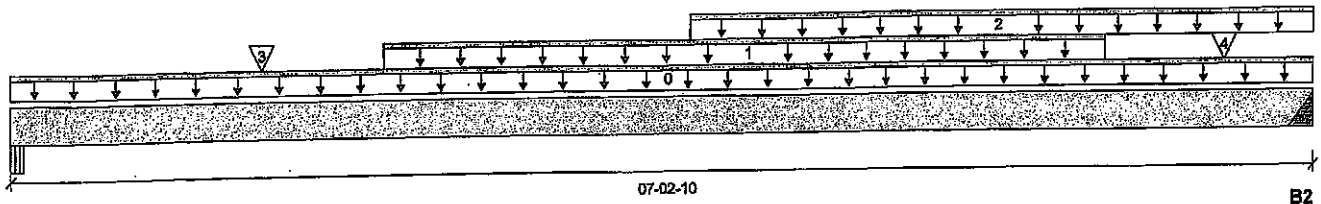
File name: MOUNTAINASH 2 EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B9(11581)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 07-02-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	566 / 0	317 / 0		
B2, 4"	1114 / 0	592 / 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	07-02-10	Top	10	66			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	02-00-10	06-00-10	Top	132	66			n/a
2	User Load	Unf. Lin. (lb/ft)	L	03-08-10	07-02-10	Top	240	120			n/a
3	J6(11367)	Conc. Pt. (lbs)	L	01-04-10	01-04-10	Top	167	83			n/a
4	J7(11139)	Conc. Pt. (lbs)	L	06-08-10	06-08-10	Top	127	63			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	3168 ft-lbs	23220 ft-lbs	13.6%	1	04-00-10
End Shear	1611 lbs	11571 lbs	13.9%	1	06-01-02
Total Load Deflection	L/999 (0.036")	n/a	n/a	4	03-08-10
Live Load Deflection	L/999 (0.023")	n/a	n/a	5	03-08-10
Max Defl.	0.036"	n/a	n/a	4	03-08-10
Span / Depth	8.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	2-5/8" x 3-1/2"	1246 lbs	11.1%	11.1%	VL 2.0 3100 SP
B2 Hanger	4" x 3-1/2"	2411 lbs	n/a	14.1%	HGUS410

Cautions

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

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.

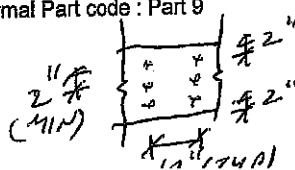
Design based on Dry Service Condition.

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. TAM 5931-20
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 9-1/2" VERSA-LAM® 2.0 3100 SP****PASSED****1ST FLR FRAMING Flush Beams B1A(1972) (Flush Beam)**

Dry | 1 span | No cant.

April 15, 2020 16:04:54

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

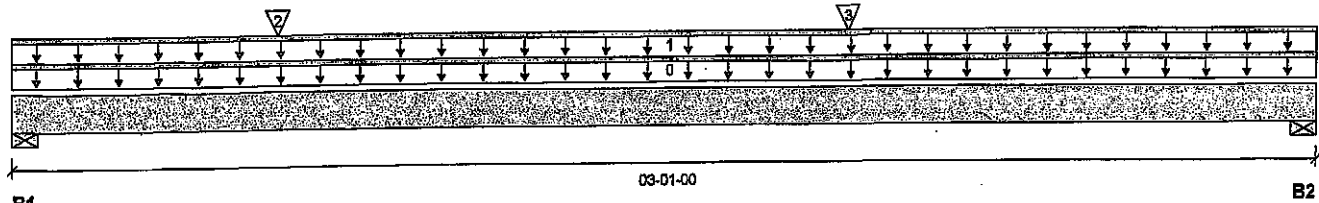
File name: MOUNTAINASH 2 EL 1 DECK CONDITION.mmdl

Description: 1ST FLR FRAMING Flush Beams B1A(1972)

Specifier:

Designer: AJ

Company:



Total Horizontal Product Length = 03-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3"	997 / 0	638 / 0		
B2, 3"	840 / 0	560 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-01-00	Top	100	0.65	1.00	1.15	00-00-00
1	E13(1558)	Unf. Lin. (lb/ft)	L	00-00-00	03-01-00	Top	320	241			n/a
2	J2(1799)	Conc. Pt. (lbs)	L	00-07-08	00-07-08	Top	425	212			n/a
3	J2(1809)	Conc. Pt. (lbs)	L	01-11-08	01-11-08	Top	425	212			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	1365 ft-lbs	23220 ft-lbs	5.9%	1	01-09-01
End Shear	1133 lbs	11571 lbs	9.8%	1	02-00-08
Total Load Deflection	L/999 (0.003")	n/a	n/a	4	01-06-11
Live Load Deflection	L/999 (0.002")	n/a	n/a	5	01-06-11
Max Defl.	0.003"	n/a	n/a	4	01-06-11
Span / Depth	3.4				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3" x 3-1/2"	2293 lbs	35.5%	17.9%	Spruce-Pine-Fir
B2	Wall/Plate 3" x 3-1/2"	1960 lbs	30.3%	15.3%	Spruce-Pine-Fir

Notes

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

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

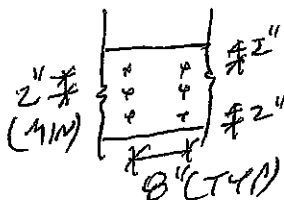
Calculations assume member is fully braced.

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

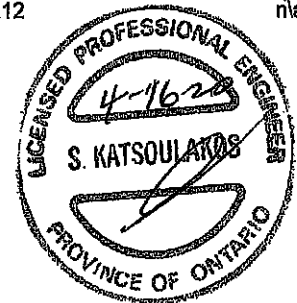
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

PROVIDE 3 ROWS OF 3/4" ARDOX SPIRAL NAILS @ 8" O/C FOR MULTI-PLY NAILING. MAINTAIN A MIN. 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS



DWG NO. YAM 5932-20

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

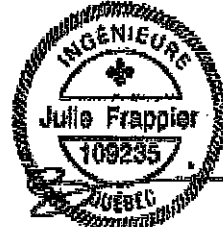
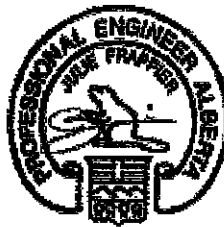
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BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BC®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

Maximum Floor Spans

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



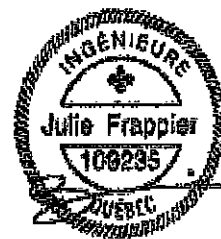
Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"	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

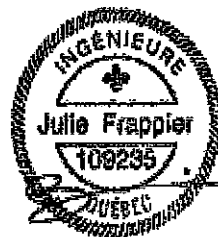
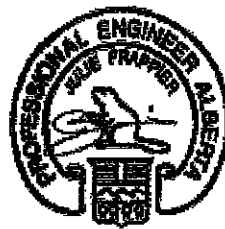
Live Load = 40 psf, Dead Load = 15 psf
Simple Spans, L/480 Deflection Limit
5/8" OSB G&N Sheathing



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.

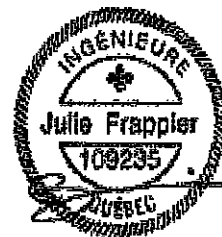


Maximum Floor Spans

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'-4"	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.



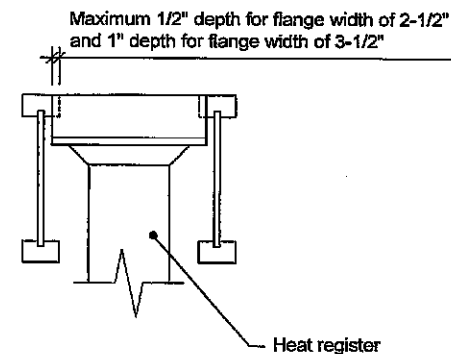
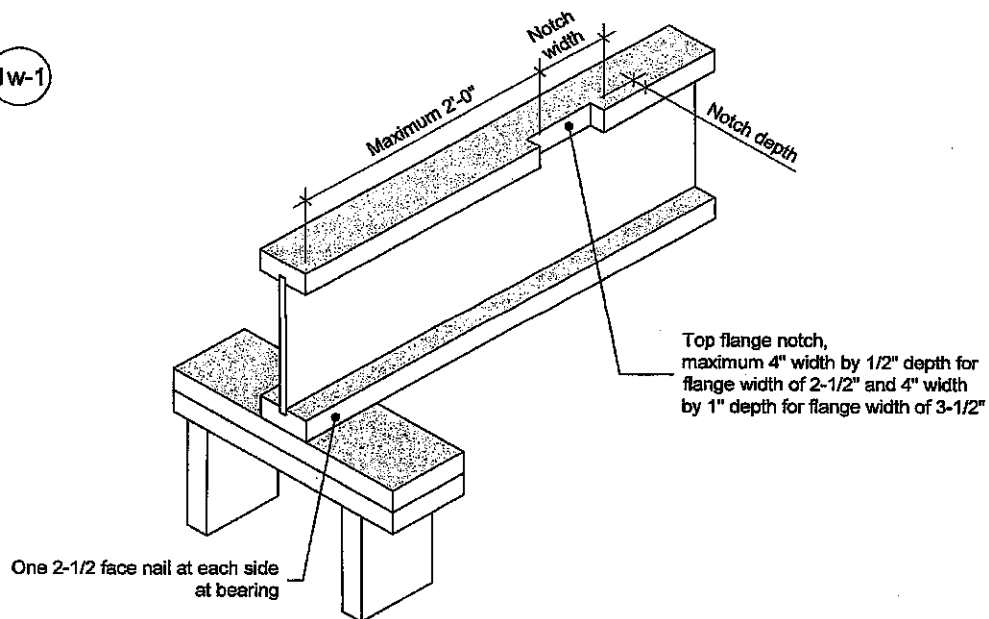
Maximum Floor Spans

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	18'-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.

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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.

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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

NUMBER

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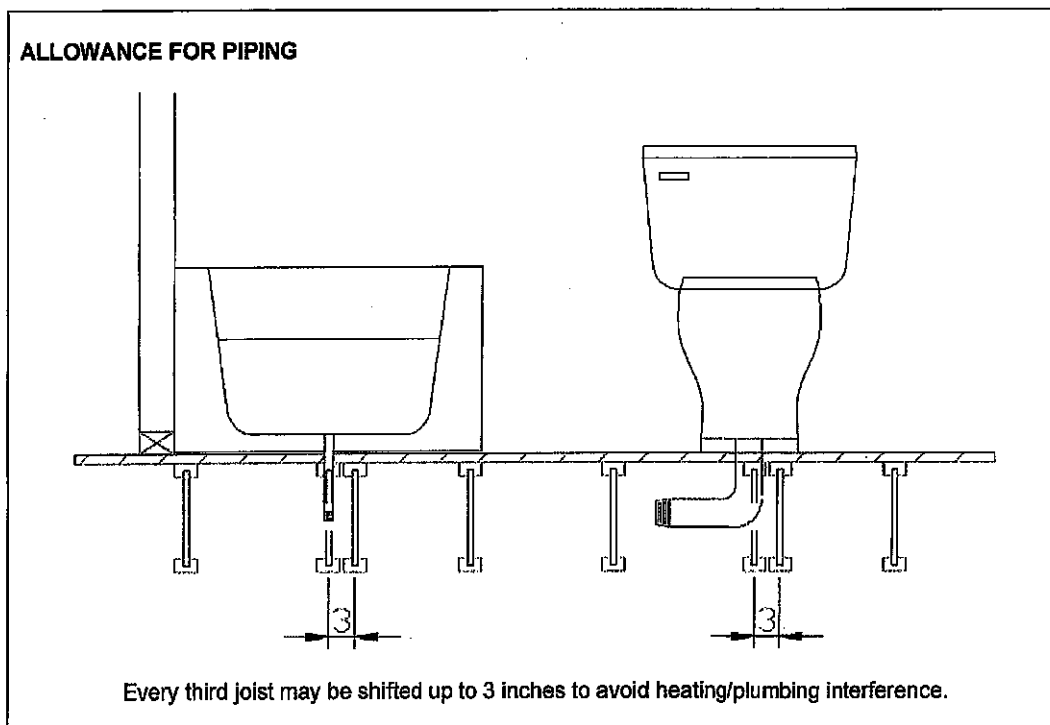


Allowance for Piping (Installation Notes)

The floor layouts have usually not been checked for heating and/or plumbing interference. On-site adjustment of joists of up to 3 inches is permitted to avoid interferences. When moving a joist, the subfloor thickness shall be checked with code requirements when the joist spacing exceeds 19.2 inches. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.

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

The detail below shows the 3-inch allowance for piping. Every third joist may be shifted up to 3 inches to avoid heating/plumbing interference. For other applications, please contact your distributor.



Revised April 12, 2012