

		Products		
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	2	38
J2	12-00-00	9 1/2" NI-40x	1	12
J3	8-00-00	9 1/2" NI-40x	1	5
J4	6-00-00	9 1/2" NI-40x	1	7
J5	2-00-00	9 1/2" NI-40x	1	4
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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



BUILDER: BAYVIEW WELLINGTON

SITE: PASSAGE ON THE CANAL

MODEL: TH2 MOD

ELEVATION: A

LOT:

CITY: ST CATHERINES

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

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

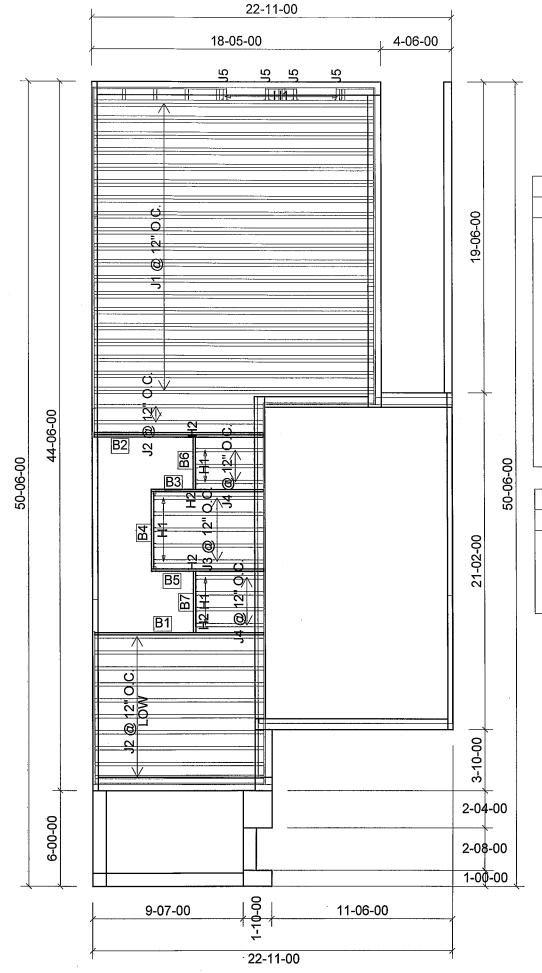
LOADING:

DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 lb/ft TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 10/27/2018

1st FLOOR



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	2	38
J2	12-00-00	9 1/2" NI-40x	1	12
J3	8-00-00	9 1/2" NI-40x	1	5
J4	6-00-00	9 1/2" NI-40x	1	7
J5	2-00-00	9 1/2" NI-40x	1	4
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1 -
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

	<u> </u>	<u> </u>								
Connector Summary										
Qty	Manuf	Product								
12	H1	IUS2.56/9.5								
4	H1	IUS2.56/9.5								
3	H2	HUS1.81/10								
1	H2	HUS1.81/10								



BUILDER: BAYVIEW WELLINGTON

SITE: PASSAGE ON THE CANAL

MODEL: TH2 MOD

ELEVATION: B

LOT:

CITY: ST CATHERINES

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

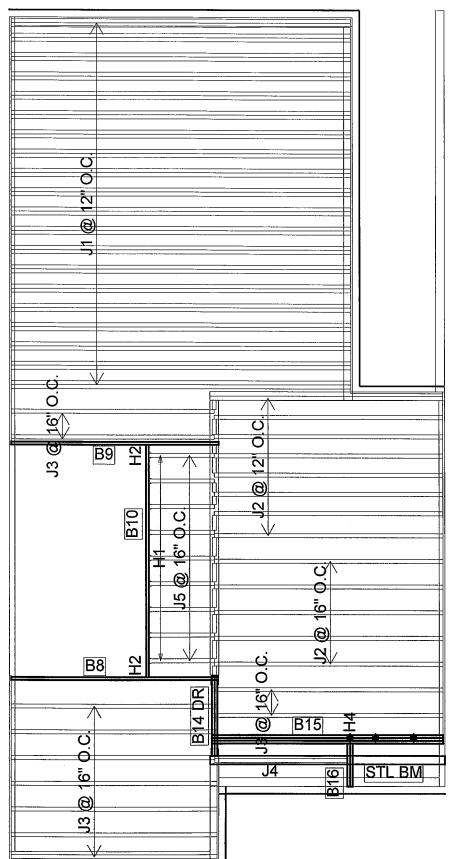
REFER TO THE NORDIC **INSTALLATION GUIDE FOR PROPER** STORAGE AND INSTALLATION. **SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2** S.P.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST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

LOADING: DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 lb/ft TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

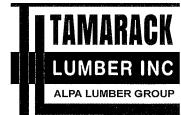
DATE: 10/27/2018

1st FLOOR



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	2	40
J2	14-00-00	9 1/2" NI-40x	1	13
J3	12-00-00	9 1/2" NI-40x	1	11
J4	8-00-00	9 1/2" NI-40x	1	1
J5	4-00-00	9 1/2" NI-40x	1	9
B10	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B15	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B9	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14 DR	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B16	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2

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



BUILDER: BAYVIEW WELLINGTON

SITE: PASSAGE ON THE CANAL

MODEL: TH2 MOD

ELEVATION: B, B2

LOT:

CITY: ST CATHERINES

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

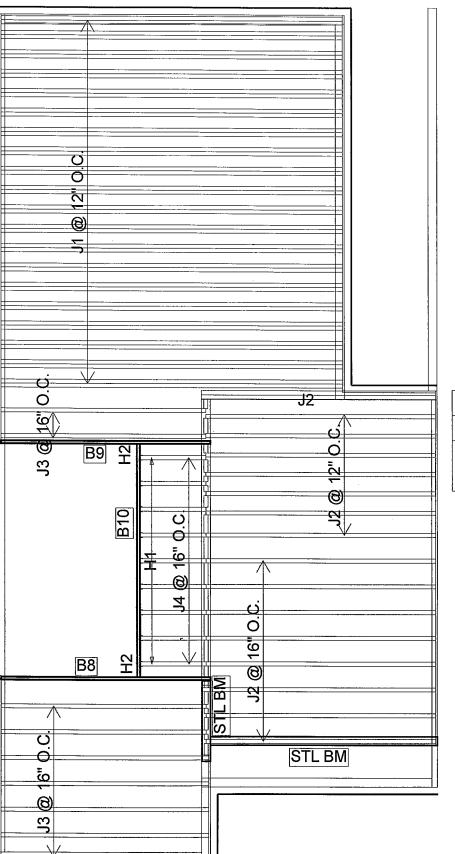
REFER TO THE NORDIC **INSTALLATION GUIDE FOR PROPER** STORAGE AND INSTALLATION. **SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2** S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST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

DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 lb/ft TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 10/29/2018

2nd FLOOR



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	2	40
J2	14-00-00	9 1/2" NI-40x	1	16
J3	12-00-00	9 1/2" NI-40x	1	9
J4	4-00-00	9 1/2" NI-40x	1	9
B10	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B9	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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



BUILDER: BAYVIEW WELLINGTON

SITE: PASSAGE ON THE CANAL

MODEL: TH2 MOD

ELEVATION: A

LOT:

CITY: ST CATHERINES

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

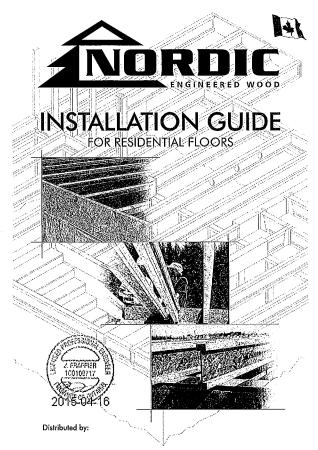
REFER TO THE NORDIC **INSTALLATION GUIDE FOR PROPER** STORAGE AND INSTALLATION. SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING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

DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 lb/ft TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 10/27/2018

2nd FLOOR



SAFETY AND CONSTRUCTION PRECAUTIONS

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



Never stack building unsheathed I-joists.
Once sheathed, do not over-stress I-joist with oncentrated loads from

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

Avoid Accidents by Following these Important Guidelines:

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

Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic Lipists, failure to follow oblewable hole sizes and locations, or failure to use web stiffeners when require can result in serious occidents. Follow these installation guidelines corefully.

MAXIMUM FLOOR SPANS

- Maximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live lead of 40 pds and deed load of 15 pds. The ultimate limit states are based on the factored loads of 1.50.4. + 1.25. The serviceability limit states include that consideration for floor vibration and a live load deflection limit of 1/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- 2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19-2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGBS-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the used of gypsum and/or a row of blocking at mid-span.
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
- Bearing stiffeners are not required when I-joists are used with the spons and spacings given in this table, except as required for hangers.
- 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.
- Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
- 7. St units conversion: 1 inch = 25.4 mm 1 foot = 0.305 m

MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS

			Simple	spans	Muliiple spans					
Joist Depth	Joist Series		On centre	spacing			On centre	spacing		
Dep	Selics	12"	16"	19.2	24°	12"	16"	19.2".	24"	
750.475	NI-20	15'-1"	14'-2"	13'-9"	13'-5"	16'-3"	15'-4"	14'-10"	14'-7"	
1.1472-12	NI-40x	16'-1"	15'-2"	14'-8"	14'-9"	17'-5"	16'-5"	15'-10"	15'-5"	
9-1/2	NI-60	16'-3"	15'-4"	14'-10"	14'-11"	17'-7'	16-7	16'-0"	16'-1"	
	NI 70	17'-1"	16'-1"	15'-6"	15'-7"	18'-7"	17'-4"	16'-9"	16'-10'	
AV 2517	NI-80	17'-3"	16'-3"	15'-8"	15'-9"	18'-10"	17-6	16'-11'	17'-0"	
A-1 12.1	NI-20	16'-11'	16'-0"	15'-5'	15'-6"	18'-4"	17'-3"	16'-8'	16'-7"	
1000	NI-40x	18'-1"	17'-0"	16'-5"	16'-6"	20'-0"	18'-6"	17'-9"	17'-7"	
44 A A A A A A A A A A A A A A A A A A	NI-60	18'-4'	17'-3"	16'-7"	16'-9"	20'-3"	18'-9"	18'-0"	18'-1"	
11-7/8	NI-70	19'-6"	18'-0"	17'-4"	17'-5"	21'-6"	19'-11"	19'-0"	19'-1"	
1200	NI-80	19'-9'	18'-3'	17'-6"	17'-7"	21'-9"	20'-2'	19'-3"	19'-4'	
	NI-90	20'-2'	18'-7"	17-10	17:11*	22'-3"	20'-7"	19'-8"	19'-9"	
	NI-90x	20'-4"	18'-9"	17'-11'	18'-0"	22'-5"	20'-9"	19'-10"	19'-11'	
Aras Saga	NI-40x	20'-1"	18'-7'	17'-10'	17'-11*	22'-2"	20'-6"	19'-8"	19'-4"	
7 N. 1	NI-60	20'-5"	18'-11"	18'-1"	18'-2"	22'-7"	20'-11"	20'-0"	20'-1"	
	NI-70	21'-7"	20'-0"	19-1"	19'-2"	23'-10"	22'-1"	21'-1'	21'-2"	
14	NI-80	21'-11"	20'-3"	19'-4"	19'-5*	24'-3"	22-5	21'-5'	21'-6"	
Novy	NI-90	22'-5"	20'-8"	19'-9'	19'-10'	24'-9"	· 22'-10"	21'-10"	21'-10'	
成功 经进	NI-90x	22'-7'	20-11	19'-11"	20'-0"	25'-0"	23'-1"	22'-0"	22'-2"	
74 JUNE 18	NI-60	22'-3'	20'-8"	19'-9"	19'-10'	24'-7"	22'-9"	21'-9*	21'-10	
11.3	NI-70	23-6	21'-9"	20'-9"	20'-10'	26'-0"	24'-0"	22'-11"	23'-0"	
16"	NI-80	23'-11'	22'-1"	21'-1"	21'-2'	26'-5"	24'-5"	23'-3"	23'-4"	
20, 24, 25	NI-90	24-5*	22'-6"	21'-5"	21'-6"	26'-11"	24'-10"	23'-9"	23'-9"	
39.50 S. C. E.	NI-90x	24'-8'	22'-9*	21'-9'	21'-10"	27'-3"	25'-2"	24'-0"	24'-1"	

I-JOIST HANGERS

1. Hangers shown illustrate the three

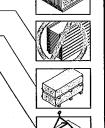
2. All nailing must meet the hanger

Hangers should be selected based on the joist depth, flange width and load capacity based on the maximum spans.

Web stiffeners are required when the sides of the hangers do not laterally brace the top flange of the I-joist.



- 1. Bundle wrap can be slippery when wet. Avoid walking on wrapped
- 2. Store, stack, and handle 1-joists vertically and level only.
- 3. Always stack and handle I-joists in the upright position only. -
- 4. Do not store I-joists in direct contact with the ground and/or flatwise. 5. Protect I-joists from weather, and use spacers to separate bundles. --
- 6. Bundled units should be kept intact until time of installation.
- 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
- # 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 t-joists in a horizontal orientation.
- 9. NEVER USE OR TRY TO REPAIR A DAMAGED 1-JOIST.

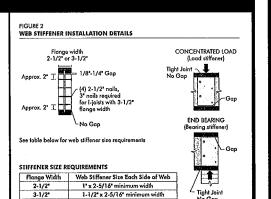


WEB STIFFENERS

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

SI units conversion: 1 inch = 25.4 mm

(le)



(lg)

NORDIC I-JOIST SERIES S-R-F No. 2 1950f MSR 2100f MSR 1950f MSR 2100f MSR 2400f MSR NPG Lumbe

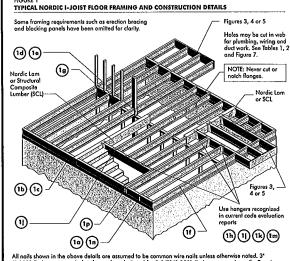
Chantiers Chibougamau Ltd. harvests its own trees, which enables Nooring products to adhere to strict quality control procedures through (1969) (1969

finished product, reflects our commitment to quality.

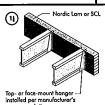
Nordic Engineered Wood Lipists use only finger-jointed back shiffleff lumber in their flanges, ensuring consistent quality, superior stress 2011/11 lumber in their flanges, ensuring consistent quality, superior stress 2011/11 lumber in their flanges, ensuring consistent quality, superior stress 2011/11 lumber in their flanges, ensuring consistent quality, superior stress 2011/11 lumber in their flanges, ensuring their flanges,

INSTALLING NORDIC I-JOISTS

- 1. Before laying out floor system components, verify that I-jaist flange widths match hanger widths. If not, control you
- 2. Except for cutting to length, 1-joist flanges should never be cut, drilled, or notched. 3. Install Ligists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
- 4. 1-joists must be anchored securely to supports before floor sheathing is attached, and supports f be level.
- 5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings 2015-04-16
- 6. When using hangers, seat 1-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. Nover suspend unusual or heavy loads from the 1-joist's bottom flange. Whenever possible, suspend off concentrated loads from the top of the 1-joist. Or, attach the load to blocking that has been securely fastened to the
- 9. Never install L-joists where they will be permanently exposed to weather, or where they will remain in direct contact with
- Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels
- For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
- 12. Due to shrinkage, common framing lumber set on edge may never be used as blocking or rim boards. Ligist blocking panels or other engineered wood products such as rim board must be cut to fit between the Ligists, and an Ligist-compatible depth selected.
- 13. Provide permanent lateral support of the bottom flange of all 1-joists at interior supports of multiple-spon joists. Similarly, support the bottom flange of all contilevered 1-joists at the end support next to the contilever extension. In the completed structure, the gypsum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, temporary bracing or strukt 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 approved building plans.



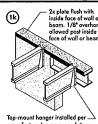
All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3' (0.122' dia.) common spiral nails may be substituted for 2-1/2' (0.128' dia.) common wire nails. Framing tumber assumed to be Spruce-fine-fir No. 2 or better. Individual components not shown to scale for clarify.



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

or nailing schedules for multiple eams, see the manufacturer's

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



Use single I-joist for loads up to 3,300 plf, double I-joists for loads up to 6,600 plf (filler block not

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

Top-mount hanger installed per -manufacturer's recommendation Note: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used. (Im) Install hanger per — manufacturer's recommendations Backer block attached per detail 1h. Nail with twelve 3* nails, clinch when possible.

Maximum support capacity = 1.620 lbs

9-1/2" 11-7/8" 14" 16"

3-1/2" x 9-1/2" 1-1/2" 11-7/8" 14" 16"

3-1/2"× 11-7/8" 2" 14" 16"

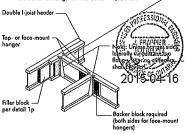
(tn) l-joist per detail 1b

over all interior

Load bearing wall above shall align vertically

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

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



BACKER BLOCKS (Blocks must be long enough to permit required

ioning wintoor sp	nutr ig)	
Flange Width	Material Thickness Required*	Minimum Depth**
2-1/2"	1.	5-1/2"
3-1/2*	1-1/2"	7-1/4"

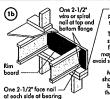
Minimum grade for backer block moterial shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-0325 or CAN/CSA-0437 Standard.

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



3.300

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

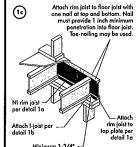


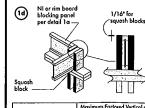
—Attach rim board to top plate using 2-1/2* wire or spiral toe-nails at 6* o.c To avoid splitting flange, start nails at least 1-1/2* from end of I-joist. Nails nay be driven at an angle to d splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate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

FSC weekeng reconstition

J. FRAFFIER 100108717

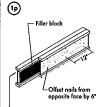
Maximum Factored Uniform Vertical Load* (plf) 8,090 1-1/8" Rim Board Plus The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.





Maximum Factored Vertical per Pair of Squash Blocks (lbs) 3-1/2" wide 5-1/2" wide
 2x Lumber
 5,500
 8,500

 1-1/8* Rim Board Plus
 4,300
 6,600



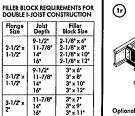
-1/8" to 1/4" gap between top flange and filler block

1. Support back of I-joist web during nailing to Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top 1-jaist

 Filler block is required between joists for full length of span. twi tength of span.

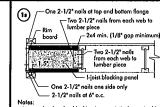
A Noil joist together with two rows of 3' noils of 12 inches a.c. (clinched when possible) on each side of the double Ljoist. Total of four noils per foot required. If noils can be clinched, only two nails per foot are required.

5. The maximum factored load that may be opplied to one side of the double joist using this detail is 860 libf/ft. Verify double 1-joist capacity.

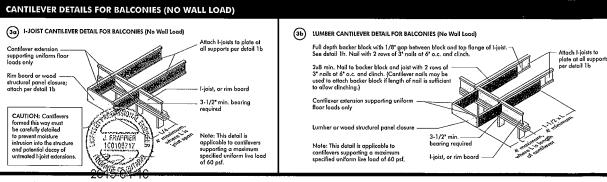


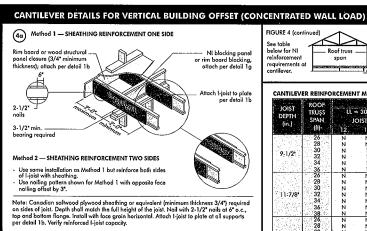
Lumber 2x4 min., extend block to face of adjacent web. Two 2-1/2" spirat nails from each web to lumber piece,

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



Notes:
- In some local codes, blocking is prescriptively required in
- the ilitati joist space (or first and second joist space) ned to
- the starter joist. Where required, see local code requirement
- for spacing of the blocking.
- All noils are common spiral in:this detail.





oll supports per detail 1b, 3-1/2* min. bearing required Block L-joists together with filler blocks for the full length of the reinforcement.

For L-joist flange widths greater than 3 inches place on additional row of 3" noils along the centreline of the reinforcing panel from each side. Clinch when possible.

4b Alternate Method 2 — DOUBLE I-JOIST

panel closure (3/4" minimum thickness); atlach per detail 1b

Attach I-joists to top plate at

For hip roofs with the jack trusses running parallel to the cantilevered floor joists, the 1-joist reinforcement Roof trusses Girder Roof truss Jack trusses truss span 2-0* requirements for a span of 26 ft. shall be permitted to be used. 2'-0" CANTILEVER REINFORCEMENT METHODS ALLOWED JOIST DEPTH (in.) LL = 30 psf. DL = 15 psf LL = 40 psf, DL = 15 psf LL = 50 psf. DL = 15 psf JOIST SPACING (in.) 16 19.2 24 12 16 19.2 24 9-1/2 11:7/8

1. N = No reinforcement required.
1 = NI reinforced with 3/4° wood structural

a reinforced with 3/4" wood structural panel on one side only.

2 = NI reinforced with 3/4" wood structural panel on both sides, or double 1-joist.

X = Try a deeper joist or closer spacing.

2. Moximum design lood shall be: 15 pst roof deed lood, 55 pst floor total lood, and 80 plf wall lood. Wall lood is bosed on 30°5"

For larger openings, or multiple 3:0° width openings spaced less than 6:0° o.c., additional plats beneath the opening's cripple studs may be required.

3. Toble opplies to plats 12' to 24° o.c. that meet the floor span requirements for a design five load of 14 op sind deed blood of 15 pst, and a law load deflection limit of 1/480. Use 12° o.c. requirements for laws repaiding.

Roof trusses

Roof truss

Roof truss

2'-0*

2'-0"

— Roof truss --span

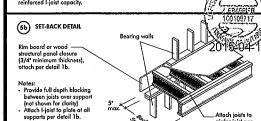
4. For conventional reof construction using a ridge beam, the Reof Trus Span column above is equivalent to the distance between the supporting well and the ridge beam. When the roof is formed using a ridge beam, when the roof is formed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting well as all forest severe.

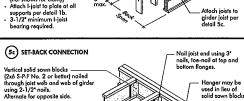
5. Confidenced joints supporting girder trusses or roof beam may require additional

For hip roofs with the jack trusses running parallel to the confilevered floor joists, the 1-joist reinforcement requirements for a span of 26 ft. shall be permitted to be used.

BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD) (5a) SHEATHING REINFORCEMENT See table below for NI Roof truss Provide full depth blocking between joists over support (not shown) ____ and bottom joist flange with 2-1/2" nails at 6" Note: Cenadian softwood plywood sheathing or equivalent (iniminum thickness 3/41 required on sides of joist. Depth shall moth the full helpin of the joist. Nail with 2-1/2" noils of 6 o.c., to pand bottom flenge, install with face grain horizontal. Attach Ljoist to plate at all supports per detail 1b. Verify reinforced Ljoist capacity. o.c. (offset opposite face nailing by 3" when using reinforcement on both sides of I-joist) BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED JOIST DEPTH (in.) 3-1/2

Face nail two rows of 3" nails at 12" o.c. each side through one 1-joist web and the filler block





Notes:

- Verify girder joist capacity if the back span exceeds the joist spacing.

- Attach double 4-joist per detail 1 p, if required.

LL = 30 psf, DL = 15 psf LL = 40 psf, DL = 15 psf LL = 50 psf, DL = 15 psf JOIST SPACING (in.) JOIST SPACING (in.) JOIST SPACING (in.) 16 19.2 24 11-7/8

1. N = No reinforcement required.
1 = NI reinforced with 3/4" wood structural panel on one side only.
2 = NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
X = Try o deeper joist or closer spacing.
2. Maximum design lood shall be 1.5 pst pool dead lood, 55 pst floor steal food, and 80 pst well lood. Well lood is bosed on 3.0" maximum width window or door openings.

For larger openings, or multiple 3-0° vidth openings special less than 6-0° o.c. odditional pilits beneath the openings cripple shads may be required.

Tables applies to point 12° to 24° o.c. that meet the floor span requirements for a design live load of 40 gal and dead load of 15 pet and a live load of 40 gal and dead load of 15 pet and a live load deflection limit at 1400. Use 12° o.c. requirements for lesser spocing.

**Confilerer deflects supporting walls as it for trust is used.

**Confilerer deflects supporting girder Insiste or roof beams may require additional reinforcing.

WEB HOLES

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.
- 2. I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified
- 3. Whenever possible, field-cut holes should be centred on the middle of the web.
- 4. The maximum size hole or the maximum depth of a duct chose opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joist flange.
- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- 6. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole for twice the length of the langest side of the longest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of opening shall be sized and la 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 shall be permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to
- 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.
- 11. Limit three maximum size holes per span, of which one may be a duct chase
- 12. A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

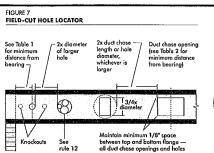
LOCATION OF CIRCULAR HOLES IN JOIST WEBS
Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf

Joist	Joist		_ c.Mii	nimun	ı dista	nce fro		ide (ac				centre	of ho	le (fi-ii	1.)		Span
Depth	Series		ratio		i day.		Ro	und ho	le dian	neter (in.)':	3.1					adjustm
		. 2	3	4	5	6	6-1/4	7.7	8	8-5/8	9	10	10-3/4		12	12-3/4	Factor
9 1.1. of 6	NI-20	0.7	1'-6"	2'-10'	4'-3"	5'-8"	6,0,	***	***	***	***	***					13.6
73247	NI-40x	0-7	1.6	3.0.	41.4	6'-0"	6-4						•••		•••		14-9
9 1/2	NI-60	1'-3'	2.6	4'-0"	5-4	7.0	7'-5"				***	•••	***	***	***		14'11
	NI-70	2.0	3'-4"	4-9	6-3	8.0	8-4		***			***	***	•••	***		15'-7'
	NI-80	2-3	3'-6"	5'-0"	6.6	8'-2"	8-8						***	***	***	***	15'-9'
36/17 free	NI-20	0.7	0'-8"	1'-0"	2.4	3'-8"	4'-0"	5' 0'	6.6	7-9"	•••	***					15'-6'
70.	NI-40x	0-7	0.8	1-3	2.8	4'-0'	4-4	5-5	7.0	8'-4"	***	***	***	•••	***	***	16'-6'
7722 July N	NI-60	0'-7"	1'-8"	3.0.	4'-3'	5'-9'	6.0	7'-3"	8-10	10.0	***	•••	***	***	***	***	16'-9'
11-7/8	NI-70	1'-3"	2-6*	4'-0"	5'-4"	6-9	7-2*	8'-4"	10-0	11-2	•••	***		***	•••	***	17'-5'
1.0	NI-80	1.6	2-10	4-2	5.6	7:0'	7-5	8 6	10'-3"	11'-4'			***	•••	•••	***	17'-7'
25 Jan 10, 11	NI-90	0.7	0.8	1'-5"	3'-2"	4'-10"	5-4	6-9	8-9	10-2	•••	***	***	***	***		17'1
	NI-90x	0:-7:	0-8*	0.9	2:-5*	4'-4"	4-9	6'-3'		***			***	***	***	***	18-0
100	NI-40x	0.7	0.8	0.8	1'-0"	2'-4'	2.9	3'-9"	5'-2'	6.0,	6.6	6-3	10-2	***	•••	***	17:1
	NI-60	0'-7'	0.8	1'-8"	3.0,	4'-3'	4'-8"	5'-8'	7-2*	8.0,	8'-8'	10-4	11'-9'	•••	•••	***	18-2
14	NI-70	0.8	1'-10'	3.0.	4'-5"	5-10	6.5.	7.3	8-9	9-9	10.4	12:0	13'-5'	***	***	•••	19-2
	NI-80	0-10*	2.0	3.4	4'-9"	6-2	6-5	7-6	9.0	10-0	10.8	12-4	13-9*	***	***	***	19-5
1.0	NI-90	0.7		0'-10"	2-5	4'-0'	4'-5"	5.9	7.5	8'-8'	9-4	11546	12-11		***	***	19-9
A 37 A 3	NI-90x	0.7	0'.8"	0-8	2.0	3-9-	4'-2"	5'-5*	7.3	8-5	9-2					***	20-0
2.5	NI-60	0.7	0.6	0'-8'	1'-6"	2'-10'	3'-2'	4'-2"	5'-6"	6'-4"	7.0	8-5"	9-8	10.2	12-2	13-9	19'-1
140	NI-70	0.7	1.0	2-3	3'-6"	4'-10'	5-3	6'-3'	7'-8"	8'-6"	9-2	10.8	12-0	12-4	14'-0"	15-6	20'1
16'	NI-80 NI-90	0.7	1'-3'	2.6	3'-10'	5'-3"	5'-6"	6'-6"	8.0	9-0	9-5'	11-0	12-3	12:-9"	14'-5"	16'-0"	21-2
1.5	NI-90	0.7	0'-8' 0'-8'	0.8.	1'-9"	3'-3"	3.8	4-9	6'-5"	7-5	8.0	9-10	11'-3"	11'-9"	13-9	15'-4"	21'-6
	- 141-901	U-/-	U-8.	0'-9'	2'-0"	3'-6'	4'-0"	5'-0'	6'-9"	7-9	8'-4"	10.2	11:6	12:-01	***	•••	2111

Above table may be used for I-joist spacing of 24 inches on centre or less.
 Hole localion 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 1-joists used at their maximum span. If the 1-joists are placed at less than their full maximum sp the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows: D_{reduced} = Loctual x D

SAF Distance from the inside face of any support to centre of hole, reduced for less-thon-modifications shall not be less than 6 inches from the face of the support to edge of the hole. SAF Son Adjustment Factor given in this table. D He minimum distance from the inside face of any support to centre of hole from this to' the factor of the support of the suppo isons (A) FRAPPIET 1001 (E) 77 2015-04-16



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

Knockouts are prescored holes provided for the contractor's convenience to instal electrical or small plumbing lines. They are 1-1/2 inches in diometer, and are praced 15 inches on centre along the length of the 1-joist. Where possible, it is preterable to use knockouts instead of field-out holes.

Where:



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

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

DUCT CHASE OPENING SIZES AND LOCATIONS — Simple Span Only

Joist Death	Joist Series									are or opening man,			
200	301103	8	10	12	14	16	18	20	22	24			
3 3 C S C	NI-20	4'-1"	4'.5'	4'-10"	5'.4"	5'-8'	6'-1"	6'-6"	7:-1*	7'-5"			
	11.40x	5'-3"	5'-8'	6'-0"	6'-5"	6'-10'	7.3'	7.8	8'-2"	8'-6"			
9.1/2	NI-60	5'-4"	5'-9'	6'-2"	6'-7°	7'-1"	7.5	8.0	8'-3*	8'-9'			
1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	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"			
1,000 0000	NI-20	5'-9'	6'-2"	6'-6"	7-1*	7:-5'	7:-9'	8'-3"	8'-9"	9'-4"			
100	NI-40x	6'.8"	7.2	7'-6"	8-1	8'-6"	9.1	9.6	10'-1"	10:9			
6.60	NI-60	7.3	7'-8"	8'-0"	8'-6"	9'-0"	9.3	9-9	10-3	11.0			
11.7/8	NI 70	7'-1"	7'-4"	7'-9'	8'-3'	8'-7"	9-1	9.6	10'-1"	10.4			
化进位的	NI-80	7-2	7-7	8'-0'	8'-5"	8'-10"	8.3.	9.8	10'-2"	10.8			
*	NI-90	7.6	7:11'	8'-4"	8'-9'	9-2	9.7	10-1-	10-7*	10'-11'			
2007 (2006)	N1.90x	7.7	8-1	8'-5'	8-10	9'-4"	9-8	10.2	10.8	11:-2"			
部署 经支税	NI-40x	8-1	8'-7"	9'-0"	9-6	10'-1"	10-7	11'-2'	12'-0'	12'-8'			
	NI-60	8-9	9'-3"	9'-8"	10-1	10'-6"	11'-1"	11'-6"	13-3	13'-0"			
14 - 3	NI 70	8'-7"	9-1	9'.5"	9'-10'	10'-4"	10'-8"	11-2	11'-7'	12'-3'			
1.0	NI-80	9.0	9.3	9'.9'	10-1	10'-7"	1141	11'-6"	12'-1"	12:6			
100	NI-90	9-2	9'-8"	10'-0"	10-6*	10-11"	11.5	11'-9"	12'-4'	12'-11'			
	NI-90x	9.4	91.91	10'-3"	10-7	11:1:	13'.7'	12'-1"	12'-7'	13'-2"			
100	N 60	10'-3"	10'-8'	11'2'	11'-6"	12-1	12'-6'	13'-2"	14'-1"	14'-10'			
	N-70	10-1	10-5	11'-0"	. 11'-4"	11'-10"	12:-3	12-8	13'-3"	14.0			
10	NI-80	10-4"	10-9"	11,-3,	11'.9"	12'-1"	12-7	13-1"	13'-8"	14'-4"			
100	NI-90	10-9*	11:-2"	11'-8"	12.0	12'-6"	13-0	13-6	14'-2"	14'-10'			
Charles the State	1_N-90x	1 11:1:	11'-5"	11'-10'	12.4	12'-10'	13-2	13-9	14'-4'	15'-2"			

1. Above lable may be used for I-joist specing of 24 inches on centre or less.
2. Duet obuse opening location distance is measured from inside face of supports to centre of opening.
3. The above solable is based on simple spen joists tools, for other opplications, contact your local distinbutor.
4. Distances are based on uniformly located floor joists thin meet the span requirements for a design five load of 40 pst and dead bod of 15 pst, and of 18 pst, and solable of 18 pst, and of 18 pst and solable of 18 pst, and of 18 pst, and solable of 18 pst, and solable of 18 pst, and solable of 18 pst, and of 18 pst, and 18 pst,

INSTALLING THE GLUED FLOOR SYSTEM

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

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

Maximum	Minimum	N	ail Size and Typ	e	Maximu	n Spacing
Joist Spacing (in.)	Panel Thickness (in.)	Common Wire or Spiral Nails	Ring Thread Nails or Screws	Stoples	of Fa Edges	Interm. Supports
16	5/8	2'	1-3/4"	2'	6'	12*
20	5/8	21	1-3/4"	2'	64	12*
24	3/4	2"	1-3/4"	2'	6'	12'

- 1. Fasteners of sheathing and subflooring shall conform to the above table.
- 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. Flooring screws shall not be less than 1/8-inch in diameter.
- 4. Special conditions may impose heavy troffic and concentrated loads that require construction in excess
- 5. Use only adhesives conforming to CAN/CGS8-71.26 Standard, Adhesives for Field-Gluing Plywood to Lumber framing for Floor systems, applied in accordance with the manufacturer's recommendations. If OSB panels with sealed surfaces and edges are to be used, use only solvent-based glues; check with

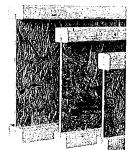
Ref.: NRC-CNRC, National Building Code of Canada 2010, Table 9.23.3.5.

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

RIM BOARD INSTALLATION DETAILS (8a) ATTACHMENT DETAILS WHERE RIM BOARDS ABUT im board Joint Between Floor Joists 2-1/2" nails at 6" o.c. (typical) Rim board Joint at Corne 2-1/2" toe-nails at 6" a.c. (typical) Rim board joint 8c) 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL 8b TOE-NAIL CONNECTION Remove siding at ledger prior to installation Rim board ----Top or sola plate – 1 1/3 2' min. 1 Staggered 1/2 1-5/8° min. 5° max.



2. FRAFFIER 100109717



oard (preservative-treated); must be greater than or equal to the depth of the deck joist

Deck iois

N1.90s



FSC HOTTLESTY

NI-60 NI-70 \$-P-F No.2 1950FMSR 2100f MSR 1950f MSR 2100f MSR 2400FAASR NPG Lumbe per unil per unit

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

WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS.

- 1. The distance between the inside edge of the support and the controline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.

LOCATION OF CIRCULAR HOLES IN JOIST WEBS

- Floist top and bottom fanges must NEVER be out notched, or otherwise modified.
 Whenever possible, field-out hotes should be centred on the middle of the web.
 The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flance of the Ligist minus 1/4 inch. A minimum of 1/8 inch should always be mainted between the top or bottom of the hale or opening and the adjacent Ljoist flange.
- 5. The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hale nemitted at that location
- the diameter of the incoming round hole permitted at that incation.

 6. Where more than one hole is necessary, the dislance between adjacent hole edges shall exceed twice the diameter of the largest round hale or twice the size of the largest square hole (or twice the length of the kongest side of the largest rectangular hole or duct chose opening) and each hole and duct chose opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.

 7. A knockout is not considered a hole, may be utilized anywhere it occurs, and may be
- ignored for purposes of calculating minimum distances between holes and/or duct 8. Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification
- 9. A 1-1/2 inch hole or smaller can be placed anywhere in the web
- provided that it meets the requirements of rule number 6 above.

 10. All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
- 11. Limit three maximum size holes per span, of which one may be a duct chase opening.

 12. A group of round holes of approximately the same location.
- shall be permitted if they meet the requirements for a single round hale circumscribed around them.

Simple or Multiple Span for Doad Loads up to 15 nsf and Live Loads up to 40 nsf

			W	inimun	ı Diştar	ice fro	m Insid	s Fac s	of Any	Support	to Cer	itre of	Hole (fi	· in.]		
Joist Depth	Joist Series						Row	rd Hol	a Diam	eter (in.)					
Беріп	201102	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4
	NI-20	0'-7"	1'-6'	2'-10"	4'-3"	5'-8"	6'-0'		-45	***		***	787	***		
	NI-40x	0'-7"	1'-6'	3'-0"	4'-4"	6'-0"	6'-4"		**-					***	~	
9-1/2"	NI-60	1'-3"	2'-6'	4'-0'	5'-4"	7'-0"	7'-5'		***				•••		•••	·
	NI-70	21.01	31.41	4291	6'-3"	8'-0"	844							***		
	NI-80	2'-3"	3'-6'	5'-0'	6'-6"	8'-2"	8'-B*		***		***	750	***	7.7		***
	NI-20	0'-7"	0'-8'	1'-0'	2'-4"	3'-8"	4'-0"	5-0	6'-6'	7'-9'						
	NI-40x	0'-7"	0'-6'	1-3.	2'-8"	4'-0"	4'-4"	5'-5"	7'-0'	8'-4"				***		***
	NI-60	0'-7"	1'-6'	3-0	4'-3"	5'-9"	6'-0"	7'-3'	8'-10"					***		
11-7/8"	NI-70	1:3"	2'-6"	4'-0"	5-4"	6-9"	7'-2"	8'-4"	10'-0'	11'-2"		***				***
	0B-IM	1'-6"	3,-10,	4'-2"	5'-6"	7'-0'	7'-5"	8'-6"	10-3						***	
	NI-90	C'-7"	08,]-5"	3'-2"	4-10	5-4	6'-9'	8'-9'	10'-2"						***
	NI-90x	0'-7"	0'-8"	0'-9"	2'-5"	4-4	41-94	6'-3'	***	•••			***	***		444
	NI-40x	6-7"	0'-8"	0,-8,	1.0	2.4	2'-9"	3'-9'	5'-2"	6-0'	6-6	Br 34	10.54	4		
	NI-60	0'-7"	0'-8'	1'-6"	3'-0'	4-3	4'-8"	5'-8'	7:-2"	8,-0,	8.8.	10-4	11'-9"			•••
14"	NI-70	0.8.	1-10	3'-0"	4-5	5'-10'		7-3	8-9	9' 9		12.0	13'-5"			
•	NJ-80	0.10	5.0.	3'-4"	4'-9'	6-2	6'-5"	7-6	9-0	10.0	10'-8"		13'-9"		***	
	NI-90	0.7	08.	0'-10°	2'-5'	4'-0'	4'-5"	5-9	7-5	8.8.	9-4	11'-4"	12'-11"			
	NI-90x	0'-7"	0.8.	0'-8"	2'-0'	3-9	4'-2"	5-5	7'-3'	81-5"	9-21	***	***			
	NI-60	0:-7'	06,	0.8	1'-6'	2'-10'	3'-2"	4'-2'	5-6	6'-4"	7'-0'	8'-5"	7-8"		12-2	13-9"
	NI-70	0'-7'	1,-0,	2'-3"	3'-6'	4'-10'		6.3.	7'-8'	8'-6"	9\2°	10'-B°			14-0	15'-6"
16"	NI-80	0'-7'	1,-3,	2-6"	3-10	5'-3'	5-6	6.6	8.0	9.0	9-5	11'-0"	12-3		14.5	16'-0"
	NI-90	0'-7'	0,-8,	0-8	1-9	3,-3,	3'-8"	4.0	6'-5'	7'-5'	8-0	9-10	11'-3"		13.9	15-4"
	NI-90x	0'-7'	0'-8"	0'-9"	5,-0,	3'-6'	4'-0"	5'-0"	6.5,	71-91	8-4	10'-2"	11'-6"	12-0	***	***

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

DUCT CHASE OPENING SIZES AND LOCATIONS

Simple Span Only

1.1.	Joist	Minim	ım distan	ce from in	side face	of suppo	orts to co	in!re of c	gninago	fi – in.)
Joist Depth	Series			1	Dud Ch	asa Long	th [in.)			
Dopin	55,,55	8	10	12	14	16	18	20	22	24
	NI-20	4'-1'	4'-5'	4'-10"	5-4"	5'-8"	6'-1"	5'-6'	7-1	7'-5"
	NI-40x	5'-3'	5-8	6'-0'	6'-5"	6'-10"	7'-3"	7'-8'	8'-2'	8'-6" 8'-9" 8'-4"
9-1/2"	NI-60	5'-4"	5'-9"	5'-2'	6'-7"	7-1	7'-5'	8'-0'	8-3	8-9"
	NI-76	5'-1"	51-51	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"
	NI-20	5'-9'	6'-2'	6'-6'	7'-1"	7'-5"	7'-9'	9,-3,	849*	9-4
	NI-40x	6'-8"	7'-2"	7'-6'	8'-1"	8'-6"	9'-1"	9-6	10'-1"	10-9"
	NI-60	7431	7-8*	8'-0"	Br-6"	9-01	9-31	9:-91	10'-3"	11'-0"
11-7/8"	NI-70	7-1"	7.4	7-9	8'-3°	8-7	9-1"	9'-6"	10:11	10'-4"
	NI-80	7'-2'	7'-7"	8'-0'	8'-5"	8'-10"	9-3	9-8	10'-2"	10'-8"
	NI-90	7-6	741 l'	B'-4"	8-5	9-2	9-7	10'-1"	10'-7"	10:11*
	NI-90x	7*-7*	8'-1"	8'-5"	8'-10'	9'-4'	9'-8"	10'-2"	10'-8"	111-21
	NI-40x	8'-1'	8'-7'	δ ₁ .0,	9'-6"	10-1°	10'-7"	111-2"	12'-0"	127-5*
	NI-60	8'-9'	9'-3"	9'-8"	10'-1'	10-6	11:1"	11'-6"	13'-3"	13-0
14'	NI-70	8'-7'	9'-1"	9'-5"	9'-10'	10-4	10-8*	11'-2'	11.7	12.3
14	NI-80	9'-0'	9-3	9'-9'	10-11	10-7"	יויוו	11'-6'	12'-1"	12-6
	NI-90	9'-2'	9-8'	10-0	10'-6'	10-11		11:9	12'-4"	12-11
	NI-90x	9.4	9.91	10'-3"	10'-7'	11'-1"	1147*	12'-1"	12:-71	13-2
	M-60	10-3	10'-8"	1342*	11'-6"	12-1"	12-6	13'-2"	14'-1"	14-10
	NI-70	10-11	10-5"	11-0"	11-4	11'-10'		12'-8"	13'-3"	14'-0'
16*	NI-80	10'-4"	10'-9"	11:-3:	11'-9'	12'-1"	12-7	7341"	13-8	14'-4'
i	NI-90	10-9	111-2"	11'-8"	15,0,	12'-6"	13'-0"	13'-6"	14-2	14-10
	NI-90x	1747"	112-5"	11710.	12-4	12'-10'	13-2"	13'-9"	34-4	15'-2'

- Above table may be used for 1-joist spacing of 24 inches on centre or less.
 Duct chase opening location distance is measured from inside face of supports to centre of opening.
 The above table is based on simple-span joists only. For other applications, conded your local distribution.
 Distances are based on uniformly louded floor joists that meet the span requirements for a design five load of 40 pst and dead load of 15 pst, and a live load deflection limit of 1480.
 The above table is based on the 1-joists being used of their noximum spans. The minimum distance os given above may be reduced for shorter spans; contact your local distributor.

l-joist to top plate per detail 15

(1d)

Maximum Factored Uniform Verlical Load* (plf) "The uniform vertical food is limited to a joist depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a banding mamber, such

Maximum Factored Ventical Load per Pair of Squash Blocks (lbs)

5,500 8,500

4,300 6,600

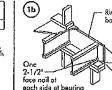
5-1/2* wide

3-1/2" wide

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

as joist, header, or rafter, For concentrated vertical load

ronsfer, sea delail 1d.



To avoid splitting flange, start nails at least 1-1/2" from end of I-joist Nails may be driven at an angle to avoid splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the information bearings when applicable.

One 2-1/2' wire or spiret noil at top and bottom flange

Blocking Panel

1-1/8" Rim Board Plus



bearing below Install squash blocks per detail 1d. area of blacks

Load bearing wall above shall align vertically per detail 1b with the bearing below. Other conditions, such as offset bearing walls, are not covered by 2-Blocking required over all interior supports under load-bearing walls or when floor jaists are not continuous over support 2-1/2" nails \$ at 6" n.c. -NI blocking panel per detai) 1a to lop plate -

Attach rim board to top plate using 2-1/2" wire or spiral toe-nails at 4" o.c.

Vertical Load* (plf)

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

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

x Lumber

-1/8' Rim Board Plus

Provide lateral bracing per detail la or 1b

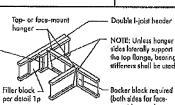
BACKER BLOCKS (Blacks must be long enough to permit required nailing without splitting)

Flange Width	Moterial Thickness Required*	Minimum Depth**
2-1/2*	12	5-1/2*
3-1/2*	1-1/2"	7-1/4*

- Minimum grads for backer block material shall be S-PF No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 Standard. * For face-mount hangers use net joist depth minus 3-1/4* for joists with 1-1/2" thick flanges. For 2" thick flanges use not dopth minus 4-1/4".

- NI or n'in board blocking

panel per delail la



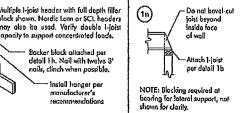
For hanger capacity see hanger manufacturer's recommendations, Verily double I-joist capacity to support concentrated loads.



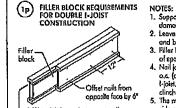
NOTE: Unless hanger sides laterally support the top flange,



(m) black shown. Nordic Lam or SCI, headers may also be used. Varify double 1-joist Backer block allached per detail 1 h. Nail with twelve 3' Install hanger per capacity = 1,620 lbs.



(11) Lumber 2x4 min., extend block to face of adjacent web. Two 2-1/2' spiral nails from each web to lumber piece, alternate OPTIONAL: Minimum 1x4 inch strap applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joists.



__1/6" to 1/4" gap between top flonge and filler block

1. Support back of I-joist web during nailing to prevent damage to web/flange connection.

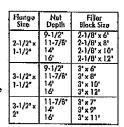
2. Leave a 1/8 to 1/4-inch gap between top of filler block and bollom of top 1-joist flange.

3. Filler block is required between joists for full length of span.

4. Nail folds together with two rows of 3' noils of 12 inches a.c. (clinched when possible) on each side of the double 1-joist. Total of four nails per foot required. If nails can be

clinched, only two nails per foot are required.
The maximum factored load that may be applied to one side of the double joist using this detail is 860 lbf/ft.
Verity double 1-joist capacity.

FIGURE 2



WEB STIFFENER INSTALLATION DETAILS

One 2-1/2" noil of top and battom flange (15) ~2x4 min. (1/8' gap minimum) Two 2-1/2* nails from each web to lumber piece 2-1/2* noils at 6' o.c. - I-joist blocking panel One 2-1/2" noil one side only NOTES:

NOTEs:

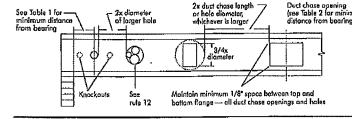
In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. Where required, see local code requirements for spacing of the blacking.

All nails are common spiral in this detail.

All noils shown in the above dotalls are assumed to be common wire nails unless otherwise notad. 3° (0,122° dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails. Framing lumber essumed to be Spruce-Pine-Fir No. 2 or better, Individual companents not shown to scale for clarity.

FIGURE 7

FIELD-CUT HOLE LOCATOR





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

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

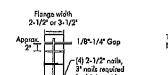
Holes in webs should be cut with a shore saw.

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

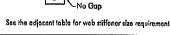
WEB STIFFENERS

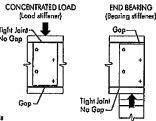
RECOMMENDATIONS:

- A boaring stiffener is required in all engineered applications with factored reactions greater than shown in the Liaist proporties table found of the Liaist Construction Guide (C101). The gap between the stiffener and the flange is at
- 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 steller have 2,370 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the confliever 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 stillener and the flange is at the bottom.



for I-joists with





STIFFENER SIZE REQUIREMENTS Web Stiffener Size 1"x 2-5/16 2-1/2" 1-1/2" x 2-5/16" 3-1/2" minimum width

SAFETY AND CONSTRUCTION PRECAUTIONS



Do not walk on t-jeists until



Never stock building motoriols over unsheathed I-joists. Once sheathed, do not over-stree

WARNING: I-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed. AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

- Brace and notil each Ligist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends.
 When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
- When the building is completed, the floor sheathing will provide lateral support for the top flanges of the t-joists. Until this
 sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent t-joist rollover
 or buckling. 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" noils to send to the top surface of each l-joids. Noil the bracing to a lateral restraint at the end of each box, Lop ands of acidining bracing over at feach two-l-joids.

 **Or, sheathing (temporary or permanent) can be noiled to the top flange of the first 4 feet of 1-joids at the end of the box.
- 3. For confidenced I-joists, brace top and bottom flanges, and brace ands with closure ponels, rim board, or cross-bridging.

 4. Install and fully not permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building moterials over beams as walls only.
- 5. Never install a damaged Lipist.

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

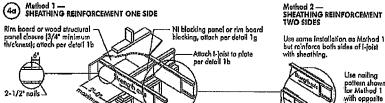


PRODUCT WARRANTY

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

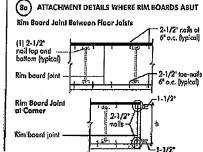
 $m{F}$ urshermore, Chantiers Chibongaman warrawa shat our products, hen utilized in accordance with our handling and installation instruction will meet or exceed our specifications for the lifetime of the structure.

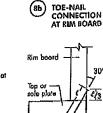
CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET



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

RIM BOARD INSTALLATION DETAILS







NORDIC STRUCTURES

COMPANY J9 1ST FLOOR Oct. 24, 2018 14:54 **PROJECT** J1 2ND FLOOR J1 2ND FLOOR

Design Check Calculation Sheet

Nordic Sizer - Canada 7.1

Loads:

Load	Type	Distribution	Pat-	Location	[ft]	Magnitude	Unit
			tern	Start	End	Start End	i
Loadi	Dead	Full Area	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	20.00	psf
Load2	Live	Full Area			* A:	40.00	psf

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



Unfactored: Dead Live	174 348		174 348
Factored: Tota1	739		739
Bearing: Resistance Joist Support Des ratio Joist Support Load case Length Min req'd	2-3/8 1-3/4	E. FOK	3786 15488 0.20 0.05 #2 4-3/8 1-3/4
Stiffener KD KB support fcp sup	No 1.00 1.00 769		1.00 1.00 769

Kzcp sup 1.09

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

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

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

Total length: 17'-9.75"; Clear span: 17'-2.99"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling This section PASSES the design code check.

Limit States Design using CSA-086-09 and Vibration Criterion:

C	riterion	Analysis Value	Design	Value	Unit	Analysis/Design
Š	near	Vf = 739	Vr =	3790	lbs	Vf/Vr = 0.20
М	oment(+)	Mf = 3215	Mr =	9647	lbs-ft	Mf/Mr = 0.33
1 (erm. Defl'n	0.09 = < L/999	0.58 ≔	L/360	in	0.16
llτ	ive Defl'n	0.19 = < L/999	0.43 =	L/480	in	0.43
T	otal Defl'n	0.28 = L/749	0.87 =	L/240	in	0.32
1 1	are Defl'n	0.20 = < L/999	0.58 =	L/360	in	0.35
Ηv	ibration	Lmax = 17'-4.8	Lv ≔	19'-2.6	ft	0.91
	Defl'n	≈ 0.027	=	0.036	in	0.76

DWG NO . TAM 2417-18 H STRUCTURAL COMPONENT ONLY

T-1902206

J1 2ND FLOOR

Nordic Sizer - Canada 7.1

Page 2

Ì	Additional	Data:								•			
1	FACTORS:	f/E	KD	KH	ΚZ	, KL	KT	KS.	KN	ĽÇ#			
	٧r	1895	1.00	1.00	-	• •••		, ~	· · ·	#2			
ł	Mr+	4824	1.00	1.00		1,000	***	-		#2			
۱	EI	218.1	million	· •••	-	-	- '	- '	· -·	#2 '	•		
1	CRITICAL LC	AD COM	BINATIONS	:				-					
I	Shear	: LC #	2 = 1.25	D + 1.51	,		•				•	•	•
١	Moment (+)	: LC #	2 = 1.25	D + 1.51	,								
1	Moment(+) Deflectio	n: LC 🕸	1 = 1.0D	(perma	ment)			•		٠.,	٠		
ı		LC.#	2 = 1.00	+ 1.QL	(live)	•		ι	ı			
ł			2 = 1.00										
Ì			2 = 1.00						•				
	Bearing							•					
			ort 2 - I										
	Load Type												
ı			.ve(use,oc						f=fire	•			
	All Load		tions (LC	s) are :	Listed	in the An	alysis	output					
	CALCULATION												
			eff = 2										
	"Live" de	flectio	on = Defle	ction fi	com all	non~dead	loads	(live, t	wind, s	now)			

Design Notes:

CONFORMS TO UBC 2012

- 1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-09 Engineering Design in Wood standard, which includes Update No.1 2. Please verify that the default deflection limits are appropriate for your application.
- 3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.

- Nordic I-joists are listed in CCMC evaluation report 13032-R.
 Joists shall be laterally supported at supports and continuously along the compression edge.
 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.

STRUCTURAL COMPONENT ONLY

T-1902206(V)

NORDIC STRUCTURES

COMPANY J9 1ST FLOOR Oct. 24, 2018 14:55 PROJECT
J1 1ST FLOOR
J1 1ST FLOOR

Design Check Calculation Sheet

Nordlo Sizer - Canada 7.1

Loads:

1			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	A	, , , , , , , , , , , , , , , , , , , 		-		At Appetendent and Appetendent	the same of the last of the la	1
١	Load	Type	Dist:	ribution	Pat-	Location	[ft]	Magnitus	de .	Unit	ı
١			l		tern	Start	End	Start	End		
	Load1	Dead	Full	Area				20.00		psf	
1	Load2	Live	Full	Area				40.00		psf	

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



	•						
Unfactored: Dead Live	174 348						174 348
Factored: Total	739						739
Bearing:	 	**************************************			**************************************		
Resistance							
Joist	3731		•	•		•	3786
Support	7318					ay h	15488
Des ratio	!	I				Ÿ	
Joist	0.20					The state of the s	0.20
Support	0,10				A	NO LEBSION TO	0.05
Load case	#2	İ		·		O morning of the	#2
Length	2-3/8				18	of Alan Mar	4-3/8
Min req'd	1-3/4			•	15	CFERON S	1-3/4
Stiffener	No				13	- cok al	No
KD .	1.00				1 1	E. NUN S	1.00
KB support	1.00				# LJ.	CONTRACTOR DE GRACE DE LINES	1.00
fcp sup	769				F. 1		769
Kzcp sup	1.00	·			. N	1	1,15
1 - Andrew Landscholler Landsch	14-14-14-14-14-14-14-14-14-14-14-14-14-1	, , , , , , , , , , , , , , , , , , , ,			_	White two little	

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

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

Total length: 17'-9.75"; Clear span: 17'-2.99"; 5/8" nailed and glued OSB sheathing
This section PASSES the design code check.

Limit States Design using CSA-086-09 and Vibration Criterion:

American management in the con-	9			
Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf ≠ 739	Vr = 3790	lbs	Vf/Vr = 0.20
Moment (+)	Mf = 3215	Mr = 9647	lbs-ft	Mf/Mr = 0.33
Perm. Defl'n	0.09 = < L/999	0.58 = L/360	in	0.16
Live Defl'n	0.19 = < L/999	0.43 = L/480	in	0.43
Total Defl'n	0.28 = L/749	0.87 = L/240	in	0.32
Bare Defl'n	0.20 = < L/999	0.58 = L/360	in	0.35
Vibration	Lmax = 17'-4.8	Lv = 18' - 9.4	£t.	0.93
Defl'n	= 0.029	⇒ 0.036	in	0.80

BWO NU , YAM 2418-18 H STRUCTURAL COMPONENT ONLY

- (- 19020)

J1 1ST FLOOR

Nordic Sizer - Canada 7.1

Page 2

Additional	Data:								
FACTORS:	f/E	KD	KH	KZ	$\kappa_{ m L}$	KT	KS	KN	LC#
Vr	1895	1.00	1,00	-	hw	-	- . '		#2
Mr+	4824	1.00	1.00	~	1.000		-	· - ·	#2
EI	218.1 mi	.llion		· —	_		· ·	-	#2
CRITICAL LO	DAD COMBI	NATIONS)	•,					
	: LC #2								
Moment(+)	; LC #2	= 1.25	5D + 1.5	L			•		
Deflection	on: LC #1								
	· LC #2	= 1.01) + 1.OL	(11ve))				
) + 1.0L						*
) + 1.0L						
Bearing	: Suppo:								
					1.5L			•	
Load Type	es: D=dead								
					ive(stor			f=fire	ı
	Combinat	lons (Lo	Cs) are	listed	in the A	nalysis	output		
CALCULATI									
	on: Elef:								
"Live" d	eflection	⇒ Defl	ection f	rom all	non-dea	d loads	(live,	wind, s	now)

Design Notes:

CONFORMS TO DBG 2012

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

STRUCTURAL COMPONENT ONLY

T. 190207 (n





PASSED

1ST FLOOR FRAMING\Flush Beams\B1(i759)

BC CALC® Member Report

Dry | 1 span | No cant.

October 27, 2018 08:23:37

Bulld 6475

Job name:

Customer:

Code reports:

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

CCMC 12472-R

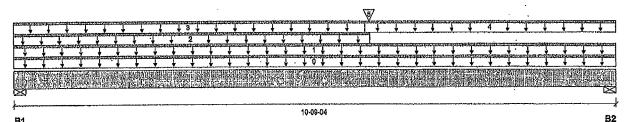
File name: TH2 MOD.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B1(I759)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 10-09-04

Reaction Summary (Down / Uplift) (lbs)

Wind Bearing B1, 2-3/8 Snow 438 / 0 356 / 0 B2, 4-3/8" 423/0

Lo	ad Summary					•	Ļive	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1,00	1,15	
0	Şelf-Weight	Unf. Lin. (lb/ft)	<u>L</u>	00-00-00	10-09-04	Top		5	,		00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-09-04	Тор	4	2			n\a
2	WALL	Unf. Lin. (lb/ft)	L	00-00-00	06-04-06	Top		60		•	n\a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	Ļ	00-00-00	06-03-08	Тор	. 3				n\a
4	FC1 Floor Material	Unf. Lin. (lb/ft)	. L	06-03-06	10-09-04	Top	11	5			n\a
5	B7(1768)	Conc. Pt. (lbs)	L	08-04-04	06-04-04	Тор	596	307	$p_{t_{i}}$		n\a

Controls Summary	Factored Demand_	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4,086 ft-lbs	11,610 ft-lbs	35,2%	1	06-04-04
End Shear	1,037 lbs	5,785 lbs	17.9%	1	09-07-06
Total Load Deflection	L/635 (0.195")	n\a	37.8%	4	05-05-07
Live Load Deflection	L/999 (0.099")	n\a	n/a	5	05-07-07
Max Defl.	0,195"	n\a	n∖a .	· 4	05-05-07
Span / Depth	13.1	,			

			Demand/ Resistance	Demand/ Resistance	
Bearing Suppor	ts Dim, (LxW)	Demand	Support	Member	Material
B1 Wall/Plate	2-3/8" x 1-3/4"	964 lbs	54.3%	19.0%	Unspecified
B2 Wall/Plate	4-3/8" x 1-3/4"	1,079 lbs	33.0%	11.6%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria. Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume member is fully braced.

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

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

PROFESSION, SW Chales <u>Disclosure</u>

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

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

BWE BU . FAW 2 STRUCTURAL COMPONENT ONLY

CONFORMS TO OBC 2012

T- Yozzof





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

Double 1-3/4" x 9-1/2" VER\$A-LAM® 2.0 3100 SP

PASSED

1ST FLOOR FRAMING\Flush Beams\B2(1760)

Dry [1 span | No cant.

October 27, 2018 08:23:37

BC CALC® Member Report Build 6476

Job name:

Address:

File name: TH2 MOD.mmdl

Wind

Description: 1ST FLOOR FRAMING\Flush Beams\B2(1760)

Specifier:

Designer:

Customer:

Code reports:

CCMC 12472-R

Company:

		••					\$	
	1 1	1 13	, t	4 + +	4 4	+ +	1 + + +	and the production of the contract of the cont
	.d. L	1 1.	9 1 L	1 1 .	1 1 3		1	- Andrew
	<u></u>	siccelementes	inim i		1-1-	<u>i i i i</u>	ana di kamana arawa	
		hevaring						
				for endadaria				
					·····			 +
 D4			•		10-09-	04		B2

Total Horizontal Product Length = 10-09-04

Snow

Reaction Summary (Down / Uplift) (lbs) Live Dead

487/0 B1, 2-3/8 328 / 0 406/0 471/0 B2, 4-3/8"

۱n	ad Summary						Live	Dead	Snow	Wind.	Tributary
Tag		Load Type	Ref.	Start	End	Loc.	1,00	0.65	1.00	1.16	
0	Self-Welght	Ųnf. Lin. (lb/ft)		00-00-00	10-09-04	Top	,_,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	10	7. J. 7. H. 4. H 1.		00-00-00
1	FC1 Floor Material	Unf. Lin. (ib/ft)	Ļ	00-00-00	10-09-04	Top	16	8			n\a
2	WALL	Unf, Lin, (lb/ft)	L.	00-00-00	06-04-07	Top		60			n\a
3	FC1 Floor Material	Unf. Lin. (lb/ft)	L.	00-00-00	06-03-06	Top	6	3			n\a
4	FC1 Floor Material	Unf. Lin. (lb/ft)	L	06-03-06	10-09-04	Top	19	10			n\a
6	B6/(778)	Conc. Pt. (lbs)	Ĺ	06-04-04	06-04-04	Top	506	260			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4,158 ft-lbs	23,220 ft-lbs	17.9%	1	06-04-04
End Shear	1,114 lbs	11,571 lbs	9,6%	1	09-07-06
Total Load Deflection	L/999 (0.103")	· n\a	n\a	4	05-05-07
Live Load Deflection	L/999 (0.052")	n\a	n\a	6	05-07-07
Max Defi.	0.103"	n\a	n\a	4	05-06-07
Span / Deoth	13.1	•			•

Bearing	g Supports	Dim, (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
81	Wall/Plate	2-3/8" x 3-1/2"	1,101 lbs	31.0%	10.9%	Unspecified
B2	Wall/Plate	4-3/8" x 3-1/2"	1,214 lbs	18.6%	6.5%	Unspecified



Notes

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86. CONFORMS TO UBC 2012

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

> DYUND. TAMZ42418H STRUCTURAL COMPONENT ONLY

T-1902209



PASSED

October 27, 2018 08:23:37

1ST FLOOR FRAMING\Flush Beams\B2(1760) Dry | 1 span | No cant.

BC CALC® Member Report

Build 6475

Job name:

Address:

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

File name:

Description:

TH2 MOD.mmdi

1ST FLOOR FRAMING\Flush Beams\B2(1760)

Specifier:

Designer:

Customer: Code reports:

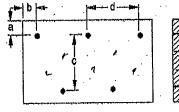
a minimum = **!**"

b minimum = 3"

CCMC 12472-R

Company:

Connection Diagram: Full Length of Member



d = 200

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



<u>Disclosure</u>

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Bolse Cascade engineered wood products must be in accordance with current installation Gulde and applicable building codes. To obtain installation Gulde or ask questions, please call (800)282-0788 before installation.

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

1 70 3 of 12

T-19020961



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLOOR FRAMING\Flush Beams\B3(i762)

Passed

October 27, 2018 08:23:37

BC CALC® Member Report

Build 6475

Job name:

Address:

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

Customer:

Code reports:

Dry | 1 span | No cant.

File name: TH2 MOD.mmdl ·

Wind

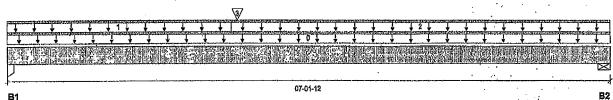
Description:

1ST FLOOR FRAMING\Flush Beams\B3(i762)

Specifier:

Designer:

Company:



Total Horizontal Product Longth = 07-01-12

Snow

Reaction Summary (Down / Uplift) (lbs)

CCMC 12472-R

Dead B1, 3-1/2 208 / 0 B2, 4-3/8" 265 / 0 152 / 0

Los	ad Summary						Live	Dead	\$now	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	 1.00	0.65	1.00	1.15	
0	Self-Weight .	Unf. Lin. (lb/ft)	L	00-00-00	07-01-12	Top	,	5	,		00-00-00
1	FC1 Floor Material	Unf. Lln. (lb/ft)	L	00-00-00	02-07-14	Top	11	5			n\a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	02-07-14	07-01-12	Top	20	10			n\a
3	B6(1778)	Conc. Pt. (lbs)	L	02-08-12	02-08-12	Top	520	267			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistançe	Çaşe	Location
Pos. Moment	1,945 ft-lbs	11,610 ft-lbs	16.8%	1	02-08-12
End Shear	789 lbs	5,785 lbs	13.6%	1	01-01-00
Total Load Deflection	L/999 (0.036")	n\a	n\a	4	03-04-01
Live Load Deflection	L/999 (0.023")	n\a	n\a	5	03-04-01
Max Defi.	0.036"	n\a	n\a	4	03-04-01
Span / Depth	8.4		,		*

Bearing	Supports	Dim. (LxW)	Demand		Demand/ Resistance Member	Material	
B1	Column	3-1/2" x 1-3/4"	820 lbs	20.6%	11.0%	Ünspecified	
B2	Wall/Plate	4-3/8" x 1-3/4"	587 lbs	18.0%	6.3%	Unspecified	

Notes

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

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

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

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Disclosure

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

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

DWG HU. TAM 2421-18H STRUCTURAL COMPONENT ONLY

T. 190210



PASSED

October 27, 2018 08:23:37

1ST FLOOR FRAMING\Flush Beams\B4(1808) Dry | 1 span | No cant.

BC CALC® Member Report

Bulld 6475

Job name:

Address:

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

Customer: Code reports:

File name:

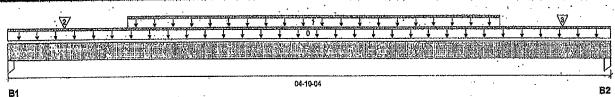
TH2 MQD.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B4(I808)

Specifier:

Designer:

Company:



* Total Horizontal Product Length = 04-10-04

Snow

Reaction Summary (Down / Upilft) (lbs)

CCMC 12472-R

Bearing Live 315/0 170/0 B1, 1-3/4 321 / 0 . 173 / 0 B2, 1-3/4"

Lo	ad Summary	4					Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	 1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-10-04	Top	 	5	,,	., ., ,	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L.	00-11-10	03-11-10	Top	140	70			n\a
2	J3(i802)	Conc. Pt. (lbs)	L	00-05-10	00-05-10	Top	111	56			n\a
3	J3(I779)	Conc. Pt. (lbs)	L	04-05-10	04-05-10	Top	105	53			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	843 ft-lbs	11,610 ft-lbs	7.3%	1 "	02-05-10
End Shear	539 lbs	5,785 lbs	9.3%	1	00-11-04
Total Load Deflection	L/999 (0.009")	n\a	n\a	4	02-04-14
Live Load Deflection	1/999 (0.006")	, n\a	n\a	5	02-04-14
Max Defl.	0.009"	n\a	n\a	4	02-04-14
Span / Depth	5.9		: :		

	. ,	•		Demand/	Demand/			
_				Resistance	Resistance			
Bearing	Supports	Dim, (LxW)	Demand	Support	Member	Material	_	
B1	Column	1-3/4" x 1-3/4"	684 lbs	34.4%	18.3%	Unspecified		
B2	Column	1-3/4" x 1-3/4"	697 lbs	35.1%	18.7%	Unspecified		

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

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

Calculations assume member is fully braced.

CONFORMS TU-OBG 2012

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

Design based on Dry Service Condition.

importance Factor: Normal Part code: Part 9

Disclosure

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Guide and applicable building codes. To obtain installation Guide or ask questions, please call (800)232-0788 before installation.

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

STRUCTURAL COMPONENT ONLY





PASSED

October 27, 2018 08:23:37

1ST FLOOR FRAMING\Flush Beams\B5(I761)

BC CALC® Member Report

Bulld 6475

Job name:

Customer:

Code reports:

Address:

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

CCMC 12472-R

Dry | 1 span | No cant.

File name: TH2 MOD, mmdi

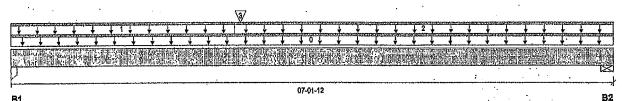
Description:

1ST FLOOR FRAMING\Flush Beams\B5(1761)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 07-01-12

Reaction Summary (Down / Uplift) (Ibs) Dead Snow Wind 24170 B1, 3-1/2" 436 / 0 172/0 B2, 4-3/8" 301/0

Load Summary							Liva	Dead	Snow	Wind	Tributary
Tag		Load Type	Ref.	Start	End	Loc.	1.00	0,66	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)		00-00-00	07-01-12	Töp		5			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-07-14	Тор	12	6	•		n\a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	٦	02-07-14	07-01-12	Top	20	10			n\a
3	B7(i768)	Conc. Pt. (lbs)	L	02-08-12	02-08-12	Top	61 5	317			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Caso	Location
Pos. Moment	2,270 ft-lbs	11,610 ft-lbs	19.6%	1	02-08-12
End Shear	921 lbs	5,785 lbs	15.9%	1	01-01-00
Total Load Deflection	L/999 (0.041")	n\a	n\a	4	03-04-01
Live Load Deflection	L/999 (0.027")	n\a	n\a	5	03-04-01
Max Defl.	0.041"	n\a	n\a	4	03-04-01
Span / Depth	8.4				

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Column	3-1/2" x 1-3/4"	956 lbs	24.0%	12.8%	Unspecified
B2	Wall/Plate	4-3/8" x 1-3/4"	666 lbs	20.4%	7.1%	Unspecified

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

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

Calculations assume member is fully braced.

CONFORMS TO OBG 2012

Resistence 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 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9



Use of the Bolse Cascade Software is subject to the terms of the End User License Agreement (EULA). Ligarise Agreement (EQLA).

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

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

- C. Gam





PASSED

1ST FLOOR FRAMING\Flush Beams\B6(1778) Dry | 1 span | No cant.

BC CALC® Member Report

Job name:

Build 6475

File name:

October 27, 2018 08:23:37

Address:

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

Description:

TH2 MOD.mmdi

Wind

1ST FLOOR FRAMING\Flush Beams\B6(1778)

Specifier:

Designer:

Customer: Code reports:

CCMC 12472-R

Company:

₩			Ā	7
				
P1	•••	· 03-03-08	•	B2

Total Horizontal Product Length = 03-03-06

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 2"	621/0	267 / 0
B2 21	506 / 0	260 / 0

	ad Summary			.	m1		Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
Ö	Self-Weight	Ųnf. Ļin. (ib/ft)	L	00-00-00	03-03-06	Top		.6	,		00-00-00
1	User Load	Unf. Lin. (lb/ft)	L.	00-00-00	03-03-06	Top	240	120			n\a
2	J4(1791)	Conc. Pt. (lbs)	L	00-05-10	00-05-10	Top	67	33			n\a
3	J4(1783)	Conc. Pt. (lbs)	L	01-05-10	01-05-10	Top	87	43	••	•	n\a
4	.14(1798)	Conc. Pt. (lbs)	L	02-05-10	02-05-10	Top	85	42			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Casa	Location
Pos. Moment	827 ft-lbs	11,610 ft-lbs	7,1%	1	01-06-04
End Shear	556 lbs	5,785 lbs	9.6%	1	02-03-14
Total Load Deflection	L/999 (0.004")	n\a	n\a	4	01-07-09
Live Load Deflection	1,/999 (0.003")	n\a	n\a	5	01-07-09
Max Defl.	0.004"	n\a	n\a	. 4	01-07-09
Snon / Denth	3.9				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	2" x 1-3/4"	1,115 lbs	n\a	26.1%	HUS1.81/10
82	Hanger	2" x 1-3/4"	1,084 lbs	n \ a	25.4%	HUS1.81/10

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

Header for the hanger HUS1.81/10 at B2 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

CONFORMS TO OBC 2012

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

DWEND. TAN 242418H STRUCTURAL COMPONENT ONLY



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

T-190213



PASSED

1ST FLOOR FRAMING\Flush Beams\B7(1768)

BC CALC® Member Report

Dry | 1 span | No cant.

October 27, 2018 08:23:37

Build 6475

Job name: Address:

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

File name: Description:

TH2 MOD.mmdi

1ST FLOOR FRAMING\Flush Beams\B7(1768)

Specifier:

Designer:

Quetomer: Code reports:

CCMC 12472-R

Company:

•			
₹	V	₩	
	1 1 1 1 1 101	, , , , , , , , , , , , , , , , , , , 	
	非国际的		福品級關係和自認定和即位罪的
1			
P4	03-10-04		B2
₩			

Total Horizontal Product Length = 03-10-04

Reaction 5	ummary (Down / Of	unt) (ms)				
Bearing	Live	Dead	Snow	Wind		
81, 2"	595 / 0	306 / 0				- F 117
82. 211	616/0	317 / 0			•	

Lo:	ad Summary Description	Load Type	Ref.	Start ·	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-10-04	Тор	4	5		a particular desirable de	00-00-00
1	User Load	Unf. Lin, (lb/ft)	L	00-00-14	03-10-04	Top	240	120			n\a
2	J4(1801)	Conc. Pt. (lbs)	L	00-05-10	00-05-10	Top	67	33			n\a
3 .	J4(1792)	Conc. Pt. (lbs)	L	01-05-10	01-05-10	Top	87	43		·	n\a
4	J4(1782)	Conc. Pt. (lbs)	L	02-05-10	02-05-10	Top	87	43			n\a
5	J4(1789)	Conc. Pt. (lbs)	L	03-05-10	03-05-10	Top	. 63	32			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1,146 ft-lbs	11,610 ft-lbs	9.9%	1	01-10-14
End Shear	730 lbs	5,785 lbs	12.6%	1	00-11-08
Total Load Deflection	L/999 (0.008")	n\a	n\a	4	01-10-14
Live Load Deflection	L/999 (0,005")	n\a	n\a	5	01-10-14
Max Defl.	0.008"	n\a	ņ ∖ a	4 .	01-10-14
Span / Depth	4.6				

Bearing	Supports	Dim. (LxW)	Demand ·	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	2" x 1-3/4"	1,275 lbs	n\a .	29.9%	HUS1.81/10
B2.	Hanger	2" x 1-3/4"	1,321 lbs	n\a	30.9%	HUS1.81/10



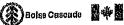
Cautions

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

Header for the hanger HUS1.81/10 at B2 is a Single 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.

STRUCTURAL COMPONENT ONLY

T-190244





PASSED

1ST FLOOR FRAMING\Flush Beams\B7(i768)

Dry | 1 span | No cant. **BC CALC® Member Report**

October 27, 2018 08:23:37

Build 6475

Job name: Address:

Customer:

Code reports:

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

CCMC 12472-R

File name: Description:

TH2 MOD.mmdl

1ST FLOOR FRAMING\Flush Beams\B7(1768)

Specifier:

Designer:

Company:

Notes

Design meets Code minimum (L/240) Total load deflection criteria. Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

CONFORMS TO OBC 2012

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9 .



Disclosure

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DWG NO. TAN 2425 STRUCTURAL COMPONENT ONLY BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®.

1 ann 10f 12

T. 19022142(L)



BC CALC® Member Report

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

2ND FLOOR FRAMING\Flush Beams\B10(1652)

Dry | 1 span | No cant.

October 27, 2018 08:23:37

PASSED

Build 6475

Job name:

Address:

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

Customer:

Code reports:

CCMC 12472-R

Description:

File name:

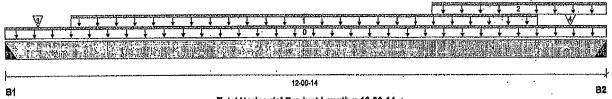
TH2 MOD.mmdI

2ND FLOOR FRAMING\Flush Beams\B10(i652)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 12-00-14

Donation Cummany (Daym / Unlift) (the)

IZGAGUQU QV	HILLIAN (POSTO) A	Print) (rea)			
Bearing	Live	Dead	Snow	Wind	
B1, 2"	529 / 0	294/0	,		
B2. 2"	1.134 / 0	596 / 0		•	

Loa	d Summary			•			Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1,00	0.65	1,00	1,15	
Ö	Self-Weight	Unf, Lin. (lb/ft)	L.	00-00-00	12-00-14	Тор	· · · · · · · · · · · · · · · · · · ·	5			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-04-04	10-08-04	Top	72	36			n\a
2	STAIR	Unf. Lin. (lb/ft)	L	08-06-14	12-00-14	Top	240	120			n\a
3	J4(1658)	Conc. Pt. (lbs)	L	00-08-04	00-08-04	Top	75	38			n\a
4	J4(1751)	Conc. Pt. (lbs)	<u>L</u>	11-04-04	11-04-04	Top	76	38			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4,465 ft-lbs	11,610 ft-lbs	38.5%	1	07-04-04
End Shear	1,904 lbs	5,785 lbs	32.9%	1	11-01-06
Total Load Deflection	L/445 (0.32")	n\a	54.0%	4	06-04-04
Live Load Deflection	L/686 (0:208")	n\a	52.5%	5	06-04-04
Max Deft.	0.32"	n\a	n\a	4	06-04-04
Span / Depth	15.0				

	•		•	Demand/ Resistance	Demand/ Resistance	
Bearing	Supports	Dim. (LxW)	Demand	Support	Member	Material
B1	Hanger	2" x 1-3/4"	1,161 lbs	n\a	27.2%	HUS1.81/10
B2	Hanger	2" x 1-3/4"	2,447 lbs	n\a	57.3%	HU\$1.81/10

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

Header for the hanger HUS1.81/10 at B2 is a Single 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.

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 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO DBG 2012

License Agreement (EULA).

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Use of the Bolse Cascade Software is subject to the terms of the End User

Disclosure

PHOPESS, ON

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

DVG NO. TAM 2426-18 STRUCTURAL COMPONENT ONLY

T-190WS

before installation.



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLOOR FRAMING\Flush Beams\B8(1679)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 27, 2018 08:23:37

Bulld 6475

Job name:

Address:

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

File name:

Description:

TH2 MOD, mmdl

Wind

2ND FLOOR FRAMING\Flush Beams\B8(i679)

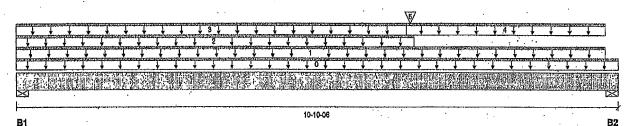
Specifier:

Designer.

Customer: Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length ≈ 10-10-86

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing B1, 2-3/8 Dead 348/0 494 / 0 B2, 5-1/2" 566 / 0 473 / 0

Lo	ad Summary		•			,	Live	Dead	Snow	Wind	Tributary
Tag		Load Type	Ref.	Start	End	Loc.	1,00	0.66	1.00	1.15	
0.	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-10-06	Top		5	-110 [4]-110]-1		00-00-00
1	FC2 Floor Material	Unf. Lln. (lb/ft)	L	00-00-00	10-07-10	Top	29	14			n\a
2	WALL	Unf, Lin. (lb/ft)	L	00-00-00	07-02-01	Top		60			n\a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L.	00-00-00	07-00-06	Top	3				n\a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	07-00-06	10-07-10	Top	15	8		•	n\a
5	B10(i652)	Conc. Pt. (lbs)	L	07-01-04	07-01-04	Top	535	297		. • ·	n\a
Cc	ntrols Summary	Factored Demand	Factored Resistance	Dem Resi	and/ stance	Çase	Location		Seld by	ofess	ONAL

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Çase	Location
Pos. Moment	4,223 ft-lbs	11,610 ft-lbs	36,4%	1	07-01-04
End Shear	1,337 lbs	6,785 lbs	23,1%	1	09-07-06
Total Load Deflection	1/572 (0.217")	n\a	41.9%	4	05-06-04
Live Load Deflection	L/999 (0.107")	n\a	n\a	5	05-08-08
Max Defl.	0.217"	n\a	n\a	4	05-06-04
Snan / Denth	13.1				

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	2-3/8" x 1-3/4"	1,140 lbs	64.2%	22,5%	Unspecified
B2	Wall/Plate	5-1/2" x 1-3/4"	1,439 lbs	35.0%	12.3%	Unspecified

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

application. The output here is based on CONFORMS TO OBC 2012building code-accepted design

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

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anyone relying on such output as

evidence of sultability for a particular

Disclosure

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

DWGNU.TAM 2 STRUCTURAL COMPONENT ONLY

T. Gozuls



PASSED

October 27, 2018 08:23:37

2ND FLOOR FRAMING/Flush Beams/89(1657)

BC CALC® Member Report

Bulld 6475

Job name:

Address:

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

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

File name: Description:

TH2 MOD.mmdi

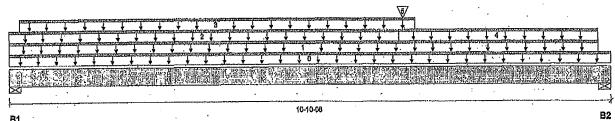
Wind

2ND FLOOR FRAMING\Flush Beams\B9(i657)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 10-10-06

Snow

Reaction	Summary	(Down /	Uplift)	(lbs)
Regring		.lve		Doad

Bearing	LIVe	Noau
Bearing B1, 2-3/8"	424 / 0	526 / O
B2, 5-1/2"	850/0	621 / 0

Los	ad Summary						Live	Dead	Snow	Wind	Tributary	
Tag		Load Type	Ref.	Start	End	Loc.	1,00	0,65	1.00	1.15		
0	Self-Weight	Unf. Lin. (lb/ft)	L:	00-00-00	10-10-08	Top		5			00-00-00	
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-07-10	Top	6	3			n\a	
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-00-06	Top	3				n\a	
3	WALL	Unf. Lin. (lb/ft)	L	00-02-06	07-03-14	Top		60			. n\a	
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	07-00-06	10-07-10	Top	16	8			⊃° n\a	
5	B10(1652)	Conc. Pt. (lbs)	L	07-01-04	07-01-04	Top	1,128	593			n\a	
Co	ntrole Summary	Eastered Nomand	Factored	Dem Resi	and/	Сява	Location		Section 1	PROFE	881ONA,	N.

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	6,564 ft-lbs	11,610 ft-lbs	56.5%	1	07-01-04
End Shear	1,995 lbs	5,785 lbs	34.5%	. 1	09-07-06
Total Load Deflection	L/408 (0.304")	n\a	58.8%	4	05-07-06
Live Load Deflection	L/753 (0,165")	n\a	47.8%	5	05-08-08
Max Defl.	0.304 ⁱⁱ	n\a	n\a	4	05-07-06
Span / Deoth	13.1				•

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	2-3/8" x 1-3/4"	1,293 lbs	72.8%	25.5%	Unspecified
B2	Wall/Plate	5-1/2" x 1-3/4"	2,051 lbs	49.9%	17.5%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria, Design meets Code minimum (L/360) Live load deflection criteria.

Calculations assume member is fully braced.

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of sultability for a particular application. The output here is based on properties and analysis methods.

C 2015 and CSA 086.

C 2015 and CSA 086.

C 2016 and contained wood products must be in accordance with current installation.

C 2016 and shotleshe building codes. To Guide and applicable building codes. To obtain Installation Gulde or ask questions, please call (800)232-0788 before installation.

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

DWG NO . YAM 2426 19H STRUCTURAL COMPONENT OKLY

T-190221

Disclosure





PASSED

October 24, 2018 14:47:23

2ND FLOOR FRAMING\Dropped Beams\B14 DR(i866)

BC CALC® Member Report

Bulid 6475

Job name:

Customer:

Address:

Code reports:

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

CCMC 12472-R

Dry | 1 span | No cant.

File name:

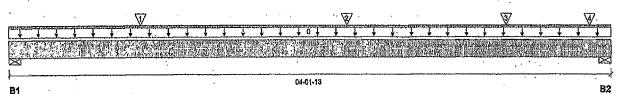
TH2 MOD EL B, B2.mmdl

Description: 2ND FLOOR FRAMING\Dro...ed Beams\B14 DR(i886)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 04-01-13

Reaction oun	imary (Down / Ob	mir) (ma)				
Bearing	Live	Dead	Snow	Wind	···	
B1, 4-7/16"	1,108/0	895 / 0	774/0	die man 11 to Man de la constitución de la constitu		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
B2. 5-3/4"	1.726 / 0	1,176/0	148 / 0			

Lo	ad Summary								Live	Dead	Snow	Wind	Tributary	
Tag	Description		Load Type	. Ref.	Start	End	Loc.		1.00	0.65	1.00	1.15		
0	Self-Weight	W. Carlotte	Únf. Lin. (lb/ft)	L	00-00-00	04-01-13	Тор	12-41-124	,,-,,,,	10	-,0,0,0,0,0,0,0,0,0,0,0		00-00-00	
1.		٠	Conc. Pt. (lbs)	Ļ	00-11-00	00-11-00	Top		1,032	898	922		n\a	
2			Conc. Pt. (lbs)	L	02-04-00	02-04-00	Top		600	301			. n\a	
3	J3(1823)		Conc. Pt. (lbs)	L	03-05-03	03-05-03	Top		319	159			n\a	
4	B8(1895)		Conc. Pt. (lbs)	L	04-00-01	04-00-01	Тор		882	671			n\a	

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2,167 ft-lbs	23,220 ft-lbs	9.3%	1	01-02-15
End Shear	2,398 lbs	11,571 lbs	20.7%	1	01-01-15
Total Load Deflection	L/999 (0.007")	n\a	n\a	35	01-11-00
Live Load Deflection	L/999 (0.005")	n\a	n\a		01-11-00
Max Defl.	0.007"	n\a	n\a	35	01-11-00
Span / Depth	4.3				•

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1	Wall/Plate	4-7/16" x 3-1/2"	3,554 lbs	28.1%	18.7%	Unspecified	
B2	Wali/Plate	5-3/4" x 3-1/2"	4,205 lbs	25.7%	17.1%	Unspecified	



Notes

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

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

Calculations assume unbraced length of Top: 00-01-12, Bottom: 00-01-12.

Resistance Factor phi has been applied to all presented results per CSA O86. CONFORMS TO OBC 2012

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

Unbalanced snow loads determined from building geometry were used in selected products verification.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads,

please consult a technical representative or professional of Record.

Member has no side loads.

DWOND TAM 24 STRUCTURAL COMPONENT ONLY

-190248





PASSED

2ND FLOOR FRAMING\Dropped Beams\B14 DR(I866)

Dry | 1 span | No cant. **BÇ CALC® Member Report**

October 24, 2018 14:47:23

Bulld 6475

Job name: Address:

Customer:

Code reports:

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

CCMC 12472-R

File name:

TH2 MOD EL B, B2.mmdl

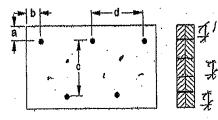
Description: 2ND FLOOR FRAMING\Dro...ed Beams\B14 DR(I866)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 🌬 b minimum = 3"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record. Member has no side loads.

31/2" ARDOX SPIRAL

<u>Disclosure</u>

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

BC CALOB, BC FRAMER®, AJS™ ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, DWGNO. TAM 242 VERSA-LAMB, VERSA-RIM PLUS®, STRUCTURAL COMPONENT ONLY

-(-1902218(1)



PASSED

2ND FLOOR FRAMING\Flush Beams\B15(i899)

BC CALC® Member Report Bulld 6475 Job name:

Dry | 1 span | No cant.

October 24, 2018 14:47:23

Address:

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

Customer: Code reports:

CCMC 12472-R

File name: TH2 MOD EL B,B2.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B15(i899)

Specifier:

Designer: AJ

Company:

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	Charles and the second
12-01-12	' . ma
B1	. В2

Total Horizontal Product Length ≈ 12-01-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	765 / 0	772/0	950 / 0	
B2, 2-3/8"	1,000 / 0	1,277 / 0	1,468 / 0	

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	 1.00	0.65	1,00	1.15	. ومحملها المراجع الماسية الما
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-01-12	Top	 	14			00-00-00
1 .	FC2 Floor Material	Unf. Lin. (lb/ft)	L,	00-01-12	12-01-12	Top	25	12			n\a
,	FC2 Floor Material	Unf. Lin. (lb/ft)	L.	00-01-12	07-04-14	Top	 22	11			n l a
3	ROOF	Unf. Lin. (lb/ft)	Ļ	07-03-02	11-11-06	Top		100			n\a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	07-04-14	12-01-12	Top	9	4			n\a
5	GIRDER	Conc. Pt. (lbs)	L.	07-03-02	07-03-02	Top	1,100	1,000	2,100		n\a
6	B16(1779)	Cono. Pt. (lbs)	L.	07-03-02	07-03-02	Top	52	51	100		n\a
7	ROOF	Conc. Pt. (lbs)	L	07-03-02	07-03-02	Top	48	44.	92		n\a
8	WINDOW	Cono. Pt. (lbs)	. Ü	08-07-04	08-07-04	Top	 33	30	68	FRR	n\a
9	WINDOW ·	Conc. Pt. (lbs)	Ĺ	10-07-04	10-07-04	Top	33	30 🖋	17.163 NOF	Same	nla nla
a	MINDON	Carrent a fram.						A S	A Party Comment	1	1 B

Controls Summary	Factored Demand	Factored Resistance	Demand/ · Resistance	Case	Location
Pos. Moment	19,780 ft- bs	36,222 ft-lbs	54.6%	13	07-03-02
End Shear	4,627 lbs	17,356 lbs	26.7%	13	11-01-14
Total Load Deflection	L/338 (0.419")	n\a	71.1%	35	06-05-14
Live Load Deflection	L/481 (0,294")	n\a	74.8%	51	06-05-14
Max Defl.	0.419"	n/a	n\a	35	06-05-14
Span / Depth	14.9			٠.	

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ / Resistance Member	Material
B1	Beam	3-1/2" x 5-1/4"	3,155 lbs	15.8%	14.1%	Unspecified
B2	Wall/Plate	2-3/8" x 5-1/4"	4,798 lbs	72.1%	31.5%	Unspecified

DWO NO. TAR 2430-184 Structural Component Only



Passed

2ND FLOOR FRAMING\Flush Beams\B16(i779)

Dry | 2 spans | No cant. **BC CALC® Member Report**

October 24, 2018 14:47:23

Build 6476

Job name:

Customer:

Code reports:

Address:

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

CCMC 12472-R

File name:

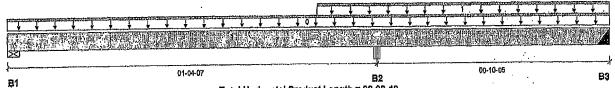
TH2 MOD EL B, B2.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B16(i779)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 02-02-12

Pasetion Summary (Down / Liplift) (lbs)

Reaction our	min y (womin o	M			
Bearing	Live	Dead	Snow	Wind	.
B1, 5-1/2"	1/4	6/0	0/5		
B2, 5-1/4"	74/0	78 / 0	141 / 0		
B3, 2"	49/2	46 / 0	91/0		

1 00	d Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	ومرمدة المطاهدات المتادونات وخطات
0	Self-Weight	Unf. Lin. (lb/ft)	Ĺ	00-00-00	02-02-12	Top		10			00-00-00
1	ROOF	Unf. Lin. (lb/ft)	L·	01-01-13	02-02-12	Top	110	∙100	210	•	n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Саве	Location
Pos. Moment	30 ft-lbs	23,220 ft-lbs	0.1%	66	01-09-10
Neg. Moment	-24 ft-lbs	-23,220 ft-lbs	0.1%	49	01-04-07
End Shear	149 lbs	11,571 lbs	1.3%	66	02-00-12
Cont. Shear	122 lbs	11,571 lbs	1.1%	49	01-07-01
Span / Depth	1.2				

Bearing	Supports	Dim, (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
81	Wall/Plate	5-1/2" x 3-1/2"	8 lbs	0.1%	n\a	Unspecified
B2	Beam	5-1/4" x 3-1/2"	382 lbs	3.9%	1,7%	Unspecified
B3	Hanger	2" x 3-1/2"	243 lbs	n/a	2.8%	HGUS410

Header for the hanger HGUS410 at B3 is a Triple 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Calculations assume unbraced length of Top: 00-08-05, Bottom: 00-08-05.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA O86. **CONFORMS TO OBC 2012**

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

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

verification.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Member has no side loads.

STRUCTURAL COMPONENT ONLY

T-190220



PASSED

October 24, 2018 14:47:23

2ND FLOOR FRAMING\Flush Beams\B16(1779)

BC CALC® Member Report

Bulld 6476 Job name:

Address:

Code reports:

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

Customer:

CCMC 12472-R

Dry | 2 spans | No cant.

File name:

TH2 MOD EL B.B2.mmdl

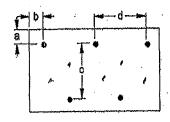
Description: 2ND FLOOR FRAMING\Flush Beams\B16(i779)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 🗗 b minimum = 3"

Member has no side loads. Connectors are: 162 Sinker Nalls

3%" ARDOX SPIRAL

<u>Disclosure</u>

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

BC CALC®, BC FRAMER®, AJS™ ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValus®, - 16 YERSA-LAM®, VERSA-RIM PLUS®,

STRUCTURAL COMPONENT ONLY

T- Garrole,



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







			В	are		1/2" Gypsum Celling On Centre Spacing				
Depth	Series		On Centr	re Spacing						
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	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"	
9-1/2"	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"	
	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"	
11-7/8"	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"	
	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"	
14"	N1-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"	
-	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"	
	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"	
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"	
4.CII	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'~10"	22'-9"	21'-6"	
16"	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"	

			Mid-Spar	n Blocking		Mid-Span Blocking and 1/2" Gypsum Ceiling				
Depth	Series		On Centr	e Spacing		On Centre Spacing				
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	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"	
9-1/2"	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"	
	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"	
44.7/08	NI-60	21'-9"	19'-8"	18'-5"	17'-1"	21'-9"	19'-8"	18'-5"	17'-1"	
11-7/8"	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"	
	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"	
14"	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"	
	N1-90x	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"	
4.611	NI-70	28'-8"	26'-8"	25'-3"	23'-4"	29'-3"	26'-11"	25'-3"	23'-4"	
16"	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"	

^{1.} 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.

^{2.} 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.

^{3.} Minimum bearing length shall be 1-3/4 inches for the end 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 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.

^{6.} 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.



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







			В	are		1	1/2" Gyps	um Ceiling	
Depth	Series		On Centr	e Spacing		On Centre Spacing			
•		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	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
9-1/2"	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
	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
11-7/8"	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A
	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
	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
14"	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
	N1-90x	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
4.011	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
16"	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

			Mid-Spar	n Blocking		Mid-S	pan Blocking an	d 1/2" Gypsum	Ceiling
Depth	Series		On Centr	e Spacing		On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	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
9-1/2°	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
	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
11-7/8"	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
	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
	N1-60	24'-0"	22'-3"	21'-3"	N/A	24'-8"	22'-11"	21'-11"	N/A
14"	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
	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
4.511	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A
16"	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

^{1.} 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.

^{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. 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.

^{3.} Minimum bearing length shall be 1-3/4 inches for the end 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 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.

^{6.} 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.



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







			Ва	are		l	1/2" Gyps	um Ceiling		
Depth	Series		On Centr	e Spacing		On Centre Spacing				
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	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"	
9-1/2"	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"	
	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"	
11-7/8"	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"	
	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"	
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"	
	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"	
	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"	
14"	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"	
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"	
	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"	
	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"	
16"	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"	

			Mid-Spar	ı Blocking		Mid-S	pan Blocking an	d 1/2" Gypsum	Ceiling
Depth	Series		On Centr	e Spacing		On Centre Spacing			
Depen		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	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"
9-1/2"	NI-60	18'-11"	17'-6"	16'-6"	15'-5"	19'-2"	17'-6"	16'-6"	15'-5"
3 -1	NI-70	20'-0"	18'-7"	17'-9"	16'-7"	20'-5"	18'-11"	17'-10"	16'-7"
	NI-80	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10"
	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 ⁷ -4"	22'-8"	20'-10"	19'-8"	18'-4"
11-7/8"	NI-70	23'-4"	21'-8"	20'-8"	19'-7"	23'-10"	22'-3"	21'-2"	19'-9"
	NI-80	23'-7"	21'-11"	20'-11"	19'-9"	24'-1"	22'-6"	21'-5"	20'-0"
	NI-90x	24'-3"	22'-6"	21'-6"	20'-4"	24'-8"	23'-0"	22'-0"	20'-9"
	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"
14"	NI-70	26'-1"	24'-3"	23'-2"	21'-10"	26'-8"	24'-11"	23'-9"	22'-4"
17	NI-80	26'-6"	24'-7"	23'-5"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"
	NI-90x	27'-3"	25'-4"	24'-1"	22'-9"	27'-9"	25'-11"	24'-8"	23'-4"
	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"
16"	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"

^{1.} 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.

^{2.} 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.

^{3.} Minimum bearing length shall be 1-3/4 inches for the end 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 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.

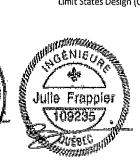
^{6.} Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



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







			Ba	are		1	1/2" Gyps	sum Ceiling		
Depth	Series		On Centr	e Spacing			On Centre Spacing			
•		12"	16"	19.2"	24"	12"	16"	19.2"	24"	
·····	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	
9-1/2"	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	
	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	
11-7/8"	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A	
	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A	
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A	
	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A	
	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	
14"	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	
	N1-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	2 1'- 6"	20'-6"	N/A	
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A	
4.011	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A	
16"	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A	
•	N(-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A	

			Mid-Spar	Blocking		Mid-S	pan Blocking an	id 1/2" Gypsum	Ceiling
Depth	Series		On Centr	e Spacing		On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	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
9-1/2"	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
	N1-20	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
11-7/8"	NI-60	21'-4"	19'-8"	18'-5"	N/A	21'-8"	19'-8"	18'-5"	N/A
	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-4"	20'-0"	N/A
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-5"	N/A
	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	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
14"	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-9"	N/A
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A
	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
	N1-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	24'-10"	23'-4"	N/A
11	N1-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A
16"	N1-80	28'-2"	26'-1"	24'-10"	N/A	28'-10"	26'-9"	25'-6"	N/A
	N1-90x	29'-0".	26'-10"	25'-7"	N/A	29'-7"	27'-5"	26'-2"	N/A

^{1.} 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.

^{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. 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.

^{3.} Minimum bearing length shall be 1-3/4 inches for the end 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 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.

^{6.} 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.

NORDIC

Construction Detail

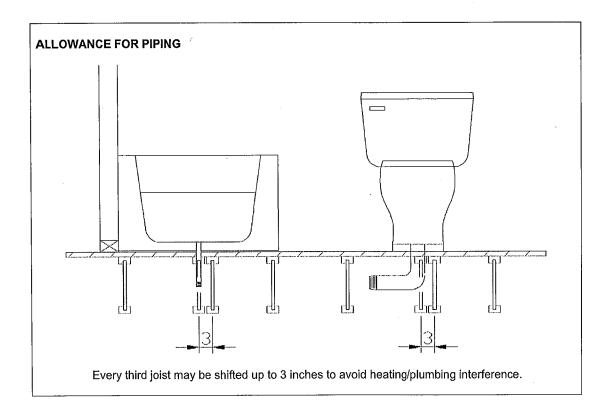
Limit States Design

Allowance for Piping (Installation Notes)

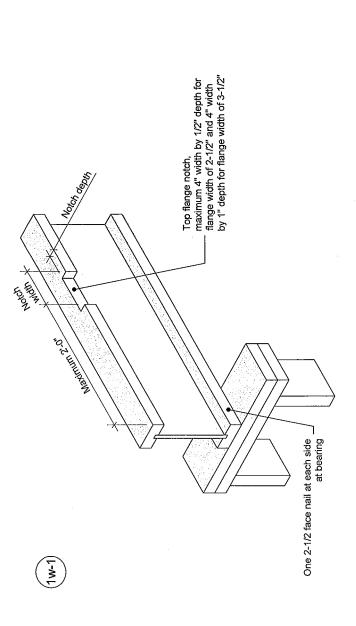
The floor layouts have usually not been checked for heating and/or plumbing interference. On-site adjustment of joists of up to 3 inches is permitted to avoid interferences. When moving a joist, the subfloor thickness shall be checked with code requirements when the joist spacing exceeds 19.2 inches.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

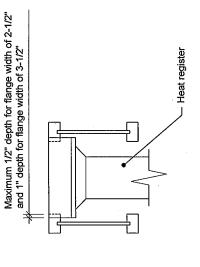
Installation of Nordic I-joists shall be as per *Nordic Joist Installation Guide for Residential Floors*. Refer to Tables 1 and 2 for maximum web hole and duct chase openings, respectively. These tables are based on the I-joists being used at their maximum spans. The minimum distance given may be reduced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





Notes:

- Blocking required at bearing for lateral support, not shown for clarity.
 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.
 This detail applies to simple-span joists and multiple-span joists where the notch is located at the end half-span.
 For other applications, contact Nordic Structures.

This document supersedes all previous versions. If the document has been in effect for more than one year, consult nordic,ca or contact Nordic Structures.

All nails shown in the details are assumed to be common nails unless otherwise noted. Nails shall have a diameter not less than 0.128 inch for 2-1/2-inch nails, or 0.144 inch for 3-inch nails. Individual components not shown to scale for clarity.

NORDIC	T 514-871-8526 1 866 817-3418
STRUCTURES	nordic.ca

Notch in I-joist for Heat Register	CATEGORY
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