

		Products		
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	18
J2.	14-00-00	11 7/8" NI-40x	1	8
J3	12-00-00	11 7/8" NI-40x	1	5
B3	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B1	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B4	10-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1
B2 B5	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

	Connecto	r Summary
Qty	Manuf	Product
4	H1	IUS2.56/11.88
8	H1	IUS2.56/11.88
1	H2	HUS1.81/10
1	Н3	HGUS410

FIRM BCIN 28103 DESIGNER BCIN 28991



FROM PLAN DATED: APR 2019

BUILDER: ROYAL PINE HOMES

SITE: FOREST SIDE

MODEL: UNIT 1702

ELEVATION: A

LOT:

CITY: BRAMPTON

SALESMAN: MARIO DICIANO

DESIGNER: AJ REVISION: Ibv

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. IJOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR HOLES INCLUDING DUCT CHASE AND FIELD CUT OPENINGS SEE FIGURE 7, TABLES 1 & 2. CERAMIC TILE APPLICATION AS PER O.B.C 9.30.6.

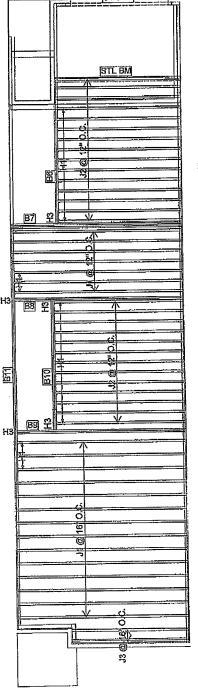
LOADING:

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

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2019-05-01

GRD FLOOR



		Products		
PlotiD	Length	Product	Plies	Net Qty
J1	18-00-00	11 7/8" NI-40x	1	21
J2	14-00-00	11 7/8" NI-40x	1	28
J3	12-00-00	11 7/8" NI-40x	1	2
B11	22-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B8	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B9	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B7	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3
B10	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2
B6.	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2

	Connecto	r Summary
Qty	Manuf	Product
31	H1	IUS2.56/11.88
4	H3	HGUS410
1	H3	HGUS410

FIRM BCIN 28103 / DESIGNER BCIN 28991



FROM PLAN DATED: APR 2019

BUILDER: ROYAL PINE HOMES

SITE: FOREST SIDE

MODEL: UNIT 1702

ELEVATION: A

LOT:

CITY: BRAMPTON

SALESMAN: MARIO DICIANO

DESIGNER: AJ REVISION: Ibv

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

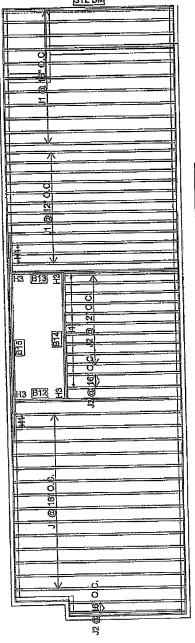
LOADING:

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

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2019-05-01

MAIN FLOOR



Products										
PlotID	Lenath	Product	Plies	Net Qty						
J1	18-00-00	11 7/8" NI-40x	1	37						
	12-00-00	11 7/8" NI-40x	1	14						
J2		1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2						
B15	22-00-00	1-3/4" X 11-7/6 VEROA-LAW 2.0 0100 CD	2	2						
B12	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	_							
B13	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2						
B14	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2						

Ī		Connecto	r Summary
١	Qty	Manuf	Product
ı	17	H1	IUS2.56/11.88
1	4	H3	HGUS410

FIRM BCIN 28103 DESIGNER BCIN 23991



FROM PLAN DATED: APR 2019

BUILDER: ROYAL PINE HOMES

SITE: FOREST SIDE

MODEL: UNIT 1702

ELEVATION: A

LOT:

CITY: BRAMPTON

SALESMAN: MARIO DICIANO

DESIGNER: AJ REVISION: Ibv

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. IJOIST 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

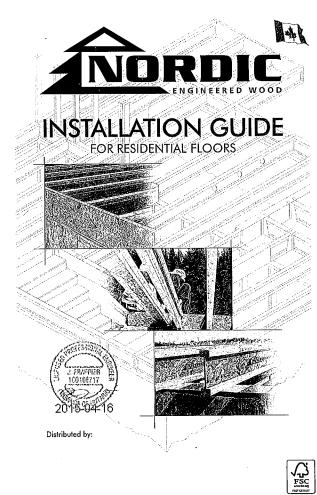
LOADING:

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

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2019-05-01

3rd FLOOR







Never stack building

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

Avoid Accidents by Following these Important Guidelines

Brace and nail each I-joist os it is installed, using hangers, blocking panels, nim 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 of the interior support.

When the building is completed, the floor sheathing will provide lateral support for the top flonges of the 1-joist. Until this sheathing is applied, temporary bracing, after called struts, or temporary sheathing must be applied to prevent 1-joist rollover or buckling.

Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2·1/2" nails fastened to the top surface of each 1-joist. Nail the bracing to a lateral restraint at the end of each bay. Lop ends of adjoining bracing over at least two 1-joists.

Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of 1-joists at the end of the bay.

For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.

 Install and fully nail permanent sheathing to each t-joist before placing loads on the floor system. Then, stack building materials over beams or walls only. 5. Never install a damaged 1-joist.

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

MAXIMUM FLOOR SPANS

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

- This span chart is based on uniform loads. For applications with other than uniform loads, an engineering analysis may be required based on the use of the design properties.
- 6. Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
- 7. SI units conversion: 1 inch = 25.4 mm 1 foot = 0.305 m

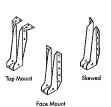
MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS SIMPLE AND MULTIPLE SPANS

13.9' 14'8' 14'10' 15'6' 15'8' 15'5' 16'5' 16'7' 17'4' 17'6' 14'-10' 15'-10' 16'-0" 16'-11" 16'-8' 13'-5' 14'-9' 14'-11' 15'-7' 15'-6' 16'-6' 16'-9' 17'-5' 17'-7' 17'-11' 18'-0' 14'-2' 15'-2' 15'-4' 16'-1' 16'-3' 16'-0' 17'-0' 17'-3' 18'-0' 18'-3' 18'-7' 9-1/2 15'.6' 18'.4' 18'.4' 18'.6' 20'.0' 16'.9' 20'.3' 18'.6' 17'.7' 21'.6' 17'.7' 21'.9' 18'.0' 22'.3' 18'.0' 22'.5' 18'.2' 22'.7' 19'.2' 21'.9' 19'.2' 21'.9' 19'.2' 21'.2' 29'.0' 21'.2' 26'.5' 20'.10' 21'.2' 26'.5' 21'.2' 26'.5' 21'.3' 21'.10' 27'.3' 18-7' 18-9' 18-11' 20-0' 20-3' 20-8' 20-11' 20-8' 21-9' 22-6' 22-9' Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings. 20'-1' 20'-5' 21'-7' 21'-11' 22'-5' 22'-7' 22'-3' 23'-6' 23'-11' 24'-5' 24'-8' 17'-10'
18'-1'
19'-1'
19'-4'
19'-9'
19'-11'
19'-9'
20'-9'
21'-1'
21'-5'
21'-9' 20.6 20.11 22.1 22.5 22.10 23.1 22.9 24.0 24.5 24.10 25.2 Bearing stiffeners are not required when 1-joists are used with the spans and spacings given in this table, except as required for hangers.

CCMC EVALUATION REPORT 13032-R

I-JOIST HANGERS

- . Hangers shown illustrate the three nost commonly used metal hanger
- All nailing must meet the hanger manufacturer's recommendations
- Hongers should be selected bosed 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.



15'.5' 16'.1' 16'.10' 17'-0' 16'-7' 17'-7' 18'.1' 19'-1' 19'-4' 19'-9' 19'-11'

20'-1" 21'-2" 21'-6" 21'-10" 22'-2" 21'-10" 23'-0" 23'-4" 23'-9" 24'-1"

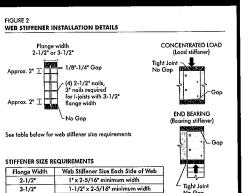
STORAGE AND HANDLING GUIDELINES

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

WEB STIFFENERS

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

SI units conversion: 1 inch = 25.4 mm



(1g)

per detail 1b

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

NORDIC I-JOIST SERIES 9.1/g* 11.7/g* 14* 16* 33 pieces 33 pieces 33 pieces 23 pie

Chantiers Chibougamou Ltd. harvests its own trees, which enables Mary products to adhere to strict quality control procedures through സ്വിദ് manufacturing process. Every phase of the operation, from torest to the finished product, reflects our commitment to quality.

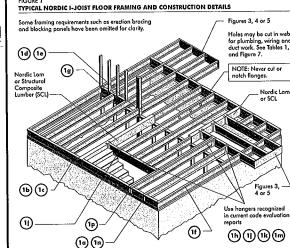
finished product, reflects our commitment to quality.

Nordic Engineered Wood Ljoists use only finger-jointed picks spright PRIFIE humber in their flanges, ensuring consistent quality, superior strategies and longer span carrying capacity. 2015-04-16

(1h) Backer block (use if hanger load exceeds 360 lbs)
Before installing a backer block to a double I-joist, drive three
additional 3 mails through the webs and filler block where the
backer block will fit. Clinch. Install backer light to lop flonge.
Use twelve 31 mails, Clinched when possible. Maximum factored
resistance for hanger for this detail = 1,620 lbs.

INSTALLING NORDIC I-JOISTS

- 1. Before laying out floor system components, verify that I-joist flonge widths match hanger widths. If not, control with the system components are supplied to the system components and the system components are supplied to the system components.
- 2. Except for cutting to length, t-joist flanges should never be cut, drilled, or notched. 3. Install 1-joists 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 for be level. 5 Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bear "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 fidures, audio equipment and security cameras. Never suspend unusual or heavy loads from the Light's bottom flange. Whenever possible, suspend all concentrated loads from the top of the Lipist. Or, attach the load to blocking that has been securely fastened to the
- 9. Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with
- 10. Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or 1-joist blocking panels.
- 11. For Lioists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
- 12. Due to shrinkage, common framing lumber set on edge may never be used as blocking or rim boards. I-joist blocking panels or other engineered wood products such as rim board must be cut to fit between the I-joists, and an I-joist-compatible depth selected.
- 13. Provide permanent loteral support of the bottom flonge of all I-joists at interior supports of multiple-span joists. Similarly, support the bottom flonge of all contilevered I-joists at the end support next to the contilever extension. In the completed structure, the gypsum wallboard celling provides this lateral support. Until the final finished celling is applied, temporary bracting or struts must be used.
- 14. If square-edge panels are used, edges must be supported between I-joists with 2x4 blocking. Glue panels to blocking to minimize squeeks. 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 noils 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. Training tumber assumed to be Spruce-Tine-Fir No. 2 or better, Individual components not shown to scale for darily

⑽ Top- or face-mount hanger installed per manufacturer's recommendations

10

For nailing schedules for multiple beams, see the manufacturer's

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

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

Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify double I-joist capacity to support Top-mount hanger installed per _____ manufacturer's recommendations

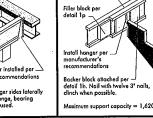
Provide backer for

Use single 1-joist for loads up to 3,300 plf, double 1-joists for loads up to 6,600 plf (filler black not

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

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

(lk)



2-1/2"× 1-1/2"

3-1/2"× 1-1/2"

3-1/2°× 11-7/8° 2° 14° 16°

tm

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"

(1n) Do not bevel-cut joist beyond inside face of wall —— Attach-/ I-joist per detail 1b Note: Blocking require at bearing for lateral support, not shown for clarity.

BACKER BLOCKS (Blocks must be long enough to permit required

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

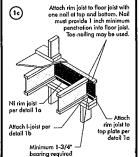
- Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-0325 or CAN/CSA-0437 Standard.

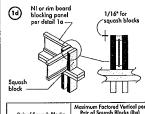
 * For face-mount hangers use net joist depth minus 3-1/4* for joists with 1-1/2* thick flanges. For 2* thick flanges use net depth minus 4-1/4*.



 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 1-joist. Nails may be driven at an angle to id splitting of bearing plate.

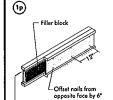
Blocking Panel 1-1/8" Rim Board Plus 8,090





 2x Lumber
 5,500
 8,500

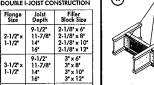
 1-1/8* Rim Board Plus
 4,300
 6,600
 -1/8" to 1/4" gap between top flange and filler block rovide lateral bracing per detail 10, 4b, or 10

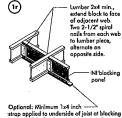


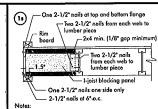
 Support back of I-joist web during noiling to prevent damage to web/flange connection. Leave a 1/8 to 1/4-inch gop between top of filler block and bottom of top I-joist flange.

 Filler block is required between joists for full length of span. Noil joists together with two rows of 3" noils at 12 inches o.c. (clinched when possible) on each side of the double I-joist. Total of four noils per foot required. If noils can be clinched, only two noils per foot or renaited. are required.

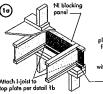
The maximum factored load that may be opplied to one side of the double joist using this detail is 860 lbf/ft. Verify double 1-joist capacity.







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



Blocking Panel or Rim Joist Maximum Factored Uniform Vertical Load* (plf)

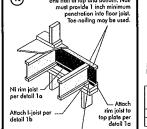
NJ Joists 3,300 *The uniform vertical load is limited to a joist depth of 16 inches or less and is bosed on standard term load duration II shall not be used in the design of a bending member,

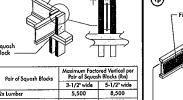
(1b)

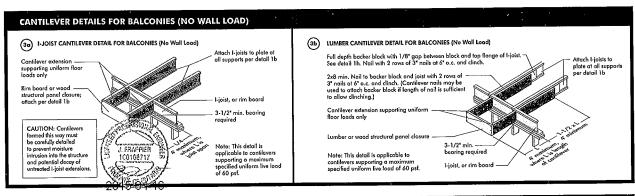
Minimum bearing length shall be 1-3/4* for the end bearings, and 3-1/2* for the intermediate bearings when applicable.

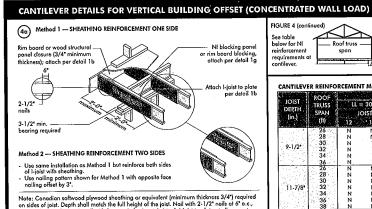
Z FRAFFIER

The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard torm 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.

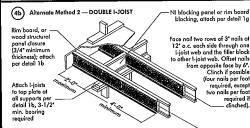








Note: Conadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and betam flenge. Install with face grain horizontal. Attach 1-joist to plate at all supports per detail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



Block I-joists together with filler blocks for the full length of the reinforcement.

For I-joist flonge widths greater than 3 inches place an additional row of 3" noils along the centraline of the reinforcing panel from each side. Clinch when possible.

For hip roofs with the jack trusses running parallel to the cantilevered floor joists, the 1-joist reinforcement requirements for a span of Roof trusses 13'-0' maximun Girder Roof truss span 20-0* FIGURE 4 (continued) requirements for a span of 26 ft. shall be permitted to be used. CANTILEVER REINFORCEMENT METHODS ALLOWED ROOF ROOF LOADING (UNFACTORED)

DEPTH.	TRUSS			DL = 45				DL = 15				DL = 15	
(in.)	SPAN		OIST SPA	CING (in)			CING (in		Jo			100
WE,	(ft)	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
11.1	26	N	N	1	2	N	1	2	X	N	2	X	Š
1.50	28	N	N	1	X	N	1	2	X	Ņ	2	Č	0
9-1/2	30	N	1	1	X	N	ļ	3	Š	;	2	÷	÷
7-1/2	32	N	!	2	X	N	2	Š	X	1 ;	Ŷ	÷	Ŷ
	34	N	1	2	X.	N	2	÷	â	;	Ŷ	Ŷ	Ŷ
	36 26	<u>N</u>		N N		-\rd	N		2	N	 ŵ	1	2
	28	_ N	N	N	- 1	N	N.	- ;	2	l ii	ï	i	x
	30	N	N	N	- i	ı N	N	i	2	N	i	2	X
11-7/8	32	Ñ	Ň	ï	il	N N	N	i	2	N	1	2	х
11.770	34	Ñ	N	i	· ;	N	ĩ	i	х	N	. 1	2	Х
	36	N	Ñ	i	2	N	i	2	X	N	1	2	Х
30 W S	38 26	N	N	i	2	Ν		2	Χ	N	2	X	X
and contact		N	N	N	N	N	N	N	1	N	N	Ņ	1
S. Santial	28	N	N	· N	N	N	N	N	1	N	N		- 1
# N/15	30	N	N	N	N	N	N	N	!	l N	N	!	2
14"	32	N	N	N	1	N	N	N	!	l N	N	- !	2
	34	N	N	N	!	N	N	!	ļ	1 5	N		2
Section .	36	N	N	N	!	N	N	:	2	N N	- ;	,	ŕ
	38	N	N	N	;	N	N N		2	l N	- 1	2	Ŷ
20, 1, 20, 30,	40 26	N N	N	N N	N	- N	N	- N	- Ń	N N	· N	Ñ	î
孤田縣	28	N	. 2	N	N	N	N	Ň	î	Ϊ́	Ñ	N	i
8 G. B.	30	N	N	N	N	N	Ň	Ñ	i	N N	N	N	1
	32	N	N	Ñ	N	N	Ň	Ñ	i	N	N	1	1
16"	34	N	N	N	N	l n	Ň	N	i	N	N	i	2
5. 5 5. 5	36	N	N	Ñ	ï	N	N	N	1	N	Ν	1	2
	38	. 7	Ň	N	i	N	N	N	1.1	N	N	1	2
1000	40	N	N	×	1	N	N	!	2	Ŋ	Ņ	1	3
100 400 340	42	N	И	N	1	N	N	1	2	N			Х.

- NI reinforced with 3/4" wood structural panel on one side only.
 NI reinforced with 3/4" wood structural panel on both sides, or double I-joist.
 X = Try a deeper joist or closer spacing.
 Moximum design load shall be: 15 pst roof.
- tional joists beneath the opening's cripple tional joists beneath the opening scripple studs may be required.

 3. Table applies to joists 12' to 24' o.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. Use 12' o.c. requirements for lesser spacing.
- ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used. S. Cantilevered joists supporting girder trusses or roof beams may require additional reinforting.

BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD) For hip roofs with the jack trusses running parollel to the cantilevered floor joists, Roof trusses Girder Roof truss | 13'-0' maximum Jack trusses 12'-0' maximum 2'-0' maximum confilerer 12" minimum length o sheathing rein __ Roof truss ______ 7 2'-0" the I-joist reinforcement requirements for a span of 26 ft. shall be permitted to elow for NI Provide full depth blocking between span ond bottom joist flange with 2-1/2" noils at 6" Note: Conadian softwood plywood sheathing or equivalent (minimum thickness 3/4*) required on sides of joist. Depth shall match the full height of the joist. Notil with 2-1/2* noils at 6* oc., top and bottom flange. Install with face grain harizontal. Attach I-joist to plate at all supports per debail 1b. Verify reinforced I-joist capacity. o.c. (offset opposite face nailing by 3" when using reinforcement on both sides of t-joist) BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED JOIST DEPTH (in.) LL = 50 psf, DL = 15 psf LL = 30 psf, DL = 15 psf LL = 40 psf, DL = 15 psf JOIST SPACING (in.) JOIST SPACING (in.) 16 19.2 24 16 19.2 24 9-1/2 2015/04-16 5b SET-BACK DETAIL Rim board or wood — structural panel closure (3/4" minimum thickness), attach per detail 1b. 11-7/8 Provide full depth blocking Provide full depth blocking between joists over support [not shown for clarity] Attach I-joist to plate at all supports per delail 1b. 3-1/2* minimum I-joist bearing required. 14 (5c) SET-BACK CONNECTION Nail joist end using 3° nails, toe-nail at top and bottom flanges. Vertical solid sawn blacks (2x6 S.P.F No. 2 or better) nailed through joist web and web of girder using 2-1/2* nails. Alternate for opposite side. For larger openings, or multiple 3-0' width openings spaced less than 6-0" o.c., additional paists beneath the openings cripple study may be required. Table applies to justs 12-10 24" o.c. that meet the floor span requirements for a design limit bood of 440 get and deed bear 4400. Use and the bood design limit of the observations of the second selection of the se 4. For conventional roof construction using a sidge beam, the Roof trus Span column above is equivolent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Roof Trus Span is equivalent to the distance between the supporting walls as if a truss is used. 1 = NI reinforzad with 3/4" wood structural pared on one side only. 2 = NI reinforzad with 3/4" wood structural pared on both sides, or double I-joist. X = Try a desper joist or closer spacing. 2. Maximum design loads tha Notes: - Verify girder joist capacity if the back span exceeds the joist spacing. - Attach double 1-joist per detail 1p, if required. truss is used. 5. Confilevered joists supporting girder trusses to 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 hale 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.
- 3. Whenever possible, instruct in the second of the continuous standards are shown as a form that can be out 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.
- Joy 4 or the diameter of the maximum round note permitted or that isocalon.

 Where more than one hole is necessory, the distance between adjacent hole edges shall exceed wice the diameter of the largest round hole or twice the size of the largest stayed hole for twice the length of the langest stade of the langest rectangular hole or duct chase opening and each hole and duct chose opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
- A knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
- Holes measuring 1-1/2 inches or smaller 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
- 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.

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

Joist Depth	- Joist - Series				تنديدا با	معتقب المستحد	Rou	ind ho	le dian		n.)					1	dujosimi
Depilit	; Jenes	2	3	4	5	6	6-1/4.	7.	8	8-5/8	9	10	10-3/4		12	2-3/4	Factor
	NI-20	0:-7"	1'-6"	2'-10°	4'-3"	5'-8'	6.0,				•••	***	•••	***		***	13.6
100	NI-40x	0-7	1.6.	3.0.	4'-4"	6'-0"	6.4		***	***		•••	•••	•••	***	***	14'-9'
9-1/2*	NI-60	1'-3"	2-6	4'-0"	5.4	7'-0"	7:-5"		***		***	***	***		***		
-	NI-70	2-0	3'-4"	4'-9'	6'-3"	8.0	8'-4"					***					15'-7'
	NI-80	2.3	3'-6"	5.0	6'-6"	8-2-	8'-8'		***	***					745	***	15'-9'
5 26 5 1	NI-20	0'-7'	0'-8"	1'.0'	2.4	3'-8"	4'-0'	5'-0"	6.6	7-9	***		***	***	***	***	15-6
	NI-40x	0.7	0'-8"	1'-3"	2'-8"	4'-0'	4'-4"	5'-5"	7:0	8-4*	***	***	***	***	***		16-6
	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	11.31	2'-6"	4'-0'	5'-4'	6-9	7-2	8'-4"	10-0	11:2	***	•••			***	***	17:5
	NI 80	14.6	2-10	4-2	5'-6'	7-0	7-5*	8.6	10-3	111.4	•••	•••			***	•••	17'-7
	NI-90	0'-7'	0.8	1'-5'	3'-2"	4'-10"	5-4	6-9	8-9	10'-2'	•••	***	***	•••			17-1
A 14 - 174	NI-90x	0.7	0.8	0.9	2-5	4'-4"	4'-9"	6.3	***		***	***		***			18 0
1.1	NI-40x	0'.7'	0.8	0'-8"	1,0,	2-4	2.9	3'-9'	5.2	6.0	6'-6'	8'-3'	10.2			***	17-1
1985	NI-60	0.7	0.8*	148*	3'-0"	4'-3"	4'8'	5'-8'	7:-2	8.0	8'-8"	10:4	11'-9'	***	***	•••	18-2
	NI-70	0.8	1-10	3.0	4'-5"	5'-10"	6-2	7.3	8-9	9-9	10-4	12:0	13'-5'	***	•••	•	19-2
14"	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
41113114	NI-90	0.7	0'-8'	0.10,	2'-5"	4'-0"	4.5	5.9	7:-5*	8'-8"	9.4	11:4"	12-11			***	19-9
	NI-90x	0.7	0.8	0'-8"	2-0	3.9	4'-2"	5.5	7'-3"	8'-5"	9.2	•••		***		***	20-0
177 515	N!-60	0.7	0.8	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
2000年	N!-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	0-7	11.31	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 Y 1	NI-90	0'-7'	0.8	0.8	1'-9'	3'-3'	3'-8"	4'-9"	6-5	7-5	8.0	9-10	111-31	11:-9"	13'-9"	15'-4'	21'6
	NI-90x	0.7	0'-8"	0.9	2.01	3.6	4'-0"	5:0"	6.9	7-9	8'-4"	10.2	11'-6*	12'-0'		***	21.1

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

The above table is based on the 1-joists used at their maximum span. If the 1-joists are placed at less than their full maximum span is the minimum distance from the centraline of the hole to the face of any support (O) as given above may be reduced as follows:

Preduced = State x D

Where:

Distance from the inside face of any support to centre of hole, reduced for less-than-maximum distance shall not be less than 6 inches from the face of the support to edge of the hole.

SAF

D

The acclual reasons depend shall not be less than 6 inches from the face of the support to edge of the hole.

SAF

SAF

The maximum distance from the inside face of any support to centre of hole, reduced for less-than-maximum distance and the support to edge of the hole.

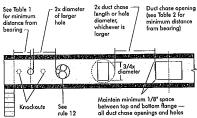
SAF

SAF

SAF

SAF 2015-04-16 TABLE 2 DUCT CHASE OPENING SIZES AND LOCATIONS — Simple Span Only





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 diameter, and are spaced 15 inches on centre along the length of the 1-joist. Where possible, it is preterable to use knockouts instead of field-cut holes.



Never drill, cut or notch the flange, or over-cut the web. Holes in webs should be cut with a sharp saw.

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

Minimum distance from inside face of any sup 9-1/2 8'-9' 10'-1' 10'-1' 10'-1' 10'-2' 11.7/8"

8-4 8-7 9-2 8-5 8-10 9-4 9-0 9-6 10-1 9-8 10-1 10-6 9-5 9-10 10-6 9-5 9-10 10-4 10-3 10-7 11-2 11-1 11-3 11-4 11-10 11-6 12-4 12-10 11-10 11-4 12-10 11-10 12-4 12-10

Above table may be used for I-joist specing of 24 inches on centre or less.
 Duad chose opening location distance is measured from misde loca of supports to centre of opening.
 The above table is bested on simple, spen joists only, for other explications, contact your local distributor.
 Distances are based on uniformly looked floor joist belt meet be spen requirements for a design line load of 40 pat and dead load of 15 pt, and as live load deficient limit of U/409. For other opplications, contact your local distributor.

INSTALLING THE GLUED FLOOR SYSTEM

- 1. Wipe any mud, dirt, water, or ice from I-joist flanges before gluing.
- Snap a chalk line across the I-joists four feet in from the wall for panel edge alignment and as a boundary for spreading glue. 3. Spread only enough glue to lay one or two panels at a time, or follow specific rea
- 4. Lay the first panel with tangue side to the wall, and noil in place. This protects the tangue of the next panel from damage when topped into place with a block and sledgehammer.
- Apply a continuous line of glue (about 1/4-inch diarneter) to the top flange of a single 1-joist. Apply
 glue in a winding pattern on wide areas, such as with double 1-joists. A Apply two lines of alue on t-joists where panel ends butt to assure proper gluing of each end.
- 7. After the first row of ponels is in place, spread glue in the groove of one or two ponels at a time before laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) than used on I-joist flanges.
- 8. Tap the second row of panels into place, using a block to protect groove edges.
- Stagger end joints in each succeeding row of panels. A 1/8-inch space between all end joints and 1/8-inch at all edges, including T&G edges, is recommended. (Use a spacer tool or on 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. (Warm weather accelerates glue setting.) Use 2" ring: or szerew-shank nails for ponels. 3/4-inch thick or less, and 2-172" ring: or szerew-shank is for thicker panels. Space analis per tihe toble below. Closer nail spacing may be required by some codes, or for disphyragm construction. The finished deck can be walked on right avory and will carry construction loads without damage to the

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

Makimum Joist	Minimum Panel		Maximum Spacing of Fasteners			
Spacing (in:)	Thickness (in.)	Common Wire or Spiral Nails	Ring Thread Nails or Screws	Stoples	Edges	Intern. Supports
16	5/8	2'	1-3/4"	2'	6'	12*
20	5/8	2*	1-3/4*	2'	6*	12"
24	3/4	2*	1-3/4"	2*	6.	12.

- 1. Fasteners of sheathing and subflooring shall conform to the above table.
- 2. Staples shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/8-inch crown
- 3. Flooring screws shall not be less than 1/8-inch in diameter.
- 4. Special conditions may impose heavy traffic and concentrated loads that require construction in excess of the minimums shown.
- Use only adhesives conforming to CAN/CGS8-71.26 Standard, Adhesives for Field-Gluing Plywood to Lumber Traming for Floor System, applied in accordance with the manufacturer's recommendations. If OSB panels with sealed surfaces and edges are to be used, use only solvent-based glues; check with spanel manufacturer.
- Ref.: NRC-CNRC, National Building Code of Canada 2010, Table 9.23.3.5.

IMPORTANT NOTE:
Floor sheathing must be field glued to the 1-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, 1-joist spans must be verified with your local distributor.

RIM BOARD INSTALLATION DETAILS (8a) ATTACHMENT DETAILS WHERE RIM BOARDS ABUT Rim board Joint Between Floor Joists 2-1/2" nails at 6" o.c. (typical) Rim board Joint at Corner /11 2-1/2" nail 2-1/2" toe-nails at 6" o.c. (typical) Rim board joint -8c 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL 8b TOE-NAIL CONNECTION AT RIM BOARD Exterior sheathing Remove siding at ledger prior to installation Top or sole plate — 2° min. 1 $\ell_{/3}$ Staggered 1/2 1-5/8" min. 5" max. 2' min. ____ Deck joist £6633900 Existing foundation Z FRAFFIER 100109717 2x ledger board (preservative-treated); must be greater than or equal to the depth of the deck joist





N1+20	N]-40x		1. [2] A O	1.10 3.10 A	1-112-1 58 3/16-+14- 0	25B 2714'-314-
land.	1-17 OS 583/5"	8 3/8' 4 0: 9 - V3 11 - 7/3' 12' 16'	9-12 9-12 11-7; 11-7; 14"	\$ 11-74 11-74 16:	1 9-1 ₇ /1-7 ₆	f 14'
5-P-F No.2	1950FMSR	2100f MSR	1950f MSR	2100f MSR	2400f MSR	NPG Lumber
33 pieces per unil	33 pieces per unit	33 pieces per unit	23 pieces per unit	23 pieces per unil	23 pieces per unit	23 přeces par unit

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

WEB HOLE SPECIFICATIONS

- 1. The distance between the inside edge of the support and the controlling of any halo 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.
- Whenever possible, field cui holes should be centred on the middle of the web. 4. The maximum size hole or the maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent lipist flange.

LOCATION OF CIRCULAR HOLES IN JOIST WEBS

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

1'-6' 2'-10" 4'-3" 5'-8" 6'-0" --1'-6' 3'-0" 4'-4" 6'-0" 6'-4" --2'-6' 4'-0" 5'-4" 7'-0" 7'-5" --3'-4' 4'-9" 6'-3" 8'-0" 8'-4" --1'-6' 16' 4'-4" 8'-0" 8'-6" 8'-4" ---

Minimum Distance from Inside Face of Any Support to Centre of Hole (ft - in.) Round Hole Diameter (in.)

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

6 6-1/4 7 8 8-5/8 9 10 10-3/4 11 12 12-3/4

- The sides of square holes or langest sides of rectangular hales should not excess 3/4 of the diameter of the movement round hole permitted at that location.
- Where more than one hole is necessary, the distance between adjacent hole adges shall exceed twice the diameter of the largest round hole or twice the size of the larges snay exceed wice the diameter of the largest side of the largest rectingular hole or duct chose opening) and each hole and 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.

 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.

 3. Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a jaist. Holes of greater size may be permitted subject to verification.
- 9. A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.

 10. All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as
 - illustrated in Figure 7.

 11. Limit three maximum size holes per span, of which one may be
 - a duct chase opening.

 12. A group of round holes at approximately the same location shall be permitted if they most the requirements for a single round hole circumscribed around them.

DUCT CHASE OPENING SIZES AND LOCATIONS

Simple Span Only

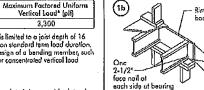
		Minimum distance from inside face of supports to centre of opening (fl - in.)									
loist	Joist Series				Duct Che	ase Long	th (in.)				
Depth	Seiter	8	10	12	14	16	18	20	22	24	
	NI-20	4'-1'	4'-5"	4-10	5-4"	5'-8'	6'-1"	6'-6'	7'-1"	7'-5°	
	NI-ÃOx	5'-3'	5' 8'	6'-0'	6'-5"	6'-10"	7'-3'	7'-8'	8'-2'	8-6°	
9-1/2"	NI-60	5'-4'	51.91	5'-2'	6'-7"	7'-1	7'-5'	8'-0'	8'-3"	8-9	
′ ′′-	NI-70	5'-1'	5'-5'	5-10	6'-3"	6'-7"	71-11	7'-6'	8'-1"	8'-4"	
	NI-80	5-3	5'-8"	6'-0"	6'-5"	6-10"	7'-3'	78.	8'-2"	8'-6"	
	NI-20	5-9	6421	5'-61	7'-1"	7-5*	7'-9'	8-3,	8'-9"	9-4	
	NI-40x	6'-8"	7'-2"	7-6	8'-1"	8'-6°	9'-1"	9-6	10:-1"	10-9"	
	NI-60	713"	748	B-D*	Br-64	ò-0.	9-3	9-9"	10'-3'	11.0	
11-7/8 ^a	Ni-70	7-1	7.4	7-9	8'-3"	8'-7"	9-1	9-6	10-1	10'-4"	
	NI-80	7'-2'	71.71	8:-0"	8'-5"	8'-10"	9-3	9'-B'	10-2	1048	
	NI-90	7-6	7-111	8'-4"	8'-9"	9-2	9-7"	10'-1"	10-7	10/11	
	NI-90x	7:-7	8'-1"	845"	8'-10'	9'-4'	9'-8"	10'-2"	10'-8"	111-21	
	NI-40x	8,-1,	8'-7'	ðr0.	9'-6"	10'-1"	10-7	111-2"	12'-0"	12'-8"	
	NI-60	8'-9'	9'-3"	9'-8"	10'-1'	10-6*	11:1"	11'-6"	13'-3"	13.0	
	NI-70	81.71	9-11	9.5	S. 10.	10-4*	10-8	11:-2	17-7"	12.3	
14	NI-80	9'-0'	9-3"	9-9	10:1'	10'-7"	1141	13' 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	91.41	8.91	10:3*	10'-7'	11:1"	11'-7'	12'-1"	12-71	13-2	
	NI-60	10'-3"	10'-8"	1142	11.6	12'-1"	12-6	13'-2"	14'-7"	1411	
	NI-70	10'-1"	10%5*	1140"	11'-4"	11 10		12'-8"	13'-3"	14'-0'	
164	NI-80	10-4	10'-9"	11'-3"	11'-9'	12'-1"	12-7)3'-1°	13'-8"	14-4	
-	NI-90	10-9	11'-2"	11′-8"	12'-0"	12'-6"	13'-0"	13'-6"	14-2	14-16	
	NI-90x	1747	111-5"	11416	12-4	12-10	13-2"	13'-9"	1444	15'-2'	

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

(1d)

*The uniform vertical load is limited to a joist death 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 joid, headen or rafter. For contentrated vertical load transfer, see detail 1d.

- 2-1/2" nails at 6" o.c. to top plate (when used for lateral shear transfer, not to bearing plate with same nailing as required for decking)



1-1/8" Rim Board Plus 8.090 *The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load durotor. It shall not be used in the design of a bending member, such as joist, header, or rotter. For concentrated vettical load transfer, see detail 1d.

Moximum Factored Uniform

Vertical Loads (plf)

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

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

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

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

Double I-joist beader

NOTE: Unless hanger

the top flange, bearing

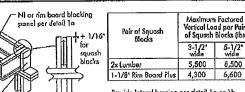
Backer block required

(both sides for face mount hangers)

sides laterally sun

Blacking Panel

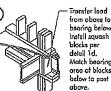
or Rim Joist



5-1/2 wide 5,500 8,500 4,300 6,600 Provide lateral bracing per detail 1a or 1b

Vertical Load* (plf)

3.300



Top- or face-mount

Filler block

Load bearing wall above shall align vertically with the bearing below. Other conditions, such as offset bearing walls, are not covered by Ablacking required over all interior supports under load-bearing walls or when floor jaists are not 2·1/2' nails freques aver support ot 6° o.c. —NI blocking panel per detail 14

Backer black (use if hunger lacid exceeds 360 lbs). Before installing a backer black to a double laterst, drive three additional 3" noils through the webs and filler block where the backer block will fit. Clinch, install backer tight to too flange. Use twelve 3' nails, clinched when possible. Maximum factored resistance for hanger for this detail = 1,620 lbs.

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

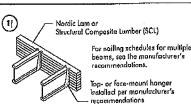
Flanga Width	Material Thickness Required*	Minimum Depth**
2-1/2*	1,1	5-1/2'
3-1/2*	1-1/2"	7-1/4*

recommendation

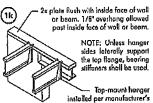
Minimum grade for backer black material shall be S-P-F No. 2 or better for solid sawn lumber and "For face-noval honger proce moreno should be 3-2F No. 2 or belief for solid sawn lumber was structural panels confarming to CAN/CSA-0325 or CAN/CSA-0437 Standard.

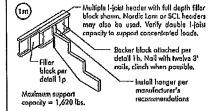
"For face-noval hongers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flunges. For 2" thick flunges use not dopth minus 4-1/4".

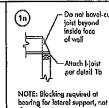
For langer capacity see hanger manufacturer's recommendations. Verify double I-joist capacity to support

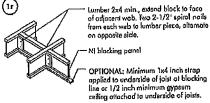


NOTE: Unless hanger sides blerally support the top flange,

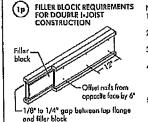


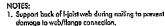






of adjacent web. Two 2-1/2' spirol nails from each web to lumber piece, alternate





damogs to web/flangs connection.

2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top loist flangs.

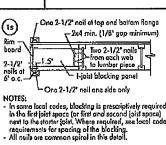
3. Filler block is required between joists for full length of span.

A. Nail joist together with two rays of 3' noils at 12 inches o.c. (clinched whon possible) on each side of the double L-joist. Total of four nails per foot required. If nails can be

clinched, only two nails per foot are required.

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

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



END BEARING

uniess otherwise notad. 3° (0,122° dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails Framing lumber umed to be to scale for clarity.

All nails shown in

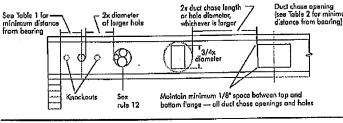
the above datalis are assumed to be common wire nails

FIGURE 7

Depth

9-1/2

FIELD-CUT HOLE LOCATOR





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

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

Holes in webs should be cut with a sharp saw.

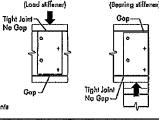
For rectangular holes, avoid over-cutting the corners, as this can cause rer rectangular nelest, avoid over-county the contents, of an actual cooper unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch diameter hole in each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

WEB STIFFENERS

- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the Halst proporties table found at the Halst Construction Guide (C101). The gop between the stiffener and the flange is at
- A bearing stiffener is required when the 1-joist is supported in a honger and the sides of the honger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.
- A load stiffener is required at locations where a factored concentrated load greater than 2,370 has a applied to the top flange between supports, or in the case of a cantilever, anywhere between the confilever tip and the support. These values are for standard term load divotion, and may be adjusted for other load durations as permitted by the code. The gap between the stillener and the forge is at the bottom.

WEB STIFFENER INSTALLATION DETAILS CONCENTRATED LOAD Flange width 2-1/2" or 3-1/2"





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

SAFETY AND CONSTRUCTION PRECAUTIONS

5. Never install a damoned Finist.



Do not walk on t-joists until fully fastened and braced, or



Never stock building materials over unsheathed Halists. Once sheathed, do not over-stress

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 noil each I-joist as it is installed, using hangers, blacking panels, rim board, and/or cross-bridging at joist ends.
 When I-joists are applied confinuous over interior supports and a load-bearing wall is planned at that location, blacking will

2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary cheathing must be applied to prevent I-joist rollover or buckling.

or buckling.

** Temporary brating 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* nais fusience to the lop surfaces of each injoist. Not the bracing to a lateral restraint at the said of each bay. Lop ands of adjoining bracing over at least two 1-joists.

Or, sheathing (emporary or permanent) can be notled to the top flange of the first 4 feet of 1-joists at the and of the bay.

3. For confidence of Figure 2, the control of the box.

I for confidence of Figure 2, the control of the box.

I for confidence of Figure 2, the control of the control of

Improper storage or installation, failure to follow applicable building codes, failure to follow apon ratings for Nordic I-joists, failure to follow allowable tools sizes and locations, or failure to use web stiffeners when required can result in serious occidents.

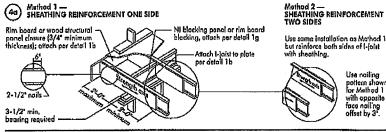


PRODUCT WARRANTY

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

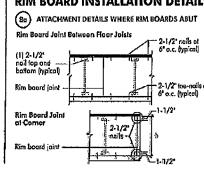
Furthermore, Chantiers Chibongaman warrants that our products, when utilized in accordance with our handling and installation instruction will meet or exceed our specifications for the lifetime of the structure.

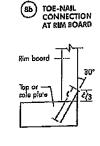
CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET



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

RIM BOARD INSTALLATION DETAILS





Schedule 1: Designer Information

Use one form for each Individual who review	ws and takes re	sponsibility for design activiti	es with respect to	the project.
A. Project Information	<u> </u>		l Unit no.	Lot/con.
Building number, street name				
Municipality BRAMPTON	Postal code	Plan number/ other descrip	otion	
B. Individual who reviews and takes	responsibilit	y for design activities		
Name EDWIN C. FOK	(FirmSTRACON EN		G INC.
Street address 69 GRAYDON CR			Unit no.	Lot/con.
Municipality RICHMOND HILL	Postal code I4B3W7	Province ONTARIO	E-mall	
Telephone number 9058322250		058320286	Cell number	
C. Design activities undertaken by I Division CI	ndividual idei	ntified in Section B. [Bu	ilding Code Ta	ble 3.5.2.1. of
House	THVAC	C - House) Structural
Small Buildings	Bulldi	ng Services	Plumblr	ng House
Large Buildings		tion, Lighting and Power		ng – All Buildings
Complex Buildings		Protection	On-site	Sewage Systems
Description of designer's workROYAL PINI		EST SIDE UNIT 1702		
FLOORIJO	IST & LAYOUT		•	
D. Declaration of Designer				
EDWIN	I C,FOK	d	leclare that (choo	se one as appropriate):
(print narr			•	· · · · · · · · · · · · · · · · · · ·
I review and take responsibility	for the design :	work on behalf of a firm regis	fered under subs	ection 3.2.4.of Division
C, of the Building Code. I am o	ualified, and the	firm is registered, in the app	propriate classes/	categories.
1		•		
Individual BCIN: 2399		· · · · · · · · · · · · · · · · · · ·		
Firm BCIN: 2810	3	Market Company		
I review and take responsibility under subsection 3.2.5.of Divi	y for the design sion C, of the Bu	and am qualifled in the appro uilding Code.	priate category a	s an "other designer"
individual BCIN:			_	
Basis for exemption from	registration:			
The design work is exempt fro			ents of the Buildir	ıg Code.
Basis for exemption from	registration and	qualification:		
I certify that:				
1 The information contained in this	schedule is true	e to the best of my knowledge) .	
I have submitted this application	with the knowled	dge and consent of the firm.		
Warla		da-71.		•
way 5/1		Signature of Designer		
Date		- Summer of monitor		

NOTE:

- 1. For the purposes of this form, "individual" means the "person" referred to in Clause 3,2.4.7(1) (c).of Division C, Article 3,2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3,2.4. and 3,2.5. of Division C.
- Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of practice, issued by the Ontario
 Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise,
 or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

NORDIC STRUCTURES

COMPANY J9 1ST FLOOR July 26, 2018 11:45 PROJECT
J1 1ST FLOOR
J1 1ST FLOOR

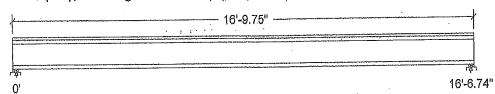
Design Check Calculation Sheet

Nordic Sizer - Canada 7.1

Loads:

	Load	Type Distribution		Pat-	Location	[ft]	Magnitude	Unit
١	1700.0			tern	Start	End	Start Enc	
	Load1	Dead	Full Area				20.00	psf
١	Load2	Live	Full Area				40.00	psf

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



Unfactored: Dead Live	166 331		166 331
Factored: Total	704	WFESS.ON	704
Bearing: Resistance Joist Support Des ratio Joist Support Load case Length Min req'd Stiffener KD KB support fcp sup Kzcp sup	2102 3659 0.33 0.19 #2 2-3/8 1-3/4 No 1.00 769 1.00	E. FOK &	2102 3659 0.33 0.19 #2 2-3/8 1-3/4 No 1.00 769 1.00

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

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

Total length: 16'-9.75"; Clear span: 16'-4.99"; 5/8" nailed and glued OSB sheathing

This section PASSES the design code check.

Limit States Design using CSA 086-14 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 704 Mf = 2914	Vr = 2336 $Mr = 6255$	lbs lbs-ft	Vf/Vr = 0.30 Mf/Mr = 0.47
Moment(+) Perm. Defl'n	$0.09 = \langle L/999$	0.55 = L/360	in	0.16 0.43
Live Defl'n Total Defl'n	0.18 = < L/999 0.27 = L/745	0.41 = L/480 0.83 = L/240	in in	0.32
Bare Defl'n	$0.20 = L/975$ $I_{max} = 16'-6.8$	0.55 = L/360 Lv = 18'-3.6	in ft	0,37
Vibration Defl'n	Lmax = 16'-6.8 = 0.028	= 0.038	in	0.74

OWO NO. TAM 8540-18 H P64 STRUCTURAL COMPONENT ONLY

T-18115102

J1 1ST FLOOR

Nordic Sizer - Canada 7.1

Page 2

										·	
Additional	Data:								- ~ !!		
FACTORS:			KH		KL	KT	KS	KN	LC#		
Vr	2336	1,00	1.00			*	-		#2		
Mr+					1.000	-	-	•••	#2		
EI				-	-		-	***	#2		
CRITICAL LO	DAD COMB	INATIONS	3;					•			
Shear	: LC #2	= 1.25	5D + 1.5I			•		. •			
Moment(+)	: LC #2	= 1.25	5D + 1.5I								
Deflection	n: LC #1	= 1.00) (perma	nent)							
			0 + 1.0L								
•			0 + 1.0L								
	LC #2	= 1.01	0 + 1.0L	(bare	joist)			•			
Bearing	: Suppo										,
	Suppo	rt 2 - 1	LC #2 = :	1.25D +	1.5L	, .		معا مدسما ما			
Load Type	es: D=dea	d W=wi	nd S=sn	ow H=e	arth, grou	indwate	r K=eal	cinquake		•	
	L=liv	e (use, o	ccupancy) Ls=l	ive(stora	ige, equ	tbwent)	r=rrre			
Load Patt	erns: s=	S/2 L=	L+Ls _=1	no patt	ern load	in thi	s span				
		ions (L	Cs) are	listed	in the Ar	nalysis	output				
CALCULATI	ONS:										
Deflection	on: Elef	f =	433e06 l	b-in2	K= 6.18€	06 lbs	43.1.	يم لمسلمين	\		
"Live" de	eflection	ı = Defl	ection f	rom all	non-dead	Toads	(TrAe'	wind, s	(IOW)		
1											

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).

2. Please verify that the default deflection limits are appropriate for your application. CONFORMS TO OBC 2012

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 no suffer into of the design assumptions made. Nordic Structures is responsible only for the structural adequate based on the design criteria and loadings shown.

DWO NO. PAMBSYO. 1017 STRUCTURAL COMPONERT ONLY

T. 18115491/1

NORDIC

STRUCTURES

COMPANY
J9 1ST FLOOR
July 27, 2018 15:11

PROJECT
J1 2ND FLOOR
J1 2ND FLOOR

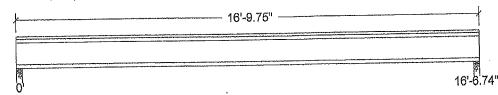
Design Check Calculation Sheet

Nordic Sizer - Canada 7.1

Loads:

Load	Type	Distribution	Pat- tern	Location Start	(ft) End	Magnitude Start End		
Load1 Load2	Dead Live	Full Area Full Area				20.00 40.00	psf psf	l

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



Unfactored: Dead Live	221		221 442
Factored:	· · · · · · · · · · · · · · · · · · ·		020
Total.	939		939
Bearing:			
Resistance		a shipped	2102
Joist	2102		3981
Support	3981	from the same of t	
Des ratio		PROPÉSS OF	0.45
Joist	0.45		0.24
Support	0.24	E E OFOK	#2
Load case	#2		2-3/8
Length	2-3/8	E NFOK	1-3/4
Min req'd	1-3/4		No
Stiffener	No		1.00
KD	1.00		1.00
KB support	1.00	The state of the s	769
fcp sup	769		1.09
Kzcp sup	1.09	the state of the s	

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

Nordic 11-7/8" NI-40x Floor joist @ 16" o.c.

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

Total length: 16'-9.75"; Clear span: 16'-4.99"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section PASSES the design code check.

Limit States Design using CSA 086-14 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 939	Vr = · 2336	lbs lbs-ft	Vf/Vr = 0.40 Mf/Mr = 0.62
Moment (+)	Mf = 3886 0.12 = < L/999	Mr = 6255 $0.55 = L/360$	in	0.21
Perm. Defl'n	0.23 = L/863	$0.41 = I_1/480$	in	0.56 0.42
Total Defl'n	0.35 = L/575	0.83 = L/240 0.55 = L/360	in in	0.42
Bare Defl'n Vibration	0.27 = L/731 Lmax = 16'-6.8	LV = 17'-8.1	ft	0.94
Defl'n	= 0.031	= 0.038	in	0,81

BYONG TAM 8541-18 H P622-STRUCTURAL COMPONENT ONLY

-T-1811543

J1 2ND FLOOR

Nordic Sizer -- Canada 7.1

Page 2

1	,,		,							**************************************	
	Additional	Data:									
ļ	FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#	
İ	Vr	2336	1.00	1,00	₩.	**		***	-	#2	
ļ	Mr+	6255	1.00	1.00	·	1.000	-		F	#2	
	EI	371,1 m	illion	_	-	-	-	-	244	#2	
١	CRITICAL LO	DAD COMBI	INATIONS	S :				•		•	
	CRITICAL LO	: LC #2	= 1.25	5D + 1,5	L.	•					
	Moment(+)	: LC #2	= 1.25	5D + 1.5	L		• :				
	Moment(+) Deflection	on: LC #1	= 1.00) (perm	anent)				• :		
		: LC #2	= 1.01	0 + 1.0L	(live)		٠.			
	·	LC #2	= 1.00	0 + 1.0L	(tota	1)				•	
		LC #2	= 1.01	D + 1.0L	(bare	joist)					
	Bearing	: Suppo	rt 1 - I	LC #2 =	1.25D +	1.51				, .	
		Suppo	rt 2 - 1	LC #2 =	1.25D +	1.5L		E-001	de harren ka		•
	Load Type	es: D=dea	d M=wi	nd S=sn	ow H=e	arth, grou	indwate	r K=ear	tuduake		
		L≕liv	e (use, o	ccupancy) rs=r	ive(stora	ige, equ	ipment)	T=TTT6		
	Load Pati	terns: s=	S/2 L=1	L+Ls _=	no patt	ern load	in thi	s span			
		Combinat	ions (L	Cs) are	listed	in the Ar	латуятя	output			
	CALCULATI	ONS:				^ 4^	. 0.6. 11 :				
	Deflecti	on: Elef	f =	448e06 l	b-in2	K= 6.18€	SQT GAE	111	ridad d	nou l	
	Live" d	eflection	= Defl	ection İ	rom all	non-dead	i ioads	(TTAG)	MTHU' S	1104/	

Design Notes:

1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA 086-14 Engineering Design in Wood standard, Update No. 2 (June 2017).

2. Please verify that the default deflection limits are appropriate for your application. 3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.

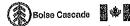
4. Nordic Lielete are listed in COMO and in the Composition of the Composit

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 tills information is their responsibility. This analysis does not constitute a record of the structural integrity of the building series in ability of the design assumptions made. Nordic Structures is responsible only for the structural adequates of this contact. based on the design criteria and loadings shown.

STRUGTURAL. COMPONENT ONLY





PASSED

B2

July 26, 2018 11:15:53

1ST FLOOR FRAMING\Flush Beams\B1(i602)

BC CALC® Member Report

235/0

Build 6475

Job name:

B1

B2, 2-3/8"

Address: City, Province, Postal Code: BRA...ON

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

UNIT 1702.mmdl File name:

Description: 1ST FLOOR FRAMING\Flush Beams\B1(i602)

Specifier: Designer: Company:

	(3)	7																	 						25.12	7.27	300000	er er reg	*****	week St.	apa ma	1,00-		7
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												•															 							4
														12-1	1-06	3	_		 ,														P.	,

Total Horizontal Product Length = 12-11-06

Reaction Summary (Down / Uplift) (lbs) Snow Live Dead Bearing 504/0 910/0 B1, 3-1/2"

158 / 0

1 4	ad Cummani						Live	Dead	Snow	Wind	Tributary
Tag	ad Summary Description	Load Type	Ref.	Start	End	Loc,	1.00	0.65	1.00	1.15	
Û	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-11-06	Тор		6			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L.	00-00-00	01-08-00	Top	15	8			n\a
2	FC1 Floor Material	Unf. Lln. (lb/ft)	L	01-08-00	12-11-06	Top	20	10			n\a
3	B2(1583)	Conc. Pt. (lbs)	Ĺ	01-08-14	01-08-14	Тор	895	459			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2,954 ft-lbs	17,696 ft-lbs	16.7%	1.	01-10-12
End Shear	1.945 lbs	7,232 lbs	26.9%	1	01-03-06
Total Load Deflection	L/999 (0,113")	n\a	n\a	4	05-11-10
Live Load Deflection	L/999 (0.07")	n\a	n\a	5	05-11-10
Max Defl.	0,113"	n\a	n\a	4	05-11-10
Span / Depth	12.7				

Bearing	Supports	· Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1.	Column	3-1/2" × 1-3/4"	1,996 lbs	40.1%	26:7%	Unspecified
B2	Wall/Plate	2-3/8" x 1-3/4"	550 lbs	24.8%	10.9%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086. CONFORMS TO OBC 2012

Design based on Dry Service Condition.

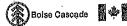
Importance Factor: Normal Part code: Part 9

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of Input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to expert to assure its adequacy, prior to anyone relying on such output as evidence of sulfability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade 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®, ALLJOIST®, BC FloorValue®, ALLJOIST®, BC FloorValue®, BOISE GLULAM™, BC FloorValue®, ALLJOIST® VERSA-LAM®, VERSA-RIM PLUS® .

STRUCTURAL COMPONENT ONLY





PASSED

July 26, 2018 11:15:53

1ST FLOOR FRAMING\Flush Beams\B2(i583)

BC CALC® Member Report

Build 6475

Job name:

Address: City, Province, Postal Code: BRA...ON

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

UNIT 1702.mmdl

File name:

Description: 1ST FLOOR FRAMING\Flush Beams\B2(I583)

Specifier: Designer:

Company:

	*				
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<u> </u>					
				and the second s	<u> </u>
		04-03-00			
1					

Total Horizontal Product Length = 04-03-00

Reaction Summary (Down / Uplift) (Ibs)

Live Dead Bearing 909 / 0 467/0 B1, 2" 483 / 0 B2, 5-1/2" 939 / 0

L.(ad Summary		met	Start	End	Loc.	1.00		Snow 1,00	Wind 1.15	Tributary
T'a	g Description	Load Type	Ref.	بعبيب بهب وسنجمية ومعتم بسويهون	04-03-00	Top.		R		**************************************	00-00-00
0	Self-Weight	Unf. Lin. (lb/ft)	L.	00-00-00		•	0.46	400			n\a
4	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	04-03-00	Top	240				
,	- '' '''	Unf. Lin. (lb/ft)	ł	00-09-00	03-09-00	αoΤ	226	113			n\a
2	Smoothed Load		-	** ** ** ** ** ** ** ** ** ** ** ** **		Top	150	75			n\a
3	.13(1579)	Conc. Pt. (lbs)	l.	00-03-00	00-03-00	tob	100	, , ,			

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1.753 ft-lbs	17,696 ft-lbs	9.9%	1	02-02-10
	1,057 lbs	7,232 lbs	14.6%	1	01-01-14
End Shear		n\a	n\a	4	02-00-00
Total Load Deflection	L/999 (0.006")		n\a	5	02-00-00
Live Load Deflection	L/999 (0.004")	n\a		4 ·	02-00-00
Max Defl.	0,006"	n\a .	n\a	*1	02-00-00
Span / Depth	3.8				

Boarino	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	2" × 1-3/4"	1,947 lbs	n\a	45,6%	Hanger
82	Wall/Plate	5-1/2" x 1-3/4"	2,012 lbs	39.1%	17.1%	Unspecified

Hanger model Hanger was not found. Hanger has not been analyzed for adequate capacity.

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 OBC 2012

DWOND.TAM 854318H STRUCTURAL COMPONENT ONLY



Disclosure.

Use of the Bolse Cascade Software is subject to the terms of the End User 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 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 BOARDTM, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®

T-181545





PASSED

1ST FLOOR FRAMING\Flush Beams\B3(i477)

BC CALC® Member Report Build 6475

Job name:

Customer:

Dry | 1 span | No cant.

July 26, 2018 11:15:53

Address:

City, Province, Postal Code: BRA...ON

File name:

UNIT 1702.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B3(i477)

Specifier:

Company:

Designer:

Code reports:

CCMC 12472-R

B2

Total Horizontal Product Length = 16-09-12

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing Live Dead 1,802/0 1,221/0 B1, 2-3/8" B2, 2-3/8" 587 / 0 462 / 0

							Live	Dead	Snow	Wind	Tributary
	oad Summary ag Description	Load Type	Ref.	Start	End	Loc.	1,00	0.65	1,00	1.15	00.00.00
Ġ	Self-Weight	Unf. Lin. (lb/ft)	I.	00-00-00	16-09-12	Тор		12			00-00-00
. 1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	16-09-12	Тор	18	9			n\a
9	STAIR	Unf. Lin. (lb/ft)	L	00-02-06	04-00-05	Тор	240	120			n\a
4	FC1 Floor Material	Unf. Lin. (lb/ft)	L	03-10-06	16-09-12	Top	11	6		•	n\a
7	B4(1590)	Conc. Pt. (lbs)	L.	04-00-02	04-00-02	Тор	1,002	787			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	12,159 ft-lbs	35,392 ft-lbs	34.4%	1	04-00-02
End Shear	3.647 lbs	14,464 lbs	25.2%	1	01-02-04
Total Load Deflection	L/534 (0.372")	n\a	45.0%	4	07-07-11
	L/931 (0.213")	n\a	38.7%	5	سننوا 1-07-77
Live Load Deflection Max Defl.	0.372"	n\a	n\a	4	07-07-61.5
Span / Depth	16.7				2

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	C. S. C.	, ,
B1 B2	Wall/Plate Wall/Plate	2-3/8" x 3-1/2" 2-3/8" x 3-1/2"	4,230 lbs 1,458 lbs	95.3% 32.8%	41.7% 14.4%	Unspecified Unspecified	N. A.	>

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.

CONFORMS TO OBC 2012

.

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.

DVO NO. TAMBSYY-10 H STRUCTURAL COMPONENT ONLY

T-1811546





PASSED

July 26, 2018 11:15:53

1ST FLOOR FRAMING\Flush Beams\B3(i477)

BC CALC® Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

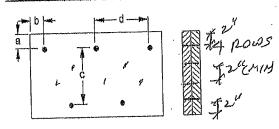
UNIT 1702.mmdl File name:

Description: 1ST FLOOR FRAMING\Flush Beams\B3(I477)

Specifier: Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 2" b mlnimum = 3"

c = 7-7/8" d = @ // B

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

Connectors are:

3-1/2" ARDOX SPIRAL

Disclosure

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

DWGNO.TAM 854418H STRUCTURAL COMPONENT ONLY

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

-T-UN1546(M





PASSED

1ST FLOOR FRAMING\Flush Beams\B4(i590)

Dry | 1 span | No cant.

July 26, 2018 11:15:53

BC CALC® Member Report Build 6475

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: BRA...ON

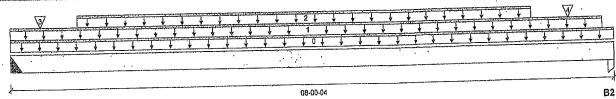
CCMC 12472-R

UNIT 1702.mmdl File name:

Description: 1ST FLOOR FRAMING\Flush Beams\B4(1590)

Specifier:

Designer: Company:



₿1

Total Horizontal Product Length = 08-00-04

Reaction Summa	ry (Down / Up	lift) (lbs) Dead	Snow	Wind	
B1, 2"	1,019 / 0	799/0			
B2, 1-3/4"	980 / 0	770 / 0	•		

			•					Live	Dead	Snow	AAIUO	tinutary
		d Summary	Load Type	Ref.	Start	End	Loc.	1.00 ·	0,65	1.00	1.15	00-00-00
-	Tag	Description	Unf. Lin. (lb/ft)	L	00-00-00	08-00-04	Тор		12			
	U	Self-Weight	• •	ī	00-00-00	07-10-08	Top		60			n\a
	1	WALL	Unf. Lin. (lb/ft)	3s	00-11-00	06-11-00	Top	262	131			n\ą
	2	Smoothed Load	Unf. Lin. (lb/ft)	L	•			205	103			n\a
	2	J2(i486)	Conc. Pt. (lbs)	L	00-05-00	00-05-00	Тор					n\a
	رو د		Conc. Pt. (lbs)	L	07-05-00	07 - 05-00	Тор	222	111			11100
	4	J2(1489)	001101 1 4 (144)									

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Principle of the Control of the Cont	4,935 ft-lbs	35,392 ft-lbs	13,9%	1	04-05-00
Pos. Moment		14,464 lbs	14.5%	1	01-01-14
End Shear	2,097 lbs	n\a	n\a	4	04-00-08
Total Load Deflection	L/999 (0.04")	n\a n\a	n\a .	б	04-00-08
Live Load Deflection	L/999 (0.023")		n\a	4	04-00-08
Max Defl.	0.04"	n\a	1116		

7.9 Span / Depth

Dealine	Cunnarte	Dim. (LxW)	Demand	Demand/ Résistance Support	Demand/ Resistance Member	Material
peaning	Supports				29.6%	Hanger
B1	Hanger	2" x 3-1/2"	2,527 lbs	n\a		
R2	Column	1-3/4" x 3-1/2"	2,433 lbs	48.9%	32.6%	Unspecified



Hanger model Hanger was not found. Hanger has not been analyzed for adequate capacity.

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

CONFORMS TO OBC 2012

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.

OWO NO . TAM BS45-1814 STRUCTURAL P6 44 COMPONENT ONLY

T-1811847





PASSED

July 26, 2018 11:15:53

1ST FLOOR FRAMING\Flush Beams\B4(1590)

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

Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer: Code reports:

CCMC 12472-R

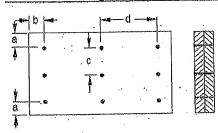
UNIT 1702.mmdl File name:

Description: 1ST FLOOR FRAMING\Flush Beams\B4(i590)

Specifier: Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

d = 🚳 6 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. Nalls Connectors are: .

3-1/2" ARDOX SPIRAL



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UWUNU.TAN BS45.18H STRUCTURAL COMPONENT ONLY

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





PASSED

1ST FLOOR FRAMING\Flush Beams\B5(i543)

Dry | 1 span | No cant.

July 26, 2018 11:15:53

BC CALC® Member Report Build 6475

Job name:

Address:

City, Province, Postal Code: BRA...ON

File name:

UNIT 1702.mmdl

Wind

Description: 1ST FLOOR FRAMING\Flush Beams\B5(l543)

Specifier:

Designer:

Customer: Code reports:

CCMC 12472-R

Company:

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1			<u>-</u>																														
															03-0	8-00)									•							
1																																	

Total Horizontal Product Length = 03-08-00

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 4"	150 / 0	414 / 0
B2, 4"	149/0	414/0

							l.ive	Dead	Snow	Wind	Tributary
	d Summary Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	00.00.00
Tag	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-08-00	Top		12			00-00-00
0	•	Unf. Lin. (lb/ft)	i	00-00-00	03-08-00	Top	61	204			n\a
7	E1(1126)		1	00-03-08	03-08-00	Top	20	10			n\a
2	FC1 Floor Material	Unf, Lin. (lb/ft)	t t		00-03-08	qoT	7				n\a
O	・ロレイバスタイト	Conc. Pt. (lbs)	L	00-03-08	00-00-00	וטף	,				

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
WHITTH	386 ft-lbs	23,005 ft-lbs	1.7%	0	01-10-01
Pos. Moment	161 ibs	9,401 lbs	1.7%	Q	01-03-14
End Shear	1-1 100	n/a	n\a	4	01~10-01
Total Load Deflection	L/999 (0.001")		n\a	5	01-10-01
Live Load Deflection	L/999 (0")	n\a	n\a	Ā	01-10-01
Max Defl.	0.001"	, n\a	ma	-1	01 10 01
Span / Depth	3.2	•			. 45

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4" x 3-1/2"	580 lbs	11.9%	5.2%	Unspecified
B2	Wall/Plate	4" x 3-1/2"	580 lbs	11.9%	5.2%	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 Canadlan Limit States Design, as per NBCC 2015 and CSA 086.

Design based on Dry Service Condition.

CONFORMS TO OBC 2012

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.

DWO NO . TAN 8546-18H STRUCTURAL P6 12 COMPONENT ONLY

T-181154ef





PASSED

July 26, 2018 11:15:53

1ST FLOOR FRAMING\Flush Beams\B5(i543)

BC CALC® Member Report

Build 6475 Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

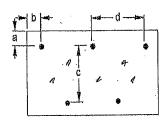
File name: UNIT 1702.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B5(I543)

Specifier: Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

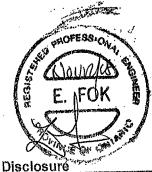
b minimum = 3"

6 d = @

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

Connectors are: " Nails

3-1/2" ARDOX SPIRAL

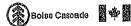


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DWBNO.TAN BS4618H STRUCTURAL COMPONENT ONLY

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

T. USUSCERCI





PASSED

2ND FLOOR FRAMING\Flush Beams\B10(i544)

Dry | 1 span | No cant.

July 26, 2018 11:15:53

Bulld 6475

Job name:

Address:

BC CALC® Member Report

City, Province, Postal Code: BRA...ON

Customer: Code reports:

CCMC 12472-R

File name:

UNIT 1702.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B10(i644)

Specifier:

Designer: Company:

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<u> 3</u>	T v	V	*	Į.	•		THE PERSON			La Shiri La Shiri	1	Ţ	Ţ	+	1		r Tillian	Ţ	Ţ	*	1	1	*	Ţ	¥		Seaq	-	-	-		<u>*</u>
V	,	Ţ	Į.	4	¥	+	V	¥	ţ	_		Į.	\	1 0	1	*		<u>' </u>		<u>' '</u>	<u> </u>	<u> </u>	<u> </u>	<u>*·</u>	*	Ý,			<u> </u>	• • •	- 4	-/
. .										٠			. :		<u></u>	·														<u> </u>	A	#
																	,									,						
			•											12-09	9-12													÷			1	В:
11																																

Total Horizontal Product Length = 12-09-12

Reaction Summary (Down / Uplift) (lbs)

Live Dead Snow Bearing 936 / 0 1,718/0 B1, 2" 2,394/0 1,274 / 0 B2, 2"

							L.i∨e	Dead	Snow	Wind	Tributary
LO Tag	ad Summary Description	Load Type	Ref.	Start	End	Loc.	. 1.00	0.65	1.00	1.15	
-148	Self-Weight	Unf. Lin. (ib/ft)	L	00-00-00	12-09-12	Тор		12			00-00-00
4	Smoothed Load	Unf, Lin. (lb/ft)	Ĺ.	01-02-02	12-02-02	Top	264	132			n\a
0	STAIR	Unf, Lin. (lb/ft)	L	09-05-12	12-09-12	Top	240	120			n\a
2	J2(j496)	Conc. Pt. (lbs)	L	00-08-02	00-08-02	Top	240	120			' n\a
ى 4	J2(1490) J2(1502)	Conc. Pt. (lbs)	Ĩ.	12-08-02	12-08-02	Top	169	84			n\a
4	JZUOUZI	00110, 1 1, (100)	_			•					

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	12,824 ft-lbs	35,392 ft-lbs	36.2%	1	06-08-02
End Shear	4,206 lbs	14.464 lbs	29.1%	1	11-07-14
Total Load Deflection	L/564 (0.268")	n\a	42.5%	4	06-05-02
	L/869 (0.174")	n\a	41.4%	5	06-05-02
Live Load Deflection	0.268"	n\a	n\a	4	06-05-02
Max Defl.	0,200	11161	11100		

Span / Depth

Rearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	2" × 3-1/2"	3,748 lbs	n\a	43.9%	Hanger
B2	Hanger	2" × 3-1/2"	5,184 lbs	n\a	60.7%	Hanger

Hanger model Hanger was not found. Hanger has not been analyzed for adequate capacity.

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

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

please consult a technical representative or professional of Record.

DWG NO.TAMB547-18H STRUCTURAL P6-2 COMPONENT UNLY





PASSED

July 26, 2018 11:15:53

2ND FLOOR FRAMING\Flush Beams\B10(i544)

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

. Build 6475

Job name:

Address: City, Province, Postal Code: BRA...ON

Customer:

Code reports:

CCMC 12472-R

File name:

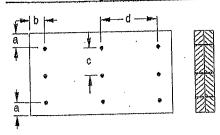
UNIT 1702.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B10(i544)

Specifier: Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

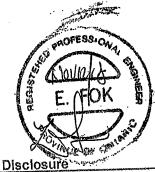
c = 4" 12

d = 🕮 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.

1 / Nails Connectors are:

3-1/2" ARDOX SPIRAL



Use of the Bolse Cascade Software Is subject to the ferms 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 outout as expert to assure its adequaty, 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 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.

STRUCTURAL COMPONENT ONLY

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

T- 1811549(Y





PASSED

Tributary

Millard

July 26, 2018 11:15:53

2ND FLOOR FRAMING\Flush Beams\B11(1603)

BC CALC® Member Report

Build 0

Job name: Address:

City, Province, Postal Code: BRA...ON

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

UNIT 1702.mmdl File name:

Description: 2ND FLOOR FRAMING\Flush Beams\B11(i503)

Specifier: Designer:

Company:

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a Aliti	<u>, </u>	↓ ↓ ↓ ↓ ↓ 4	* * * * * * * * * * * * * * * * * * * 	W T TET T
<u> </u>	<u> </u>			
			Land Cultinate	50 Ì

Total Horizontal Product Length = 21-00-00 (full Sufferior)

1	al Commence of the								Live	Dead	Snow	wina	ITIDULALY
	ad Summary		Load Type	Ref.	Start	End	Loc.		1,00	0.65	1,00	1.15	
Tag	Description		Unf. Lin. (lb/ft)	1	00-00-00	21-00-00	Top			12			00-00-00
Ų	Self-Weight		Unf. Lin. (lb/ft)	ï	00-00-00	21-00-00	Top			81			:n\a
1	E18(i261)			L.	00-00-00	21-00-00	Top			60			n\a
2	WALL		Unf, Lin, (lb/ft)	Bri I	00-00-00	04-06-08	Top		345	173			n\a
3.	E18(i261)		Unf. Lin. (lb/ft)	L.		• • •			0.10	112		•••	n\a
4	E18(1261)	,	Unf. Lin. (lb/ft)	L.,	02-11-00	20-07-00	Top		327	164			n\a
5	E18(I261)		Unf. Lin. (lb/ft)	L.	18-03-04	21-00-00	Тор	•		228			n\a
6	J1(1593)	1	Conc. Pt. (lbs)	L.	01-02-08	01-02-08	Top		456				n\a
7	J1(i604)		Conc. Pt. (lbs)	L.	02-06-08	02-06-08	Top		456	228			n\a
8 .	J1(1535)		Conc. Pt. (lbs)	L.	03-10-08	. 03-10-08	Top		412	206			
9.	0 1/10007		Conc. Pt. (lbs)	L	05-00-07	.05-00-07	Top		3,757	2,507	٠.		n\a
10			Conc. Pt. (lbs)	L	17-11-09	17-11-09	Top		3,701	2,610			n\a
	14/1500\	•	Conc. Pt. (lbs)	Ĺ	18-08-10	18-08-10	Top		304	152		NA CONTRACTOR OF THE PARTY OF T	. n∖a
11	J1(i528)		Conc. Pt. (lbs)	,-	19-08-10	19-08-10	Top		342	171	المامير م. المامير م.	Charles and the	- n\a
12	J1(1594)			ï	20-08-10	20-08-10	Top		342	171	ا مره : «کانتین ۱۹۹۹ سه منطقهای	CO CO	n\a
13	J1(1476)		Conc. Pt. (lbs)	L.,	FO 00.10		[-			ASPA	L' PROPE	SS.CA	***

Controls Summ	arv Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Dist. Load	1,079.80 lb/ft	57,645.00 lb/ft	1.9%		
Conc. Load	8,814 lbs	16,813 lbs	52.4%		

Disolesure

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DWO NO. TAM 85481814 STRUCTURAL . COMPONENT ONLY

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

T-1811550



BC CALC® Member Report



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

PASSED

MAIN FLOOR FRAMING\Flush Beams\B6(i1029)

Dry | 1 span | No cant.

May 1, 2019 15:01:02

Build 6766

Job name:

Customer:

B1, 4"

B2, 5-1/2"

Code reports:

Address: City, Province, Postal Code: BRA...ON

CCMC 12472-R

File name:

UNIT 1702.mmdi

Description:

MAIN FLOOR FRAMING\Flush Beams\B6(I1029)

Specifier:

Designer: ΑJ

Company:

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A		 									 																	} *
# B1							_				1-07-0			հ ⊶ 4	4.07.	.00											B2	!

Total Horizontal Product Length = 11-07-08

Snow

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

794/0 1,448/0 823 / 0 1,505 / 0

_							Live	Dead	Snow	Wind	Tributary
	ad Summary	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
Tag	Description	Unf. Lin. (lb/ft)	1	00-00-00	11-07-08	Top		12			00-00-00
O	Self-Weight		1	00-08-10		•	254	127			n\a
1	Smoothed Load	Unf. Lin. (lb/ft)	<u>.</u>			1	181	91			n\a
2	.12(11054)	Conc. Pt. (lbs)	L.	00-02-10	00-02-10	Тор	101	01			ma

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	8,208 ft-lbs	35,392 ft-lbs	23,2%	1	06-02-10
• =	2.706 lbs	14,464 lbs	18.7%	1	10-02-02
End Shear	L/1,021 (0.129")	n\a	23.5%	4	05-08-10
Total Load Deflection	L/999 (0.083")	n\a	n\a	5	05-08-10
Live Load Deflection Max Defl.	0.129"	n\a	n\a	4	05-08-10
Span / Depth	11.1				

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1 Hanger B2 Wall/Plate	4" x 3-1/2" 5-1/2" x 3-1/2"	3,164 lbs 3,287 lbs	n\a 32.0%	18.5% 14.0%	HGUS410 Unspecified	

Cautions

Header for the hanger HGUS410 at B1 is a Double 1-3/4" x 11-7/8" VERSA-LAM® 1.7 2400 DF. Hanger model HGUS410 and seat length were input by the user.

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 phl has been applied to all presented results per CSA O86.

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

please consult a technical representative or professional of Record.

Nail one ply to another with 3 1/2" spiral nails @ 10"

o.c. staggered in 2 rows





PASSED

MAIN FLOOR FRAMING\Flush Beams\B7(i1072)

Dry | 1 span | No cant.

May 1, 2019 15:00:56 .

BC CALC® Member Report

Bulld 6766

Job name:

Address: City, Province, Postal Code: BRA...ON

Customer: Code reports:

CCMC 12472-R

File name:

UNIT 1702.mmdl

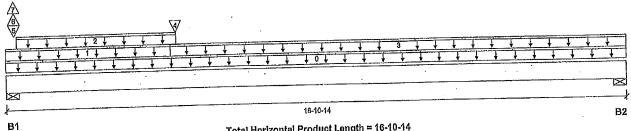
Wind

Description: MAIN FLOOR FRAMING\Flush Beams\B7(I1072)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 16-10-14

Snow

Reaction Summary (Down / Uplift) (lbs)

Dead Bearing 3,277 / 0 3,580 / 342 B1, 3-1/2" 512/0 684/0 B2, 2-3/8"

							Live	Dead	Snow	Wind	Tributary
Loa	d Summary	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
Tag	Description	Unf. Lin. (lb/ft)	1	00-00-00	16-10-14	Тор		18			00-00-00
0	Self-Welght		ĭ	00-00-00	04-05-12	Top	16				n\a
1	FC2 Floor Material	Unf, Lin. (lb/ft)	I⊷ l	00-03-08	04-07-10	•	240	120			n\a
2	STAIR	Unf. Lin. (lb/ft)	1	04-05-12	16-10-14	•	20	10			n\a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L 1	04-07-08	04-07-08	•	1,420	778			n\a
4	B6(11029)	Conc. Pt. (lbs)	L		00-02-12		1,483	2,220			n\a
5	E18(1261)	Conc. Pt. (lbs)	L	00-02-12		4 - In	1,400	-195			n\a
6	E18(I261)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	•	0.40	-100			n\a
7	E18(1261)	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Тор	-342				1100
- 1	LIGUEOTY	• •									

Commons	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Controls Summary	15,323 ft-lbs	55,212 ft-lbs	27.8%	1	04-07-08
Pos. Moment End Shear	4.134 lbs	21,696 lbs	19.1%	1	01-03-06
Total Load Deflection	L/659 (0.301")	n\a	36.4%	6	07-08-15
Live Load Deflection	L/1,083 (0.183")	n\a	33.2%	8	07-06-14
Max Defl.	0.301"	n \ a	n\a	6	07-08-15
Span / Depth	16.7			•	

Desilor	Cunnarte	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 \	# # CA (11)	3-1/2" × 5-1/4" 2-3/8" × 5-1/4"	9,466 lbs 1,666 lbs	96.5% 25.0%	42.2% 11.0%	Unspecified Unspecified

Nail one ply to another with 3 1/2" spiral nails @ 10 1 o.c. staggered in 2 rows







PASSED

July 26, 2018 11:15:53

2ND FLOOR FRAMING\Flush Beams\B8(i478)

BC CALC® Member Report

Build 6475

Job name: Address:

City, Province, Postal Code: BRA...ON

Customer: Code reports:

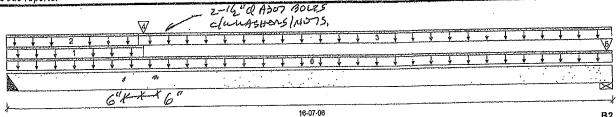
CCMC 12472-R

Dry | 1 span | No cant.

UNIT 1702.mmdl File name: Description: 2ND FLOOR FRAMING\Flush Beams\B8(i478)

Specifier: Designer:

Company:



Total Horizontal Product Length = 16-07-06

Reaction Summary (Down / Uplift) (lbs) Snow Dead Live 2,013/0 1,366 / 0 709/0 979 / 0 B2, 2-3/8"

PROVIDE 4ROWS OF 3-1/2 ARDOX SPIRAL NAILS @ 12_ " O/C FOR MULTI-PLY NAILING, MAINTAIN A MIN. 2"LUMBER EDGE / END DISTANCE, DO NOT USE AIR NAILS.

1.0	ad Commonwe					1252 2411	Live	Dead	Snow	yvina	Imputary
	ad Summary	Load Type	Ref.	Start	End	Loc.	1.00	0,65	1,00	1.15	
Tag	Description Cals Malaba	Unf. Lin. (lb/ft)	1	00-00-00	16-07-06	Top		12		(00-00-00
Ų.	Self-Weight	• •	ī	00-00-00		Тор		60			`n\a
1	WALL	Unf. Lin. (lb/ft)	1	00-00-00	03-07-04		17	9			n\a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L.			* 1	20	10			n\a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-07-04	16-07-06						n\a
4	B10(i544)	Conc. Pt. (lbs)	L	03-09-00	03-09-00	Тор	2,387	1,270			
5	E22(1259)	Conc. Pt. (lbs)	L.	16-05-12	16-05-12	Тор	282	219		A STATE OF THE STA	∷ n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	16,299 ft-lbs	35,392 ft-lbs	46.1%	1	03-08-14
End Shear	4,580 lbs	14,464 lbs	31.7%	1	01-01-14
Total Load Deflection	L/432 (0.455")	n\a	55.6%	4	07-04-11
	L/708 (0.277")	n\a	50.8%	5	07-04-11
Live Load Deflection Max Defl.	0.455"	n\a	n\a	4 ·	07-04-11
Span / Depth	16.5				

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	·
B1	Hanger	2" x 3-1/2"	4,726 lbs	n\a	55.3%	Hanger	
B2	Wall/Plate	2-3/8" x 3-1/2"	2,354 lbs	53.0%	23,2%	Unspecified	

Cautions

Hanger model Hanger was not found. Hanger has not been analyzed for adequate capacity.

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

Resistance Factor phi has been applied to all presented results per CSA 086.

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Concentrated side-load exceeds allowable magnitude for connection design, Please consult a technical representative or Professional Engineer for the design of the connection.

DWO NO. TAMB 55/-18 H STRUCTURAL COMPONENT ONLY

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 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-LAMB, VERSA-RIM PLUS® .

T-1811553



PASSED

3RD FLOOR FRAMING\Flush Beams\B12(i481)

Dry | 1 span | No cant.

July 26, 2018 11:15:53

Build 6475

Job name:

Address:

Customer:

Code reports:

City, Province, Postal Code: BRA...ON

BC CALC® Member Report

CCMC 12472-R

UNIT 1702.mmdl File name:

Wind

Description: 3RD FLOOR FRAMING\Flush Beams\B12(i481)

Specifier: Designer: Company:

	₩	
		3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
 	* * * * * * * * * * * * * * * * * * *	
		·
		,
/	16-05-06	R9

Total Horizontal Product Length ≈ 16-05-06

Snow

Reaction Summary (Down / Uplift) (lbs)

Dead Live 1,134/0 B1, 2" 1,325 / 0 B2, 4-3/8" 635/0 857 / 0

							Live	Dead	Snow	Wind	Tributary
	ad Summary	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	22.22.20
Tag	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	16-05-06	Тор		12	•		00-00-00
1	WALL	Unf. Lin. (lb/ft)	L.	00-00-00	06-09-10	Тор		60			n\a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	04-11-00	Тор	30	15			n\a -\-
3	FC3 Floor Material	Unf. Lin. (lb/ft)	L	04-11-00	16-05-06	Top	51	26			n\a ~\a
4	B14(I588)	Conc. Pt. (lbs)	L.	05-00-12	05-00-12	Top	. 1,442	793			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	14,904 ft-lbs	35,392 ft-lbs	42.1%	1	05-00-12
	3.227 lbs	14,464 lbs	22,3%	1	01-01-14
End Shear	L/440 (0,437")	n\a	54.5%	4	07-06-15
Total Load Deflection	L/768 (0.251")	n\a	46.9%	. 5	07-06-15
Live Load Deflection Max Defl.	0.437"	n\a	nla	4	07-06-15
Span / Depth	16,2				13

Dogrina	Supports	Dlm. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
Dearing	Supporta				00.00/	Llongor
B1	Hanger	2" x 3-1/2"	3,406 lbs	n\a	39.9%	Hanger
D 1	Haligor	,, .,		07 10/	11.1%	Unspecified
B2	Wall/Plate	4-3/8" x 3-1/2"	2,079 lbs	25.4%	1 1, 170	CHabaomea

Cautions

Hanger model Hanger was not found, Hanger has not been analyzed for adequate capacity.

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.

CONFORMS TO OBC 2012

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.

BWO NO. TAM 8353.18 H STRUCTURAL P6 4 COMPONENT ONLY

T. 1811555





PASSED

3RD FLOOR FRAMING\Flush Beams\B12(i481)

Dry | 1 span | No cant.

July 26, 2018 11:15:53

BC CALC® Member Report **Bulld 6475**

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer:

Code reports:

CCMC 12472-R

File name:

UNIT 1702.mmdl

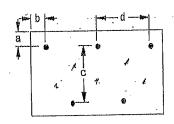
Description: 3RD FLOOR FRAMING\Flush Beams\B12(i481)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8" d = 🐠 \mathcal{B}

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. Nalls Connectors are:

3-1/2" ARDOX SPIRAL

Use of the lower case of the End User License Agreement (EUL'A). Completenass 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 engineered wood products must be in accordance with current installation Guide and applicable building codes. To obtain installation Guide or ask questions, please call (800)232-0788 before Installation.

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

STRUCTURAL COMPONENT ORLY





Passed

3RD FLOOR FRAMING\Flush Beams\B13(i523)

Dry | 1 span | No cant.

July 26, 2018 11:15:53

Bulld 6475

Job name:

Customer:

Address: City, Province, Postal Code: BRA...ON

BC CALC® Member Report

File name:

UNIT 1702.mmdl

Wind

Description: 3RD FLOOR FRAMING\Flush Beams\B13(i523)

Specifier:

CCMC 12472-R Code reports:

Designer: Company:

2-12" CA A307 BOLZS cluvasters/MUZS. 16-05-06 B2

Total Horizontal Product Length = 16-05-06

Snow

Reaction Summary (Down / Uplift) (lbs)

Dead Live 1,233 / 0 B1, 2" 1,661/0 592 / 0 849/0 B2, 4-3/8"

	1.65						Live	Dead	Snow	Wind	Tributary
	d Summary Description	Load Type	Ref.	Start	End	Loc.	1.00	0,65	1,00	1.15	
<u>Tag</u>	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	16-05-06	Тор		12			00-00-00
4	WALL	Unf. Lin. (lb/ft)	L	00-00-00	05-00-01	Тор		60	•		n\a
,	FC3 Floor Material	Unf, Lin. (lb/ft)	L	00-00-00	04-11-00	Тор	20	10			n\a
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	04-11-00	16-05-06	Тор	22	11			n\a
ن ا	B14(1588)	Conc. Pt. (lbs)	L	05-00-12	05-00-12	Тор	2,157	1,150			. ⊪ n\a
4	D 14(1000)	COLLOL L. CIMES								1	TOTAL STORY

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	18,295 ft-lbs	35,392 ft-lbs	51.7%	<u>,</u> 1	05-00-12
End Shear	3,880 lbs	14,464 lbs	26.8%	· 1	01-01-14
est 1 v	L/386 (0.499")	n\a	62.2%	4	07-05-00
Total Load Deflection	L/639 (0.301")	n\a	56.3%	5	07-05-00
Live Load Deflection Max Defl.	0.499"	n\a	n\a	. 4	07-05-00
Span / Depth	16.2	• •			

Roaring	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	2" x 3-1/2"	4,033 lbs	n\a	47.2%	Hanger
B2	Wall/Plate	4-3/8" x 3-1/2"	2,013 lbs	24,6%	10.8%	Unspecified

Hanger model Hanger was not found. Hanger has not been analyzed for adequate capacity:

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 OBC 2012

Concentrated side-load exceeds allowable magnitude for connection design. Please consult a technical representative or Professional Engineer for the design of the connection. OIL WITH MAILING TIME

PROVIDE4 ROWS OF 3-1/2" ARDOX bwg no . Tam 685 418 SPIRAL NAILS @ 12" O/C FOR MULTI-PLY NAILING, MAINTAIN + BOLTS STRUCTURAL A MIN. 2"LUMBER EDGE / END COMPONENT ONLY DISTANCE. DO NOT USE AIR NAILS.



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 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®,

-T-1811556





PASSED

2ND FLOOR FRAMING\Flush Beams\B9(i570)

Dry | 1 span | No cant.

July 26, 2018 11:15:53

Build 6475

Job name:

Customer:

Code reports:

Address:

City, Province, Postal Code: BRA...ON

BC CALC® Member Report

File name:

UNIT 1702.mmdl

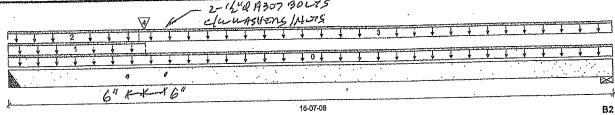
Description: 2ND FLOOR FRAMING\Flush Beams\B9(i570)

Specifier: Designer:

CCMC 12472-R

Company:

2-12"Q A307 BOLTS



Total Horizontal Product Length = 16-07-06

Snow

Reaction Summary (Down / Uplift) (lbs)

Live Dead 1,365 / 0 2,410/0 B1, 2" 510/0 784/0 B2. 2-3/8"

								Live	Dead	Snow	Wind	Tributary
	d Summary	Load Type	Ref.	Start	End	Loc.	,	1.00	0.65	1.00	1.15	00.00.00
Tag	Description Self-Weight	Unf. Lin. (lb/ft)	, L	00-00-00	16-07-06	Top			12			00-00-00
4	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	03-09-03	Top		240	120			n\a
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-07-04	Тор		23	12			n\a
۷.	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-07-04	16-07-06	Top		37	18			n\a
3		Conc. Pt. (lbs)	ï	03-09-00	03-09-00	Top		1,726	940			n\a
4	B10(i544)	Coulor Le (100)	_			•						

Controls Summary	Factored Demand	Factored Resistance	Demand <i>i</i> Resistance	Case	Location
Pos. Moment	15,358 ft-lbs	35,392 ft-lbs	43.4%	. 1	03-09-00
	4.656 lbs	14,464 lbs	32,2%	1	01-01-14
End Shear	L/436 (0.451")	n\a	55.1%	4	07-07-02
Total Load Deflection		n\a	51,7%	5	07-04-15
Live Load Deflection	L/696 (0.282")		n\a	4	07-07-02
Max Defl.	0.451"	. n\a :	1110		
Snan / Denth	16.5				

Bearing Supports	Dim. (LxW)	Demand	Resistance Support	Resistance Member	Material	
B1 Hanger	2" x 3-1/2" 2-3/8" x 3-1/2"	5,321 lbs 1,814 lbs	n\a 40.9%	62,3% 17.9%	Hanger Unspecified	

Cautions

Hanger model Hanger was not found. Hanger has not been analyzed for adequate capacity.

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Concentrated side-load exceeds allowable magnitude for connection design. Please consult a technical representative or Professional Engineer for the design of the connection. OR MITH MAINTER PROVIDE中ROWS OF 3-1/2" ARDOX

SPIRAL NAILS @ 12" O/C FOR

MULTI-PLY NAILING, MAINTAIN A MIN, 2" LUMBER EDGE / END

STRUCTURAL COMPONENT ONLY

BWG NO. TAM 855218 H

DISTANCE. DO NOT USE AIR NAILS. 1-BOLTS

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 enyone 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 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™ ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,





PASSED

3RD FLOOR FRAMING\Flush Beams\B14(i588)

BC CALC® Member Report

Dry | 1 span | No cant.

July 26, 2018 11:15:53

Bulld 6475

Job namė:

Customer:

Code reports:

Address:

City, Province, Postal Code: BRA...ON

CCMC 12472-R

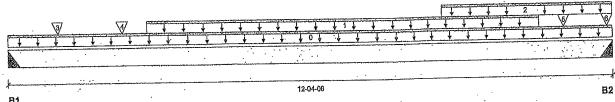
File name: Description: UNIT 1702 mmdl

3RD FLOOR FRAMING\Flush Beams\B14(i588)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 12-04-08

Snow

Reaction Summary (Down / Uplift) (Ibs)
Bearing Live Dead Bearing B1, 2" 791/0 1,437 / 0 B2, 2"

1,153 / 0 2,162/0

							Live	Dead	Snow	Wind	Tributary
LO8 Tag	ad Summary Description	Load Type	Ref.	Start	End	Loc.	. 1,00	0,65	1.00	1.15	00.00.00
7 20	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-04-08	Top		12			00-00-00
٧		Unf. Lin. (lb/ft)	Ĺ	02-10-08	10-10-08	Top	231	115			n\a
1	Smoothed Load	Unf. Lin. (lb/ft)	1	08-10-08	12-04-08	Top	240	120			n\a
2	STAIR		1	01-00-08	01-00-08		291	145			n\a
3	J2(i520)	Conc. Pt. (lbs)	Ļ		•	•	269	135			n\a
4	J2(i565)	Conc. Pt. (lbs)	L.	02-04-08	02-04-08	•		109			n\a
5	J2(1562)	Conc. Pt. (lbs)	Ĺ	11-04-08	11-04-08	Top	219				n\a
6	J2(i550)	Conc. Pt. (lbs)	L	12-03-04	12-03-04	Тор	132	66			. ING

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location ·
Pos. Moment	10,886 ft-lbs	35,392 ft-lbs	30.8%	1	06-04-08
End Shear	3.724 lbs	14.464 lbs	25.7%	1	11-02-10
	L/686 (0.213")	n\a	35.0%	4	· 06-03-00
Total Load Deflection	L/1,059 (0.138")	n\a	34.0%	5	06-03-0
Live Load Deflection	0.213"	n\a	n\a	4	. 06-03-00
Max Defl.	* * * * * * * * * * * * * * * * * * * *	11/61 .	11393		Sie
Span / Depth	12.3				ď

Daguina	·Quanarte	Dim, (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
peaning	Supports				36.8%	Hanger	
B1	Hanger	2" x 3-1/2"	3,144 lbs	n\a			
B2	Hanger	2" x 3-1/2"	4,685 lbs	n\a	54.9%	Hanger	

Hanger model Hanger was not found. Hanger has not been analyzed for adequate capacity.

OWO NO. TAM \$355-18 H STRUGTURAL P6 2 COMPONENT ONLY

T-181155)





PASSED

3RD FLOOR FRAMING\Flush Beams\B14(i588)

Dry | 1 span | No cant.

July 26, 2018 11:15:53

BC CALC® Member Report Bulld 6475

Job name: Address:

UNIT 1702.mmdl File name:

Description: 3RD FLOOR FRAMING\Flush Beams\B14(i588)

City, Province, Postal Code: BRA...ON

Specifier: Designer: Company:

Customer: Code reports:

CCMC 12472-R

Notes

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

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

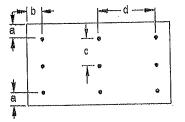
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

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

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 4"

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

Connectors are: 16d (Nails

AP ARDOX SPIRAL



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OVEND. TAM 8355-184 STRUCTURAL PGG COMPONENT ONLY

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

T-1811557(M





Passed

3RD FLOOR FRAMING\Flush Beams\B15(i589)

Dry | 1 span | No cant.

July 26, 2018 11:15:53

BC CALC® Member Report Build 0

Job name:

Address:

City, Province, Postal Code: BRA...ON

Customer: Code reports:

CCMC 12472-R

UNIT 1702.mmdl

File name: Description: 3RD FLOOR FRAMING\Flush Beams\B15(i589)

Specifier: Designer:

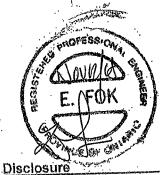
Company:

\27\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		4 4

	LA SUPPORTED	

			Total Horizo	ontal Product	t Lenath ≈ 1	7-08-00 <i>(*1</i>	ما قر بامباليه عناه	11 14			
			TOTAL HOLLES	/// / / / / / / / / / / / / / / / / /			Live	Dead	Snow	Wind	Tributary
LO: Tag	ad Summary Description	Load Type	Ref.	Start	End	Loc.	1,00	0,65	1.00	1.15	00-00-00
nay.	Self-Weight	Unf. Lin. (lb/ft)	L.	00-00-00	17-08-00	Top		12			n/a
. 1	WALL	Unf, Lin. (lb/ft)	L.	00-00-00	17-08-00	Тор		100			n\a
2	J1(1276)	Conc. Pt. (lbs)	. L	00-11-08	00-11-08	Тор	458	229			n\a
3	B12(i481)	Conc. Pt. (lbs)	L	02-04-00	02-04-00	Тор	1,335	1,137			n\a
4	B13(I523)	Conc. Pt. (lbs)	L	15-00-00	15-00-00	Тор	1,674	1,238			n\a
.5	J1(i343)	Conc. Pt. (lbs)	L	15-10-04	15-10-04	Тор	318	159			n\a
6	J1(i337)	Conc. Pt. (lbs)	L	16-10-04	16-10-04	Тор	329	165			. 11164

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Dist, Load	144.38 lb/ft	37,469.25 lb/ft	0.4%		
Conc. Load	4,059 lbs	16,813 lbs	24.1%		



Use of the Bolse Cascade Software is subject to the terms of the End User 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 expert to assure its acceptacy, 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.

COMPONENT UNLY

BWG NO.TAN 955618 H ALLJOIST®, BC FRAMER®, AJS™, BCI®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,



Maximum Floor Spans

Live Load = 40 psf; Dead Load = 90 psf Simple Spans, L/480 Deflection Unit 6/8" OSB G&N Sheathing,







			Ba	are		1/2" Gypsum Ceiling					
Depth	Series		On Centr	e Spacing			On Centre Spacing				
P 2 p 4		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"	15¹-6"	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		
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A		
11-7/8"	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 ^u	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A		
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A		
	NI-90x	. 22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A		
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A		
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A		
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-Span	Blocking		Mid-Span Blocking and 1/2" Gypsum Ceiling				
Depth	Series		On Centr	e Spacing		On Centre Spacing				
	•	12 ⁿ	1.6"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	15¹-7"	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	
J 2/4	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	
	NI-20	18'-9"	17'-0"	16'-0"	N/A	18'-9"	17'-0"	16'-0"	N/A	
	NI-40x	21'-0"	19'-3"	17'-9"	N/A	21'-3"	19'-3"	17'-9"	N/A	
	NI-60	21'-4"	19'-8"	18'-5"	N/A	21'-8"	19'-8"	18'-5"	N/A	
11-7/8"	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	
	N1-90x	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	
7.7	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"	24'-10"	23'-4"	N/A	
	. 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 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 celling 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 086-09, 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.











			Ва	ire		l	1/2" Gyp:	sum Celling	
	Series		On Centr	e Spacing			 On Cent 	re Spacing	
Depth	Series	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
0.4 /28	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A
9-1/2"	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'-\$"	N/A	17'-6"	16'-6"	16'-0"	N/A
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11''	N/A
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
11-7/8"	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
	NI-70	21'-7"	20*-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
14"	NI-80	21'-11"	20"-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
	· NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
<u></u>	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-50 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-Span	Blocking	Mid-Span Blocking and 1/2" Gypsum Ceiling					
	Series .		On Centre	Spacing		On Centre Spacing				
Depth	Jenes .	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 NI-80	19'-2"	17'-10"	17'-2"	N/A	19'-7"	18'-3"	17'-7"	·N/A		
	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	
	NI-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	
14	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	
	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 1. Waximum clear Span opposed on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, 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 liveload deflection limit of L/480 and a total load deflection limit of L/240.

a INVERSE description with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist 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 2. 2. Spans are pased on a 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.

^{5.} William Dearing Stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

^{4.} Bearing Suite lies and not required for applications with other than uniformly distributed loads, an engineering analysis may be required 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.

Dased until the use of the dasher property and continuously along the compression edge. Refer to technical documentation for installation 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.



Maximum Floor Spans







			Ba	are	1/2" Gypsum Ceiling						
ما د د	Series		On Centr	e Spacing			On Centre Spacing				
Depth	Julios	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"		
0.4/20	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"	16'-5"	15'-5"	14'-3"		
9-1/2" NI-60 NI-70 NI-80		18'-0"	16'-11"	16'-3"	15'-6"	18'-5"	17'-3"	16'-7"	15'-6"		
	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"		
<i>N</i>	NI-40x	19'-4"	17'-11"	17'-3"	15'-10"	19'-11"	18'-6"	17'-9"	15'-10"		
	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18' - 9"	17'-11"	17'-1"		
11-7/8"	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"		
4 40	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21-11"	20'-10"	19'-9"		
14"	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-Span	Blocking	Mid-Span Blocking and 1/2" Gypsum Ceiling				
	Series		On Centro	e Spacing		On Centre Spacing			
Depth	261162	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"
		18'-1"	16'-5"	15'-5"	14'-3"	18'-1"	16'-5"	15'-5"	14'-3"
9-1/2"	NI-60 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"
		18'-10"	17'-1"	16'-0"	14'-10"	18'-10"	17'-1"	16'-0"	14'-10"
NI-20 NI-40x	21'-3"	19'-3"	17'-9"	15'-10"	21'-3"	19'-3"	17'-9"	15'-10"	
		21'-9"	19'-8"	18'-5"	17'-1"	21 -9"	191-811	18'-5"	17'-1"
11-7/8°	NI-60	23'-4"	21'-5"	20'-1"	18'-6"	23'-8"	21'-5"	20'-1"	18'-6"
TT-110	NI-70	23'-7"	21'-10"	20'-5"	18'-11"	24'-1"	21'-10"	20'-5"	18'-11"
	MI-80	25-7 24'-3"	22'-6"	21'-3"	19'-7"	24'-8"	22'-7"	21'-3"	19'-7"
	NI-90x	24'-2"	21'-5"	19'-6"	17'-5"	24'-2"	21'-5"	19'-6"	17'-5"
	NI-40x		22'-5"	21'-0"	19'-6"	24'-9"	22'-5"	21'-0"	19'-6"
	NI-60	24'-9"	24'-3"	22'-9"	21'-0"	26'-8"	24'-3"	22'-9"	21'-0"
14"	NI-70	26'-1"	24'-7"	23'-3"	21'-6"	27'-1"	24'-10"	23'-3"	21'-6"
•	NI-80	26'-6"	25'-4"	23'-1"	22'-4"	27'-9"	25'-10"	24'-3"	22'-4"
	NI-90x	27'-3"	24'-11"	23'-5"	21'-7"	27'-6"	24'-11"	23'-5"	21'-7"
	NI-60	27'-3"		25'-3"	23'-4"	29'-3"	26'-11"	25'-3"	23'-4"
a (1)	NI-70	28'-8"	26'-8"	25 -3 25'-9"	23'-10"	29'-8"	27'-6"	25'-10"	23'-10"
16"	NI-80	29'-1"	27'-0"		24'-10"	30'-6"	27 -6 28'-5"	25 -10 26'-11"	23 -10 24'-10"
	NI-90x	29'-11"	27'-10"	26'-6"	24-10	30.0	20-5	70 -11	Z4'-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 1. Maximum crear span approach to a span and or so pst. 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.

a nive in a uniform with a minimum thickness of 3/4 inch for a joist 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 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 2. Spans are used on a composite floor may include 1/2 Inch gypsum ceiling and/or one row of blocking at mid-span with strapping. 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. spacing of 24 ments of 1884 linch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists. 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.

^{3.} Willimm Dearing Stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

^{4.} Bearing summers are noting in the state of the state o based on the use of the design properties. Tables are based on Limit States Design per CSA 086-09, NBC 2010, and 08C 2012.

^{6.} Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation o. Joins Shau De Tatelan, Special Section, Special Section of the Communication for guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-1274C.











-			Ba	ire		1	1/2" Gyp:	sum Ceiling		
				e Spacing		On Centre Spacing				
Depth	Series	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-20 NI-40x	17'-0"	16'-0"	15'-5"	14'-9"	17'-5"	16'-5"	15'-10"	15'-2"	
		17'-2"	16'-2"	15'-7"	14'-11"	17'-6"	16'-7"	15'-11"	15'-3"	
9-1/2"	NI-60	18'-0"	16'-11"	16'-3"	15'-7"	18'-5"	17'-3"	16'-7"	15'-11"	
	NI-70	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	16'-1"	
NI-80 NI-20	17'-10"	16'-10"	16'-2"	15'-6"	18'-6"	17'.4"	16'-9"	16 ^r -1"		
NI-40	-	19'-4"	17'-11"	17'-3"	16'-6"	19'-11"	18'-6"	17'-9"	17'-0"	
		19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"	
11-7/8"	NI-60	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"	
11-110	NI-70	20-3	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"	
	NI-80	21'-1 21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"	
	NI-90x	21'-5"	19'-10"	18'-11"	17'-11"	22'-1"	20°-6"	19'-7"	18'-7"	
	NI-40x	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"	
	NI-60	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"	
14"	NI-70	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20°-0"	
	NI-80		22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21*-9"	20°-7"	
	NI-90x	24'-1"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"	
16"	NI-60	23'-9"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"	
	NI-70	25"-1"	23'-6"	22'-4"	21"-2"	26'-1"	24*-2"	23'-1"	21'-10"	
	NI-80	25'-6"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"	
	NI-90x	26'-4"	24-3	Z3 -T	EA ILU	1				

		Mid-Span Blocking On Centre Spacing				Mid-Span Blocking and 1/2" Gyρsum Ceiling On Centre Spacing			
Depth	Series								
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
		16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"
9-1/2"		18'-8"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"
	NI-40x	18'-11"	17'-6"	16'-6"	15' - 5"	19'-2"	17¹-6"	16'-6"	15 '- 5"
	NI-60	20'-0"	18'-7"	17'-9"	16'-7"	20'-5"	18'-11"	17'-10"	16'-7"
	NI-70	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10"
	NI-80	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"
11-7/8"	NI-20	21'-10"	20'-4"	19'-4"	17'-8"	22'-5"	20'-6"	19'-4"	17'-8"
	NI-40x	22'-1"	20'-7"	19'-7"	18 ^í -4"	22'-8"	20'-10"	19'-8"	18'-4"
	MI-60	23'-4"	21'-8"	20'-8"	19'-7"	23'-10"	22'-3"	21'-2"	19'-9"
	NI-70	23'-7"	21'-11"	20'-11"	19'-9"	24'-1"	22'-6"	21'-5"	20'-0"
	NI-80	24'-3"	22'-6"	21'-6"	20'-4"	24'-8"	23'-0"	22'-0"	20'-9"
	NI-90x	24'-5"	22'-9"	21'-8"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"
14"	NI-40x	24'-10"	23'-1"	22'-0"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"
	NI-60	26'-1"	24'-3"	23'-2"	21'-10"	26'-8"	24'-11"	23'-9"	22'-4"
	NI-70	26'-6"	24'-7"	23'-5"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"
	NI-80	. 27'-3"	25'-4"	24'-1"	22'-9"	27'-9"	25'-11"	24'-8"	23'-4"
	NI-90x	27'-3"	25'-5"	24'-2"	22'-10"	28'-0"	26'-2"	24'-9"	23'-1"
16"	NI-60	27 <i>-</i> 5 28'-8"	26'-8"	25'-4"	23'-11"	29'-3"	27'-4"	26'-1"	24'-8"
	NI-70	28 - 8 29'-1"	27'-0"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"
	NI-80	29"-11"	27'-10"	26'-6"	25'-0"	30'-6"	28'-5"	27'-2"	25'-8"
	NI-90x	73-11	41-40					·	

^{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 1. Maximum clear Span approache to simple open residence in the consideration for floor vibration, ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, 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.

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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 celling and/or one row of blocking atmid-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 coan chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be considered.

Bearing sufficiency are not required which repose are used with the spans and spacings given in this cause, except as required for hangers.
 This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required.

This span chart is pased on uniform loads, not 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 086-09, NBC 2010, and 08C 2012.
 Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.

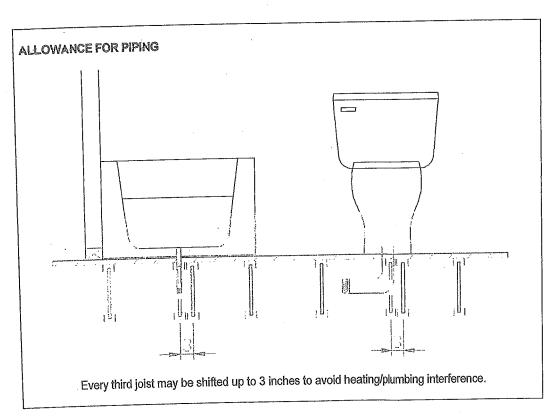


Allowance for Piping (Installation Notes)

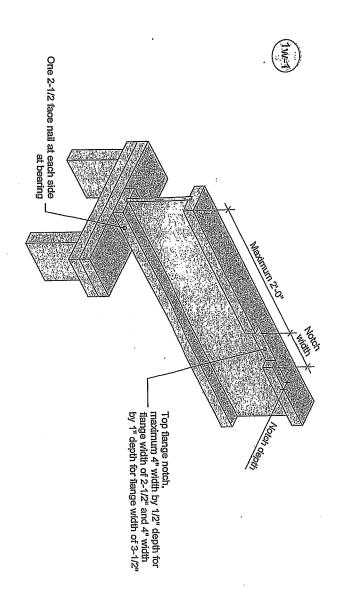
The floor layouts have usually not been checked for heating and/or plumbing interference. On-site adjustment of joists of up to 3 inches is permitted to avoid interferences. When moving a joist, the subfloor thickness shall be checked with code requirements when the joist spacing exceeds 19.2 inches.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

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

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



Revised April 12, 2012





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

Notes:

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

2. The maximum dimensions for a notch on the side of the top flange are 4-noth width by 1/2-inch depth for flange width of 2-1/2 inches, and 4-noth width by 1-noth depth for flange width of 3-1/2 inches.

3. This detail applies to simple-span joists and multiple-span joists where the notch is located at the end half-span.

4. For other applications, contact Nordo Structures.

Notch in I-joist for Heat Register

I-joist - Typical Floor Framing and Construction Details

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

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