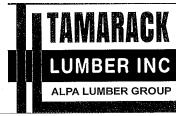


		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	5
J1DJ	16-00-00	9 1/2" NI-40x	2	4
J2	14-00-00	9 1/2" NI-40x	1	3
J3	12-00-00	9 1/2" NI-40x	1	30
J4	10-00-00	9 1/2" NI-40x	1	3
J6	8-00-00	9 1/2" NI-40x	1	2
J5	6-00-00	9 1/2" NI-40x	1	5
J6	4-00-00	9 1/2" NI-40x	1	6
J7	2-00-00	9 1/2" NI-40x	1	4
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B2	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B5	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B10L	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B12L	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B9	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B11L	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B3	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B8	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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



FROM PLAN DATED:

**BUILDER: BAYVIEW WELLINGTON** 

SITE: PASSAGE ON THE CANAL

MODEL: TH8C

**ELEVATION: B** 

LOT: 23

CITY: ST CATHERINES

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

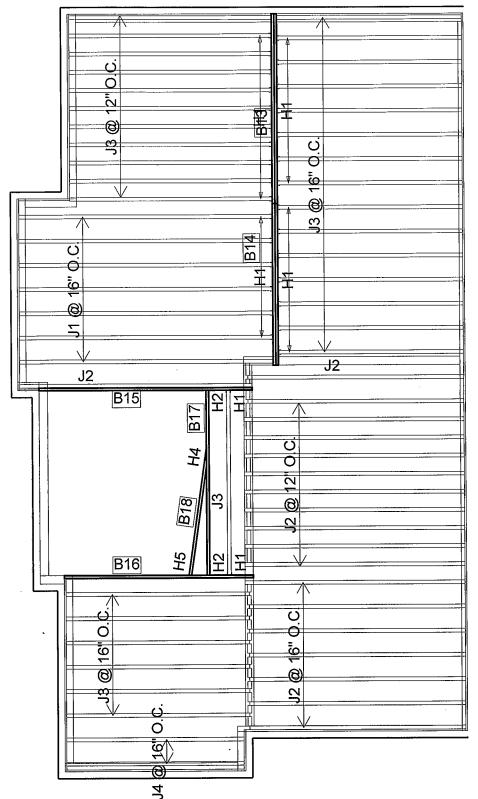
REFER TO THE NORDIC **INSTALLATION GUIDE FOR PROPER** STORAGE AND INSTALLATION. **SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2** S.P.F REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST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

LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 fb/ft

TILED AREAS: 20 lb/ft
SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 10/26/2018

# 1st FLOOR



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	7
J2	14-00-00	9 1/2" NI-40x	1	19
J3	12-00-00	9 1/2" NI-40x	1	33
J4	10-00-00	9 1/2" NI-40x	1	2
B15	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B16	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B17	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B13	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B18	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

C	Connector Summary											
Qty	Manuf	Product										
2	H1	IUS2.56/9.5										
30	H1	IUS2.56/9.5										
2	H2	HUS1.81/10										
1	H4	LS90										
1	H5	LSSUI25										



FROM PLAN DATED:

**BUILDER: BAYVIEW WELLINGTON** 

SITE: PASSAGE ON THE CANAL

MODEL: TH8C

**ELEVATION: B** 

LOT: 23

**CITY: ST CATHERINES** 

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

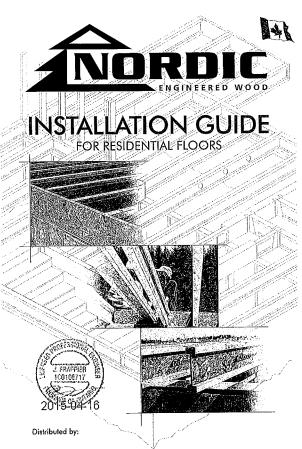
REFER TO THE NORDIC **INSTALLATION GUIDE FOR PROPER** STORAGE AND INSTALLATION. **SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2** S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST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

DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft<sup>2</sup> DEAD LOAD: 15.0 lb/ft TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 10/26/2018

# 2nd FLOOR



#### SAFETY AND CONSTRUCTION PRECAUTIONS



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



l-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed. Avoid Accidents by Following these Important Guidelines

- Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
- When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
- Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the lop surface of each I-joist. Nail the bracing to a lateral restraint at the end of each boy. Lop ends of adjoining bracing over at least two I-joists.
- Or, sheathing (temporary or permanent) can be noted to the top flange of the first 4 feet of t-joists at the end of the boy. 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 I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.

5. Never install a damaged l-joist.

STORAGE AND HANDLING GUIDELINES

2. Store, stack, and handle I-joists vertically and level only.

3. Always stack and handle I-joists in the upright position only. -

6. Bundled units should be kept intact until time of installation.

■ Pick I-joists in bundles as shipped by the supplier.

8. Do not handle 1-joists in a horizontal orientation.

9. NEVER USE OR TRY TO REPAIR A DAMAGED I-JOIST.

4. Do not store I-joists in direct contact with the ground and/or flatwise

5. Protect I-joists from weather, and use spacers to separate bundles. -

When handling I-joists with a crone on the job site, take a few — simple precoutions to prevent damage to the I-joists and injury to your work crew.

Orient the bundles so that the webs of the 1-joists are vertical.

■ Pick the bundles at the 5th points, using a spreader bar if necessary

. Bundle wrap can be slippery when wet. Avoid walking on wrapped

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

#### MAXIMUM FLOOR SPANS

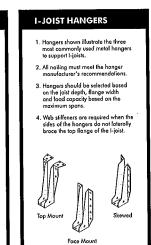
- . Moximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live bad of 40 pst and dead load of 15 pst. The ultimate limit states are based on the factored loads of 1.50. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- or move or me augment span.

  2. Spans are based an a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 21 notes, or 3/4 linch 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 blacking of mid-span.
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
- Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than 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. St units conversion: 1 inch = 25.4 mm

#### MAXIMUM FLOOR SPANS FOR NORDIC !- JOISTS SIMPLE AND MULTIPLE SPANS

Joist Series 16" 19.2" 13'-9' 14'-8' 14'-10' 15'-6' 13'-5' 14'-9' 14'-11' 15'-7' 14'-2' 15'-2' 15'-4' 16'-1' 15'-1' 16'-3' 17'-1' 17'-3' 16'-11' 18'-1' 18'-4' 19'-6' 19'-6' 19'-6' 20'-2' 20'-4' 20'-1' 20'-5' 21'-1' 22'-5' 15'-5'
16'-1'
16'-10'
17'-0'
17'-0'
18'-1'
19'-1'
19'-4'
19'-9'
21'-6'
21'-10'
22'-2'
21'-10'
23'-0'
23'-4'
23'-9'
24'-1' 9-1/2 15'-8' 15'-5' 15-6 18'-10" 17'-6" 16'-3' 16'-0' 17'-0' 17'-3' 18'-0' 18'-3' 18'-7' 18'-7' 18'-7' 18'-11' 20'-0' 20'-3' 20'-8' 16'-11'
16'-8'
17'-9'
18'-0'
19-0'
19-3'
19-10'
19-8'
20-0'
21'-1'
21'-5'
21'-10' 15'-5' 16'-5' 16'-7' 17'-4' 17'-6' 17'-10' 17'-11' 17'-10' 18'-1' 19'-4' 19'-4' 19'-11' 16-6' 16-9' 17-7' 17-11' 18-0' 17-11' 18-2' 19-5' 19-10' 20-10' 20-10' 21'-6' 20'.0° 20'.3° 21'.6° 21'.9° 22'.3° 22'.5° 22'.7° 23'.10° 24'.3' 24'.3' 24'.9° 25'.0° 26'.5° 26'.5° 18'.6" 18'.9" 19'-11" 20'-2" 20'-7" 20'-9" 20'-6" 20'-11" 22'-1" 22'-5" 22'-10" 11-7/8 19'-11' 19'-9' 20'-9' 21'-1' 21'-5'

CCMC EVALUATION REPORT 13032-R





#### RECOMMENDATIONS:

■ A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the 1-joist properties table found of the 1-joist l-joist properties table found or the 19031 Construction Guide (C101). The gap between the stiffener and the flange is at the top.

\* A bearing stiffener is required when the I-joist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.

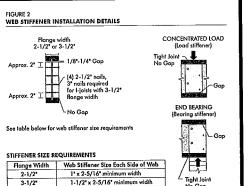
A load stiffener is required at location: where a factored concentrated load greate than 2,370 lbs is applied to the top flange than 2,370 lbs is applied to the top lange between supports, or in the case of a confilerer, anywhere between the confilerer tip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permit by the code. The gap between the stiffener and the flonge is at the bottom.

SI units conversion: 1 inch = 25.4 mm

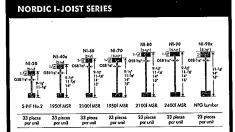
— Nordic Lam or SCL

10

(II)



19



Chaptiers Chihougamau Ltd. harvests its own trees, which enables, blood Products to adhere to strict quality control procedures through the products to adhere to strict quality control procedures through the product of the operation, from the product, reflects our commitment to quality. finished product, relicets our commitment to quality.

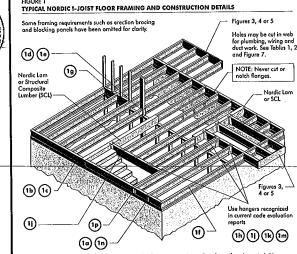
Nordic Engineered Wood Ljoists use only linger-joined back service in the following of the first service of the first serv

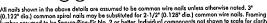
2015-04-16

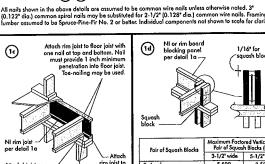
#### INSTALLING NORDIC I-JOISTS

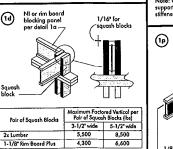
- 1. Before laying out floor system components, verify that i-joist flonge widths match hanger widths. If not, costilisized
- 2. Except for cutting to length, 1-joist flanges should never be cut, drilled, or notched.
- 3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment. I-joists must be anchored securely to supports before floor sheathing is attached, and supports to be level.
- 5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for inter-
- 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 concentrated loads include track lighting fidures, outline experied in residential construction should only be applied to the top surface of the top Brage. Normal concentrated loads include track lighting fidures, outline equipment and security cameras. Nover suspend unusual or heavy loads from the 1-joist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the 1-joist. Or, attach the load to blacking that has been securely fastened to the 1-joist webs.
- 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 I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks (cripple members) to transfer gravity toads intrough the floor system to the wall or foundation below.
- Due to shrinkage, common framing lumber set on edge may never be used as blocking or rim boards. I-joist blocking ponels or other engineered wood products such as rim board must be cut to fit between the I-joists, and an I-joist-compatible depth selected.
- 13. Provide permanent lateral support of the bottom flange of all I-joists at interior supports of multiple-span joists. Similarly, support the bottom flange of all confilevered I-joists at the end support next to the confilever extension. In the completed structure, the apysum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, tumporary bracing or struts must be used.
- 14. If square-edge panels are used, edges must be supported between I-joists with 2x4 blocking. Glue panels to blocking to minimize squeaks. Blocking is not required under structural finish flooring, such as wood strip flooring, or if a separate underlayment layer is installed.
- 15. Nail spacing: Space nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

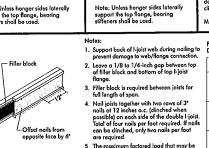
(1b)











(lk)

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.

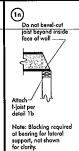
Top-mount hanger installed per

# Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL headers may also be used. Verify double I-joist capacity to support concentrated loads. (Im)

2-1/2" nails at

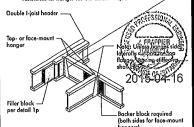
6" a.c. to top plat

Backer block attached per detail 1h. Nail with twelve 3" nails, clinch when possible. oximum support capacity = 1,620 lbs.



Load bearing wall above shall align vertically

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



For hanger capacity see hanger manufactu Verify double I-joist capacity to support con

#### BACKER BLOCKS (Blocks must be long enough to permit required

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

Minimum grads for bocker block material shall be S-PF No. 2 or better for solid sown lumber and wood structural panels conforming to CAN/CSA-0325 or CAN/CSA-0437 Standard.

For face-mouth langers us and loid depth minus 3-1/4" for joists with 1-1/2" thick flanges. For 2" thick flanges use net depth minus 4-1/4".



NI Joists

3,300

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

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

To avoid splitting flange, start nails at least 1-1/2\* from end of I-joist. Nails d splitting of bearing plot Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.

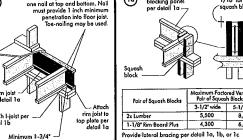
1-1/8" Rim Board Plus "The uniform vertical load is limited to a nim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail td.

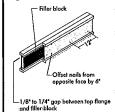
FSC

100100717 Amulticity appare

--- Attach rim board to top

plate using 2-1/2" wire or spiral toe-nails at 6" o.c.





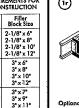
For nailing schedules for multiple beams, see the manufacturer's

FILLER BLOCK REQUIREMENTS FOR DOUBLE 1-JOIST CONSTRUCTION Flange Joist Filler Size Depth Block Size 9-1/2 11-7/8 14 16 2·1/2"× 1·1/2" 3-1/2"× | 9-1/2" 1-1/2" | 11-7/8" 1-1/2" | 14" 16"

3-1/2'× 111-7/8' 2' 14' 16'

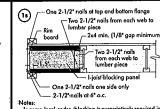
Use single I-joist for loads up to 3,300 plf, double I-joists for loads up to 6,600 plf (filler block no required). Attach I-joist to

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



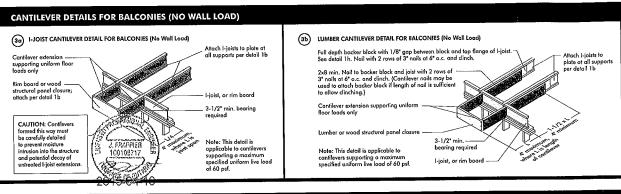


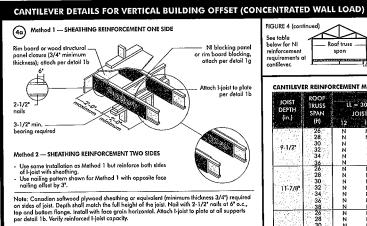
strap applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joists.

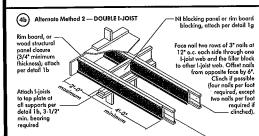


Notes:
In some local codes, blocking is prescriptively required in the first joint space (or first and second joist space) next to the starter joint. Where required, see local code requirement for spacing of the blocking.

All nails are common spiral in this detail.







Block I-joists together with filter blocks for the full length of the reinforcement. —
For I-joist flonge widths greater than 3 inches place on additional row of 3\* nails along the centraline of the reinforcing panel from each side. Clinch when possible.

(50) SHEATHING REINFORCEMENT

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

	ROOF				10.14.60	ROOF L	OADING	(UNFACT	ORED)				经基础
JOIST	TRUSS	ii.	= 30 psf.	DL = 15	psf		= 40 psf.	DL = 15	psf	ii =	50 psf,	DL = 15	psf
DEPTH	SPAN		OIST SPA	CING fin			OIST SPA	CING (in.		K	DIST SPAC	CING (in.	
(in.)	(ft)	12		102	24	12	716	19.2	24	12	16	19.2	2/2
	26	N N	N	A CONTRACTOR	2	N N		2	X	N	2	X	X
	28	N	N	i	x	l n	i	2	- X	N	2	X	X
2023	30	Ñ	ï	i	X	N	ì	2	Х	1	2	X-	Х
9-1/2"	32	N	i	2	. X	N	2	X	X	1	X	Х	X
797.5	34	N	1	2	X	N	2	Χ.	х	. 1	Х	X	X
100	36	Ν		. 2	X	1_	2	X	X		X	X	— <del>}</del>
1331.6	26	N	N	N	1	N	N	!	2	N	Ņ	!	2 X
	28	N	N	N	!	N	. N	1	2	N N	1	1	÷
المعتدا	30	N	N	Ņ	1	N N	N		2 1	N	- ;	2	Ŷ
11-7/8	32	N	N	1	ļ	N N	N	- 1	v I	N	;	2	x
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	36 38	N	N		2	l ii	- 1	2	ŷΙ	N N	ż	x	x
7.00	26	N	- <u>N</u>	N	Ň	<del>l N</del>	- N	· Ñ	一行一	Ň	N	Ñ	- 1
17.56	28	N	Ň	N	N	ΙÑ	Ñ	N	i l	N	N	ı	1
	30	Ñ	Ñ	Ň	N	N	N	N	3 1	N	N	1	2
95501	32	N	Ň	N	1	N	N	N	1	N	N	1	2
14*	34	N	N	N	1	N	N	1	1	N ·	Ņ	1	2
	36	N	N	N	1	N	N	3	2	N	1.	1	2
	38	N	N	N	1	N	N	1	2	N	. 1	j	Š
Section 4	40	N	N·	N		N	<u>N</u>		2	N		2	<del></del> ^
	26	N	N	N	N	N	N	N	Ŋ	N N	N	N	i
	28	- N	N	N	N	N	N	N	- ; ;	N	N	N	i
학원하다	30 32	N	N N	N	N	N N	N .	N	- 1	N	N	ï	i
	34	N	N	N	N	N	N N	N	- i 1	l N	· N	i	ż
16"	36	N N	7	N N	1	N	N	Ñ	- i I	l ñ	Ñ	- i	2
A Chargo	38	N	N	N	i	N	N	N	i 1	N	N	3	2
J. C.	40			N	i	N	N	ï	2	N	N	1	2 X
	42	N	7 7	Ñ	j	ΙÑ	Ñ	- 1	2	l N	1	1	Х

Roof trusses

Girder

Roof truss

Span

Roof truss

Span

2'-0"

Roximum

Jack trusses

2'-0"

N = No reinforcement required.
1 = NI reinforced with 3/4° wood structural 1 = NI reinforced with 3/4" wood structural panel on one side only.
2 = NI reinforced with 3/4" wood structural panel on both sides, or double 1-joist.
X = Try a desper joist or closer spacing.
2. Moximum design food shall be: 15 pst food deed load, 55 pst floor total load, and 80 plt wall load. Wall load is bosed on 3"0" engineering with branches or foot congrigate.

Roof truss ---- 7 2'-0"

F 2'-0'

- For conventional roal construction using a ridge beam, the Roal Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roal is formed using a ridge board, in the Roal Truss Span is equivalent to the distance between the supporting walls as if a tasse is used.

  Cantillevered joists supporting girder trusses or roal teams may require additional reinforcing. For larger openings, or multiple 3'-0' width openings spaced less than 6'-0' o.c., additional joists beneath the opening's cripple studs may be required.

  3. Table applies to joists 12' to 24' o.c. that meet the floor consequence and additional to the study of the second opening the second opening

For hip roofs with the jack

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

#### Roof trusses Girder Roof truss Roof truss Roof truss Spon Contiliver A' maximum Contiliver A' maximum trusses running parallel to the cantilevered floor joists, the I-joist reinforcement requirements for a span of 26 ft. shall be permitted to be used. .... Roof truss .... span Provide full depth blocking between maximum cantilever Nail reinforcement to top and bottom joist flanges with 2-1/2" nails at 6" o.c. (offset opposite face nailing by 3" when using reinforcement on both sides of 1-joist) Note: Canadian softwood plywood sheathing or equivalent (minimum BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED equivalent (Innimum thickness 3/47) required on sides of joist. Dopth shall match the full height of the joist. Nail with 2-1/2\* nails at 6\* o.c., top and bottom flange. Install with face grain harizontal. Attach 1-joist to plate at all supports per detail 1b. Verify reinforced 1-joist capacity. ROOF TRUSS SPAN JOIST DEPTH LL = 50 psf, DL = 15 psf LL = 30 psf, DL = 15 psf LL = 40 psf, DL = 15 psf JOIST SPACING (in.) JOIST SPACING (in.) 201920416 5b SET-BACK DETAIL Rim board or wood —— structural panel closure (3/4° minimum thickness), ottach per detail 1b. 11.7/8 Notes: - Provide full depth blocking between joists over support (not shown for clarity) - Attach I-joist to plate at all supports per detail 1b. - 3-1/2\* minimum I-joist bearing required. -Nail joist end using 3" nails, toe-nail at top and bottom flanges. (5c) SET-BACK CONNECTION 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 proced last tam 5-0° ac. additional joints beneath the opening's cripple studies may be required. 3. Table applies to joist 12 to 24 to c. that meet the floors pan requirement for a design live load of 40 paf and dead load of 15 paf, and a tive load deflection limit of 1/480. Use 12° o.c. requirements for lesser spocing. 1. N = No reinforcement required. 1 = NI reinforced with 3.4" wood structural panel on one side only. 2 = NI reinforced with 3.4" wood structural in the side only. 3 = NI reinforced with 3.4" wood structural in the side of distance between the supporting walls as if a fusus is used. 5. Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing. Notes: - Verify girder joist capacity if the back span exceeds the joist spacing. - Attach double 1-joist per detail 1p, if required.

FIGURE 5 (continued)

#### WEB HOLES

#### RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS

- The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the require 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.
- The maximum size hole or the maximum depth of a duct chose opening that con be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joist flange.
- The sides of square holes or longest sides of rectongular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- Where more than one hale is necessary, the distance between adjacent hale address shall exceed twice the diameter of the largest round hale or twice the edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the longest side of the longest rectangular hole or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of
- 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
- 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.
- 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.

ABLE I .OCATION 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			· ·			Rot	nd ho	le dian	neter (	in.)	a Alderia and					adjustm
Depin	Series	2	3	4	5	6	6-1/4	7.	8.4	8-5/8	9	10	0-3/4		12.	2-3/4	`Fqclo
	NI-20	0.7	1'-6"	2'-10'	4'.3"	5'-8'	6,0,	***	***			•••			***		13'-6'
\$ 14 miles 2	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"				***		•••		***	***	14.1
177	NI-70	2-0	3'-4"	4'-9"	6'-3"	8'0'	8'-4"		***	***	•••	•••	•••	***	***	•••	15.7
2000000	NI-80	2'-3'	3:-6*	5'-0"	6'-6"	8'-2"	8'-8'		***						***		15-9
7777	NI-20	0'-7'	0.8,	1'-0"	2.4	3'.8"	4'-0"	5'-0"	6'-6"	7.9	***			***		•••	15'6
1.12	NI-40x	0-7	08,	1'-3'	2.8	4.0	4'-4"	5'-5"	7:0"	8'-4"	***		•••				16.6
100	NI-60	0.7	1'-8'	3.0	4'-3'	5'-9'	6'-0"	7.3	8'-10"	10.0	***		•••		***		16.9
11-7/8	NI-70	1.3	2'-6'	4.0	5-4	6'-9"	7-2	8'-4"	10.0	111-2"	•••		***	***	•••		17:5
N 12 13 3 4	NI-80.	1'-6"	2'-10'	4'-2"	5'-6"	7.0	7-5	8.6	10-3	11'-4"	***		***		•••		17.7
100	NI-90	0'-7'	0-8*	1.5	3'-2"	4'-10'	5'-4"	6.9	8-9	10'-2"	***	***	***		***		17-1
100 Care to	NI-90x	0.7	0'-8"	0.9	2'-5"	4'-4"	4-9	6.3.	***		•••	•••	•••		***		18'0
11 / 11/25	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
1. 40. 41.9	NI-60	0.7*	0.8	1.8	3'-0"	4'-3"	4'.8"	5'-8"	7-21	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
1000	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
14. 6 3 4	NI-90x	0.7	0.8	0.8,	2'-0"	3.9	4.2	5'-5'	7:3*	8.5	9:-2"	***	•••	***			20-0
27 1 6 36	NI-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
1.50	NI-70	0.7	1.0	2'-3"	3'-6"	4'-10"	5'-3"	6-3	7-8	8'-6'	9-2	10-8	12-0	12-4	14'-0'	15'-6"	20-1
16"	NI-80	0.7	1'-3"	2.6	3'-10'	5-3	5'-6"	6'-6"	8.0.	9.0	9-5	1150	12-3	12'-9'	14-5	16'-0"	21-2
	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
100	NI-90x	0.7	0'-8'	0'-9"	2'-0'	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 1-joist spacing of 24 inches an centre or less.
 Hole localion distance is measured from inside face of supports to centre of hole.
 Distances in this chart are based on uniformly loaded joists.

The above table is based on the Lipists used at their maximum span. If the Lipists are placed at less than their full maximum span (s the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows: D<sub>reduced</sub> = Lactual x D

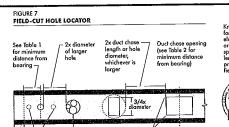
ns (A) EB/PPIER Disduced = Distance from the inside face of any support to centre of hole, reduced for less-than-maximum.

Loctual = The actual resourced span distance share in the face of the support to edge of the hole.

SAF = Span Adjustment Factor given in this table.

It leads it greater than 1, use 1 in the above calculation for factual.

SAF = SAF 2015-04



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 sugged 15 inches on caste also are spaced 15 inches on centre along the length of the I-joist. Where possible, it is



For redangular holes, avoid over-culting the corners, as this can cause unnecessar stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-ind-diameter hole in each of the four corners and the starting that the corners is the starting and the starting a

#### OUCT CHASE OPENING SIZES AND LOCATIONS — Simple Span Only Minimum distance from inside face of any support Duct chase length (in.) Joist Joist Depth Series 4-11 5-3-3 5-4-5 5-3-1 5-3-7 5-3-7 5-3-7 5-3-7 7-7-1 7-7-6-7 8-1-7 8-7-7 9-0-2 9-0-1 10-1 10-1 10-9 11-1 9-1/2" 11,7/B 9.6' 10-1' 9-10' 10-1' 10-6' 10-7' 11-6' 11-4' 11-9' 12-0' 12-4'

Above table may be used for t-joint specing of 24 inches on centre or less.
 Duck obuse opening location distances is measured from insule feac of supports to centre of opening.
 The obove table is bosted on simple, spen joist to enk; for other opplications, contact your local distributor.
 Distances are based on uniformly located floor joints that meet the spon requirements for a design his boad of 40 psf and dead load of 15 pd, and a like local distellation list of 1400. For other applications, contact your local distributor.

#### INSTALLING THE GLUED FLOOR SYSTEM

- 1. Wipe any mud, dirt, water, or ice from 1-joist flanges before gluing.
- Snap a chalk line across the 1-joists four feet in from the wall for panel edge alignment and as a boundary for spreading glue.
- 3. Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from
- A. 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 tapped into place with a black and sledgehammer.
- Apply a continuous line of glue (about 11/4-inch diameter) to the top flange of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists.
- 6. Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.
- 7. After the first row of panels is in place, spread glue in the groove of one or two panels at a time before loying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) than used an I-joilt flanges.
- 8. Tap the second row of panels into place, using a black 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 an 2-1/2' common nail to assure accurate and consistent spacing.)
- 10. Complete all nailling of each panel before give sets. Check the manufacturer's recommendations for cure time. (Warm weather accelerates give setting; Use 2º ring- or screw-shank nails for ponals J4-linch thick or less, and 2-1/2º ring- or screw-shank also for thicker penals. Space nails per rite table below. Closer nail spacing may be required by some codes, or for diaphragm construction. The finished deck can be walked on right away and will carry construction loads without domage to the

#### FASTENERS FOR SHEATHING AND SUBFLOORING(1)

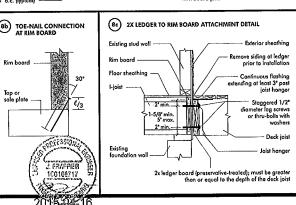
Maximum	Minimum Panel		nil Size and Ty Ring Thread	Maximum Spacing of Fasteners			
Joist Spacing (in.)	Thickness (in.)	Wire or Spiral Nails	Nails	Staples	Edges	Interm. Supports	
16	5/8	2"	1-3/4"	2*	6*	12"	
20	5/8	2*	1-3/4*	2'	6'	12"	
24	3/4	2'	1-3/4"	2'	6.	12*	

- 1. Fasteners of sheathing and subflooring shall conform to the above table.
- Staples shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/8-inch crown driven with the crown parallel to framing.
- 3. Flooring screws shall not be less than 1/8-inch in diameter.
- Special conditions may impose heavy traffic and concentrated loads that require construction in excess
  of the minimums shown.
- 5. Use only adhesives conforming to CAN/CGSB-71.26 Standard, Adhesives for Field-Gluing Plywood It Lumber Framing for Floor System, applied in accordance with the monufacturer's recommendations: II OSB panels with scaled surfaces and edges are to be bused, see only solvent-based glous; thetak with

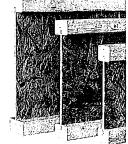
Ref.: NRC-CNRC, National Building Code of Canada 2010, Table 9.23.3.5.

.IMPORTANT NOTE:
Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spons shown in this document. If sheathing is noiled only, I-joist spons 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 (8c) 2X LEDGER TO RIM BOARD ATTACHMENT DETAIL 8b TOE-NAIL CONNECTION AT RIM BOARD Existing stud wall







FSC meritosy er content

2 3-1/2

NPG Lumber



www.nordicewp.com

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

### 2400f MSR 1950f MSR 2100f MSR S-P-F No.2 1950FMSR 2100f MSR

#### WEB HOLE SPECIFICATIONS

- 1. 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.
- 10:00 to 7.4, respectively.

  1. Fjoist top and bottom foregas must NEVER be cut, notched, or eitherwise modified.

  3. Whenever possible, field-cut holes should be centred on the middle of the web.

  4. The maximum size hole or the maximum depth of a duct chose opening that can be cut into an Lipist wat shall equal the clear distance between the flarges of the Lipist 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 flarge.

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

3 4 5 6 6-1/4 7

1\(^{1}\)6' 2\(^{1}\)10' 4\(^{3}\)2' 5\(^{6}\)6' 0\(^{1}\)1.

1\(^{6}\)6' 3\(^{1}\)0' 4\(^{4}\)6' 6\(^{1}\)0' 6\(^{4}\)4' ...

2\(^{6}\)6' 4\(^{9}\)6' 5\(^{4}\)7' 7\(^{9}\)7' 7\(^{5}\)5' ...

3\(^{6}\)6' 5\(^{1}\)9' 6\(^{3}\)3' 8\(^{4}\)4' ...

3\(^{6}\)5' 5\(^{1}\)9' 6\(^{3}\)3' 8\(^{4}\)4' ...

3\(^{6}\)5' 5\(^{1}\)9' 6\(^{3}\)3' 8\(^{4}\)4' ...

3\(^{6}\)5' 5\(^{1}\)9' 6\(^{3}\)3' 8\(^{4}\)4' 5\(^{5}\)5' 6\(^{1}\)0' 13' 11\(^{1}\)3' 2\(^{1}\)3' 4\(^{1}\)4' 4\(^{1}\)5' 5\(^{1}\)7' 13' 11\(^{1}\)6' 3\(^{1}\)9' 6\(^{3}\)3' 7\(^{2}\)7' 7\(^{2}\)8' 8\(^{4}\)9' 6\(^{3}\)3' 9\(^{1}\)8' 4\(^{3}\)9' 6\(^{3}\)3' 9\(^{3}\)9' 6\(^{3}\)3' 4\(^{3}\)9' 6\(^{3}\)3' 4\(^{3}\)9' 6\(^{3}\)3' 4\(^{3}\)9' 6\(^{3}\)9' 5\(^{6}\)9' 6\(^{3}\)9' 6\(^{3}\)9' 6\(^{3}\)9' 6\(^{3}\)9' 6\(^{3}\)9' 6\(^{3}\)9' 6\(^{3}\)9' 6\(^{3}\)9' 8\(^{3}\)9' 6\(^{3}\)9'

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

. Above table may be used for 1-joist spacing of 24 inches on centre or less.

. Hale 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 and he l-joist being used at their meximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

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

6'-6' 7'-9' ---7'-0' 8'-4' ---8'-10' 10'-0' ---10'-0' 11'-2' ---10'-3' 11'-4" ---8'-9' 10'-2' ---

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 longest sides of rectangular holes should not exceed 3/4 of
  the diameter of the maximum round hole permitted at that location.
   Where more than one hole is necessary, the distance between adjacent hole edges
  shall exceed twice the diameter of the largest round hole or twice the size of the largest
  square hole (or twice the length of the langest side of the langest rectangular hole or
  duct chose opening) and each hole and duct chose opening shall be sized and located
  in compliance with the requirements of Tables 1 and 2, respectively.
   A knockout is not considered a hole, may be utilized anywhere it occurs, and may be
  ignored for purposes of calculating minimum distances between hales and/or duct
  chose openings.
- hase openings.
- 3. Holes measuring 1-1/2 inches or smaller are permitted anywhere in a contilevered 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
- illustrated in Figure 7.
- 11 Limit three maximum size holes per span, of which one may be
- a duct chase opening.

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

NI-80

Simple Span Only

		Minimu	m distan	e from ins	ide face	of suppo	ris to ce	n're of c	bavjua (	t - in.)
Joist	Joist Series	Duct Chose Longth [in.)								
Depth	Sellez	8	10	12	14	16	18	20	22	24
	NI-20	4'-1'	4'-5'	4'-10"	5-4"	5.8	6'-1"	5.6.	7-1"	7'-5"
	NI-40x	5'-3'	5-8	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6* 8'-9"
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'	51-51	5'-10"	6'-3°	6'-7"	71-1"	7'-6'	8'-1"	8-4
	NI-80	5'-3'	5'-8"	6'-0'	6'-5"	6'-10"	7'-3"	7'-8'	8'-2"	8-6
	NI-20	5'-9'	6421	6'-6'	7'-1°	7'-5"	7'-9'	8:-3	8-9	9-4
	NI-40x	64.8*	7'-2"	7-6'	B'-1"	8'-6°	9'-1"	9.6	10-1	10.9
11-7/8°	NI-60	743*	7L8"	BCD	B'-6"	9-0"	9-3	9'-9'	10'-3'	11'-0"
	NI-70	7-1	71.4	749'	8,-3,	8'-7"	9-1-	9'-6"	10'-1"	10'-4'
	NI-80	71-21	71-75	8-0	6'-5"	8'-10"	9-3.	5'-B'	10'-2"	10.8
	NI-90	7'-6"	74111	8'-4"	8'-9"	9'-2"	9'-7"	10'-1"	10'-7"	10/11
	NJ-90x	7:-7	8'-1"	B'-5"	8'-10'	9-4	91-8"	10'-2"	10'-8"	111-24
	NI-40x	8'-1'	8-7	ð/·0•	9'-6"	10-1"	10-7	111-2"	12'-0"	12'-8'
	NI-60	8'-9'	9'-3"	9'-B*	10'-1"	10'-6"	11:1"	11'-6"	13'-3"	13-0
	NI-70	8'-7'	9-1"	9'-5"	9'-10'	10-4*	10-8	11:2	11'-7'	12-3
14"	NI-80	9'.0'	9.3"	9-9	10:1:	10-7"	11-1	11'-6"	12:-1"	12-6
	NI-90	9121	9-81	10.0	10.6		11.5	11'-9'	12'-4"	12411
	Nt-90x	9'-4'	9.91	10-3	10'-7'	11-1"	11:7	12-1	12'-7"	13-2
	141-60	10-3"	10/-B"	11-2	11'-6"	12-1"	12-6	13'-2"	14'-3"	14-10
	NI-70	10-1	10'-5"	11-0"	11:-4"	11,-10		12'-8"	13'-3"	141-0
16	NI-80	10-4	ነው-ም	11'-3"	11-9	12-1	12'-7"	13-1"	13'-8"	14-4
	NI-90	10-9	11'-2"	11'-8"	12'-0"	12'-6"	13'-0"	13'-6"	14-2	14-10
	Nt-90x	1747	11'-5"	13410	12-4	12'-10	13-2"	13'-9"	14-4*	15'-2'

#### **DUCT CHASE OPENING SIZES AND LOCATIONS**

Joist	Joist	Minimu	<u>m distan</u>	co from ins				mre of c	beving (	n - m.)
Depth	Series				Dud Cho	oso Long	in (in.)			
- Cpini	10.00	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-40x	5'-3'	5-8	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2'	8'-6" 8'-9"
9-1/2"	Ni-60	5'-4'	5'-9"	5'-2'	6'-7"	7'-1"	7.5	8:-0:	8'-3"	8-9
	NI-70	5'-1'	5'-5'	5'-10"	63°	6'-7"	7'-1"	7'-6'	8'-1"	8'-4"
	NI-80	5'-3'	5'-8"	6'-0'	6'-5"	6'-10"	7'-3"	7'-8'	8'-2"	8'-6"
,	NI-20	5'-9'	6'-2"	6'-6'	7'-1°	7'-5"	7.9	8-3	8'-9"	9-4
	NI-40x	6'-8"	7.2	7-6'	B'-1"	8-6	9'-1"	9.6	10-1	10-9"
1	NI-60	713	768	8cDi	B' 6"	9-0	91-31	9'-9'	10-3	11'-0"
11-7/8"	NI-70	7'-1"	71.2	7'-9'	8,-3,	8'-7'	9-1-	9'-6"	10'-1"	10'-4"
	NI-80	7'-2"	71.7	8-0	6'-5"	8'-10"	9-3	5'-B'	10'-2'	1048*
1	NI-90	7'-6"	74111	B'-4"	8'-9"	9'-2"	9'-7"	10'-1"	10-7	10/11
	NI-90x	7:-7	8'-1"	B'-5*	8'-10'	9-4	91-8"	10'-2"	10'-8"	111-24
	NI-40x	8'-1"	8'-7'	3/-0.	9'-6"	10-1"	10-7	111-2"	12'-0"	12-8
}	NI-60	8'-9'	9'-3"	9'-B*	10'-1"	10'-6"	11:1"	11'-6"	13'-3"	13'-0"
14"	NI-70	81.71	9-1"	9'-5"	9-10	10-4*	10-8	11-2	11'-7'	12-3
14	NI-80	9'.0'	9.3	9-9	10-1.	10-7"	11-1	11'-6"	12'-1"	12-6
	NI-90	9-2	9-8	10.0	10.6	10-11		11'-9'	12'-4"	12'-11' 13'-2'
	N1-90x	9'-4"	9.91	10'-3"	10'-7'	11'-1"	11-7	12'-1"	12-7	10110
Ì	Mi-60	10-3	10/-8"	11-2	11'-6"	12-1"	12-6	13'-2"	14'-3"	14-10
1	NI-70	10-1	10'-5"	11'-0"	11-4	11'-10		12'-8"	13'-3" 13'-8"	1450
16	14-80	10-4	10-9"	11'-3"	11491	12-1"	12-7	1341" 1346°	13'-8"	1444
	NJ-90	10-9	11'-2"	11'-8"	12'-0"	12'-6"	13'-0"	13'-9"	14-4	15-2
	NI-90x	1747	1145"	11410	12'-4"	12-10	13-2"	13.4	14-4	13-2

. Above table may be used for 1-joist spacing of 24 inches on centre or less.

2. Duct chase opening location distance is measured from inside face of supports to centre of opening.

3. The above table is based on simple-span joist only. For other applications, contact your local distributor.

5. 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 1/480.

5. The above table is based on the I-joist being used of their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

# Filler ... block -Offset nails from -1/6" to 1/4" gap between top flonge and filler block

WEB STIFFENERS

FILLER BLOCK REQUIREMENTS
FOR DOUBLE 1-JOIST

NI blocking

- NI or rim board blocking

Flanga Width Material Thickness Required\*

2x plate flush with inside face of wall

ar beam. 1/8" overhang allowed past inside face of wall or beam.

sides laterally suppor

installed per monufacturer's

panel per detail la

Attach l-joist to lop plate per detail 15

(H)

Squash block –

2-1/2\*

3-1/2\*

#### NOTES:

- 1. Support back of l-joist web during mailing to prevent
- damogs to web/filange connection.

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

  3. Filler black is required between joists for full length

capacity = 1,620 lbs.

- of span.

  4. Nail joists together with two rows of 3" noils at 12 inches o.c. (tilnethed when possible) on each side of the double Ljoist, Total of four nails per foot required. If noils can be cliniched, 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 lbf/ft.
  Verify double I-joist copacity.

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

One 2-1/2" noil of top and bottom flange (15) ~2x4 min. (1/8' gap minimum) Two 2-1/2" nails from each web to lumber piece 2-1/2' nails at 6' o.c. Lipist blocking panel

(<del>1</del>7)

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

All rails are common spiral in this detail.

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

#### FIGURE 7

9-1/2"

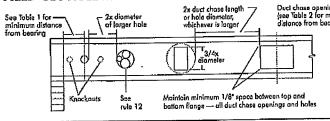
11-7/8\*

14"

NI-70 NI-80 NI-90

NI-60 NI-70

#### FIELD-CUT HOLE LOCATOR



5. Never install a domoged Lipist.



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

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

Holes in webs should be cut with a sharp sow.

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

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

- A bearing siffener is required when the t-joist is supported in a hunger 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 siffener is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the contilever tip and the support. These volues are for standard term load divration, and may be adjusted for other load divrations as permitted by the code. The gap between the stillaner and the flange is at the bottom.

(1b)

One 2-1/2'-

face nail at

each side at bearing

3,300

Maximum Factored

Vertical Load per Pair of Squash Blocks (lbs

3-1/2" 5-1/2" wide

5,500 8,500

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

Minimum Danth\*\*

5-1/2"

7-1/4

Provide lateral bracing per detail 1a or 1h

\*The uniform vertical load is limited to a joist depth of 16 inches or less and is based on standard term load duration.
It shall not be used in the design of a bending member, such

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

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

x Lumber

Backer black (use if hunger load exceeds 360 lbs). Before installing a backer block to a

when possible. Maximum factored resistance for hanger for this detail = 1,620 lbs.

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 not depth minus 4-1/4".

⑽

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

double I-joist, drive three additional 3" nails through the webs and filler block where the backer block will fit. Clinch. Install backer tight to top flange. Use twelve 3" nails, clinched

or Rim Joist

1-1/8" Rim Board Plus

One 2-1/2" wire or spirel noil at top and bottom flonge

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

2-1/2' nails

at 6° a.c.

Double I-joist heads:

NOTE: Unless hanger

sides laterally support the top flange, bearing stiffeners shall be used.

thath sides for face

- Da not boyel-cut

joist beyond inside foce

per detail 16

NOTE: Blocking required at

mount hangers)

Jaist altachment

per defail 1 b

(1g)

from above to

Insfall squash

blocks per detail 1d. Match bearing

area of blocks below to post

For tranger capacity see hanger manufacturer's recommendations, Verity double 1-joist capacity to support

Top- or face-mount

Filler block

Multiple I-joist header with full depth filler

block shown. Nordic Lam or SCL headers may also be used. Verify double 1-joist

Sacker block attached per detail 1h, Nail with twelve 3'

- Install hanger per

concentrated loads.

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

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

Vertical Load≠ (plf)

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

Load bearing wall above shall align vertically

with the bearing below. Other conditions, such as offset bearing walls, are not covered by

load-bearing walls or when floor joists are not continuous over support

Structural Composite Lumber (SCL)

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

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

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

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

tine or 1/2 inch minimum gypsum ceiling attached to underside of joists.

Blocking required over all interior supports under

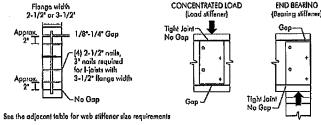
—NI blocking panel per datail 14

NOTE: Unless hanger sides laterally support the top flange,

bearing stiffeners shall be used.

8,090

#### WEB STIFFENER INSTALLATION DETAILS



STIFFEMER SIZE REQUIREMENTS Web Stiffener Size Each Side of Web 1°x 2-5/16° 2-1/2 minimum width 1-1/2" x 2-5/16" 3-1/2"

#### SAFETY AND CONSTRUCTION PRECAUTIONS



Do not walk on t-jeists until



Never stock building materials

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

AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

Brace and nail each Lipist as it is installed, using hangers, blacking panels, rim board, and/or cross-bridging at joist ends.
When Lipists are applied continuous over interior supports and a load-bearing wall is planned at that location, blacking will be required at the interior support.

- oe required at the interior support.

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

  • Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/21 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-joids.

  • Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 leat of 1-joist at the end of the boy.

  3. For contilevered 4-joists, brace top and battern flanges, and brace ands with closure panels, rim board, or cross-bridging.
- to rearrange reports process on the my one contains analysis and successing minimal reports principle and outly of the report of the state of the first period of the first p
- Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic Lipists, failure to follow allowable trains see and facultions, or follow to use web stiffeness when required can result in serious accidents. Follow these installation guidelines carefully.

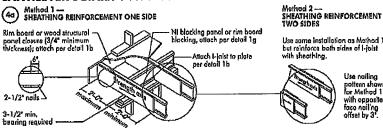


#### PRODUCT WARRANTY

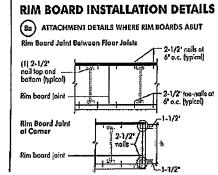
Chantlers Chibougaman guarantees that, in accordance with our specifications, Nordic products are free from manufacturing defects in material and workmanship.

Furthermore, Chantiers Chibongaman warrants that our products, en 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. Noil with 2-1/2" nails at 6" o.c., top and bottom florge. Install with face grain honzontal. Attach 1-joist to plate at all supports per detail 1b. Verify reinforced t-joist capacity.







# NORDIC STRUCTURES

COMPANY J9 1ST FLOOR Oot. 26, 2018 08:17 **PROJECT** J1 1ST FLOOR J1 1ST FLOOR

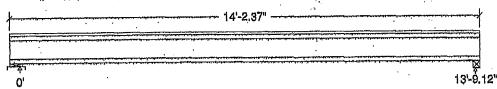
#### **Design Check Calculation Sheet**

Nordic Sizer - Canada 7.1

#### Loads:

1	Load	Type	Distribution	Pat-	Location [ft]	Magnitude	Unit
١	1			tern	Start End	Start End	
ı	Loadi	Dead	Full Area	·.			psf
1	Load2	Live	Full Area			40.00	psf

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



	Ο'		10-0.12
Unfactored: Dead Live	183 367	And the second s	183 367
Factored:	700		780
Total	780	ALESSA A	
Bearlng: Resistance		Lo more 19	<b>\</b>
Joist	1893	Con Contraction of the Contracti	L \ 1869
Support	6734		일 N
Des ratio	7,02	i cok	1869
Joist	0.41	( E. FOK	55 0.42
Support	0.12	The state of the s	o /   👌 🖟
Load case	#2	The state of the s	
Length	4-3/8	X Charles Market	2-5/8
Min req'd	1-3/4	A Marie Carlotte Contraction of the Contraction of	1-3/
Stiffener	No	and the state of t	1.0
KD	1.00		1
KB support	1.00		
fcp sup	769		
Kzcp sup	1.00		<del> </del>

Nordic 9-1/2" NI-40x Floor joist @ 16" o.c.
Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Steel Beam, W;
Total length: 14-2.37"; Clear span: 13'-7.36"; 5/8" nalled and glued OSB sheathing
This section PASSES the design code check.

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

		A to the state of	<del>[ 4(1-2) - 4 10 4</del>	
Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf. = 780	Vr = .1895	lbs	Vf/Vr = 0.41
Moment (+)	Mf = 2682	Mr = 4824	lbs-ft	Mf/Mr = 0.56
Perm. Defl'n	0.09 = < L/999	0.46 = L/360	in	0.20
Live Defl'n	0.19 - L/891	0.34 = L/480	in	0.54
Total Defl'n	0.28 = L/594	0.69 = L/240	in	0:40 -
Bare Defl'n	0.22 = L/744	0.46 = L/360	in	0.48
Vibration	$L_{max} = 13'-9.1$	Lv = 15'-4.4	ft	0.90
Defl'n	= 0.034	= 0.049	in	0.70
1/477 11	Language of the second	<del></del>	The state of the s	1-4-4-4

STRUCTURAL COMPONENT ONLY

#### J1 1ST FLOOR

#### Nordic Sizer - Canada 7.1

Page 2

	<del>ada 41 mininte despis minin</del>								•		
Additional D	ata:						_		11		
	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#		•
Vr	1895	1.00	1.00	-			-	-	#2		
	4824	1.00	1,00	-	1.000	• • • •			#2		
	218.1 mi		. <del>-</del>	-			. <del>-</del> ·		#2		
CRITICAL LOA	D. COMBIN	VATIONS:								•	•
	LC #2		) + 1.5L	•.							
Moment (+)	: LC #2							·			
Deflection	LC #1	= 1.0D	(perman	ent)							
TOT TOO CTO!	LC #2	= 1.0D	+ 1.0L	(live	i)						
	LC #2	= 1.0D	+ 1.0L	(tota	11)					•	
	LC #2	= 1.0D	+ 1.04	(bare	joist)					•	
Bearing	. Suppor	t 1 - L	C #2 = 1.	25D +	· 1.5L	,		•			
_	Suppor	t 2 - L	C #2 = 1.	.25D +	• 1.5ь						
Load Types	· n=dead	ł W=win	d S=snov	v H≕e	earth, gro	undwate	r E=ear	thquake		٠.	
1	T.= 1 i ve	11158.00	cupancy)	_Ls=]	live(stor	age, equ	ipment)	f=fire			
All Load C	ombinati	ons (LC	s) are 1:	sted	in the A	nalysis	output				
CALCULATION			<b>-</b> ,			-					
Deflection	WTAFf	- 2	68e06 lb-	-in2	K= 4.94	e06 lbs					•
"Live" def	leation	= Defle	ction fro	om all	l non-dea	d loads	(live,	wind, s	now)		
"TIAG" GET	70001011	treamen			****	******		**************************************		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<del>.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>

**Design Notes:** 

CONFORMS TO OBG 2012

1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC), Division B, Part 4, and the CSA OB6-09 Engineering Design in Wood standard, which includes Update No.1 2. Please verify that the default deflection limits are appropriate for your application.

2. Please verify that the default deflection limits are appropriate for your application.

3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.

4. Nordic I-joists are listed in CCMC evaluation report 13032-R.

5. Joists shall be laterally supported at supports and continuously along the compression edge.

6. The design assumptions and specifications have been provided by the client. Any damages resulting from faulty or incorrect information, specifications, and/or designs furnished, and the correctness or accuracy of this information is their responsibility. This analysis does not constitute a record of the structural integrity of the building nor suitabling of the design assumptions made. Nordic Structures is responsible only for the structural adequacy of this component based on the design of terial and loadings shown. design criteria and loadings shown.

DWG NO . YAM 2.2273184 STRUCTURAL COMPONENT ONLY

T-1903497(M



PASSED

1ST FLOOR FRAMING\Flush Beams\B1(i698)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

**BC CALC® Member Report Bulld 6475** 

Job name:

Address:

Customer:

Code reports:

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

CCMC 12472-R

File name:

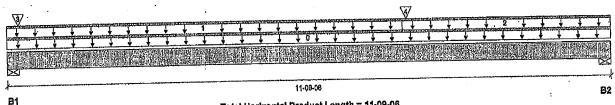
TH8C.mmdl

1ST FLOOR FRAMING\Flush Beams\B1(i698) Description:

Specifier:

Designer:

Company:



Total Horizontal Product Length = 11-09-06

Reaction Summary (Down / Uplift) (Ibs)
Bearing Live Dead 1,537/0 672/0 ₿1, 5-1/2° 289/0 511/0 B2, 4-3/8"

_		•						Live	Dead	Snow	AAING	Indutary
	ad Summary	Load Type	Ref.	Start	End	Loc.		1,00	0.65	1.00	1,15	
Tag	Description	LONG TYPE		00-00-00	11-09-06	qoT	<del></del>	***************************************	5			00-00-00
0 '	Self-Weight	Unf. Lin. (lb/ft)	<u> </u>			1		15	g			n\a
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	07-08-08	Top	•	10	40			n\a
ò	FC2 Floor Material	Unf. Lin. (lb/ft)	L	07-08-08	11-09-06	Тор		39	19			
4	LOS LIGOLANDIONS	Conc. Pt. (lbs)	L	00-02-12	00-02-12	Top		397	1,368			n\a
3		,	1.	07-09-06	07-09-06	Top		513	265			n\a
	B8/1763\	Conc. Pt. (lbs)	F.	Λ1 <u>-</u> ΛΩ-ΝΛ	Q1-00-PQ	. 44		W				

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
	3,469 ft-lbs	11.610 ft-lbs	29.9%	1.1	07-09-06
Pos. Moment	1.026 lbs	5.785 lbs	17.7%	1	10-07-08
End Shear	L/736 (0.181")	n\a	32.6%	4	06-03-09
Total Load Deflection	L/999 (0.115")	n\a	n/a	5	06-04-12
Live Load Deflection  Max Defl.	0.181"	n\a	n\a	4	06-03-09
Span / Depth	14.0	•			

Dealing Cumports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
Bearing Supports B1 Wall/Plate B2 Wall/Plate	5-1/2" × 1-3/4" 4-3/8" × 1-3/4"	2,152 lbs 1,128 lbs	80.5% 34.5%	28.2% 12.1%	Unapecified Unapecified	

**Notes** 

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

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

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 2016 and CSA 086.......

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

PHOFESSION

Disclosure

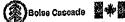
Use of the Bolse Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to appropriatelying on such output as anyone relying on 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 FIDOrValue® , VERSA-LAM®, VERSA-RIM PLUS® ,

日刊日刊廿、平本辦 22279 STRUCTURAL COMPONENT ONLY

CONFORMS TO DBG 2012

T-190234eA





PASSED

1ST FLOOR FRAMING\Flush Beams\B10L(i670)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

BC CALC® Member Report **Build 6475** 

Job name:

Address:

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

File name:

TH8C.mmdi

1ST FLOOR FRAMING\Flush Beams\B10L(i670) Description:

Specifier.

Designer:

Customer: CCMC 12472-R Code reports:

Company:

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and the second of the second s	<b>建筑村的市场中市的市场中部</b>	<b>新拉斯特的特别的</b>		<b>建筑建筑建筑建筑建筑设</b>
是是被重要的证据,但是是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一	MANUFACTURE OF THE PARTY OF THE	<b>西亚洲 10月5日 10月5日 10月 10月 10月</b> 10月	<b>建设设计算机 计多数 经股份 医多种性皮肤</b>	THE REAL PROPERTY OF THE PROPERTY OF
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PROPERTY AND PROPE		•••		1 1
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4	05-09-10			'

**B**1

Total Horizontal Product Length = 05-09-10

Reaction Sun	nmary (Down / U	plift) (lbs) Dead	Snow	Wind	, ,
B1, 4-3/8"	58/0	43/0			
B2, 1-3/4"	54/0	40 / 0			

Land Company							Livo	Dead	Snow	Wind	Tributary
Load Summary Tag Description	Load Type	Ref.	Start	End	Loc.		1.00	0.65	1,00	1.15	
0 Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	05-09-10	Top			5		,	00-00-00
1 FC1 Floor Material	Unf. Lin. (lb/ft)	L.	00-00-00	05-09-10	Тор	•	19	10		•	· n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	171 ft-lbs	11,610 ft-lbs	1.5%	1	03-00-02
End Shear	87 lbs	5,785 lbs	1.5%	1	01-01-14
Total Load Deflection	L/999 (0.003")	n\a	n\a	4	03-00-02
Live Load Deflection	L/999 (0.001")	n\a	n\a	5	03-00-02
Max Dell.	0.003"	n\a	n\a	4	03-00-02
Span / Depth	6.8	-			

		· · · · · · · · · · · · · · · · · · ·	· ·	Demand/ Resistance	Demand/ Resistance	******
Bearing	Supports	Dim. (LxW)	Demand	Support	Member	Material
B1	Wall/Plate	4-3/8" x 1-3/4"	141 lbs	4.3%	1.5%	Unspecified
B2	Column	1-3/4" x 1-3/4"	131 lbs	6.6%	3.5%	Unspecified



Notes

Design meets Code minimum (L/240) Total load deflection criteria. Design meets Code minimum (L/360) Live load deflection criteria. Calculations assume member is fully braced.

CONFORMS TO OBC 2012

Resistance Factor phi has been applied to all presented results per CSA O86. BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Disclosure:

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

STRUCTURAL COMPONENT ONLY

T- 190224PE





PASSED

#### 1ST FLOOR FRAMING\Flush Beams\B11L(i658)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

**BC CALC® Member Report Build 6475** 

Job name:

Address:

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

Customer: Code reports:

CCMC 12472-R

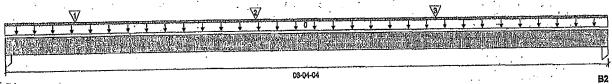
File name:

TH8C,mmdl

1ST FLOOR FRAMING\Flush Beams\B11L(i658) Description:

Specifier: Designer:

Company:



B1.

Total Horizontal Product Length = 03-04-04

Reaction Sumi	nary (Down / I	Jplift) (lbs)	•	380
Bearing	Llvo .	Dead	Snow	Wind
B1, 1-3/4"	197 / 0	106/0	•	
B2, 3-1/2"	148/0	. 83/0		

٠.	and Cumamanus						Live	Dead	Snow	Wind	Tributary
	ad Summary  Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
Ta	Self-Weight	 Unf. Lin. (lb/ft)	L	00-00-00	03-04-04	Top		5			00-00-00
	J7(1735)	 Conc. Pt. (lbs)	L	00-04-12	00-04-12	Top	116	58			n\a
. 0	J7(1802)	Conc. Pt. (lbs)	L	01-04-12	01-04-12	Top	116	58	•	•	n/a
2	17(1861)	Cono. Pt. (lbs)	L	02-04-12	02-04-12	Top	113	67			n/a

Controls Summary	Factored Demand	Factored Resistance	Demand/ . Resistance	Case	Location
Pos. Moment	310 ft-lbs	11.610 ft-lbs	2.7%	1	01-04-12
End Shear	281 lbs	5.785 lbs	4.9%	1	02-03-04
	L/999 (0.001")	n\a	n\a	4	01-07-01
Total Load Deflection	L/999 (0:001")	n/a	n\a	5	01-07-01
Live Load Deflection Max Defl.	0.001"	n\a	n\a	4	01-07-01
Span / Depth	3.8				**

•				Demand/ Resistance	Demand/ Resistance	
Bearing	Supports	Dim. (LxW)	Demand	Support	Member	Material .
B1	Column	1-3/4" x 1-3/4"	429 lbs	21.5%	11.5%	Unspecified
B2	Column	3-1/2" x 1-3/4"	325 lbs	8.2%	4.4%	Unspecified

Notes

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

Calculations assume member is fully braced.

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

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

MOFESS, ON A

Disclosure

Use of the Bolse Cascade Software is subject to the terms of the End User License Agreement (EULA). COMPORMS TO BBC 2012 Tours 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 application. The curput nere 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 guestings, please call (800)232-0788 questions, please call (800)232-0788 before installation.

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

DWEND, TAN 2000 60 186 STRUCTURAL COMPONENT ONLY

T- 19023TO





PASSED

1ST FLOOR FRAMING\Flush Beams\B12L(i520)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

**BC CALC® Member Report** 

**Bulld 6475** 

Job name:

Address:

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

Customer: Code reports: **CCMC 12472-R** 

TH8C.mmdl File name:

1ST FLOOR FRAMING\Flush Beams\B12L(i620) Description:

Specifier:

Designer:

Company:

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Material Annual	1 1 1 1 1 1 1 1 1	* * * * * * * * * * * * * * * * * * *	Name and Associated State of the Control of the Con
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	04-08-08		100
	******	-	DZ

Total Horizontal Product Length = 04-08-06

Reaction Sum	mary (Down / L	Jplift) (lbs)	_	18644	
Bearing	Live	Dead	Snow	Wind	<del>,</del>
B1, 3-1/2"	24/0	23/0			
B2 4-3/8"	29 / 0	26 / 0	•		

							Live	Dead	Snow	Wind	Tributary	
Load Summary	Load Type	Ref.	Start	End	Loc.		1.00	0.65	1.00	1,15		
Tag Description		<del></del>	00-00-00		Tóp			5			00-00-00	
0 Self-Weight	Unf. Lln. (lb/ft)	L.			•		40 .				n\a	
1 FC1 Floor Material	Unf, Lin. (lb/ft)	L .	00-03-08	04-08-06	riop	• .	12	Ü			. 11164	

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	69 ft-lbs	11,610 ft-lbs	0.6%	1	02-03-12
• • • • • • • • • • • • • • • • • • • •	30 lbs	5.785 lbs	0.7%	1	01-01-00
End Shear	L/999 (0.001")	n\a	n\a	4	02-03-12
Total Load Deflection	L/899 (0")	· n/a	n\a	б	02-03-12
Live Load Deflection  Max Defl.	0.001"	nla	n\a	4	02-03-12
Soan / Depth	5,3				

Danilar (	Sunnarta	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
Bearing S	Column	3-1/2" x 1-3/4"	66 lbs	1.7%	0.9%	Ünspecified	_
<b>—</b> (	Mall/Diata	4-3/8" x 1-3/4"	76 lbs	2,3%	0.8%	Unspecified	



Notes

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

GONFORMS TO OBC 2012

Calculations assume member is fully braced. Resistance Factor phi has been applied to all presented results per CSA Q86.

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

**Disclosure** 

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

8 NO . YAM 22277-184 STRUCTURAL COMPONENT DNLY

TE 190235



PASSED

1ST FLOOR FRAMING\Flush Beams\B2(i847)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

**BC CALC® Member Report Build 6475** 

Job name:

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

Customer: Code reports:

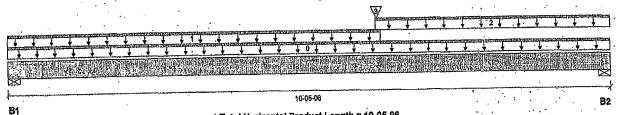
CCMC 12472-R

File name:

TH8C.mmdl

1ST FLOOR FRAMING\Flush Beams\B2(i847) Description:

Specifier: Designer: Company:



\* Total Horizontal Product Length = 10-05-06

Reaction Summary (Down / Uplift) (lbs) Wind Snow Dead Bearing 495/0 B1, 5-1/2 464 / 0 582 / 0 B2, 4-3/8"

		•		•			Live	Dead	Snow	Wind	Tributary
	oad Summary	Load Type	Ref.	Start	End	Loc.	1,00	0.85	1.00	1.15	<del>, , , , , , , , , , , , , , , , , , , </del>
	ag Description Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-05-06	Top		10		•	00-00-00
4	WALL	Unf. Lin. (lb/ft)	L	00-00-00	06-05-09	Top		60	•		n\a
. ,	FC2 Floor Material	Unf. Lin. (lb/ft)	L	06-04-08	10-05-06	Тор	27	13			n\a
9	M. C.	Conc. Pt. (lbs)	L	96-94-12	06-04-12	Top	800	417	• .		, n∖a
	-	# 41147 V /			•				•		

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	4,825 ft-lbs	21,027 ft-lbs	22.9%	7	06-05-06
	1.374 lbs	11,571 lbs	11.9%	1	09-03-08
End Shear	L/999 (0.101")	n\a	n\a	4	05-06-01
Total Load Deflection	L/999 (0.053")	n\a	n\a	5	05-07-14
Live Load Deflection  Max Defl.	0.101"	n\a	n\a	4	05-06-01
Snan / Denth	12.3		•		

•				Demandi Resistance	Demand/ Resistance		
Bearin	g Supports	Dim. (LxW)	Demand	Support	Member	Material	,
B1	Wall/Plate	5-1/2" x 3-1/2"	1,110 lbs	8.9%	4.7%	Unspecified	
P2	Wall/Plate	4-3/8" x 3-1/2"	1,453 lbs	22.2%	7.8%	Unspecified	

Notes

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

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

Calculations assume unbraced length of Top: 05-07-00, Bottom: 05-07-00.

CONFORMS TU OBC 2012

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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.

BNB. YAM ZOOR 184 STRUGTURAL COMPONENT ONLY





1ST FLOOR FRAMING\Flush Beams\B2(i847)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

PASSED

BC CALC® Member Report

**Build 6475** 

Job name:

Address:

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

**Customer:** Code reports:

CCMC 12472-R

TH&C.mmdl File name:

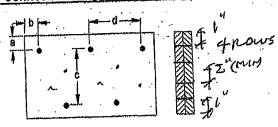
1ST FLOOR FRAMING\Flush Beams\B2(1847) Description:

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = # b mlnimum = 3" c=3-1/2" 6"

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

ARDOX SPIRAL



Disclosure

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

T-1902352(L)

STRUGTURAL



PASSED

1ST FLOOR FRAMING\Flush Beams\B3(I828)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

**BC CALC® Member Report** Bulld 6475

Job name:

Address:

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

Customer: Code reports:

CCMC 12472-R

File name: TH8C.mmdl

1ST FLOOR FRAMING/Flush Beams/B3(1828) Description:

Specifier: Designer:

Company:

· · · · · · · · · · · · · · · · · · ·	V		* * * 1
3 100 171	. 03-02-08		———→ B2
	*	.*	

Total Horizontal Product Length = 03-02-08

Reaction Summary (Down / Uplift) (lbs) Wind Live Bearing 56 / 0 96/0 B1, 1-3/4 65/0 116/0 B2, 2"

	•						ĽίΛ <b>Ġ</b>	Dead	SHOW	AAIIIC	HINDOM
L	oad Summary	Load William	Ref.	Start	End	Loc.	1,00	0.65	1.00	1.15	
Ţ	g Description	Load Type Unf. Lin. (lb/ft)	1,011	00-00-00	03-02-08	Тор		5			00-00-00
0	Self-Weight	Unf. Lin. (lb/ft)	Ē.	02-04-12	03-02-08	Top	13	7 .			. n\a
1	FC2 Floor Material	Conc. Pt. (lbs)	Ī,	01-00-12	.01-00-12	Тор	108	54	•	:	n/a
2	J7(1774)	Conc. Pt. (lbs)	· L	02-04-12	02-04-12	Тор	. 93	46			. n/a
ົ	1707793										•

Cantrala Summani	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Controls Summary Pos. Moment End Shear Total Load Deflection Live Load Deflection Max Defl. Span / Depth	205 ft-lbs 205 lbs 209 lbs L/999 (0.001") L/999 (0.001") 0.001" 3.8	11,610 ft-lbs 5,785 lbs n\a n\a n\a	1.8% 3.6% n\a n\a n\a	1 4 5 4	01-00-12 02-03-00 01-07-00 01-07-00 01-07-00

1		• •		Demand/ Resistance	Demand/ Resistance	
Bearing	Supports	Dim. (LxW) 1-3/4" x 1-3/4"	Demand	Support	Member	Material Unspecified
B1	Column	1-3/4" x 1-3/4"	213 lbs	10.7%	5.7%	Hanger
B2	Hanger	2" x 1-3/4"	255 lbs	n\a	6.0%	Liquiger

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

**Disclosure** 

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> BC CALCO, BC FRAMERO, AJSTM. ALLJOIST®, BC RIM BOARDTM, BOIR , BOISE GLULAMTM, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®.

BWBNO, YAM 20209-484 STRUCTURAL COMPONENT ONLY

たしろのるく



PASSED

1ST FLOOR FRAMING\Flush Beams\B4(i695)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

**BC CALC® Member Report Bulld 6475** 

Job name:

Address:

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

Customer: Code reports:

CCMC 12472-R

File name:

TH8C.mmdl

1ST FLOOR FRAMING\Flush Beams\B4(i695) Description:

Specifier:

Designer:

Company:

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30 43 311 - 536 31 5 5 5		
<b>   </b>	The second secon	
	04-04-14	B2

**B**1

Total Horizontal Product Length = 04-04-14

Reaction Sum	mary (Down /	Uplift) (lbs)	Snow	Wind
Bearing	Live	L/DQQ	SHOW	**************************************
B1, 3-1/2"	52/0	37/0		
DO 4 3/8//	64 / 0	38/0		

	· .	•					Live	Dead	Snow	Wind	Tributary	
Loa	d Summary		Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15		
Tag	Description	Load Type	Lar			Top	**************************************	<del></del>	****		00-00-00	
	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-04-14			٧.				
			ì	00-00-00	04-04-14	Top	24	12			n\a	
4	FC2 Floor Material	Unf. Lin. (lb/ft)	l.	00-00-00	O'T O'T I'I	. +14						

Controls Summary	Factored Demand	Factored Resistance	Resistance	Case	Location
Pos. Moment	108 ft-lbs	11,610 ft-lbs	0.9%	1	02-02-00
End Shear Total Load Deflection	62 lbs L/999 (0.001")	6,786 lbs n\a	n\a	4	02-02-00
Live Load Deflection	L/999 (0")	n\a	n\a	5	02-02-00 02-02-00
Max Defl. Span / Depth	0.001° 4.9 :	n\a	n\a	-7	OL-OL-OO

<b></b>	. Ourundo	min /I vAAA	•	Demand	•	Demand/ Resistance Support	Demand/ Resistance Member	Material	
Bearing B1 B2	CP CI (VIII)	Dim. (LxW) 3-1/2" x 1-3/4" 4-3/8" x 1-3/4"		124 lbs 128 lbs	<del></del>	3.1% 3.9%	1.7% 1.4%	Unspecified 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.

CONFORMS TO OBC 2012

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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 venified 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 destin 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®

STRUCTURAL COMPONENT ONLY

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PASSED

1ST FLOOR FRAMING\Flush Beams\B5(1708).

Dry | 1 span | No cant.

October 26, 2018 08:05:03

**BC CALC® Member Report** 

Build 6475 Job name:

Address:

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

Customer: Code reports:

**CCMC 12472-R** 

. File name: TH8C.mmdi

Description: 1ST FLOOR FRAMING\Flush Beams\B6(i708)

Specifier:

Designer:

Company:

		;		
		\ <del>\\\</del> \\		
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**B1** 

Total Horizontal Product Length = 07-03-02

Reaction Summa	ry (Down /	Drav	Snow	Wind
B1, 1-3/4"	350 / 0 352 / 0	197/0 198/0		

							Live	Dead	Snow	Astua	Industry	
•	Load Summary	Y and Time	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15		
	Tag Description	Load Type Unf, Lin, (lb/ft)	L.	00-00-00	07-03-02	Top		5			00-00-00	
	0 Self-Weight	Unf. Lin. (lb/ft)	Ī.	00-00-00	03-02-04	Top	14	7			n\a	
	1 FC2 Floor Material	Unf, Lin. (lb/ft)	Ĺ	03-02-04	07-03-02	Top	33	17			n\a	
	2. FC2 Floor Material	Conc. Pt. (lbs)	L	03-03-02	03-03-02	Top	622	270			n\a	
	3 BB(1763)	COUCY 1.5" (199)	_	• • • • • • • • • • • • • • • • • • • •								

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
	2,258 ft-lbs	11,610 ft-lbs	19.4%	1	03-03-02
Pos. Moment	737 lbs	5.785 ibs	12,7%	1	00-11+04
End Shear	L/999 (0.045")	n\a	· n\a	4 .	03-05-04
Total Load Deflection		n\a	n\a	5	03-05-04
Live Load Deflection Max Defl.:	L/998 (0.029") 0.045"	n\a	n\a	4	03-05-04
Snan / Denth	8.7				

D Dermo	anto mi dista	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
Bearing Supp	n 1-3/4" x 1-3/4"	770 lbs 776 lbs	38.7% 23.7%	20.6% 8.3%	Unspecified Unspecified

Notes

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Disclosure

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

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

DWE NU. TAMPAB/ int STRUCTURAL COMPONENT ONLY

GONFORMS TO OBC 2012





PASSED

**B**2

#### 1ST FLOOR FRAMING\Flush Beams\B6(1836)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

BC CALC® Member Report

**Bulld 6475** 

Job name:

Address:

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

File name:

TH8C.mmdl

1ST FLOOR FRAMING\Flush Beams\B6(i836) Description:

Specifier:

Designer: Company:

Customer: **CCMC 12472-R** Code reports:

**B**1

02-10-00 Total Horizontal Product Length = 02-10-00

	mmary (Down / U	plift) (lbs) Dead	Snow	Wind
Bearing B1, 1-3/4"	144 / 0	78/0		
B2, 3-1/2"	166 / 0	91/0		

- ' <b></b>	•					Live	Dead	Snow	Wind	Tributary
Load Summary	Load Type	Ref.	Start	End	Loc.	1.00	0,65	1.00	1.15	
Tag Description	Unf. Lin. (lb/ft)	L	00-00-00	02-10-00	Top		5		•	00-00-00
0 Self-Weight	Conc. Pt. (lbs)	ī	00-09-12	00-09-12	Top	165	82			nla
1 J6(1734)		-	02-01-12	02-01-12	Top	145	73			n\a
2 J6(1687)	Conc. Pt. (lbs)	<b>I</b> -	02-01-12	04°01°14	TOP	1-10	. •		٠ .	•

Controls Summary	Factored Demand	Factored Resistance	Resistance	Case	Location
Pos. Moment	226 ft-lbs	11,610 ft-lbs	1.9%	1	00-09-12
End Shear	252 ibs	6,785 lbs	4.4% n\a	٦ 4٠	00-11-04 01-03-13
Total Load Deflection	L/999 (0.001") L/999 (0")	n\a n\a	n\a	5	01-03-13
Live Load Deflection Max Defl.	0.001"	n\a	n\a	4 ·	01-03-13
Span / Depth	3.2				

٠.				Demand/ Resistance	Demand <i>i</i> Resistance		
Bearlr	ng Supports	Dim. (LxW)	Demand	Support	Member	Material	
B1	Column	1-3/4" x 1-3/4"	313 lbs	15.7%	8.4%	Unspecified	
D2	Column	3-1/2" x 1-3/4"	363 lbs	9.1%	4.9%	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 O86.

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

PROFESSION

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

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

HARM TAM 228248H STRUGTURAL COMPONENT ONLY

CONFORMS TO OBG 2012



PASSED

### 1ST FLOOR FRAMING\Flush Beams\B7(i701)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

**BC CALC® Member Report** Bulld 6475 -

Job name:

Address:

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

Customer: Code reports:

.CCMC 12472-R

File name:

TH8C.mmdl

Description: 1ST FLOOR FRAMING\Flush Beams\B7(I701)

Specifier: Designer: Company:

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	字的表情的是,我是是是重要的表现。	公司。相称为文明在14.25元号号201140公共————————————————————————————————————	
<u>}</u>	07	04-14	В2

**B**1

#### Total Horizontal Product Length = 07-04-14

	. :	10001110				
Reaction Sum	mary (Down / U	olift) (lbs) Dead	Snow	Wind		<del></del>
B1, 3-1/2"	434 / 0	240 / 0				
DO 4 9/8"	. 444/0	244 / 0			•	

	• • •						Live	Dead	Snow	Wind	Imputary
Los	ad Summary	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1,15	
Tag	Description	Unf, Lin. (lb/ft)	L	00-00-00	07-04-14	Top ·		5		٠.	00-00-00
0	Self-Weight	Unf, Lin. (lb/ft)	Ī	00-00-00	03-04-00	Top	19	10			n\a
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-04-00	07-04-14	Top	47	23			n/a .
2	FC2 Floor Material	Cone. Pt. (lbs)	Ē	03-04-14	03-04-14	Top	624	322	•		n\a

Controls Summary	Factored Demand	Factored Resistance	Resistance	Case	Location
Controls Summary	2,753 ft-lbs	11,610 ft-lbs	23.7%	1	03-04-14
Pos. Moment	901 lbs	5,785 lbs	15.6%	1	01-01-00
End Shear	• • • • • • • • • • • • • • • • • • • •	n\a	n/a	4	03-07-00
Total Load Deflection	L/999 (0.055")	n\a	n\a	5	03-07-00
Live Load Deflection Max Defl.	L/999 (0,036") 0.055"	n/a	. n\a	4	03-07-00
Span / Depth	8.7	,			

		,	٠. `		Demand/ Resistance	Demand/ . Resistance		
Bearing	Supports	Dim. (LxW)		Demand	Support	Member 12.7%	Material Unspecified	,
B1	Column	3-1/2" x 1-3/4"		952 lbs	23.9% 29.7%	10.4%	Unspecified	
B2 ·	Wall/Plate	4-3/8" x 1-3/4"		971 lbs	29.170	10,474	Olloposition	

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Sept.

**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 evidence of suitability for a perticular 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 guestions, please cell (800)232-0788 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®

BYB HE, THE 2283118 H STRUCTURAL COMPONENT OHLY

CONFORMS TO OBG 2012



PASSED

1ST FLOOR FRAMING\Flush Beams\B8(i763)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

BC CALC® Member Report

**Build 6475** Job name:

Address:

Customer:

Code reports:

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

**CCMC 12472-R** 

File name:

TH8C.mmdl

1ST FLOOR FRAMING\Flush Beams\B8(1763) Description:

Specifier: Designer:

Company:

DERIVED AND AND ADDRESS OF THE PARTY OF THE			<b>7</b>		
		成功是公债权率和制度的			
ļ		03-06-00			B2
61	Y44	al Harizontal Product Lanoth	= 03-06-00	 \$ 1.00	

Total Horizontal Product Length = 03-06-00

	mmary (Down / U)	olift) (lbs) Dead	Snow	Wind	
Bearing B1, 2 <sup>11</sup>	522/0	270 / 0		•	
ווס סוו	613/0	265/0			

			•			Live	Dead	Snow	Wind	Tributary
Load Summary	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	. 00 00 00
Tag Description  0 Self-Weight  1 STAIR  2 J8(1780)  3 J8(1860)	Unf. Lin. (lb/ft) Unf. Lin. (lb/ft) Conc. Pt. (lbs) Conc. Pt. (lbs)	L L L	00-00-00 00-00-00 00-11-12 02-03-12	03-06-00 03-06-00 00-11-12 02-03-12	Top Top Top Top	240 93 102	5 120 47 51	· .		00-00-00 n\a n\a n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment End Shear Total Load Deflection Live Load Deflection Max Defl. Span / Depth	903 ft-lbs 625 lbs L/999 (0.005") L/999 (0.003") 0.005" 4.2	11,610 ft-lbs 5,785 lbs n\a n\a n\a	7,8% 10,8% n\a n\a n\a	1 1 4 5 4	01-08-04 00-11-08 01-09-04 01-09-04 01-09-04

				•	M	Demand/ Resistance Support	Demand/ Resistance Member	Material	
Bearing	And in contrast to the last to	Dim.	(LxW) 1-3/4"	<del>~~~</del>	1.120 lbs	n\a	26.2%	Hanger	
B1 B2.	Hanger Hanger		1-3/4"		1,101 lbs	n\a	25.8%	Hanger	

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.

CONFORMS TO OBG 2012 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

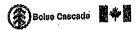
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Disclosure

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STRUCTURAL COMPONENT ONLY



PASSED

#### 1ST FLOOR FRAMING\Flush Beams\B9(i863)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

**BC CALC® Member Report** 

**Build 6475** Job name:

Address:

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

Customer:

Code reports:

CCMC 12472-R

File name:

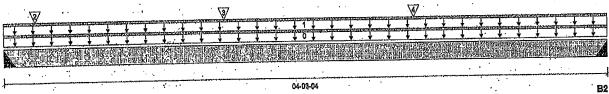
TH8C.mmdl

1ST FLOOR FRAMING\Flush Beams\B9(i863) Description:

Specifier:

Designer:

Company:



**B**1

#### Total Horizontal Product Length = 04-03-04

Reaction Sum	mary (Down / Up	olift) (lbs) Dead	Snow	Wind	<del></del>	<del> </del>	<del></del>
B1, 2"	. 678 / 0	349/0				•	
B2 2"	627 / 0	323/0					

Load Summary	Land Throne	Ref.	Start	End	Loc.	1.00	Dead 0.65	3now 1.00	Wind 1.15	Tributary
Tag Description  0 Self-Weight  1 STAIR  2 J8(I751)  3 J8(I663)  4 J8(I856)	Load Type Unf. Lin. (lb/ft) Unf. Lin. (lb/ft) Conc. Pt. (lbs) Conc. Pt. (lbs) Conc. Pt. (lbs)		00-00-00 00-00-00 00-02-12 01-06-12 02-10-12	04-03-04 04-03-04 00-02-12 01-06-12 02-10-12	Top Top Top Top	240 67 104 109	5 120 33 52 54			00-00-00 n\a n\a n\a n\a
4 00(1000)		Factored	Dem	and/				٠,.	PTA CT	OPESS ON

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1,381 ft-lbs	11,610 ft-lbs	11,9%	1	02-01-04
•		. 5,785 lbs	14.7%	1	03-03-12
End Shear		n/a	n\a	. 4	02-01-12
Total Load Deflection	L/999 (0.012") L/999 (0.008")	n\a	n\a	5	02-01-12
Live Load Deflection Max Defl.	0.012"	n\a ·	n\a	4	02-01-12
Span / Depth	5.1	.* ,	•		

• • •	·		•	Demand/ Resistance	Demand/ Resistance		•
Rearing	Supports	Dim. (LxW)	Demand	Support	Member	Material	
	Hanger	2" x 1-3/4"	1,453 lbs	nla	34.0%	Hanger	
	Hender	2" x 1-3/4"	1,344 lbs	n\a	31.5%	Hanger	

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.

CONFORMS TO UBG 2012

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Disclosure

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STRUCTURAL COMPONENT ONLY

T.1902359

PASSED

#### 2ND FLOOR FRAMING/Flush Beams/B13(1710)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

BC CALC® Member Report **Bulld 6475** 

Job name:

Customer:

Code reports:

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

File name: Description:

TH8C.mmdl

Wind

2ND FLOOR FRAMING\Flush Beams\B13(I710)

Specifier: Designer: Company:

**CCMC 12472-R** 

Total Horizontal Product Length = 10-05-08

Snow

Reaction Summary (Down / Uplift) (lbs) 1,143/0 2,185/0 1,055/0 2.005/0 B2, 5-1/2"

		•					Live	Dond.	Snow	Wind	Tributary
	ad Summary	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1,18	
Tag	Description Self-Weight	Unf, Lin. (lb/ft)	L.	00-00-00	10-05-08	Тор		10			00-00-00
٧.	Smoothed Load	Unf. Lin. (lb/ft)	Ĺ	00-05-08	08-06-08	Top	435	218			n/a
l	J3(1697)	Conc. Pt. (ibs)	L	00-03-02	00-03-02	Top	223	111			n\a
3	nolinas i	Conc. Pt. (lbs)	F .	09-02-04	09-02-04	· Top	485	242		• .	n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
	11.488 ft-lbs	23,220 ft-lbs	49.5%	1	05-01-08
Pos. Moment	4.279 lbs	11,571 lbs	37.0%	1	09-02-08
End Shear	L/419 (0.283")	n\a	57.3%	4	05-01-08
Total Load Deflection	L/637 (0.186")	n\a	56.5%	5	05-01-08
Live Load Deflection Max Defl.	0.283"	nla	n\a	4	05-01-08
Span / Depth	12.5		•		•

Dunalian	Sunnavio	Direct H wAAD	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1	Supports Column	3" × 3-1/2"	4,706 lbs 4,326 lbs	69.0% 52,6%	36.7% 18.4%	Unspecified Unspecified	4-1-6
R2	Wall/Plate	5-1/2" x 3-1/2"	4,020 108	Q#10 10	101-110	Oliup a ciri-	

PAOLESS'ON

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

Calculations assume member is fully braced.

CONFORMS TO UBG. 2012

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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 . TAM 22 86 . 18 H STRUGTURAL COMPONENT ONLY





PASSED

#### 2ND FLOOR FRAMING\Flush Beams\B13(i710)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

**BC CALC® Member Report** 

**Build 6475** 

Job name:

Address:

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

Customer: Code reports:

CCMC 12472-R

TH8C.mmdl File name:

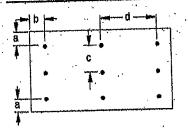
2ND FLOOR FRAMING\Flush Beams\B13(I710) Description:

Specifier:

Designer:

Company:

#### Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" o = 2-3/4" d = 6

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

ARDOX SPIRAL



Disclosure

Use of the Bolse Cascade Software is subject to the terms of the End User Lloense 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 pail (800)232-0788 before installation.

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DWG NG . THM 2286 FT H STRUCTURAL COMPONENT ONLY

T-190260(V)

. ace "



PASSED

#### 2ND FLOOR FRAMING\Flush Beams\B14(i754)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

**BC CALC® Member Report Build 6475** 

Job name:

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

Description: 2ND FLOOR FRAMING\Flush Beams\B14(1754)

Specifier. Designer:

File name:

TH8C.mmdl

Customer: -Code reports:

CCMC 12472-R

Company:

	• •	
A section of the sect		The state of the s
benderes de majorista de la constanta della constanta della constanta della constanta della co	1 1 1 1 1 1 1 1 1 1 1 1	<del>                                      </del>
	•	· ,
	. 08-11-00	B2

Total Horizontal Product Length = 08-11-00

Reaction Sun	nmary (Down / Up	lift) (lbs)		
Bearing	Live	Dead	Snow	Win
B1, 5-1/2"	1,991 / 0	1,039 / 0	•	
B2. 3"	2,179/0	1,132 / 0		

Load Summary				•		Live	Dead	Snow	Wind	Tributary
Tag Description	Load Type	Ref.	Start	End	Loc.	1.00	0,65	1.00	1.15	
0 Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-11-00	Top	•	10		•	00-00-00
1 Smoothed Load		L	00-10-08	07-06-08	Top'	492	246			n\a
2 · J3( 823)	Conc. Pt. (lbs)	L	00-08-08	00-08-08	Top	285	142			n\a
3 J1(1827)	Conc. Pt. (lbs)	L	08-02-08	08-02-08	Top	326	163	•	: .	n\a
4 J3(1675)	Conc. Pt. (lbs)	` L `	08-08-08	08-08-08	Top	279	140		. *	n\a.

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Caso	Location
Pos. Moment	9.151 ft-lbs	23,220 ft-lbs	39.4%	1	04-08-08
End Shear	3,856 lbs	11.571 lbs	33.3%	Ì	01-03-00
Total Load Deflection	L/620 (0,161")	n\a	38.7%	4	04-07-00
Live Load Deflection	L/999 (0.106")	n\a	n\a	5 .	04-07-00
Max Defl.	0.161"	n\a	n\a	4	04-07-00
Snan / Denth	10.5	•		·	

			<b>**</b>	Demand/ Resistance	Demand/ Resistance Member	Material	
Bearing	Supports	Dim, (LxW)	Demand	Support			
B1	Wall/Plate	5-1/2" x 3-1/2"	4,285 lbs	52.1%	18.2%	Unspecified	
H2	Column	3" x 3-1/2"	4,683 lbs	68.7%	36.6%	Unspecified	

**Notes** 

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

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

Calculations assume member is fully braced.

GONFORMS TO UBG 2012

Resistance Factor phi has been applied to all presented results per CSA O86. BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.

Design based on Dry Service Condition.

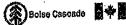
Importance Factor: Normal Part code: Part 9

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.

> . HE NO . TAM-2287 1794 STRUCTURAL COMPONENT ONLY

T-19026/

WHOFESS ON





PASSED

2ND FLOOR FRAMING\Flush Beams\B14(i754)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

**BC CALC® Member Report** 

**Build 6475** 

Job name:

Address:

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

Customer:

Code reports:

CCMC 12472-R

Flie name:

TH8C.mmdl

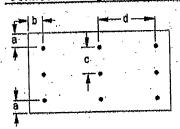
2ND FLOOR FRAMING\Flush Beams\B14(1754) Description:

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member





a minimum = 2" b minimum = 3"

- or 25

c = 2-3/4" d = 100 6"

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

ARDOX SPIRAL



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STRUCTURAL COMPONENT ONLY

T-190236 (C)





PASSED

#### 2ND FLOOR FRAMING\Flush Beams\B15(1671)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

BC CALC® Member Report **Build 6475** 

Job name:

Address:

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

Customer:

Code reports:

CCMC 12472-R

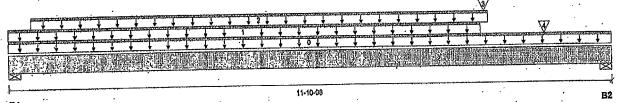
File name:

TH8C, mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B15(1671)

Specifier: Designer:

Company:



Total Horizontal Product Length = 11-10-08

Snow

Reaction Summary (Down / Uplift) (lbs)

Dead 464/0 222 / 0 B1, 5-1/2 791/0 1,025 / 0 B2, 5-1/2"

٠.	Load Summary	Laured Wesser	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow : 1.00	Wind 1.15	Tributary
	Tag Description	Load Type		00-00-00	11-10-08	Top		- 6	***************************************		00-00-00
_	0 Self-Weight	Unf. Lin. (lb/ft)	L.					~			n\a
٠.	1 FC3 Floor Material	Unf. Lin. (lb/ft)	<b>L</b>	00-00-00	09-03-08	Top	- 5	<b>3</b> .			
			1 '	00-05-08	09-05-05	Top		60			n\a
	2 WALL	Unf. Lin. (lb/ft)	hr-			Top	859	465			, n\a
	3 B17(1668)	Conc. Pt. (lbs)	L	09-04-06	09-04-06			-	٠,		
	4 J3(i660)	Conc. Pt. (lbs)	1_	10-06-08	10-06-08	Top	329	164			n\a
	4 33(1000)	CONTRACT OF COMMY						•		30.835E	(OO
	·	Nr.	Factored	Dem	and/	Cana	Location		· ME	ANOUS	TOO ON TO

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos, Moment	4,475 ft-lbs	11.610 ft-lbs	38.5%	1	09-04-06
	2.511 lbs	5,785 lbs	43.4%	1	10-07-08
End Shear		n\a	46.8%	4	06-04-13
Total Load Deflection	L/513 (0.259")	n/a	n/a	5	06-07-13
Live Load Deflection Max Defi.	L/999 (0.117"). 0.259"	n\a n\a	n\a	4	06-04-13
Span / Depth	14.0				

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1 Wall/Plate	5-1/2" x 1-3/4" 5-1/2" x 1-3/4"	649 lbs 2,526 lbs	24.3% 61.4%	8.5% 21.5%	Unspecified Unspecified	

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

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

Calculations assume member is fully braced.

CONFORMS TO OBC 2012

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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STRUCTURAL COMPONENT ONLY

C-190262





PASSED

Tributary

00-00 n\a n\a n\a n\a ·ula 'Cala

Snow . Wind.

Dead

#### 2ND FLOOR FRAMING\Flush Beams\B16(1809)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

**Bulld 6475** 

Job name:

Customer:

Code reports

Address: ...

City, Province, Postal Code: ST .: NES

BC CALC® Member Report

CCMC 12472-R

File name: Description:

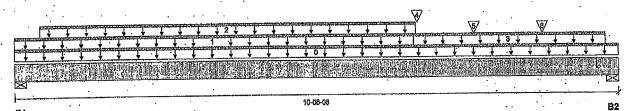
TH8C,mmdi

Wind

2ND FLOOR FRAMING\Flush Beams\B16(i809)

Specifier: Designer:

Company:



Total Horizontal Product Length = 10-06-08

Reaction Summary (Down / Uplift) (ibs)

230 / 0 410/0 B1, 5-1/2 847/0 B2, 5-1/2" 703/0

LORG Summary Tag Description	Load Type	Ref.	Start	End	Loc.	1,00	0.65	1,00	1.15	.,
0 Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-06-08	Top		5 .		CO	-00
1 FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	06-11-08	Top	21	10			
2 WALL	Unf. Lin. (lb/ft)	L	00-05-08	06-11-15	Top		60			
3 FC3 Floor Material	Unf, Lin. (lb/ft)	L	06-11-08	10-03-12	Top	19	10			
4 B18(1709)	Conc. Pt. (lbs)		07-00-04	07-00-04	Top	45	36		•	
5 B17(1668)	Cone, Pt. (lbs)	L	08-00-06	08-00-06	Top	345	206		15 THE P. P. LEWIS CO.	ميا مد
6 J3(1660)	Conc. Pt. (lbs)	Ĺ	09-02-08	09-02-08	Top	327	164		THE PARTY OF THE PARTY	æ
		Factored		and/ stance	Case	Location		A s	A Keb	10
Controls Summary	Factored Demand	Resistance	1/691	Stailte	-V400	TAGAREGE		¥ 9	2 Walterstanding	,

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2,835 ft-lbs	11,610 ft-lbs	24.4%	1	07-00-04
End Shear	1.678 lbs	5.785 lbs	29.0%	1	09-03-08
Total Load Deflection	L/839 (0.14")	n\a	28,6%	6	05-06-06
Live Load Deflection	L/999 (0:063")	n\a	n\a	8	05-08-08
Max Defl.	0.14"	n\a	n\a	6	05-06-06
Span / Depth	12.3	. •			-

Bearing Supports	Dlm. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 Wall/Plate	5-1/2" × 1-3/4"	574 lbs	21.5%	7.5%	Unspecified
B2 Wall/Plate	5-1/2" x 1-3/4"	1,738 lbs	42,3%	14.8%	Unspecified

#### Notes

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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UWEND, TAM 20289. 18 H Structural COMPONENT ONLY





PASSED

#### 2ND FLOOR FRAMING\Flush Beams\B17(i668)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

BC CALC® Member Report **Bulld 6475** 

Job name:

Customer:

Code reports:

Address:

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

.CCMC 12472-R

TH8C.mmdi File name:

2ND FLOOR FRAMING\Flush Beams\B17(1668) Description:

Specifier: Designer:

Company:

	+ 3 + + + + + + + + + + + + + + + + + +	
A SECTION OF THE PARTY AND A SECTION OF THE PART	10.02.08	***************************************

Total Horizontal Product Length = 10-02-08

Reaction Summary (Down / Uplift) (lbs) Live

202/0 337/0 B1, 2" 467/0 865 / 0 B2, 2"

Loa	d Summary					•	Live	Dead 0.65	Snow	wind 1.15	Indutary
Tag	Description Self-Weight	Load Type Unf. Lin. (lb/ft)	Ref.		End 10-02-08		1.00	5 120	# 1,000		00-00-00 n\a
1 2	WALL FC3 Floor Material	Unf. Lin. (lb/ft) Unf. Lin. (lb/ft)	L L	06-08-08 07-00-04 00-00-00	10-02-08 10-02-08	qoT qoT qoT	240 25 45	13	•		n\a n\a
3 .	. FÇ3 Floor Material	Trapezoidal (lb/f	τ) L	05-06-14	07-00-04 05-06-14	•	26 36	13 37			n\a
4.,	B18(1709)	Conc. Pt. (lbs)	. Factored	Dem	iand/	Case	Location	 	ASTER	PATAOF	ESSIONA

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2,915 ft-lbs	11,610 ft-lbs	25.1%	. 1	06-11-04
End Shear	1,336 lbs	5,785 lbs	23.1%	1	09-03-00
Total Load Deflection	L/856 (0.14")	n\a	28.0%	4	05-05-02
	L/999 (0.089")	n\a	n\a	5	05-05-02
Live Load Deflection Max Defl.	0.14"	n\a	n\a	4.	05-05-02
Omen / Donth	12.6				

Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
757 lbs	n\a	17.7%	Hanger
1,881 lbs	n\a	44.1%	Hanger

B1

B2 .

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

Notes

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

2" x 1-3/4"

2" x 1-3/4"

Calculations assume member is fully braced.

Bearing Supports Dim. (LxW)

Hanger

Hånger

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

Disclosure

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STRUCTURAL COMPONENT ONLY

CONFORMS TO USO 2012



PASSED

#### 2ND FLOOR FRAMING\Flush Beams\B18(1709)

Dry | 1 span | No cant.

October 26, 2018 08:05:03

**BC CALC® Member Report** Bulld 6475

Job name:

Address:

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

Customer: Code reports:

CCMC 12472-R

File name:

TH8C.mmdl

2ND FLOOR FRAMING\Flush Beams\B18(i709) Description:

Specifier: Designer:

Company:

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	ALAMAN TIPLE YER JURENTERS (2012) 11 12 2 14 1	到到1971年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年
	06-08-13	, po

**B**1

Total Horizontal Product Length = 06-06-13

Reaction St	ımmary (Down / U	lplift) (lbs)	
Bearing	Live	Dead	Snow
B1, 2"	49/0	40 / 0	
B2 2"	26/0	29 / 0	

	1 Acres and a second	•					L	ve	Dead	Snow	Wind	Tributary
	ad Summary Description	Load Type	Ref.	Start	End	Loc.	. 1.	00	0.65	1.00	1.15	
Tag	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-06-13	Тор	•	-,	5			00-00-00
4	FC3 Floor Material	Trapezoldal (lb/ft)	L	00-00-00		Top	2	1	11 ·			n\a
3	LC2 LIOOL Meteriës	(tapazotam (m)			06-06-13	` .	2		1:	•		

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	155 ft-lbs	11,610 ft-lbs	1.3%	1	02-11-01
	110 lbs	5.785 lbs	1.9%		00-11-08
End Shear	L/999 (0.003")	n\a	n\a	4	03-02-09
Total Load Deflection	L/999 (0.002")	n\a	n\a	. 5	03-02-09
Live Load Deflection Max Defl.	0.003"	n\a	n\a	4	03-02-09
Span / Danth	8.0				

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistence Support	Demand/ Resistance Member	Material
B1 Hanger	2" x 1-3/4"	124 lbs	n\a	2.9%	Hanger
B2 Hander	2" x 1-3/4"	.76 lbs	n\a	1.8%	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 unbraced length of Top: 00-06-04, Bottom: 00-06-04.

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

WOFESS.ON.

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DWG NO. TAM 2291-1811 STRUCTURAL COMPONENT ONLY

CONFORMS TO OBG 2012



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







			Ва	are		ļ	1/2" Gyps	sum Ceiling			
Depth	Series		On Centr	e Spacing			On Centre Spacing				
•		12"	16"	19.2"	24"	12"	16"	19.2"	24"		
	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"		
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"		
9-1/2"	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"	16'-5"	15'-5"	14'-3"		
•	NI-70	18'-0"	16'-11"	16'-3"	15'-6"	18'-5"	17'-3"	16'-7"	15'-6"		
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	15'-10"		
	NI-20	17'-10"	16'-10"	16'-0"	14'-10"	18'-6"	17'-1"	16'-0"	14'-10"		
	NI-40x	19'-4"	17'-11"	17'-3"	15'-10"	19'-11"	18'-6"	17'-9"	15'-10"		
1011	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"		
	N1-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"		
	NI-40x	21'-5"	19'-10"	18'-11"	17'-5"	22'-1"	20'-6"	19'-6"	17'-5"		
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"		
14"	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"		
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"		
	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"		
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"		
	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"		
16"	NI-80	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"		
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"		

			Mid-Spar	Blocking		Mid-S	pan Blocking an	d 1/2" Gypsum	Ceiling	
Depth	Series		On Centr	e Spacing		On Centre Spacing				
		12"	16"	19.2"	24"	12"	16"	19,2"	24"	
	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"	
	NI-40x	17'-9"	16'-1"	15'-1"	13'-11"	17'-9"	16'-1"	15'-1"	13'-11"	
9-1/2"	NI-60	18'-1"	16'-5"	15'-5"	14'-3"	18'-1"	16'-5"	15'-5"	14'-3"	
NI-70 NI-80	NI-70	19'-10"	17'-11"	16'-9"	15'-6"	19'-10"	17'-11"	16'-9"	15'-6"	
	20'-2"	18'-3"	17'-1"	15'-10"	20'-2"	18'-3"	17'-1"	15'-10"		
	N1-20	18'-10"	17'-1"	16'-0"	14'-10"	18'-10"	17'-1"	16'-0"	14'-10"	
	NI-40x	21'-3"	19'-3"	17'-9"	15'-10"	21'-3"	19'-3"	17'-9"	15'-10"	
	NI-60	21'-9"	19'-8"	18'-5"	17'-1"	21'-9"	19'-8"	18'-5"	17'-1"	
11-7/8"	NI-70	23'-4"	21'-5"	20'-1"	18'-6"	23'-8"	21'-5"	20'-1"	18'-6"	
	NI-80	23'-7"	21'-10"	20'-5"	18'-11"	24'-1"	21'-10"	20'-5"	18'-11"	
	NI-90x	24'-3"	22'-6"	21'-3"	19'-7"	24'-8"	22'-7"	21'-3"	19'-7"	
	NI-40x	24'-2"	21'-5"	19'-6"	17'-5"	24'-2"	21'-5"	19'-6"	17'-5"	
	NI-60	24'-9"	22'-5"	21'-0"	19'-6"	24'-9"	22'-5"	21'-0"	19'-6"	
14"	NI-70	26'-1"	24'-3"	22'-9"	21'-0"	26'-8"	24'-3"	22'-9"	21'-0"	
	NI-80	26'-6"	24'-7"	23'-3"	21'-6"	27'-1"	24'-10"	23'-3"	21'-6"	
	NI-90x	27'-3"	25'-4"	24'-1"	22'-4"	27'-9"	25'-10"	24'-3"	22'-4"	
	NI-60	27'-3"	24'-11"	23'-5"	21'-7"	27'-6"	24'-11"	23'-5"	21'-7"	
	NI-70	28'-8"	26'-8"	25'-3"	23'-4"	29'-3"	26'-11"	25'-3"	23'-4"	
16"	NI-80	29'-1"	27'-0"	25'-9"	23'-10"	29'-8"	27'-6"	25'-10"	23'-10"	
	NI-90x	29'-11"	27'-10"	26'-6"	24'-10"	30'-6"	28'-5"	26'-11"	24'-10"	

<sup>1.</sup> Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.

Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
 Minimum bearing length shall be 1-3/4 inches for the end bearings.

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

<sup>5.</sup> 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.

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



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







			Ba	are		_	1/2" Gyps	ium Ceiling		
Depth	Series		On Centr	e Spacing		On Centre Spacing				
* *F		12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	15'-1"	14'-2"	13'-9"	N/A	15'-7"	14'-8"	14'-2"	N/A	
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A	
9-1/2"	N1-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A	
<b>-</b> /-	NI-70	17'-1"	16'-1"	15'-6"	N/A	17′-5"	16'-5"	15'-10"	N/A	
	NI-80	17'-3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A	
	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A	
	N1-40x	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"	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A	
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A	
	N1-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A	
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A	
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A	
16"	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A	
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A	

			Mid-Spar	Blocking		Mid-S	pan Blocking an	d 1/2" Gypsum	Ceiling	
Depth	Series		On Centr	e Spacing		On Centre Spacing				
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	16'-8"	15'-3"	14'-5"	N/A	16'-8"	15'-3"	14'-5"	N/A	
	NI-40x	17'-11"	16'-11"	16'-1"	N/A	18'-5"	17'-1"	16'-1"	N/A	
NI-70	NI-60	18'-2"	17'-1"	16'-4"	N/A	18'-7"	17'-4"	16'-4"	N/A	
	NI-70	19'-2"	17'-10"	17'-2"	N/A	19'-7"	18'-3"	17'-7"	N/A	
	NI-80	19'-5"	18'-0"	17'-4"	N/A	19'-10"	18'-5"	17′-8"	N/A	
	NI-20	19'-6"	18'-1"	17'-3"	N/A	19'-11"	18'-3"	17'-3"	N/A	
	NI-40x	21'-0"	19'-6"	18'-8"	N/A	21'-7"	20'-2"	19'-2"	N/A	
	NI-60	21'-4"	19'-9"	18'-11"	N/A	21'-11"	20'-4"	19'-6"	N/A	
11-7/8"	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-5"	20'-5"	N/A	
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-8"	N/A	
	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A	
	NI-40x	23'-7"	21'-11"	20'-11"	N/A	24'-3"	22'-7"	21'-7"	N/A	
	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	
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A	
	N1-90x	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	

<sup>1.</sup> Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.

<sup>2.</sup> Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.

<sup>3.</sup> Minimum bearing length shall be 1-3/4 inches for the end bearings.

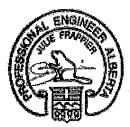
<sup>4.</sup> Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

<sup>5.</sup> 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.

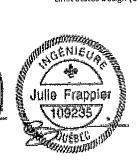
<sup>6.</sup> Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



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







			Ва	ire		1	1/2" Gyps	um Ceiling		
Depth	Series		On Centr	e Spacing		On Centre Spacing				
Берат	501705	12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"	
	NI-40x	17'-0"	16'-0"	15'-5"	14'-9"	17'-5"	16'-5"	15'-10"	15'-2"	
9-1/2"	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-6"	16'-7"	15'-11"	15'-3"	
J 1/1	NI-70	18'-0"	16'-11"	16'-3"	15'-7"	18'-5"	17'-3"	16'-7"	15'-11"	
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	16'-1"	
	NI-20	17'-10"	16'-10"	16'-2"	15'-6"	18'-6"	17'-4"	16'-9"	16'-1"	
NI-40	NI-40x	19'-4"	17'-11"	17'-3"	16'-6"	19'-11"	18'-6"	17'-9"	17'-0"	
	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"	
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'-11"	22'-1"	20'-6"	19'-7"	18'-7"	
	NI-60	21'-10"	201-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"	
14"	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"	
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"	
	N1-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"	
16"	NI-80	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"	
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"	

			Mid-Spar	ı Blocking		Mid-S	pan Blocking an	d 1/2" Gypsum	Ceiling	
Depth	Series		On Centr	e Spacing		On Centre Spacing				
Берил		12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"	
	NI-40x	18'-8"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"	
9-1/2"	NI-60	18'-11"	17'-6"	16'-6"	15'-5"	19'-2"	17'-6"	16'-6"	15'-5"	
3 -/	NI-70	20'-0"	18'-7"	17'-9"	16'-7"	20'-5"	18'-11"	17'-10"	16'-7"	
	N1-80	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10"	
	NI-20	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"	
	NI-40x	21'-10"	20'-4"	19'-4"	17'-8"	22'-5"	20'-6"	19'-4"	17'-8"	
	NI-60	22'-1"	20'-7"	19'-7"	18 <sup>7</sup> -4"	22'-8"	20'-10"	19'-8"	18'-4"	
11-7/8"	NI-70	23'-4"	21'-8"	20'-8"	19'-7"	23'-10"	22'-3"	21'-2"	19'-9"	
	NI-80	23'-7"	21'-11"	20'-11"	19'-9"	24'-1"	22'-6"	21'-5"	20'-0"	
	NI-90x	24'-3"	22'-6"	21'-6"	20'-4"	24'-8"	23'-0"	22'-0"	20'-9"	
	NI-40x	24'-5"	22'-9"	21'-8"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"	
	NI-60	24'-10"	23'-1"	22'-0"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"	
14"	NI-70	26'-1"	24'-3"	23'-2"	21'-10"	26'-8"	24'-11"	23'-9"	22'-4"	
	NI-80	26'-6"	24'-7"	23'-5"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"	
	NI-90x	. 27'-3"	25'-4"	24'-1"	22'-9"	27'-9"	25'-11"	24'-8"	23'-4"	
	NI-60	27'-3"	25'-5"	24'-2"	22'-10"	28'-0"	26'-2"	24'-9"	23'-1"	
	NI-70	28'-8"	26'-8"	25'-4"	23'-11"	29'-3"	27'-4"	26'-1"	24'-8"	
16"	NI-80	29'-1"	27'-0"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"	
	NI-90x	29'-11"	27'-10"	26'-6"	25'-0"	30'-6"	28'-5"	27'-2"	25'-8"	

<sup>1.</sup> Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.

<sup>2.</sup> Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.

<sup>3.</sup> Minimum bearing length shall be 1-3/4 inches for the end bearings.

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

<sup>5.</sup> 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.

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



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







	Series	Bare On Centre Spacing				1/2" Gypsum Ceiling On Centre Spacing			
Depth									
o op ar		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	N1-20	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"	NÍ-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A
J 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'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A
11-7/8"	N1-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	N1-80	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
14"	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
16"	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

	Series	Mid-Span Blocking On Centre Spacing				Mid-Span Blocking and 1/2" Gypsum Ceiling On Centre Spacing			
Depth									
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	15'-7"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A
	NI-40x	17'-9"	16'-1"	15'-1"	N/A	17'-9"	16'-1"	15'-1"	N/A
9-1/2"	NI-60	18'-1"	16'-4"	15'-4"	N/A	18'-1"	16'-4"	15'-4"	N/A
J 1/1	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
11-7/8"	NI-40x	21'-0"	19'-3"	17'-9"	N/A	21'-3"	19'-3"	17'-9"	N/A
	NI-60	21'-4"	19'-8"	18'-5"	N/A	21'-8"	19'-8"	18'-5"	N/A
	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-4"	20'-0"	N/A
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-5"	N/A
	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	NI-40x	23'-7"	21'-5"	19'-6"	N/A	24'-1"	21'-5"	19'-6"	N/A
	NI-60	24'-0"	22'-3"	21'-0"	N/A	24'-8"	22'-5"	21'-0"	N/A
14"	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-9"	N/A
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A
	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
16"	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
	N1-80	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

<sup>1.</sup> 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.

<sup>2.</sup> Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.

<sup>3.</sup> Minimum bearing length shall be 1-3/4 inches for the end bearings.

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

<sup>5.</sup> 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.

<sup>6.</sup> 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.

# Construction Detail Limit States Design

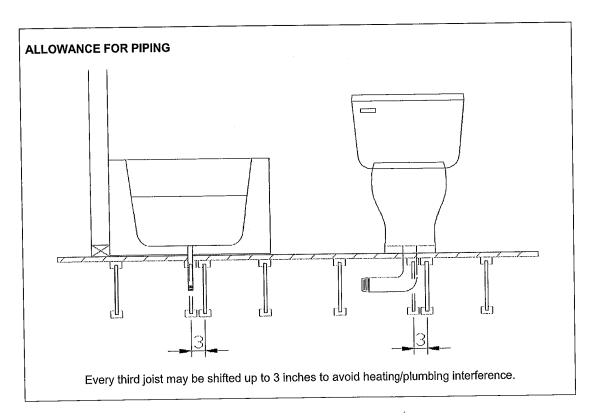


# Allowance for Piping (Installation Notes)

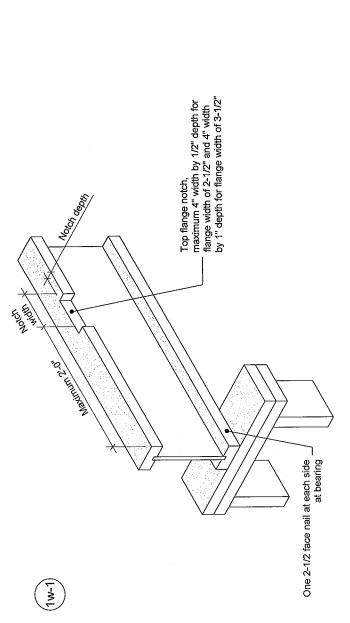
The floor layouts have usually not been checked for heating and/or plumbing interference. On-site adjustment of joists of up to 3 inches is permitted to avoid interferences. When moving a joist, the subfloor thickness shall be checked with code requirements when the joist spacing exceeds 19.2 inches.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

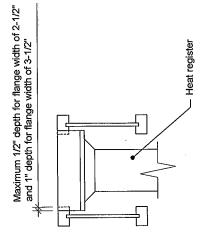
Installation of Nordic I-joists shall be as per *Nordic Joist Installation Guide for Residential Floors*. Refer to Tables 1 and 2 for maximum web hole and duct chase openings, respectively. These tables are based on the I-joists being used at their maximum spans. The minimum distance given may be reduced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

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



Revised April 12, 2012





Notes:

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

1. Blocking required at bearing for a notch on the side of the top flange are 4-inch width by 1/2-inch depth for flange.

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

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

4. For other applications, contact Nordic Structures.

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

All nails shown in the details are assumed to be common nails unless otherwise noted. Nails shalt 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 darity.

	T 514-871-852
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STRUCTURES	nordic.ca

Notch in I-joist for Heat Register	CATEGORY	I-joist - Typical Floor Framing and
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