

		Products		
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	12
J2	12-00-00	9 1/2" NI-40x	1	24
J2DJ	12-00-00	9 1/2" NI-40x	2	4
J3	10-00-00	9 1/2" NI-40x	1	2
J4	8-00-00	9 1/2" NI-40x	1	4
J5	6-00-00	9 1/2" NI-40x	1	8
J6	4-00-00	9 1/2" NI-40x	1	1
J7	2-00-00	9 1/2" NI-40x	1	2
B1	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B2	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B3	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B4	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1 .
B5	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B7	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B6	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

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



FROM PLAN DATED:

BUILDER: BAYVIEW WELLINGTON

SITE: PASSAGE ON THE CANAL

MODEL: TH1E

ELEVATION: A,B

LOT:

CITY: ST CATHERINES

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

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

LOADING:

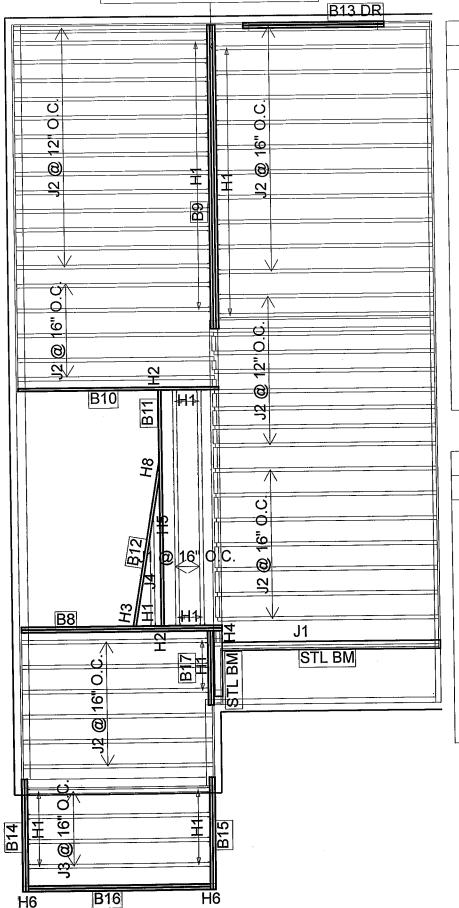
DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 lb/ft TILED AREAS: 20 lb/ft

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 10/24/2018

1st FLOOR

3-PLY 11 7/8" LVL BEAM REQ'D OR BEAM BY OTHER



		Products		
PlotID	Length	Product	Plies	Net Qty
J1	14-00-00	9 1/2" NI-40x	1	3
J2	12-00-00	9 1/2" NI-40x	1	52
J3	10-00-00	9 1/2" NI-40x	1	4
J4	6-00-00	9 1/2" NI-40x	1	1
B11	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B10	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B8	12-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B12	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B16	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B13 DR	8-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B14	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B17	4-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B9	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	3	3

	Connector	Summary
Qty	Manuf	Product
2	H1	IUS2.56/9.5
14	H1	IUS2.56/9.5
27	H1	IUS2.56/9.5
1	H2	HUS1.81/10
1	H2	HUS1.81/10
1	H3	LSSUI25
1	H4	HGUS410
1	H5	LSSUH310
2	H6	HUC410
1	H8	LS90



FROM PLAN DATED:

BUILDER: BAYVIEW WELLINGTON

SITE: PASSAGE ON THE CANAL

MODEL: TH1E

ELEVATION: A,B

LOT:

CITY: ST CATHERINES

SALESMAN: M D DESIGNER: AJ REVISION:

NOTES:

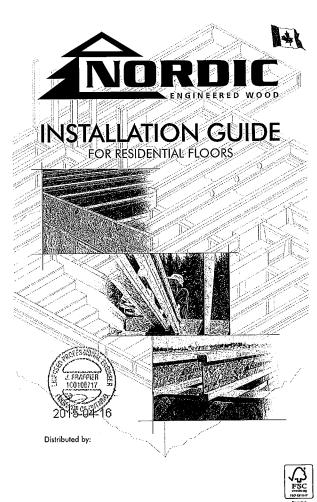
REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND INSTALLATION. **SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2** S.P.F. REQ'D UNDER INTERIOR UNIFORM LOAD BEARING WALLS. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING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

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

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 10/25/2018

2nd FLOOR



SAFETY AND CONSTRUCTION PRECAUTIONS

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



Never stack building materials over unsheathed I-joists. Once sheathed, do no

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

 Broce and noil each i-joist as it is installed, using hangers, blocking panels, rimboard, and/or cross-bridging at joist ands. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required or the interior support. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joist. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.

To prevent t-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 2-1/27 nails fastened to the top surface of each I-joist. Nail the bracing to a leteral restraint at the end of each boy. Lap ends of adjoining bracing over at least two I-joists.

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

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

Install and fully nail permanent sheathing to each I-joist before placing loads on the flaor system. Then, stack building materials over beams or walls only.

5. Never install a damaged 1-joist. Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I, Joiste, failure to follow allowable hole sizes and locations, or failure to use web stifteners when required can result in serious accidents. Follow these installation guidelines carefully.

WEB STIFFENERS

MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS

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

Spans are based on a security floor.

MAXIMUM FLOOR SPANS

2. Spans are based on a composite floor with glued-nailed oriented strand board (OS8) sheathing with a minimum thickness of 56 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CG85-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the used of gypsum and/or a row of blocking at mid-span. Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings. Bearing stiffeners are not required when 1-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.

Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.

7. SI units conversion: 1 inch = 25.4 mm

| 16 | 19.2 | 24 | 14.52 | 13.53 | 13.53 | 13.53 | 13.53 | 13.53 | 13.53 | 13.53 | 13.53 | 13.54 | 14.10 | 14.11 | 16.11 | 16.11 | 15.65 | 15.77 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 16.57 | 15.67 | 17.77 | 18.37 | 17.54 | 18.37 | 17.54 | 18.37 | 17.54 | 18.37 | 17.54 | 18.37 | 17.54 | 18.37 | 17.54 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 18.37 | 17.57 | 17.57 | 18.37 | 17.57 | 17.57 | 17.57 | 18.37 | 17.57 | 17.57 | 17.57 | 18.37 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17.57 | 17. 11-7/8 20-9* 20-6* 20-11* 22-1* 22-5* 22-10* 20'-5' 21'-7' 21'-11' 22'-5' 22'-7' 22'-3' 23'-6' 23'-11' 24'-5' 24'-8' 25'-0" 24'-7" 26'-0" 26'-5" 26'-11" 27'-3" 22'-0" 21'-10'

CONCENTRATED LOAD

END BEARING (Bearing stiffener)

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

over all interior supports under load-bearing walls or when floor joists are

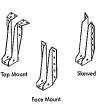
4. Web stiffeners are required when the sides of the hangers do not laterally brace the top flange of the 1-joist.

I-JOIST HANGERS

Hangers shown illustrate the three

2. All nailing must meet the hanger

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



CCMC EVALUATION REPORT 13032-R



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

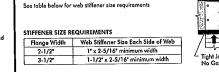
(1e)

11)

(IP)

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

**A load stiffener is required at localions where a factored concentrated load greater than 2,370 lbs is applied to the top Blange between supports, or in tha case of a contilever, anywhere between the cantilever tip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permit by the code. The gap between the stiffener and the flange is at the bottom. SI units conversion: 1 inch = 25.4 mn



(19)

attachment per detail 1b

2-1/2" nails at

1/8"-1/4" Gap

1/8"-1/4" Gap

(4) 2-1/2" nails,
3" nails required for 1-joists with 3-1/2" flonge width

No Gan

FIGURE 2
WEB STIFFENER INSTALLATION DETAILS

NORDIC I-JOIST SERIES 21001 MSR 19501 MSR 21001 MSR 24001 MSR NPG lumbe

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

Nordic Engineered Wood I-joists use only linger-jointed back sprice in their flonges, ensuring consistent quality, superior stranger.

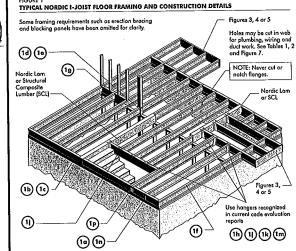
(1h) Backer block (use if hanger load exceeds 360 lbs)
Before installing a backer block to a double I-joist, drive three
additional 3 mails through the webs and filler block where the
backer block will fin. Clinch. Install backer light to top flange.
Use treetwe 3* nails, clinched when possible. Maximum factored

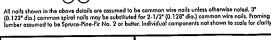
INSTALLING NORDIC I-JOISTS

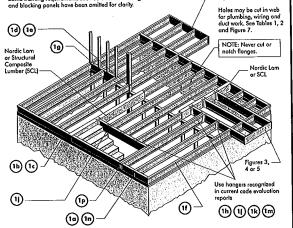
- 1. Before laying out floor system components, verify that 1-joist flange widths match hanger widths. If not, contribution
- 2. Except for cutting to length, 1-joist flanges should never be cut, drilled, or notched. 3. Install 1-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment. Ligists 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 intermediate bearings
- 6. When using hangers, seat 1-joists firmly in hanger bottoms to minimize settlement.
- 7. Leave a 1/16-inch gap between the 1-joist end and a header.

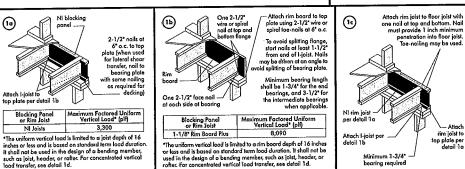
(III)

- 8. Concentrated loads greater than fhose that can normally be expected in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include track lighting fixtures, outlio equipment and security cameros. Never suspend unusual or heavy loads from the I-joist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the I-joist webs.
- 9. Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with
- 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 loads through the floor system to the wall or foundation below.
- 12. Due to shrinkage, common framing lumber set on edge may never be used as blocking or rim boards. I-joist blocking panels or other engineered wood products such as rim board must be cut to fit between the I-joists, and an I-joist-compatible depth selected. 13. Provide permanent loteral support of the bottom flange of all Lipists at interior supports of multiple-span joists. Similarly, support the bottom flange of all confilerered Lipists at the end support next to the confilerer extension. In the completed structure, the gyssum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, temporary bracing or struks must be used.
- 14. If square-edge panels are used, edges must be supported between I-joists with 2x4 blocking. Glue panels to blocking to minimize squeeks. Blocking is not required under structural finish flooring, such as wood strip flooring, or if a separate underlayment layer is installed.
- 15. Noil spacing: Space noils installed to the flonge's top face in accordance with the applicable building code require approved building plans.



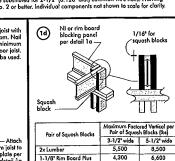




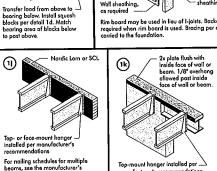


100102717 multiple span jossem

2015-04-16



rovide lateral bracing per detail 1a, 1b, or 1c



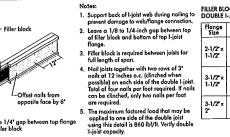
Use single 1-joist for loads up to 3,300 plf, double 1-joists for loads up to 6,600 plf (filler block no

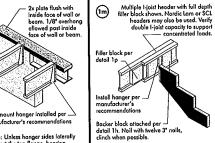
Rim board may be used in lieu of I-joists. Backer is no



Woll sheathing,

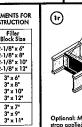
Note: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used. Note: Unless honger sides laterally support the top flange, bearing stiffeners shall be used.

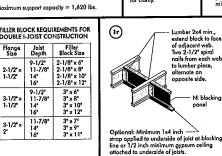


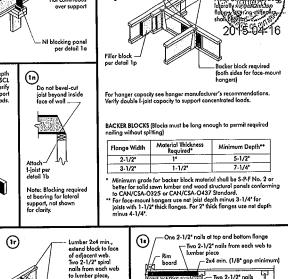


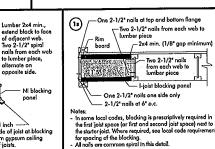
siding attachment

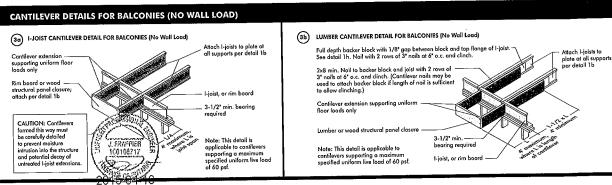


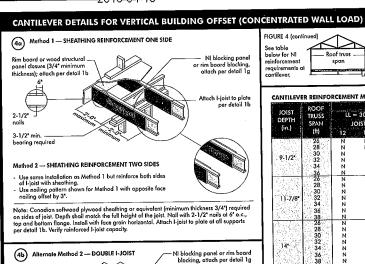












Attach I-joists to top plate at all supports per detail 1b, 3-1/2* min. bearing required Block I-joist together with filler blocks for the full tength of the reinforcement. > For I-joist flonge widths greater than 3 inches place an additional row of 3' nails along the centreline of the reinforcing panel from each side. Clinch when possible.

(5a) SHEATHING REINFORCEMENT

(5c) SET-BACK CONNECTION

Vertical solid sown blocks
(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.

Notes:

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

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

For hip roofs with the jack 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 trusses

| 13"-0" rnoximum
| Jack trusses
| truss | Span | 2-0" Roof truss ---span T 2'-0"

JOIST DEPTH	TRUSS SPAN		= 30 psf, l OIST SPAC					DL = 15 CING (in.)			= 50 psf, l DIST SPAC	CING (in	
(in.)	(ft)	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
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25/4/11	26 28	N	N	N	1 1	N	Ñ	í	2	Ň	1 .	i	X
14.48	30	N	N	N	i i	l ii	N	1	2	N	1	2	X
11-7/8"	30 32	N.	N	ï	- i i	l ii	N	1	2	N	1.1	2	X
11-//0	34	N	N	. i	2	N	1	1	Х	N	1	2	X
30%	36	Ň	N	í	2	N	1	2	Х	N	1	2	X
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	34	N	N	N	ļ	N	N	1	2	I N	1	i	5
经验的	36	N	N	N	1	N	N.	- ;	2	l N	ij	i	X
975/44	38	Й	N	N	ļ	2 2	N .	;	2	l n	i	ۇ	Ŷ
	40 26	N	N	N	i_	N	<u>N</u>	- N	Ň	N	·N	- N	ì
9.00	26 28	N	N	N N	N N	N	N	N	· î	N N	N	Ñ	1.
发展设置	30	N	N	N .	N	l n	N	· N	i	N	N	N	1
A STATE	30	N	N	N	N	l Ñ.	N	N	i	N	N	1	1
16"	34	N	N	N	Ñ	N	N	N	1	N	N	1	2
	36	N	N	Ñ	ï	N ·	N	N	1	N	N	1	2
性(類)。	38	N	N	Ñ	i	N	N	N	1	N	N	1	2
MARK N	40		N	N	3	N	И	j.	2	l N	Ņ	ļ.	2 X
(20 Visit)	42	7 7	N	N	1_	N	N		2	N			^

i = 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 doubte 1-joist.
X = Tity a deeper joist or closer spacing.
2. Maximum design lood shall bes: 15 panel of dood load, 5-pa 11 loot of 100 and 80 plf will load. Wall load is based on 15 and 100 plf will load. Wall load is based on 15 and 100 plf will load. Wall load is based on 15 and 100 plf will load. Wall load on 40 on 100 plf will load will load on 5 and 100 plf will load. Wall load is based on 15 and 15 and

Roof truss — [2'-0" maxim

maximum cantilever

∽5" maximum

CANTILEVER REINFORCEMENT METHODS ALLOWED

- opanings spaced less than 6:0° c.c., addi-tional joists beneath the opening's cripple studs may be required. 3. Toble applies to joist 12° to 24° c.c. that meet the floor span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of I/480. Use
- ridge beam, the Root Irus span column above is equivalent to the distance between the supporting well and the ridge beam. When the root is framed viring a ridge board, the Roof Trus Spon is equivalent to the distance between the supporting wolls as if a 5. Conflexered joist supporting girder trusses or roof beams may require additional seinforcing.

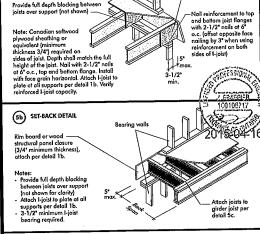
For hip roofs with the tack trusses running parallel to the contilevered floor joists, the 1-joist reinforcement

requirements for a span of 26 ft. shall be permitted to

BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD) Roof truses Girder Roof trus spon rousinum Lock truses 2-0rousinum contiliever 5moximum contiliever 5moximum FIGURE 5 (continued)

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

Hanger may be used in lieu of solid sown block



JOIST	ROOF	LL = 30 psf, D	= 15 nd			(UNFACT DL = 15		11 =	50 psf	DL = 15	psf
DEPTH	TRUSS	ICIST SPACE				CING (in.)				CING (in.)	
(in.)	SPAN (ft)		19.2 24	12	16	19.2	24	12	16	19.2	24
9-1/2*	26 28 30 32 34 36	1 X 1 X 2 X 2 X 2 X	X X X X X X X X X X X X X	2 2 2 2 X X	X X X X	X X X X	X X X X	X X X X	X X X X	X X X X	X X X X
11.7/84	26 28 30 32 34 36	N 2 N 2 N 2 N 2 N 2 N 2 N 2 N 2 N 2 N 2	X X X X X X X X X X X X X X X X X X X	1 1 1 2 2 2	X X X X X	X X X X X	X X X X	1 2 2 2 2 X	X X X X	X X X X	X X X X X
14"	38 26 28 30 32 34 36 36 38 40	N 1 N 2 N 2 N 2 N 2	2 X X X X X X X X X X X X X X X X	N 1 1 1 1 1 2	2 2 2 X X X X	X X X X X X	X X X X X	1 1 2 2 2 2 2 2	X X X X X	X X X X X	X X X X X X
16"	26 28 30 32 34 36 38 40 40	N 1 N 1 N 1 N 2 N 2 N 2 N 2	2 X 2 X 2 X 2 X X X X X X X	N N N 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 2 2 2 2 2 2 X X	X X X X X X X	X X X X X	N 1 1 1 1 2 2	2 2 X X X X X	X X X X X X	X X X X X X X
1 = Ni r pan 2 = Ni r pan X = Try c 2. Maximur dead loo wall look	reinforcement reinforced with a deeper joist on design food of, 55 psf floor d, Wall lood is to	3/4" wood structural only. 3/4" wood structural es, or double I-joist. or closer spacing. shall be: 15 psf roof total load, and 80 plf	For larger op openings spa additional joi stude may be 3. Table applies the floor spa load of 40 a live load di 12° o.c. requ	aced less the sists beneath a required. a to joists 12 in requirements af and dead aflection lim	an 6'-0" ox h the openion 2" to 24" ox ients for a d d load of 1; nit of L/480	c., ing's cripple .c. that meet design live 5 psf, and D. Use	ridg abo the t Wh the dist trus	ge beam, the core is equived supporting ten the roof Truss lance between its used.	he Roof Tru ralent to the g wall and t f is framed Span is equent the sup- poists suppo-	enstruction uses Span co- uses Span co- te distance the ridge b dusing a ric quivalent to pporting was pring girden additional	olumn between beam. dge boar o the rolls as if

ridge beam, the Root Truss Spon column bovo is equivolent to the distonce between the supporting well and the ridge beam. When the root is framed using a ridge board, the Root Truss Spon is equivolent to the distonce between the supporting wells as if a truss is used.

5. Conflevered joints supporting gidder trustee roof beams may require additional reinforcing. additional joists beneath the opening's cripple additional pists oriented in wolvening 2 crypte studs may be required.

3. Table applies to joist 12" to 24" o.c. that meet the floor span requirements for a design live load of 40 pst and dead load of 15 pst, and a tive load deflection limit of U/480. Use 12" o.c. requirements for lesser spacing.

WEB HOLES

RILLES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- The distance between the inside edge of the support and the centreline of any hole or duct chose opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- 2. 1-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.
- winenerer pussaler, instructions and an applying a duct chase opening that can be cut into an I-joist web shall equal the dear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 linch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joist flange.
- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- 3/4 or me alameter of the maximum round hale permitted of final location.

 6. Where more than one hole is necessory, the distance between adjacent hole edges shall exceed vice 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 dust chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tobles 1 and 2, respectively.

 A breaking the description of the compliance with the requirements of the compliance with the co
- A knockout is not considered a hole, may be utilized anywhere it occurs, and
 may be ignored for purposes of calculating minimum distances between hole
 and/or duct chase openings.
- 8. Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to
- A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it
 meets the requirements of rule number 6 above.
- All holes and duct chase openings shall be cut in a workmon-like manner 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

FIELD-CUT HOLE LOCATOR

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.

length or hole diameter, whichever is

diameter

Maintain minimum 1/8' space between top and bottom flange — all duct chase openings and hole:

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

Joist	Joist Series		////			ice iro			e or ar le dian	ieter (adjustme
Depth	Series	2.5	3	4	5 .	.6	6-1/4	7.5	8	8-5/8_	9	10 1	0-3/4	10.2	2.13	2-3/4	13.6°
7 . 4	NI-20	0.7	1'-6"	2'-10"	4'-3'	5'-8'	6,-0,	***	***	•••			***		•••	***	14-9
137 35	NI-40x	0-7	1.6	3'-0"	4-4	9.0	6'-4"			***	***	• • •		***			14:11
9-1/2	NI-60	1'-3'	2.6	4'-0"	5'-4"	7.0	7'-5"	•••	***	***	•••	•••		•••			15.7
100	NI-70	2.0	3'-4"	4'-9"	6-3	8'-0"	8'-4"	***	***		***		•••				15.9
14. 19.71	N/-80	2:3	3'-6'	5'-0"	6.6	8'-2"	8-8					***					15.6
1141 1141	NI-20	07.7	0'-8'	1.0	2.4	3'.6"	4'-0"	5'-0'	66.	7.9	***		***		***	•••	16.6
10.7	NI-40x	0.7	0'-8"	1431	2'-6"	4'-0'	4'-4"	5'-5"	7:0	8.4	•••	***	***	***			16.9
2.50	NI-60	0.7	1'-8'	3.0	4'-3"	5'-9'	6:-0.	7'-3"	8-10	10'-0"	•••	***		•••		***	17'5'
11-7/8	NI-70	11.31	2.6	4'-0'	5'-4"	6-9	7.2	8'-4"	10-0	111-2"	***	***		•••	***		17-7
11.70	NI-80	11.6"	2'-10"	41.21	5'-6"	7.0	7-5*	8-6	10-3	11'-4"	***	•••		***	***		17-11
ACCEPTAGE AND AC	NI-90	0.7	0'-8"	1-5	3'-2'	4'-10"	5'-4"	6-9	8-9*	10-2	•••	•••	***	***	•••		18.0
1.1 16 11	NI-90x	0.7	0-8	0.9	2-5*	4'-4"	4.9	6-3	•••		***	***		•••	•••		17:11
A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	NI-40x	0:7	0.8	0'-8"	1'0'	2'-4"	2'-9'	3.9	5'-2"	6'-0"	6'-6"	8-3	10-2		•••	•••	18.2
3 3 7 7	NI-60	0'-7°	0-81	1'-8"	3'-0"	4'-3"	4'-8'	5'-8"	7-2	8.0	8.8	10'-4'	11'-9"	***	***		
C 12:152:1	NI-70	0.8	11-101	3.0	4'-5"	5'-10'	6.5	7-3	8-9	9-9	10-4	12-0	13-5	***			19-2 19-5
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	•••			
** A 1.54	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
4. 3. 3. 3. 3.	NI-90x	0.7	0.8	0'-8'	2.0	3-9*	4'-2'	5'-5"	7-3	8'-5"	9-2	•••			***	101.01	20.0
	NI-60	0.7	0'.B'	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:	19.10
	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'	20-10
16	NI-80	0.7	11.31	2-6	3-10	5-3	5'-6"	6'-6"	8'-0'	9-0	9.5	11:-0	12'-3"	12'-9'	14'-5'	16:0	21-2
10.	NI-90	0.7	0.8	0.8	14.9*	3'-3"	3'-8"	4'-9"	6'-5"	7-5*	8-0	9-10	11'-3"	11'-9'	13.9	15'-4'	21'-6'
	NI-90	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'-10

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

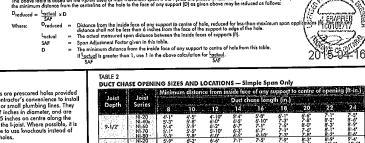
Knockouts are prescored holes provided for the contrador's convenience to install electrical or small plumbing lines. They are 1-1/2 inches in diameter, and are spaced 15 inches on centre along the length of the 1-joist. Where possible, it is preferable to use knockouts instead of field-out holes.

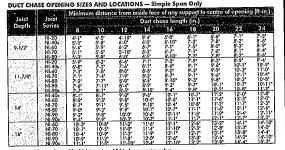
For reclangular hales, avoid over-cutting the comers, as this can cause unnecessary stress concentrations. Slightly rounding the comers is recommended. Starting the reclangular hale by the relating a 1-inch diameter hale in each of the four corners and then making the cuts before the hale is another good method to minimize domog to the 1-joil.

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

Holes in webs should be cut with a

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 (se the minimum distance from the centreline of the hole to the face of any support (D) as given above may be reduced as follows:





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

Dud chose opening location distance is measured from inside face of supports to centre of opening.

The above table is based on simple-span joids only for other opplications, centact your local distributor.

Distances are based on uniformly loaded floor joids that must be span requirements for a design his lead of 40 part and dead Good of 15 pgt, and a line load deletion limit of LIAQB. For other applications, centred your local distributor.

INSTALLING THE GLUED FLOOR SYSTEM

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.

- 1. Wipe any mud, dirt, water, or ice from I-joist flanges before gluing.
- 2. Snop a chalk line across the L-joists four feet in from the wall for panel edge alignment and as a boundary for spreading glue.
- Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.

Duct chase opening (see Table 2 for minimum distance from bearing)

- 4. Lay the first panel with tangue side to the wall, and noil in place. This protects the tangue of the next panel from damage when tapped into place with a block and sledgehammer. Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single 1-joist. Apply
 glue in a winding pattern on wide areas, such as with double 1-joists.
- 6. Apply two lines of glue on 1-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 laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) than used on i-joist flanges.
- 8. Tap the second row of panels into place, using a block to protect groove edges.
- Stagger end joints in each succeeding row of panels. A 1/8-inch space between all end joints and 1/8-inch at all edges, including T&G edges, is recommended. (Use a spacer tool or an 2-1/2' common nail to assure accurate and consistent spacing.)
- 1.01. Complete all nailing of each panel before give sets. Check the manufacturer's recommendations for cure time. (Warm weather accelerates give setting). Use 2" ring- or screw-shank nails for panels 3/4-inch thick or lests, and 2-1/2" ring- or screw-shank rails for hicker panels. Space nails per his tolds below. Closer nail spacing may be required by some codes, or for diaphragm construction. The finished dack can be walked on right away and will carry construction loads without damage to the alue band.

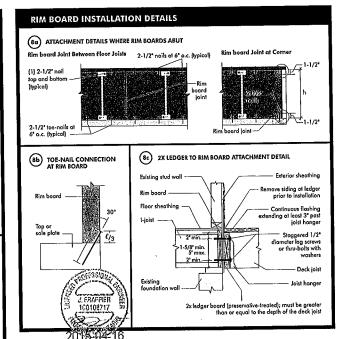
FASTENERS FOR SHEATHING AND SUBFLOOR

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

- 1. Fasteners of sheathing and subflooring shall conform to the above table.
- Stoples 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.
- Use only adhesives conforming to CAN/CGS8-71.26 Standard, Adhesives for Field-Gluing Plywood to Lumber Framing for Floor System, applied in accordance with the manufacturer's recommendations. If OSB panels with sealed surfaces and edges are to be used, use only solvent-based glues; check with

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

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





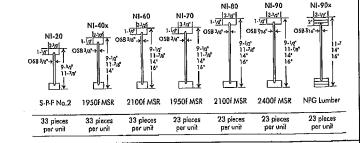


NI-90x

Nf-90



FSC ha nack of web's forest



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

WEB HOLE SPECIFICATIONS

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

 2. I-joist top and bottom flonges must NEVER be cut, notched, or alterwise 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 duat chose opening that
- can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joist flange.

LOCATION OF CIRCULAR HOLES IN JOIST WEBS

- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the moximum round hole permitted at that location.
- the diameter of the maximum round hole permitted at that location.

 6. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed vice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the largest 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.

 7. A knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of colculating minimum distances between holes and/or duct chose openings.

 8. Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.

- 9. A 1-1/2 inch hole or smaller can be placed onywhere in the web provided that it meets the requirements of rule number 6 above.
 10. All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as
- illustrated in Figure 7.

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

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

DUCT CHASE OPENING SIZES AND LOCATIONS

Simple	or Multip	le Sp	an foi	Deac	Load	ls up	to 15	psf a	nd Liv	e Loa	ds up	to 40) psf					Simple S	pan Only				`					
			٨	Ninimun	n Distar	nce from	n Insid	e Face	of Any	Suppor	t to Ce	ntre of	Hole (ft	- in.)				Joist	Joist	Minim	um distan					intre of a	pening (ft - in.)
Joist	Joist						Rou	nd Hol	e Diam	ster (in.	.)							Depth Serie	Series				Duct Cho	ise Lengi	m (m.)			
Depth	Series	2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4	,			8	10	12	14	16	18	20	22	24 7'-5'
9-1/2"	NI-20 NI-40x NI-60 NI-70 NI-80	0'-7" 0'-7" 1'-3" 2'-0" 2'-3"	1'-6" 1'-6" 2'-6" 3'-4" 3'-6"	2'-10" 3'-0" 4'-0" 4'-9" 5'-0"	4'-3' 4'-4' 5'-4' 6'-3' 6'-6'	5'-8" 6'-0" 7'-0" 8-0" 8-2"	6'-0" 6'-4" 7'-5" 8'-4" 8'-8"											9-1/2*	NI-20 NI-40x NI-60 NI-70 NI-80	4'-1' 5'-3' 5'-4' 5'-1' 5'-3'	4'-5" 5'-8" 5'-9" 5'-5" 5'-8"	4'-10' 6'-0' 6'-2" 5'-10' 6'-0"	5'-4" 6'-5" 6'-7" 6'-3" 6'-5"	5'-8' 6'-10" 7'-1' 6'-7' 6'-10" 7'-5"	6'-1" 7'-3" 7'-5" 7'-1" 7'-3"	6'-6" 7'-8" 8'-0" 7'-6" 7'-8"	7'-1" 6'-2" 8'-3" 8'-1" 8'-2"	8'-6' 8'-9' 8'-4' 8'-6'
11-7/8	NI-20 NI-40x NI-60 NI-70 NI-80 NI-90 NI-90x	0'-7" 0'-7" 0'-7' 1'-3" 1'-6" 0'-7"	0'-8' 0'-6' 1'-6' 2'-6' 2'-10' 0'-8' 0'-8	1'-5° 0'-9°	2'-4" 2'-8" 4'-3" 5'-4" 5'-6" 3'-2"	3'-8' 4'-0' 5'-9' 6'-9' 7'-0' 4'-10' 4'-4'	4'-9"	5'-0' 5'-5' 7'-3' 8'-4' 8'-6' 6'-9'	6'-6' 7'-0' 8'-10' 10'-0' 10'-3' 8'-9'	7'-9" 8'-4" 10'-0" 11'-2" 11'-4" 10'-2"							İ	11-7/8*	NI-20 NI-40x NI-60 NI-70 NI-80 NI-90 NI-90x	5-9° 6'-8' 7'-3" 7'-1' 7'-2' 7'-6' 7'-7"	6.2' 7'.2' 7'.8' 7'.4' 7'.7' 7'.11' 8'.1'	5'-6' 7'-6' 8'-0' 7'-9' 8'-0' 8'-4' 8'-5'	8'-1" 8'-6" 8'-5" 8'-5" 8'-9" 8'-10"	8'-6' 9'-0' 8'-7' 8'-10' 9'-2' 9'-4'	9'-1' 9'-3' 9'-3' 9'-7' 9'-8'	9'-6' 9'-9' 9'-6' 9'-8' 10'-1' 10'-2'	10'-1' 10'-3' 10'-1' 10'-2' 10'-7' 10'-8'	10'-9' 11'-0' 10'-4' 10'-8' 10'-11' 11'-2'
14"	NI-40x NI-60 NI-70 NI-80 NI-90 NI-90x	0'-7" 0'-7" 0'-8" 0'-10" 0'-7"	0'-8" 0'-8" 1'-10' 2'-0" 0'-8"	0'-8" 1'-8" 3'-0" 3'-4" 0'-10" 0'-8"	1'-0' 3'-0' 4'-5' 4'-9' 2'-5' 2'-0'	2'-4" 4'-3" 5'-10' 6'-2" 4'-0" 3'-9'	2'-9' 4'-8' 6'-2' 6'-5' 4'-5'	3'.9' 5'.8' 7'-3' 7'-6' 5'-9'	5-2* 7-2* 8-9* 9-0* 7-5* 7-3*	6'-0' 8'-0' 9'-9' 10'-0' 8'-8'		12-0 12-4	13'-5' 13'-9' 12'-11'					14*	NI-40x NI-60 NI-70 NI-80 NI-90 NI-90x	8'-9' 8'-7" 9'-0' 9'-2" 9'-4"	9'-3' 9'-1' 9'-3' 9'-8' 9'-9'	9'-8" 9'-5" 9'-9" 10'-0" 10'-3"	10'-1" 9'-10" 10'-1" 10'-6" 10'-7"	10-6* 10-4* 10-7* 10-11*	11'-1' 10'-8' 11'-1' 11'-5' 11'-7'	11'-6" 11'-2' 11'-6' 11'-9' 12'-1"	13'-3' 11'-7' 12'-1' 12'-4' 12'-7'	13'-0' 12'-3' 12'-6' 12'-11' 13'-2'
16°	NI-60 NI-70 NI-80 NI-90 NI-90x	0'-7" 0'-7" 0'-7" 0'-7" 0'-7"	0'-8" 1'-0" 1'-3" 0'-8"	0'-8" 2'-3" 2-6 0'-8" 0'-9"	1'-6' 3'-6' 3'-10' 1'-9' 2'-0'	2'-10' 4'-10'	3'-2' 5'-3' 5'-6' 3'-8' 4'-0'	4-2 6-3 6-6 4-9 5-0	5'-6' 7'-8' 8'-0' 6'-5' 6'-9'	6'-4' 8'-6' 9'-0' 7'-5' 7'-9'	7'-0' 9'-2' 9'-5' 8'-0' 8'-4'	10'-8 11'-0 9'-10	' 12'-3' ' 11'-3'	1254 1259 1159	2" 12'-2 1" 14'-0 2" 14'-5 2" 13'-9 3"	15'-6' 16'-0"		16"	NI-60 NI-70 NI-80 NI-90 NI-90*	10'-3" 10'-1" 10'-4' 10'-9' 11'-1"	10'-8' 10'-5' 10'-9' 11'-2' 11'-5'	11'-0' 11'-0' 11'-8' 11'-10	11'-6" 11'-4" 11'-9" 12'-0"	12'-1" 12'-6"	12'-6' 12'-3* 12'-7' 13'-0'	12'-8" 13'-1"	13'-3' 13'-8' 14'-2' 14'-4'	14-10 14-0 14-4 14-10 15-2
4. The ob	Above table may be used for I-joist spacing of 24 inches on centre or less. Hole location distance is measured from inside face of supports to centre of hole. Distances in this chart are based on uniformly loaded joists. The above table is based on the I-joist being used at their maximum spans. The minimum distance as given above may be reduced for sharter spans; contact your local distributor.											2. Duct ch 3. The abo 4. Distanc	able may be ase opening we table is b es are based 40 psf and we table is i	lacation ased on s lon unifo dead load ased on	distance i: imple-spa irmly load I of 15 ps the I-loists	s measur n joists on ed floor j f, and a l being us	ed from it ally. For oil oists that ive load c sed at thei	nside tace ner applic meet the leflection ir maximu	e of supportions, contions, contions	ports to a contact yo quireme L/480. as, The m	ints for a	design liv						

- 1. Above table may be used for I-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 joists only. For other applications, contact your local distributor.
 4. 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 t480.
 5. The above table is based on the I-joists being used of their maximum spans. The minimum distance are given above may be reduced for shorter spans; contact your local distributor.

(1k) or beam. 1/8" overhang allowed past inside face of wall or beam. NOTE: Unless bange sides laterally support the top flange, bearing

FILLER BLOCK REQUIREMENTS
FOR DOUBLE 1-JOIST

-1/6" to 1/4" gap between top flange and filler block

- 2x plate flush with inside face of wall

Offset pails from

installed per manufacturer

Blocking Panel or Rim Joist

NI Joists

NI blocking

NI or rim board blocking

panel per detail 1a

l-joist to top plate per detail 1 b

Flance Width

2-1/2*

3-1/2"

(bl)

(Im) Multiple I-joist header with full depth filler block shown. Nordic Lam or SCL header may also be used. Verify double I-join Backer block attached per detail 1h. Nail with twelve 3" — Filler nails, clinch when possible. black pe Install hanger per Maximum support capacity = 1,620 lbs.

(1b)

One 2-1/2'-

face nail at

each side at bearing

hanaer -

Filler block

Vertical Load* (plf)

3,300

Maximum Factored

Vertical Load per Pair of Squash Blocks (ibs)

5,500 8,500

4,300 6,600

5-1/2' wide

3-1/2" wide

Provide lateral bracing per detail 1a or 1b

5-1/2

7-1/4

1. Support back of I-joist web during nailing to prevent

somoga to webynanga connection.

Leava a 1/8 to 1/4-inch gop between top of filler block and bottom of top 1-foist flange.

Filler block is required between joists for full length

4. Nail joists together with two rows of 3" nails of 12 inches

o.c. (clinched when possible) on each side of the double L-joist. Total of four nails per foot required. If nails can be

clinched, only two nails per fool are required.

The maximum factored load that may be applied to one side of the double joist using this detail is 860 lbf/ff.

*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, nail to bearing plate with same nailing as required for decking)

-1/8" Rim Board Plus

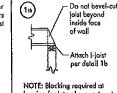
Backer block (use if hanger load exceeds 360 lbs). Before installing a backer block to a double i-joist, drive three additional 3" nails through the webs and filler block where the backer block will fit. Clinch. Install backer tight to top flange. Use twelve 3" nails, clinched

* Minimum grade for backer black 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 bangers use net joist depth minus 3-1/4* for joists with 1-1/2* thick flanges.
For 2* thick flanges use net depth minus 4-1/4*.

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

Material Thickness Required*



Filler Block Size

2-1/8" x 6"

2-1/8" x 10" 2-1/8" x 12"

from above to bearing below

Match bearing

area of block

below to post

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

bearing for lateral support, not shown for clarity.

NI blacking ognel OPTIONAL: Minimum 1x4 inch strap applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joists. All nails shown in -One 2-1/2" noil at top and bottom flance the above details are assumed to be common wire nails

Maximum Factored Uniform

8.090

*The uniform vertical load is limited to a rim board depth of 16 inches or less and is based o

standard term load durotion. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

Load bearing wall above shall align vertically

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

Placking required over all interior supports under

load-bearing walls or when floor joists are not

Structural Composite Lumber (SCL)

For nailing schedules for multiple

beams, see the manufacturer's

installed per manufacturer's

umber 2v4 min , extend block to face

of adjacent web. Two 2-1/2" spirol nails

from each web to lumber piece, alternate

continuous over support

-NI blocking panel per detail 1a

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

1-1/8" Rim Board Plus

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

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

2-1/2° nails

to top plate ~

Double I-joist heade

sides laterally support the top flonge, bearing

- Rocker block required

(both sides for face-

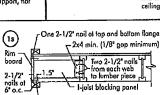
Attach rim board to top plate using 2-1/2" wire or spiral toe-nails of 6" o.c.

(11)

To avoid splitting flange, start nails at least 1-1/2° from end of I-joist

Nails may be driven at an anale to avoid splitting of bearing plate

Vertical Load* (plf)



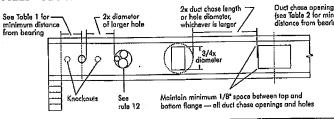
One 2-1/2" nail one side only In same local codes, blocking is prescriptively required in the first joist space (or first and second joist space) next to the starter joist. Where required, see local code

noted, 3° (0,122" dla. common spiral nails may be substituted for 2-1/2" (0.128" dia.) Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better: Individual components not show to scale for clarity.

PIGURE 7

TABLE 1

FIELD-CUT HOLE LOCATOR





Knockouts are prescared 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 1-joist. Where

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

Holes in webs should be cut with a sharp saw.

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

WEB STIFFENERS

- 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 Construction Guide (C101). The gap between the stiffener and the flange is a
- A bearing stiffener is required when the I-joist is supported in a hange and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.
- A load stiffener is required at locations where a loctored 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 confilever fip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

FIGURE 2

WEB STIFFENER INSTALLATION DETAILS

14° 16°

Net Depth

7-1/2*

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

11-7/8" 3'x 7" 14" 3'x 9" 16" 3'x 11"

Flange Size

2-1/2" x

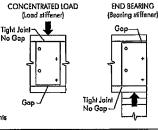
3-1/2° x

1-1/2"

3-1/2° x

1-1/2*





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

STIFFENER SIZE REQUIREMENTS

SAFETY AND CONSTRUCTION PRECAUTIONS



Do not walk on I-joists until fully fastened and braced, o



Never stack building materials over unsheathed Lipists. Once rer unsheathed Hoists. Onc heathed, do not over-stress

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

- Brace and nail each 1-joist as it is installed, using hangers, blacking panels, rim board, and/or cross-bridging at joist ends.
 When 1-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blacking will be required at the interior support.
- pe required at the interior support.

 2. When the building is completed, the floor sheathing will provide lateral support for the top flunges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to provent I-joist rollover.
- sheating is appried, including the shear of page 1. The shear of page 2. - 3. For contilevered t-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging. 4. Install and fully notilipermanent sheathing to each injoist before placing loads on the floor system. Then, stock building moterials over beams or walls only.
- 5. Never install a domoged l-joist.

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

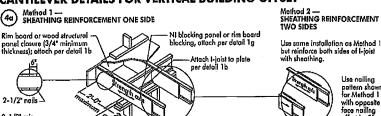


PRODUCT WARRANTY

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

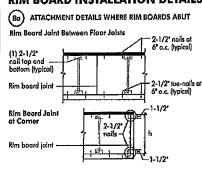
Furthermore, Chantiers Chibongaman warrants that our products, hen utilized in accordance with our handling and installation hutruction will meet or exceed our specifications for the lifetime of the structure.

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

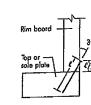


NOTE: Canadian softward plywood sheathing or equivalent (minimum thickness 3/4*) required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2* nails at 6* o.c., top and bottom flange. Install with face grain horizontal. Atlach I-joist to plate at all supports per detail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

RIM BOARD INSTALLATION DETAILS



8b TOE-NAIL CONNECTION



NORDIC **STRUCTURES**

COMPANY J9 1ST FLOOR Oct. 24, 2018 09:29 **PROJECT** J1 1ST FLOOR J11ST FLOOR

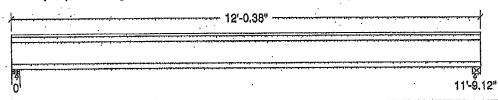
Design Check Calculation Sheet

Nordio Sizer - Canada 7.1

Loads:

	Load	l'ype	Distribution	i.	Location Start	[ft] End	Magnitude Start E	Unit
1				tern	OLAEL	THE STATE OF		***************************************
١	Loadl	Dead	Full Area	1			20,00	psf
l	Load2	Live	Full Area				40.00	psf

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



Unfactored: Dead Live Factored:	157 314		157 314
Total	666	AUFESSION4	666
Bearing: Resistance Joist Support Des ratio	1865 3981	ENFOK E	1869
Joist Support	0.36 0.17	the board amount of the second	0.36
Load case Length	#2 2-3/8	The state of the s	#2 2-5/8 1-3/4
Min req'd Stiffener	1-3/4 No	The state of the s	ДО
KD KB support	1.00		1.00
fcp sup Kzcp sup	769 1.09		-

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

Nordic 9-1/2" NI-40x Floor Joist @ 16" c.c.
Supports: 1 - Lumber Wall, No.1/No.2; 2 - Steel Beam, W;
Total length: 12'-0.38"; Clear span: 11'-7.37"; 5/8" nailed and glued OSB sheathing This section PASSES the design code check.

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

		فيتل كتميين والمراوات والمستوم فيتم المراوية والمراوية والمراوية والمراوية والمراوية والمستواحة والمستواحة والم		the state of the second second and second se
Criterion	Analysis Value	Design Value .	Unit	Analysis/Design
Shear	Vf = 666	Vr = 1895	Lbs	Vf/Vr = 0.35
Moment (+)	Mf ≈ 1959	Mr = 4824	lbs-ft	Mf/Mr ∞ 0.41
Perm. Defl'n	0.05 = < L/999	0.39 = L/360	in	0.13
Live Defl'n	0.10 = < L/999	0.29 = L/480	in	0,35
Total Defl'n	0.16 = L/907	0.59 = L/240	in	0.26
Bare Defl'n	0.12 = < L/999	0.39 = L/360	i.n	0.31
Vibration	Lmax = 11'-9.1	Lv = 15' - 4.4	ft	0.77
1 1	0.000	= 0.060	in	0.42
Defl'n	⇒ V.025	7 0.000	7.11	A THE PERSON ASSESSMENT OF THE PERSON ASSESSME

DWE NO. TAM 2382-18 JUNE STRUCTURAL

J1 1ST FLOOR

Nordic Sizer -- Canada 7.1

Page 2

Additional	Data:								"	
FACTORS:	f/E	КĎ	KH	KZ	KL	KT	KS	KN	LC#	
Vr	1895	1.00	1.00	٠ -				₩	#2	
Mr+	4824		1.00	-	1.000		·	. -	#2	
EI	218.1 m	illion		,		~			#2	•
CRITICAL LC	AD COMBI	NATIONS	! .							
Shear	; LC #2	= 1.25	D + 1.5I				A			
Moment (+)	; LC #2	= 1,25	D + 1.5I	1						
Deflection	n: LC #1	≈ 1.QD	(perma	nent)						
1	LC #2	≖ 1,QD	+ 1.QL	(live)		•			
	LC #2	= 1.0D	+ 1.0L	(tota	1)					
ı	LC #2	± 1.0D	+ 1.0L	(bare	joist)					
Bearing	: Suppo	rt 1 - L	C #2 - 1	L.25D +	1.5L		•			
	oggus	rt 2 - L	C #2 ≃ :	L.25D +	1.5L	•	•		•	
Load Type	s: D=dea	d W≕win	d S=sno	9≖H w¢	arth, grou	ındwate	r E≕ear	thquake		•
	L=liv	e (use, oc	cupancy	Ls≔l	ive(stora	age, equ	ipment)	f=fire		
All Load		ions (LC	s) are	listed	in the Ar	nalysis	output			
CALCULATION	ЭNS:									•
Deflection	n: Elef	f == 2	68e06 1	o-in2	K = 4.946	∍06 lbs				
"Live" de	eflection	- Defle	ction f	com all	. non-dead	i loads	(live,	wind, s	now)	
	~	.)		·				CONF	OHMS TO OB	U-2012

Design Notes:

- 1. WoodWorks analysis and design are in accordance with the 2010 National Building Code of Canada (NBC), Division B, Part 4, and the CSA Q86-09 Engineering Design in Wood standard, which includes Update No.1
 2. Please verify that the default deflection limits are appropriate for your application.
 3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
 4. Nordic I-joists are listed in CCMC evaluation report 13032-R.

- 5. Joists shall be laterally supported at supports and continuously along the compression edge
- 6. The design assumptions and specifications have been provided by the client. Any damages treating incorrect information, specifications, and/or designs furnished, and the correctness or applications. responsibility. This analysis does not constitute a record of the structural integrity of the build assumptions made. Nordic Structures is responsible only for the structural adequacy of this design criteria and loadings shown.

DYOND, YAM 23026 STRUCTURAL COMPONENT ONLY





PASSED

1ST FLOOR FRAMING\Flush Beams\B1(i1384)

Dry. 1 span | No cant.

October 25, 2018 16:20:07

Bulld 6475

Job name:

Address:

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

BC CALC® Member Report

Customer: Code reports:

CCMC 12472-R

File name: TH1E.mmdl

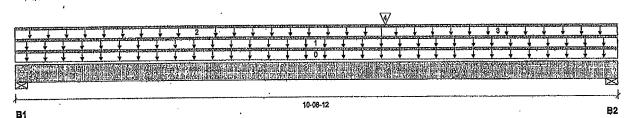
Description: 1ST FLOOR FRAMING\Flush Beams\B1(i1384)

Wind

Specifier:

Designer:

Company:



Total Horizontal Product Length = 10-08-12

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 4-3/8"	295/0	202/0
B2. 4-3/8"	433 / 0	273 / 0

Loa	ad Summary		•	•			Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L.	00-00-00	10-08-12	Top		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-08-12	Top	11	5			n/a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	06-06-02	Тор	6	3			n\a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	06-06-02	10-08-12	Тор	. 9	5			n/a
4	B6((1352)	Conc. Pt. (ibs)	, L	06-07-00	06-07-00	Top	535	276			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3,342 ft-lbs	23,220 ft-lbs	14.4%	7	06-07-00
End Shear	928 lbs	11,571 lbs	8.0%	1	09-06-14
Total Load Deflection	L/999 (0.073")	n\a	n\a	4	05-08-01
Live Load Deflection	L/999 (0.045")	n\a	n\a	5	05-08-01
Max Defl.	0.073"	n\a	n\a	4	05-08-01
Span / Depth	12.8				

Demand

695 lbs 991.lbs

	Demand/ Resistance Support	Demand/ Resistance Member	Material
_	8.5%	3.7%	Unspecified
	12 1%	5.3%	Unspecified

Notes

B1

B2

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

4-3/8" x 3-1/2"

4-3/8" x 3-1/2"

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

Calculations assume member is fully braced.

Bearing Supports Dim. (LxW)

Wall/Plate

Wall/Plate

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

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.

BYONO, TAN 2303,

STRUCTURAL COMPONENT ONLY

T-1902172

AOFESSION



Passed

1ST FLOOR FRAMING\Flush Beams\B1(I1384)

BC CALC® Member Report

CCMC 12472-R

Dry | 1 span | No cant.

October 25, 2018 16:20:07

Bulld 6475

Job name:

Address:

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

Customer:

Code reports:

TH1E.mmdl File name:

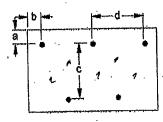
1ST FLOOR FRAMING\Flush Beams\B1(i1384) Description:

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = # b minimum = 3"

T

d=20 8"

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

Connectors are: ' Nails

ARDOX SPIRAL



Disclosure

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

T. 1902172(4)



PASSED

October 25, 2018 16:20:07

1ST FLOOR FRAMING\Flush Beams\B2(i1395)

BC CALC® Member Report

Build 6475

Customer:

Job name:

Address:

Code reports:

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

CCMC 12472-R

Dry | 1 span | No cant.

File name: Description:

TH1E.mmdl

1ST FLOOR FRAMING\Flush Beams\B2(i1395)

Specifier:

Designer:

Company:

	, , , , , ,	
	<u> </u>	, + + +
10-09-14		Do
B1		54

Total Horizontal Product Length = 10-09-14

Reaction Sur	nmary (Down / U)	olift) (lbs)		•		
Bearing	Live	Dead	Snow	Wind	· · · · · · · · · · · · · · · · · · ·	
B1, 5-1/2"	208/0	16170				•
B2, 4-3/8"	371/0	244/0				

ا م	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Ştart	End	Loc.	1.00	0.65	1.00	1,16	(A.C
0	Self-Weight	Unf. Lin. (lb/ft)	L.	00-00-00	10-09-14	Top	,	10			00-00-00
1 .	FC2 Floor Material	Unf. Lin. (lb/ft)	L,	06-07-04	10-09-14	Top	14	7			n\a
2	B7(l1359)	Conc. Pt. (lbs)	L.	06-08-02	06-08-02	Top	519	271			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Çase	Location
Pos. Moment	2,952 ft-lbs	20,563 ft-lbs	14.4%	1	06-08-02
End Shear	813 lbs	11,571 lbs	7.0%	1	09-08-00
Total Load Deflection	L/999 (0,062")	n\a	n\a	4	05-09-03
Live Load Deflection	L/999 (0,038")	n\a	n\a	5	05-09-03
Max Defl.	0.062!"	n\a	n\a	4	05-09-03
Span / Depth	12.8				

				Demand/ Resistance	Demand/ Resistance		
Bearing	g Supports	Dim. (LxW)	Demand	Support	Member	Material	****
B1	Wall/Plate	5-1/2" x 3-1/2".	512 lbs	5.0%	2.2%	Unspecified	
B2	Wall/Plate	4-3/8" x 3-1/2"	862 lbs	10.5%	4.6%	Unspecified	



Notes

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

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

Calculations assume unbraced length of Top: 06-01-12, Bottom: 06-01-12.

Resistance Factor phi has been applied to all presented results per CSA 086. CONFORMS TO OBC 2012

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

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.

STRUCTURAL COMPONENT ONLY

T- 1902173



PASSED

1ST FLOOR FRAMING\Flush Beams\B2(I1395)

Dry | 1 span | No cant.

October 25, 2018 16:20:07

BC CALC® Member Report

Bulld 6475

Job name:

Address:

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

Customer:

Code reports:

CCMC 12472-R

File name:

TH1E,mmd

Description:

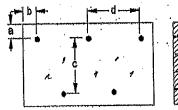
1ST FLOOR FRAMING\Flush Beams\B2(i1395)

Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member



a minimum = #" b minimum = 3"

ARDOX SPIRAL



Disclosure

Use of the Bolse Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of 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.

DWG NO. TAM 2384-184 STRUCTURAL COMPONENT ONLY

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

T-1902173(1)



PASSED

October 25, 2018 16:20:07

1ST FLOOR FRAMING\Flush Beams\B3(i1287)

BC CALC® Member Report

Bulld 6476

Job name:

Address:

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

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

File name: TH1E.mmdl

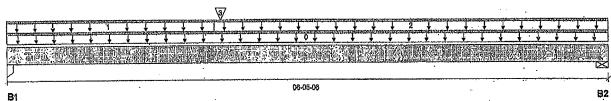
Description: 1ST FLOOR FRAMING\Flush Beams\B3(i1287)

Wind

Specifier:

Designer:

Company:



Total Horizontal Product Length = 06-05-08

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 1-3/4"	404 / 0	222 / 0
DO 4 2/9"	30970	173 / 0

Load Summary		d Summary	* .					Live	Dead	Snow	Wind	Tributary
	Tag		Load Type	Ref.	Start	End	Loc.	1,00	0.65	1.00	1.15	
•	Ö	Self-Weight	Ųnf. Lin. (lb/ft)	L	00-00-00	06-05-06	Top		5			00-00-00
	1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-02-12	Top	19	9			n\a
	2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	02-02-12	06-05-06	Top	40	20			n\a
	3	B6((1352)	Cono. Pt. (lbs)	L	02-03-10	02-03-10	Top	502	259			∘y, n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Casa	Location "
Pos. Moment	1,837 ft-lbs	11,610 ft-lbs	15.8%	1	02-03-10
End Shear	840 lbs	5,785 lbs	14.5%	1	00-11-04
Total Load Deflection	L/999 (0.029")	n\a	n\a	4	02-11-08
Live Load Deflection	L/999 (0.019")	n\a	n\a	5	02-11-08
Max Defi.	0.029"	n\a	n\a	4	02-11-08
Span / Depth	7.7	• .			

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Column	1-3/4" x 1-3/4"	883 lbs	35.5%	23.6%	Unspecified
B2	Wall/Plate	4-3/8" x 1-3/4"	680 lbs	16.6%	7.3%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

CONFORMS TO OBG 2012

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9



Disclosure

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

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

STRUCTURAL COMPONENT ONLY

T-190174



PASSED

October 25, 2018 16:20:07

1ST FLOOR FRAMING\Flush Beams\B4(i1371)

BC CALC® Member Report

Build 8476

Job name:

Customer:

Code reports:

Address:

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

CCMC 12472-R

Dry | 1 span | No cant.

File name: TH1E.mmdi

Description: 1ST FLOOR FRAMING\Flush Beams\B4(i1371)

Wind

Specifier:

Designer:

Company:

06-05-08 **B**2

Total Horizontal Product Length = 06-05-06 Snow

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

B1, 1-3/4" 506/0 276/0 183 / 0 B2, 4-3/8" 325/0

10		d Summary			•			Live	Dead	Snow	Wind	Tributary
		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	06-05-06	Top	-34-11-1-1-4-14-14-14-14-1	5		mit-Anti-ont	00-00-00
	1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-02-12	Top	17	8			n\a
	ò	FC2 Floor Material	Unf. Lin. (lb/ft)	L	02-02-12	06-05-06	Top	20	10			n\a
	3	B7(1359)	Conc. Pt. (lbs)	L	02-03-10	02-03-10	Top	708 -	366			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2,335 ft-lbs	11,610 ft-lbs	20.1%	1	02-03-10
End Shear	1,064 lbs	5,785 lbs	18.4%	1	00-11-04
Total Load Deflection	L/999 (0,035").	n\a	n\a	4	02-11-08
Live Load Deflection	L/999 (0.023")	n\a	n\a	5	02-11-08 -
Max Defl.	0.035"	n\a	n\a	4	02-11-08
Span / Depth	7.7				•

			:		Domand/ Resistance	Demand/ Resistance	
	Bearing	Supports	Dlm. (LxW)	Demand	Support	Member	Material
1	B 1	Column	1-3/4" x 1-3/4"	1,103 lbs	44.4%	29.5%	Unspecified
	B2	Wall/Plate	4-3/8" x 1-3/4"	715 lbs	17.5%	7.7%	Unspecified

Notes

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

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

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



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DWO NU . TAN 2386-184 STRUCTURAL COMPONENT ONLY

T-190175



PASSED

October 25, 2018 16:20:07

1ST FLOOR FRAMING\Flush Beams\B5(i1367)

BC CALC® Member Report

Bulld 6475

Job name:

Address:

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

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

File name: TH1E.mmdl

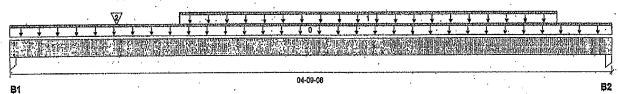
Description:

1ST FLOOR FRAMING\Flush Beams\B5(i1367)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 04-09-08 Snow

Reaction Summary (Down / Uplift) (ibs)

Bearing B1, 3-1/2 Doad 137 / 0 253/0 B2, 3-1/2" 246/0 135 / 0

Lo	Load Summary					Live	Dead	Snow	Wind	Tributary				
Tag			Load Type		Ref.	Start	End	Log.		1,00	0.66	1.00	1.15	
0	Self-Weight		Unf. Lin. (lb/ft)	*****	Ľ,	00-00-00	04-09-08	Top		,	5		landa titl restrant at a	00-00-00
1	Smoothed Load	٠.	Unf. Lin. (lb/ft)		L·	01-04-04	04-04-04	Top		126	64	•	. ,	n\a
2	J4(I1393)		Conc. Pt. (lbs)		L.	00-10-04	00-10-04	Top		118	69			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	646 ft-lbs	11,610 ft-lbs	5.6%	1	02-10-04
End Shear	483 lbs	5,785 lbs	8.4%	1	03-08-08
Total Load Deflection	L/999 (0.006")	n\a	n\a	4	02-05-00
Live Load Deflection	L/999 (0.004")	h\a	n\a	5	02-05-00
Max Daff,	0.006"	n\a	n\a	4	02-05-00
Snan / Danth	5.5				

Bearing	Supports	Dim, (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
	Column	3-1/2" x 1-3/4"	551 lbs	11.1%	7.4%	Unspecified	
R2	Column	3-1/2" x 1-3/4"	538 lbs	10.8%	7.2%	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

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

DWOHO, TAM 238248H STRUCTURAL COMPONENT DNLY

T. 190176



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLOOR FRAMING\Flush Beams\B6(i1352)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

October 25, 2018 16:20:07

Build 6475

Job name:

Address:

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

File name:

Description:

TH1E.mmd 1ST FLOOR FRAMING\Flush Beams\B6(I1352)

Specifier:

Designer:

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

Company:

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	trial and a second seco		
VIII WHEN IN		2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	
		03-04-08	
n.		03-04-05	B2

B1

Total Horizontal Product Length = 03-04-08

Snow

Reaction Summary (Down / Uplift) (lbs)

500/0 258 / 0 B2, 2" 537 / 0 277 / 0

Lo	ad Summary				94 9	1 -2	Live	Dead	Snow 1.00	Wind 1.15	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1,00	1,10	The state of the s
G	Self-Welght	Unf. Lin. (lb/ft)	L	00-00-00	03-04-08	Top		5			00-00-00
1	User Load	Unf. Lin. (lb/ft)	L	00-00-00	03-04-08	Top	240	120			n\a
'n	J5(\1285)	Conc. Pt. (lbs)	Ĺ	01-00-12	01-00-12	Top	87	43			n\a
4	• •	Conc. Pt. (lbs)	1	02-00-12	02-00-12	Τοα	81	41			n\a
3	J5(I1347)		F4	•							nla.
4	J5(i1340)	Conc. Pt. (lbs)	L.	03-00-12	03-00-12	Top	59	30			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	853 ft-lbs	11,610 ft-lbs	7.3%	1	01-08-10
End Shear	579 lbs	6.785 lbs	10.0%	1	00-11-08
Total Load Deflection	L/999 (0.004")	n\a	n\a	4	01-08-04
Live Load Deflection	L/999 (0.003")	n\a	n\a	5	01-08-04
Max Defl.	0.004"	n\a	n\a	4	01-08-04
Span / Depth	4.0				

Bearing S	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 H	anger	2" x 1-3/4"	1,073 lbs	n/a	25.1%	HUS1.81/10
	anger	2" x 1-3/4"	1,151 lbs	n/a	27.0%	HUS1.81/10

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

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

Notes

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2016 and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

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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®,

DWE NO . FAM 2308-18H STRUCTURAL COMPONENT ONLY



Disclosure



PASSED

October 25, 2018 16:20:07

1ST FLOOR FRAMING\Flush Beams\B7(i1359)

BC CALC® Member Report

CCMC 12472-R

Bulld 6475

Job name: Address:

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

Customer: Code reports: Dry | 1 span | No cant.

File name:

TH1E.mmdl

Wind

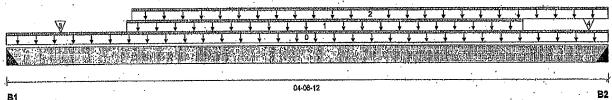
Description:

1ST FLOOR FRAMING\Flush Beams\B7(i1359)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 04-06-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 2"	516/0	270/0
B2, 2"	711/0	367 / 0

Los	id Summary						Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1,00	0.65	1.00	1.15	
Ö	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-06-12	Тор		5	.,	1 11-4-4 9	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-11-00	03-11-00	Top	. 81	41			n\a
2	User Load	Unf. Lin. (lb/ft)	L	00-11-08	04-06-12	Тор	240-	120			n\a
3	J5(11279)	Conc. Pt. (lbs)	L	00-05-00	00-05-00	Top	69	35			n\a
4	J5(l1307)	Conc. Pt. (lbs)	L	04-05-00	04-05-00	Top	- 50	25			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1,544 ft-lbs	11,610 ft-lbs	13,3%	1	02-05-00
End Shear	1,006 lbs	5,785 lbs	17.4%	.1	00-11-08
Total Load Deflection	1,/999 (0,015")	n\a	n/a	4	02-03-08
Live Load Deflection	L/999 (0.01")	n\a	n/a	5 '	02-03-08
Max Defl.	0.015"	n\a	n\a	4	02-03-08
Span / Depth	5.5				•

Bearir	ng Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1	Hanger	2" × 1-3/4"	1,112 lbs	n\a	26.0%	HUS1.81/10	,
B2	Hanger	2" x 1-3/4"	1,526 lbs	n\a	35.7%	HU\$1.81/10	

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

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

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

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2016 and CSA Q86.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CUNFURMS TO OBG 2012

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

BHE NO. FAM-2369-181 STRUCTURAL COMPONENT DALY



Disclosure

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

T- BOUR



BC CALC® Member Report



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0.3100 SP

Passed

2ND FLOOR FRAMING\Dropped Beams\B13 DR(i1308)

Dry | 1 span | No cant.

October 25, 2018 16:20:07

Bulld 6476

Job name:

Address:

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

Customer:

Code reports:

CCMC 12472-R

File name:

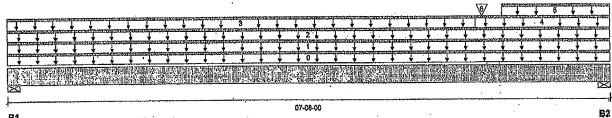
TH1E.mmdl

Description: 2ND FLOOR FRAMING\Dro...d Beams\B13 DR(i1308)

Specifier:

Designer:

Company:



B1

Total Horizontal Product Length = 07-08-00

Reaction Su	ımmary (Down / Up	lift) (lbs)			
Bearing	Live	Dead	Snow	Wind	
B1, 4"	278/0	508 / 0	258/0		
BO AB	98670	1.215 / 0	1.394 / 0		

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
Ö	Self-Weight	Unf, Lin. (lb/ft)	L.	00-00-00	07-08-00	Top	- 	10			00-00-00
1	J2(11430)	Unf. Lin. (lb/ft)	L	00-00-00	07-08-00	Тор	27	16			n\a
ż	R1(11267)	Unf. Lin. (lb/ft)	L.	00-00-00	07-08-00	Top	4	4			n\a
3	R1(11267)	Unf. Lin. (lb/ft)	L.	00-00-00	05-11-08	Top.		61			n\a
4	R1(I1267)	Unf. Lin. (lb/ft)	L	05-11-08	07-08-00	Top		81			n\a
5	R1(11267)	Unf. Lin, (lb/ft)	L	06-03-08	07-08-00	Top	198	180	318		n\a
6	R1(11267)	Conc. Pt. (lbs)	Ĺ.	06-00-08	06-00-08	Тор	757	745·	1,215		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	.Case	Location
Pos. Moment	4,880 ft-lbs	23,220 ft-lbs	21,0%	13	06-00-08
End Shear	3,394 lbs	11,571 lbs	29.3%	13 .	06-06-08
Total Load Deflection	L/999 (0.058")	n\a	n\a	35	04-02-11
Live Load Deflection	L/999 (0,035")	. n\a	n\a	51	04-03-09
Max Defl.	0.058"	n\a	n\a	35	04-02-11
Span / Depth	9.0				

Bearin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1	Wall/Plate	4" x 3-1/2"	1,311 lbs	11.5%	7.7%	Unspecified	
B2	Wall/Plate	4" x 3-1/2"	4,597 lbs	40.4%	26.9%	Unspecified	7 15

DWG NO . FAM Z 390 STRUCTURAL COMPONENT ONLY

T-1902179





PASSED

October 25, 2018 16:20:07

2ND FLOOR FRAMING\Dropped Beams\B13 DR(i1308)

BC CALO® Member Report

Build 6475

Job name:

Address:

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

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

File name: TH1E.mmdl

2ND FLOOR FRAMING\Dro...d Beams\B13 DR(i1308) Description:

Specifier:

Designer:

Company:

Notes

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

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

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

CONFORMS TO OBG 2012

BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86. Unbalanced snow loads determined from building geometry were used in selected product's

verification.

Design based on Dry Service Condition.

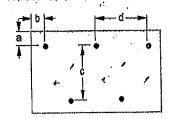
Importance Factor: Normal Part code: Part 9

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

please consult a technical representative or professional of Record.

Member has no side loads.

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 1-1/2" d = 200

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

Connectors are:

ARDOX SPIRAL

PAOFESBONA

Disclosure ····

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

STRUCTURAL

COMPONENT ONLY

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

T-1902179(1)



PASSED

October 25, 2018 16:20:07

2ND FLOOR FRAMING\Flush Beams\B10(i1423)

BC CALC® Member Report

Build 6475

Job name:

Address:

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

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

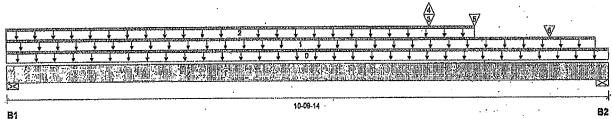
TH1E.mmdl File name:

Description: 2ND FLOOR FRAMING\Flush Beams\B10(i1423)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 10-09-14 Snow

Reaction Summary (Down / Uplift) (lbs)

	Live	Dead	
Bearing B1, 4-3/8" -	405./ 5	238 / 0	
B2 5-1/2"	1.211 / 13	657 / 0	

10	ad Summary	•				٠	Live	Dead	Snow	Wind	Tributary	
Tag		Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15		
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-09-14	Тор		5		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	00-00-00	
1	FC3 Floor Material	Unf. Lin. (lb/ft)	· L	00-00-00	10-07-02	Top	11	6			n\a	
2	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-05-02	Top	3	1			n\a	
3	B11(i1356)	Conc. Pt. (lbs)	. r	07-07-04	07-07-04	Top	916	493			n\a	
4	B11(11356)	Conc. Pt. (ibs)	L	07-07-04	07-07-04	Top	-18	13 a 1			n\a	
5	J1(l1314)	Conc. Pt. (lbs)	L	08-05-02	08-05-02	Top	280	140		•	n\a	
6	J1(l1320)	Conc. Pt. (lbs)	L	09-09-02	09-09-02	Top	274	137	,	124 C	TESS, ON	u.
		•	Factored	Dem	and/				4	ES TO	Marin Marin Marin	ď

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	5,558 ft-lbs	11,610 ft-lbs	47.9%	1	07-07-04
End Shear	2,467 lbs	5,785 lbs	42.6%	1	09-06-14
Total Load Deflection	L/522 (0.233")	n\a	45.9%	6	05-10-01
Live Load Deflection	L/813 (0.149")	n\a	44.3%	8	05-11-04
Max Defi.	0.233"	n\a	n\a	6	05-10-01
Span / Depth	12.8				•

	Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	Use of the Bolse Cascade Software is subject to the terms of the End User License Agreement (EULA).
	B1	Wall/Plate	4-3/8" x 1-3/4"	906 lbs	22.1%	9.7%	Unspecified	Completeness and accuracy of input
	B2	Wall/Plate	5-1/2" x 1-3/4"	2,637 lbs	51.3%	22.5%	Unspecified	must be reviewed and verified by a
								qualified engineer or other appropriate expert to assure its adequacy, prior to
	Notes			•				anyone relying on such output as
٠	Design me	ets Code mir	ilmum (L/240) Tota	I load deflect	on criteria.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		evidence of suitability for a particular application. The output here is based on
	Design me	eets Code mir	ılmum (L/360). Live	load deflection	n criteria.			building code-accepted design
	Calculatio	ns assume m	ember is fully brac	ed.		CON	IFORMS TÓ OBC.	2 n 1 2 properties and analysis methods.
	Resistanc	e Factor phi h	ias been applied to	all presented	results per C	SA Q86.		Installation of Boise Cascade
	20 0410	ا ما ساسينس ــ ده	hanad au Conndini	a I Imit States	Doglan of no	A NECC 201	5 and CSA ORS	engineered wood products must be in

Notes

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

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.

Disclosure

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

BWB NO . TAM 239/-18H STRUCTURAL COMPONENT ONLY

-T-190260

Fage 17



PASSED

October 25, 2018 16:20:07

2ND FLOOR FRAMING\Flush Beams\B11(i1356)

BC CALC® Member Report

Build 6475

Job name:

Customer:

Address:

Code reports:

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

CCMC 12472-R

Dry | 1 span | No cant.

File name:

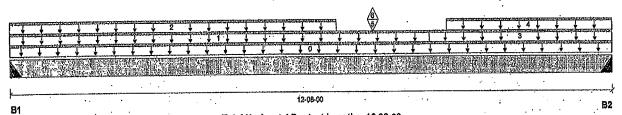
TH1E.mmdi

Description: 2ND FLOOR FRAMING/Flush Beams/B11(i1356)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 12-08-00

Reaction Summary (Down / Uplift) (lbs)
Bearing Live Dead Snow Bearing B1, 2" 303 / 12 18570 B2, 2" 921 / 18 496 / 0

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
	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	12-08-00	Top	,	5			00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-10-00	Тор	16	8			n\a
,	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	06-10-07	Top	8	4			n\a
9	FC3 Floor Material	Unf, Lin. (lb/ft)	L	08-10-00	12-08-00	Top	18	9			n\a
1	STAIR	Unf. Lin. (lb/ft)	L	09-02-05	12-08-00	Top	240	120	•		n\a
т В	B12(1370)	Conc. Pt. (lbs)	Ĺ	07-07-10	07-07-10	Top	111	63			n\a
8	B12((1370)	Conc. Pt. (lbs)	Ĺ	07-07-10	07-07-10	Тор	-30				n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3,465 ft-lbs	11,610 ft-lbs	29.8%	1	07-07-10
End Shear	1.470 lbs	5,785 lbs	25.4%	1	11-08-08
Total Load Deflection	L/573 (0:261")	n\a	41.9%	6	06-10-07
Live Load Deflection	L/902 (0.166")	n\a	39.9%	8	06-10-07
Max Defl.	0.261"	n\a	n\a	6	06-10-07
Snon / Denth	15.7				

Rearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	2" x 1-3/4"	685 lbs	n∖a	16.1%	HUS1.81/10
B2	Hanger	2" x 1-3/4"	2,001 lbs	n\a	46.9%	HUS1.81/10

Cautions

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

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

DWG NO. TAM 2392-1814 STRUCTURAL COMPONENT ONLY

T-1302181



Passed

2ND FLOOR FRAMING\Flush Beams\B11(i1356)

BC CALC® Member Report

Build 6475

Dry | 1 span | No cant.

October 25, 2018 16:20:07

Job name: Address:

File name: Description:

TH1E.mmdl 2ND FLOOR FRAMING\Flush Beams\B11(i1356)

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

Specifier:

Designer:

Code reports:

CCMC 12472-R

Company:

Notes

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

CONFORMS TO OBC 2012

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

T-13028160



PASSED

October 25, 2018 16:20:07

2ND FLOOR FRAMING\Flush Beams\B12(i1370)

BC CALC® Member Report

Build 6476

Job name:

Customer:

Code reports:

Address:

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

CCMC 12472-R

Dry | 1 span | No cant.

File name:

TH1E,mmdl

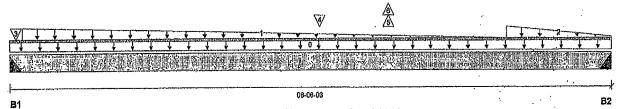
Description:

2ND FLOOR FRAMING\Flush Beams\B12(i1370)

Specifier:

Designer: AJ

Company:



Total Horizontal Product Length = 08-06-03 Snow

Reaction Summary (Down / Uplift) (ibs)

73/0 B1, 2" 122 / 16 100/28 56/0 B2, 2"

1.0	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag		Load Type	Ref.	Start	End	Loc.	1.00	0.65	1,00	1.15	
0	Self-Welght	Unf. Lin, (lb/ft)	L	00-00-00	08-06-03	Тор	1.2-2-1111.	5			00-00-00
1	FC3 Floor Material	Trapezoidal (lb/ft)	L	00-02-03		Тор	23	12			n\a
•		, , , ,		•	06-11-08		0	Q			
2	FC3 Floor Material	Trapezoldal (lb/ft)	L	07-00-05		Top	8	4			n\a
			:		08-06-03		.1	1			
3	FC3 Floor Material	Conc. Pt. (lbs)	Ļ	00-01-02	00-01-02	Top	4	2	•		n\a
4	J4(i1334)	Conc. Pt. (lbs)	L	04-04-11	04-04-11	Тор	108	54			n/a
5	J4(i1334)	Conc. Pt. (lbs)	L	05-04-04	05-04-04	Top	24	-10			, n\a
6	.14((1334)	Conc. Pt. (lbs)	L	05-04-04	05-04-04	Top	-44				n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	740 ft-lbs	11,610 ft-lbs	6.4%	1.	04-04-11
Neg. Moment	-2 ft-lbs	-11,610 ft-lbs	n\a	4	05-04-04
End Shear	262 lbs	5,785 lbs	4.5%	1	00-11-08
Total Load Deflection	L/999 (0.023")	n\a	n\a	6	04-03-06
Live Load Deflection	L/999 (0.015")	п\а	n\a	-8	04-03-06
Max Defl.	0.023"	n\a	n\a	6	04-03-06
Span / Depth	1.0.5				

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 Hanger	2" x 1-3/4"	275 lbs	n\a	6,4%	LSSUI25
B2 Hanger	2" x 1-3/4"	220 lbs	n\a	5,1%	LS90

Cautions

Header for the hanger LSSUI25 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model LSSUI25 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Header for the hanger LS90 at B2 is a Single 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model LS90 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

> DWB NO. PAN 2393. STRUCTURAL COMPONENT ONLY

-T- Grisz



Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLOOR FRAMING\Flush Beams\B12(i1370)

Passed

BC CALC® Member Report

Dry | 1 span | No cant.

October 25, 2018 16:20:07

Build 6475

Job name:

Customer: Çode reports:

Address:

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

CCMC 12472-R

TH1E.mmdl File name:

Description:

2ND FLOOR FRAMING\Flush Beams\B12(i1370)

Specifier:

Designer: AJ

Company:

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: 00-05-05, Bottom: 00-05-05.

Hanger Manufacturer: Unassigned

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9



Disclosure 300

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

STRUCTURAL COMPONENT CHLY

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

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PASSED

October 25, 2018 16:20:07

2ND FLOOR FRAMING\Flush Beams\B14(i1346)

BC CALC® Member Report

Bulld 6476

Job name:

Customer:

Code reports:

Address:

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

CCMC 12472-R

Dry | 1 span | No cant.

File name: TH1E,mmdl

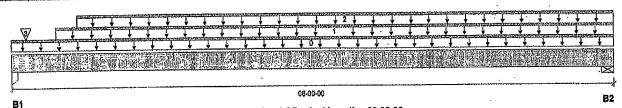
Wind

2ND FLOOR FRAMING\Flush Beams\B14(I1346) Description:

Specifier:

Designer:

Company:



Total Horizontal Product Length = 06-00-00

ant (Down / Haliff) (lha)

Reaction outlin	INIA (mossili o		_	
Bearing	Live	Dead	Snow	~~~~
B1, 3-1/2"	972 / 0	1,286 / 0	694 / 0	
B2 5-1/2"	879 / 0	815 / 0	453 / 0	

	ا م	d Summary			•			Live	Dead	Snow	Wind	Tributary
	Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1,00	1.15	
-	<u> </u>	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-00-00	Top		10	,		00-00-00
	4	E12((1076)	Unf, Lin. (lb/ft)	L	00-05-08	06-00-00	Top	77	151	147		n\a
	2	Smoothed Load	Unf, Lin. (lb/ft)	L	00-08-00	06-00-00	Top	209	104			n\a
	~	שוווייינומי ביליפה	Conc. Pt. (lbs)	ī	00-01-13	00-01-13	Top	303	651	332		n\a
	3	•	Collor Le (ing)	h	ΔάΔ I tO	00 01-10	. 75	000	+ - .			

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3,298 ft-lbs	23,220 ft-lbs	14.2%	1	02-08-00
End Shear	2,131 lbs	11,671 lbs	18.4%	1	01-01-00
Total Load Deflection	L/999 (0.026")	n\a	n\a	35	02-11-00
Live Load Deflection	L/999 (0.016")	n\a	ri \ a	51	02-11-00
Max Defi.	0.026"	n\a	n\a	35	02-11-00
Span / Depth	6.8				

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Column	3-1/2" x 3-1/2"	3,760 lbs	37.8%	25.2%	Unspecified
B2	Wall/Plate	5-1/2" x 3-1/2"	2,791 lbs	27.1%	11.9%	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 O8600NF0NM\$ TO DBC 2012

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

please consult a technical representative or professional of Record.

DWG NO . TAM 239% STRUCTURAL COMPONENT DNLY

-T. 190263



PASSED

October 25, 2018 16:20:07

2ND FLOOR FRAMING\Flush Beams\B14(i1346)

BC CALC® Member Report

Bulld 6475

Job name:

Address:

Customer: Code reports:

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

CCMC 12472-R

Dry | 1 span | No cant.

TH1E.mmdl File name:

Description:

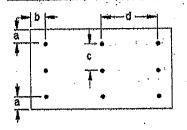
2ND FLOOR FRAMING\Flush Beams\B14(I1346)

Specifier:

Designer: AJ

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

0 = 2-3/4" // d = 6 //

b minimum = 3"

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

312" ARDOX SPIRAL



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Disclosure

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

T- (902/83(1)



PASSED

October 25, 2018 16:20:07

2ND FLOOR FRAMING\Fiush Beams\B15(i1273)

BC CALC® Member Report

Bulld 6475

Job name:

Customer:

Code reports:

Address:

City, Province, Postal Code: \$1" ... NES

CCMC 12472-R

Dry [1 span | No cant.

File name:

TH1E.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B15(!1273)

Specifier:

Designer:

Company:

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	T	ŢŢ		1						ļ.	∳ û	1	*	Į.	<u>, , , , , , , , , , , , , , , , , , , </u>	,	,		,	 , ,			• 🛊		
		熟湖				齱:	žķ.	47									3 1					计算器			
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	The state of the state	*******	(P.BES)A.	11,000, 1150	echeusa	en craw-			ان باساد	بمبعيت	(I destro)	Lithiigh	الطابونيناند	165116.52	gran eg a	25.50010	- California	445 1462	i de la constitución		P31		244244		×
ļ.											00 00		***							 					
B1											40-00·	-00				•				 :			•		B2

Total Horizontal Product Length = 06-00-00

Reaction Summary (Down / Uplift) (lbs)

I TOROGRAM SHIP	and the second of the second		_	
Bearing	Live	Dead	Snow	Wir
B1, 3-1/2"	1,002/0	1,314/0	753 / 0	
B2. 5-1/2"	880 / 0	816/0	453 / 0	

l na	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag		Load Type	Ref.	Start	End	Loc.	1.00	0.65	1,00	1.15	· ·
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-00-00	Тор	· ·	10	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		00-00-00
1	E16(I1080)	Unf. Lln. (lb/ft)	L	00-00-00	06-00-00	Top	77	151	147		n\a
2	Smoothed Load	Unf. Lin. (lb/ft)	L.	00-08-00	06-00-00	Top	209	104			n\a
3	•	Conc. Pt. (lbs)	· L	00-01-12	00-01-12	Тор	293	597	324		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3,304 ft-lbs	23,220 ft-lbs	14.2%	1	02-08-00
End Shear	1,847 lbs	11,571 lbs	16.0%	1	01-01-00
Total Load Deflection	L/999 (0.026")	nla ·	n\a	35	02-11-00
Live Load Deflection	L/999 (0.016")	n\a	n\a	51	02-11-00
Max Defl.	0:026"	n\a	n\a	35	02-11-00
Span / Depth	6.8				* .

Bearing Su	pports Dim. (Lx	W) Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1 Colu	umn 3-1/2" x II/Plate 5-1/2" x	• • • • • • • • • • • • • • • • • • • •		26.1% 11.9%	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 unbraced length of Top: 00-00-00, Bottom: 00-00-00.

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

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

please consult a technical representative or professional of Record, ...

DWG NU. TAM 2395.18H STRUCTURAL COMPONENT ONLY

TUROUSE





PASSED

October 25, 2018 16:20:07

2ND FLOOR FRAMING\Flush Beams\B15(i1273)

BC CALC® Member Report

Bulld 6476

Job name:

Address:

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

Customer: Code reports: Dry | 1 span | No cant,

File name:

TH1E.mmdl

Description:

2ND FLOOR FRAMING\Flush Beams\B15(i1273)

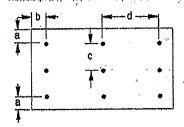
Specifier:

Designer:

Company:

Connection Diagram: Full Length of Member

CCMC 12472-R



a minimum = 2" b minimum = 3" 0=2-3/4" 4 1/

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

31/2" ARDUX SPIRAL

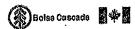


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STRUCTURAL COMPONENT ONLY BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

T- Gorseply



PASSED

October 25, 2018 16:20:07

2ND FLOOR FRAMING\Flush Beams\B16(i1426)

BC CALC® Member Report

Build 6476

Job name:

Address:

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

Dry | 1 span | No cant.

File name:

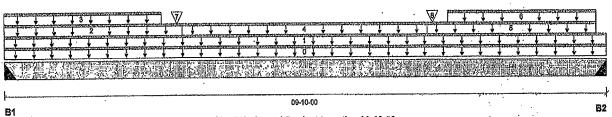
TH1E.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B16(i1426)

Specifier:

Designer: Company:

Customer: CCMC 12472-R Code reports:



Total Horizontal Product Length = 09-10-00

Reaction Sun	nmary (Down / U	plift) (lbs)			
Bearing	Live	Dead	Snow	Wind	
B1, 2-1/2"	294 / 0	614/0	31070	,	
B2, 2-1/2"	287 / 0	594 / 0	299 / 0		•

Los	ad Summary	•			•		Live	Dead	\$now.	Wind	Tributary
Tag	_	Load Type	Ref.	Start	End	Lac.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-10-00	Тор		10		.,	00-00-00
1	FC3 Floor Material	Unf. Lin, (lb/ft)	L.	00-00-00	09-10-00	Top ·	27	13			n\a
2	E18(i1086)	Unf. Lin. (lb/ft)	L	00-00-00	02-11-00	Top		81			n\a
. 3	E18(1086)	Unf, Lln. (lb/ft)	L	00-00-00	02-07-00	Top	. 33	30	63		n\a
4	E19(1087)	Unf. Lin. (lb/ft)	L	02-11-00	06-11-00	Top		. 41			. n\a
5	E17(11077)	Unf. Lin. (lb/ft)	L	06-11-00	09-08-00	Тор	•	81 .			n\a
в	E17(11077)	Unf. Lin. (lb/ft)	L.	07-03-00	09-08-00	Top	33	30	63		n\a
7	E18(1086)	Conc. Pt. (lbs)	Ĺ	02-10-00	02-10-00	Тор	78	106	148	•	n\a
8	E17(11077)	Conc. Pt. (lbs)	L.	07-00-00	07-00-00	Тор	76	104 -	146	275	n/a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3,060 ft-lbs	23,220 ft-lbs	13.2%	1	04-11-00
End Shear	1,205 lbs	11,571 lbs	10.4%	13	01-00-00
Total Load Deflection	L/999 (0,085")	n\a	n\a	35	04-11-00
Live Load Deflection	L/999 (0.042")	n\a	n\a	51	04-11-00
Mex Defl.	0.085"	n\a	n\a	35	04-11-00
Span / Depth	12,1				

Dogring	Summorfs	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
······································		2-1/2" x 3-1/2"	1.526 lbs	u/a	14.3%	HUC410
B1	Hanger	- ····	,			****
B2	Hanger	2-1/2" x 3-1/2"	1,479 lbs	n\a	13.9%	HUC410

Cautions

Header for the hanger HUC410 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HUC410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Header for the hanger HUC410 at B2 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.

STRUGTURAL COMPONENT ONLY

T-19rouft





PASSED

2ND FLOOR FRAMING\Flush Beams\B16(i1426)

Dry | 1 span | No cant.

October 25, 2018 16:20:07

BC CALC® Member Report

Build 6475 Job name:

Customer:

Code reports:

Address:

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

CCMC 12472-R

File name:

TH1E.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B16(i1426)

Specifier:

Designer:

Company:

Notes

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

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

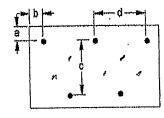
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

Member has no side loads.

Connection Diagram: Full Length of Member



a minimum = 1" b minimum = 3"

ii-71

c = 4-1/2"

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

Member has no side loads.

Connectors are: .

ARDOX SPIRAL



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

STRUCTURAL COMPONENT ONLY

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

T- 1910ZIRT(M



PASSED

October 25, 2018 16:20:07

2ND FLOOR FRAMING/Flush Beams/B17(i1381) Dry | 1 span | No cant.

BC CALC® Member Report

Bulld 6475

Job name:

Customer:

Address:

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

Code reports:

CCMC 12472-R

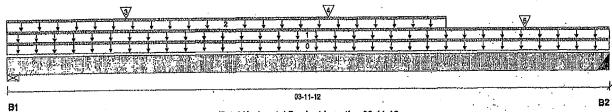
TH1E.mmdi File name:

Description: 2ND FLOOR FRAMING\Flush Beams\B17(i1381)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 03-11-12

Reaction Summary (Down / Uplift) (lbs)

\$now 279 / 0 Live 527 / 0 Dead Bearing B1, 3-1/2" 504 / 0 B2, 3" 455 / 0 390/0 148/0

Los	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.16	
0	Self-Weight	Unf. Lin. (lb/ft)	L.	00-00-00	03-11-12	Top		10			00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-11-12	Top	6	3			n\a
,	E16(11080)	Unf. Lin. (lb/ft)	L.	00-00-00	02-10-14	Top	77	151	147		n\a
3	J2(l1332)	Conc. Pt. (lbs)	L	00-09-08	00-09-08	Top	267	134			n\a
4	J2(11282)	Conc. Pt. (lbs)	Ĺ	02-01-08	02-01-08	Top	267	134			n\a
5	neturnet	Conc. Pt. (lbs)	Ĺ	03-05-01	03-05-01	Top	201	137			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1,402 ft-lbs	23,220 ft-lbs	6.0%	1	02-01-08
End Shear	1,000 lbs	11,571 lbs	8.6%	1	02-11-04
Total Load Deflection	L/999 (0,005")	n\a	nla	35	01-11-15
Live Load Deflection	L/999 (0.003")	n\a	n\a	51	01-11-15
Max Deft.	0.005"	n/a	n\a	35	01-11-15
Snan / Denth	4.5				

Bearin	ıg Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	3-1/2" x 3-1/2"	1,699 lbs	26,0%	11.4%	Unspecified
B2	Hanger	3" x 3-1/2"	1,318 lbs	n\a	10.3%	HGU\$410

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

BWB NO. TAN 2392 18H STRUCTURAL COMPONENT ONLY

T. Garst





PASSED

2ND FLOOR FRAMING\Flush Beams\B17(i1381)

Dry | 1 span | No cant.

October 25, 2018 16:20:07

BC CALC® Member Report

Build 6475

Job name:

Customer:

Address:

Code reports:

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

CCMC 12472-R

File name:

Description:

2ND FLOOR FRAMING\Flush Beams\B17(I1381)

TH1E.mmdl

Specifier:

Designer;

Company:

Notes

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

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

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

CONFORMS TO OBG 2012

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

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

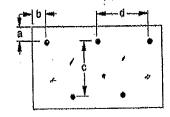
Design based on Dry Service Condition.

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.

Connection Diagram: Full Length of Member



a minimum = " b minimum ≈ 3" c = 6 - 1/28

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

316" ARDOX SPIRAL

PAOFESS ON A

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- (90286(4)



BC CALC® Member Report

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

Passed

Tributary

2ND FLOOR FRAMING\Flush Beams\B8(i1321)

Dry | 1 span | No cant.

October 25, 2018 16:20:07

Bulld 6475

Job name:

Address:

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

Customer:

CCMC 12472-R Code reports:

File name:

TH1E.mmdl

Wind

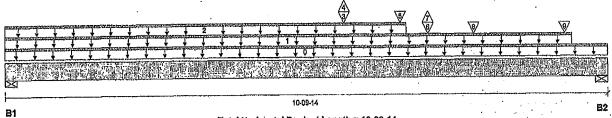
Description:

2ND FLOOR FRAMING\Flush Beams\B8(i1321)

Specifier:

Designer: ΑJ

Company:



Total Horizontal Product Length = 10-09-14

Reaction Summary (Down / Uplift) (lbs)

Snow Bearing B1, 4-3/8" Dead 335/9 237 / 0 4/0 141/0 B2, 5-1/2" 1,317 / 17 895/0

10	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	. End	Loc.	1.00	0.65	1.00	1.15	
0,0	Self-Weight	Únf. Lin. (lb/ft)	L	00-00-00	10-09-14	Тор		10	.,		00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L.	00-00-00	10-02-02	Top	13	7			n\a
,	FC3 Floor Material	Unf. Lin. (lb/ft)	L,	00-00-00	07-02-06	Top	6	3			n\a
3	B12(11370)	Conc. Pt. (lbs)	L	06-01-02	06-01-02	Top	114	69			n\a
ď	B12(i1370)	Conc. Pt. (lbs)	Ĺ	06-01-02	06-01-02	Top	-14		•		n\a
т. Б	J4(11334)	Conc. Pt. (lbs)	L	07-01-02	07-01-02	Top	47	23			n\a
6	B11(i1356)	Conc. Pt. (lbs)	Ĺ	07-07-04	07-07-04	Top	311	189	•		n\a
7	B11(11356)	Conc. Pt. (lbs)	Ĺ	07-07-04	07-07-04	Top	-12				n\a
8	J1(11314)	Conc. Pt. (ibs)	Ī.	08-05-02	08-05-02		280	140	•		ลได้ 🗝
9	\$ 1(110 t4) -	Conc. Pt. (lbs)	Ĺ	10-00-10	10-00-10		711	513	145	SO PAOR	ess.ovu)a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3,897 ft-lbs	23,220 ft-lbs	16.8%	1	07-07-04
End Shear	2,089 lbs	11,571 lbs	18.1%	1	09-06-14
Total Load Deflection	1/999 (0.093")	n\a	n\a	58	05-08-11
Live Load Deflection	L/999 (0,057")	n\a	n\a.	85	05-10-09
Max Defl.	0.093"	n\a	n\a	58	05-08-11
Snon / Denth	12.8	•			

·				Demand/ Resistance	Demand <i>i</i> Resistance	• • • • •
Bearing	Supports	Dlm. (LxW)	Demand	Support	Member	Material
B1	Wall/Plate	4-3/8" x 3-1/2"	802 lbs	9,8%	4.3%	Unspecified
B2	Wall/Plate	5-1/2" x 3-1/2"	3,236 lbs	31.5%	13.8%	Unspecified

448 NO . 78 W2 398 118 H STRUCTURAL COMPONENT ONLY

- r. yorls 7





PASSED

2ND FLOOR FRAMING\Flush Beams\B8(i1321)

Dry | 1 span | No cant.

October 25, 2018 16:20:07

BC CALC® Member Report

Bulld 6475

Job name:

Notes

Address:

Customer:

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

File name:

TH1E.mmdl

Description: 2ND FLOOR FRAMING\Flush Beams\B8(i1321)

Specifier:

Designer:

Company:

CCMC 12472-R Code reports:

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. CUNFURMS TU OBC 2012

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

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

verification.

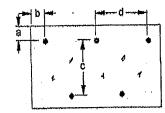
Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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

please consult a technical representative or professional of Record.

Connection Diagram: Full Length of Member-



a minimum ≈ 4" b minimum = 3" c=1-1/2" 8"

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

314" ARDOX SPIRAL



Disclosure

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-C.190218761



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B9(i1389)

October 25, 2018 16:20:07

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.

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA 086. CUNFORMS TO OBC 2012

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

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.

Nalling schedule applies to both sides of the member.

STRUCTURAL COMPONENT ONLY

CCALC® Member Repo	ort	L	ory 1 span	No cant.				¢, ¢rope.	201 201	V (0,20.0)	
Bulld 6475 lob name:			. 1	ile name:	TH1E.n						
Address:		•	١	Description:	2ND FL	OOR FRAM	/iNG\Flus	h Beam	s\B9(i13	89)	
City, Province, Postal Co	de: STNES		;	Specifier:							
Customer:			1	Designer:	AJ						
Code reports:	CCMC 12472-F	₹) ************************************	Company:						·····	
									₹7		
, , , , , , , , , , , , , , , , , , ,		anga sa dan sa Sanananan sa kata	neses de serviciones de la constanción	to the same of the same	-	Section of the section of	makan makan .	ci consissione	Ÿ V	7	
Water			<u> </u>	1	afanca f isia	<u> </u>	na de la companya de	J-Ju	the tar		
THE PROPERTY OF THE PROPERTY O	337.3048 (4018-4018-4018-4018-4018-4018-4018-4018-	医强性恐惧的	ARE MIRREY AND								
	还自己期间到17.20m	川野平 的唯公						AND PARTY		×	
125								, , , , , , , , , , , , , , , , , , , 			
			16-03	08			٠.	•		B2	
Bt		Total Ho	rizontal Produ	ct Length = 1	6-03-06						
Reaction Summary	(Down / Unliff)			_			٠.		•		
Bearing	Live	Dead	Sno	w	Win	d		·	·	18 - E (19) 1 1 1 1 1 1 1 1 1 	₽.
B1, 5-1/2"	3,576 / 0	1,934 / 0	÷.			•					
	3,392 / 0	1,842 / 0	•								
•							•				
Load Summary					Ť	Live	Dead	Snow	Wind	Tributary	
Tag Description	Load Type		ef. Start	End	Loc.	1.00	0,65	1.00	1.15	7.5 22 55	_
0 Self-Weight	Unf. Lin. (lb	/ft) L	00-00-00				18			00-00-00	
1 Smoothed Load	Ųnf. Lin. (ib	/ft) L	02-10-08			453	227		-	n\a	
2 -	Conc. Pt. (II		00-10-08			524	261			n\a	
3 J2(i1409)	Conc. Pt. (I		01-08-0	•		283				n\a	
4 J2(I1364)	Conc. Pt. (I		02-04-0			247				n\a n\a	
5 J2(I1312)	Conc. Pt. (I			3 . 14-04-08		212	•	1 P	. •	n\a	
6 -	Conc. Pt. (I	bs) L	15-02-0	1 15-02-01	Тор	487	243			n vo	1
		Factore		mand/	•	1			مد ترسطنان	W. Sallan	
Controls Summary				sistance	Case	Location 08-04-08	-	A STATE OF THE PARTY OF THE PAR	SANOE!	S& ON A	ès.
Pos. Moment	29,934 ft-lbs	55,212		.2% .7%	1	01-05-06		20032	A STATE OF THE PARTY OF	Section Property Co	``
End Shear	7,105 lbs	21,696		. <i>1</i> %	4	08-04-08	144	10	OF ESS		Č
Total Load Deflection	L/297 (0.63°)	n\a n\a		.7%	5	08-04-08	S.M.	13	nes Gl/WHISEMES	Em 62 17	
Live Load Deflection	L/457 (0.409")	n∖a n\a	n\		4	08-04-08	Š,		la.	MUN	į
Max Defi	0,63"	ma	m	a	7	00-04-00	4	,A 3 18.	NAME TRANS	THE PERSONAL PROPERTY.	
Span / Depth	15.7							W 5		The state of the s	
			Demand/	Demand/				K.	97.	Annual Street	. 4
			Resistance	Resistance				**		Yes 41"	
Bearing Supports	Dim. (LxW)	Demand	Support	Member	Material		-		- 24	A.K	
B1 Wall/Plate	5-1/2" x 5-1/4"	7,782 lbs	50.5%	22.1%	Unspec		•				
B2 Wall/Plate	4-3/8" x 5-1/4"	7,390 lbs	60.3%	26.4%	Unspec	itted			•		
Notes											





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

PASSED

2ND FLOOR FRAMING\Flush Beams\B9(i1389)

Dry | 1 span | No cant.

October 25, 2018 16:20:07

BC CALC® Member Report Bulld 6475

Job name:

Customer:

Code reports:

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

CCMC 12472-R

File name: Description:

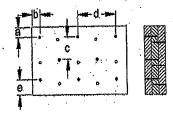
2ND FLOOR FRAMING\Flush Beams\B9(i1389) Specifier:

Designer:

TH1E.mmdl

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

0 = 3-1/2" 8 d = 🐲

b minimum = 3" e minimum = 3"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record. Nalling schedule applies to both sides of the member.
Connectors are: ARDOX SPIRAL



Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in 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.

UNGNO, TAM 239 STRUCTURAL COMPONENT ONLY BC CALC®, BC FRAMER®, AJS™, ALLJOIST®, BC RIM BOARD™, BCI®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

-T-(Goriff(1)



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







			8:	are			1/2" Gyp:	sum Ceiling	
Depth	Series		On Centr	re Spacing			On Cent	re Spacing	
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"
9-1/2"	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"	16'-5"	15'-5"	14'-3"
	NI-70	18'-0"	16'-11"	16'-3"	15'-6"	18'-5"	17'-3"	16'-7"	15'-6"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	15'-10"
	NI-20	17'-10"	16'-10"	16'-0"	14'-10"	18'-6"	17'-1"	16'-0"	14'-10"
	NI-40x	19'-4"	17'-11"	17'-3"	15'-10"	19'-11"	18'-6"	17'-9"	15'-10"
44 7/07	N!-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-1"
11-7/8"	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"
······································	NI-40x	21'-5"	19'-10"	18'-11"	17'-5"	22'-1"	20'-6"	19'-6"	17'-5"
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"
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"
168	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-Spai	n Blocking		Mid-S	Mid-Span Blocking and 1/2" Gypsum Ceiling				
Depth	Series		On Centr	e Spacing		On Centre Spacing					
		12"	16"	19.2"	24"	12"	16"	19.2"	24"		
	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"		
	NI-40x	17'-9"	16'-1"	15'-1"	13'-11"	17'-9"	16'-1"	15'-1"	13'-11"		
9-1/2"	NI-60	18'-1"	16'-5"	15'-5"	14'-3"	18'-1"	16'-5"	15'-5"	14'-3"		
	NI-70	19'-10"	17'-11"	16'-9"	15'-6"	19'-10"	17'-11"	16'-9"	15'-6"		
	NI-80	20'-2"	18'-3"	17'-1"	15'-10"	20'-2"	18'-3"	17'-1"	15'-10"		
	NI-20	18'-10"	17'-1"	16'-0"	14'-10"	18'-10"	17'-1"	16'-0"	14'-10"		
	NI-40x	21'-3"	19'-3"	17'-9"	15'-10"	21'-3"	19'-3"	17'-9"	15'-10"		
14 7/011	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"		
4.631	NI-70	28'-8"	26'-8"	25'-3"	23'-4"	29'-3"	26'-11"	25'-3"	23'-4"		
16"	NI-80	29'-1"	27'-0"	25'-9"	23'-10"	29'-8"	27'-6"	25'-10"	23'-10"		
	NI-90x	29'-11"	27'-10"	26'-6"	24'-10"	30'-6"	28'-5"	26'-11"	24'-10"		

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

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

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

^{4.} Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

^{5.} This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.

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



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







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

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

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

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

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

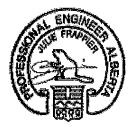
^{4.} Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

^{5.} This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA 086-09, NBC 2010, and OBC 2012.

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



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







			Ba	are		i .	1/2" Gyps	um Ceiling			
Depth	Series		On Centr	e Spacing			On Centre Spacing				
o opa.		12"	16"	19.2"	24"	12"	16"	19.2"	24"		
	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"		
	NI-40x	17'-0"	16'-0"	15'-5"	14'-9"	17'-5"	16'-5"	15'-10"	15'-2"		
9-1/2"	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-6"	16'-7"	15'-11"	15'-3"		
,-	NI-70	18'-0"	16'-11"	16'-3"	15'-7"	18'-5"	17'-3"	16'-7"	15'-11"		
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	16'-1"		
	NI-20	17'-10"	16'-10"	16'-2"	15'-6"	18'-6"	17'-4"	16'-9"	16'-1"		
	NI-40x	19'-4"	17'-11"	17'-3"	16'-6"	19'-11"	18'-6"	17'-9"	17'-0"		
1-11	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"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"		
14"	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"		
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"		
	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"		
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"		
	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"		
16"	NI-80	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"		
	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"		

			Mid-Spar	ı Blocking		Mid-Span Blocking and 1/2" Gypsum Ceiling				
Depth	Series		On Centr	e Spacing			On Centi	e Spacing		
		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"	
,	NI-70	20'-0"	18'-7"	17'-9"	16'-7"	20'-5"	18'-11"	17'-10"	16'-7"	
	NI-80	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10'	
	NI-20	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"	
	NI-40x	21'-10"	20'-4"	19'-4"	17'-8"	22'-5"	20'-6"	19'-4"	17'-8"	
	N1-60	22'-1"	20'-7"	19'-7"	18 -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"	

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

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

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

^{4.} Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

^{5.} This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.

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



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







			Ва	are	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'-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	
	NI-70	17'-1"	16'-1"	15'-6"	N/A	17'-5"	16'-5"	15'-10"	N/A	
	NI-80	17'-3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A	
	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A	
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18'-9"	17'-6"	16'-11"	N/A	
11-7/8"	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A	
	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A	
	N!-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	
	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A	
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A	
-41	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	d-Span Blocking and 1/2" Gypsum Ceiling		
Depth	Series		On Centr	e Spacing			On Centr	e Spacing	
- op		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	16'-8"	15'-3"	14'-5"	N/A	16'-8"	15'-3"	14'-5"	N/A
	NI-40x	17'-11"	· 16'-11"	16'-1"	N/A	18'-5"	17'-1"	16'-1"	N/A
9-1/2"	NI-60	18'-2"	17'-1"	16'-4"	N/A	18'-7"	17'-4"	16'-4"	N/A
,-	NI-70	19'-2"	17'-10"	17'-2"	N/A	19'-7"	18'-3"	17'-7"	N/A
	NI-80	19'-5"	18'-0"	17'-4"	N/A	19'-10"	18'-5"	17'-8"	N/A
	NI-20	19'-6"	18'-1"	17'-3"	N/A	19'-11"	18'-3"	17'-3"	N/A
	NI-40x	21'-0"	19'-6"	18'-8"	N/A	21'-7"	20'-2"	19'-2"	N/A
	NI-60	21'-4"	19'-9"	18'-11"	N/A	21'-11"	20'-4"	19'-6"	N/A
11-7/8"	NI-70	22'-6"	20'-10"	19'-11"	N/A	23'-0"	21'-5"	20'-5"	N/A
	NI-80	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-8"	N/A
	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A
	NI-40x	23'-7"	21'-11"	20'-11"	N/A	24'-3"	22'-7"	21'-7"	N/A
	NI-60	24'-0"	22'-3"	21'-3"	N/A	24'-8"	22'-11"	21'-11"	N/A
14"	N1-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-11"	N/A
	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A
	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A
	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	25'-3"	24'-2"	N/A
	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A
16"	NI-80	28'-2"	26'-1"	24'-10"	N/A	28'-10"	26'-9"	25'-6"	N/A
	NI-90x	29'-0"	26'-10"	25'-7"	N/A	29'•7"	27'-5"	26'-2"	N/A

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

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

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

^{4.} Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

^{5.} This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA O86-09, NBC 2010, and OBC 2012.

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

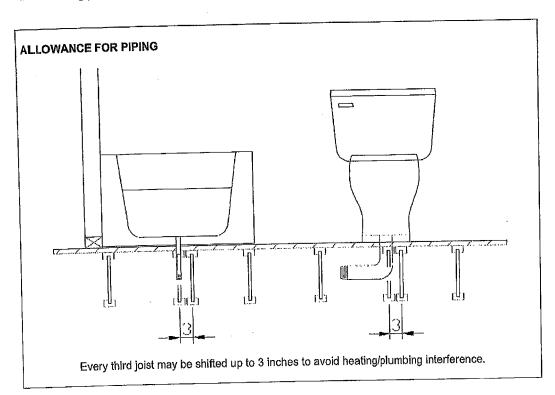


Allowance for Piping (Installation Notes)

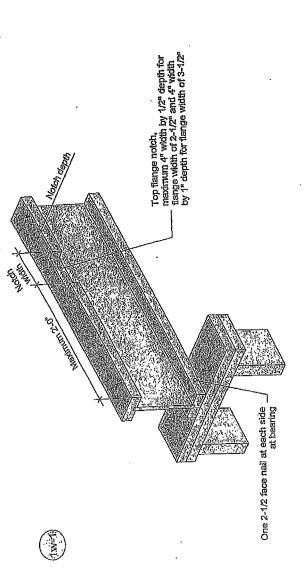
The floor layouts have usually not been checked for heating and/or plumbing interference. On-site adjustment of Joists of up to 3 inches is permitted to avoid interferences. When moving a joist, the subfloor thickness shall be checked with code requirements when the Joist spacing exceeds 19.2 inches.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

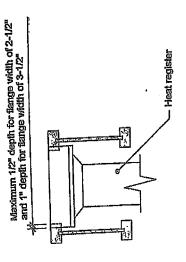
Installation of Nordic I-joists shall be as per *Nordic Joist Installation Guide for Residential Floors*. Refer to Tables 1 and 2 for maximum web hole and duct chase openings, respectively. These tables are based on the I-joists being used at their maximum spans. The minimum distance given may be reduced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

The detail below shows the 3-inch allowance for plping. 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.

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

With of 2-1/2 inches, and 4-inch width by 1-inch depth for flange width of 3-1/2 inches.

3. This detail applications, contact Surdures.

4. For other applications, contact Nortice Surdures.

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

All nais shown in the details are assumed to be common nails unless otherwise noted. Nails shall have a diameter not less than 0.128 inch for 24/24 inch for 94 inch for 95 inch for 97 i

STRUCTURES

Notch in Hoist for Heat Register T 514-871-8528 1 866 817-3418

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CATEGORY

I-joist - Typical Floor Framing and Construction Details

DOCUMENT

Author 1 2018-04-10