

<u> </u>		Products		
PlotID	Length	Product	Plies	Net Qty
J1	18-00-00	9 1/2" NI-40x	1	21
J2	16-00-00	9 1/2" Ni-40x	1	27
J3	14-00-00	9 1/2" NI-40x	1	14
J4	12-00-00	9 1/2" NI-40x	1	9
J5	10-00-00	9 1/2" NJ-40x	1	25
J6	4-00-00	9 1/2" NJ-40x	1	7
B20	16-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B15A	14-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
:B16	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1
B14	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B11A DR	10-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	3	3
B12	6-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	- I
B17	2-00-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP		2
43		1 01 X 0 112 VEITOA-EAWN 2.0 3100 SP	_2	_2

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

CITY OF HAMILTON **Building Division**

Permit No. 21 - 163000

THESE STAMPED DRAWINGS SHALL BE AVAILABLE ON SHITE

THE OWNER AND/OR CONTRACTOR SHALL COMPLY VALUE

THE ONTARIO BUILDING CODE AND ALL OTHER APPLICABLE

These drawings and/or specifications have been reviewed APR 0 8 2022

FOR JOL

DATE: 8/16/21

2ND FLOOR FRAMING

CITY OF HAMILTON
BUILDING DIVISION
Planning & Development Department

NOV 2 9 2021

REC BY	DATE
REF'D TO	DATE



FROM PLAN DATED: JAN 2021 **BUILDER: GREENPARK HOMES** SITE: RUSSELL GARDENS PH. 4

MODEL: VALLEYCREEK 5A

ELEVATION: 2 LOT: 553

CITY: WATERDOWN

SALESMAN: MARIO DICIANO

DESIGNER: AJ **REVISION: CH**

NOTES:

REFER TO THE NORDIC INSTALLATION GUIDE FOR PROPER STORAGE AND

INSTALLATION.

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

LOADING:

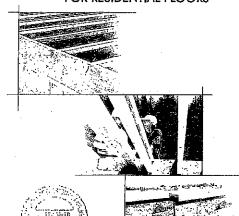
DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft2 DEAD LOAD: 20.0 lb/ft2

SUBFLOOR: 5/8" GLUED AND NAILED



INSTALLATION GUIDE

FOR RESIDENTIAL FLOORS



Distributed by:

2015-04-16

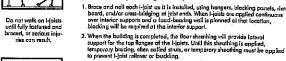
INSTALLING NORDIC I-JOISTS

SAFETY AND CONSTRUCTION PRECAUTIONS



Never stock building materials over unsteathed i-joists, Once stiedthed, do not over-stress i-joist with

t-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



The particular returns of DUCKING.

Temporory bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on ceater, and must be secured with a minimum of two 2-1/21 mails featured to the top surface of each Lipist, Nail the bracing to alteral restrict and the end of each boy. Lap ends of adjoining over at least two Lipists.

Or, sheathing (temporary or permonent) can be nailed to the top flonge of the first 4 feet of I-joists at the end of the boy.

 For cantilevered I-jains, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging. Install and fully not permanent sheathing to each I-juist before placing loads on the floor system. Then, stack building materials over beams or walls only.

5. Never install a damaged I-jaist. Improper storage or installation, failure to fallow applicable building codes, failure to follow spon ratings for Nordic Lipidits, failure to follow ollowable hole sizes and locations, or failure to use web stifferens when required can result in serious accidents. Failure these installation guidelines corefully.

MAXIMUM FLOOR SPANS

num clear spans applicable to simple-span . Maximum clear spans opplicable to simple-span or multiple-span madefaulid floor construction with of dasign live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the forefored load of 15.00. + 1.250. The sentiae billity limit states include the consideration of 60 or wibration on of a live load different limit of 1/480. For multiple-span applications, the end spans shell be 40% For multiple-span applications, or more of the adjacent span.

2. Spans are based on a composite floor with glued-mailed ofented strand board (CSS) sheathing with a minimum thickness of 50 flands for a joist sparing of 19.2 inches or less, or 3/4 inch for joist spacing of 124 inches. Adhesive shall meet the requirements jeven in CGSS 7.1.26.
Standard. No constrate topping or bridging element was assumed. Increased spans may be achieved with the used of gypsum and/or a row of blooking at mid-span.

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

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

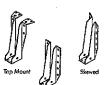
5. This span chart is based on uniform loads. For application with alter than uniform loads, an engineering analysis mabe required based on the use of the design properties.

6. Tables are bosed on Limit States Design per CAN/CSA OB6-09 Standard, and NBC 2010. 7. 5I units conversion: 1 luch = 25.4 mm 1 foot = 0.305 m

MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS SIMPLE AND MULTIPLE SPANS 15.1° 16-1° 16-3° 17-1° 14-8° 14-10° 15-6° 9-1/2 15-6 16-6 16-6 16-9 17-5 17-7 16'-B' 17'-9' 18'-0' 19-0' 19-3' 17.0° 17.3° 18.0° 18.3° 18.7° 16-5* 16-7* 17-4* 17-6* 17-10* 18-6* 18-9* 19-11* 20-2* 11-7/8 18-0* 17-31* 18-2* 19-2* 19-5* 19-10* 22-5* 22-2* 22-7* 23-10* 24-3* 18-11 20-0 20-3 20-8 20-6* 20-11* 22-1* 22-5* 22-10* 20-5* 21'-7* 21'-1 }* 22'-5' 18:1° 19:1° 19:4° 19:9° 20:-0° 19:-10 20:-10 21:-2° 21:-6° 25-0 24-7 26-0 26-5 26-11 22'-9' 24'-0' 24'-5' 24'-10' 20.9° 21.1° 21.5°

I-JOIST HANGERS

- L. Honger, shows illustrate the three most commonly used metal hangers to support t-joists.
- 2. All nothing must meet the hanger
- 3. Hongers should be selected boses on the joist depth, flonge width and land capacity based on the maximum spans.
- 4. Web stiffeners are required when the



Face Mount

STORAGE AND HANDLING GUIDELINES

- Bundle wrop can be slippery when well. Avoid walking on wropped
- 2. Store, stack, and handle I-joists vertically and level aniv. 3. Always stack and handle I-joists in the egright position only.
- 4. Do not store i-joists in direct contact with the ground and/or flatwise.
- 5. Protect I-joists from weather, and use spacers to separate bundles.
- 6. Bundled units should be kept intact until time of installation.
- When handling Ljoists with a crans on the job sile, toke a few -simple precoutions to prevent damage to the I-joists and injury to your work crew.
- Pick I-joists in bundles as shipped by the supplier.
- To Orient the bundles so that the webs of the 1-joists are vertical
- Pick the bundles at the 5th points, using a spreader bor if necessary.
- 8. Do not handle 1-joists in a harizantal orientation.
- 9. NEVER USE OR TRY TO REPAIR A DAMAGED I-JOIST.

WEB STIFFENERS

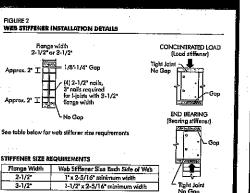
A bearing stiffener is required in all lengineered applications with factored reactions greater than shown in the lefest properties table found of the I-joist Construction Guide (C101). The gap betwith stiffener and the flampe is at the top.

• A hearing stiffener is required when the I-loist is supported in a honger and the sides of the honger do not extend up to, and support, the top frange. The gap between the stiffener and frange is at the top.

A load stiffener is required at local where a factored concentrated load greate than 2,370 lbs is applied to the top flange between supports, or in the case of a confliction, consistent the confliction of ip and the support. These values are for slandard term load duration, and may be objusted for other food durations as permit by the code, The gap between the stiffener and the flange is at the bottom.

Stunits conversion: 1 inch = 25.4 mm

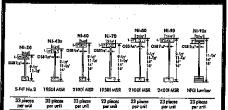
(To)



ⅎ

alfachment per delail 16

2-1/2" noils at — 6" o.c. to top picte



CCMC EVALUATION REPORT 13032-R

NORDIC I-JOIST SERIES

Chantiers Chibougamou Ltd. harvests its own trees, which enables. No. 1950 products to adhere to slint quality control procedures throughout amountacturing process. Every phase of the operation, frog foliate to this finished product, reflects our commitment to quality.

Nordic Engineered Wood Lights use only finger-joinled black spritch; "12.11 lumber in their flanges, ensuring consistent quality, supplier steads, and langer span corrying capacity.

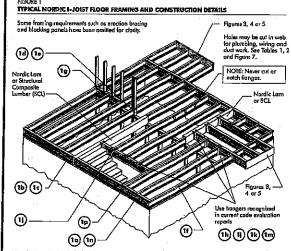
(1b) Backer block (use if honger load exceeds 360 lbs) Before Insuling a backer block to a double I-joint, drive three additional 31 nails through the webe and filter block where the backer black will fit, Clinch. Insuli

2015-04-16

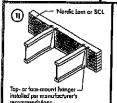
(both sides for foo hangers)

- 1. Before laying out floor system components, verify that I-joint floogs widths match hanger widths. If not, contribution
- 2. Except for cutting to length, I-loist flanges should never be out, drilled, or notched.
- 3. Install 1-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment. I-joints must be anchored securely to supports before floor sheathing is attached, and supports to be level.
- be level.

 5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings 2015-04-16
- 6. When using hangers, seat I-joists firmly in hanger bottoms to minimize settlement.
- 7. Leave a 1/16-inch gap between the f-joist end and a header. 8. Concentrated loads greater than those that can normally be expected in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include track lighting fixtures, outline equipment and security camerums. Never suppead unusual or nevery loads from the Italia's battern flange. Whenever possible, suspend concentrated loads from the Italia's battern flange. Whenever possible, suspend contentrated loads from the Italia's battern flange. Whenever possible, suspend to the Italia's battern flange whenever possible, suspend to the Italia's battern flange. Whenever possible, suspend to the Italia's battern flange is the Italia's battern flange.
- 9. Never install Lipitals where they will be permanently exposed to weather, or where they will remain in direct contact with
- 10. Restrain ends of floor joints to prevent rollover. Use rim board, rim joists or I-joist blocking panels,
- 11. For I-joist 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 agrines at wood products such as rim board must be cut to fit between the I-joists, and an I-joist-compatible depth selected. 13. Provide permanent lateral support of the bottom flonge of all Lipits at interior supports of multiple-spen joint. Similarly, support the bottom flonge of all contilevered Lipits at the end support next to the contilever extension. In the completed structure, the apysour wolfored calling provides this lateral support. Until the final finished calling is applied, temporary bracing or struts must be used.
- 14. If equare-edge panels are used, edges must be supported between I-joids with 2x4 blocking. Give 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. Noti spacing: Space noils installed to the flange's top face in accordance with the applicable building code requirements of approved building plans.



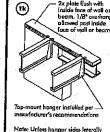
All notes shown in the above details are assumed to be common wire note unless otherwise noted, 3° (0.122° dic.) common spiral notes may be substituted for 2-1/2° (0.128° dic.) common wire notes. Froming united resumed to be Spruce-fine-fir No. 2° or better, Individual components not shown to each four clarity.



bearing below. Install squash blocks per detail 1 d. Match

bearing area of blacks below a past above.

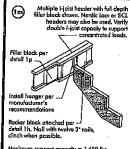
Note: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.



Use single Ligist for loads up to 3,300 plf, double Ligists for loads up to 6,600 plf (filler block not

Rimboard may be used in lieu of I-Joists. Backer is not required when rim board is used. Bracing per cade shall b carried to the foundation.

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



(m)

ximum support expectly = 1,620 lbs.

l-įpist per detail 16

Note: Blocking requirer al bearing for lateral support, not shown for clarity.

(in) Do not bavel-cut joist beyond Inside face of wall _____ For honger expectly see hanger manufacturer's recommendations. Verify double I-joist capacity to support concentrated loads. BACKER BLOCKS (Blocks must be long enough to permit required nailing without splitting) Flonge Width Moterial Thickness Minimum Depth** 2-1/2']" 3-1/2' 1-1/2'

Minimum grade for backer block material shall be S-R-F No. 2 or better for solid sown lumber and wood structural panels conforming to CAN/CSA-0325 or CAN/CSA-0437 Standard. For face-mount hangers use nel joist depth minus 3-1/4* for joists with 1-1/2* thick flonges. For 2* thick flonges use nel depth minus 4-1/4*.



Vertical Load* (plf) 3,300 NI Joists "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, heading, or rafter. For concentrated vertical load transfer, see debtil 1d.



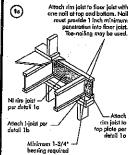
— Attach rim board to top plate using 2-1/2" wice ar spiral toe-nails at 6" o.c. To avoid splitting flange, start nails at least 1-1/2' from end of 1-joist. Nails may be driven at an angle to id splitting of bearing plate.

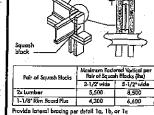
FSC

PET WER

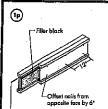
Minimum bearing length shall be 1-3/4* for the end bearings, and 3-1/2* for the intermediate bearings when applicable.

The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see duals 12d.





blocking panel per detail ?a —



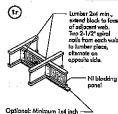
 Support back of I-joist web during sailing to prevent damage to web/flange connection. Leave a 1/8 to 1/4-inch gop between top of filler block and bottom of top I-jaist Filler block is required between joists for full length of span. us segm or span.

Noll joist signifier with two rows of 3' nails of 12 inches o.c. (clinched when possible) on each side of the double ligits. Total of four nails per foot required. If nails can be clinched, only two nails per foot or executed.

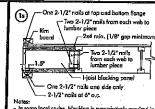
5. The maximum factored load that may be applied to one side of the double joist using this detail is 860 lbt/s. Venity double lights capacity. -1/8" to 1/4" gap between top flange and filler black

FILLER BLOCK REQUIREMENTS FOR DOUBLE 1-JOIST CONSTRUCTION Florige Joist Filler Size Depth Block Size 9-1/2" 2-1/8*x.6* 11-7/8" 2-1/8*x.6* 14" 2-1/8*x.10 16" 2-1/8*x.12 2-1/2*x 1-1/2* 2-1/8" x 10" 2-1/8" x 72" 9-1/2' 11-7/8' 14' 16' 3-1/2"x 1-1/2"

3-1/2"× 11-7/8" 2" 14" 16"



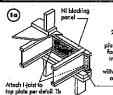
strap applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joists.



Notes:

In some local cades, blocking is prescriptively required in
the first loid space for first and second joist space; next to
the starter joist. Where required, see local code requirement
for spacing of the blacking.

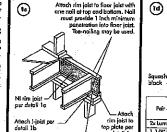
All nots are common spiral in this debit.

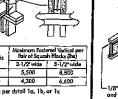


Blodding Fanet or Rim Joist Maximum Factored Uniform or Rim Joist Vertical Load" (plf)

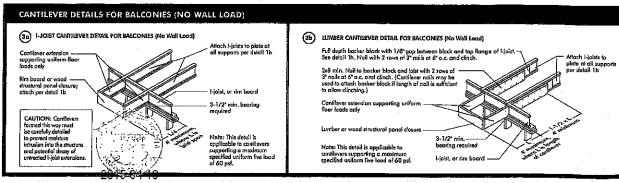
1-1/5" Rim Board Hus 8,090

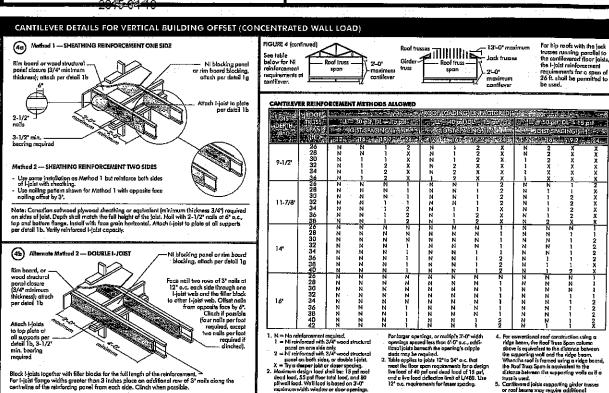
Deputy Communication of the Rim Board Hus 8,090





1/16" for squash blocks





BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD) For hip roofs with the jack trusses running percilel to the conflievered floor joists, the kjoist reinforcement Roof trusses Girder Roof trusses Roof trusses 2'-0' modimum point trusses Rooffruss requirements for a span of 26 ft. shall be permitted to and bottom joist flanges with 2-1/2" noils at 6" a.c. (affect apposite face nailing by 3" when using reinforcement on both Notes Consolian softwood plywood shealthing or equivalent (entirement sheat of the consoliant or equivalent (entirement sheat of the consoliant of the conso BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED JOIST ROOF TRUSS: U 46 FQ. (5b) SET-BACK DETAIL 2015-04-1 Notes: - Provide full depth blocking between faists over support (not shown for clarity) - Artect I-faist to picte at all supports per defail 1b. - 3-1/2* minimum I-faist bearing required. _ Attach joists to girder joist per detail 5c. SET BACK CONNECTION Neil jaist end using 3° nails, toe-neil at top and bottom flanges. 16* Hanger may bused in lieu of solid sown blo For larger openings, or multiple 3*0" width openings epoced less than 6*0" o.c., uddiffices [olds beared the expansing's cripple studies may be required. 1 Table applies to plets 1 per 26 o.c. that meet the filter open requirements for a design limit load of 40 per and deed food of 15 pet, and o live load deficient limit of L/430. Use 12*0. The provision of the confidence of the filter points. A. For convenience reclamatical using p sign beam, the feed from 5 per column active is a peopler if the distance between the supporting well and the ridge beam. When he can it foul the ridge beam. When he can it found a using a ridge board, the Reof Tours Span is equivalent to the additional beam of the supporting while or if a roas is used. 5. Cantibeard justs supporting gride fromes errord beams may require additional trainfacting. N = No reinforcement required. N = Ni minforced with 3/4"wood structural. 1 = N miniforced with 3/4" wood structural popula on one side only. 2 = Ni miniforced with 3/4" wood structural popula on both sides, or double 1-joist. X = Try of desper joid or doser specing. 2. Maximum dissign lood shall be 1.5 por fred dead lood, 3/5 pill floor total flood, and 80 pill well bood. Well lood is based on 3/5.0" maximum dissiph work because of 3/5.0" maximum with windows of the compriser. Notes: Verify girder joist copacity if the back span exceeds the joist spacing. Attach double I-joist per detail 1p, if required.

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- The distance between the inside edge of the support and the centraline of any hale or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- 2. I-joist top and bottom floriges must NEVER be aut, notched, or otherwise modified.
- 3. Whenever possible, field-cut holes should be centred on the middle of the web.
- The maximum size hole or the maximum depth of a dud chase opening that can be cut into an I-joist web shell equal the clear distance between the flanges of the I-joist mins 1/4 finth. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joist flange. The sides of square holes or langest sides of redangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted of that location.
- Where more than one hole is necessary, the distrants between adjacent hole adjaces shall exceed whice the diameter of the largest round hale or trice the size of the largest source hole for twice the largest round. But for this case, the largest source hole for twice the largest of the largest source hole for twice the largest of the largest source hole or duct chare opening) and each hole and duct chare opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.
- A knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of coloriding minimum distances between holes and/or duct chose openings.
- Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a contilevered 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.
- 10. All holes and duct chose openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7. Limit three maximum size holes per span, of which one may be a duct chase opening.
- 12. A group of round holes at approximately the same location shall be permitted if they must the requirements for a single round hole circumscribed ground them.

IPALE | KOCATION OF CIRCULAR HOLES IN JOIST WEBS Simple or Multiple Span for Dead Loads up to 15 psi and Live Loads up to 40 psi

47.7						111111			, ,				1 11:5			130.1
			_			500	nea e	1 . 37.00		ling						2.13
			- 2!	*	7	gar İze	. 9	, ji	1.44	÷	. 1	112 (14.1	+ }	-3	1114	10.0
	0.7	10.		4'-3'	5'-8'	6-0						***				13'-6"
NI-4UX	1.4	2.4	3.0	4-4	6.0											14.0
	2.0	31.4	4.0	21.21	20.					****				***	_	14511
N 60	2.3			4.0	8.2	O'D-	-									15.7
NI-20	0.7*	0:8		7.4			30				144					15:6
NI-40x	0.7*	0.8	i ā·	2.6	4'-0'	4'-4'	5:5		8.4	_						16.0
NI-60 1	0.7	1.8	3.0	4-3	5-9	6-0	7:3·	8-10	10:0		***					16-9
NI-70 1	1.3*	2.6	4:0.		6.9	7.2	8-4	10.0	11:-2	-						17:51
NI-BU 1	1.6	X-10.	4-2	5-6	7.01	7:5	8.6	10:3	11:4				_			17.7
	0.7			3.2	4-10-	5+4"		8.9	16-2		•••	_	_			17-11
	7.72	6.5						- UT	7176	-777	0.00	1010				16-0
NI-60	7.7-	U.A.	1.4	1.0.	5.3		2.5	2.2.	P-07	800		10-2				17:11
NI-70	0.8*	1510		4.5*	321D*	A.2-	뀫	a o	0.0	IO:4*		12'6'				18-2
NI-80	0.10	2.0,	3'-4'	4.9	6.2	6-5*	7.6	ein.	100.00	10.5	2.4	13.0			/	19.5
NI-90			0.10	2.5	4.0	4.5	519	7:5	8.8	9.4		12.11	=			1919
N2.9Da	0.7*	0.8	0.8			4.2		7:3	8.5	9.2	·					20.0
M-60	U-7*	0.8	0.8		2-10	3.2	4.2	5.6	6.4	7:0"	8'.5'	9'8'	10:2	12:2	13-7	19-10
MI-VO	0-/-	1-0	4-3	3.6		2.3.	6.3	7:8	6.6	7-2	10:8	12.0	12.4	14:0	15.6	20:10
Ni.on	0.7	140		3-10	2:3	3.4	6.6.	5-O	A-0,	7.5	1140	12:3	12-9	14:5		21:2
NI-9Dz	ŏ.7-	430	P-0.	2.0	3.7	4.0	2.7	0.5	1.5	a.u.	7.10	11:3;	11:5	13.9	15:4	21'-6' 21'-10'
	NI-20 NI-40 NI-40 NI-50 NI NI-50 NI NI-50 NI-50 NI NI-50 NI NI-50 NI NI-50 NI NI-50 NI NI-50 NI NI-50 NI NI NI-50 NI NI NI-50 NI NI NI NI NI NI NI NI NI NI NI NI NI	NI-20 0.7 NI-40 0.7 NI-40 0.7 NI-40 0.7 NI-50	N.	N 10 07 14 250 11 12 12 12 12 12 12 1	1.00 1.00	1	120 07 14 21 3 4 4 1 1 1 1 1 1 1 1	120 07 16 210 37 240 07 181 18	1	1	N	1	125 3 3 4 5 5 6 7 7 5 6 7 7 7 6 7 7 7 7 7	1	1	N

Above table may be used for 1-joint spacing of 24 inches on contre or tass.
 Hole Occasion distance is measured from inside face of supports to centre of hole
 Distances in #3 cheef are bosed on uniformly loaded justs.

OFTIONAL:

The obove table is based on the Lights used of their maximum span. If the Lights are placed at less than their full maximum span (see Maximum Pres Spans, the minimum distance from the arteriors of the bole to the force of any support (O) or given above more for reduced as follows: D_{reduced} = Lociool ×D SAF Where: D_{reduced} =

d = Distance from the lesiste face of any support to centre of hole, reduced for last-then-maximum distance shall not be less than Ginches from the face of the support to edge of the hole.

The catched measured good addisone between the inside faces of support (5).

Span Adjustment Factor jakes in this tolds.

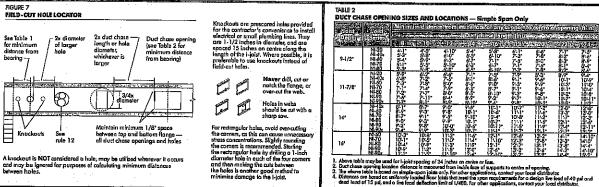
The minimum distance from the inside face of any support to centre of tole from this tolds.

If the minimum distance from the inside face of any support to centre of tole from this tolds.

SAF

Lactural SAF: D

2015-04-16



INSTALLING THE GLUED FLOOR SYSTEM

- 1. Wipe any mud, dirt, water, or ice from I-joist flonges before gluing.
- Snop a chalk line across the i-joists four feet in from the wall for panel edge alignment and as a boundary for spreading give.
- Spread only analysing glue to key one or two panels at a time, or follow specific recon the glue manufacturer. Lay the first panel with tangue side to the wall, and not in place. This protects the langue of the next panel from damage when tapped into place with a black and sledgehammer.
- Apply a continuous line of glue labout 1/4-inch diameter) to the top flange of a single I-joist. Apply
 give in a winding pattern on wide areas, such as with double I-joists.
- 6. Apply two lines of glue on I-joists where panel ends built 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. Glus 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. Top the second row of panels into place, using a block to protect proove edges.
- Stagger and Joint in each succeeding row of ponels. A 1/8-inch space between all and joints and 1/8-inch of oil degree, including T&G edges, it recommended. (Use a spacer tool or on 2-1/2' common field to assure occurries and considerit specifiqs.)
- not to assure occurre and consume spacery.

 10. Complete all notifies of each panel before glue sets: Check the manufacturer's recommendations for ourselime. (Warm vectors acceptance glue setting.) Use 2º ring- or screw-shank noils for panels 3/4-tinch thinks or less, and 2-1/2° ring- or screw-shank noils for thicker panels. Space noils per the table below. Closer not spacing may be required by some code, or for disphragm construction. The finished dark can be walked on right away and will carry construction loads without damage to the

FASTENERS FOR SHEATHING AND SUBFLOORING(1)

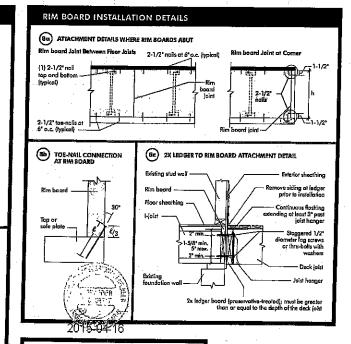
Maxamurin Jost	Minimum Panel	Common:	ail Size and Ty Rose Thread	pe .		(See Inc.)
Special			OF STATE		el como co	Aldero Support
16	5/B	2.	1-3/4*	2"	6.	12"
20	5/8	2'	1-3/4"	2"	6*	12"
24	3/4	2'	1-3/4*	2"	6*	12*

- I. Fusieners of sheathing and subflooring shall conform to the above table.
- 2. Staples shall not be less than 1/36 inch in diameter or thickness, with not less than a 3/8-inch crown
- 3. Flooring screws shall not be less than 1/8-inch in diameter.
- Special conditions may impose beauty traffic and concentrated loads that require construction in excess
 of the minimums shown.
- 5. Use only adhesives conforming to CAN/COSB-71.26 Standard, Adhesives for Reld-Gluing Mywood to Lumber Francing for Floor System, opplied in accordance with the manufacturer's recommendations. If OSB panels with seaded surfaces and edges are to be used, use only solvent-based glues; check under the conformation of the co

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

IMPORTANT NOTE:

Roor shearthing must be field glund to the I-joist flunges in order to achieve the maximum gents shown in this document. If shearthing is notified only, I-joist spans must be verified with your local distributor.











MI-40x OSB 3/8" -> ₽ S-P-F No.2 1950f MSR 2100f MSR 1950f M\$R 2100f MSR 2400f MSR NPG Lumber 33 pieces

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

WEB HOLE SPECIFICATIONS

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

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

 Lipids top and bottom flanges must NEVER be cut, notiched, or otherwise modified.

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

 The moximum size hole or the maximum depth of a duct chase opening that can be cut into an Lipids web shall equal the clear distance between the flanges of the 1-joist minus 1/4 inch. A minimum of 1/8 inch should always be mainted between the top or bottom of the hole or opening and the adjacent l-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 focation.
 Where more than one hole is necessary, the distance between adjacent hole edges
 shall exceed twice the diameter of the largest round hole or twice the size of the largest
 square hole (or twice the length of the langest side of the langest rectangular hole or duct chase opening) and each hale and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.

 A knockout is **not** considered a hole, may be utilized anywhere it occurs, and may be
- ignored for purposes of calculating minimum distances between holes and/or duct
- ring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Hales of greater size may be permitted subject to verification
- 9. A 1-1/2 inch hole or smaller can be placed anywhere in the web rovided that it meets the requirements of rule number 6 above 10. All holes and duct chase openings shall be cut in a workman-like
- shall be permitted if they meet the requirements for a single round hole circumscribed around them.

LOCATION OF CIRCULAR HOLES IN JOIST WEBS

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

	l			Ainimur Nami	n Disto	ince fro	ım Insid	e Face	of Any	Suppor	t to Ce	rifre of	Hole (ft	- in.)		
Joist Depth	Joist Series						Rou	nd Ho	le Diam	eter (in	.)					
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4
	NI-20	0'-7"	1'-6"	2'-10"	4'-3"	5'-8"	6'-0"		***							
l .	NI-40x	0'-7"	1'-6"	3'-0"	4'-4"	<i>6</i> '-0"	6'-4"									
9-1/2"	NI-60	1'-3"	2-6	4'-0"	5'-4"	7'-0"	7'-5"									_:
	NI-70	2'-0"	3'-4"	4'-9"	6'-3"	B,-O ₀	B'-4"	***								***
	NI-80	2'-3"	3'-6°	5'-0'	6'-6"	8'-2"	8'-8"				***					
	NI-20	0'-7"	O'-B'	"0-ין	2'-4"	3'-8"	4'-0"	5'-0"	6'-6"	7-9						464
	NI-40x	0'-7°	0'-8"	1'-3"	2'-8"	4'-0"	4-4"	5'-5°	7'-0°	8'-4"				***		
	NI-60	0'-7"	1'-8"	3'-0"	4'-3"	5'-9"	6'-Q"	7'-3"	8'-10"	10.0						
11-7/8"	NI-70	13.	2'-6"	4'-0"	5'-4"	6'-9"	7'-2"	8-4"	10-0"	11-2				***		
	NI-80	1'-6"	2'-10"	4'-2"	5'-6"	7'-0"	7'-5"	8-6	10-3"	11-4"					•••	***
I	NI-90	0'-7"	0'-B*	1'-5"	3'-2"	4'-10"		6 9	8'-9"	10-2				***	_	
	NI-90x	0'-7"	0'-8"	0'-9"	2'-5"	4'-4"	4-9	6'-3"		•••						
	Nr-40x	0'-7"	01-81	0'-8"	1,-0,	2'-4"	2-9	3'-9"	5-2"	6'-D"	6.6	8'-3"	10'-2"			
	NI-60	0'-7"	0'-8"	"8- ¹ 1	3'-0"	4'-3"	4-8*	5'-8"	7'-2"	8'-0"	8'-8"	7D'-4"	17'-9"			
34"	NI-70	0'-8"	1'-10'	3'-0"	4'-5"	5-10	6-2*	7'-3"	8'-9°	9-9	10'-4"	12'-0"	13'-5"			
'	NI-80	0'-10"	2'-0"	3'-4"	4'-9"	6'-2"	6 5	7'-6"	9'-0"	10-0	10'-B'	12'-4"				
	NI-90	0'-7"	0^{-8}	0'-10°	2'-5"	4'-0"	4-5"	5'-9"	7'-5"	B'-B"	9-4	11'-4"	12'-11"			
\Box	Nt-90x	0'-7"	0'-8'	0'-B"	2'-0"	3'-9"	4-2*	5'-5"	7'-3"	8'-5"	9-2			•••		
	NI-60	0'-7"	0'-8'	0'-8"	1'-6"	2'-10"	3'-2×	4'-2"	5'-6"	6'-4"	7'-0'	8-5	9'-8"	10'-2"	12.2	13 9"
l t	N]-70	0'-7"	1'-0'	2'-3"	3'-6"	4'-30"	5'-3"	6'-3"	7'-8"	8'-6"	9'-2"	10'-8"	12'-0"	12'-4"	14-0	15'-6"
16"	NI-80	0'-7"	1,-3,	2-6"	3'-10"	5-3	5-6°	6'-6°	B;-0°	9'-0"	9'-5"	11:0"			14'-5"	16-0"
!	NI-90	0'-7"	0'-8"	0'-8"	1'-9"	3'-3"	3'-8"	4'-9"	6'-5"	7'-5"	8'-0"	ም-10"	1723"	11'-9"	13.9	15'-4"
<u></u>	NI-90x	0'-7"	0'-8'	0'-9"	2'-0"	3'-6"	4'-0"	5'-0"	6'-9"	7-9"	8'-4"	70'-2"	11'-6"	12'-0"		}

- 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 located joists.
 The above table is based on the I-joists being used at their maximum spans. The minimum distance as given above may be reduced for sharing songer context ways local distributions.

Joist	Joist	Minin	एम distor	sce from i	ıside fac	a of supp	orts to c	entre of	opening	(ft - in.)
Depth	Series				Duct Ch	iose Leng	th (in.)	- :		
		8	סו	12	14	16	18	20	22	24
	NJ-20	4-1	4'-5"	4'-10"	5-41	5'-8"	6-1'	6'-6"	7'-1"	7'-5"
	NI-40x	5'-3°	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"
9-1/2	N1-60	5'-4"	5'-9"	6'-2"	6'-7"	7'-1"	7'-5"	8'-0"	8'-3"	81-911
	NI-70	5'-1"	5'-5"	5'-10"	6'-3"	6'-7"	7'-1"	7'-6"	B'-7"	8'-4"
	NI-80	5'-3"	5'-8"	6'-0"	6-5	<u>6'-10"</u>	7'-3"	7'-8"	8'-2"	8'-6"
	NI-20	5'-9"	6'-2"	6'-6"	7-1"	7'-5"	7'-9"	8'-3"	8'-9"	9-4
	NI-40x	6'-8"	7'-2"	7'-6"	8'-1"	8'-6"	9'-1"	9'-6"	10-1*	10-9"
	NI-60	7'-3"	7'-8"	8'-0"	B'-6"	9'-0"	7'-3"	9'-9"	10'-3"	11'-0"
11-7/8"	NI-70	7'-1"	7'-4"	7'-9"	8'-3"	8'-7"	9'-1"	9'-6"	10'-1"	10-4"
i	NI-80	7'-2"	7'-7°	8:-O*	8'-5"	8'-10"	9'-3"	9'-8"	10'-2"	10'-8"
	NJ-90	7'-6"	7'-11"	8'-4"	8-9	9-2"	9'-7"	10'-1"	10'-7"	10-11
	NI-90x	7-7	8'-1"	8'-5"	8'-10"	9'-4"	9'-8"	10'-2"	10'-8'	11'-2"
	NI-40x	8'-1"	8-7	9:-0"	9'-6"	10'-1"	70'-7"	11'-2"	12'-0"	12'-8"
- 1	NI-60	8'-9"	9'-3"	9'-8*	10'-1"	10-6	13'-1"	11'-6"	13'-3"	13'-0"
14"	NJ-70	8'-7"	9'-1"	9'-5"	9'-10"	10'-4"	10'-8"	17'-2"	11-7	12'-3"
'*	Ni-80	9-0"	9'-3"	9'-9"	10'-1"	10'-7"	11414	.71'-6"	12'-1"	12'-6"
J	NI-90	9'-2"	9'-8"	10'-0"	10'-6"	10'-11"	1145"	11'-9"	12'-4"	12'-11"
	NI-90x	9-4	9'-9"	10'-3"	10'-7"	11'-1"	1357"	12'-1"	12'-7"	13 2°
	NI-60	10'-3"	10'-8"	11'-2"	11'-6"	12'-1"	12'-6"	13'-2"	14'-7"	14'-10"
i	Ni-70	10'-1"	70'-5"	11'-0"	11-4"	11'-10"	12'-3"	12'-B"	13'-3"	14' 0'
16"	NI-BO	10'-4"	10'-9"	11'-3"	11.9	12'-1"	12'-7"	13'-1"	13'-8"	14'-4"
ľ	NI-90	10'-9"	11'-2"	11:-8*	12'-0"	12'-6"	13'-0"	13'-6"	14'-2'	14'-10"
- 1	NI-90x	11'-1"	11'-5"	11'-10"	12'-4"	12'-10"	13'-2"	13'-9"	14'-4"	15'-2"

Attach I-jaist to top plate per detail 1 b

- 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

DUCT CHASE OPENING SIZES AND LOCATIONS

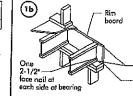
Joist	Joist	Minim	rum distor	nce from in	ıside fac	a of supp	orts to c	entre of	opening	(ft - in.)
Depth	Series				Duct Ch	tose Leng	jth (in.)			 ,
		8	סו	12	14	16	18	20	22	24
	NI-20	4'-1"	4'-5"	4'-10"	5'-4"	5'-8"	6-11	6'-6"	7'-1"	7'-5"
,	NI-40x	5-3°	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"
9-1/2"	NI-60	5'-4"	5'-9"	6'-2"	6'-7"	7'-1"	7-5	8'-0"	8'-3"	8'-9"
	NI-70	5'-1"	5'-5"	5'-10"	6'-3"	6'-7"	7-1"	7'-6"	8-7"	8'-4"
	NI-80	5'-3"	5'-8"	6'-0"	6-5	<u>6'-10"</u>	7'-3"	7'-8"	8'-2"	8'-6"
	NI-20	5'-9"	6'-2"	6'-6"	7-1"	7'-5"	7'-9"	8'-3"	8'-9°	9'-4'
J	NI-40x	6'-8"	7'-2"	7'-6"	8-1"	8'-6"	9'-1"	9'-6"	10-1*	10-9"
ļ	NI-60	7'-3"	7'-8"	8'-0"	B'-6"	9'-0"	9'-3"	9'-9"	10'-3"	11.0
11-7/8"	NI-70	7'-1"	7'-4"	7'-9"	8'-3"	8'-7"	9'-1"	9'-6"	10.1.	10'-4"
1	NI-80	7'-2"	7'-7°	8:-0*	8'-5"	8'-10"	9'-3"	9'-8"	10-2"	10'-8"
	NI-90	7-6	7'-11"	8'-4"	8-9	9-2"	9-7	10'-1"	10'-7"	10-11
	NI-90x	7-7	8'-1"	8'-5"	8'-10"		9'-8"	10'-2"	10'-8"	11-2
	NI-40x	8'-1"	8-7:	9°-0"	9'-6"	10'-1"	70'-7"	11'-2"	12'-0"	12'-8"
- 1	NI-60	8'-9"	9'-3"	9-8*	10'-1"	10-6	13'-1"	111-6"	13'-3"	13'-0°
14"	NJ-70	8'-7"	9'-1"	9'-5"	9'-10"	10'-4"	10'-8"	11'-2"	11-7	12'-3"
'*	Ni-80	9'-0"	9'-3"	9-9	10'-1"	10-7"	11414	.1156*	12'-1"	12'-6"
- 1	NI-90	9'-2"	9'-8"	10'-0"	10'-6"			11'-9"	12'-4"	12'-11"
	NI-90x	9-4	9'-9"	10'-3"	10'-7"	11'-1"	13'-7"	12'-1"	12'-7"	13 - 2°
	NI-60	10'-3"	10'-8"	11'-2"	11'-6"	12'-1"	12'-6"	13'-2"	14'-7"	14'-10"
- 1	NI-70	10,-1,	70'-5"	11'-0"	11'-4"	11410		12'-8"	13'-3"	14 0
16"	NI-B0	10'-4"	10'-9"	11'-3"	11'-9"		12'-7"	13'-1"	13'-8"	14'-4"
1	NI-90	10'-9"	11'-2"	11:-8"	12'-0"	12'-6"	13'-0"	13'-6"	14'-2"	14'-10"
- 1	NI-90x	11'-1"	11'-5"	11'-10"	12'-4"	12'-10"		13'-9"	14'-4"	15-2

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

NI Joists 3,300

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

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



Blocking Ponel or Rim Joist Maximum Factored Uniform Vertical Load* (plf) 1-1/8" Rim Board Plus 8,090

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

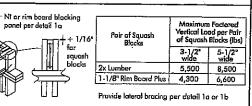
One 2-1/2" wire or spiral nail at top and battom flange Attach rim board to top plate using 2-1/2" wire or spiral toe-nails at 6" o.c.

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

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

at 6" o.c.

to top picie —



(1e) from above to bearing belov blocks per

Match bearing area of blocks

Load bearing wall above shall align vertically with the bearing below. Other conditions, such as offset bearing walls, are not covered by A Blocking required over all interior supports under load-bearing walls or when floor joists are not continuous over support 2-1/2" nails

(1h) 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

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

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

 Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 Standard. For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges.

(m)

For 2" thick flanges use net depth minus 4-1/4".

2x plate flush with inside face of wall

or beam, 1/8" overhand allowed

NOTE: Unless horizer sides laterally support the top flange, bearing

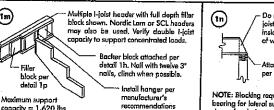
installed per manufacturer's

Double I-joist header hanger -NOTE: Unless hange ides laterally suppor the top flance, bea filler block Backer block requires (both sides for face

For hanger capacity see hanger manufacturer's recommendations. Verify double 1-joist capacity to support

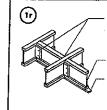


NOTE: Unless hanger sides laterally support the top flange,



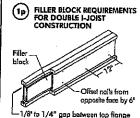
Do not bevel-cut of wall

NOTE: Blocking required at bearing for lateral support, not



Lumber 2x4 min., extend block to face of adjacent web. Two 2-1/2" spiral nails from each web to lumber piece, alternate Ni blocking panel

OPTIONAL: Minimum 1x4 inch strap applied to underside of joist at blocking ceiling attached to underside of joists





1. Support back of t-joist web during nailing to prevent damage to web/florge connection. 2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top I-joist flange. 3. Filler block is required between joists for full length

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

copacity = 1.620 lbs.

- o.c. (clinched when possible) on each side of the double I-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.
- 5. The maximum factored load that may be a side of the double joist using this detail is 860 lbf/ft. Verify double 1-joist capacity.

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

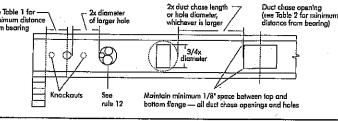
-One 2-1/2" nail at top and bottom flange ← 2x4 min. (1/8" gap minimum) Two 2-1/2" nails from each web to lumber piece - I-iaist blocking panel One 2-1/2" noil one side only NOTES:

IOTES:
In some local codes, blocking is prescriptively required in the first joist space (or first and second joist space)

Where required, sea local code

All nails shown in the above details are assumed to be common wire nails unless officewise noted: 3" (0.122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) common wire nails.
Framing lumber
assumed to be
Spruce-Pine-Fir No. 2
or Better, Individual
components not show:
to scale for clearly.

FIELD-CUT HOLE LOCATOR





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

Vever drill, cut or notch the flange, or over-cut the web

Holes in webs should be cut with a sharp saw.

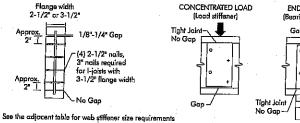
for rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch diameter hole neach of the four corners and then making the cuts between the holes is another good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

WEB STIFFENERS

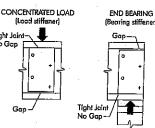
bearing required

- 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 (C101). The gap between the stiffener and the flonge is at
- A bearing stiffener is required when the L-jaist 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 factored concentrated load greater than 2,370 lbs is applied to the top floring between supports, or in the case of a cantillerer, anywhere between the cantillerer tip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the floring is at the bottom.

WEB STIFFENER INSTALLATION DETAILS



{1} 2-1/2^d



RIM BOARD INSTALLATION DETAILS

(8a) ATTACHMENT DETAILS WHERE RIM BOARDS ABUT

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

SAFETY AND CONSTRUCTION PRECAUTIONS



ully fastened and braced. σ



Never stock building material

WARNING: 1-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed. AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

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

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

or bucking.

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

Or, sheathing (temporary or permanent) can be railed to the top flange of the first 4 feet of 1-joists at the end of the bay. . For cantilevered I-joists, brace top and battorn flanges, and brace ends with closure panels, rim boord, or cross-bridging. Install and fully not permanent sheathing to each 1-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.

Never instalt a damaged I-joist.

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



PRODUCT WARRANTY

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

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



CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET Method 1 — SHEATHING REINFORCEMENT ONE SIDE

 Nt blocking panel or rim board blocking, attach per detail 1g panel closure (3/4" minimum thickness); attach per detail 1b

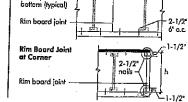
2-1/2" pails \(\right\) 3-1/2° min

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

Method 2 -SHEATHING REINFORCEMENT

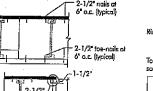
> Use same installation as Method but reinforce both sides of I-joist with sheathing.





Rim Board Joint Between Floor Joist:

8b TOE-NAIL CONNECTION AT RIM BOARD



Top or -

NORDIC STRUCTURES

COMPANYFeb. 13, 2020 15:27

PROJECT
J1 1ST FLOOR.wwb

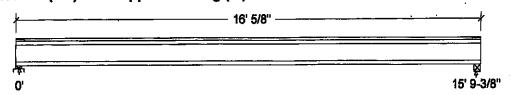
Design Check Calculation Sheet

Nordic Sizer - Canada 7.2

Loads:

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

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



Unfactored: Dead Live	158 316		158 316
Factored: Total	671		671
Bearing:			
Capacity			
Joist	1865		1869
Support	3981		- [
Des ratio			
Joist	0.36		0.36
Support	0.17		- I
Load case	#2		#2
Length	2-3/8		2-5/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	1.00		- I
fcp sup	769		- [
Kzcp sup	1.09	•	

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

Supports: 1 - Lumber Sill plate, No.1/No.2; 2 - Steel Beam, W;

Total length: 16' 5/8"; Clear span: 15' 7-5/8"; 3/4" nailed and glued OSB sheathing
This section PASSES the design code check.

Limit States Design using CSA-O86-09 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 671	Vr = 1895	lbs	Vf/Vr = 0.35
Moment(+)	Mf = 2646	Mr = 4824	lbs-ft	Mf/Mr = 0.55
Perm. Defl'n	0.12 = < L/999	0.53 = L/360	in 🥖	ROFESSIONIA 0.22
Live Defl'n	0.23 = L/807	0.39 = L/480	in 🛵	0.59
Total Defl'n	0.35 = L/538	0.79 = L/240	in /d/	3261e 20.45
Bare Defl'n	0.28 = L/676	0.53 = L/360	in &	#0.53
Vibration	Lmax = 15'-9.4	Lv = 17'-1.8	ft 100 c	KATSOULAKOS 92
Defl'n	= 0.031	= 0.041	in	0.77

NO NO. TAM 5459 -20 Structural Component only

NCE OF ON

WoodWorks® Sizer

for NORDIC STRUCTURES

J1 1ST FLOOR.wwb

Nordic Sizer - Canada 7.2

Page 2

Additional	Data:					****	ve	KN	LC#
FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	#2
Vr	1895	1.00	1.00		-	-	-	-	-
Mr+	4824	1.00	1,00	_	1.000	-	-	-	#2
EI	218.1 m			_	-	-	-	-	#2
CRITICAL LO		NATIONS							
CRITICALL	DAD COMBI	1 20	n. :rs. 1 1 E1						
Shear	: LC #2	= 1.25	D + 1.51						
Moment (+)) : LC #2	= 1.25	D + 1.51	L					
Deflection	on: T.C #1	= 1.01) (perma	anent)					•
1	LC #2	= 1.00) + 1.0L	(live)					•
	T.C. #2	= 1.01) + 1.0L	(tota)	.)				
	LC #2	= 1.01	+ 1.0L	(bare	joist)				
Banning	_	rt 1 - 1	C #2 =	1.25D +	1.5L				
Bearing	Cuppe	~+ 2 - 1	'C #2 = '	1.25D +	1.5L				
	suppo es: D≃dea		d Q-en	ow Hares	rth.grou	ındwate:	r E=ear	thquake	
Load Typ	es: D≖dea	G M=MTI	10 5-511)	ve (stora	are emi	inment)	f=fire	
	L=liv	e (nse, o	cupancy) 112-11	.ve(80016	ige, equ.	renan		
Load Pat	terns: s=	S/2 L=]	_=; 	no parte	ELI TOGO		a ahan		
All Load	Combinat	ions (Lo	ls) are .	listed i	n the Ar	латувта	output		
CALCULATI	IONS:							ean	FARMS TO OBC 2012
nr.ss _	26E 20 1h	-in^2 1	K= 4.94	e06 lbs					Atma . 4 ass as
Ererr -	eflection	is due	to all	non-dead	lloads	(live, t	wind, sn	ow)	AMENDED 2020
l "rive, d	GITECTION	13 auc							United and a second

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

ON NOE OF ON

989 NO. TAN 545 9 -20 STRUCTURAL COMPONENT ONLY

NORDIC STRUCTURES

COMPANY Feb. 13, 2020 15:28

PROJECT
J1 2ND FLOOR.wwb

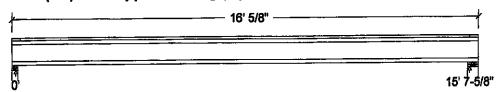
Design Check Calculation Sheet

Nordic Sizer - Canada 7.2

Loads:

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

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



Unfactored: Dead Live	156 313		156 313
Factored: Total	664		664
Bearing:			
Capacity			
Joist	1865		1893
Support	3981		7744
Des ratio			
Joist	0.36	· i	0.35
Support	0.17		0.09
Load case	#2		#2
Length	2-3/8		4-3/8
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	_		
fcp sup	769		769
Kzcp sup			

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

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

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

Total length: 16' 5/8"; Clear span: 15' 5-7/8"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling This section PASSES the design code check.

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
	Vf = 664	Vr = 1895	1hs	vf/vr = 0.35
Shear	Mf = 2597	Mr = 4824	lbs-ft	OFESSMEWMr = 0.54
Moment(+)		0.52 = L/360	in of	- TELEVISION 1
Perm. Defl'n		0.32 - H/300 0.39 = L/480	in /	0.22
Live Defl'n	1 **	0.78 = L/240	1 9249	6 0.45
Total Defl'n		0.78 = 1/240 0.52 = 1/360	in S c	ATSOULAKOS \$ 0.52
Bare Defl'n	0.27 = L/694		ft 3 S.	A1300Lanoo 22 0.32
Vibration	Lmax = 15'-7.6		1 - 5	0.81
Defl'n	= 0.034	= 0.041	in	

STRUCTURAL COMPONENT ONLY

WoodWorks® Sizer

for NORDIC STRUCTURES

J1 2ND FLOOR.wwb

Nordic Sizer - Canada 7.2

Page 2

Additional	Data:							101	T 0#	
FACTORS:	f/E	KD		KZ	KL	KT	KS	KN	LC#	
Wr.	1895	1.00	1.00	-	_	-	-	-	#2	
Mr+	4824	1.00	1.00	_	1.000	-	-		#2	
EI	218.1 m	illion	-	-	-	-	-	-	#2	
CRITICAL LO										
Shear	: LC #2	= 1.25	5D + 1.51	Ĺ						
Moment (+)	• T.C #2	= 1.25	D + 1.5	<u>.</u>						
Deflectio	~. IC #1	= 1 00) (perma	nent)						
Dettectro	II. DC #1	1.0£	+ 1.0L	(live))					
	TC #2	_ 1 00	+ 1.0L	(tota)	11					
1	LC #2	= 1.01) T 1.01	(boro	ioist)					
1	LC #2	= 1.01	+ 1.0L	(Dare	1 57					
Bearing	: Suppo	rt 1 - 1	LC #2 = 1	1.250 +	1.31					
	Suppo	rt 2 - I	LC #2 = 1	1.25D +	1.5L			L la la -		
Load Type	s: D=dea	d W=wir	nd S≖sno	ow H=ea	arth,grou	ındwatei	r E=ear	cnquake		
	L=liv	e use.o	cupancy)	ıve(stora	ge, equi	rbmenri	r=rre		ļ
Load Patt	erns: s=	S/2 $L=I$	L+Ls =1	no patte	ern load	in this	s span			
All Load	Combinat	ions (L	cs) are .	listed :	in the An	alysis	output			
CALCULATIO			•							
Eleff = 2	50 20 1h	-in^2 F	<= 4.94¢	e06 lbs				64	Aforms to	OBC 2012
"Live" de	.Ju.zy ID	ia dua	to all t	non-dead	d loads (live. v	wind, sne	ow)		
"TIAE" GE	:TEC+TO1								<u> Amended</u>	<u> 2020 — </u>

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 O86-09 Engineering Design in Wood standard, which includes Update No.1

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

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

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

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

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

> WINCE OF ON 984 NO. TAN 5460 -20

STRUCTURAL COMPONENT ONLY





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

PASSED

February 13, 2020 14:51:27

1ST FLR FRAMING\Flush Beams\B1(i1675) (Flush Beam)

BC CALC® Member Report

Build 7239

Job name:

Customer:

Address:

City, Province, Postal Code: WATERDOWN

Dry | 1 span | No cant.

VALLEYCREEK 5 EL 2.mmdl

File name: Description: 1ST FLR FRAMING\Flush Beams\B1(i1675)

Wind

Specifier:

Designer: ΑJ

CCMC 12472-R Code reports:

Company:

<u> </u>		
1 1 1 1 1 1	, 0 + + + + + + + + + + + + + + + + + +	

Total Horizontal Product Length = 12-11-04

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 1-7/8"	175 / 0	118/0
B2 4-3/8"	181 / 0	122 / 0

	ad Summary	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	8now 1.00	Wind 1.15	Tributary
0	Description Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-11-04	Тор		5			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L ·	00-00-00	12-11-04	Top	28	14			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1267 ft-lbs	11610 ft-lbs	10.9%	1	06-04-06
End Shear	349 lbs	5785 lbs	6.0%	1	00-11-03
Total Load Deflection	L/999 (0.103")	n\a	n\a	4	06-04-06
Live Load Deflection	L/999 (0.061")	n\a	n\a	5	06-04-06
Max Defl.	0.103"	n\a	n\a	4	06-04-06
Span / Depth	15.8				

Bearing	g Supports	Dim. (i.xW)	Demand	Demand <i>i</i> Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	1-7/8" x 1-3/4"	410 lbs	20.3%	10.2%	Spruce-Pine-Fir
B2	Wall/Plate	4-3/8" x 1-3/4"	424 lbs	9.0%	4.5%	Spruce-Pine-Fir



044 40. TAN 5461 -20 STRUCTURAL COMPONENT ONLY

Notes

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86. BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Disclosure

Use of the Boise Cascade Software is CONFORMS TO OBC 20 12 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, piease call (800)232-0788 before installation.

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



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Ffush Beams\B2(i1694) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

February 13, 2020 14:51:27

Bulld 7239

Job name: Address:

City, Province, Postal Code: WATERDOWN

File name:

VALLEYCREEK 5 EL 2.mmdi

Description: 1ST FLR FRAMING\Flush Beams\B2(i1694)

Specifier:

Designer:

Customer: Code reports:

CCMC 12472-R

Company:

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- 		Ī	1	1	1	+	Ţ	Ţ	Ţ		, _	Ţ	Ŧ	0 1	•	 Į	Ţ	Ŧ	Ţ	Į.	—	 ┖	ţ	¥	<u>+</u>	¥	+	<u>.</u>
						- , -			-	_												•		,				
																	-				_	 					<u> </u>	
				,																								
														15-00		 												

Total Horizontal Product Length = 10-05-00

Snow

Reaction Summary (Down / Uplift) (lbs)

73/0 507/0 B1, 1-3/4 B2, 1-7/8" 479 / 0 73/0

1.	oad Summary						Live	Dead	Snow	Wind	Tributary
	g Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
7	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-05-00	Тор		10			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-05-00	Top	14	7			n\a
2	11(1450)	Unf, Lin. (lb/ft)	Ĺ	00-00-00	10-00-10	Top		81		ه درود چه چه سومه میماند	i/Oa
_	1 1(1-100)	\$111, min ()	_		· ·	•			25	_VEF93	IUA.

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1787 ft-lbs	15093 ft-lbs	11.8%	0	05-02-07
End Shear	649 lbs	7521 lbs	8.6%	0	09-05-10
Total Load Deflection	L/999 (0.055")	n\a	n\a	4	05-02-07
Live Load Deflection	L/999 (0.007")	n\a	n\a	5	05-02-07
Max Defi.	0.055"	n\a	n\a	4	05-02-07
Span / Depth	12.9				

earing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
Column	1-3/4" x 3-1/2"	710 lbs	22.0%	14.6%	Unspecified	
Wall/Plate	1-7/8" x 3-1/2"	671 lbs	25.6%	12.9%	Spruce-Pine-Fir	

8 NO. YAM 5464 -20 STRUCTÚRÁL COMPONENT ONLY

CE OF O

Notes

Be **B1**

B2

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

PROVIDE3ROWS OF 3½" ARDOX SPIRAL HAILS @ 12 " 0/G FOR MULTI-PLY NAILING, MAINTAIN A MIN 2" LUMBER EDGE/END DISTANCE. DO NOT USE AIR NAILS Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). CONFORMS TO OBC 20 12 License Agreement (Course) of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

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





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B3(i1954) (Flush Beam) Dry | 1 span | No cant.

PASSED

February 13, 2020 14:51:27

BC CALC® Member Report

Build 7239

Job name:

Customer:

Code reports:

Address:

City, Province, Postal Code: WATERDOWN

CCMC 12472-R

File name:

VALLEYCREEK 5 EL 2.mmdl

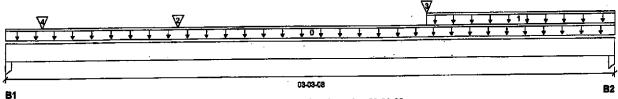
Wind

Description:

1ST FLR FRAMING\Flush Beams\B3(i1954)

Specifier: Designer:

Company:



Total Horizontal Product Length = 03-03-08

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 3-1/2"	141 / 0	81/0
B2, 3-1/2"	147 / 0	81/0

ما	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)	Ļ	00-00-00	03-03-08	Top		5			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	02-03-02	03-03-08	Top	33	17			п\а
,	J7(i1800)	Conc. Pt. (lbs)	L	00-11-02	00-11-02	Top	135	67			n\a
3	J7(i1752)	Conc. Pt (lbs)	L	02-03-02	02-03-02	Top	116	58	200	CESS!	n\a
4	11(i450)	Conc. Pt. (lbs)	Ĺ	00-02-06	00-02-06	Top		3	PRO) - COO!	May Mya
			Eactored	Dem	andi					1 42	1386

Controls Summary	Factored Demand	Factored Resistance	Demand <i>i</i> Resistance	Case	Location
Pos. Moment	220 ft-lbs	11610 ft-lbs	1.9%	1	02-03-02
End Shear	279 lbs	5785 lbs	4.8%	1	02-02-08
Total Load Deflection	L/999 (0.001")	n\a	n\a	4	01-07-12
Live Load Deflection	L/999 (0.001")	n\a	n\a	5	01-07-12
Max Defl.	0.001"	n\a	n\a	4	01-07-12
Span / Depth	3.6				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Column	3-1/2" x 1-3/4"	312 lbs	6.3%	4.2%	Unspecified
B2	Column	3-1/2" x 1-3/4"	323 lbs	6.5%	4.3%	Unspecified

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

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

CONFORMS TO OBC 2012

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86. AMENDED 2020 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086. Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

OVINCE OF ON BWG HO. TAM 5465-20 STRUCTURAL COMPONENT ONLY

<u>Disclosure</u>

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

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



BC CALC® Member Report



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

PASSED

1ST FLR FRAMING\Flush Beams\B5(i1693) (Flush Beam)

Dry | 1 span | No cant.

February 13, 2020 14:51:27

Build 7239

Job name:

Address:

City, Province, Postal Code: WATERDOWN

File name:

VALLEYCREEK 5 EL 2.mmdl

Wind

Description: 1ST FLR FRAMING\Flush Beams\B5(i1693)

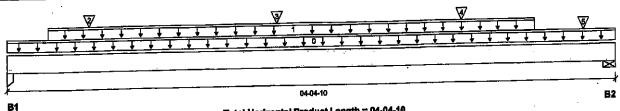
Specifier:

Designer: AJ

Customer: Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 04-04-10

Snow

Reaction Summary (Down / Uplift) (lbs)

Live Bearing 215/0 410/0 B1, 3-1/2" 1155 / 0 502 / 0 B2, 5-1/2"

							LIVO	2000
	ad Summary	Load Type	Ref.	Start	End	Loc.	1.00_	0.65
Tag	Description		1	00-00-00	04-04-10	Top		5
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-04-10	IUP		_
v		Limit Lim (No./96)	L	00-03-08	03-09-10	Top	120	60
1	STAIR	Unf. Lin. (lb/ft)	<u> </u>			•	118	59
	17/14 505)	Conc. Pt. (lbs)	L	00-07-02	00-07-02	Top	110	9 8
2	J7(i1525)			04 44 02	01-11-02	Ton	118	59
3	J7(i1525)	Conc. Pt. (ibs)	L	U1-11-02				
_	•	Conc. Pt. (lbs)	ı ı	03-03-02	03-03-02	Top	108	54
4	J7(i1534)	Conc. Pt. (IDS)	L			•	147	966
<u>, </u>	•	Conc. Pt. (lbs)	Ĺ	04-01-14	04-01-14	rop	147	300
5	7(i399)	001101 1 11 (104)	_					

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
	814 ft-lbs	11610 ft-lbs	7.0%	1	01-11-02
Pos. Moment	725 lbs	5785 lbs	12.5%	1	03-01-10
End Shear	L/999 (0.006")	n\a	n\a	4	02-01-06
Total Load Deflection	L/999 (0.004")	n\a	n\a	5	02-01-06
Live Load Deflection Max Defl.	0.006"	n\a	n\a	4	02-01-06
Span / Depth	4.7				

Danima C	marte	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
	lumn	3-1/2" x 1-3/4"	884 lbs 1617 lbs	17.8% 42.0%	11.8% 21.2%	Unspecified Spruce-Pine-Fir
B2 W	all/Plate	5-1/2" x 1-3/4"	1017 IDS	42,070	£11£70	-p

Notes

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86. AMENDED 2020 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086. Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9



Wind

1.15

Snow

1.00

Tributary

00-00-00

DWG NO.TAM 5Y66 -20 STRUCTURAL COMPONENT ONLY

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 CARFORMS TO OBC 2012 anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Bolse Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain installation Guide or ask questions, please call (800)232-0768 before installation.

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





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B6(i1676) (Flush Beam)

PASSED

Tributary

00-00-00 n\a n\a n\a n\a

Wind

Snow

BC CALC® Member Report

Dry | 1 span | No cant.

February 13, 2020 14:51:27

Build 7239

Job name:

Address:

City, Province, Postal Code: WATERDOWN

File name:

VALLEYCREEK 5 EL 2.mmdl

Description: 1ST FLR FRAMING\Fiush Beams\86(i1676)

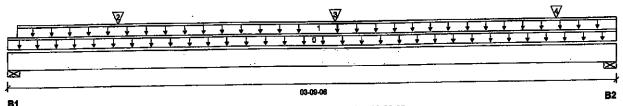
Specifier:

Designer:

Customer: Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 03-09-08

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 2"	340 / 0	179/0
B2 5-1/2"	808 / 0	470 / 0

1 -	d Common						LIVE	Dead	GHOM	Atting
	ad Summary Description	Load Type	Ref.	Start	End _	Loc.	1.00	0.66	1.00	1.15
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	03-09-08	Top		5		
4	STAIR	Unf. Lin. (lb/ft)	L	00-00-11	03-09-08	Top	120	60		
,		Conc. Pt. (lbs)	Ī.	00-08-04	00-08-04	Top	100	50		
2	J7(i1698)	Conc. Pt. (lbs)	Ē	02-00-04	02-00-04	Top	125	63	PRO	ESSIO
3	J7(i1664)	Conc. Pt. (lbs)	• 7	03-05-00	03-05-00	Top	467	289	NO RO	
4	-	CORG Pr. (ma)	-	00-00-00	00 00 00	, -,-		J.	9	
			Factored	Dem		_			S KA	260
Co	ntrois Summary	Factored Demand	Resistance	Resi	stance	Case	Location	14	;	
	. Moment	613 ft-lbs	11610 ft-lbs	5.3%	6	1	02-00-04	19	SKA	TSOUL
1 44	, Manietti	•				-		E .w		_

Controls Summary	Factored Demand	Resistance	Resistance	Case	Location
Pos. Moment	613 ft-lbs	11610 ft-lbs	5.3%	1	02-00-04
End Shear	425 ibs	5785 lbs	7.3%	1	00-11-08
Total Load Deflection	L/999 (0.003")	n\a	n\a	4	01-09-01
Live Load Deflection	L/999 (0.002")	n/a	n\a	5	01-09-01
Max Defl.	0.003"	n\a	n\a	4	01-09-01
Span / Depth	4.2				

Rearino	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	2" x 1-3/4"	734 lbs	34.1%	17.2%	Spruce-Pine-Fir
B2	Wall/Plate	5-1/2" x 1-3/4"	1800 lbs	30.4%	15.3%	Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced.

AMENDED 2020

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

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

dwg no . Yan 5467 -20 STRUCTURAL COMPONENT ONLY **Disclosure**

ON OF ON





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B7(i1667) (Flush Beam)

PASSED

February 13, 2020 14:51:27

BC CALC® Member Report

Build 7239

Job name:

Address: City, Province, Postal Code: WATERDOWN

Customer:

Code reports:

CCMC 12472-R

Dry [1 span | No cant.

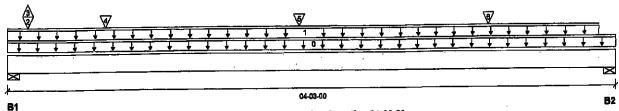
VALLEYCREEK 5 EL 2.mmdl File name:

Description: 1ST FLR FRAMING\Flush Beams\B7(i1667)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 04-03-00

Reaction Sun	IIIISIY (DOWILL O	hnis) (apa)		
Bearing	Live	Dead	Snow	W
B1, 5-1/2"	533 / 3	277 / 0		
B2, 3-1/2"	409 / 0	215/0		

1 4	ad Cummanı						Live	Dead	Snow	Wind
	ad Summary Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-03-00	Тор		5		
1	STAIR	Unf. Lin. (lb/ft)	L	00-00-00	04-01-10	Top	120	60		
2	J5(i1703)	Conc. Pt: (lbs)	L.	00-01-12	00-01-12	Тор	70	34		
3	J5(i1703)	Conc. Pt. (lbs)	L	00-01-12	00-01-12	Тор	-3			
4	J7(i1707)	Conc. Pt. (lbs)	L	00-08-04	00-08-04	Top	101	51	Sale C	FESS
5	J7(i1661)	Conc. Pt. (lbs)	L	02-00-04	02-00-04	Top	145	73	7.0 D	
6	J7(11670)	Conc. Pt. (lbs)	Ĺ	03-04-04	03-04-04	Top	126	63	*	M

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	816 ft-lbs	11610 ft-lbs	7.0%	1	02-00-04
End Shear	565 lbs	5785 lbs	9.8%	1	03-02-00
Total Load Deflection	L/999 (0.005")	n\a	n\a	6	02-02-06
Live Load Deflection	L/999 (0.003")	n\a	n\a	8	02-02-06
Max Defl.	0.005"	n\a	n\a	6	02-02-06
Snon / Denth	4.6				

Bearing S	upports	Dim. (LxW)	Demand	Demandi Resistance Support	Demand <i>i</i> Resistance Member	Material
B1 W	ali/Plate	5-1/2" x 1-3/4" 3-1/2" x 1-3/4"	1145 lbs 883 lbs	19.3% 23.4%	9.8% 11.8%	Spruce-Pine-Fir Spruce-Pine-Fir

Notes

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

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

CONFORMS TO OBC 2012

Calculations assume member is fully braced.

AMENDED 2020 Resistance Factor phi has been applied to all presented results per CSA 086. BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

00-00-00 n\a n\a n\a ONINCE OF OF NO. TAM5468 -20

Tributary

STRUCTURAL COMPONENT DWLY

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

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





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

PASSED

BC CALC® Member Report

2ND FLR FRAMING\Dropped Beams\B11 DR(i1959) (Dropped Beam) Dry | 1 span | No cant.

February 13, 2020 14:51:27

Build 7239

Job name:

Address:

City, Province, Postal Code: WATERDOWN

Customer: Code reports:

CCMC 12472-R

File name:

VALLEYCREEK 5 EL 2.mmdl

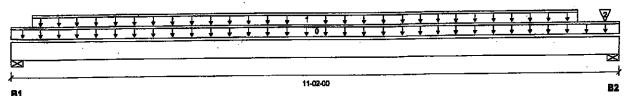
Description:

2ND FLR FRAMING\Dropped Beams\B11 DR(i1959)

Specifier:

Designer:

Company:



Total Horizontal Product Length = 11-02-00

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 4"	3250 / 0	1703 / 0
B2 4"	3690 / 0	1923 / 0

	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	11-02-00	Тор		14			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-04-14	10-04-14	Top	629	314			n\a
2		Conc. Pt. (lbs)	L	10-10-14	10-10-14	Тор	650	325			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	19114 ft-ibs	36222 ft-lbs	52.8%	1	05-10-14
End Shear	6614 lbs	17356 lbs	38.1%	1	01-01-08
Total Load Deflection	L/349 (0.365")	n\a	68.7%	4	05-06-06
Live Load Deflection	L/531 (0.24")	n\a	67.7%	5	05-06-06
Max Defl.	0.365"	n\a	n\a	4	05-06-06
Span / Depth	13.4				

Bearing	: Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1	Wall/Plate	4" x 5-1/4"	7004 lbs	25.0%	27.3%	Spruce-Pine-Fir	_
B2	Wall/Piate	4" x 5-1/4"	7939 lbs	28.3%	31.0%	Spruce-Pine-Fir	

Notes

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

COMFORMS TO OBE 2012

Calculations assume unbraced length of Top: 00-03-02, Bottom: 00-03-02.

AMENDED 2020

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

PROVIDE 3 ROWS OF 3½" ARDOX SPIRAL HAILS @ /2. " O/C FOR LTI-PLY HAILING, MAINTAIN MIN. 2" LUMBER EBGE/END DISTANCE. DO NOT USE AIR HAILS STAGGER NAWS GO BETWEEN PLIES.



044 NO. TAM 5469 -20 STRUCTURAL COMPONENT ONLY

Disclosure

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





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

PASSED

February 13, 2020 14:51:27

2ND FLR FRAMING\Flush Beams\B12(i1747) (Flush Beam)

BC CALC® Member Report

Build 7239

Job name:

Address:

City, Province, Postal Code: WATERDOWN

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

Dry | 1 span | No cant.

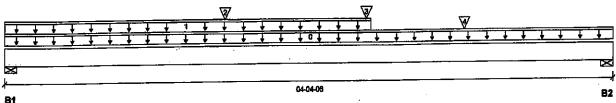
File name:

VALLEYCREEK 5 EL 2.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B12(i1747)

Specifier:

Designer. Company:



Total Horizontal Product Length = 04-04-06

Snow

Reaction Summary (Down / Uplift) (lbs)

Dead Live 779/0 B1, 4-7/8" 1520/0 555 / 0 1069 / 0 B2, 5-1/2"

	al Commone						Live	Dead	Snow
LOS Tag	ed Summary Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00
0	Self-Weight	Unf. Lin. (lb/ft)	Ĺ	00-00-00	04-04-06	Тор		10	
4	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	02-07-04	Top	506	253	
2	=	Conc. Pt. (lbs)	Ī.	01-06-14	01-06-14	Top	311	155	
_	J2(i1886)	Conc. Pt. (lbs)	ī	02-06-14	02-06-14	•	311	155	
3	J2(i1946)	Conc. Pt. (lbs)	ī	03-03-08	03-03-08	•	649	325	ALERE P.F.
4	-	Conc. F L (los)	-	00 00 00	•• ••				
_	. 4 1		Factored		and/	Cano	Location		19/

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2308 ft-lbs	23220 ft-lbs	9.9%	1	02-01-04
End Shear	1963 lbs	11571 lbs	17.0%	1	03-01-06
Total Load Deflection	L/999 (0.008")	n\a	n\a	4.	02-01-15
Live Load Deflection	L/999 (0.005")	n\a	n\a	5	02-01-15
Max Defi.	0.008"	n\a	n\a	4	02-01-15
Snan / Depth	4.6				

Bearing S	upports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material_
B1 W		4-7/8" x 3-1/2" 5-1/2" x 3-1/2"	3254 lbs 2297 lbs	31.0% 19.4%	15.6% 9.8%	Spruce-Pine-Fir Spruce-Pine-Fir

Notes

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

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

Calculations assume member is fully braced. AMENDED 2020

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

PROVIDE 3 ROWS OF 3½" ARDOX SPIRAL NAILS @ 6 "O/C FOR MULTI-PLY HAILING, MAINTAIN A MIN.2" LUMBER EDGE/END DISTANCE. BOHOT USE AIR HAILS



Wind

1.15

Tributary

00-00-00 n\a n\a n\a

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 CONFORMS TO OBC 2012 expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0788 before installation.

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





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B14(i1681) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

February 13, 2020 14:51:27

Build 7239

Job name: Address:

VALLEYCREEK 5 EL 2.mmdl File name:

Specifier:

Description: 2ND FLR FRAMING\Flush Beams\B14(i1681)

City, Province, Postal Code: WATERDOWN

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

Designer: Company:

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														•		· ·			×
<u> </u>						_	00.05.00						_					_	 -∤
, R1							09-05-08	1											B 2

Total Horizontal Product Length = 09-05-08

Snow

Reaction Summary (Down / Uplift) (lbs)

Dead Bearing 206/0 304/0 B1, 4" 383 / 0 250 / 0 B2, 5-1/2"

	1 00	od Crimmany						Live	Dead	Snow	Wind	Tributary
		ad Summary Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
٠	U.	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	09-05-08	Тор	-	10			00-00-00
	1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-03-02	Top	24	12			n\a
	,	FC3 Floor Material	Unf, Lin. (lb/ft)	Ł	05-03-02	09-05-08	Top	27	13			n\a
	4		Conc. Pt. (lbs)	Ī	05-04-00	05-04-00	Top	451	247			n\a
	3	B16(i1696)	CONG. PL. (IDS)	-	00-01-00	00 0-1 00				يتيم مسرر	CERRIO	o iq.

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2729 ft-lbs	23220 ft-lbs	11.8%	1	05-04-00
End Shear	801 lbs	11571 lbs	6.9%	1	08-02-08
Total Load Deflection	L/999 (0.046")	n\a	n\a	4	04-10-07
Live Load Deflection	L/999 (0.028")	n\a	n\a	5	04-10-07
Max Defl.	0.046"	п\а	n\a	4	04-10-07
Snan / Denth	11.1				

Rearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4" x 3-1/2"	713 lbs	8.3%	4.2%	Spruce-Pine-Fir
B2	Wall/Plate	5-1/2" x 3-1/2"	887 lbs	7.5%	3.8%	Spruce-Pine-Fir

Notes

.a/1∂ i

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.

AMENDED 2020

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

PROVIDE3 ROWS OF 31/2" ARDOX SPIRAL NAILS @ /2 " 0/C FOR MULTI-PLY MAILING, MAINTAIN A MIN. 2 LUMBER EDGE/END Distance, Bonot use air nails



048 NO . TAMSY2 / -28 STRUCTURAL COMPONENT ONLY

Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input CORFORMS TO OBC 2012 must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current installation Guide and applicable building codes. To obtain installation Guide or ask questions, please call (800)232-0788 before installation.

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





City, Province, Postal Code: WATERDOWN

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

PASSED

2ND FLR FRAMING\Flush Beams\B17(i1910) (Flush Beam)

BC CALC® Member Report **Build 7239**

Job name: Address:

Dry | 1 span | No cant.

February 13, 2020 14:51:27

File name:

VALLEYCREEK 5 EL 2.mmdl 2ND FLR FRAMING\Flush Beams\B17(i1910) Description:

Specifier:

Designer:

Customer: Code reports:

CCMC 12472-R

Company:

																										
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							•								•										•	
			·	_																						
										01-	10-0	2														

B1

Total Horizontal Product Length = 01-10-02

tion Summary (Down / Uplift) (lbs)

Reading	Live	Dead	Snow
B1, 5-1/4"	56 / 0	122/0	57 / 0
B2, 5-1/2"	56 / 0	124/0	59 / 0

	ad Summary Description	Loed Type	Ref.	Start	<u>End</u>	Loc.	Live 1.00	Dea 0.65
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-10-02	Тор		10
4	ROOF	Unf, Lin. (lb/ft)	L	00-00-00	01-10-02	Top	33	30
2	WALL	Unf. Lin. (lb/ft)	L	00-00-00	01-10-02	Тор		80
_	• • • • • • • • • • • • • • • • • • • •	Unf. Lin. (ib/ft)	ī	00-00-00	00-05-04	Top	30	15
3	FC3 Floor Material	• •	ĭ	00-05-04	01-10-02	Top	27	14
4	FC3 Floor Material	Unf. Lin. (lb/ft)	L	UU-UU-U4	01-10-02	iop	<u> </u>	

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	46 ft-lbs	23220 ft-lbs	0.2%	13	00-10-15
End Shear	102 lbs	11571 lbs	0.9%	1	01-02-12
Snan / Denth	1.4				

Rearin	g Supports	Dim. (LxW)	Demand	Resistance Support	Resistance Member	Material	
B1	Beam	5-1/4" x 3-1/2"	295 lbs	3.0%	1.3%	Unspecified	_
B2	Wall/Plate	5-1/2" x 3-1/2"	300 lbs	2.5%	1.3%	Spruce-Pine-Fir	

Notes

Calculations assume member is fully braced.

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

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

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

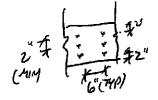
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

Wind

AMENDED 2020



PROVIDE 3 ROWS OF 3½" ARDOX SPIRAL NAILS @ 6 " 0/C FOR MULT!-PLY NAILING, MAINTAIN A M!N. 2"LUMBER EDGE/END DISTANCE. BONOTUSE AIR NAILS

POLINCE OF ON OWO NO. YAM 5474 -20 COMPONENT ONLY

Wind

Snow

63

Tributary

00-00-00

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

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





Single 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B16(i2566) (Flush Beam)

PASSED

March 23, 2021 09:46:31

BC CALC® Member Report

Build 7773

Dry | 1 span | No cant.

Snow

Wind

Tributary

Job name: Address:

City, Province, Postal Code: WATERDOWN

File name: Description:

VALLEYCREEK 5A EL 2, 3.mmdl 2ND FLR FRAMING\Flush Beams\B16(i2566)

Live

Specifier:

ΑJ

Customer: Code reports:

Load Summary

CCMC 12472-R

Designer: Company:

 	 	<u>* </u>	7
		+ + +	

Total Horizontal Product Length = 09-07-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"	514 / 0	281 / 0		
B2, 2"	753 / 0	400 / 0		

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	09-07-08	Top		5			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-11-08	07-07-08	Top	83	41			n\a
2	STAIR	Unf. Lin. (lb/ft)	L	05-03-08	09-07-08	Top	120	60			n\a
3	J6(i2603)	Conc. Pt. (lbs)	L	00-03-08	00-03-08	Top	81	41		ى <u>ۋېر</u> ېشىلىقىدانىي بېر	n\a
4	J6(i2570)	Conc. Pt. (lbs)	L	08-03-08	08-03-08	Тор	116	58		OFESSIO	n\a
Coi	ntrols Summary	Factored Demand	Factored Resistance	Dem: Resi	and/ stance	Case	Location		186	-242	

Controls Summary	Factored Demand	Factored Resistance	Demand <i>l</i> Resistance	Case	Location
Pos. Moment	3292 ft-lbs	11610 ft-lbs	28.4%	1	05-07-08
End Shear	1379 lbs	5785 lbs	23.8%	1	08-08-00
Total Load Deflection	L/785 (0.144")	n\a	30.6%	4	05-00-08
Live Load Deflection	L/999 (0.094")	n\a	n \ a	5	05-00-08
Max Defl.	0.144"	n\a	n\a	4	05-00-08
Span / Depth	11.9		,		

Bearin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	2" x 1-3/4"	1122 lbs	n\a	26.3%	HUS1.81/10
B2	Hanger	2" x 1-3/4"	1629 lbs	n\a	38.2%	HUS1.81/10

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 9-1/2" LVL Beam.

Hanger model HUS1.81/10 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

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

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

Hanger Manufacturer: Unassigned

AMENDED 2020

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

Calculations assume unbraced length of Top: 00-00-00, Bottom: 01-02-12.

CONFORMS TO OBC 2012

DY NCE OF DWG NO. TAM 7060 -28 STRUCTURAL COMPONENT ONLY

Disclosure

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





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B15A(i3255) (Flush Beam)

PASSED

March 23, 2021 08:02:44

BC CALC® Member Report

Build 7773

Job name:

Address: Customer:

Code reports:

City, Province, Postal Code: WATERDOWN

CCMC 12472-R

Dry | 1 span | No cant.

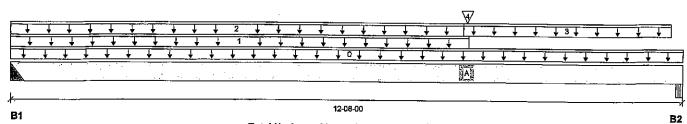
File name: VALLEYCREEK 5A EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B15A(i3255)

Specifier:

Designer: ΑJ

Company:



Total Horizontal Product Length = 12-08-00

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing Live Dead B1, 4" 301/0 560/0 B2, 5-1/2" 647/0 573/0

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	Ĺ	00-00-00	12-08-00	Тор		10			00-00-00
1	WALL	Unf. Lin. (lb/ft)	F	00-00-00	08-06-14	Тор		60			n\a
2	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	00-00-00	08-05-10	Тор	9	5			n\a
3	FC3 Floor Decking (Plan View Fill)	Unf. Lin. (lb/ft)	L	08-05-10	12-05-04	Тор	33	17		-	n\a
4	B16(i2869)	Conc. Pt. (lbs)	L	08-06-08	08-06-08	Тор	738	392			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	5649 ft-lbs	23219 ft-lbs	24.3%	1	08-06-08
End Shear	1599 lbs	11571 lbs	13.8%	1	11-05-00
Total Load Deflection	L/765 (0.188")	n\a	31.4%	. 4	06-07-09
Live Load Deflection	L/999 (0.089")	n\a	n\a	5	06-10-05
Max Defl.	0.188"	n\a	n \ a	4	06-07-09
Span / Depth	15.2				

Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	4" x 3-1/2"	784 lbs	n\a	7.1%	HGUS410
B2	Beam	5-1/2" x 3-1/2"	1686 lbs	16.4%	7.2%	Unspecified

Header for the hanger HGUS410 is a Double 1-3/4" x 9-1/2" LVL Beam.

Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.



DWG NO. TAMZOS! STRUCTURAL COMPONENT ONLY





Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B15A(i3255) (Flush Beam)

PASSED

March 23, 2021 08:02:44

BC CALC® Member Report

Build 7773

Job name:

Address:

Customer: Code reports:

City, Province, Postal Code: WATERDOWN

CCMC 12472-R

Dry | 1 span | No cant.

VALLEYCREEK 5A EL 1.mmdl

CONFORMS TO OBC 2012

File name:

Description: 2ND FLR FRAMING\Flush Beams\B15A(i3255)

Specifier:

Designer:

Company:

Notes

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

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

Hanger Manufacturer: Unassigned

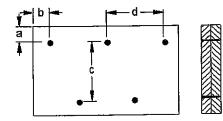
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

Design based on Dry Service Condition

Design based on Dry Service Condition. Importance Factor: Normal Part code: Part 9

Calculations assume unbraced length of Top: 00-00-00, Bottom: 08-05-10.

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

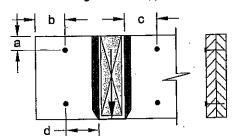
c = 5-1/2"d = 100 6

Connectors are:

1 312" ARDOX SPIRAL

Connection Diagrams: Concentrated Side Loads

--- Applies to load tag(s): 4 Connection Tag: A---



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

Connectors are: 16d

⊕ Nails

ARDOX SPIRAL



040 HO. TAM 7061-21 STRUCTURAL COMPONENT ONLY

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CCMC 12472-R

Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Dropped Beams\B11A DR(i1939) (Dropped Beam)

PASSED

August 16, 2021 09:45:33

BC CALC® Member Report

Build 7773

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

Dry | 1 span | No cant.

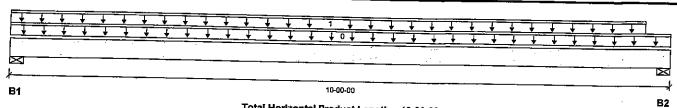
LOT 553.mmdl

File name:

Description: 2ND FLR FRAMING\Dropped Beams\B11A DR(i1939)

Specifier: Designer:

Company:



Total Horizontal Product Length = 10-00-00

Treaction oun	minary (DOWII / U	PHITE) (IDS)			
Bearing	Live	Dead	Snow	Wind	
B1, 4-1/2"	3395 / 0	1767 / 0		YYINU	
B2, 4-1/2"	2915 / 0	1527 / 0			

Load Summary Live Dead Snow Wind Tributary Tag Description Load Type Ref. Start End 1.00 0.65 1.00 1.15 Self-Weight Unf. Lin. (lb/ft) L 00-00-00 10-00-00 Тор 14 00-00-00 Smoothed Load Unf. Lin. (lb/ft) L 00-00-00 09-07-08 Top 656 327 n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	15046 ft-lbs	36222 ft-lbs	41.5%	1	05-01-08
End Shear	5869 lbs				
		17356 lbs	33.8%	· 1	01-02-00
Total Load Deflection	L/505 (0.223")	n\a	47.6%	4	05-00-00
Live Load Deflection	L/768 (0.146")	n\a	46.9%	5	05-00-00
Max Defl.	0.223"	n\a	n\a	4	05-00-00
Span / Depth	11.8			7	00-00-00

	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-1/2" x 5-1/4"	7301 ibs	23,2%	25.3%	Spruce-Pine-Fir
B2	Wall/Plate	4-1/2" x 5-1/4"	6282 lbs	19.9%		Spruce-Pine-Fir

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

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

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

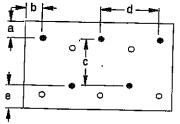
BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 086.

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Calculations assume unbraced length of Top: 00-10-12, Bottom: 10-00-00.

Connection Diagram: Full Length of Member







CONFORMS TO OBG 2012

191 10. TAN 1950221 STRUCTURAL COMPONENT DNLY





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

PASSED

August 16, 2021 09:45:33

2ND FLR FRAMING\Dropped Beams\B11A DR(i1939) (Dropped Beam) Dry | 1 span | No cant.

BC CALC® Member Report Build 7773

Job name: Address:

City, Province, Postal Code:

Customer:

Code reports:

LOT 553.mmdl

File name:

Description: 2ND FLR FRAMING\Dropped Beams\B11A DR(i1939)

Specifier: Designer:

Company:

Connection Diagram: Full Length of Member

a minimum =**⊉**" b minimum = 3"

Connectors are: 3 111

d=20 8 "

CCMC 12472-R

e minimum =2" Nailing applies to both sides of the member

312" ARDOX SPIRAL

886 NO. 748 | 9502-21 STRUCTURAL Disclosure ONLY

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



Maximum Floor Spans Live Load = 40 psf, Dead Load = 15 psf

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







			В	are		1	1/2" Gyps	um Ceiling	
Depth	Series		On Centi	re Spacing		1	On Centi	e Spacing	
•		12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	15'-1"	14'-2"	13'-9"	N/A	15'-7"	14'-8"	14'-2"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
9-1/2"	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A
	NI-70	17'-1"	16'-1"	15'-6"	N/A	17'-5"	16'-5"	15'-10"	N/A
	NI-80	17'-3"	16'-3"	15'-8"	N/A	17'-8"	16'-7"	16'-0"	N/A
	NI-20	16'-11"	16'-0"	15'-5"	N/A	17'-6"	16'-6"	16'-0"	N/A
	NI-40x	18'-1"	17'-0"	16'-5"	N/A	18 '-9"	17'-6"	16'-11"	N/A
/0!	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17'-1"	N/A
11-7/8"	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A
	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
14"	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
	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
4.61	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
16"	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'- 9 "	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

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



Maximum Floor Spans

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







	Series		В	are	1/2" Gypsum Ceiling On Centre Spacing				
Depth			On Cent	re Spacing					
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
**	NI-20	15'-10"	15'-0"	14'-5"	13'-5"	16'-4"	15'-5"	14'-6"	13'-5"
	NI-40x	17'-0"	16'-0"	15'-5"	14'-9"	17'-5"	16'-5"	15'-10"	15'-2"
9-1/2"	NI-60	17'-2"	16'-2"	15'-7"	14'-11"	17'-6"	16'-7"	15'-11"	15'-3"
	NI-70	18'-0"	16'-11"	16'-3"	15'-7"	18'-5"	17'-3"	16'-7"	15'-11"
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	16'-9"	16'-1"
	NI-20	17'-10"	16'-10"	16'-2"	15'-6"	18'-6"	17'-4"	16'-9"	16'-1"
	NI-40x	19'-4"	17'-11"	17'-3"	16'-6"	19'-11"	18'-6"	17'- 9 "	17'-0"
44 7 (0)	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"
11-7/8"	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"
	NI-40x	21'-5"	19'-10"	18'-11"	17'-11"	22'-1"	20'-6"	19'-7"	18'-7"
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'- 1 0"
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"
4.011	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"

	Series		Mid-Spar	n Blocking	Mid-Span Blocking and 1/2" Gypsum Ceiling On Centre Spacing				
Depth			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"
11-7/8"	NI-60	22'-1"	20'-7"	19'-7"	18'-4"	22'-8"	20'-10"	19'-8"	18'-4"
11-1/0	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"
16"	NI-70	28'-8"	26'-8"	25'-4"	23'-11"	29'-3"	27'-4"	26'-1"	24'-8"
10	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.

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

^{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.



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







Depth	Series		Ва	are	1/2" Gypsum Ceiling On Centre Spacing				
				e Spacing					
-upu.	201.00	12"	16"	19.2"	24"	12"	16"	19.2"	24"
	NI-20	15'-1"	14'-1"	13'-3"	N/A	15'-7"	14'-1"	13'-3"	N/A
	NI-40x	16'-1"	15'-2"	14'-8"	N/A	16'-7"	15'-7"	15'-1"	N/A
9-1/2"	NI-60	16'-3"	15'-4"	14'-10"	N/A	16'-8"	15'-9"	15'-3"	N/A
<i>-</i> ,-	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
	NI-60	18'-4"	17'-3"	16'-7"	N/A	19'-0"	17'-8"	17 '-1 "	N/A
11-7/8"	NI-70	19'-6"	18'-0"	17'-4"	N/A	20'-1"	18'-7"	17'-9"	N/A
	NI-80	19'-9"	18'-3"	17'-6"	N/A	20'-4"	18'-10"	17'-11"	N/A
	NI-90x	20'-4"	18'-9"	17'-11"	N/A	20'-10"	19'-3"	18'-5"	N/A
	NI-40x	20'-1"	18'-7"	17'-10"	N/A	20'-10"	19'-4"	18'-6"	N/A
	NI-60	20'-5"	18'-11"	18'-1"	N/A	21'-2"	19'-7"	18'-9"	N/A
14"	NI-70	21'-7"	20'-0"	19'-1"	N/A	22'-3"	20'-7"	19'-8"	N/A
• '	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
	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
16 "	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'- <u>4"</u>	N/A

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

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

^{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.

^{4.} Bearing stiffeners are not required when 1-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.



Maximum Floor Spans

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







	Series		B	are	1/2" Gypsum Ceiling On Centre Spacing				
Depth			On Centi	e 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 7/00	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-1"
11-7/8"	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"
	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"
	NI-40x	21'-5"	19'-10"	18'-11"	17'-5"	22'-1"	20'-6"	19'-6"	17'-5"
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"
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"
4.611	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"

Depth	Series		Mid-Spar	Blocking	Mid-Span Blocking and 1/2" Gypsum Celling On Centre Spacing				
			On Centi	e 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"	1 6 '-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"
	NI-60	21'-9"	19'-8"	18'-5"	17'-1"	21'-9"	19'-8"	18'-5"	17'-1"
11-7/8"	NI-70	23'-4"	21'-5"	20'-1"	18'-6"	23'-8"	21'-5"	20'-1"	18'-6"
	NI-80	23'-7"	21'-10"	20'-5"	18'-11"	24'-1"	21'-10"	20'-5"	18'-11"
	NI-90x	24'-3"	22'-6"	21'-3"	19'-7"	24'-8"	22'-7"	21'-3"	19'-7"
	NI-40x	24'-2"	21'-5"	19'-6"	17'-5"	24'-2"	21'-5"	19'-6"	17'-5"
	NI-60	24'-9"	22'-5"	21'-0"	19'-6"	24'-9"	22'-5"	21'-0"	19'-6"
14"	NI-70	26'-1"	24 '-3"	22'-9"	21'-0"	26'-8"	24'-3"	22'-9"	21'-0"
	NI-80	26'-6"	24'-7"	23'-3"	21'-6"	27'-1"	24'-10"	23'-3"	21'-6"
	NI-90x	27'-3"	25'-4"	24'-1"	22'-4"	27'-9"	25'-10"	24'-3"	22'-4"
	NI-60	27'-3"	24'-11"	23'-5"	21'-7"	27'-6"	24'-11"	23'-5"	21'-7"
	NI-70	28'-8"	26'-8"	25'-3"	23'-4"	29'-3"	26'-11"	25'-3"	23'-4"
16"	NI-80	29'-1"	27'-0"	25'-9"	23'-10"	29'-8"	27'-6"	25'-10"	23'-10"
	NI-90x	29'-11"	27'-10"	26'-6"	24'-10"	30'-6"	28'-5"	26'-11"	24'-10"

^{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.

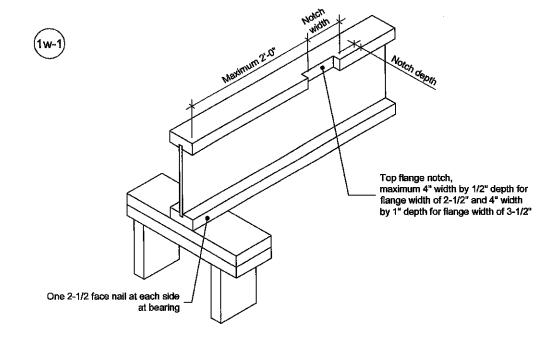
^{2.} Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum celling and/or one row of blocking at mid-span with strapping. Strapping shall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

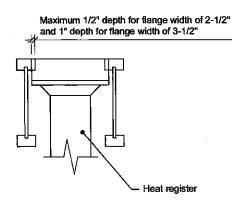
3. Minimum bearing length shall be 1-3/4 inches for the end bearings.

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

^{5.} This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA 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-1274C.





- Blocking required at bearing for lateral support, not shown for clarity.
 The maximum dimensions for a notch on the side of the top flange are 4-inch width by 1/2-inch depth for flange. width of 2-1/2 inches, and 4-inch width by 1-inch depth for flange width of 3-1/2 inches.
- 3. This detail applies to simple-span joists and multiple-span joists where the notch is located at the end half-span.
- 4. For other applications, contact Nordic Structures.

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

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

NORDIC **STRUCTURES**

T 514-871-8526 1 866 817-3418 Notch in I-joist for Heat Register

DOCUMENT

DATE

NUMBER

nordic.ca

1-joist - Typical Floor Framing and Construction Details

2018-04-10

1w-1

Construction Detail Limit States Design

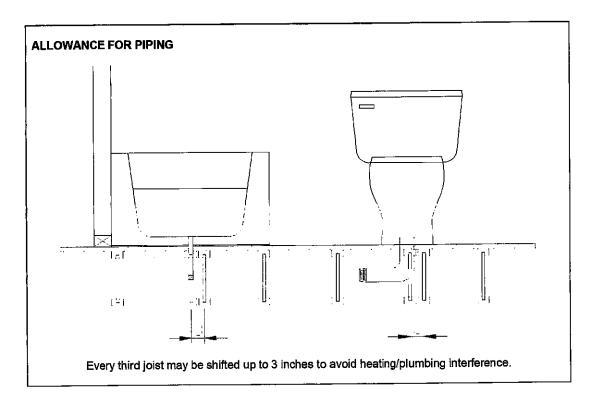


Allowance for Piping (Installation Notes)

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

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

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



Revised April 12, 2012