

REVIEWED FOR COMPLIANCE WITH THE ONTARIO BUILDING CODE AND THE APPLICABLE ZONING BY-LAW

20.130034.000.00.CM

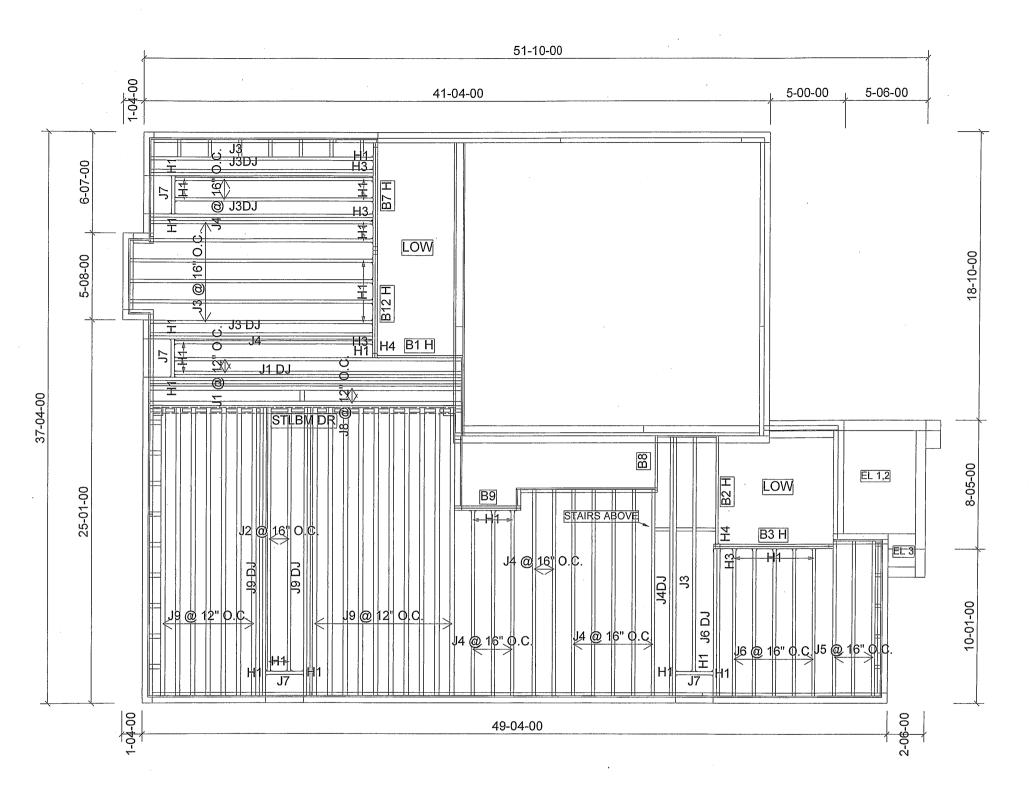
LAMPONE INVESTMENT INCONSTRUCTION SHALL COMPLY WITH THE ONTARIO BUILDING CODE.

CITY OF MARKHAM

FLOOR JOISTS SHOP DRAWINGS

MODEL NAME: KIMBERLY 4

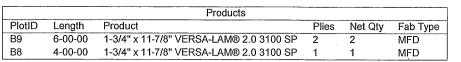
ELEV 1, 2 & 3

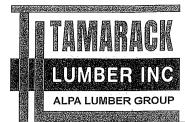


Products										
PlotID	Length	Product	Plies	Net Qty	Fab Type					
J1 DJ	22-00-00	11 7/8" NI-40x	2	2	MFD					
J1	20-00-00	11 7/8" NI-40x	1	2	MFD					
J9 DJ	20-00-00	11 7/8" NI-40x	2	4	MFD					
J2	18-00-00	11 7/8" NI-40x	1	2	MFD					
J4DJ	18-00-00	11 7/8" NI-40x	2	2	MFD					
J3	16-00-00	11 7/8" NI-40x	1	8	MFD					
J3 DJ	16-00-00	11 7/8" NI-40x	2	2	MFD					
J3DJ	16-00-00	11 7/8" NI-40x	2	4	MFD					
J4	14-00-00	11 7/8" NI-40x	1	13	MFD					
J5	12-00-00	11 7/8" NI-40x	1	3	MFD					

	Products								
PlotID	Length	Product	Plies	Net Qty	Fab Type				
J6	10-00-00	11 7/8" NI-40x	1	5	MFD				
J6 DJ	10-00-00	11 7/8" NI-40x	2	2	MFD				
J7	4-00-00	11 7/8" NI-40x	1	4	MFD				
J8	22-00-00	11 7/8" NI-80	1	2	MFD				
J9	20-00-00	11 7/8". NI-80	1	17	MFD				
B2 H	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD				
B12 H	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD				
B3 H	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD				
B7 H	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD				
B1 H	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD				

	Connecto	r Summary
Qty	Manuf	Product
18	H1	IUS2.56/11.88
8	H1	IUS2.56/11.88
8	H1	IUS2.56/11.88
.4	H3	HU312-2
2	H4	HUS1.81/10





FROM PLAN DATED: JULY 2,2020

BUILDER: GREENPARK HOMES

SITE: LAMPONE INVESTMENTS

MODEL: KIMBERLY 4

ELEVATION: 1,2,3

LOT:

CITY: MARKHAM

SALESMAN: MARIO DI CIANO

DESIGNER: L.D. **REVISION:** L.D

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 REIJOIST 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 TIL APPLICATION AS PER O.B.C 9.30.6.

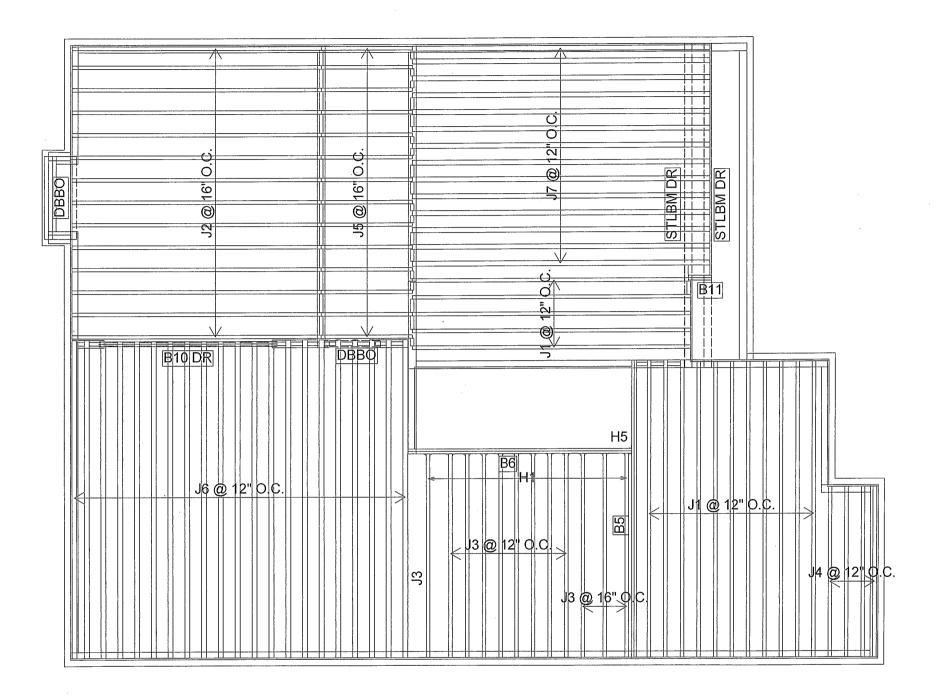
LOADING:

DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 lb/ft² TILE LOAD: 20.0 lb/ft²

SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2020-07-23

1st FLOOR



		Products			
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	18-00-00	11 7/8" NI-40x	1	16	MFD
J2	16-00-00	11 7/8" NI-40x	1	14	MFD
J3	14-00-00	11 7/8" NI-40x	1	12	MFD
J4	12-00-00	11 7/8" NI-40x	1	4	MFD
J5	6-00-00	11 7/8" NI-40x	1	14	MFD
J6	20-00-00	11 7/8" NI-80	1	21	MFD
J7	18-00-00	11 7/8" NI-80	1	14	MFD
B5	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B6	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B10 DR	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD

			-
Fab Type	Qty	Manuf	Product
MFD	12	H1	IUS2.56/
MFD	1	H5	HGUS41
MFD			

Connector Summary

IUS2.56/11.88

HGUS410

		Products			
PlotID	Length	Product	Plies	Net Qty	Fab Type
B11	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD



FROM PLAN DATED: JULY 2,2020

BUILDER: GREENPARK HOMES

SITE: LAMPONE INVESTMENTS

MODEL: KIMBERLY 4

ELEVATION: 1,2

LOT:

CITY: MARKHAM

SALESMAN: MARIO DI CIANO

DESIGNER: L.D. REVISION: L.D.

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. MULTIPI **SQUASH BLOCKS** REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING ALO BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURE 7 TABLES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR HOLES INCLUDING DUCT CHASE AND FIEL **CUT OPENINGS** SEE FIGURE 7 TABLES 1 8 OF THE INSTALLATION GUIDE. CERAMIC T APPLICATION AS PER O.B.C. 9.30.6

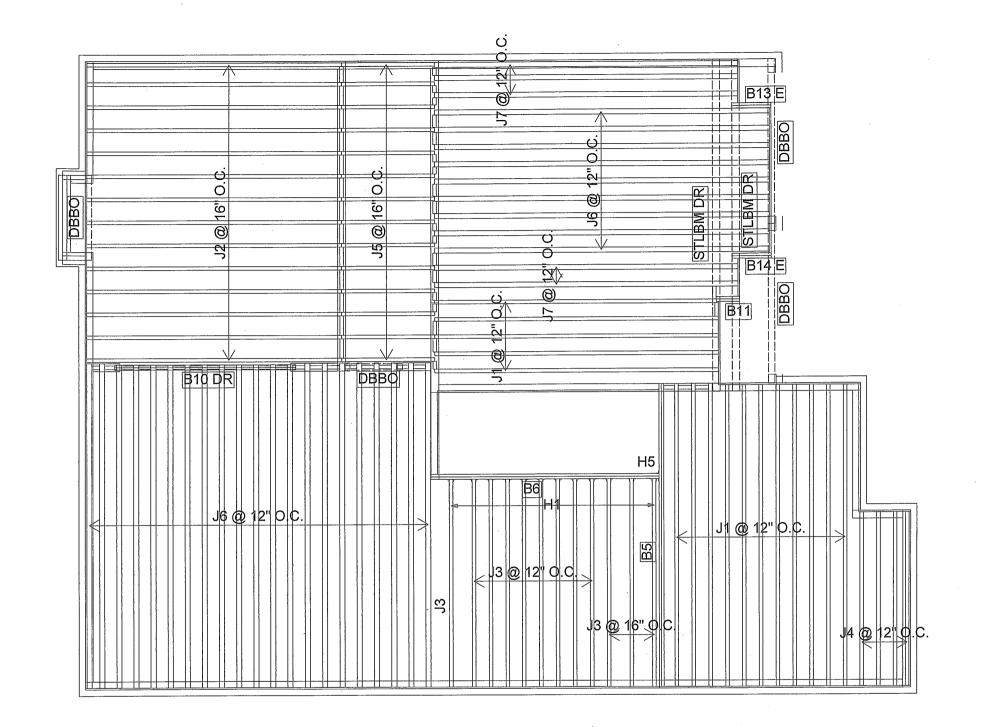
LOADING:

DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 lb/ft² TILE LOAD: 20.0 lb/ft2

SUBFLOOR: 5/8" GLUED AND NAILED

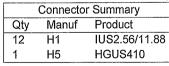
DATE: 2020-07-23

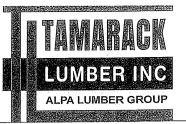
2nd FLOOR



		Products		·	
PlotID	Length	Product	Plies	Net Qty	Fab Type
J1	18-00-00	11 7/8" NI-40x	1	16	MFD
J2	16-00-00	11 7/8" NI-40x	1	14	MFD
J3	14-00-00	11 7/8" NI-40x	1	12	MFD
J4	12-00-00	11 7/8" NI-40x	1	4	MFD
J5	6-00-00	11 7/8" NI-40x	1	14	MFD
J6	20-00-00	11 7/8" NI-80	1	30	MFD
J7	18-00-00	11 7/8" NI-80	1	5	MFD
B5	18-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B6	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B10 DR	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD

		Products			
PlotID	Length	Product	Plies	Net Qty	Fab Type
B13 E	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B14 E	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B11	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD





FROM PLAN DATED: JULY 2,202

BUILDER: GREENPARK HOMES

SITE: LAMPONE INVESTMENTS

MODEL: KIMBERLY 4

ELEVATION: 3

LOT:

CITY: MARKHAM

SALESMAN: MARIO DI CIANO

DESIGNER: L.D. **REVISION:** L.D.

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. MULTIPI SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING ALO BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURE 7 TABLES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR HOLES INCLUDING DUCT CHASE AND FIEL **CUT OPENINGS** SEE FIGURE 7 TABLES 1 8 OF THE INSTALLATION GUIDE. CERAMIC T APPLICATION AS PER O.B.C. 9.30.6

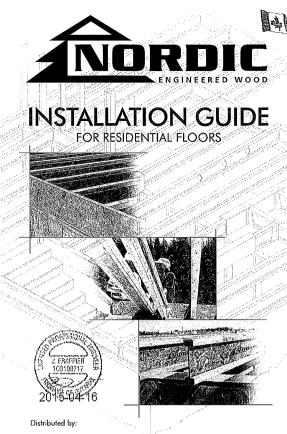
LOADING:

DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft² DEAD LOAD: 15.0 lb/ft² TILE LOAD: 20.0 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2020-07-23

2nd FLOOR





FSC mentions nor contain

C0100717

SAFETY AND CONSTRUCTION PRECAUTIONS

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



Never stack building materials over Once sheathed, do no

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

- Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing walls planned at that location, blocking will be required at the interior support. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
- Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fostened to the tops surface of each I-joist. Not the bracing to a lateral restraint at the end of each boy. Lop ends of adjoining bracing over at least two I-joists.
- Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of l-joists at the end of the bay.
- 3. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
- Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only. 5. Never install a damaged I-joist.

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

MAXIMUM FLOOR SPANS

- Maximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 ppt and deed load of 15 ppt. The bullimate limit states are based on the factored loads of 1.50.1 + 1.250. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of U/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- 2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19-2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in CGBS-71-26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the used of gypsum and/or a row of blocking at mid-span.
- Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.
- Bearing stiffeners are not required when 1-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications
 with other than uniform loads, an engineering analysis may
 be required based on the use of the design properties.
- 6. Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
- 7. St units conversion: 1 inch = 25.4 mm 1 foot = 0.305 m

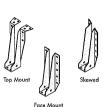
MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS SIMPLE AND MULTIPLE SPANS

25 97 (6)	"大学"的	THE REAL PROPERTY.	Simple	spans 🦟	ALC: NO.	FEMALS:	MOTHER		到指导 到
Joist Depth	Joist Series		On centre	spacing			On centre	spacing	
		12	16"	19.2	24	12"	16"	19.2	24
,	NI-20	15'-1"	14'-2	13'-9"	13'-5	16'-3"	15'-4	14'-10	14'-7
#47. A.L	NI-40x	16'-1"	15'-2"	14'-8"	14'-9"	17'-5"	16'-5"	15'-10"	15'-5"
9-1/2"	NI-60	16'-3"	15'-4"	14'-10"	14'-11'	17'-7'	16'-7"	16'-0"	16'-1'
200	NI-70	17'-1"	16'-1"	15'-6"	15'-7"	18'-7'	17'-4"	16'-9"	16'-10'
0.4 1.2	NI-80	17'-3'	16'-3"	15'-8"	15'-9"	18'-10'	17'-6'	16'-11'	17'-0"
Control 65	NI-20	16'-11'	16'-0"	15'-5	15'-6"	18'-4	17'-3"	16'-8	16'-7'
4人等的时	N1-40x	18'-1	17'-0"	16'-5	16'-6"	20'-0	18'-6"	17'-9	17'-7"
	NI-60	18'-4"	17'-3"	16'-7"	16'-9"	20'-3"	18'-9"	18'-0"	18'-1'
11-7/8*	NI-70	19'-6"	18'-0"	17'-4"	17'-5"	21'-6"	19-11	19'-0"	19'-1"
	NI-80	19'-9"	18'-3'	17-6	17'-7'	21'-9"	20'-2"	19'-3'	19'-4"
49.1,141.	NI-90	20'-2"	18'-7	17'-10	17'-11"	22'-3"	20'-7	19'-8'	19'-9
0.000	NI-90x	20-4	18'-9	17'-11"	18'-0	22-5	20'-9	19'-10'	19'-11'
9770,55	NI-40x	20'-1"	18'-7"	17'-10"	17'-11'	22'-2"	20'-6"	19'-8"	19'-4"
	NI-60	20'-5"	18'-11'	18'-1"	18'-2"	22'-7"	20'-11"	20'-0"	20'-1"
Alas Gilli	NI-70	21'-7"	20'-0"	19'-1'	19'-2"	23'-10"	22'-1"	21'-1"	21'-2"
14*	NI-80	21'-11'	20'-3"	19'-4"	19'-5"	24'-3"	22'-5"	21'-5"	21'-6"
	NI-90	22'-5	20'-8"	19'-9	19'-10"	24'-9	22'-10"	21'-10'	21'-10'
	NI-90x	22'-7"	20'-11"	19'-11"	20'-0"	25'-0"	23'-1"	22'-0"	22'-2"
0.0873	NI-60	22'-3"	20'-8'	19'-9'	19'-10"	24'-7"	22'-9"	21'-9'	21'-10
44.5	NI-70	23'-6"	21'-9'	20'-9"	20'-10"	26'-0"	24'-0"	22'-11"	23'-0"
16*	NI-80	23'-11	22'-1"	21'-1"	21'-2"	26'-5*	24'-5"	23'-3"	23'-4"
	NI-90	24'-5"	22'-6	21'-5"	214-6	26'-11"	24'-10'	23'-9"	23'-9
	NI-90x	24'-8"	22'-9"	21'-9"	21'-10"	27'-3'	25'-2"	24'-0"	24'-1"

CCMC EVALUATION REPORT 13032-R

I-JOIST HANGERS

- Hangers shown illustrate the three most commonly used metal hangers to support 1-joists.
- Hangers should be selected based on the joist depth, flange width and load capacity based on the maximum spans.
- Web stiffeners are required when the sides of the hangers do not laterally brace the top flange of the I-joist.



STORAGE AND HANDLING GUIDELINES

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

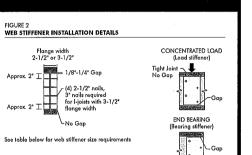
WEB STIFFENERS

- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the Ljoist properties table found of the L-joist Construction Guide (C101). The gap betwee the stiffener and the flange is at the top.
- A bearing stiffener is required when the I-joist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top. ■ A load stiffener is required at locations
- than 2,370 lbs is applied to the top flange etween supports, or in the case of a antilever, anywhere between the cantilever ip and the support. These values are for tandard term load duration, and may be adjusted for other load durations as pe by the code. The gap between the stiffener and the flange is at the bottom.

Stunits conversion: 1 inch = 25.4 mm

(1e)

(1)



	no cap	(Bearing stiffener)
low for	web stiffener size requirements	. → Go
SIZE R	EQUIREMENTS	
idth	Web Stiffener Size Each Side of Web	/ 1
	1" x 2-5/16" minimum width	/
	1-1/2" x 2-5/16" minimum width	La Tight Joint

NORDIC I-JOIST SERIES

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

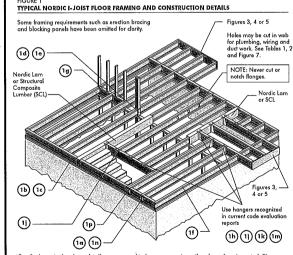
Chantiers Chihougamau Ltd. harvests its own trees, which enables Nord Channiers Chipougamau Lid. narvests its own trees, which end products to adhere to strict quality control procedures throughts manufacturing process. Every phase of the operation, from or finished product, reflects our commitment to quality.

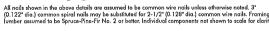
finished product, reflects our commitment to quality.

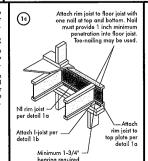
Nordic Engineered Wood Lipists use only finger-jointed dick spicial/FIEB umber in their flanges, ensuing consistent quality, superior stands 10,000, longer span carrying capacity.

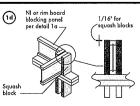
INSTALLING NORDIC I-JOISTS

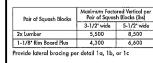
- 1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, কোটোইইইট
- 2. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched. 3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
- I-joists must be anchored securely to supports before floor sheathing is attached, and supports for be level. 5. Minimum begring lengths: 1-3/4 inches for end begrings and 3-1/2 inches for intermediate begrings
- 6. When using hangers, seat I-joists firmly in hanger bottoms to minimize settlement.
- 7. Leave a 1/16-inch gap between the I-joist end and a header. 8. Concentrated loads greater than those that can normally be expected in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include track lighting factures, audio equipment and security cameras. Never usupend unusual or heavy loads from the loads to surface to the manage. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the
- 9. Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with
- 10. Restrain ends of floor joists to prevent rollover. Use rim board, rim joists or I-joist blocking panels.
- 11. For I-joists installed over and beneath bearing walls, use full depth blocking panels, rim board, or squash blocks (cripple members) to transfer gravity loads through the floor system to the wall or foundation below.
- 12. Due to shrinkage, common framing lumber set on edge may never be used as blocking or rim boards. I-joist blocking panels or other engineered wood products such as rim board must be cut to fit between the I-joists, and an I-joist-compatible depth selected. 13. Provide permanent lateral support of the bottom flange of all I-joists at interior supports of multiple-span joists. Simi support the bottom flange of all cantilevered I-joists at the end support next to the cantilever extension. In the complistructure, the gypsum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, temporaring or struts must be used.
- 14. If square-edge panels are used, edges must be supported between Ljoists with 2x4 blocking. Glue panels to blocking to minimize squeaks. Blocking is not required under structural finish flooring, such as wood strip flooring, or if a separate
- 15. Nail spacing: Space nails installed to the flange's top face in accordance with the applicable building code requapproved building plans.

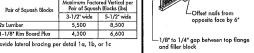




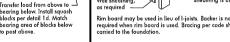


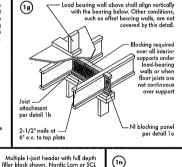




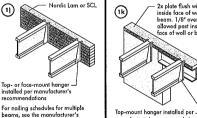


Use single 1-joist for loads up to 3,300 plf, double 1-joists for loads up to 6,600 plf (filler block not required). Attach l-joist t Provide backer for siding attachment unless nailable





— Load bearing wall above shall align vertically



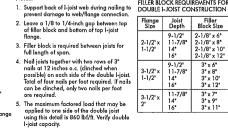
Top-mount hanger installed pe manufacturer's recommendation

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

stall hanger per *....l* anufacturer's Backer block attached per detail 1h. Nail with twelve 3" nails, clinch when possible. Note: Unless hanger sides laterally Maximum support capacity = 1,620 lbs.

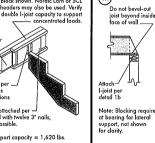
(1m)

Filler block per



FILLER BLOCK REQUIREMENTS FOR

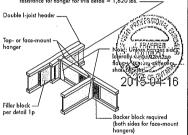
11-7/8" 14" 16" 11-7/8" 14" 16" 3" x 7" 3" x 9" 3" x 11"



(IF)

extend block to tack of adjacent web. Two 2-1/2" spiral nails from each wel

(1h) Backer block (use if hanger load exceeds 360 lbs)
Before installing a backer block to a double l-joist, drive three
additional 3" rails through the wabs and filler black where the
backer block will fit. Clinich. Install backer tight to top flague,
Use twelve 3" nails, cliniched when possible. Maximum factored
assistance for hanges for this deat if a 140 lbs. esistance for hanger for this detail = 1,620 lbs. -

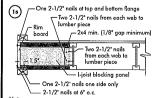


BACKER BLOCKS (Blocks must be long enough to permit required nailing without splitting)

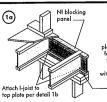
Flange Width	Material Thickness Required*	Minimum Depth**
2-1/2*	ין	5-1/2"
3-1/2*	1-1/2"	7-1/4"

- Minimum grade for backer block material shall be S-P-F No. 2 or better for solid som lumber and more installable parts to a conforming to CAN/CSA-0325 or CAN/CSA-037 Standard.

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



In some local codes, blocking is prescriptively required in In some local coaces, placking is prescriptively required in the first joist space (or first and second joist space) next to the stater joist. Where required, see local code requirement for spacing of the blocking. All noils are common spiral in this detail.



NI Joists The uniform vertical load is limited to a joist depth of 16

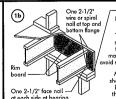
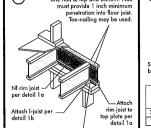
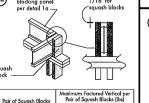


plate using 2-1/2" wire or spiral toe-nails at 6" o.c. Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings

when applicabl

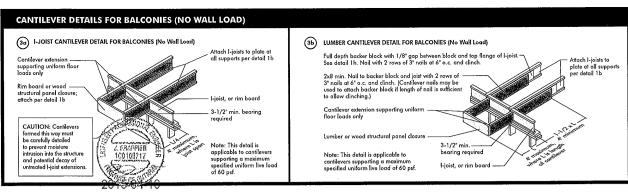
1-1/8" Rim Board Plus *The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.





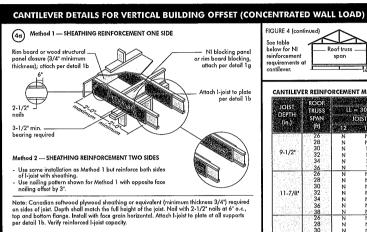
(1p) LOffeet nails from

3" x 6" 3" x 8" 3" x 10" 3" x 12"



__ Roof truss ___ T 21_0*

span



(4b) Alternate Method 2 — DOUBLE I-JOIST NI blocking panel or rim board blocking, attach per detail 1g Face nail two rows of 3" nails at 12" o.c. each side through one I-joist web and the filler block to other I-joist web. Offset nails from opposite face by 6". Clinch if possible wood structura (four nails per foo Attach I-joists to top plate at all supports per -detail 1b, 3-1/2" min. bearing required, excep two nails per foo

Block I-joist together with filler blocks for the full length of the reinforcement. — For I-joist flange widths greater than 3 inches place an additional row of 3° nails along the centreline of the reinforcing panel from each side. Clinch when possible

(5a) SHEATHING REINFORCEMENT

Roof trusses 134-0° maximum Or Girder Roof truss span 134-0° maximum 1-0° Jack trusses oximum truss requirements for a span of 26 ft. shall be permitted to cantilever CANTILEVER REINFORCEMENT METHODS ALLOWED LL = 30 psf, DL = 15 psf LL = 40 psf, DL = 15 psf LL = 50 psf, DL = 15 psf JOIST SPACING (in.) JOIST SPACING (in.) JOIST SPACING (in.) 11-7/8

- . N = No reinforcement required. 1 = NI reinforced with 3/4" wood structural
- 1 = NI reinforced with 3/4" wood structural ponel on one side only.
 2 = NI reinforced with 3/4" wood structural ponel on boils risides, or double I-joist.
 X = Try a deeper joist or claser specing.
 2. Moximum design load shall be: 15 psf roof deed load, 55 psf floor total load, and 80 pll well load. Woll load is based on 3"-0"

FIGURE 5 (continued

JOIST ROOF TRUSS SPAN (in.) (ft)

11-7/8

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

 3. Table applies to joists 12" to 24" o.c. that

maximum cantilever

LL = 30 psf, DL = 15 psf

JOIST SPACING (in.)

BRICK CANTILEVER REINFORCEMENT METHODS ALLOWED

JOIST SPACING (in.)

LL = 40 psf, DL = 15 psf LL = 50 psf, DL = 15 psf

24 12 16 19.2 24 12 16 19.2 24

 For conventional roof construction using a ridge beam, the Roof Trus Span column above is equivalent to the distance between the supporting well and the ridge beam. When the roof is fromed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting well as at it a distance between the supporting man. ...
truss is used.

Cantilevered joists supporting girder trusses

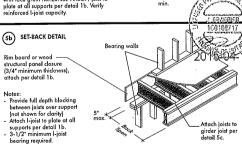
For hip roofs with the jack trusses running parallel to the cantilevered floor joists the I-joist reinforcement

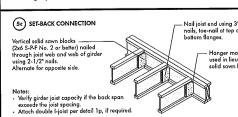
ents for a span of

For hip roofs with the jack trusses running parallel to the cantilevered floor joists, the I-joist reinforcement

JOIST SPACING (in.)

—Nail reinforcement to top and bottom joist flanges with 2-1/2" nails at 6" o.c. (offset opposite face nailing by 3" when using reinforcement on both sides of l-joist) Note: Canadian softwood Note: Canadian softwood phywood 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° noils of 6°.oc., to pand bettern filange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail 1b. Verify reinforced I-joist capacity. 5b) SET-BACK DETAIL (42)





Nail joist end using 3° nails, toe-nail at top and bottom flanges. Hanger may be used in lieu of solid sawn block

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

1. N = No reinforcement required.
1 = NI reinforced with 3/4" wood structural panel on one side only.
2 = NI reinforced with 3/4" wood structural

panel on both sides, or double 1-joist.

X = Try a deeper joist or closer spacing.

Maximum design load shall be: 15 psf roof Maximum design load shall be: 15 pst roof dead load, 55 pst floor total load, and 80 plf wall load. Wall load is bosed on 3-0" maximum width window or door openings.

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

3. Table applies to joists 12 to 24° o.c. that meet the floor spon requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of LY480. Use 12° o.c. requirements for lesser spacing.

4. For conventional roof construction using a ridge beam, the Roof Trust Span column above is equivalent to the distance between the supporting well and the ridge beam. When the root is framed using a ridge board, the Roof Trust Span is equivalent to the distance between the supporting wells as if a trust is used.

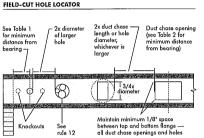
5. Confiderer of joints supporting girder trusses or roof beams may require additional rainforcing.

WEB HOLES

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS:

- The distance between the inside edge of the support and the controlline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- 2. I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified. 3. Whenever possible, field-cut holes should be centred on the middle of the web.
- 4. The maximum size hole or the maximum depth of a duct chase opening that can be cut into an Lipids tweb shall equal the clear distance between the flanges of the Lipids timus 1/4 inch. A minimum of 1/9 inch should always be maintained between the top or bottom of the hole or opening and the adjacent Lipids flange.
- The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
- 6. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the longest side of the longest rectangular hole or duct chase opening) and each hole and duct chas opening shall be sized and located in compliance with the requirements of lables 1 and 2, respectively.
- 7. A knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between duct chase openings.
- Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to
- A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above.
- All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
- 11. Limit three maximum size holes per span, of which one may be a duct chase
- 12. A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

FIGURE 7
FIELD-CUT HOLE LOCATOR



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

Knockouts are prescored holes provide for the contractor's convenience to instellectrical or small plumbing lines. They are 1-1/2 inches in diameter, and are



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

For rectangular holes, avoid over-cutting

the corners, as this can cause unnecessa stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch diameter hole in each of the four corners

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

Joist	Joist			nimun	clisio				eolar					SUDI	II HUE	(20)	Spein
	Series	機能	100			Round hole diameter (in.)							adjustm				
		. 2	3	22.00	5	6.	6-1/4	7.3	8	8-5/8	9	110 🛎	10-3/4		12	12-3/4	
X 121 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	NI-20	0'-7"	1'-6"	2'-10"	4'-3'	5'-8'	6-0.							***	***	***	13-6
4 1 1 1 1 1 1 1	NI-40x	0'-7"	1'-6"	3,-0.	4'-4"	6'-0"	6'-4"	***	***		***	***		***			14'9
9-1/2	NI-60	1'-3'	2'-6"	4'-0"	5'-4'	7'-0"	7'-5'	•••						•••	•••	•••	14-11
A. 31 (A. 19)	NI-70	2'-0"	3'-4"	4'-9"	6'-3"	8:-0.	8'-4"				***	•••			***		15-7
28 A W	NI-80	2'-3"	31-6	5'-0'	6'-6"	8'-2"	8'-8"	***		***			***	***	***		15'-9"
11 17 17	NI-20	0-7	0'-8'	1'-0"	2'-4"	3,-8,	4'-0"	5'-0"	6'-6"	7-9*	***				***	•••	15'-6"
	NI-40x	0-7	0'-8"	1'-3"	2'-8"	4'-0	4'-4"	5'-5"	7'-0"	8'-4"	***						16'-6"
. 77.44	NI-60	0-7*	1'-8"	3-0.	4'-3	5'-9	6.0.	7'-3"	8-10	10'-0"	•••		***				16'-9"
11-7/8	NI-70	1'-3"	2'-6"	4'-0"	5'-4	6-9	7-2	8'-4"	10-0	11'-2					•••		17'-5"
145. 3. 5.	NI-80	1'-6"	2'-10'	4'-2"	5'-6"	7'-0"	7'-5"	-8'-6	10-3	11'-4	•••						17-7
See See Se	NI-90	0-7	0'-8"	1'-5"	3'-2"	4'-10'	5'-4"	6'-9	8-9	10'-2"	***	•••	•••				17'-11
gradus, version	NI-90x	0-7	0'-8"	0-9-	2'-5"	4'-4"	4'-9"	6'-3"	***	•••		***	***		•••		18'-0'
100	NI-40x	0-7*	0,-8,	0-8	1,-0,	2'-4"	2'-9"	3'-9"	5'-2'	6-0	6'-6'	8-3	10-2				17'-11
A 100 TO	NI-60	0-7	0'-8"	1'-8	3'-0"	4'-3'	4'-8"	5'-8"	7'-2"	8'-0	8-8	10-4"	11'-9'				18'-2"
14	NI-70	0-8-	1:-10	3'-0	4'-5"	5'-10"	6'-2"	7'-3"	8-9	9-9-	10-4	12'-0"	13'-5"		***	•••	19-2
75.0	NI-80	0-10	2'-0'	3'-4"	4'-9'	6-2	6'-5	7'-6"	9'-0"	10'-0"	10-8	12'-4"	13'-9'				19-5
经验证的证据	NI-90	0-7	08.	0-10	2'-5"	4'-0"	4'-5	5'-9"	7'-5*	8-8	9-4	11'-4"	12-11.				19-9 20-0
Ches has	NI-90x	0'-7"	0.8,	0.8	2'-0'	3-9	4'-2"	5'-5'	7'-3"	8'-5"	9-2		01.01	10101	10101	1010	
9.15.20	NI-60	0'-7"	0.8.	0.8.	1'-6'	2'-10	3'-2"	4'-2"	5'-6	6'-4"	7-0	8'-5'	9'-8'	10-2	12'-2'	13'-9	19-10
	NI-70	0'-7"	1'-0	21-3*	3'-6'	4'-10	5'-3"	6-3	7'-8	89.	9-2	10'-8"	12'-0'	12'-4"	14'-0"	15'-6"	20-10
16"	NI-80	0'-7"	1'-3	2-6*	3'-10'	5'-3'	5'-6"	6'-6"	8-0	9.0	9'-5'	9-10-	11-3	12-9	13'-9"		21'-2
	NI-90	0.7	0'-8"	08.	1'-9"	3-3	3'-8	4'-9"	6'-5"	7'-5*	8:0	9-10	111-3	10101	13-9	15-4	2116

D_{reduced} = L_{actual} x D

- Technical CVD

The douced by the CVD reduced by t

DUCT CHASE OPENING SIZES AND LOCATIONS — Simple Span Only

		Minimu	m distan	ce from I					of opening	
Joist Donth	Joist Series	A RECORDER			Dud c	hase leng	th (m)			
	10000		AIO	12	14	16	18	20	22	221 5
ANY WARD	NI-20	4'-1"	4'-5"	4'-10'	5'-4"	5'-8' 6'-10'	6'-1' 7'-3' 7'-5'	6'-6"	7'-1"	7'-5"
9813989	NI-40x	5'-3	5'-8"	6'-0"	6'-5 6'-7 6'-3'	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"
eriologii	NI-70	5'-1"	5'-5"	5'-10'	6'-3'	6'-7'	7'-1"	7'-6"	8'-1"	8'-4"
200	NJ-80	5'-3'	5'-8"	6'-0"	6'-5'	6-10	7'-3"	7' <u>-8</u> *	8'-2"	8'-6"
300 4 40	NI-20	5'-9"	6'-2	6'-6"	7'-1"	7'-5	7'-9'	8'-3*	8'-9	9'-4"
Y sieta!	NI-40x	6'-8"	7'-2	7'-6"	8'-1"	8'-6	9'-1"	9'-6"	10-1	10'-9"
2.25	NI-60	7'-3"	7'-8"	8'-0"	8'-6"	9'-0"	9'-3"	9'-9"	10'-3"	11'-0"
1-7/8	NI-70	7'-1"	7'-4"	7'-9"	8'-3"	8'-7 '	9-1	9'-6"	10'-1"	10'-4"
	NI-80	7'-2"	7'-7"	8'-0	8'-5*	8'-10"	94-3	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
5 45.2	NI-90x	7-7	8'-1"	8'-5"	8'10"	9'-4"	9-8	10:-2:	10.8	1152
3.30 4.	NI-40x	8'-1"	8'-7"	9'-0"	91-6*	10'-1"	10'-7"	11'-2"	12'-0"	12'-8"
66 65 1	NI-60	8'-9	9'-3"	9'-8"	10-1"	10'-6"	11'-1"	11'-6"	13'-3"	13'-0"
	NI-70	8'-7"	9'-1"	9'-5"	9-10	10'-4"	10'-8"	11'-2	11'-7"	12'-3"
14	NI-80	9'-0"	9'-3"	9-9	10'-1"	10'-7"	11515	11'-6"	12'-1"	12'-6"
1.0000000	NI-90	9'-2"	9'-8"	10'-0"	10'-6"	10-11	11'-5"	11'-9"	12'-4"	12'-11"
197.57 E. V.	NI-90x	9'-4"	9'-9	10'-3"	10-7*	115	11575	12'-1"	12'-7	13'-2'
(S) (B)	NI-60	10-3	10'-8	11'-2'	11'-6"	12'-1	12'-6"	13'-2"	14'-1	14'-10"
	NI-70	10-1	10'-5"	11'-0'	11'-4"	11-10	12'-3"	12'-8"	131-3"	14'-0"
16	NI-80	10'-4"	10'-9"	111-3*	111.9	12'-1"	12'-7"	13'-1"	13'-8"	14'-4"
	NI-90	10'-9"	11'-2"	ii'-ă	12'-0"	12'-6"	13'-0	13'-6"	14'-2"	14'-10"
	NI-90x	l iivir	11-5	11110	12'-4"	12'-10"	13-2	13'-9"	14'-4"	15-2

. (4 584FFISB

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1. Above table may be used for I fails sporing of 24 inches on centre or less.
2. Duct chase opening localized distance is measured from inside face of supports to centre of opening.
3. The above table is to seed on simple, seprency local supports on the optications, contact your local distributor.
4. Distances are based on uniformly located floor joints fault made is page nequirements for a design live load of 40 put and dead load of 13 pt, and a live load defection limit of U/480. For other optications, contact your local distributor.

INSTALLING THE GLUED FLOOR SYSTEM

- 1. Wipe any mud, dirt, water, or ice from I-joist flanges before gluing.
- 2. Snap a chalk line across the l-joists four feet in from the wall for panel edge alignment and as a boundary for spreading glue.
- Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.
- Lay the first panel with tongue side to the wall, and nail in place. This protects the tongue of the next panel from damage when tapped into place with a black and sledgehammer. 5. Apply a continuous line of glue (about 1/4-inch diameter) to the top flonge of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists.
- 6. Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.
- 7. After the first row of panels is in place, spread glue in the groove of one or two panels at a time before laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (178 inch) than used on 1-joint Blanges.
- 8. Tap the second row of panels into place, using a block to protect groove edges.
- Stagger end joints in each succeeding row of panels. A 1/8-inch space between all end joints and 1/8-inch at all edges, including T&C edges, is recommended. (Use a spacer tool or an 2-1/2" comm noil to assure accurate and consistent spacing.)
- 10. Complete all nailing of each panel before alue sets. Check the manufacturer's reco 1. Compete an indump of each panel bestree give selfs. Check the menuracturer's recommendation for cure time. (Warm weather accelerates give setting) Use 2"ring- or screw-shank nails for panels 3/4-inch thick or less, and 2-1/2" ring- or screw-shank nails for thicker panels. Space nails per the table below. (Closer nail spacing may be required by some codes, or for disphragm construction. The finished deck can be walked on right away and will carry construction loads without damage to the glue bond.

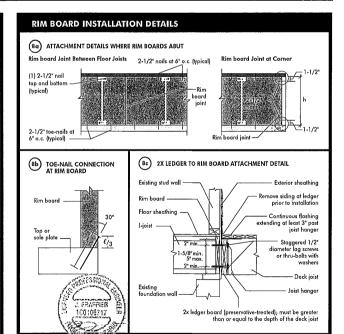
FASTENERS FOR SHEATHING AND SUBFLOORING(1)

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

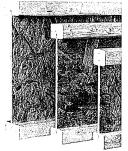
- 1. Fasteners of sheathing and subflooring shall conform to the above table
- 2. Staples shall not be less than 1/16-inch in diameter or thickness, with not less than a 3/8-inch crown driven with the crown parallel to framing
- 3. Flooring screws shall not be less than 1/8-inch in diameter
- 4. Special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

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

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







l-joist to top plate per detail 1b

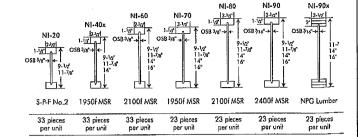
panel per defail la

(1d)



Refer to the Installation Guide for Residential Floors for additional information





WEB HOLE SPECIFICATIONS

CCMC EVALUATION REPORT 13032-R

RULES FOR CUTTING HOLES AND DUCT CHASE OPENINGS

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

 2. I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified
- Whenever possible, field-cut holes should be centred on the middle of the web.
 The maximum size hole or the maximum depth of a duct chose opening that
- can be cut into an I-joist web shall equal the clear distance between the flances of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent I-joist flange.

LOCATION OF CIRCULAR HOLES IN JOIST WEBS

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

- 5. The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
 6. Where more than one hole is necessary, the distance between adjacent hole edges
- shall exceed twice the diameter of the largest round hale or twice the size of the largest square hale (or twice the length of the langest side of the langest rectangular hale or duct chose opening) and each hole and duct chose opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.

 7. A knockout is not considered a hole, may be utilized anywhere it occurs, and may be
- ignored for purposes of calculating minimum distances between hales and/or duct
- Hales measuring 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 provided that it meets the requirements of rule number 6 above.

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

 11. Limit three maximum size holes per span, of which one may be
- a duct chase opening.
 A group of round holes at approximately the same location shall be permitted if they meet the requirements for α single round hale circumscribed around them.

Simple Span Only

			М	inimun	Distan	ce fro	m Insid	e Face	of Any	Support	to Cer	ntre of	Hole (ft	in.)		
Joist	Joist Series						Roui	nd Hole	Diam:	eter (in.	}					
Depth	261162	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"	146"	2'-10"	4'-3"	5'-8"	6'-0"									
	NI-40x	0'-7"	1'-6"	3'-0"	4-4	6'-0"	6'-4"							•••		
9-1/2"	NI-60	1'-3"	2'-6"	4'-0"	5'-4"	7'-0"	7'-5"	***								
1	NI-70	2'-0"	3'-4"	4'-9"	6'-3"	8'-0"	8'-4"	***								•
	NI-80	2'-3"	3'-6"	5'-0"	6'-6"	8'-2"	8'-8"									***
	NI-20	0'-7"	0'-8"	1'-0"	2'-4"	3'-8"	4'-0"	5'-0'	6'-6"	7'-9"	•••					
	NI-40x	0'-7"	0'-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'-0"	7'-3"	8'-10"	10:-0				•••		
11-7/8	NI-70	וי.3"	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"			***			
1	NI-90	0'-7"	0'-8"	1'-5"	3'-2"	4-10		6'-9"	8'-9"	10'-2"						
	NI-90x	0'-7"	0'-8"	0'-9"	2'-5"	4'-4"	41-91	6'-3"	***	***			***			
	NI-40x	0'-7"	0, 8.	0'-8"	1.0"	2'-4"	2'-9"	3'-9"	5'-2"	6'-0"	6'-6"	8,-3,	10'-2"			
	NI-60	0'-7"	0'-8"	1"-8"	3'-0"	4'-3"	4'-8"	5'-8"	7'-2"	8'-0"	8'-8"	10'-4"	11'-9"			
14"	NI-70	0'-8"	1'-10"	3'-0"	4'-5"	5'-10"		7'-3'	8'-9"	91.9"	10'-4"		13'-5"			•••
· -	NJ-80	0'-10"	2'-0"	3'-4"	4'-9"	6'-2"	6'-5"	7'-6"	9'-0"	10'-0"	10'-8"		13'-9"			
	NJ-90	0'-7"	0'-8"	0'-10"	2'-5"	4'-0*	4'-5"	5'-9"	7-5	8'-8"	9'-4"	11'-4"	12'-11"			•••
	NI-90x	0'-7"	0'-8°	0'-8"	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'		4'-2"	5'-6"	6'-4"	7'-0"	8'-5"	9'-8"		12'-2"	13,-6,
	NI-70	0'-7"	1'-0"	2'-3"	3'-6"	4'-10'		6'-3°	7'-8"	8'-6"	9'-2"	10'-8"	12'-0"		14'-0"	15'-6"
16"	NI-80	0'-7"	11-3"	2-6"	3'-10"	5'-3"	5'-6"	6-6	8'-0"	9'-0*	9-5	11'-0"	12'-3"		14'-5"	16'-0"
1	NI-90	0'-7°	0'-8"	0'-8"	1-9"	3'-3"	3'-8"	4'-9"	6'-5"	7'-5"	8'-0"	9'-10"	11'-3'		13'-9"	15'-4"
1	NI-90x	0'-7"	0'-8"	0'-9"	2'-0"	3'-6*	4'-0"	5'-0"	6'-9"	7'-9"	8'-4"	10'-2"	11'-6"	12'-0"		

- Above table may be used for I joist spacing of 24 inches on centre or less. Hale lacation distance is measured from inside tace of supports to centre of hole. Distances in this chart are based on uniformly loaded joists.
- Limities in inisional are based on unitariny loaded laist.
 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.

	Joist	MINIM	ım aisian	ce trom in	ISIDE IDCE	or suppr	KIS IO CE	anne or c	penny (n - u <i>ъ</i> j
Joist Depth	Series				Duct Ch	ase Leng	th (in.)			
Берш	001103	8	10	12	14	16	18	20	22	24
	NI-20	4'-1"	41-51	4'-10"	5'-4"	5'-8"	6'-1"	6'-6"	7'-1"	7'-5"
	NI-40x	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"
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'-1"	8'-4"
	NI-80	5'-3'	5'-8"	6'-0"	6'-5"	6'-10"	7'-3°	7'-8"	8'-2"	8'-6"
	NI-20	5'-9"	6-2	6'-6"	7'-1'	7'-5'	7'-9"	8'-3"	8'-9"	9'-4"
	NI-40x	6'-8"	7'-2"	7'-6"	8'-1"	8'-6"	9'-1"	9'-6"	10:-1"	10'-9"
	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"
	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'-4"	9'-8"	10'-2"	10'-8"	11'-2"
	NI-40x	8'-1"	8'-7"	9'-0"	9'-6"	10'-1°	10'-7"	11-2	12'-0*	12'-8"
	NI-60	8'-9"	9'-3"	9'-8"	10:-1"	10'-6"	11'-1"	11'-6"	13'-3"	13'-0"
	NI-70	81-71	9'-1"	9'-5"	9'-10"	10'-4"	10'-8"	11-2	11,-7,	1243*
14*	NI-80	9'-0"	9'-3"	9-9	10-1	10'-7"	11'1"	11'-6"	12'-1"	12'-6"
	NI-90	9'-2"	9'-8"	10'-0"	10'-6"		' 11'-5°	11'-9"	12'-4"	12-11
	NI-90x	9'-4"	9'-9"	10'-3"	10'-7"	1141"	11'-7"	12'-1"	12'-7"	13-2
	NI-60	10'-3"	10'-8"	1152	11'-6"	12'-1"	12'-6"	13'-2"	141-1"	14-10
	NI-70	10-11	10'-5"	11'-0"	11'-4"	17'-10		12'-8"	13'-3"	14'-0"
16"	NI-80	10-4	10'-9"	11'-3'	71'-9"	12'-1"	12'-7"	13'-1"	13'-8"	14'4'
	NI-90	10-9"	11'-2"	11'-8"	12'-0°	12'-6"	13'-0"	13'-6"	14-2	14'-10'
	NI-90x	1341*	11'-5"	114-10	12'-4"	12'-10	13'-2"	13'-9"	14-40	15'-2"

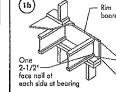
DUCT CHASE OPENING SIZES AND LOCATIONS

		Minimu	ım distan	ce from in	side tace	of suppo	orts to ce	entre of c	pening (ff - (rs.)
Joist Depth	Joist Series				Duct Ch	ase Leng	th (in.)			
Берш	001103	8	10	12	14	16	18	20	22	24
	NI-20	4'-1"	4'-5"	4'-10"	5'-4"	5'-8"	6'-1"	6'-6"	7'-1"	7'-5"
	NI-40x	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8-2	8'-6"
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'-1"	8'-4"
	NI-80	5'-3'	5'-8"	6'-0"	6'-5"	6'-10"	7′-3°	7'-8"	8'-2"	8'-6"
	NI-20	5'-9"	6'-2"	6'-6"	7'-1'	7'-5"	7'-9"	8'-3"	8'-9"	9'-4"
	NI-40x	6'-8"	7'-2"	7'-6"	8'-1"	8'-6"	9'-1"	9'-6"	10-1	10'-9"
	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"
	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"
	NJ-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°	10-7"	11'-2"	12'-0"	12'-8"
	NI-60	8'-9'	9'-3"	9'-8"	10:-1"	10-6	11-1*	11'-6"	13'-3"	13'-0"
14*	NI-70	8'-7"	9'-1"	9'-5"	9'-10"	10'-4"	10-8*	11-2	11'-7"	12'-3"
14	NI-80	9'-0"	9,-3,	9-9	10'-1"	10'-7"	11,1,	11'-6"	12'-1"	12'-6"
	NI-90	9'-2"	9'-8"	10'-0"	10'-6"		11-5	11'-9"	12'-4"	12'-11"
	NI-90x	9'-4"	9'-9"	10'-3"	10'-7"	11:1"	11'-7'	12'-1"	12'-7"	13'-2"
	NI-60	10'-3"	10'-8"	11'-2"	11-6	12:-1"	12-6	13'-2"	141-1"	14-10
	N-70	10'-1"	10'-5"	11'-0"	11-4	17'-10		12'-8"	13'-3"	14'-0'
16"	NI-80	10-4	10'-9"	11'-3"	71'-9"	12'-1"	12'-7"	13'-1"	13'-8"	14'-4"
	N1-90	10-9	11'-2"	11'-8"	12'-0°	12'-6"	13'-0"	13'-6"	14'-2"	14'-10"
	NI-90x	1341	11'-5"	11410	12'-4"	12'-10	" 13'-2"	13'-9"	14-40	15'-2"

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

Maximum Factored Uniform Vertical Load* (plf) 3 300 *The uniform vertical load is limited to a joist death of 16 inches or less and is based on standard term load durotion. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

- 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)



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

Maximum Factored Uniform

Vertical Load* (plf)

8 090

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

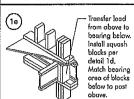
Blocking Panel

1-1/8" Rim Board Plus

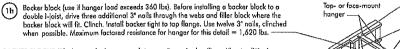
Attach rim board to top plate using 2-1/2" wire or spiral toe-nails at 6" o.c. To avoid splitting flange, start nails at least 1-1/2" from end of 1-joist

Nails may be driven at an angle to 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.



oad bearing wall above shall align vertically with the bearing below. Other condition as offset bearing walls, are not covered by Blacking required over all interior supports under load-bearing walls or when floor joists are not continuous over support 2-1/2° nails at 6" a.c. - NI blocking panel per detail la to top plate



-1/8" Rim Board Plus 4,300

Provide lateral bracing per detail 1a or 1b

Maximum Factored

Vertical Load per Pair of Squash Blocks (lbs

5,500 8,500

5-1/2" wide

6,600

3-1/2"

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

squash blacks

x Lumber

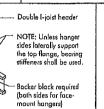
Flange Width	Material Thickness Required*	Minimum Depth**
2-1/2*	1"	5-1/2"
3-1/2*	1-1/2"	7-1/4*

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

(Im)

For hanger capacity see hanger manufacturer's adations. Verify double 1-joist capacity to suppor concentrated loads.

Filler block .



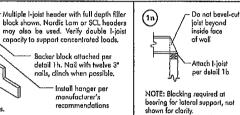
NOTE: Unless hanger sides laterally support the top flange, bearing stiffeners shall be used.

Structural Composite Lumber (SCL)

For nailing schedules for multiple

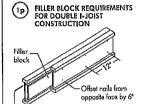
seams, see the manufacturer's

installed per manufacturer's





of adjacent web. Two 2-1/2" spiral nails from each web to lumber piece, alternate OPTIONAL: Minimum 1x4 inch strap applied to underside of joist at blocking line or 1/2 inch minimum gypsum ceiling attached to underside of joists.



- 2x plate flush with inside face of wall

past inside face of wall or beam.

NOTE: Unless hange sides laterally support

the ton flange begging

stiffeners shall be used

installed per manufacturer's

-1/8" to 1/4" gap between top flange

Flange Size Net Depth Filier Block Size Support back of I-joist web during nailing to prevent 1. Suppar actor or Joins was auring nating to prevent damage to web/flange connection. 2. Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top 1-joist flange. 3. Filler block is required between joists for full length 2-1/8" x 6" -1/2° s

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

Maximum support

apacity = 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 applied to one
- side of the double joist using this detail is 860 lbf/ft.
 Verify double I-joist capacity.

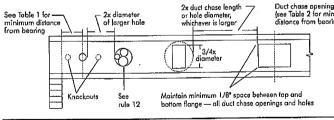
One 2-1/2" noil at top and bottom flange 2x4 min. (1/8" gap minimum, board 2-1/2" noils 1-1.5" Two 2-1/2" noils 1-joist blocking panel One 2-1/2" noil one side only NOTES: In some local codes, blocking is prescriptively require

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

All nails are common spiral in this detail. All nails shown in the above details are assumed to be common wire nails noted, 3" (0.122" dia.) common spiral nails may be substituted 2-1/2" (0.128" dia.) Framing lumber assumed to be Spruce-Pine-Fir No. 2 or better. Indivi ats not show components not sh to scale for clarity.

PIGURE 7

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 I-joist. Where assible, it is preferable to use knockouts instead of field-cut holes

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

Holes in webs should be cut with a sharp saw.

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

WEB STIFFENERS

bearing require

- 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 flange is at
- A bearing stiffener is required when the I-joist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.
- A load stiffener is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flonge between supports, or in the case of a cantilever, anywhere between the contilever fip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap betwee the stiffener and the flonge is at the bottom.

WEB STIFFENER INSTALLATION DETAILS

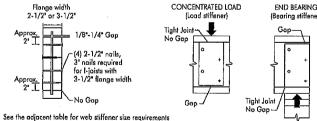
9-1/2"

1-7/8"

3'x 12'

-1/2"

3-1/2° x



er)	(Bearing stiffener)	STIFFENER SIZE REQUIRE				
\neg	Gop	Flange Width	Web Stiffener Each Side of			
\prod	0 +	2-1/2"	1" x 2-5/1 minimum w			
.		3-1/2"	1-1/2" x 2-5 minimum w			
≟ ∃ia	ht Joint					

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



fully fastened and braced, a



Never stack building materials over unsheathed Ljoists. Once sheathed, do not over-stress

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

AVOID ACCIDENTS BY FOLLOWING THESE IMPORTANT GUIDELINES:

Brace and nail each Hoist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends.

When Hoists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.

pe required at the interior support.

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

sheathing is applied, temporary bracing, often called struss, at temporary sheathing that be applied to prevent holds content or buckling.

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

***Dr. sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the boy.

**3. For confilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging. Install and fully notil permanent shouthing to each I-joist before placing loads on the floor system. Then, stock building moterois over beams ar walls only.

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

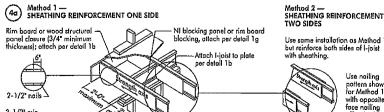


PRODUCT WARRANTY

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

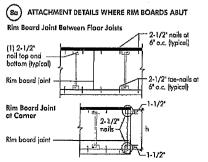
Furthermore, Chautiers Chibougaman warrants that our products, n utilized in accordance with our handling and installation instructions will meet or exceed our specifications for the lifetime of the structure.

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET



NOTE: Canadian softward plyward 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 L-joist to plate at all supports per detail 1b. Verify reinforced L-joist copacity.

RIM BOARD INSTALLATION DETAILS







NORDIC STRUCTURES

COMPANY June 1, 2020 15:44 PROJECT J8 - 1ST FLOOR

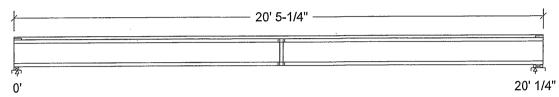
Design Check Calculation Sheet

Nordic Sizer - Canada 7.2

Loads:

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

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



Unfactored: Dead Live	200 400	200 400
Factored: Total	851	851
Bearing:		
Capacity		0000
Joist	2188	2336
Support	5573	10841
Des ratio		
Joist	0.39	0.36
Support	0.15	0.08
Load case		#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	1.00	1.00
fcp sup	769	769
Kzcp sup	1.09	1.15

Nordic Joist 11-7/8" NI-80 Floor joist @ 12" o.c.

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

Total length: 20' 5-1/4"; Clear span: 19' 10-1/2"; 3/4" nailed and glued OSB sheathing with 1 row of blocking This section PASSES the design code check.

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

			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 851	Vr = 2336	lbs	Vf/Vr = 0.36
Moment(+)	Mf = 4259	Mr = 11609	lbs-ft	Mf/Mr = 0.37
Perm. Defl'n	0.13 = < L/999	0.67 = L/360	in in	SEESSION 0.20
Live Defl'n	0.26 = L/915	0.50 = L/480	in prof	0.52
Total Defl'n	0.39 = L/610	1.00 = L/240	in /O	73020 20.39
Bare Defl'n	0.30 = L/813	0.67 = L/360	in /5//	7 3000 \$ 0.44
Vibration	Lmax = 20'-0.3	Lv = 22'-6.2	ft 🖔 🐃	10.89
Defl'n	= 0.024	= 0.032	in 9 5	KATSOULAKOS Sp.76
	I		\$ coa9	1//

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COMIDNENT ONLY

WoodWorks® Sizer

for NORDIC STRUCTURES

J8 - 1ST FLOOR

Nordic Sizer - Canada 7.2

Page 2

									
Additiona	l Data:								"
FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
	2336	1.00	1.00	-		-	-	-	#2
Mr+	11609		1.00	_	1.000	-		-	#2
EI	547.1 m		-	-	-	-	-	-	#2
CRITICAL L			S:						
Shear	"	= 1.2	5D + 1.5	<u>L</u>					
Moment (+) : LC #2	= 1.25	5D + 1.5	Ĺ					
Deflecti	on: LC #1	= 1.01) (perm	anent)					
Berroom	LC #2	= 1.01	0 + 1.0L	(live)				
	LC #2	= 1.01	+ 1.0L	(tota:	l)				
ļ	LC #2	= 1.01	+ 1.0L	(bare	joist)				
Bearing	: Suppo	ort 1 - 3	LC #2 =	1.25D +	1.5L				
	Suppo	rt 2 - 1	LC #2 = 1	1.25D +	1.5L				
Load Typ	es: D=dea	id W=wi	nd S=sn	ow H=e	arth,grou	ndwate	r E=ear	thquake	
	T.=1 i v	re (use, o	ccupancy) Ls=l:	ive(stora	ge, equ	ipment)	f=fire	
Load Pat	terns: s=	S/2 L=	L+Ls _=	no patte	ern load	in this	s span		
All Load	d Combinat	cions (L	Cs) are	listed :	in the An	alysis	output		
CALCULAT									
TTOFF -	625 37 1h	o-in^2	K = 6.18	e06 lbs				. •	CAFORMS TO OBC 2012
"Live" d	deflection	is due	to all	non-dea	d loads (live, w	wind, sn	ow)	aroa or emnump
									AMENDED 2020

Design Notes:

AMENDED ZUZU

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

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

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.



uva no. TAN 1/116 =20 STRUCTURAL COMPONENT ONLY



COMPANY June 2, 2020 14:28 PROJECT
J1 - 1ST FLOOR CANT

Design Check Calculation Sheet

Nordic Sizer - Canada 7.2

Loads:

۱	Load	Type	Distribution	Pat-	Location	[ft]	Magnitud	е	Unit
	Load	-11		tern	Start	End	Start	End	
	Load1	Dead	Full Area	No			20.00		psf
	Load2	Live	Full Area	Yes			40.00		psf

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

 	19' 9-5/8"	
O'		[설명] 17' 8-1/2"19' 8-1/2

Unfactored: Dead Live	175 354	219 439	
Factored: Total	750	932	
Bearing: Capacity Joist Support Des ratio Joist Support Load case Length Min req'd	2154 4520 0.35 0.17 #4 2 1-3/4	5006 - 0.19 - #2 4 3-1/2	
Stiffener KD KB support fcp sup	No 1.00	No 1.00 - -	

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

Nordic Joist 11-7/8" NI-80 Floor joist @ 12" o.c.

Supports: 1 - Lumber Wall, No.1/No.2; 2 - Steel Beam, W; Total length: 19' 9-5/8"; Clear span: 17' 5-5/8", 1' 10"; 5/8" nailed and glued OSB sheathing

This section PASSES the design code check.

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J1 - 1ST FLOOR CANT

Nordic Sizer - Canada 7.2

Page 2

Limit States Design using CSA O86-14 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 762	Vr = 2336	lbs	Vf/Vr = 0.33
Moment(+)	Mf = 3307	Mr = 11609	lbs-ft	Mf/Mr = 0.28
Moment(-)	Mf = 170	Mr = 11609	lbs-ft	Mf/Mr = 0.01
Deflection:				
Interior Perm	0.08 = < L/999	0.59 = L/360	in	0.14
Live	0.17 = < L/999	0.44 = L/480	in	0.38
Total	0.25 = L/848	0.89 = L/240	in	0.28
Cantil. Perm	-0.02 = L/974	0.13 = L/180	in	0.18
Live	-0.05 = L/460	0.10 = L/240	in	0.52
Total	-0.08 = L/312	0.20 = L/120	in	0.38
Bare Defl'n	-0.06 = L/410	0.13 = L/180	in	0.44
Vibration	Lmax = 17'-8.5	Lv = 19'-11	ft	0.89
Defl'n	= 0.026	= 0.035	in	0.74

Additional Data:

FACTORS:	f/E	. KD	KH	KZ	$_{ m KL}$	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-		_	_	-	#2
Mr+	11609	1.00	1.00	_	1.000	_	-	-	#4
Mr-	11609	1.00	1.00	-	1.000	_	-	-	#2
ET.	547 1 r	nillion		_	_	_		_	#4

CRITICAL LOAD COMBINATIONS:

Shear : LC #2 = 1.25D + 1.5L

Moment(+) : LC #4 = 1.25D + 1.5L (pattern: L_)

Moment(-): LC #2 = 1.25D + 1.5L

Deflection: LC #1 = 1.0D (permanent)

LC #4 = 1.0D + 1.0L (pattern: L_) (live) LC #4 = 1.0D + 1.0L (pattern: L_) (total) LC #4 = 1.0D + 1.0L (pattern: L_) (bare joist)

Bearing : Support $1 - LC \# 4 = 1.25D + 1.5L (pattern: L_)$

Support 2 - LC # 2 = 1.25D + 1.5L

Load Types: D=dead W=wind S=snow H=earth,groundwater E=earthquake

L=live(use,occupancy) Ls=live(storage,equipment) f=fire

Load Patterns: s=S/2 L=L+Ls _=no pattern load in this span All Load Combinations (LCs) are listed in the Analysis output

CALCULATIONS:

Eleff = $613.27 \text{ lb-in}^2 \text{ K} = 6.18e06 \text{ lbs}$

"Live" deflection is due to all non-dead loads (live, wind, snow...)

CONFORMS TO OBC 2012

Design Notes:

AMENDED 2020

- 1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
- 2. Please verify that the default deflection limits are appropriate for your application.
- 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.

DWB NO. FAM II 117 - 28 S. KATSOULAKOS S. STRUCTURAL COMPONENT ONLY



COMPANY
June 1, 2020 16:03

PROJECT J6 - 2ND FLOOR

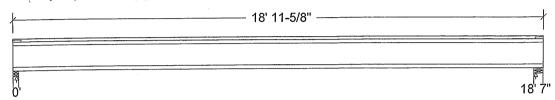
Design Check Calculation Sheet

Nordic Sizer – Canada 7.2

Loads:

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

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



Unfactored:			100
Dead	186		186
Live	372		372
Factored:			700
Total	790		790
Bearing:			
Capacity			0004
Joist	2188		2334
Support	5573		9901
Des ratio			0 04
Joist	0.36		0.34
Support	0.14		0.08
Load case			#2
Length	2-3/8		4
Min req'd	1-3/4		1-3/4
Stiffener	No		No
KD	1.00		1.00
KB support	_	,	7.00
fcp sup	769		769
Kach gun	l –		_

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

Nordic Joist 11-7/8" NI-80 Floor joist @ 12" o.c.

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

Total length: 18' 11-5/8"; Clear span: 18' 5-1/4"; 5/8" nailed and glued OSB sheathing with 1/2" gypsum ceiling

This section PASSES the design code check.

Limit States Design using CSA O86-14 and Vibration Criterion:

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 790	Vr = 2336	lbs	Vf/Vr = 0.34
Moment(+)	Mf = 3669	Mr = 11609	lbs-ft	Mf/Mr = 0.32
Perm. Defl'n	0.10 = < L/999	0.62 = L/360	in	COFESSION 0.16
Live Defl'n	0.20 = < L/999	0.46 = L/480	in 🎉	0.43
Total Defl'n	0.30 = L/736	0.93 = L/240	in 🎢	2 Mars 60.33
Bare Defl'n	0.22 = < L/999	0.62 = L/360	in /3 (2.36
Vibration	Lmax = 18'-7	Lv = 20'-5.8	C L 1 13 %	1 61.01
Defl'n	= 0.027	= 0.034	in 📜 🤄	KATSOULAKOS \$1.79
L DOLL 11			11	depresentationality (c)

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WoodWorks® Sizer

for NORDIC STRUCTURES

J6 - 2ND FLOOR

Nordic Sizer - Canada 7.2

Page 2

Additional												
FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#			
Vr	2336	1.00	1.00	-		_	-	-	#2			
Mr+	11609	1.00	1.00	-	1.000	-	-	-	#2			
EI	547.1 m	illion	_	-	-	-	-		#2			
CRITICAL LO	DAD COMB	INATIONS	8:									
Shear	: LC #2	= 1.25	5D + 1.5I									
Moment(+)	: LC #2	= 1.25	5D + 1.5I									
Deflection	on: LC #1	= 1.01) (perma	anent)								
	LC #2	= 1.01	+ 1.0L	(live)							i
	LC #2	= 1.01	+ 1.0L	(tota	1)							
	LC #2	= 1.01	+ 1.0L	(bare	joist)							
Bearing	: Suppo	rt 1 - 1	LC #2 = 1	25D +	1.5L							
	Suppo	rt 2 - 1	LC #2 = 1	L.25D +	1.5L							ļ
Load Type	es: D=dea	d W=wir	nd S=sno	ow H=e	arth,grou	ndwateı	r E=ear	thquake				
	L=liv	e(use,o	ccupancy)	Ls=l	ive(stora	ge,equi	ipment)	f=fire				
Load Patt	terns: s=	S/2 L=1	L+Ls _=r	no patt	ern load	in this	s span					
All Load	Combinat	ions (Lo	Cs) are l	isted	in the An	alysis	output					
CALCULATION												}
ETeff = 6	613,27 lb	-in^2 H	K= 6.186	e06 lbs								
"Live" de	eflection	is due	to all r	non-dea	d loads (live, v	vind, sn	ow)	canforms	TO	0BC 2	2012
1												

Design Notes:

AMENDED 2020

- 1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
- 2. Please verify that the default deflection limits are appropriate for your application.
- 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.



dwa no. tam 11118-28 Structural Component only

NORDIC STRUCTURES

COMPANYJune 3, 2020 13:47

PROJECT
J6 - 2ND FLOOR CANT

Design Check Calculation Sheet

Nordic Sizer - Canada 7.2

Loads:

Load	Type	Distribution	Pat-	Location [ft]		Magnitude		Unit
1000	- 11		tern	Start	End	Start	End	
Load1	Dead	Full Area	No			20.00		psf
Load2	Live	Full Area	Yes			40.00		psf
WALL	Dead	Point	No	17.80		100		lbs
ROOF	Dead	Point	No	17.80		45		lbs
ROOF SNOW	Snow	Point	Yes	17.80		72		lbs

Load magnitude does not include Normal Importance factor from O86 Table 5.2.3.2, which is applied during analysis.

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

19' 9-5/8" 17' 8-1/2" 19' 8-1/2"

			1	
Unfactored: Dead Live Snow	175 354	·	364 439 72	
Factored: Total	750		1185	
Bearing: Capacity				
Joist	2154 4520		5006 -	
Support Des ratio			0.24	
Joist Support	0.35		-	
Load case Length	#10		#4	
Min req'd	1-3/4 No		3-1/2 No	
Stiffener KD	1.00		1.00	
KB support fcp sup	769		_	
Kach ein			- 1	

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

Nordic Joist 11-7/8" NI-80 Floor joist @ 12" o.c.

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

Total length: 19' 9-5/8"; Clear span: 17' 5-5/8", 1' 10"; 5/8" nailed and glued OSB sheathing

This section PASSES the design code check.

846 NO. TAM LILI9 = 2 STRUCTURAL COMPONENT ONLY

Nordic Sizer - Canada 7.2

Page 2

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

Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 762	Vr = 2336	lbs	Vf/Vr = 0.33
Moment(+)	Mf = 3307	Mr = 11609	lbs-ft	Mf/Mr = 0.28
Moment(-)	Mf = 170	Mr = 11609	lbs-ft	Mf/Mr = 0.01
Deflection:				
Interior Perm	0.08 = < L/999	0.59 = L/360	in	0.14
Live	0.17 = < L/999	0.44 = L/480	in	0.38
Total	0.25 = L/848	0.89 = L/240	in	0.28
Cantil. Perm	-0.02 = L/974	0.13 = L/180	in	0.18
Live	-0.05 = L/460	0.10 = L/240	in	0.52
Total	-0.08 = L/312	0.20 = L/120	in	0.38
Bare Defl'n	-0.06 = L/410	0.13 = L/180	in	0.44
Vibration	Lmax = 17'-8.5	Lv = 19'-11	ft	0.89
Defl'n	= 0.026	= 0.035	in	0.74

Additional Data:

Madiciona	· · · · · ·								
FACTORS:	f/E	KD	KH	KZ	KL	KT	KS	KN	LC#
Vr	2336	1.00	1.00	_	_	-	-	-	#2
Mr+	11609	1.00	1.00	_	1.000	_	_	_	#10
Mr-	11609	1.00	1.00	_	1.000	_	_	_	#2
FT	547.1 m	illion		. —	-	_	-	-	#10

CRITICAL LOAD COMBINATIONS:

```
: LC \#2 = 1.25D + 1.5L
```

Moment(+): LC
$$\#10 = 1.25D + 1.5L$$
 (pattern: L_)

Moment(-): LC
$$\#2 = 1.25D + 1.5L$$

LC
$$\#10 = 1.0D + 1.0L$$
 (pattern: L_) (live)
LC $\#10 = 1.0D + 1.0L$ (pattern: L_) (total)

LC
$$\#10 = 1.0D + 1.0L$$
 (pattern: L) (bare joist)

Bearing : Support 1 - LC
$$\#10 = 1.25D + 1.5\overline{L}$$
 (pattern: L_) Support 2 - LC $\#4 = 1.25D + 1.5L + (1.0)1.0S$

Load Types: D=dead W=wind S=snow H=earth, groundwater E=earthquake

L=live(use, occupancy) Ls=live(storage, equipment) f=fire

Load Patterns: s=S/2 L=L+Ls _=no pattern load in this span All Load Combinations (LCs) are listed in the Analysis output

CALCULATIONS:

 $Eleff = 613.27 lb-in^2 K = 6.18e06 lbs$ "Live" deflection is due to all non-dead loads (live, wind, snow...) CONFORMS TO OBE 2012

AWENDED 2020

Design Notes:

- 1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B. Part 4, and the CSA O86-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
- 2. Please verify that the default deflection limits are appropriate for your application.
- 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.

awa no . Tam [1] 9 STRUCTURAL COMPONENT ONLY





PASSED

July 23, 2020 17:02:01

1ST FLR FRAMING\Flush Beams\B2 H(i20605) (Flush Beam)

BC CALC® Member Report

Build 7493 Job name:

Address:

City, Province, Postal Code: MARKHAM

Dry | 1 span | No cant.

KIMBERLY 4 - EL 1,2.mmdl

File name: 1ST FLR FRAMING\Flush Beams\B2 H(i20605) Description:

Wind

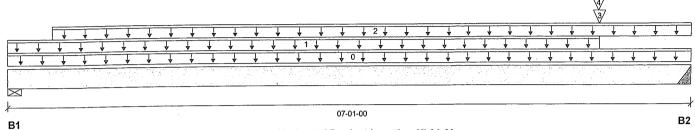
Specifier:

Designer: L.D.

Customer: Code reports:

CCMC 12472-R

Company:



Total Horizontal Product Length = 07-01-00

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	
B1, 5-1/2"	896 / 0	470 / 0	
B2. 3"	1046 / 0	543 / 0	

Loa	ad Summary						Live
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-01-00	Top	
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	06-01-08	Top	31
2	STAIRS	Unf. Lin. (lb/ft)	L	00-05-08	07-01-00	Top .	240
3	Bk2(i20671)	Conc. Pt. (lbs)	L	06-01-08	06-01 - 08	Top	97
4	STAIRS	Conc. Pt. (lbs)	L	06-01-06	06-01-06	Тор	56

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3200 ft-lbs	17696 ft-lbs	18.1%	1	03-08-09
End Shear	1500 lbs	7232 lbs	20.7%	1	05-10-02
Total Load Deflection	L/999 (0.035")	n\a	n\a	4	03-07-12
Live Load Deflection	L/999 (0.023")	n\a	n\a	5	03-07-12
Max Defl.	0.035"	n\a	n\a	4	03-07-12
Span / Depth	6.6				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1	Wall/Plate	5-1/2" x 1-3/4"	1931 lbs	32.6%	16.4%	Spruce-Pine-Fir	
B2	Hanger	3" x 1-3/4"	2249 lbs	n\a	35.1%	HUS1.81/10	

Cautions

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 11-7/8" 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.

CONFORMS TO OBC 2012

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned

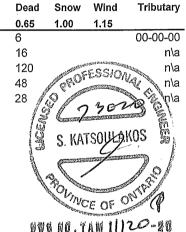
AMENDED 2020

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 086.

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

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



STRUCTURAL COMPONENT ONLY Disclosure

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BC CALC® Member Report



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

PASSED

1ST FLR FRAMING\Flush Beams\B12 H(i20633) (Flush Beam)

Dry | 1 span | No cant.

July 23, 2020 17:02:01

Build 7493

Job name:

Customer:

Address:

Code reports:

City, Province, Postal Code: MARKHAM

CCMC 12472-R

KIMBERLY 4 - EL 1,2.mmdl File name:

Wind

Description: 1ST FLR FRAMING\Flush Beams\B12 H(i20633)

Specifier:

L.D. Designer:

Company:

 	<u>†</u> † † † † † † † † † † † † † † † † † †		<u> </u>
↑	4 4 4 4 4	* * * * * * * * * * * * * * * * * * *	
and the control of the control of the			
			07-00-04

Total Horizontal Product Length = 07-00-04

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 3-1/2"	3031 / 0	1862 / 0
B2, 3"	2533 / 0	1592 / 0

1.0	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag		Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	07-00-04	Top		12			00-00-00
1	10(i89)	Unf. Lin. (lb/ft)	L	00-00-00	07-00-04	Top	403	283			n\a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	03-00-00	07-00-00	Top	329	164			n\a
2	B1 H(i20621)	Conc. Pt. (lbs)	L	00-00-14	00-00-14	Top	628	330			n\a
3	,	Conc. Pt. (lbs)	Ĺ	01-02-11	01-02-11	Тор	451	227			n\a
4	-	Conc. Pt. (lbs)	ī	02-04-00	02-04-00	Top	340	170			n\a
5	J3(i20663)	CONC. Pt. (IDS)	_	02 0-7-00	02 0 1 00	٠ ٦٦	5.0				

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	9151 ft-lbs	35392 ft-lbs	25.9%	1	03-08-00
End Shear	4148 lbs	14464 i bs	28.7%	1	01-03-06
Total Load Deflection	L/999 (0.052")	n\a	n∖a	4	03-06-00
Live Load Deflection	L/999 (0.032")	n\a	n\a	5	03-06-00
Max Defl.	0.052"	n\a	n\a	4	03-06-00
Span / Depth	6.7				

Rearin	g Supports	Dim (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1	Column	3-1/2" x 3-1/2"	6875 lbs	86.4%	46.0%	Unspecified	
B2	Column	3" x 3-1/2"	5790 lbs	84.9%	45.2%	Unspecified	

Notes

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

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

CONFORMS TO OBE 2012

Calculations assume member is fully braced.

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

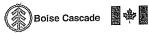
AWENDED 2020

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

OWS NO. FAM 1/12/ =20 STRUCTURAL COMPONENT ONLY





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B12 H(i20633) (Flush Beam)

PASSED

July 23, 2020 17:02:01

BC CALC® Member Report

Build 7493

Job name:

Address: City, Province, Postal Code: MARKHAM

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

KIMBERLY 4 - EL 1,2.mmdl File name:

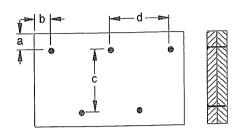
Description: 1ST FLR FRAMING\Flush Beams\B12 H(i20633)

Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 6"

Calculated Side Load = 931.5 lb/ft

Connectors are:

- Nails

316" ARDOX SPIRAL



DWG NO. YAN 11124-20 STRUCTURAL COMPONENT ONLY

Disclosure

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PASSED

1ST FLR FRAMING\Flush Beams\B3 H(i20453) (Flush Beam)

Dry | 2 spans | L cant.

July 23, 2020 17:02:01

Build 7493

Job name:

Customer:

Address:

Code reports:

City, Province, Postal Code: MARKHAM

BC CALC® Member Report

File name: Description: KIMBERLY 4 - EL 1,2.mmdl

1ST FLR FRAMING\Flush Beams\B3 H(i20453)

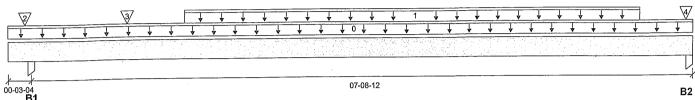
Wind

Specifier:

Designer: L.D.

CCMC 12472-R

Company:



Total Horizontal Product Length = 08-00-00

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead		
B1, 3-1/2"	1983 / 0	1060 / 0		
B2 3-1/2"	712 / 0	423 / 0		

10	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-00-00	Top		12			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	02-00-08	07-04-08	Top	204	102			n\a
2	Omoonica Load	Conc. Pt. (lbs)	L	00-02-06	00-02-06	Top	1318	679			n\a
2	J6(i20460)	Conc. Pt. (lbs)	L	01-04-08	01-04-08	Тор	254	127			n\a
ა ⊿	56(120400) F44(169)	Conc. Pt. (lbs)	Ĺ	07-11-00	07-11-00	Top	29	34			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	3187 ft-lbs	35392 ft-lbs	9.0%	1	04-00-08
End Shear	1491 lbs	14464 lbs	10.3%	1	06-08-10
Cont. Shear	1435 lbs	14464 lbs	9.9%	1	01-04-14
Total Load Deflection	L/999 (0.023")	n\a	n\a	8	04-00-08
Live Load Deflection	L/999 (0.015")	n\a	n\a	11	04-00-08
Total Neg. Defl.	2xL/1998 (-0.003")	n\a	n\a	10	00-00-00
Max Defl.	0.023"	n\a	n\a	8	04-00-08
Span / Depth	7.6				

Rearin	ng Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Column	3-1/2" x 3-1/2"	4300 lbs	54.0%	28.8%	Unspecified
D1			4 5 6 7 11	00.40/	10.7%	Unspecified
B2	Column	3-1/2" x 3-1/2"	1597 lbs	20.1%	10.7%	Orispecified

Cautions

Concentrated side load(s) 1 are closer than 18" from end of member. Please consult a technical representative or Professional of Record.

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.

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

Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.



OW6 NO. FAN 1/122-20 STRUCTURAL COMPONENT ONLY





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B3 H(i20453) (Flush Beam)

Dry | 2 spans | L cant.

PASSED

July 23, 2020 17:02:01

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: MARKHAM

Customer:

Code reports:

CCMC 12472-R

File name:

KIMBERLY 4 - EL 1,2.mmdl

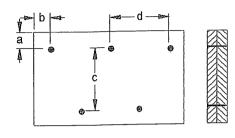
Description: 1ST FLR FRAMING\Flush Beams\B3 H(i20453)

Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 7-7/8" d = 100 B

Calculated Side Load = 573.8 lb/ft Connectors are: 16d Nails

316" ARDOX SPIRAL

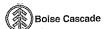


OWA NO. TAM U1 22-20 STRUCTURAL COMPONENT ONLY

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PASSED

July 23, 2020 17:02:01

1ST FLR FRAMING\Flush Beams\B7 H(i20630) (Flush Beam)

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: MARKHAM

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

KIMBERLY 4 - EL 1,2.mmdl

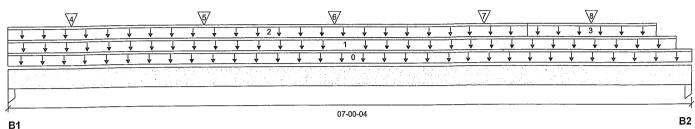
File name: 1ST FLR FRAMING\Flush Beams\B7 H(i20630) Description:

Wind

Specifier:

Designer: L.D.

Company:



Total Horizontal Product Length = 07-00-04

Snow

Reaction Summary (Down / Uplift) (lbs)

Live Dead Bearing 1554 / 0 B1, 3" 2460 / 0 2195 / 0 1413/0 B2, 3-1/2"

Load Sum	marv					Live	Dead	Snow	Wind	Tributary
Tag Descript		Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0 Self-We		lb/ft) L	00-00-00	07-00-04	Тор		12			00-00-00
1 10(i89)	Unf. Lin. ((lb/ft) L	00-00-00	06-10-04	Top		81			n\a
2 10(i89)	Unf. Lin. ((lb/ft) L	00-00-00	05-03-12	Top	403	202			n\a
3 10(i89)	Unf. Lin. ((lb/ft) L	05-03-12	06-07-12	Top	371	186			n\a
4 J3(i2050	Conc. Pt.	(lbs) L	00-07-12	00-07-12	Top	381	190			n\a
5 -	Conc. Pt.	(lbs) L	01-11-15	01-11-15	Top	473	236			n\a
6 J4(i2050	Onc. Pt.	(lbs). L	03-03-12	03-03-12	Top	341	170			n\a
7 -	Conc. Pt.		04-10-04	04-10-04	Top	478	239			n\a
8 .13(i206 ⁻		•	05-11-12	05-11-12	Top	324	162			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand <i>l</i> Resistance	Case	Location
Pos. Moment	8800 ft-lbs	35392 ft-lbs	24.9%	1	03-03-12
End Shear	4748 lbs	14464 lbs	32.8%	1	05-08-14
Total Load Deflection	L/999 (0.05")	n\a	n\a	4	03-05-12
Live Load Deflection	L/999 (0.031")	n\a	n\a	5	03-05-12
Max Defl.	0.05"	n\a	n\a	4	03-05-12
Span / Depth	6.7				

Bearir	ng Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Resistance Member	Material
B1	Column	3" x 3-1/2"	5632 lbs	82.6%	44.0%	Unspecified
B2	Column	3-1/2" x 3-1/2"	5060 lbs	63.6%	33.9%	Unspecified

Notes

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

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

GANFORMS TO OBE 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



BWB NO. TAN 1/123-20 STRUCTURAL COMPONENT ONLY





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B7 H(i20630) (Flush Beam)

PASSED

July 23, 2020 17:02:01

BC CALC® Member Report

Build 7493

Job name:

Address: City, Province, Postal Code: MARKHAM

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

KIMBERLY 4 - EL 1,2.mmdl

File name:

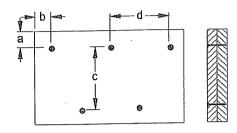
Description: 1ST FLR FRAMING\Flush Beams\B7 H(i20630)

Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 7-7/8" d = 100 B

Calculated Side Load = 869.9 lb/ft Connectors are: 16d (

ARDOX SPIRAL



OWG NO. TAM 11/23-20 STRUCTURAL COMPONENT ONLY

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BC CALC® Member Report



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

PASSED

1ST FLR FRAMING\Flush Beams\B1 H(i20621) (Flush Beam) Dry | 1 span | No cant.

July 23, 2020 17:02:01

Build 7493

Job name:

Customer:

Code reports:

Address: City, Province, Postal Code: MARKHAM

CCMC 12472-R

File name:

KIMBERLY 4 - EL 1,2.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B1 H(i20621)

Specifier:

Company:

Designer: L.D.

Wind

Live

Dead

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Total Horizontal Product Length = 05-07-00

Snow

Reaction Summary (Down / Uplift) (lbs)

Dead Bearing 345 / 0 658 / 0 B1, 3" 378 / 0 675 / 0 B2, 5-1/2"

Loa	ad Summary					_			4.00		
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	05-07-00	Top		6			00-00-00
4	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	05-07-00	Top	5	3			n\a
1		Unf. Lin. (lb/ft)	ī	00-00-00	05-01-08	Top	240	120			.⊾ n\a
2	STAIRS		-	05-04-04	05-04-04	qoT	75	61	artiki Trikita	LFESSIO	Ma. n\a
3	12(i2210)	Conc. Pt. (lbs)	L	05-04-04	05-04-04	rop	73	01	10 C. C. C.		
			Factored	Dem	and/	0	Lasation		Some	2/90	200

Controls Summary	Factored Demand	Factored Resistance	Resistance	Case	Location
Pos. Moment	1650 ft-lbs	17696 ft-lbs	9.3%	1	02-08-04
End Shear	765 lbs	7232 lbs	10.6%	1	01-02-14
Total Load Deflection	L/999 (0.011")	n\a	n\a	4	02-08-04
Live Load Deflection	L/999 (0.007")	n\a	n\a	5	02-08-04
Max Defl.	0.011"	n\a	n\a	4	02-08-04
Span / Depth	5.1				

Rearing	g Supports	Dim (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Hanger	3" x 1-3/4"	1419 lbs	n\a	22.2%	HUS1.81/10
B2	Wall/Plate	5-1/2" x 1-3/4"	1485 I bs	25.1%	12.6%	Spruce-Pine-Fir

Cautions

Header for the hanger HUS1.81/10 is a Double 1-3/4" x 11-7/8" 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.

Calculations assume member is fully braced.

Hanger Manufacturer: Unassigned 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

: INFARMS TO OBE 2012

OWE NO. TAN 11124-20 STRUCTURAL COMPONENT ONLY

POVINCE OF ON THE

Wind

Snow

Tributary

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





PASSED

July 23, 2020 17:02:01

1ST FLR FRAMING\Flush Beams\B9(i20465) (Flush Beam)

BC CALC® Member Report Build 7493

Job name:

Address:

City, Province, Postal Code: MARKHAM

Customer: Code reports:

B1

CCMC 12472-R

Dry | 1 span | No cant.

KIMBERLY 4 - EL 1,2.mmdl

File name: 1ST FLR FRAMING\Flush Beams\B9(i20465) Description:

Wind

Specifier:

Designer: L.D.

Company:

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			-	- 1	7.1																						

Total Horizontal Product Length = 04-04-00

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 5-1/2"	3215 / 0	1740 / 0
B2, 3-1/2"	985 / 0	517 / 0

	!						Live	Dead	Snow	Wind	Tributary
	ad Summary Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
_ ray	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-04-00	Тор		12			00-00-00
4	STAIRS	Unf. Lin. (lb/ft)	L	00-04-08	03-11-08	Top	240	120			n\a
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-06-11	04-04-00	Тор	264	132			n\a
2			1	00-03-04	00-03-04	Top	2333	1272			n\a
3	26(i11628)	Conc. Pt. (lbs)	L	00-00-04	00 00 0 .	·op	2000				

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1875 ft-lbs	35392 ft-lbs	5.3%	1	02-06-08
End Shear	1557 lbs	14464 lbs	10.8%	1	03-00-10
Total Load Deflection	L/999 (0.003")	n\a	n\a	4	02-03-03
	L/999 (0.002")	n\a	n\a	5	02-03-03
Live Load Deflection Max Defl.	0.003"	n\a	n\a	4	02-03-03
Span / Depth	3.7				

Bearing Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1 Wall/Plate B2 Wall/Plate	5-1/2" x 3-1/2"	6999 lbs	59.1%	29.8%	Spruce-Pine-Fir
	3-1/2" x 3-1/2"	2125 lbs	28.2%	14.2%	Spruce-Pine-Fir

Notes

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

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

CANFORMS TO OBG 2012

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

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

POVINCE OF ONE

OW 6 NO. FAM 11125-20 STRUCTURAL COMPONENT ONLY





PASSED

1ST FLR FRAMING\Flush Beams\B9(i20465) (Flush Beam) Dry | 1 span | No cant.

July 23, 2020 17:02:01

BC CALC® Member Report **Build 7493**

Job name:

Address: City, Province, Postal Code: MARKHAM

Customer: Code reports:

CCMC 12472-R

File name:

KIMBERLY 4 - EL 1,2.mmdl

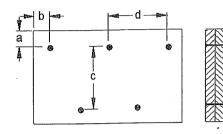
Description: 1ST FLR FRAMING\Flush Beams\B9(i20465)

Specifier:

L.D.

Designer: Company:

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 7-7/8" d = 28 8 "

Calculated Side Load = 356.3 lb/ft Connectors are: 16d 7 / Nails

ARDOX SPIRAL



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 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.

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Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B8(i20656) (Flush Beam)

PASSED

BC CALC® Member Report

Dry | 1 span | No cant.

July 23, 2020 17:02:01

Build 7493

Job name: Address:

File name:

KIMBERLY 4 - EL 1,2.mmdl

Description:

1ST FLR FRAMING\Flush Beams\B8(i20656)

City, Province, Postal Code: MARKHAM

Specifier:

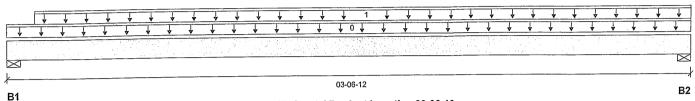
Customer:

CCMC 12472-R Code reports:

Designer:

L.D.

Company:



Total Horizontal Product Length = 03-06-12

Boostion Summary (Down / Unlift) (lbs)

Reaction Sun	Illiary (Down o	pine, (iso)	
Bearing	Live	Dead	Snow
B1. 1-3/4"	35 / 0	27 / 0	
D2 5 1/2"	46 / 0	35 / 0	

	d Cummani						Live	Dead	Snow	Wind	Tributary
	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	03-06-12	Тор		6			00-00-00
1	FC3 Floor Material	Unf. Lin. (lb/ft)	L	00-01-12	03-06-12	Тор	24	12			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	69 ft-lbs	17696 ft-lbs	0.4%	1	01-07-08
End Shear	28 lbs	7232 lbs	0.4%	1	01-01-10
Total Load Deflection	L/999 (0")	n\a	n\a	4	01-07-08
Live Load Deflection	L/999 (0")	n\a	n\a	5	01-07-08
Max Defl.	0"	n\a	n\a	4	01-07-08
Span / Depth	3.1				

Rearin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	1-3/4" x 1-3/4"	87 lbs	4.6%	2.3%	Spruce-Pine-Fir
B2	Wall/Plate	5-1/2" x 1-3/4"	112 lbs	1.9%	1.0%	Spruce-Pine-Fir

Notes

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

Design meets Code minimum (L/360) Live load deflection criteria. CANFORMS TO OBE 2012 Calculations assume unbraced length of Top: 00-00-00, Bottom: 00-00-00.

Resistance Factor phi has been applied to all presented results per CSA 086. Resistance Factor phi has been applied to all presented results per CSA U86. 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



944 NO. TAN 11126-20 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 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.

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PASSED

July 23, 2020 17:02:01

2ND FLR FRAMING\Flush Beams\B5(i20140) (Flush Beam) Dry | 1 span | No cant.

BC CALC® Member Report

Build 7493 Job name:

Address:

City, Province, Postal Code: MARKHAM

Customer: Code reports:

CCMC 12472-R

File name:

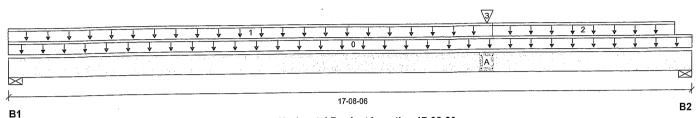
KIMBERLY 4 - EL 1,2.mmdl Description: 2ND FLR FRAMING\Flush Beams\B5(i20140)

Wind

Specifier:

L.D. Designer:

Company:



Total Horizontal Product Length = 17-08-06

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	
B1, 4-3/8"	741 / 0	499 / 0	
B2 5-1/2"	1428 / 0	875 / 0	

I and Cummon/							Live	Dead	Snow	Wind	Tributary
	ad Summary Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
-145	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	17-08-06	Тор		12			00-00-00
1	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	12-05-06	Top	27	13			n\a
2	FC4 Floor Material	Unf. Lin. (lb/ft)	L	12-05-06	17-02-14	Top	21	10			n\a
3	B6(i20268)	Conc. Pt. (lbs)	L	12-03-10	12-03-10	Тор	1734	944			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	15391 ft-lbs	35392 ft-lbs	43.5%	1	12-03-10
End Shear	3165 lbs	14464 lbs	21.9%	1	16-03-00
Total Load Deflection	L/426 (0.479")	n\a	56.4%	4	09-06-12
Live Load Deflection	L/687 (0.297")	n\a	52.4%	5	09-06-12
Max Defl.	0.479"	n\a	n\a	4	09-06-12
Span / Depth	17.2				

Rearin	ng Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	4-3/8" x 3-1/2"	1734 lbs	18.4%	9.3%	Spruce-Pine-Fir
B2	Wall/Plate	5-1/2" x 3-1/2"	3236 lbs	27.3%	13.8%	Spruce-Pine-Fir

Notes

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

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

CANFORMS TO OBG 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



000 HO. TAW 11127 -20 STRUCTURAL COMPONENT ONLY





PASSED

2ND FLR FRAMING\Flush Beams\B5(i20140) (Flush Beam) Dry | 1 span | No cant.

July 23, 2020 17:02:01

BC CALC® Member Report Build 7493

Job name: Address:

Customer:

City, Province, Postal Code: MARKHAM

File name:

KIMBERLY 4 - EL 1,2.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B5(i20140)

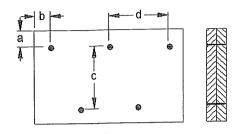
Specifier:

Company:

Designer: L.D.

CCMC 12472-R Code reports:

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

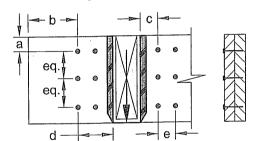
c = 7-7/8"

Connectors are: ARDUX SPIRAL

Nails

Connection Diagrams: Concentrated Side Loads

Connection Tag: A Applies to load tag(s): 2



a minimum = 2"

b minimum = 4"

c minimum = 4"

d maximum = 12"

e minimum = 4"

Connectors are: 16d 🧳 Nails

316" ARDOX SPIRAL



OWS NO. YAW 11127-20 STRUCTURAL COMPONENT ONLY

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PASSED

2ND FLR FRAMING\Flush Beams\B6(i20268) (Flush Beam)

BC CALC® Member Report

Dry | 1 span | No cant.

July 23, 2020 17:02:01

Build 7493

Job name: Address:

City, Province, Postal Code: MARKHAM

File name:

KIMBERLY 4 - EL 1,2.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B6(i20268)

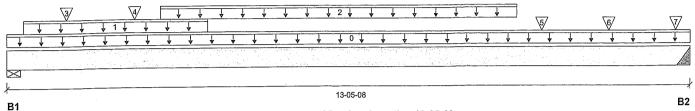
Specifier:

Customer: Code reports:

CCMC 12472-R

Designer: L.D.

Company:



Total Horizontal Product Length = 13-05-08

Position Summary (Down / Unlift) (lbs)

Reaction Sui	Illiary (Down of				
Bearing	Live	Dead	Snow	Wind	
B1, 5-1/2"	2305 / 0	1233 / 0			
B2, 4"	1762 / 0	959 / 0			

Lo	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	13-05-08	Top		12			00-00-00
1	STAIRS	Unf. Lin. (lb/ft)	L	00-04-00	03-11-00	Top	240	120			n\a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	03-00-00	10-00-00	Top	. 249	124			n\a
3	J3(i20267)	Conc. Pt. (lbs)	L	01-02-00	01-02-00	Top	328	164			n\a
4	J3(i20318)	Conc. Pt. (lbs)	L	02-06-00	02-06-00	Top	290	145			n\a
5	J3(i20173)	Conc. Pt. (lbs)	L	10-06-00	10-06-00	Тор	290	145			n\a
6	J3(i20109)	Conc. Pt. (lbs)	L	11-10-00	11-10-00	Top	332	166			n\a
7	J3(i20149)	Conc. Pt. (lbs)	L.	13-02-00	13-02-00	Top	220	110			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	12801 ft-lbs	35392 ft-lbs	36.2%	1	06-06-00
End Shear	4211 lbs	14464 I bs	29.1%	1	01-05-06
Total Load Deflection	L/556 (0.276")	n\a	43.1%	4	06-09-00
Live Load Deflection	L/857 (0.179")	n\a	42.0%	5	06-09-00
Max Defl.	0.276"	n\a	n\a	4	06-09-00
Span / Depth	12.9				

	Bearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
-	B1	Wall/Plate	5-1/2" x 3-1/2"	4999 lbs	42.2%	21.3%	Spruce-Pine-Fir
	B2	Hanger	4" x 3-1/2"	3841 lbs	n\a	22.5%	HGUS410

Cautions

Header for the hanger HGUS410 is a Double 1-3/4" x 11-7/8" LVL Beam.

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



DWG NO. TAM 11128-20 STRUCTURAL COMPONENT ONLY





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B6(i20268) (Flush Beam)

PASSED

July 23, 2020 17:02:01

BC CALC® Member Report

Build 7493

Job name:

Address: City, Province, Postal Code: MARKHAM

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

KIMBERLY 4 - EL 1,2.mmdl

File name: Description: 2ND FLR FRAMING\Flush Beams\B6(i20268)

Specifier:

Designer: L.D.

Company:

Notes

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

Calculations assume member is fully braced.

CONFORMS TO OBC 2012

Hanger Manufacturer: Unassigned

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

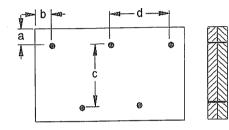
AMENDED 2020

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

Connection Diagram: Full Length of Member



a minimum = 2"b minimum = 3"

c = 7-7/8" d = 10 B "

Calculated Side Load = 660.9 lb/ft Connectors are: 16d Amount Nails

312" ARDOX SPIRAL



444 NO. TAN 11/28-20 STRUCTURAL COMPONENT ONLY

Disclosure

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PASSED

July 23, 2020 17:02:01

2ND FLR FRAMING\Dropped Beams\B10 DR(i20088) (Dropped Beam)

BC CALC® Member Report

Build 7493

Job name:

Address: City, Province, Postal Code: MARKHAM

Dry | 1 span | No cant.

KIMBERLY 4 - EL 1,2.mmdl

File name: Description: 2ND FLR FRAMING\Dropped Beams\B10 DR(i20088)

Specifier:

Designer: L.D.

Customer: Code reports:

CCMC 12472-R

Company:

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	1.5	1.3		3,30	435	3.7	11.5	1000	15.15.						4 2 2 2	41.	91	- 1, 25	:		<u> </u>		

Total Horizontal Product Length = 10-07-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live) Dead	Sno
B1, 3-1/2"	2085 / 0	1110 / 0	
B2 3-1/2"	2058 / 0	1096 / 0	

10	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-07-00	Top		12			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-00-00	10-07-00	Top	386	194			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	10440 ft-lbs	35392 ft-lbs	29.5%	1	05-03-00
End Shear	3679 lbs	14464 lbs	25.4%	1	01-03-06
Total Load Deflection	L/878 (0.138")	n\a	27.3%	4	05-03-00
Live Load Deflection	L/999 (0.09")	n\a	n\a	5	05-03-00
Max Defl.	0.138"	n\a	n\a	4	05-03-00
Span / Depth	10.2				

Bear	ring Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	3-1/2" x 3-1/2"	4515 lbs	27.6%	30.2%	Spruce-Pine-Fir
B2	Wall/Plate	3-1/2" x 3-1/2"	4457 lbs	27.3%	29.8%	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 unbraced length of Top: 00-08-08, Bottom: 00-08-08.

CONFORMS TO OBC 2012

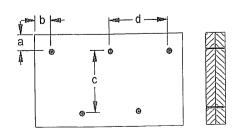
AMENDED 2020

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

Connection Diagram: Full Length of Member





6W6 NO. TAN 11129 -20 STRUCTURAL COMPONENT ONLY





PASSED

July 23, 2020 17:02:01

2ND FLR FRAMING\Dropped Beams\B10 DR(i20088) (Dropped Beam)

BC CALC® Member Report

Build 7493

Job name:

Address:

Customer: Code reports:

City, Province, Postal Code: MARKHAM

CCMC 12472-R

Dry | 1 span | No cant.

KIMBERLY 4 - EL 1,2.mmdl File name:

2ND FLR FRAMING\Dropped Beams\B10 DR(i20088) Description:

Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member

a minimum = 2"

c = 7-7/8"

b minimum = 3"

d = 2 8 2

Connectors are:

M. A.

.ı Nails

316" ARDOX SPIKAL



OW 8 NO. TAN 1/129-20 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®,





City, Province, Postal Code: MARKHAM

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

PASSED

B2

2ND FLR FRAMING\Flush Beams\B11(i20137) (Flush Beam)

BC CALC® Member Report

Build 7493

Job name: Address:

Dry | 1 span | No cant.

July 23, 2020 17:02:01

File name:

KIMBERLY 4 - EL 1,2.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B11(i20137)

Specifier:

Designer.

L.D.

Customer: Code reports:

CCMC 12472-R

Company:

	<u> </u>
\ \ \ \ \ \ \ \ \ \ \ \ \	, , , , , , ,
	,

В1

01-04-10 Total Horizontal Product Length = 01-04-10

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow
B1, 2-5/8"	8/0	137 / 0	126 / 0
B2 5_1//"	17 / 0	160 / 0	124 / 0

l o:	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-04-10	Тор		12			00-00-00
1	E25(i49)	Unf. Lin. (lb/ft)	L	00-00-00	01-04-10	Top		81			n\a
2	E25(i49)	Unf. Lin. (lb/ft)	L	00-00-00	01-01-14	Top		135	216		n\a
3	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-02-10	01-04-10	Top	21	10			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	59 ft- i bs	35392 ft-lbs	0.2%	13	00-07-00
End Shear	234 lbs	14464 lbs	1.6%	13	00-02-10
Span / Depth	0.9				

Bearing	y Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam	2-5/8" x 3-1/2"	368 lbs	9.4%	3.3%	Unspecified
B2	Beam	5-1/4" x 3-1/2"	403 lbs	5.1%	1.8%	Unspecified

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

AWENDED 2020 POVINCE OF ON

> 044 NO. YAN 11130-20 STRUCTURAL COMPONENT ONLY





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B11(i20137) (Flush Beam)

PASSED

July 23, 2020 17:02:01

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: MARKHAM

Customer:

Code reports:

Dry | 1 span | No cant.

KIMBERLY 4 - EL 1,2.mmdl

File name:

2ND FLR FRAMING\Flush Beams\B11(i20137) Description:

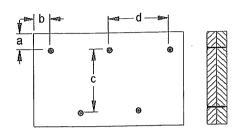
Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member

CCMC 12472-R



a minimum = 2" b minimum = 3"

c = 7-7/8" d = 💇 👶 🗳

Connectors are: *

ARDOX SPIRAL



. OWG NO. FAM 1/130-20 STRUCTURAL COMPONENT ONLY

Disclosure

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BC CALC®, BC FRAMER® , AJS $^{\text{TM}}$ ALLJOIST® , BC RIM BOARD $^{\mathsf{TM}}$, BCI® , BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,





PASSED

July 23, 2020 17:05:07

2ND FLR FRAMING\Flush Beams\B13 E(i22460) (Flush Beam)

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code: MARKHAM

Customer:

Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

KIMBERLY 4 - EL 3.mmdl File name:

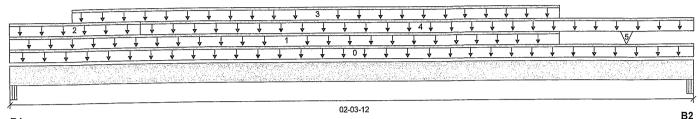
Wind

Description: 2ND FLR FRAMING\Flush Beams\B13 E(i22460)

Specifier:

Designer: L.D.

Company:



В1

Total Horizontal Product Length = 02-03-12

Reaction Summary (Down / Uplift) (lbs)

	Live	Dead	Snow
Bearing B1. 5-1/4"	11 / 0	170 / 0	155 / 0
B1, 0-17-7 B2 2"	9/0	148 / 0	136 / 0

	oad Summary						Live	Dead	Snow	Wind	Tributary
	ag 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	02-03-12	Тор		12			00-00-00
1	E70(i18710)	Unf. Lin. (lb/ft)	L	00-00-00	01-10-04	Тор		40			n\a
,	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-05-04	Top	6				n\a
7	B E70(i18710)	Unf. Lin. (lb/ft)	L	00-02-08	01-10-04	Top		90	144		n\a
	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-05-04	02-03-12	Top	9	5			n\a
	F69(i18709)	Conc. Pt. (lbs)	Ĺ	02-01-00	02-01-00	Top		57	54		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	169 ft-lbs	35392 ft-lbs	0.5%	13	01-03-08
End Shear	222 lbs	14464 lbs	1.5%	13	01-01-14
Total Load Deflection	L/999 (0")	n\a	n\a	35	01-03-08
Max Defl.	0"	n\a	n\a	35	01-03-08
Span / Depth	1.9				

Rearing	3 Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Wember	Material
B1	Beam	5-1/4" x 3-1/2"	455 lbs	4.6%	2.0%	Unspecified
B2	Beam	2" x 3-1/2"	399 lbs	10.7%	4.7%	Unspecified

Notes

Design meets Code minimum (L/240) Total 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. 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



2020

146 AO. TAM 1113/-20 STRUCTURAL COMPONENT ONLY





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B13 E(i22460) (Flush Beam)

PASSED

July 23, 2020 17:05:07

BC CALC® Member Report

Build 7493

Job name:

Address:

Customer: Code reports:

City, Province, Postal Code: MARKHAM

CCMC 12472-R

Dry | 1 span | No cant.

File name:

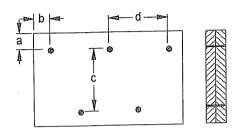
KIMBERLY 4 - EL 3.mmdl 2ND FLR FRAMING\Flush Beams\B13 E(i22460)

Description: Specifier:

Designer: L.D.

Company:

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 7-7/8" d = 22 6

Connectors are:

, Nails

312" ARDOX SPIRAL



0W0 NO. TAM 11131-20 STRUCTURAL COMPONENT ONLY

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





PASSED

July 23, 2020 17:05:07

2ND FLR FRAMING\Flush Beams\B14 E(i22445) (Flush Beam)

BC CALC® Member Report

Build 7493

Job name: Address:

City, Province, Postal Code: MARKHAM

Customer: Code reports:

CCMC 12472-R

Dry | 1 span | No cant.

KIMBERLY 4 - EL 3.mmdl

Wind

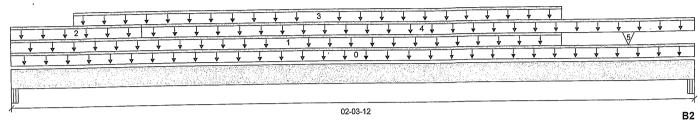
File name:

Description: 2ND FLR FRAMING\Flush Beams\B14 E(i22445)

Specifier:

L.D. Designer:

Company:



В1

Total Horizontal Product Length = 02-03-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow
B1, 5-1/4"	13 / 0	222 / 0	155 / 0
B2 2"	11 / 0	180 / 0	140 / 0

	1 C						Live	Dead	Snow	Wind	iributary
	ad Summary Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
Tag	Self-Weight	Unf. Lin. (lb/ft)	L.	00-00-00	02-03-12	Тор		12			00-00-00
1	E71(i18711)	Unf. Lin. (lb/ft)	L	00-00-00	01-10-04	Тор		81			n\a
2	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	00-05-04	Тор	8				n\a
2	E71(i18711)	Unf. Lin. (lb/ft)	L	00-02-08	01-10-04	Top		90	144		n\a
ى 4	FC4 Floor Material	Unf. Lin. (lb/ft)	L	00-05-04	02-03-12	Тор	11	5			n\a
4		Conc. Pt. (lbs)	Ĺ	02-01-00	02-01-00	Тор		64	58		n\a
5	E75(i21506)	00110. 1 t. (100)	_			•					

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	191 ft-lbs	35392 ft-lbs	0.5%	13	01-03-08
	253 lbs	14464 lbs	1.7%	23	01-01-14
End Shear	L/999 (0")	n\a	n\a	35	01-03-08
Total Load Deflection		n\a	n\a	51	01-03-08
Live Load Deflection	L/999 (0")		n∖a	35	01-03-08
Max Defl.	0"	n\a	II la	00	01-00-00
Span / Depth	1.9				

Rearing	Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam	5-1/4" x 3-1/2"	523 lbs	5.3%	2.3%	Unspecified
B2	Beam	2" x 3-1/2"	446 lbs	11.9%	5.2%	Unspecified

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

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

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 O86.

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

verification.

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



9W8 NO. TAN 11132-20 STRUCTURAL COMPONENT ONLY





Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B14 E(i22445) (Flush Beam)

PASSED

July 23, 2020 17:05:07

BC CALC® Member Report

Build 7493

Job name:

Address:

City, Province, Postal Code:

Customer:

Code reports:

Dry | 1 span | No cant.

KIMBERLY 4 - EL 3.mmdl

File name:

Description: 2ND FLR FRAMING\Flush Beams\B14 E(i22445)

Specifier:

Designer:

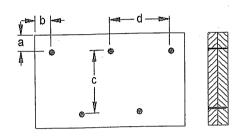
Company:

L.D.

Connection Diagram: Full Length of Member

MARKHAM

CCMC 12472-R



a minimum = 2" b minimum = 3" c = 7-7/8" (1 d = **39** 6

Connectors are: 3-113

Nails

ARDOX SPIRAL

ONINCE OF OUR

OWO NO. TAM 11/32-20 STRUCTURAL COMPONENT ONLY

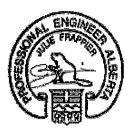
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Live Load = 40 psf, Dead Load = 15 psf Simple Spans, L/480 Deflection Limit 5/8" OSB G&N Sheathing







			Ва	are		1	1/2" Gyps	um Ceiling	
Depth	Series		On Centr	e Spacing	On Centre Spacing				
осрин		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
J -/ -	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
14	NI-80	21'-11"	20'-3"	19'-4"	N/A	22'-7"	20'-11"	20'-0"	N/A
	NI-90x	22'-7"	20'-11"	19'-11"	N/A	23'-3"	21'-6"	20'-6"	N/A
	NI-60	22'-3"	20'-8"	19'-9"	N/A	23'-1"	21'-5"	20'-6"	N/A
	NI-70	23'-6"	21'-9"	20'-9"	N/A	24'-3"	22'-5"	21'-5"	N/A
16"	NI-80	23'-11"	22'-1"	21'-1"	N/A	24'-8"	22'-10"	21'-9"	N/A
	NI-90x	24'-8"	22'-9"	21'-9"	N/A	25'-4"	23'-5"	22'-4"	N/A

			Mid-Spar	Blocking	Mid-Span Blocking and 1/2" Gypsum Ceiling					
Depth	Series		On Centr	e Spacing		On Centre Spacing				
осран	501.44	12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	16'-8"	15'-3"	14'-5"	N/A	16'-8"	15'-3"	14'-5"	N/A	
	NI-40x	17'-11"	. 16'-11"	16'-1"	N/A	18'-5"	17'-1"	16'-1"	N/A	
9-1/2"	NI-60	18'-2"	17'-1"	16'-4"	N/A	18'-7"	17'-4"	16'-4"	N/A	
J-1/2	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-70	22'-9"	21'-1"	20'-1"	N/A	23'-3"	21'-7"	20'-8"	N/A	
	NI-90x	23'-4"	21'-8"	20'-8"	N/A	23'-10"	22'-2"	21'-2"	N/A	
	NI-40x	23'-7"	21'-11"	20'-11"	N/A	24'-3"	22'-7"	21'-7"	N/A	
	NI-60	24'-0"	22'-3"	21'-3"	N/A	24'-8"	22'-11"	21'-11"	N/A	
14"	NI-70	25'-3"	23'-4"	22'-3"	N/A	25'-10"	24'-0"	22'-11"	N/A	
14	NI-80	25'-7"	23'-8"	22'-7"	N/A	26'-2"	24'-4"	23'-2"	N/A	
	NI-90x	26'-4"	24'-4"	23'-3"	N/A	26'-10"	24'-11"	23'-9"	N/A	
	NI-60	26'-5"	24'-6"	23'-4"	N/A	27'-2"	25'-3"	24'-2"	N/A	
	NI-70	27'-9"	25'-8"	24'-6"	N/A	28'-5"	26'-5"	25'-2"	N/A	
16"	NI-80	28'-2"	26'-1"	24'-10"	N/A	28'-10"	26'-9"	25'-6"	N/A	
	NI-90x	29'-0"	26'-10"	25'-7"	N/A	29'-7"	27'-5"	26'-2"	N/A	

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

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

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

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

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

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



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







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

		Mid-Span Blocking On Centre Spacing				Mid-Span Blocking and 1/2" Gypsum Ceiling On Centre Spacing				
Depth	Series									
Deptil	501103	12"	16"	19.2"	24"	12"	16"		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"		15'-5"	
3-1/2	NI-70	20'-0"	18'-7"	17'-9"	16'-7"	20'-5"	18'-11"	tre Spacing 19.2" 14'-6" 16'-3" 16'-6" 17'-10" 18'-2" 17'-5" 19'-4" 19'-8" 21'-5" 22'-0" 21'-9" 22'-4" 23'-9" 24'-1" 24'-8" 24'-9" 26'-5"	16'-7"	
	NI-80	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"		16'-10"	
	NI-20	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"	
	NI-40x	21'-10"	20'-4"	19'-4"	17'-8"	22'-5"	20'-6"	19'-4"	17'-8"	
	NI-60	22'-1"	20'-7"	19'-7"	18 -4"	22'-8"	20'-10"	19'-8"	18'-4"	
11-7/8"	NI-70	23'-4"	21'-8"	20'-8"	19'-7"	23'-10"	22'-3"	19.2" 14'-6" 16'-3" 16'-6" 17'-10" 18'-2" 17'-5" 19'-4" 19'-8" 21'-2" 21'-5" 22'-0" 21'-9" 22'-4" 23'-9" 24'-1" 24'-8" 24'-9" 26'-1" 26'-5"	19'-9"	
	NI-80	23'-7"	21'-11"	20'-11"	19'-9"	24'-1"	22'-6"		20'-0"	
	NI-90x	24'-3"	22'-6"	21'-6"	20'-4"	24'-8"	23'-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"	re Spacing 19.2" 14'-6" 16'-3" 16'-6" 17'-10" 18'-2" 17'-5" 19'-4" 19'-8" 21'-2" 22'-0" 22'-4" 23'-9" 24'-1" 24'-8" 24'-9" 26'-1"	20'-10"	
14"	NI-70	26'-1"	24'-3"	23'-2"	21'-10"	26'-8"	24'-11"		22'-4"	
14	NI-70	26'-6"	24'-7"	23'-5"	22'-2"	27'-1"	25'-3"		22'-9"	
	NI-90x	27'-3"	25'-4"	24'-1"	22'-9"	27'-9"	25'-11"		23'-4"	
	NI-60	27'-3"	25'-5"	24'-2"	22'-10"	28'-0"	26'-2"	24'-9"	23'-1"	
	NI-70	28'-8"	26'-8"	25'-4"	23'-11"	29'-3"	27'-4"	26'-1"	24'-8"	
16"	NI-70 NI-80	29'-1"	27'-0"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"	
	NI-80 NI-90x	29'-11"	27'-10"	26'-6"	25'-0"	30'-6"	28'-5"	e Spacing 19.2" 14'-6" 16'-3" 16'-6" 17'-10" 18'-2" 17'-5" 19'-4" 19'-8" 21'-5" 22'-0" 21'-9" 22'-4" 23'-9" 24'-1" 24'-8" 26'-1" 26'-5"	25'-8"	

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

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

^{3.} Minimum bearing length shall be 1-3/4 inches for the end bearings.4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.

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

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



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







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

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

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

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

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

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

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

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



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







			В	are		1/2" Gypsum Ceiling				
Depth	Series		On Centi	re Spacing			On Cent	re Spacing		
		12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"	
	NI-40x	17'-0"	16'-0"	15'-1"	13'-11"	17'-5"	16'-1"	15'-1"	13'-11"	
9-1/2"	NI-60	17'-2"	16'-2"	15'-5"	14'-3"	17'-6"	On Centre Spacing 16" 19.2" 14'-2" 13'-4"	14'-3"		
	NI-70	18'-0"	16'-11"	16'-3"	15'-6"	On Centre Spacing 12"	16'-7"	15'-6"		
	NI-80	18'-3"	17'-1"	16'-5"	15'-9"	18'-8"	17'-5"	re Spacing 19.2" 13'-4" 15'-1" 15'-5" 16'-9" 16'-0" 17'-9" 17'-11" 18'-10" 19'-6" 19'-6" 19'-11" 20'-10" 21'-2" 21'-9" 23'-1"	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"	On Centre Spacing 16" 19.2" 4'-2" 13'-4" 6'-1" 15'-1" 6'-5" 15'-5" 7'-3" 16'-9" 7'-1" 16'-0" 8'-6" 17'-9" 8'-9" 17'-11" 9'-9" 18'-10" 0'-0" 19'-6" 0'-6" 19'-6" 0'-10" 19'-11" 1'-11" 20'-10" 2'-3" 21'-2" 2'-10" 21'-9" 2'-9" 21'-8" 3'-10" 22'-9" 4'-2" 23'-1"	15'-10"	
44 7/01	NI-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"		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"	re Spacing 19.2" 13'-4" 15'-1" 15'-5" 16'-9" 16'-0" 17'-9" 17'-11" 18'-10" 19'-6" 19'-6" 19'-11" 20'-10" 21'-2" 21'-9" 23'-1"	18'-6"	
	NI-40x	21'-5"	19'-10"	18'-11"	17'-5"	22'-1"	20'-6"	19'-6"	17'-5"	
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"	
14"	N1-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"	
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"	
	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"	
	NI-60	23'-9"	22'-0"	20'-11"	Spacing On Centre Spacing 19.2" 24" 12" 16" 13'-4" 12'-4" 15'-7" 14'-2" 15'-1" 13'-11" 17'-5" 16'-1" 15'-5" 14'-3" 17'-6" 16'-5" 16'-3" 15'-6" 18'-5" 17'-3" 16'-5" 15'-9" 18'-8" 17'-5" 16'-0" 14'-10" 18'-6" 17'-1" 17'-3" 15'-10" 19'-11" 18'-6" 17'-5" 16'-9" 20'-2" 18'-9" 18'-3" 17'-5" 21'-4" 19'-9" 18'-6" 17'-7" 21'-7" 20'-0" 19'-1" 18'-0" 22'-2" 20'-6" 18'-11" 17'-5" 22'-1" 20'-6" 18'-11" 17'-5" 22'-1" 20'-6" 18'-11" 17'-5" 22'-1" 20'-6" 18'-11" 17'-5" 22'-1" 20'-6" 19'-3" 18'-2" 22'-5" 20'-10"	21'-8"	20'-6"			
1.68	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"	re Spacing 19.2" 13'-4" 15'-1" 15'-5" 16'-9" 16'-0" 17'-9" 17'-11" 18'-10" 19'-6" 19'-6" 19'-11" 20'-10" 21'-2" 21'-9" 22'-9" 23'-1"	22'-5"	

Depth			Mid-Spar	n Blocking	Mid-Span Blocking and 1/2" Gypsum Ceiling				
	Series		On Centr	e Spacing	On Centre Spacing				
		12"	16"	19.2"	24"	12"	16"		24"
	NI-20	15'-7"	14'-2"	13'-4"	12'-4"	15'-7"	14'-2"	13'-4"	12'-4"
	NI-40x	17'-9"	16'-1"	15'-1"	13'-11"	17'-9"	16'-1"	15'-1"	13'-11"
9-1/2"	NI-60	18'-1"	16'-5"	15'-5"	14'-3"	18'-1"	16'-5"	19.2" 13'-4" 15'-1" 15'-5" 16'-9" 17'-1" 16'-0" 17'-9" 18'-5" 20'-1" 20'-5" 21'-3" 19'-6" 21'-0" 22'-9" 23'-3" 24'-3" 23'-5" 25'-3"	14'-3"
	NI-70	19'-10"	17'-11"	16'-9"	15'-6"	19'-10"	17'-11"		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" 17'-9" 18'-5" 20'-1"	14'-10"
	NI-40x	21'-3"	19'-3"	17'-9"	15'-10"	21'-3"	19'-3"	17'-9"	15'-10"
44 7/01	NI-60	21'-9"	19'-8"	18'-5"	17'-1"	21'-9"	On Centre Spacing 16" 19.2" 14'-2" 13'-4" 16'-1" 15'-1" 16'-5" 15'-5" 0" 17'-11" 16'-9" 18'-3" 17'-1" 19'-3" 17'-9" 19'-8" 18'-5" 21'-5" 20'-1" 21'-5" 20'-1" 22'-7" 21'-3" 22'-5" 21'-0" 24'-10" 23'-3" 24'-10" 23'-3" 24'-10" 23'-5" 24'-10" 23'-5" 24'-11" 23'-5" 24'-11" 23'-5" 24'-11" 23'-5" 24'-11" 23'-5" 24'-11" 25'-3" 27'-6" 25'-10"	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"	e Spacing 19.2" 13'.4" 15'.1" 15'.5" 16'.9" 17'.1" 16'.0" 17'.9" 18'.5" 20'.5" 21'.3" 19'.6" 21'.0" 22'.9" 23'.5" 24'.3" 23'.5" 25'.3" 25'.10"	18'-11"
	NI-90x	24'-3"	22'-6"	21'-3"	19 ' -7"	24'-8"	22'-7"		19'-7"
	NI-40x	24'-2"	21'-5"	19'-6"	17'-5"	24'-2"	21'-5"	e Spacing 19.2" 13'.4" 15'.1" 15'.5" 16'.9" 17'.1" 16'.0" 17'.9" 18'.5" 20'.1" 20'.5" 21'.3" 19'.6" 21'.0" 22'.9" 23'.3" 24'.3" 25'.3" 25'-10"	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"	e Spacing 19.2" 13'-4" 15'-1" 15'-5" 16'-9" 17'-1" 16'-0" 17'-9" 18'-5" 20'-1" 20'-5" 21'-3" 19'-6" 21'-0" 22'-9" 23'-3" 24'-3" 23'-5" 25'-3" 25'-10"	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"
1.51	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"	e Spacing 19.2" 13'-4" 15'-1" 15'-5" 16'-9" 17'-1" 16'-0" 17'-9" 18'-5" 20'-1" 20'-5" 21'-3" 19'-6" 21'-0" 22'-9" 23'-3" 24'-3" 23'-5" 25'-3" 25'-10"	23'-10"
	NI-90x	29'-11"	27'-10"	26'-6"	24'-10"	30'-6"	28'-5"		24'-10"

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

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

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

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

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

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

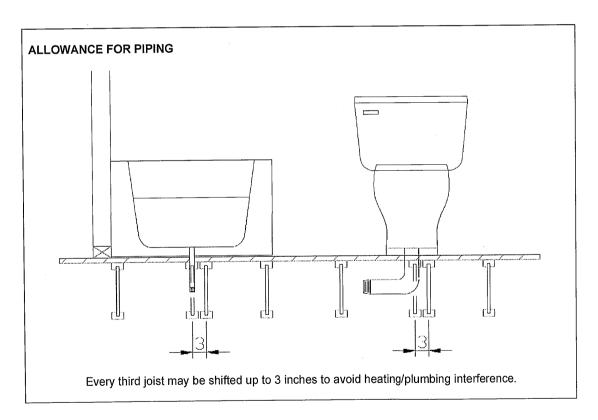


Allowance for Piping (Installation Notes)

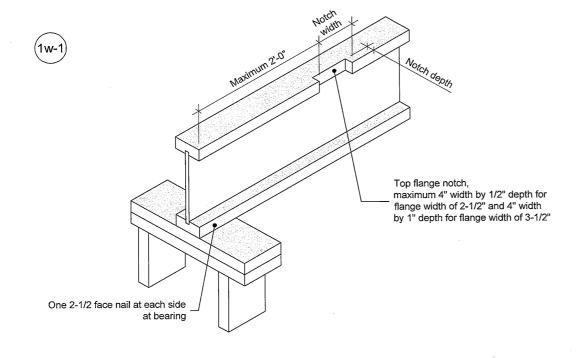
The floor layouts have usually not been checked for heating and/or plumbing interference. On-site adjustment of joists of up to 3 inches is permitted to avoid interferences. When moving a joist, the subfloor thickness shall be checked with code requirements when the joist spacing exceeds 19.2 inches.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

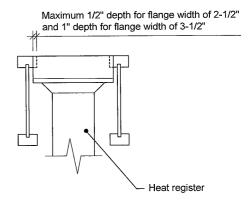
Installation of Nordic I-joists shall be as per *Nordic Joist Installation Guide for Residential Floors*. Refer to Tables 1 and 2 for maximum web hole and duct chase openings, respectively. These tables are based on the I-joists being used at their maximum spans. The minimum distance given may be reduced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

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



Revised April 12, 2012





Notes:

- 1. Blocking required at bearing for lateral support, not shown for clarity.
- 2. 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.



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DOCUMENT Notch in I-joist for Heat Register DATE NUMBER CATEGORY I-joist - Typical Floor Framing and Construction Details 2018-04-10 1w-1