

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

20.130045.000.00.CM

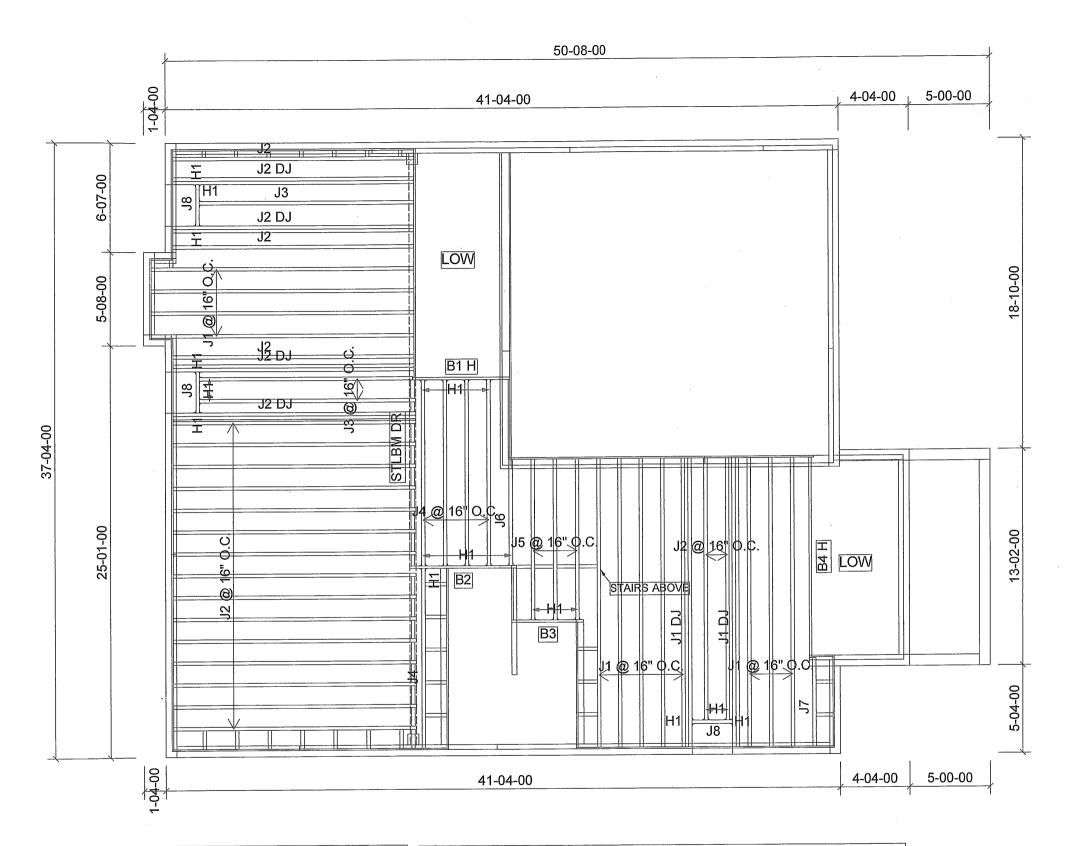
# LAMPONE INVESTMENT INCONSTRUCTION SHALL COMPLY WITH THE ONTARIO BUILDING CODE.

## **CITY OF MARKHAM**

## **FLOOR JOISTS SHOP DRAWINGS**

**MODEL NAME: KIMBERLY 1** 

**ELEV 1, 2 & 3** 



Products							
PlotID	Length	Product	Plies	Net Qty	Fab Type		
J1	18-00-00	11 7/8" NI-40x	1	12	MFD		
J1 DJ	18-00-00	11 7/8" NI-40x	2	4	MFD		
J2	16-00-00	11 7/8" NI-40x	1	20	MFD		
J2 DJ	16-00-00	11 7/8" NI-40x	2	8	MFD		
J3	14-00-00	11 7/8" NI-40x	1	3	MFD		
J4	12-00-00	11 7/8" NI-40x	1	5	MFD		
J5	10-00-00	11 7/8" NI-40x	1	3	MFD		
J6	8-00-00	11 7/8" NI-40x	1	1	MFD		
J7	6-00-00	11 7/8" NI-40x	1	1	MFD		
18	4-00-00	11 7/8" NI-40x	1	3	MFD		

Products							
PlotID	Length	Product	Plies	Net Qty	Fab Type		
B4 H	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD		
B2	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD		
B1 H	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1	MFD		
B3	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1 -	1	MFD		

	Connector Summary					
Qty Manuf Product						
13	H1	IUS2.56/11.88				
6	H1	IUS2.56/11.88				
5	H1	IUS2.56/11.88				



FROM PLAN DATED: JULY 2, 2020

**BUILDER: GREENPARK HOMES** 

**SITE: LAMPONE INVESTMENTS** 

**MODEL:** KIMBERLY 1

**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 REGINGOUST 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.

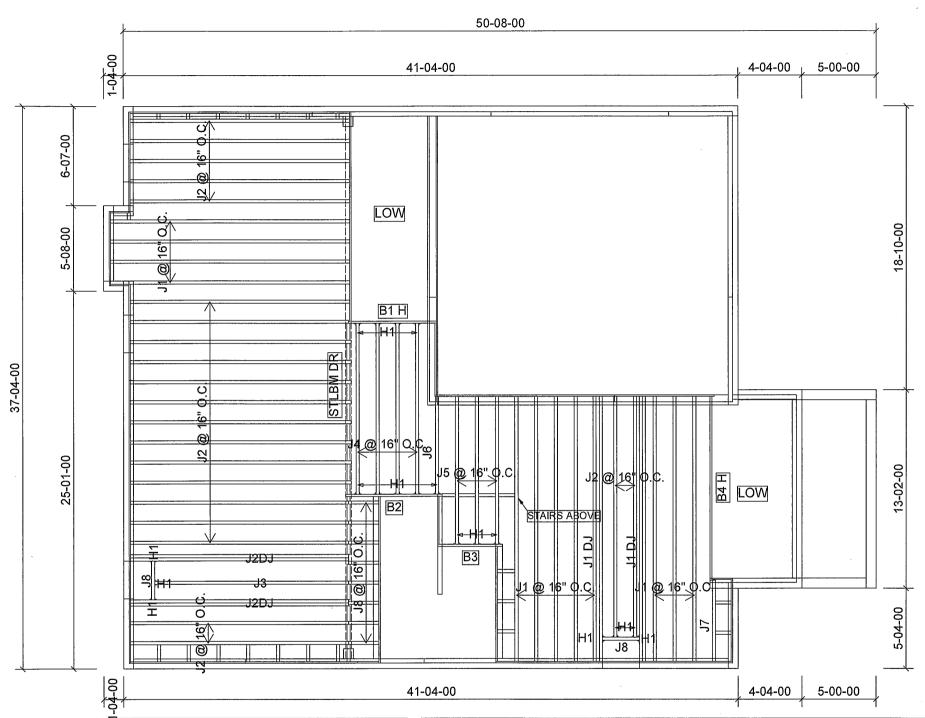
LOADING:

DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft<sup>2</sup> DEAD LOAD: 15.0 lb/ft<sup>2</sup> TILE LOAD: 20.0 lb/ft<sup>2</sup>

SUBFLOOR: 3/4" GLUED AND NAILED

**DATE:** 2020-07-23

1st FLOOR



Products							
PlotID	Length	Product	Plies	Net Qty			
J1	18-00-00	11 7/8" NI-40x	1	12			
J1 DJ	18-00-00	11 7/8" NI-40x	2	4			
J2	16-00-00	11 7/8" NI-40x	1	22			
J2DJ	16-00-00	11 7/8" NI-40x	2	4			
J3	14-00-00	11 7/8" NI-40x	1	1			
J4	12-00-00	11 7/8" NI-40x	1	4			
J5	10-00-00	11 7/8" NI-40x	1	3			
J6	8-00-00	11 7/8" NI-40x	1	1			
J7	6-00-00	11 7/8" NI-40x	1	1			
.18	4-00-00	11 7/8" NI-40x	1	10			

	Products					
PlotID	Length	Product	Plies	Net Qty		
B4 H	14-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1		
B2	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1		
B1 H	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1		
В3	6-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	1	1		

Connector Summary				
Qty	Manuf	Product		
12	H1	IUS2.56/11.88		
4	H1	IUS2.56/11.88		
3	H1	IUS2.56/11.88		



FROM PLAN DATED:

**BUILDER:** GREENPARK HOMES

**SITE:** LAMPONE INVESTMENTS

**MODEL:** KIMBERLY 1

**ELEVATION:** 1.2.3

LOT:

**CITY:** MARKHAM

SALESMAN: MARIO DI CIANO

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

NOTES:

REFER TO THE **NORDIC INSTALLATION**GUIDE FOR PROPER STORAGE AND

INSTALLATION.

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

LOADING:

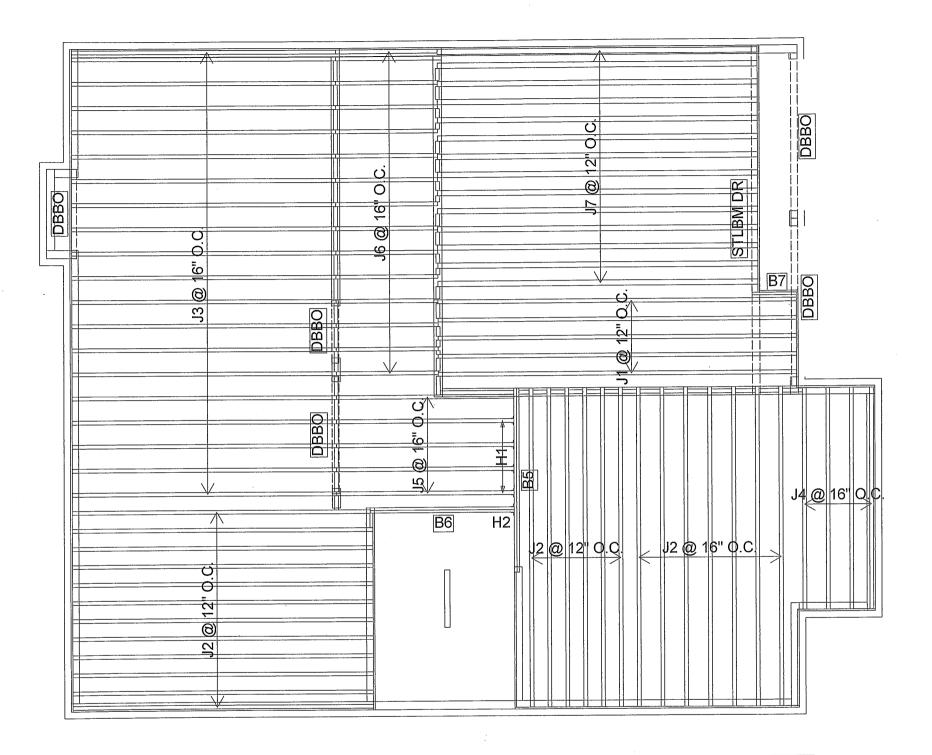
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SUBFLOOR: 3/4" GLUED AND NAILED

**DATE:** 11/12/20

1st FLOOR

WALK-UP CONDITION



	Products						
PlotID	Length	Product	Plies	Net Qty	Fab Type		
J1	22-00-00	11 7/8" NI-40x	1	5	MFD		
J2	18-00-00	11 7/8" NI-40x	1	25	MFD		
J3	16-00-00	11 7/8" NI-40x	1	20	MFD		
J4	14-00-00	11 7/8" NI-40x	1	4	MFD		
J5	10-00-00	11 7/8" NI-40x	1	5	MFD		
J6	6-00-00	11 7/8" NI-40x	1	15	MFD		
J7	18-00-00	11 7/8" NI-80	1	14	MFD		
B5	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD		
B6	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD		
В7	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD		

Connector Summary						
Qty	Manuf	Product				
4	H1	IUS2.56/11.88				
1	H2	HGUS410				



FROM PLAN DATED: JULY 2, 2020

**BUILDER: GREENPARK HOMES** 

**SITE:** LAMPONE INVESTMENTS

**MODEL:** KIMBERLY 1

**ELEVATION: 1** 

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 INTERIOF UNIFORM LOAD BEARING WALLS. MULTIP 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 FIE CUT OPENINGS SEE FIGURE 7 TABLES 1 OF THE INSTALLATION GUIDE. CERAMIC 1 APPLICATION AS PER O.B.C. 9.30.6

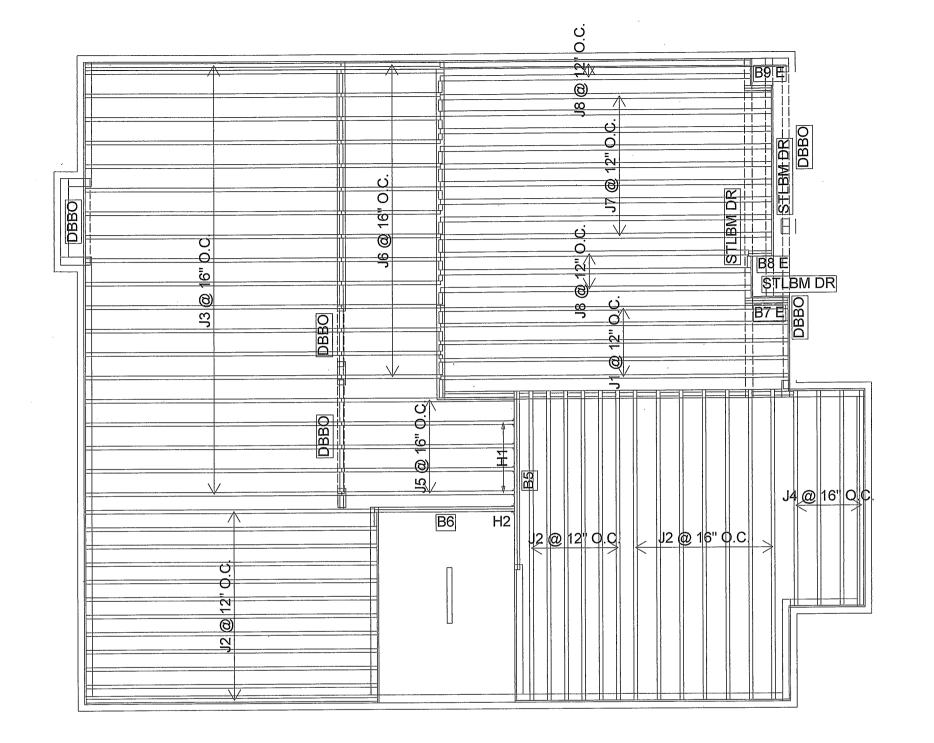
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DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft<sup>2</sup> DEAD LOAD: 15.0 lb/ft<sup>2</sup> TILE LOAD: 20.0 lb/ft<sup>2</sup>

SUBFLOOR: 5/8" GLUED AND NAILED

**DATE:** 2020-07-23

# 2nd FLOOR



Products							
PlotID	Length	Product	Plies	Net Qty	Fab Type		
J1	22-00-00	11 7/8" NI-40x	1	5	MFD		
J2	18-00-00	11 7/8" NI-40x	1	25	MFD		
J3	16-00-00	11 7/8" NI-40x	1	20	MFD		
J4	14-00-00	11 7/8" NI-40x	1	4	MFD		
J5	10-00-00	11 7/8" NI-40x	1	5	MFD		
J6	6-00-00	11 7/8" NI-40x	1	15	MFD		
J7	20-00-00	11 7/8" Nİ-80	1	9	MFD		
J8	18-00-00	11 7/8" NI-80	1	5	MFD		
B5	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD		
B6	8-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD		

Fab Type	Qty	Manuf	Product
MFD	4	H1	IUS2.56/
MFD	1	H2	HGUS41
MFD			

Connector Summary

IUS2.56/11.88

HGUS410

Products								
PlotID	Length	Product	Plies	Net Qty	Fab Type			
B7 E	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD			
B8 E	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD			
B9 E	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 1

**ELEVATION: 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 FIEI CUT OPENINGS SEE FIGURE 7 TABLES 1 ? OF THE INSTALLATION GUIDE. CERAMIC 1 APPLICATION AS PER O.B.C. 9.30.6

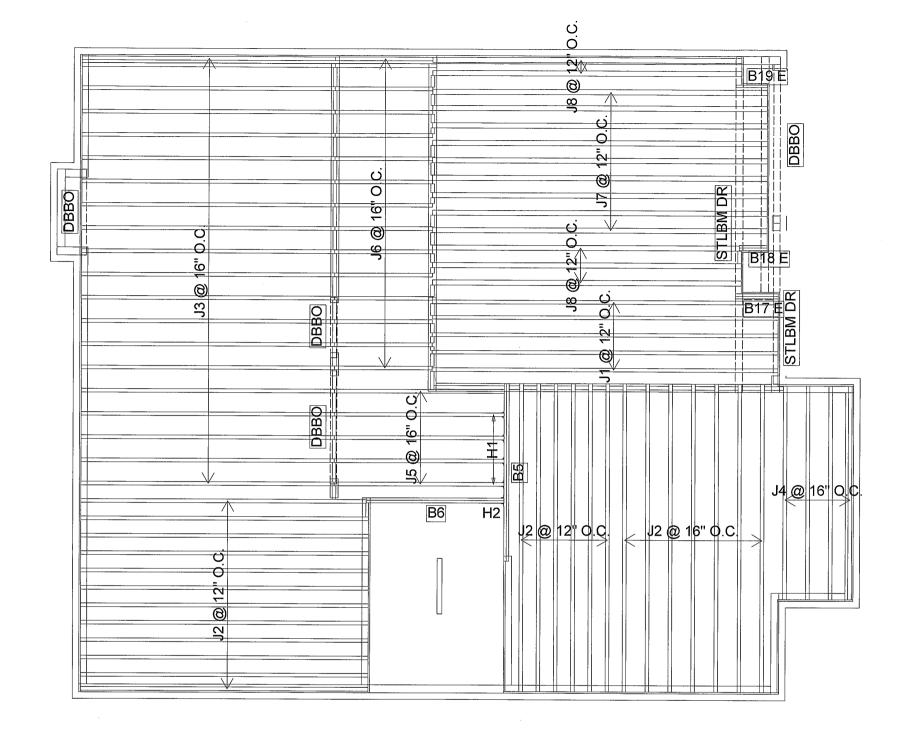
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DESIGN LOADS: L/480.000 LIVE LOAD: 40.0 lb/ft<sup>2</sup> DEAD LOAD: 15.0 lb/ft<sup>2</sup> TILE LOAD: 20.0 lb/ft<sup>2</sup>

SUBFLOOR: 5/8" GLUED AND NAILED

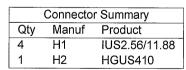
**DATE:** 2020-07-23

# 2nd FLOOR



Products						
PlotID	Length	Product	Plies	Net Qty	Fab Type	
J1	22-00-00	11 7/8" NI-40x	1	5	MFD	
J2	18-00-00	11 7/8" NI-40x	1	25	MFD	
J3	16-00-00	11 7/8" NI-40x	1	20	MFD	
J4	14-00-00	11 7/8" NI-40x	1	4	MFD	
J5	10-00-00	11 7/8" NI-40x	1	5	MFD	
J6	6-00-00	11 7/8" NI-40x	1	15	MFD	
J7	20-00-00	11 7/8" NI-80	1	9	MFD	
J8	18-00-00	11 7/8" NI-80	1	5	MFD	
B5	12-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD	
B6	8-00-00	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
B17 E	4-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B18 E	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD
B19 E	2-00-00	1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP	2	2	MFD





FROM PLAN DATED:

**BUILDER: GREENPARK HOMES** 

**SITE:** LAMPONE INVESTMENTS

**MODEL:** KIMBERLY 1

**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. MULTIPLE SQUASH BLOCKS REQ'D UNDER CONCENTRATED LOADS. SEE FIGURE 1. CANTILEVERED JOISTS INCLUDING CANT' OVER BRICK REQ. I-JOIST BLOCKING ALONG BEARING AND RIMBOARD CLOSURE AT ENDS. SEE FIGURE 7 TABLES 4 & 5 FOR REINFORCEMENT REQUIREMENTS. FOR HOLES INCLUDING DUCT CHASE AND FIELD **CUT OPENINGS** SEE FIGURE 7 TABLES 1 & 2 OF THE INSTALLATION GUIDE. CERAMIC TILE APPLICATION AS PER O.B.C. 9.30.6

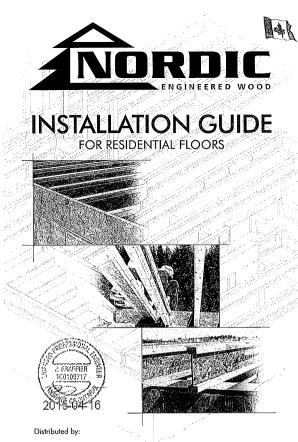
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**SUBFLOOR:** 5/8" GLUED AND NAILED

**DATE:** 2020-12-02

2nd FLOOR





2015-04

#### SAFETY AND CONSTRUCTION PRECAUTIONS



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



Never stack building materials over unsheathed I-joists. Once sheathed, do not

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 I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
- When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
- Temporary Invasi remover of DUCKING).
   Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each 1-joist. Nail the bracing to a lateral restraint at the end of each bay. Lop ends of adjoining bracing over at least two 1-joists.
- Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-ioists at the end of the bay.
- For cantilevered l-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 1-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 I-jaists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when requires can 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 five load of 40 pst 1 me ultimate limit states are based on the factored loads of 1.5 pst. The ultimate limit states are based on the factored loads of 1.50L ÷ 1.25D. The serviceability limit states include the consideration for floor without on and a live load deflection limit of 1/480. 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 S/B 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-7.1.26
  Slandard. 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 I-joists are used with the spans and spacings given in this table, except as required for hangers.
- This span chart is based on uniform loads. For applications with other than uniform loads, on engineering analysis may be required based on the use of the design properties.
- Tables are based on Limit States Design per CAN/CSA O86-09 Standard, and NBC 2010.
- 7. SI units conversion: 1 inch = 25.4 mm 1 foot = 0.305 m

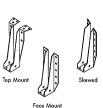
#### MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS SIMPLE AND MULTIPLE SPANS

Depth	Series -	STATE OF THE PARTY.	Constitution of the		<b>法的</b>	THE RESIDENCE OF THE PARTY.	Cardon Brazille	ALCOHOL: N	<b>日月初期後期</b>
		1.2	160	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
1900	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"
100	NI-70	17'-1'	16'-1"	15'-6"	15'-7"	18'-7"	17'-4"	16'-9"	16'-10"
Same Villa	NI-80	17'-3'	16'-3'	15'-8"	15'-9"	18'-10"	17'-6"	16'-11'	17'-0"
April No.	NI-20	16'-11'	16'-0"	15'-5	15'-6"	18'-4	17'-3"	16'-8	16'-7"
V	NI-40x	18'-1	17'-0"	16'-5	16'-6"	20'-0	18'-6"	17'-9	17'-7"
200	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"
territoria.	NI-80	19'-9*	18'-3"	17'-6"	17'-7"	21'-9'	20'-2"	19'-3"	19'-4"
	NI-90	20'-2"	18'-7	17'-10	17'-11"	22'-3"	20'-7	19'-8"	19'-9
30. 30.90	NI-90x	20'-4"	18'-9	17'-11"	18'-0	22'-5"	20'-9	19'-10"	19'-11'
100000	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"
	NI-70	21'-7"	20'-0"	19'-1"	19'-2"	23'-10"	22'-1'	21'-1'	21'-2"
1.4"	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
200	NI-90x	22'-7"	20'-11"	19'-11'	20'-0"	25'-0"	23'-1"	22'-0"	22'-2"
T. B. T. T.	NI-60	22'-3"	20'-8"	19'-9'	19'-10'	24'-7"	22'-9'	21'-9"	211-10
	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"	21'-6	26'-11'	24'-10"	23'-9"	23'-9
<u>16 . 201</u>	NI-90x	24'-8"	22'-9"	21'-9'	21'-10"	27'-3"	25'-2"	24'-0"	24'-1'

Hangers shown illustrate the three most commonly used metal hanger to support I-joists.

I-JOIST HANGERS

- 2. All nailing must meet the hanger
- 3. Hangers should be selected based on the joist depth, flange width and load capacity based on the maximum spans.
- 4. Web stiffeners are required when the sides of the hangers do not laterally brace the top flange of the I-joist.



CCMC EVALUATION REPORT 13032-R

#### STORAGE AND HANDLING GUIDELINES

- Bundle wrap can be slippery when wet. Avoid walking on wrapped
- 2. Store, stack, and handle I-joists vertically and level only. 3 Always stack and handle l-joists in the upright position only.
- 4. Do not store 1-joists in direct contact with the ground and/or flatwise
- 5. Protect I-joists from weather, and use spacers to separate bundles.
- 6. Bundled units should be kept intact until time of installation.
- When handling I-joists with a crone on the job site, take a few simple precautions to prevent damage to the I-joists and injury to your work crew.
- Pick I-joists in bundles as shipped by the supplier.
- Orient the bundles so that the webs of the I-joists are vertical.
- Pick the bundles at the 5th points, using a spreader bar if necessary.
- 8 Do not handle Ligists 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 I-joist properties table found of the I-joist Construction Guide (C 101). The gap between the stiffener and the flange is at the top.
- A bearing stiffener is required when the I-joist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the er and flange is at the top
- \*\*A load stiffener is required at locations where a factored concentrated load greater than 2,370 bis applied to the top flange between supports, or in the case of a contilever, 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 permitt by the code. The gap between the stiffener and the flange is at the bottom.

(1e)

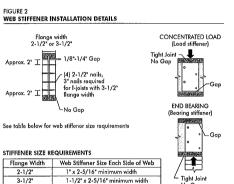
(1)

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

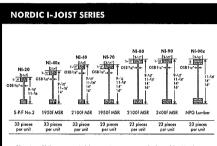
Nordic Lam or SC

Figures 3, 4 or 5

SI units conversion: 1 inch = 25.4 mm



(1g)



Chantiers Chibougamau Ltd. harvests its own trees, which enables No. products to adhere to strict quality control procedures through வூர் இன் manufacturing process. Every phase of the operation, from organism finished product, reflects our commitment to quality.

finished product, reflects our commitment to quality.

Nordic Engineered Wood Lipists use only finger-jointed pack society FFER

lumber in their flanges, ensuring consistent quality, superior strength 100017

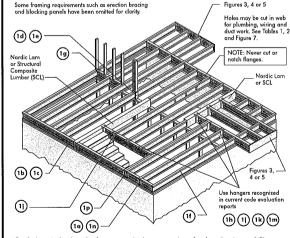
longer span carrying capacity. 2015-04-10

(1h) Backer block (use if hanger load exceeds 360 lbs)
Before installing a backer block to a double 1-joist, drive three

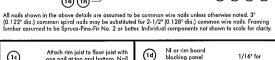
additional 3" nails through the webs and filler block where the backer block will fit. Clinch. Install backer tight to top flange. Use twelve 3" nails, clinched when possible. Maximum factored resistance for hanger for this detail = 1,620 lbs.

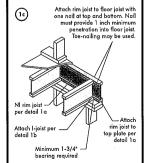
#### INSTALLING NORDIC I-JOISTS

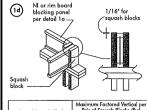
- 1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, cout বিশ্বস্থা
- 2. Except for cutting to length, 1-joist flanges should never be cut, drilled, or notched. 3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
- 4. I-joists must be anchored securely to supports before floor sheathing is attached, and supports be level
- 5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for inte
- 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 flonge. Normal concentrated loads include track lighting fixtures, audio aquipment and security cameros. Never suspend unusual or heavy loads from the I-joist's bottom flonge. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the I-joist webs.
- 9. Never install 1-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 ponels or other engineered wood products such as rim board must be cut to fit between the I-joists, and an I-joists-compatible depth selected.
- 13. Provide permanent lateral support of the bottom flange of all I-joists at interior supports of multiple-span joists. Similarly, support the bottom flange of all cantilevered I-joists at the end support next to the cantilever extension. In the completed structure, the gypsum wallboard ceiling provides this lateral support. Until the final finished ceiling is applied, temporary bracing or struts must be used.
- 14. If square-edge panels are used, edges must be supported between I-joists with 2x4 blocking. Glue panels to blocking to minimize squaeks. Blocking is not required under structural finish flooring, such as wood strip flooring, or if a separate underlayment layer is installed.
- 15. Nail spacing: Space nails installed to the flange's top face in accordance with the applicable building code requirements approved building plans.



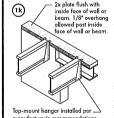
TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS







	3-1/2 Wide	3-1/2 Widi
2x Lumber	5,500	8,500
1-1/8" Rim Board Plus	4,300	6,600



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

For nailing schedules for multiple

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

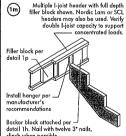
 Support back of I-joist web during nailing to prevent damage to web/flange connection. - Filler block Leave a 1/8 to 1/4-inch gap between top
 of filler block and bottom of top 1-joist 3. Filler block is required between joists for

LOffset nails from

## required). Attach I-joist t such as offset bearing walls, are no covered by this detail walls or whe floor joists ar not continuou Rim board may be used in lieu of I-joists. Backer is not required when rim board is used. Bracing per code shall be carried to the foundation. NI blocking panel per detail 1a 2-1/2" nails at 5" o.c. to top plate

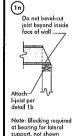
Tight Joint

oad bearing wall above shall align vertically with the bearing below. Other conditions,



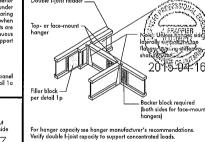
clinch when possible. Maximum support capacity = 1,620 lbs

FILLER BLOCK REQUIREMENTS FOR



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

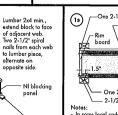
T



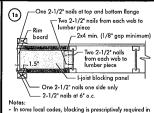
BACKER BLOCKS (Blocks must be long enough to permit required

Flange Width	Material Thickness Required*	Minimum Depth**
2-1/2"	יו	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 sewn lumber and wood strudural panels conformin; to CAN/CSA-0235 or CAN/CSA-0437 Standard. 1,47 for for face-mount hangers use nei joist depth minus 31/4 for joists with 1-1/2 hick flanges. For 2\* hick flanges use net depth



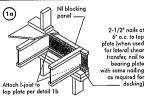
Optional: Minimum 1x4 inch
strap applied to underside of joist at blocking
line or 1/2 inch minimum gypsum ceiling
attached to underside of joists.



Notes:

- In some local codes, blocking 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 nails are common spirol in this detail.



transfer, nail to bearing plate with same nailing Maximum Factored Unifor Vertical Load\* (plf)

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

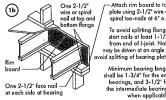


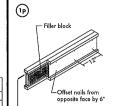
plate using 2-1/2" wire or spiral toe-nails at 6" o.c To avoid splitting flange, start nails at least 1-1/2' from end of I-joist. Nails may be driven at an angle to d splitting of bearing plate. Minimum bearing length shall be 1-3/4" for the end

bearings, and 3-1/2° for the intermediate bearings when applicable. Maximum Factored Uniform Vertical Load\* (plf) 1-1/8" Rim Board Plus 8,090

The uniform vertical load is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be

or less that is based on significant mirrord actions. In significant used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer, see detail 1d.

Pair of Squash Blocks Maximum Factored Vertical per Pair of Squash Blocks (lbs)

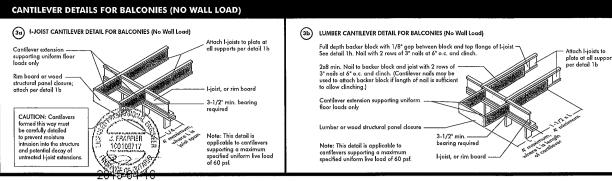


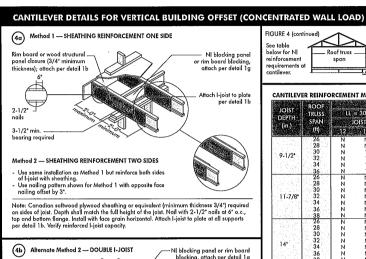
Nail joists togather with two rows of 3° nails at 12 inches o.c. (clinched when possible) on each side of the double I-joist. Total of four nails per foot required. If nails can be clinched, only two nails per foot are required.

The control of the control of 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. -1/8" to 1/4" gap between top flange

## DOUBLE I-JOIST CONSTRUCTION Flange Joist Filler Size Depth Block Size 2-1/8" x 12" 3" x 6" 3" x 8" 3" x 10' 3" x 12'

2" x 11-7/8" 3" x 7" 14" 3" x 9" 16" 3" x 11" 3-1/2" x 2"





NI blocking panel or rim board blocking, attach per detail 1g

wood structural panel closure (3/4" minimum thickness); attacl per detail 1 b 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 Clinch if possible (four nails per foot required, except two nails per foot Attach I-joists to top plate at all supports per detail 1b, 3-1/2"

Block I-joists 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.

# Roof trusses 13'-0" maximum Girder Roof truss 12'-0" Jack trusses truss span 2'-0" — Roof truss — span requirements for a span of 26 ft. shall be permitted to 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.)

N = No reinforcement required,
 N = NI reinforced with 3/4" wood structural

\_\_ Roof truss \_\_\_

span

IGURF 5 (continued)

- 1 = N1 reinforced with 3/4" wood structural panell on one side only.
  2 = N1 reinforced with 3/4" wood structural panel on both sides, or double 1-joist.
  X = Try a deeper joist or claser spacing.
  2. Maximum design load shall be: 15 psf root dead load, 55 psf floor total load, and 80 plf wall load. Wall load is based 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 joist beneath the openings cripple studs may be required.

  Table applies to joists 12' to 24' o.c. that meet the floor span requirements for a design live load of 40 psf and dead flood of 15 psf, and a live load defliction limit of L/480. Use 12' o.c. requirements for reserve spacing.

Girder Roof truss 2'-0' maximum

Span 2'-0' maximum

2'-0' maximum

2'-0' maximum

# A for conventional roal construction using a ridge beam, the Roal Truss Span column above is equivalent to the distance between the suspending well and the ridge beam. When the roal is formed using a ridge board, the Roal Truss Span is equivalent to the distance between the supporting wells as if a trus is used. 5. Cantileversel joists supporting girder trusses or not beams may require additional selections.

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

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

## BRICK CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET (CONCENTRATED WALL LOAD) (5a) SHEATHING REINFORCEMENT —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 Note: Canadian softwood Note: Canadian softwood plywood sheathing or equivalent (minimum linickness 3/4) required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2° nails of 6° c.c., to pand bottom flange. Install with face grain horizontal. Attach i-joist to plate at all supports per defail 1b. Verify reinforced I-joist capacity. sides of I-joist) 5b SET-BACK DETAIL Rim board or wood ructural panel closure Provide full depth blocking Provide full depth blocking between joists over support (not shown for clarity) Attach I-joist to plate at all supports per detail 1b. 3-1/2" minimum I-joist bearing required. (5c) SET-BACK CONNECTION Nail joist end using 3" nails, toe-nail at top and bottom flanges. Vertical solid sawn blocks -(2x6 S-P-F No. 2 or better) nailed through joist web and web of girder using 2-1/2\* nails. Alternate for opposite side.

Notes:

- Verify girder joist capacity if the back spanexceeds the joist spacing.

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

JOIST DEPTH	ROOF							G (UNFACT					
	TRUSS		= 30 psf, [					DL = 15					
(in.)	SPAN	1	OIST SPAC	ING (in			OIST SP/	CING (in.)		J	OIST SPA	CING (in	
	(fr)	12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
	26	1	X	X	Х	2 2	Х	X	X	2	X	Х	Х
	28	1	X	X	Х	2	Х	X	X	X	X	X	Х
9-1/2"	30	1	X	X	X	2	X	X	X	l X	X	X	Х
	32 34	2 -	X	X	X	2 X	X	X X	X	X	X	X	X
	36	2 2	x	X	x	â	x	x	X	◊	X	Š	X
	26	Ń		- x	Ŷ				Ŷ			Ŷ	<del></del> ŷ-
	28	l ii	2 2 2	x	â	i	â	x	X	2	X	â	X
- 11	30	i	2	Х	X	1	X	X	X	2 2 2	Х	X	X
11-7/8	32	1	2	Х	Х	1	Х	X	Х	2	Х	Х	X X
	34	1	X	Х	Х	2	Х	Х	Х	2	Х	Х	Х
	36	1	X	X	X	2	X	X	X	l X	X	X	X
	38 26	h-	X	2	X	N N	2	X	X	<del></del>	<del></del>	X	X
	28	Z	-	X	î î	1	2	Ŷ	â	l ¦	â	x	â
	30	l ii	2	Ŷ	â	1		Ŷ		l i	â	ŷ	
	32	N N	2	X	X	i	2 X	x	X X X	l ż	x	x	X X X
14"	34	N	2	Х	Х	1	х	X	X	2	Х	X	X
	36	1	2	Χ	X	1	Х	Х	X	2	Х	Х	Х
	38	1	2	X	X	1	X	Х	X	2	X	Х	Х
	40 26	1_1_	<u> </u>	X	X	N N	X	X	X	2 N	<u> X</u>	X	X
	28	N	1	2	X	N	,	X	X	N i	2	Ş	X
	30	l Ñ	i	2	â	Ň	2	â	- ŝ	1 1	2 X X X	Ŷ	â
	32	l ñ	i	2	Ŷ	Ň	ž	x	- x	Ιi	x	Ŷ	x
16"	34	N	2	2 X	X	1	2 2 2 2 X	X	X	i	X	X	X X
	36	N	2 2	Х	X	1		X	Х	1	Х	Х	Х
	38	N	2	Х	Х	1	Х	X	Х	2	Х	Х	Х
	40 42	Ņ	2	X	X	1	X	Š	X	2 2	X	Š	X

the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.

5. Conflevered joists supporting girder trusses or roof beams may require additional reinforcing. studs may be required.

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

#### **WEB HOLES**

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

- The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the 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 minus 1/4 inch. A minimum of 1/9 linch 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 for twice the length of the longest side of the longest rectangular hole or duct chose opening) and each hole and duct chose opening shall be sized and located in compliance with the requirements of Tobles 1 and 2, respectively.
- A knockout is not considered a hole, may be utilized anywhere it occurs, and may be ignored for purposes of calculating minimum distances between holes and/or duct chase openings.
- Holes measuring 1-1/2 inches or smaller shall be permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to
- A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it
  meets the requirements of rule number 6 above.
- 10. All holes and duct chose openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 7.
- 11. Limit three maximum size holes per span, of which one may be a duct chase
- A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

TABLE I 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		M S	nimun	i dista	nce fro	m ins	ide fac	eofai	y sup	of to	centre	of ho			4000	Span
	Series				4	<b>新教教室</b>			ledidi								adjustmi
		2						國人學	NO CO	8-5/8	- 9	10	10-3/4	MI	312%	12-3/4	Feelo
10, 375	NI-20	0'-7"	1'-6"	2'-10"	4'-3"	5'-8"	6,-0.					***					13'-6
	NI-40x	0'-7"	1'-6"	3,-0,	4-4"	6'-0"	6'-1"	***	***		***			***		•••	14'-9
9-1/2"	NI-60	1'-3"	2'-6"	4'-0"	5-4"	7'-0"	7'-5"				***	•••				•••	14511
. 36 3.1	NI-70	2'-0"	3.4	4'-9"	6'-3"	8,-0.	8'-4"				***			•••		•••	15'-7
20,000	NI-80	21.3*	3'-6	5'-0"	6'-6"	8'-2"	8'-8"	•••	•••			***	***				15'-9"
100	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"
1000	NI-60	0-7	1'-8"	3'-0"	4'-3	5'-9	6-0.	7.3	8'-10"	10-0	•••						16'-9"
11-7/8*	NI-70	1'-3"	2'-6"	4'-0"	5'-4	6-9-	7:-2	8'-4"	10-0	111-2	•••						17'-5"
1.477	NI-80	1'-6"	2'-10'	4'-2"	5'-6"	7'-0"	7'-5"	8'-6	10-3	11'-4			•••	•	•••		17-7
1.7 % 44	NI-90	0-7	08.	1'-5'	3'-2"	4'-10"	5-4	6'-9	8'-9"	10-2"		•••					17-11
	NI-90x	0-7	0'-8"	0-9	2'-5"	4'-4"	41-91	6'-3"			***		***		***	***	18'-0"
A CONTRACTOR	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
1.35 4.36	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
100	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
100	NI-90	0-7	0'-8"	0'-10"	2'-5"	4'-0"	4'-5	5'-9"	7:-5*	8'-8"	9-4	11'-4"	12-11			•••	19-9
	NI-90x	0-7*	0'-8"	0-8	2'-0"	3-9	4-2	5'-5'	7'-3"	8'-5"	9-2						20-0
	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	19410
1.00	NI-70	0-7	1'-0	2'-3"	3'-6"	4'-10"	5'-3"	6'-3'	7'-8	8'-6"	9'-2"	10-8"	12'0	12'-4"	14'-0"	15'-6"	20-10
16"	NI-80	0'-7"	1'-3	2-6*	3-10	5'-3'	5-6	6'-6'	8'-0"	9'-0"	9-5	11'-0"	12-3	12'-9	14'-5"	16:0	21-2
4.5	NI-90	0-7	0'-8"	0-8	1'-9'	3'-3"	3'-8	4'-9"	6'-5"	7.5	8'-0"	8-10.	11'-3"	11'-9"	13'-9"	15'-4"	21-6
医多克克氏菌	NI-90x	0-7	0.8	0-9	2'-0'	3'-6"	4'-0"	5'-0"	6'-9"	7-9-	8'-4"	10.2	11'-6"	12:0			21'-10

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

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

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

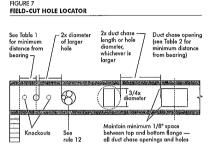
ASA Spon Adjustment Footo given in this table.

The minimum distance from the inside face of any support to centre of hole from this table. Where:

If Lactual is greater than 1, use 1 in the above calculation for Lactual SAF

an (4) FR/FR/ER

2015-04-10



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

Knockouts are prescored holes provided for the contractor's convenience to 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 possible, it is preferable to use knockouts instead of field-cut holes.



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

For redangular holes, avoid over-cutling the corners, as this can cause unnecessal stress concentrations. Slightly rounding the corners is recommended. Starting the redangular hole by drilling a 1-inch diameter hole in each of the four corner and then making the cut's between the holes is another good method to minimize damage to the 1-joist.

		Minim	ım distan	ee from i	nside fac	of ciny's	upport t	centre e	f openin	(iiiiii)
Depth	Joist Series	1000		T. 12 18 18 18 18 18 18 18 18 18 18 18 18 18	Duct cl	iaso leng	h (in)	22.00		10 A 10 A 10
L COMP		8.0	10	12		16	18	20	22	24
10000	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 NI-80	5'-1' 5'-3'	5'-5'	5'-10"	6'-3'	6'-7'	7'-1"	7'-6' 7'-8'	8'-1"	8'-4"
10000	N-20	5-3	6-2	6'-6"	7-1	7'-5	7'-9"	8'-3"	8-2*	8'-6" 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'	8'-6"	9'-0"	9-3	9-9-	10-3	111.0
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
Agent 5 Table	NI-90x	7'-7*	8'-1"	8'-5"	8'-10"	9-4"	9'-8'	10'-2"	10'-8"	11:-2:
	NI-40x	8'-1"	81-7	9'-0"	9'-6"	10'-1"	10'-7"	111-2"	12'-0"	12'-8"
	NI-60	8'-9	9'-3'	9'-8"	10-1"	10'-6"	11'-1'	111-6*	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"
	NI-80 NI-90	9'-0"	91-3*	9'-9"	10-1	10-7	111-11	11'-6"	12'-1"	12'-6"
	141-90	9'-2"	9'-8'	10'-0"	10-6	10-11	11'-5"	11'-9"	12'-4"	12:-11

1. Above table may be used for I-joist specing of 24 inches on centre or lass.
2. Duct chase opening location distance is measured from inside face al supports to centre of apening.
3. The above table is tasted on simple, sepan joists only, for other opplications, contact your local distributor.
4. Distances are based on uniformly loaded libor joists that meet the span requirements for a design five load of 40 psf and dead load of 15 psf, and a love load distellar loss in 10 14280. For other applications, contact you 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 I-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 alue 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 block and sledgehammer.
- Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single I-joist. Apply
  glue in a winding pattern on wide areas, such as with double I-joists.
- 6. Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.
- 7. After the first row of panels is in place, spread glue in the groove of one or two panels at a time before laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) than used on 1-joil till flanges.
- 8. Tap the second row of panels into place, using a block to protect groove edges.
- Stagger end joints in each succeeding row of panels. A 1/8-inch space between all end joints and 1/8-inch at all edges, including T&G edges, is recommended. (Use a spacer tool or an 2-1/2\* common nail to assure accurate and consistent spacing.)
- 10. Complete all nailing of each panel before glue sets. Check the manufacturer's for cure time. (Warm weather accelerates glue 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. (Oser mail spacing may be required by some codes, or for diaphragm construction. The finished deck can be walked on right away and will carry construction loads without damage to the

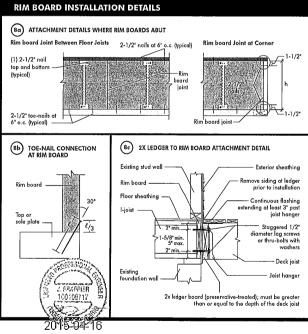
#### FASTENERS FOR SHEATHING AND SUBFLOORING(1)

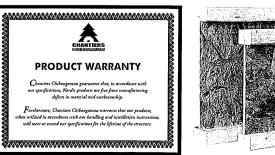
Joist	Panel	Common	Ring Thread		Ol Fo	sieners
Spacing (in.)	Thickness (in.)	Wire or Spiral Nails	Nails or Screws	Staples	Edges	Interm. Supports
16	5/8	2*	1-3/4"	2*	6'	12*
20	5/8	2"	1-3/4*	2*	6'	12'
24	3/4	2"	1-3/4"	2*	6'	12*

- 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
- 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
- 5. Use only adhesives conforming to CAN/CGSB-71.26 Standard, Adhesives for Field-Gluing Plywood to Lumbor Framing for Floor System, applied in accordance with the manufacturer's recommendations. If OSB panels with sealed surfaces and edges are to be used, use only solvent-based glues; check with

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

IMPORTANT NOTE:
Floor 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.





NI-98x



 $\overline{\circlearrowleft}$ FSC OSR 3/a"-4 S-P-F No.2 1950FMSR 2100f MSR 1950f MSR 2100f MSR 2400f M\$R NPG Lumber 23 pieces 23 pieces 33 pieces 33 piece 33 pieces per unit

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

#### WEB HOLE SPECIFICATIONS

9-1/2"

11-7/8

FIGURE 7

PLUES 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 chase opening shall be in compliance with the requirements of
- 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 chose opening that
- can be cut into an bigist web shall equal the clear distance between the flances of the Lipist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole or opening and the adjacent 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

- 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 hote 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 source hale for twice the length of the langest side of the langest rectangular hale of
- aquous note for twice the tengin or the langest side or the longest rectinguist hale of duct chose opening) and each hale 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 holes and/or duct ase openina:
- Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.
- 9. A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above. 10. All holes and duct chase openings shall be cut in a workman-like manner in accordance with the restrictions listed above and as
  - illustrated in Figure 7. Limit three maximum size holes per span, of which one may be
  - a duct chase opening.

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

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

Simple Span Only

$\overline{}$		- 14		- Dista	na tra	n locid	o Fore	of Any	Sunnar	to Co	ntre of	Hale (ft	inl						Minim	ım distana	e from in:	ide face	of suppo	rts to ce	ntre
faic		14	((III))IUII	ומוגועו ו	ice iioi						1116 01	note (ii	11117				Joist	Joist				Ouct Cho			
ries						Rou	nd Hole	e Diame	eter (in.	)							Depth	Series				Jour Chu	30 LOIN		
103	2	3	4	5	6 .	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4				8	10	12	14	16	18	20
1-20	0'-7"	1'-6"	2'-10"	4'-3"	5'-8"	6'-0"												NI-20	4'-1"	4'-5"	4'-10"	5'-4"	5'-8'	6'-1"	6'-6
I-40x	0'-7"	1'-6"	3'-0"	4'-4"	6'-0"	6'-4"			***				•••			i		NI-40x	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7-8
1-60	1'-3"	2'-6"	4'-0"	5'-4"	7'-0"	7'-5"	***										9-1/2"	NI-60	5'-4"	5'-9"	6'-2"	6'-7"	7'-1"	7'-5"	8,-(
1-70	2'-0"	3'-4"	41-9"	6'-3"	8'-0"	8'-4"												NI-70	5'-1"	5'-5"	5'-10'	6'-3"	6'-7"	7'-1"	7'-6
1-80	2'-3"	3'-6"	5'-0"	6'-6"	8'-2"	8,-8,									***			NI-80	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3°	7-8
1-20	0'-7"	0'-8"	1'-0"	2'-4"	3'-8"	4'-0"	5'-0"	6'-6"	7'-9"				70-					NI-20	5-9	6-2	6'-6"	7'-1"	7'-5"	7'-9"	8'-3
1-40x	0'-7"	O'-B"	1'-3"	21-8"	4'-0"	4'-4"	5'-5"	7'-0"	8'-4"									NI-40x	6'-8"	7'-2"	7'-6"	8'-1"	8'-6"	9'-1"	9-6
1-60	0'-7"	1'-6"	3'-0"	4'-3"	5'-9"	6'-0"	7'-3"	8'-10"	10:-0"					***				NI-60	7'-3"	7'-8"	8'-0"	B'-6"	9-0	9'-3"	9'-9
I-70	1'-3"	2'-6"	4'-0"	5'-4"	6'-9"	7'-2"	8'-4°	10'-0°	11'-2"						***		11-7/8"	NI-70	7'-1"	7'-4"	7'-9"	8'-3"	8'-7"	9'-1"	9-6
1-80	1'-6"	2'-10"	4'-2"	5'-6"	7'-0"	7'-5'	8'-6"	10'-3"	11'-4°			***					i i	NI-80	7'-2*	7'-7"	8'-0"	8'-5"	8'-10"	9'-3"	9'-8
1-90	0'-7°	0'-8"	1-5	3'-2"	4'-10"	5'-4"	6'-9"	8'-9"	10'-2"								1	NI-90	7'-6"	7'-11'	8'-4"	8'-9"	9'-2"	9'-7° 9'-8"	10' 10'
1-90x	0'-7"	0'-8"	0'-9"	2'-5"	4 4	4'-9"	6'-3"	***	•••						***			NJ-90x	7'-7"	8'-1"	8'-5"	8'-10"	9'-4"		
I-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"					i 1	NI-40x	8'-1"	8'-7"	8'-0°	9'-6"	10'-1"	10'-7"	11
-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"					1	NI-60	8'-9"	9'-3"	9'-8"	10'-1'	10'-6"	11-14	11'
1-70	0'-8"	1'-10"	3'-0"	4'-5"	5'-10"	6'-2"	7'-3'	8'-9"	9,-6,	10'-4'	12'-0"	13'-5"					14.	NI-70	8'-7"	9'-1'	9'-5"	9'-10"	10-4"	10'-8"	13
1-80	0'-10"	2'-0"	3'-4"	4'-9"	6'-2"	6'-5"	7-6	9'-0"	10'-0"	10'-8'	12-4	13'-9"		***			1	NI-80	9'-0"	Dı 3ı	9-9"	10,-1,	10-7	11,1,	11'
1-90	0'-7"	0'-8"	0'-10"	2'-5"	4'-0"	4'-5"	5'-9"	7'-5"	8'-8"	9-4	11'-4"	12'-11"			•		1 (	NI-90	9'-2"	9'-8"	10'-0" 10'-3"	10'-6'	11-1"	11'-5" 11'-7"	12
1-90x	0'-7"	0'-8°	0'-8"	2'-0"	3'-9"	4'-2'	5'-5"	7'-3"	8'-5"	9'-2"								NI-90x	9'-4"			10'-7"			131
1-60	0'-7"	0'-8"	0'-8"	1'-6"	2'-10"		4'-2"	5'-6"	6'-4"	7'-0"	8'-5"	9'-8"	10-2		13'-9"		1	NI-60	10'-3"	10'-8"	111-2"	11'-6"	12'-1"	12'-6"	13
1-70	0'-7"	1'-0"	2'-3"	3'-6"	4'-10'	5'-3"	6'-3"	7'-8"	8'-6"	9-2	10'-8"	12'-0"		14'-0'	15'-6"		1	NI-70	10'-1'	10'-5"	11'-0"	11'-4"	11'-10"		12
1-80	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"		16"	NI-80	10'-4'	10'-9"	11'-3"	11'-9"	12'-1"	12-7"	13'
1-90	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"	l	{ ]	NI-90	10-9	11'-2"	114-8"	12'-0" 12'-4"	12'-6" 12'-10"	13'-0" 13'-2"	13
I-90x	0'-7"	0'-8"	0'-9"	2'-0'	3'-6*	4'-0"	5'-0*	6'-9"	71-91	8-4	10'-2"	11'-6"	12'-0			}	L	N1-90x	1341*	11'-5"	11-10-	14-4-	12-10	13-2"	13

**FIELD-CUT HOLE LOCATOR** 

Above table may be used for t-joist spacing of 24 inches on centre or less.
 Hole location distance is measured from inside face of supports to centre of hole.
 Distances in this chart are based on uniformly loaded joists.
 The above table is based on the 1-joists being used at their maximum spans. The minimum distance as given above may be reduced

Joist	Joist	Minimu	ım distan	ce from in				entre of o	pening (	# - in.)
Depth	Series				Duct Ch	ase Leng	th (in.)			
		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"
	N1-70	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"	91-8"	10'-2"	10'-8"	11-24
	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	10-11	10-6	11-14	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"	11-11	11'-6"	12'-1"	12'-6"
	NI-90	9'-2"	9'-8"	10'-0'	10'-6'	10-13		111-9"	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"	14'-1"	14'-10"
	NI-70	10'-1"	10'-5"	11'-0"	11'-4"	11'-10'		12'-8"	13'-3"	14'-0"
16"	NI-80	10'-4'	10'-9"	11'-3"	11'-9"	12'-1"	12-7"	13'-1"	13'-8"	14'-4"
	NI-90	10-9	11'-2"	11'-8"	12'-0"	12'-6"	13'-0"	13'-6"	14-2	14'-10"
	NI-90x	1341	יוו-5"	11'-10"	12'-4"	12'-10'	' 13'-2"	13'-9"	14-4"	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.
   Distances are based on uniformly loaded floor joists that meet the span requirements for a design five 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 os given above may be reduced for shorter spans; contact your local distributor.

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

#### Knockouts are prescared holes provided for the contractor's convenience to install electrical or small plumbing lines. They are 1-1/2 inches in diameter, and are spaced 15 inches on centre along the length of the Lioist. Where

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

possible, it is preferable to use knackouts instead of field-cut hales.

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 n each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist



#### SAFETY AND CONSTRUCTION PRECAUTIONS



Do not walk on I-jaists until



Never stock building moterials 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:

Maintain minimum 1/8" space between top and

3/4x

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

See Table 2 for min

- be required at the interior support.

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

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

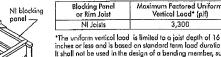
  \*\*Temporary or permanent\*\*) can be nailed to the top flange of the first 4 feet of 1-joists at the end of the boy.
- For confilerered Lipits, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
   Install and fully nail permanent sheathing to each Lipits before placing loads on the floor system. Then, stack building materials over beams ar walls only.
- Never install a dampaed l-loist. 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 occidents. Follow these installation guidelines carefully.

# CHANTIERS

# PRODUCT WARRANTY

Chansiers Chibougamau guarantees that, in accordance with ur specifications, Nordic products are free from manufacturing defects in material and marbmanship.

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

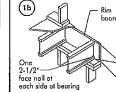


\*The uniform vertical load is limited to a joist death of 16 inches or less and is based on standard term load duration.
It shall not be used in the design of a bending member, such

l-joist to top plate per detail 1b

(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 shear transfer, nail to 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.

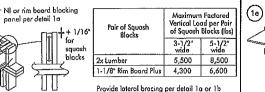
One 2-1/2' wire or spiral nail at top and bottom flonge

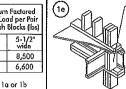
Attach rim board to top plate using 2-1/2" wire or spiral toe-nails at 6" o.c.

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

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

Blocking Pane or Rim Joist





from above for bearing belo detail 1d. Match bear area of blocks

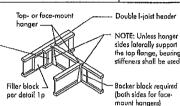
ner detail th with the bearing below. Other conditions, such as offset bearing walls, are not covered by this detail. Blocking required over all interior supports under load-bearing walls or when floor joists are not continuous over suppor 2-1/2° nails – NI blocking panel per detail 1a at 6" o.c. to top plate -

(h) Bocker block (use if hanger load exceeds 360 lbs). Before installing a backer block to a double block to the second state of the second state double I-joist, drive three additional 3° nails through the webs and filler block where the backer block will fit. Clinch. Install backer tight to top flange. Use twelve 3° nails, clinched possible. Maximum factored resistance for hunger for this detail = 1,620 lbs.

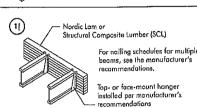
BACKER BLOCKS (Blocks must be long enough to permit required nailing without splitting)

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

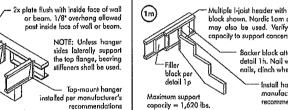
 Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 Standard. \* For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges For 2° thick flanges use net depth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



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



NOTE: Unless hanger sides laterally support the top flange,



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

Leave a 1/8 to 1/4-inch gap between top of filler block and bottom of top 1-joist flonge.
 Filler block is required between joists for full length

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

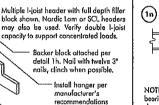
o.c. (clinched when possible) on each side of the double l-joist. Total of four nails per foot required. If nails can be

clinched, only two nails per foot are required.

The maximum factored load that may be applied to one

FIGURE 2

side of the double joist using this detail is 860 lbf/ft.



9-1/2"

9-1/2° 11-7/8°

11-7/8°

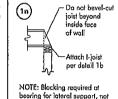
1-1/2"

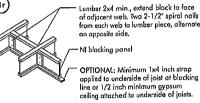
3-1/2°×

3-1/2° x

7-1/8\* v 6

 $2 \cdot 1/8" \times 12"$ 







- I-joist blocking panel

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

All nails are common spiral in this detail. the above details are assumed to be common wire nails unless otherwise noted, 3" (0,122" dia.) common spiral nails may be substituted for 2-1/2" (0.128" dia.) ed at hames Spruce-Pine-Fir No. 2 or better. Individual components not sh to scale for clarity.

#### **WEB STIFFENERS**

FILLER BLOCK REQUIREMENTS

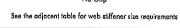
-Offset nails from

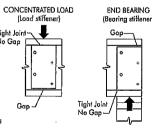
FOR DOUBLE I-JOIST CONSTRUCTION

#### RECOMMENDATIONS:

- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the t-joist properties table found of the t-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 hong 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 flange between supports, or in the case of a cantillever, anywhere between the contilever tip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between

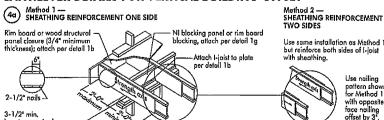






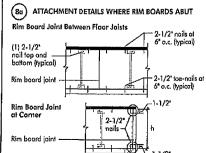
Flange Width	Web Stiffener Size Each Side of Web
2-1/2"	1" x 2-5/16" minimum width
3-1/2°	1-1/2" x 2-5/16" minimum width

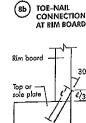
#### CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET

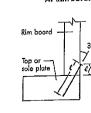


NOTE: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nati with 2-1/2 nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail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

#### **RIM BOARD INSTALLATION DETAILS**







# NORDIC **STRUCTURES**

COMPANY May 28, 2020 15:43 **PROJECT** J1 - 1ST FLOOR

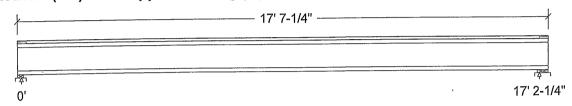
#### **Design Check Calculation Sheet**

Nordic Sizer – Canada 7.2

#### Loads:

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

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



Unfactored:		
Dead	229	229
Live	458	458
Factored:		
Total	974	974
Bearing:		
Capacity		2336
Joist	2102	7744
Support	3981	1144
Des ratio		0.42
Joist	0.46	0.13
Support	0.24	#2
Load case	#2	4-3/8
Length	2-3/8	1-3/4
Min req'd	1-3/4	No
Stiffener	No	1.00
KD	1.00	1.00
KB support	1.00	769
fcp sup	769	1.15
Kzcp sup	1.09	1.13

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

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

Total length: 17' 7-1/4"; Clear span: 17' 1/2"; 3/4" nailed and glued OSB sheathing

This section PASSES the design code check.

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

Emiliant Coronaco most	9 · · · · · · · ·			
Criterion	Analysis Value	Design Value	Unit	Analysis/Design
Shear	Vf = 974	Vr = 2336	lbs	Vf/Vr = 0.42
Moment(+)	Mf = 4185	Mr = 6255	lbs-ft	Mf/Mr = 0.67
Perm. Defl'n	0.13 = < L/999	0.57 = L/360	in	0.23
Tive Defl'n	0.26 = L/798	0.43 = L/480	in ,	TOFESSION 0.60
Total Defl'n	0.39 = L/532	0.86 = L/240	in 🦸	0.45
Bare Defl'n	0.31 = L/659	0.57 = L/360	in 🕼	2000 60.55
Vibration	$L_{max} = 17'-2.3$	$L_{V} = 18'-1.3$	ft /30	0.95
Defl'n	= 0.031	= 0.037	in ()	7.3020 0.55 0.95 0.85
Dell II	0.031	L	1 20	NATSUULANON A

Bong no . Tan 16079 - 20 STRUCTURAL COMPONENT ONLY

ROUNVEE OF ONE

#### WoodWorks® Sizer

#### for NORDIC STRUCTURES

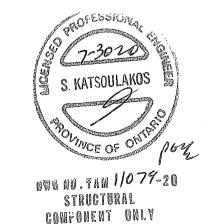
#### J1 - 1ST FLOOR

#### Nordic Sizer - Canada 7.2

Page 2

Additional	Data:									
FACTORS:		KD	KH	KZ	KL	KT	KS	KN	LC#	
Vr	2336		1.00	_	_	=	-	-	#2	
	6255		1.00	-	1.000	_	-	-	#2	
	371.1 m			_	-		-	-	#2	
CRITICAL LO	DAD COMB	INATIONS	S:							
Shear	: LC #2		5D + 1.5D							
Moment(+)	) : LC #2	= 1.2	5D + 1.51	Ĺ 						
Deflection	on: LC #1	= 1.0	D (perma	anent)						
			D + 1.0L							
	LC #2	= 1.0	D + 1.0L	(tota.	1) 1010+1					
	_	= 1.0	D + 1.0L	1 25D T	1 5T		•			
Bearing	: Suppo	rt 1	LC #2 = 1	1 25D +	1.5T					
Load Type	oddng oddng	d W=wi	nd S=sn	ow H=e	arth.grou	indwate	r E=ear	thquake		
Load Type	zs. D-ueu T.=liv	e (use. 0	ccupancy	) Ls=1.	ive(stora	ige, equi	ipment)	f=fire		
Load Patt	terns: s=	S/2 L=	L+Ls =	no patt	ern load	in this	s span			
All Load	Combinat	ions (L	Cs) are	listed .	in the An	alysis	output			
CALCULATI		•								
FToff =	459.76 lb	-in^2	K = 6.18	e06 lbs				r	QNFORMS TO	nrc 2012
"Live" de	eflection	is due	to all	non-dea	d loads (	live, v	wind, sn	ow)	KMI GHMO IC	, 666 661 661 6
									AMENDEI	2020
Design No	otes:									

- 1. WoodWorks analysis and design are in accordance with the 2015 National Building Code of Canada (NBC), Division B, Part 4, and the CSA 086-14 Engineering Design in Wood standard, Update No. 2 (June 2017).
- 2. Please verify that the default deflection limits are appropriate for your application.
- 3. Refer to Nordic Structures technical documentation for installation guidelines and construction details.
- 4. Nordic 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.





**COMPANY**July 23, 2020 15:47

**PROJECT**J7 - 2ND FLOOR CANT

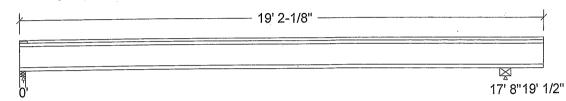
#### **Design Check Calculation Sheet**

Nordic Sizer - Canada 7.2

#### Loads:

Load Type		Distribution Pat-		Location	[ft]	Magnitude		Unit
Boad			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):



•			
Unfactored: Dead Live	176 353	205 410	
Factored: Total	749	872	
Bearing: Capacity Joist Support Des ratio Joist Support Load case Length Min req'd Stiffener KD	2199 5919 0.34 0.13 #4 2-1/2 1-3/4 No 1.00	5531 - 0.16 - #2 5 3-1/2 No 1.00	
KB support fcp sup Kzcp sup	769 -	- - -	

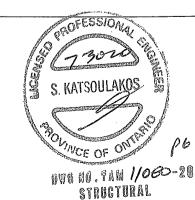
Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

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' 2-1/8"; Clear span: 17' 4-5/8", 1' 2"; 5/8" nailed and glued OSB sheathing

This section PASSES the design code check.



#### J7 - 2ND FLOOR CANT

#### 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 = 755	Vr = 2336	lbs	Vf/Vr = 0.32
Moment(+)	Mf = 3304	Mr = 11609	lbs-ft	Mf/Mr = 0.28
Moment(-)	Mf = 80	Mr = 7546	lbs-ft	Mf/Mr = 0.01
Deflection:			<del></del>	
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/849	0.88 = L/240	in	0.28
Cantil. Perm	-0.02 = L/951	0.09 = L/180	in	0.19
Live	-0.04 = L/463	0.07 = L/240	in	0.52
Total	-0.05 = L/311	0.14 = L/120	in	0.39
Bare Defl'n	-0.04 = L/413	0.09 = L/180	in	0.44
Vibration	Lmax = 17!-8	Lv = 19'-11	ft	0.89
Defl'n	= 0.026	= 0.035	in	0.74

#### Additional Data:

FACTORS:	f/E	KD	KH	KZ	$\mathtt{KL}$	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	_	_	-	_	#2
Mr+	11609	1.00	1.00	-	1.000	_	-	-	#4
Mr-	11609	0.65	1.00		1.000	-	_	_	#5
E.T	547.1 m	illion	-	_	_	-	_	-	#4

#### CRITICAL LOAD COMBINATIONS:

```
Shear : LC \#2 = 1.25D + 1.5L
Moment(+) : LC \#4 = 1.25D + 1.5L (pattern: L )
```

Moment(+): LC #5 = 1.25D + 1.5L (pattern: L)

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

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

 $EIeff = 613.27 lb-in^2 K = 6.18e06 lbs$ 

"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.

BWG NO. TAN 1/060-20
STRUCTURAL
COMPONENT ONLY



**COMPANY**July 23, 2020 15:56

PROJECT
J7 - 2ND FLOOR CANT - EL 3

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

Nordic Sizer - Canada 7.2

#### Loads:

Load		Type Distribution Pa		Pat-	Location	[ft]	Magnitude	Unit
	шоаа	- 1 -		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): 17' 8"19' 3-1/2" Unfactored: 211 175 Dead 421 353 Live Factored: 895 749 Total Bearing: Capacity 5531 2199 Joist 5919 Support Des ratio 0.16 0.34 Joist 0.13 Support #2 #4 Load case 5 2-1/2Length 3-1/21 - 3/4Min req'd No No Stiffener 1.00 1.00 KB support 769 fcp sup

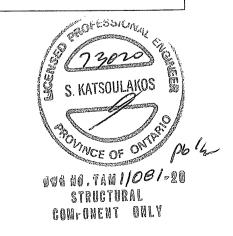
Kzcp sup - Bearing for wall supports is perpendicular-to-grain bearing on top plate. No stud design included.

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' 5-1/8"; Clear span: 17' 4-5/8", 1' 5"; 5/8" nailed and glued OSB sheathing

This section PASSES the design code check.



#### J7 - 2ND FLOOR CANT - EL 3

#### 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 = 757	Vr = 2336	lbs	Vf/Vr = 0.32
Moment(+)	Mf = 3300	Mr = 11609	lbs-ft	Mf/Mr = 0.28
Moment(-)	Mf = 112	Mr = 7546	lbs-ft	Mf/Mr = 0.01
Deflection:				0.14
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/851	0.88 = L/240	in	0.28
Cantil. Perm	-0.02 = L/961	0.11 = L/180	in	0.19
Live	-0.04 = L/463	0.08 = L/240	in	0.52
Total	-0.06 = L/312	0.16 = L/120	in	0.38
Bare Defl'n	-0.05 = L/413	0.11 = L/180	in	0.44
Vibration	Lmax = 17'-8	Lv = 19'-11	ft	0.89
Defl'n	= 0.026	= 0.035	in	0.74

#### Additional Data:

FACTORS:	f/E	KD	KH	ΚZ	$_{ m KL}$	KT	KS	KN	LC#
Vr	2336	1.00	1.00	-	_	-	_	-	#2
Mr+	11609	1.00	1.00	-	1.000	-	_	-	#4
Mr-	11609	0.65	1.00	_	1.000	_	-	-	#5
FT	547 1 m	illion	-	_	_	-			#4

#### **CRITICAL LOAD COMBINATIONS:**

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

Moment(+): LC #4 = 1.25D + 1.5L (pattern: L ) Moment (-): LC #5 = 1.25D + 1.5L (pattern:  $\overline{L}$ )

Deflection: LC #1 = 1.0D (permanent)

LC #4 = 1.0D + 1.0L (pattern: L)(live) (total) LC #4 = 1.0D + 1.0L (pattern: L)LC #4 = 1.0D + 1.0L (pattern: L)(bare joist) : Support 1 - LC #4 = 1.25D + 1.5L (pattern: L )

Bearing

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)

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 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.

076 NO. TAN 11081-20 STRUCTURAL COMPONENT ONLY





#### Single 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 1ST FLR FRAMING\Flush Beams\B4 H(i3933) (Flush Beam)

PASSED

June 10, 2020 07:56:12

**BC CALC® Member Report** 

City, Province, Postal Code:

**Build 7493** 

Job name:

Address:

MARKHAM

CCMC 12472-R

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

KIMBERLY 1 - EL 1.mmdl

File name: Description:

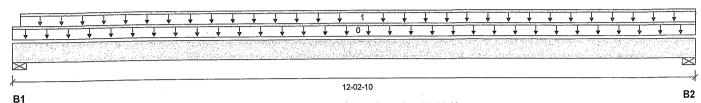
1ST FLR FRAMING\Flush Beams\B4 H(i3933)

Specifier:

Designer. L.D.

Wind

Company:



Total Horizontal Product Length = 12-02-10

Snow

Reaction Summary (Down / Uplift) (Ibs)

Live Dead Bearing 106/0 139 / 0 B1, 1-3/4" 148 / 0 111/0 B2. 4-3/8"

Los	ad Summary						Live	Dead	Snow	Wind	Tributary
	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-02-10	Тор		6			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-01-12	12-02-10	Top	24	12			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1015 ft-lbs	17696 ft-lbs	5.7%	1	06-00-00
End Shear	282 lbs	7232 lbs	3.9%	1	01-01-10
Total Load Deflection	L/999 (0.038")	n\a	n\a	4	06-00-00
Live Load Deflection	L/999 (0.021")	n\a	n\a	5	06-00-00
Max Defl.	0.038"	n\a	n\a	4	06-00-00
Span / Depth	12.0				

	Bearing Suppor	<b>ts</b> Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
-	B1 Wall/Plate		341 lbs	18.1%	9.1%	Spruce-Pine-Fir	_
	B2 Wall/Plate	4-3/8" x 1-3/4"	361 lbs	7.7%	3.9%	Spruce-Pine-Fir	

#### Notes

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



#### Disclosure

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PASSED

June 10, 2020 07:56:12

1ST FLR FRAMING\Flush Beams\B2(i4153) (Flush Beam)

**BC CALC® Member Report** 

**Build 7493** 

Job name:

Address:

**Load Summary** 

Customer: Code reports:

City, Province, Postal Code: MARKHAM

CCMC 12472-R

Dry | 1 span | No cant.

File name:

KIMBERLY 1 - EL 1.mmdl

1ST FLR FRAMING\Flush Beams\B2(i4153)

Wind

Live

Dead

Snow

1.00

Wind

1.15

**Tributary** 

00-00-00 n\a n∖a

FESSICIAL (n)a

POVINCE OF ONTE

OVE NO. TAM 1/083-20 STRUCTURAL

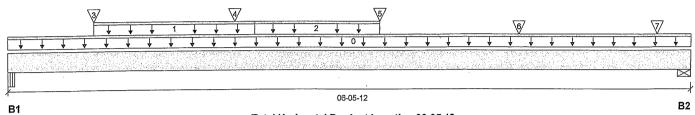
n\a

n\a

Description: Specifier:

Designer: L.D.

Company:



#### Total Horizontal Product Length = 06-05-12

Snow

Reaction Summary (Down / Uplift) (lbs)

Live 1385 / 0 726 / 0 B1, 4-1/2" 1508 / 0 779 / 0 B2, 3-1/2"

	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-05-12	Тор		6
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-09-12	02-03-12	Top	21	10
2	STAIRS	Unf. Lin. (lb/ft)	L	02-03-12	03-05-12	Top	120	60
3		Conc. Pt. (lbs)	L	00-09-12	00-09-12	Top	530	264
4	_	Conc. Pt. (lbs)	L	02-01-08	02-01-08	Тор	556	298
5	J4(i4311)	Conc. Pt. (lbs)	L	03-05-12	03-05-12	Тор	547	274
6	J4(i4235)	Conc. Pt. (lbs)	L	04-09-12	04-09-12	Тор	630	315
7	-	Conc. Pt. (lbs)	L	06-01-13	06-01-13	Тор	451	225
	of the Parameter Company		Factored	Dem	and/	Cana	Lasation	

		Factored	Demand/		
Controls Summary	Factored Demand	Resistance	Resistance	Case	Location
Pos. Moment	4465 ft-lbs	17696 ft-lbs	25.2%	1	03-05-12
End Shear	2346 lbs	7232 lbs	32.4%	1	01-04-06
Total Load Deflection	L/999 (0.04")	n\a	n\a	4	03-03-02
Live Load Deflection	L/999 (0.026")	n\a	n\a	5	03-03-02
Max Defl.	0.04"	n\a	n∖a	4	03-03-02
Span / Depth	6.0				

Beari	ng Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1	Beam	4-1/2" x 1-3/4"	2984 lbs	71.0%	31.1%	Unspecified	
B2	Wall/Plate	3-1/2" x 1-3/4"	3236 lbs	85.9%	43.3%	Spruce-Pine-Fir	

#### Notes

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

AMENDED 2020

CONFORMS TO OBC 2012

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PASSED

June 10, 2020 07:56:12

1ST FLR FRAMING\Flush Beams\B1 H(i4172) (Flush Beam)

**BC CALC® Member Report** 

**Build 7493** Job name:

Address:

City, Province, Postal Code: MARKHAM

Customer:

Code reports:

Dry | 1 span | No cant.

File name:

KIMBERLY 1 - EL 1.mmdl

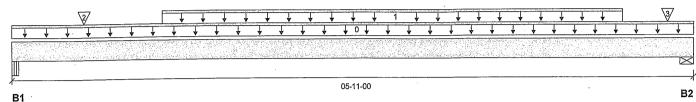
1ST FLR FRAMING\Flush Beams\B1 H(i4172) Description:

Wind

Specifier:

Designer: L.D.

Company:



#### Total Horizontal Product Length = 05-11-00

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead		
B1, 2-1/4"	618 / 0	326 / 0		
B2 5-1/2"	642 / 0	352 / 0		

CCMC 12472-R

Load 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	05-11-00	Top		6			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	01-03-08	05-03-08	Top	232	116			n\a
2	J4(i4238)	Conc. Pt. (lbs)	L	00-07-08	00-07-08	Top	-257	129			⊤n\a
3	12(i2210)	Conc. Pt. (lbs)	L	05-08-04	05-08-04	Тор	74	49			n\a

		Factored	Demand/		
Controls Summary	Factored Demand	Resistance	Resistance	Case	Location
Pos. Moment	1846 ft-lbs	17696 ft- <b>i</b> bs	10.4%	1	03-03-08
End Shear	1116 lbs	7232 lbs	15.4%	1	04-05-10
Total Load Deflection	L/999 (0.014")	n\a	n\a	4	02-09-08
Live Load Deflection	L/999 (0.009")	n\a	n\a	5	02-09-08
Max Defl.	0.014"	n\a	n\a	4	02-09-08
Span / Depth	5.5				

Bearii	ng Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam	2-1/4" x 1-3/4"	1334 lbs	63.5%	27.8%	Unspecified
B2	Wall/Plate	5-1/2" x 1-3/4"	1403 lbs	23.7%	11.9%	Spruce-Pine-Fir

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

CONFORMS TO OBC 2012

AMENDED 2020



#### DWG NO. TAN 11084-20 STRUCTURAL COMPONENT

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#### 1ST FLR FRAMING\Flush Beams\B3(i4117) (Flush Beam)

**BC CALC® Member Report** Dry | 1 span | No cant. June 10, 2020 07:56:12

**Build 7493** 

Job name:

Customer:

Code reports:

Address:

City, Province, Postal Code: MARKHAM

CCMC 12472-R

File name:

KIMBERLY 1 - EL 1.mmdl

Description: 1ST FLR FRAMING\Flush Beams\B3(i4117)

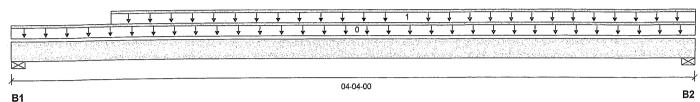
Specifier:

Company:

Designer:

L.D.

Wind



#### Total Horizontal Product Length = 04-04-00

Snow

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead
B1, 3-1/2"	501 / 0	263 / 0
B2. 5-1/2"	1041 / 0	564 / 0

	ad Summary  Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.65	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-04-00	Тор		6			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-07-08	04-04-00	Top	414	215			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	1236 ft-lbs	17696 ft-lbs	7.0%	1	02-07-08
End Shear	1071 lbs	7232 lbs	14.8%	1	01-03-06
Total Load Deflection	L/999 (0.004")	n\a	n\a	4	02-01-00
Live Load Deflection	L/999 (0.003")	n\a	n\a	5	02-01-00
Max Defl.	0.004"	n\a	n\a	4	02-01-00
Span / Depth	3.7				

Rearing	y Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material .
B1	Wall/Plate	3-1/2" x 1-3/4"	1080 lbs	28.7%	14.5%	Spruce-Pine-Fir
B2	Wall/Plate	5-1/2" x 1-3/4"	2266 lbs	38.3%	19.3%	Spruce-Pine-Fir

#### **Notes**

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

CONFORMS TO OBC 2012

AMENDED 2020



#### OWO NO. TAM 1/085-20 STRUCTURAL COMPONENT ONLY

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June 10, 2020 07:56:12

#### 2ND FLR FRAMING\Flush Beams\B5(i3358) (Flush Beam)

**BC CALC® Member Report** 

**Build 7493** 

Customer:

Code reports:

Job name:

Address: City, Province, Postal Code: MARKHAM

CCMC 12472-R

Dry | 1 span | No cant.

File name:

Wind

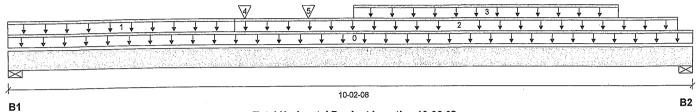
KIMBERLY 1 - EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B5(i3358)

Specifier:

Designer: L.D.

Company:



#### Total Horizontal Product Length = 10-02-08

Reaction Summary (Down / Uplift) (lbs)

Live 670 / 0 427 / 0 B1, 3-1/2" 875 / 0 516/0 B2. 5-1/2"

Los	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	10-02-08	Top		12			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	03-04-00	Top	20	10			n\a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	03-04-00	09-11-12	Тор	17	9			n\a
3	Smoothed Load	Unf. Lin. (lb/ft)	Ľ	05-01-00	09-01-00	Тор	201	101			n\a
1	B6(i3357)	Conc. Pt. (lbs)	L	03-05-12	03-05-12	Top	319	207			n\a
5	J5(i3547)	Conc. Pt. (lbs)	L	04-05-00	04-05-00	Тор	235	118			n∖a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	5206 ft-lbs	35392 ft-lbs	14.7%	1	05-03-00
End Shear	1891 lbs	14464 lbs	13.1%	1	08-09-02
Total Load Deflection	L/999 (0.062")	n\a	n\a	4	05-01-00
Live Load Deflection	L/999 (0.039")	n\a	n\a	5	05-01-00
Max Defl.	0.062"	n\a	n\a	4	05-01-00
Span / Depth	9.7				

Bearin	ng Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1	Wall/Plate	3-1/2" x 3-1/2"	1539 lbs	20.4%	10.3%	Spruce-Pine-Fir	_
B2	Wall/Plate	5-1/2" x 3-1/2"	1957 lbs	16.5%	8.3%	Spruce-Pine-Fir	

#### Notes

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

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

Calculations assume member is fully braced.

Resistance Factor phi has been applied to all presented results per CSA O86. CONFORMS TO OBC 2012 BC CALC® analysis is based on Canadian Limit States Design, as per NBCC 2015 and

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9



678 NO. TAN 11086-20 STRUCTURAL COMPONENT ONLY





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June 10, 2020 07:56:12

2ND FLR FRAMING\Flush Beams\B5(i3358) (Flush Beam) Dry | 1 span | No cant.

**BC CALC® Member Report Build 7493** 

Job name:

Address:

City, Province, Postal Code: MARKHAM

Customer: Code reports:

File name:

KIMBERLY 1 - EL 1.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B5(i3358)

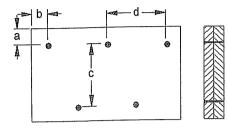
L.D.

Specifier:

Designer: Company:

CCMC 12472-R

#### Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 7-7/8" d = 10 8 11

Calculated Side Load = 618.6 lb/ft Connectors are: 16d , . Nails

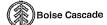
312" ARDOX SPIRAL



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June 10, 2020 07:56:12

#### 2ND FLR FRAMING\Flush Beams\B6(i3357) (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.

File name:

KIMBERLY 1 - EL 1.mmdl

2ND FLR FRAMING\Flush Beams\B6(i3357)

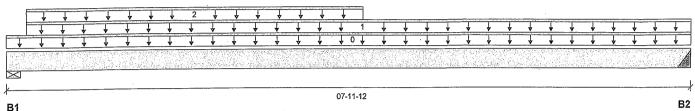
Description: Specifier:

Designer:

L.D.

Wind

Company:



#### Total Horizontal Product Length = 07-11-12

Snow

Reaction Summary (Down / Uplift) (lbs)

Live 764 / 0 429 / 0 B1, 2-3/4" 334 / 0 216/0 B2, 4"

Los	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	07-11-12	Тор		12			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-02-12	07-11-12	Top	22	11			n\a
2	STAIRS	Unf. Lin. (lb/ft)	L	00-02-12	04-01-04	Тор	240	120			n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	2572 ft-lbs	35392 ft-lbs	7.3%	1	03-02-07
End Shear	1113 lbs ·	14464 lbs	7.7%	1	01-02-10
Total Load Deflection	L/999 (0.018")	n\a	n\a	- 4	03-08-15
Live Load Deflection	L/999 (0.011")	n\a	n\a	5	03-07-13
Max Defl.	0.018"	n\a	n\a	4	03-08-15
Span / Depth	7.6				

Bearir	ng Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Wall/Plate	2-3/4" x 3-1/2"	1682 lbs	28.4%	14.3%	Spruce-Pine-Fir
B2	Hanger	4" x 3-1/2"	771 lbs	n\a	4.5%	HGUS410

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.

#### Notes

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

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

Calculations assume member is fully braced.

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

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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

POVINCE OF ONLY

ovs no . Tan 1/08**8**-20 STRUCTURAL COMPONENT ONLY





2ND FLR FRAMING\Flush Beams\B6(i3357) (Flush Beam)

Dry | 1 span | No cant.

June 10, 2020 07:56:12

PASSED

**Build 7493** 

Job name:

Address:

City, Province, Postal Code: MARKHAM

**BC CALC® Member Report** 

Customer:

Code reports:

CCMC 12472-R

File name:

KIMBERLY 1 - EL 1.mmdl

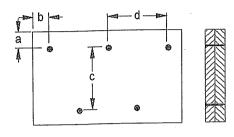
2ND FLR FRAMING\Flush Beams\B6(i3357) Description:

Specifier:

L.D. Designer:

Company:

#### Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 7-7/8" d = 28'8'

Connectors are:

"... Wails

ARDOX SPIRAL



COMPONENT ONLY

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June 10, 2020 07:56:12

#### 2ND FLR FRAMING\Flush Beams\B7(i3795) (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.

File name:

KIMBERLY 1 - EL 1.mmdl

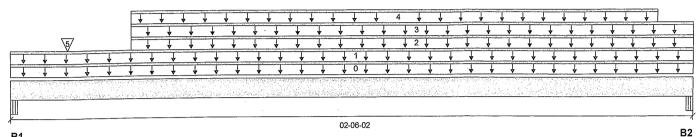
2ND FLR FRAMING\Flush Beams\B7(i3795)

Wind

Description: Specifier:

Designer: L.D.

Company:



В1

#### Total Horizontal Product Length = 02-06-02

Reaction Summary (Down / Uplift) (lbs)

Snow Dead Live Bearing 337 / 0 352 / 0 11/0 B1, 5-1/4" 318 / 0 325 / 0 12/0 B2, 3-3/8"

Loa	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	02-06-02	Тор		12			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-06-02	Тор	5	3			n\a
2	E25(i49)	Unf. Lin. (lb/ft)	L	00-05-04	02-06-02	Тор		81			n\a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-05-04	02-06-02	Тор	5				n\a
4	E25(j49)	Unf. Lin. (lb/ft)	Ĺ	00-05-04	02-04-08	Тор		195	312		n\a
5	E63(i3805)	Conc. Pt. (lbs)	L	00-02-08	00-02-08	Тор		68	72		n\a

		Factored	Demand/		
Controls Summary	Factored Demand	Resistance	Resistance	Case	Location
Pos. Moment	387 ft-lbs	35392 ft-lbs	1.1%	13	01-04-00
End Shear	80 lbs	14464 lbs	0.6%	13	01-02-14
Total Load Deflection	L/999 (0")	n\a	n\a	35	01-04-00
Live Load Deflection	L/999 (0")	n\a	n\a	51	01-04-00
Max Defl.	0"	n\a	n\a	35	01-04-00
Span / Depth	1.9				

Bearin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material	
B1	Beam	5-1/4" x 3-1/2"	960 lbs	9.8%	4.3%	Unspecified	
B2	Beam	3-3/8" x 3-1/2"	896 lbs	14.2%	6.2%	Unspecified	

#### **Notes**

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

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

CONFORMS TO 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



COMPONENT ONLY





PASSED

#### 2ND FLR FRAMING\Flush Beams\B7(i3795) (Flush Beam)

Dry | 1 span | No cant.

June 10, 2020 07:56:12

**Build 7493** 

Job name:

Address:

City, Province, Postal Code:

**BC CALC® Member Report** 

Customer:

Code reports:

MARKHAM

File name:

KIMBERLY 1 - EL 1.mmdi

2ND FLR FRAMING\Flush Beams\B7(i3795) Description:

Specifier:

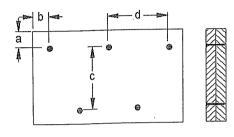
Company:

Designer:

L.D.

CCMC 12472-R

#### Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

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

Connectors are: ...

Nails ARDOX SPIKAL

> PROFESSION, POVINCE OF ONTE

> > 1176 NO. TAN 11088-20 STRUCTURAL COMPONENT ONLY

#### Disclosure

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# Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B7 E(i6011) (Flush Beam)

PASSED

**BC CALC® Member Report** 

Dry | 1 span | No cant.

July 23, 2020 15:47:47

Build 0

Job name:

Address:

City, Province, Postal Code: MARKHAM

CCMC 12472-R

Customer:

Code reports:

File name:

KIMBERLY 1 - EL 2 - 2ND FLOOR.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B7 E(i6011)

Specifier:

Designer: L.D.

Company:

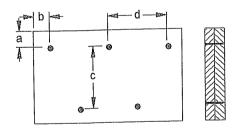
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5	¥	+	↓ ↓			¥	1	1	1 .	L L	↓	2	Ų.	<b>+</b>	Ų.	<b>¥</b>	¥	¥	<u>†</u> †	· +	_ ₩	+
<b>, , , , ,</b>	, ↓		Ţ	T T	. 1	1		Τ.	1 1	↓ .	1 1	. 1	Ť.	4	4	4	<u> </u>	<b>+</b>	. ♦	<b>↓</b>	<u> </u>	<u></u>
	, ↓	4	<b>\</b>	↓ ↓	. ↓	<b>+</b>	¥	<b>¥</b>	↓ 0	¥ .	<b>↓</b> √	, 🔻	- ↓			₩			<b>+</b>	<u></u>	₩	<u>+</u>

FULLY SUPPORTED BOTTOM EDGE ALONG FULL WIDTH FAM ALONG FULL LENGTH
Total Horizontal Product Length = 02-06-02

	ad Cummary						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	02-06-02	Top		12			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	· L	00-00-00	02-06-02	Top	8	4			n\a
2	E25(i49)	Unf. Lin. (lb/ft)	L	00-05-04	02-06-02	Top		81			n\a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-05-04	02-06-02	Top	5				n\a `
3		Unf. Lin. (lb/ft)	Ē	00-05-04	02-04-08	Top		195	312		n\a
4	E25(i49)	Conc. Pt. (lbs)	ı	00-02-08	00-02-08	Top		68	72		n∖a
5	E70(i5267)	• •	-		02-06-02		1				n\a
6	FC2 Floor Material	Conc. Pt. (lbs)	L	02-06-02	02-00-02	ιυþ	ı				ma

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Dist. Load	832.85 lb/ft	57645.00 lb/ft	1.4%		
Conc. Load	193 lbs	16813 lbs	1.1%		

## Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 7-7/8"  $d = \textcircled{3} \ \theta$ 

Connectors are:

✓ Nails & Ardox Spiral CONFORMS TO OBG 2012
AMENDED 2020

DWW NO.7AW 11089-20 STRUCTURAL COMPONENT ONLY

GOFESSION W

OVINCE OF ONLY

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PASSED

July 23, 2020 15:47:47

2ND FLR FRAMING\Flush Beams\B8 E(i6063) (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:

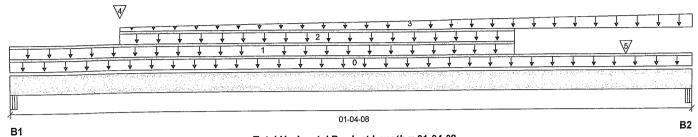
KIMBERLY 1 - EL 2 - 2ND FLOOR.mmdl 2ND FLR FRAMING\Flush Beams\B8 E(i6063) Description:

Specifier:

Designer:

L.D.

Company:



Total Horizontal Product Length = 01-04-08

ction Summary (Down / Unlift) (lhe)

Reaction Sui	Illinary (Dogair)	pind (ips)			
Bearing	Live	Dead	Snow	Wind	
B1. 2-5/8"	10 / 0	106 / 0	97 / 0		
B2, 4-1/8"	27 / 0	200 / 0	146 / 0		

1 0	ad Summary						Live	Dead	Snow	Wind	Tributary
Tag	Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-04-08	Тор		12			00-00-00
1	E74(i5318)	Unf. Lin. (lb/ft)	L	00-00-00	01-00-02	Top		98	156		n\a
2	E74(i5318)	Unf, Lin. (lb/ft)	L	00-02-10	01-00-02	Top		81			n\a
2	FC2 Floor Material	Trapezoidal (lb/ft)	L	00-02-10		Top	14	7			n\a
3	1 02 1 1001 Matorias	,			01-04-08	•	48	24			
4	FC2 Floor Material	Conc. Pt. (lbs)	L	00-02-10	00-02-10	Тор	1				n\a
5	E73(i5316)	Conc. Pt. (lbs)	L	01-02-14	01-02-14	Тор		108	85		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	56 ft-lbs	35392 ft-lbs	0.2%	13	00-07-08
End Shear	206 lbs	14464 lbs	1.4%	13	00-02-10
Span / Depth	0.9				

Bearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam	2-5/8" x 3-1/2"	288 lbs	5.9%	2.6%	Unspecified
B2	Beam	4-1/8" x 3-1/2"	495 lbs	6.4%	2.8%	Unspecified

#### **Notes**

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.

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

CONFORMS TO OBC 2012

AMENDED 2020



uve no . Tan 11090 = 20 STRUCTURAL COMPONENT ONLY





# Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B8 E(i6063) (Flush Beam)

PASSED

**BC CALC® Member Report** 

Build 7493 Job name:

Address:

City, Province, Postal Code: MARKHAM

Customer:

Code reports:

Dry | 1 span | No cant.

July 23, 2020 15:47:47

File name:

Description:

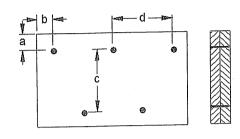
KIMBERLY 1 - EL 2 - 2ND FLOOR.mmdl 2ND FLR FRAMING\Flush Beams\B8 E(i6063)

Specifier:

Designer: Company: L.D.

Connection Diagram: Full Length of Member

CCMC 12472-R



a minimum = 2" b minimum = 3" c = 7-7/8" d = 286 6"

Connectors are:

Nails

3%° ARDOX SPIRAL



BWS NO. TAW 1/090-20 STRUCTURAL COMFONENT 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

#### 2ND FLR FRAMING\Flush Beams\B9 E(i5990) (Flush Beam)

**BC CALC® Member Report** 

Dry | 1 span | No cant.

July 23, 2020 15:47:47

**Build 7493** Job name: Address:

City, Province, Postal Code: MARKHAM

Customer: Code reports:

CCMC 12472-R

File name:

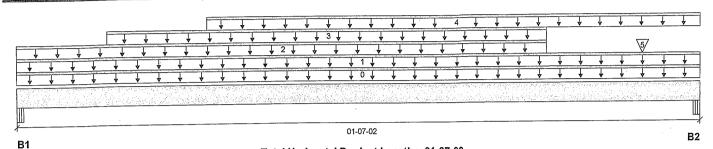
KIMBERLY 1 - EL 2 - 2ND FLOOR.mmdl

2ND FLR FRAMING\Flush Beams\B9 E(i5990) Description:

Specifier:

Designer: L.D.

Company:



Total Horizontal Product Length = 01-07-02

Reaction Sun	nmary (Down / U	piiit) (ibs)		_	
Bearing	Live	Dead	Snow	Wind	
B1, 5-1/4"	9/0	144 / 0	99 / 0		
B2, 4-1/8"	10 / 0	148 / 0	121 / 0		

	- d Cumamam/						Live	Dead	Snow	Wind	Tributary
	ad Summary Description	Load Type	Ref.	Start	End	Loc.	1.00	0.65	1.00	1.15	
100	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-07-02	Тор		12			00-00-00
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-07-02	Top	8	4			n\a
2	E72(i5319)	Unf. Lin. (lb/ft)	L	00-00-00	01-02-12	Top		81			n\a
2	,	Unf. Lin. (lb/ft)	L	00-02-08	01-02-12	qoT		98	156		n\a
3	E72(i5319)	Unf. Lin. (lb/ft)	_ I	00-05-04	01-07-02	Top	6	3			n\a
4	FC2 Floor Material		-	01-05-08	01-05-08	•	_	65	60		n\a
5	F71(i5317)	Conc. Pt. (lbs)	L.	01-00-00	0 1-00-00	ιυρ		00	00		1110

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	53 ft-lbs	35392 ft-lbs	0.2%	13	00-10-02
End Shear	199 lbs	14464 lbs	1.4%	13	00-05-04
Span / Depth	0.9				

Rearing	ı Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam	5-1/4" x 3-1/2"	337 lbs	3.4%	1.5%	Unspecified
B2	Beam	4-1/8" x 3-1/2"	376 lbs	4.9%	2.1%	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 O86.

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

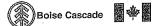
verification.

Design based on Dry Service Condition. Importance Factor: Normal Part code: Part 9 CONFORMS TO OBG 2012

AWENDED

ONG NO. TAN 1/09# 20 STRUCTURAL COM. ONENT ONLY

PONTACE OF ONLE





#### Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B9 E(i5990) (Flush Beam)

PASSED

July 23, 2020 15:47:47

**BC CALC® Member Report** 

**Build 7493** 

Job name: Address:

City, Province, Postal Code: MARKHAM

Customer:

Code reports:

Dry | 1 span | No cant.

KIMBERLY 1 - EL 2 - 2ND FLOOR.mmdl

File name: 2ND FLR FRAMING\Flush Beams\B9 E(i5990) Description:

Specifier:

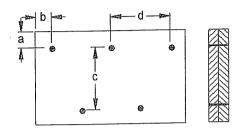
Designer:

L.D.

Company:

Connection Diagram: Full Length of Member

CCMC 12472-R



a minimum = 2" b minimum = 3"

c = 7-7/8" d = 20 6 4

Connectors are:

....

ARDOX SPIRAL

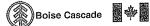


DWG NO. TAW 1/09/-20 STRUCTURAL COMPONENT ONLY

#### Disclosure

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PASSED

2ND FLR FRAMING\Flush Beams\B17 E(i5276) (Flush Beam)

Dry | 1 span | No cant.

July 23, 2020 15:38:56

KIMBERLY 1 - EL 3 - 2ND FLOOR.mmdl

**BC CALC® Member Report** Build 0

Job name:

Address:

City, Province, Postal Code: MARKHAM

Customer: Code reports:

CCMC 12472-R

Description: 2ND FLR FRAMING\Flush Beams\B17 E(i5276)

Specifier: Designer:

L.D.

File name:

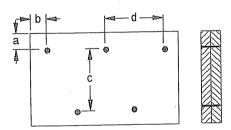
Company:

65 ALONG FULL WOTH AND Total Horizontal Product Length = 02-06-02 ALONG PERL LONGTH.

•	Total Honzontal Froduct Longui - 62 66 62										
	ad Cummany						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	02-06-02	Top		12			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	02-06-02	Top	8	4			n\a
2	E25(i49)	Unf. Lin. (lb/ft)	L	00-05-04	02-06-02	Top		81			n\a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-05-04	02-06-02	Top	5				n\a
4	E25(i49)	Unf. Lin. (lb/ft)	L	00-05-04	02-04-08	Top		195	312		n\a
5	E70(i5267)	Conc. Pt. (lbs)	L	00-02-08	00-02-08	Top		68	72		n\a
-	. ,	Conc. Pt. (lbs)	ī	02-06-02	02-06-02	Top	1				n\a
6	FC2 Floor Material	00110.1 1. (100)	_			•					

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Dist. Load	832.85 lb/ft	57645.00 lb/ft	1.4%		
Conc. Load	193 lbs	16813 lbs	1.1%		

#### Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

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

Connectors are:

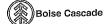
1 .. ARDOX SPIRAL CONFORMS TO OBC 2012 AMENDED 2020

DVINCE OF ONTE 88 NO. TAN 1/09 3-20 STRUCTURAL COMPONENT ONLY

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#### Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B18 E(i5298) (Flush Beam)

PASSED

**BC CALC® Member Report** 

Dry | 1 span | No cant.

July 23, 2020 15:38:56

**Build 7493** 

Job name:

Address: City, Province, Postal Code: MARKHAM

Customer: Code reports:

CCMC 12472-R

File name:

KIMBERLY 1 - EL 3 - 2ND FLOOR.mmdl

2ND FLR FRAMING\Flush Beams\B18 E(i5298) Description:

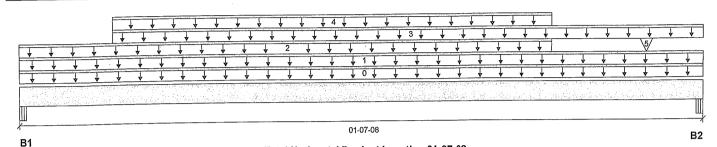
Specifier:

Company:

Designer:

L.D.

Wind



Total Horizontal Product Length = 01-07-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow		
B1, 2-5/8"	20 / 0	135 / 0	117 / 0		
B2, 4-1/8"	25 / 0	224 / 0	161 / 0		

	ad Cummary						Live	Dead	Snow	Wind	iributary
	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	01-07-08	Top		12			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-07-08	Тор	19	10			n\a
2	E74(i5318)	Unf. Lin. (lb/ft)	L	00-00-00	01-03-02	Тор		98	156		n\a
2	FC2 Floor Material	Unf. Lin. (lb/ft)	L		01-07-08		10	5			n\a
ى	•	Unf. Lin. (lb/ft)	Ī	00-02-10	01-03-02	Top		81			n\a
4	E74(i5318)	Conc. Pt. (lbs)	-		01-05-14			109	81		n\a
5	E73(i5316)	Conc. Pt. (ibs)	1	01-00-14	01 00 11	. 06		.00	• .		

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	91 ft-lbs	35392 ft-lbs	0.3%	13	00-09-00
End Shear	241 lbs	14464 lbs	1.7%	13	00-03-08
Span / Depth	1.2				

Rearing	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1		2-5/8" x 3-1/2"	363 lbs	7.4%	3.2%	Unspecified
B2	Beam	4-1/8" x 3-1/2"	547 lbs	7.1%	3.1%	Unspecified

**Notes** 

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.

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 CONFORMS TO OBC 2012

AMENDED OLINCE OF ON

> uvu no. tam 11027 STRUCTURAL COMPONENT ONLY





#### Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B18 E(i5298) (Flush Beam)

PASSED

July 23, 2020 15:38:56

**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.

File name:

KIMBERLY 1 - EL 3 - 2ND FLOOR.mmdl

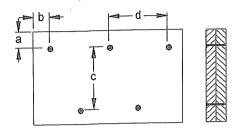
2ND FLR FRAMING\Flush Beams\B18 E(i5298) Description:

Specifier:

Designer:

L.D. Company:

#### Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3" c = 7-7/8" d = 289 60

Connectors are:

Nails

ARDOX SPIRAL



976 NO. TAM 21093 - 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.

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





PASSED

July 23, 2020 15:38:56

#### 2ND FLR FRAMING\Flush Beams\B19 E(i5282) (Flush 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.

File name:

KIMBERLY 1 - EL 3 - 2ND FLOOR.mmdl

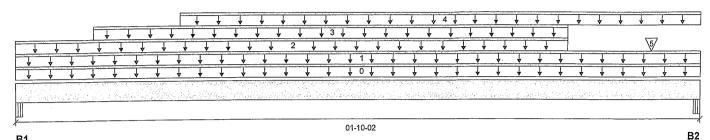
Description:

2ND FLR FRAMING\Flush Beams\B19 E(i5282)

Specifier:

Designer: L.D.

Company:



В1

#### Total Horizontal Product Length = 01-10-02

Reaction Summary (Down / Uplift) (lbs)

1/cachon our	minary (Doming			
Bearing	Live	Dead	Snow	Wind
B1, 5-1/4"	11 / 0	169./0	118 / 0	
B2 4-1/8"	13 / 0	176 / 0	137 / 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	01-10-02	Top		12			00-00-00
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	01-10-02	Top	6	3			n\a
2	E72(i5319)	Unf. Lin. (lb/ft)	L	00-00-00	01-05-12	Top		81			n\a
3	E72(i5319)	Unf. Lin. (lb/ft)	L	00-02-08	01-05-12	Top		98	156		n\a
4	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-05-04	01-10-02	Top	10	5			n\a
5	E71(i5317)	Conc. Pt. (lbs)	L	01-08-08	01-08-08	Тор		67	57		n\a

Controls Summary	Factored Demand	Factored Resistance	Demand/ Resistance	Case	Location
Pos. Moment	87 ft-lbs	35392 ft-lbs	0.2%	13	00-11-10
End Shear	229 lbs	14464 lbs	1.6%	13	01-05-02
- 15 ()	4.0				

Span / Depth 1.2

Bearin	g Supports	Dim. (LxW)	Demand	Demand/ Resistance Support	Demand/ Resistance Member	Material
B1	Beam	5-1/4" x 3-1/2"	399 lbs	4.1%	1.8%	Unspecified
B2	Beam	4-1/8" x 3-1/2"	440 lbs	5.7%	2.5%	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 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

COMPORMS TO OBC 2012

AMENDED 2020



STRUCTURAL COMPONENT ONLY





#### Double 1-3/4" x 11-7/8" VERSA-LAM® 2.0 3100 SP 2ND FLR FRAMING\Flush Beams\B19 E(i5282) (Flush Beam)

PASSED

July 23, 2020 15:38:56

**BC CALC® Member Report** 

**Build 7493** Job name:

Address:

City, Province, Postal Code: MARKHAM

Customer:

Code reports:

Dry | 1 span | No cant.

File name:

KIMBERLY 1 - EL 3 - 2ND FLOOR.mmdl

Description: 2ND FLR FRAMING\Flush Beams\B19 E(i5282)

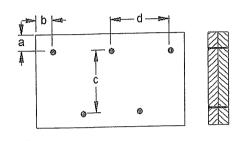
Specifier:

Designer:

Company:

CCMC 12472-R

Connection Diagram: Full Length of Member



a minimum = 2" b minimum = 3"

c = 7-7/8" d = 20 6

Connectors are:

312" ARDOX SPIKAL



9W6 NO. TAW 2102428 STRUCTURAL COMPONENT ONLY

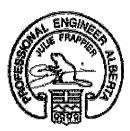
#### Disclosure

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



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







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

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

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

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

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

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

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

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



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







-			Ba	are		1/2" Gypsum Ceiling					
Depth	Series	············	On Centr	e Spacing			On Centre Spacing				
осра		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"		
-,-	N1-70	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-60	19'-7"	18'-2"	17'-5"	16'-9"	20'-2"	18'-9"	17'-11"	17'-2"		
11-7/8"	NI-70	20'-9"	19'-2"	18'-3"	17'-5"	21'-4"	19'-9"	18'-10"	17'-10"		
	NI-80	21'-1"	19'-5"	18'-6"	17'-7"	21'-7"	20'-0"	19'-0"	18'-0"		
	NI-90x	21'-8"	20'-0"	19'-1"	18'-0"	22'-2"	20'-6"	19'-6"	18'-6"		
	NI-40x	21'-5"	19'-10"	18'-11"	17'-11"	22'-1"	20'-6"	19'-7"	18'-7"		
	NI-60	21'-10"	20'-2"	19'-3"	18'-2"	22'-5"	20'-10"	19'-11"	18'-10"		
14"	NI-70	23'-0"	21'-3"	20'-3"	19'-2"	23'-8"	21'-11"	20'-10"	19'-9"		
	NI-80	23'-5"	21'-7"	20'-7"	19'-5"	24'-0"	22'-3"	21'-2"	20'-0"		
	NI-90x	24'-1"	22'-3"	21'-2"	20'-0"	24'-8"	22'-10"	21'-9"	20'-7"		
	NI-60	23'-9"	22'-0"	20'-11"	19'-10"	24'-6"	22'-9"	21'-8"	20'-6"		
	NI-70	25'-1"	23'-2"	22'-0"	20'-10"	25'-9"	23'-10"	22'-9"	21'-6"		
16"	NI-80	25'-6"	23'-6"	22'-4"	21'-2"	26'-1"	24'-2"	23'-1"	21'-10"		
_	NI-90x	26'-4"	24'-3"	23'-1"	21'-10"	26'-11"	24'-11"	23'-8"	22'-5"		

	Mid-Span Blocking				Mid-Span Blocking and 1/2" Gypsum Ceiling					
Depth	Series		On Centr	e Spacing		On Centre Spacing				
Берит	Jeries	12"	16"	19.2"	24"	12"	16"	19.2"	24"	
	NI-20	16'-10"	15'-5"	14'-6"	13'-5"	16'-10"	15'-5"	14'-6"	13'-5"	
	NI-40x	18'-8"	17'-2"	16'-3"	15'-2"	18'-10"	17'-2"	16'-3"	15'-2"	
9-1/2"	NI-60	18'-11"	17'-6"	16'-6"	15'-5"	19'-2"	17'-6"	16'-6"	15'-5"	
3-1/2	NI-70	20'-0"	18'-7"	17'-9"	16'-7"	20'-5"	18'-11"	17'-10"	16'-7"	
	NI-80	20'-3"	18'-10"	17'-11"	16'-10"	20'-8"	19'-3"	18'-2"	16'-10"	
	NI-20	20'-1"	18'-5"	17'-5"	16'-2"	20'-1"	18'-5"	17'-5"	16'-2"	
	NI-40x	21'-10"	20'-4"	19'-4"	17'-8"	22'-5"	20'-6"	19'-4"	17'-8"	
	NI-60	22'-1"	20'-7"	19'-7"	18 <sup>′</sup> -4"	22'-8"	20'-10"	19'-8"	18'-4"	
11-7/8"	NI-70	23'-4"	21'-8"	20'-8"	19'-7"	23'-10"	22'-3"	21'-2"	19'-9"	
	NI-70	23'-7"	21'-11"	20'-11"	19'-9"	24'-1"	22'-6"	21'-5"	20'-0"	
	NI-90x	24'-3"	22'-6"	21'-6"	20'-4"	24'-8"	23'-0"	22'-0"	20'-9"	
	NI-40x	24'-5"	22'-9"	21'-8"	19'-5"	25'-1"	23'-2"	21'-9"	19'-5"	
	NI-40X NI-60	24'-10"	23'-1"	22'-0"	20'-10"	25'-6"	23'-8"	22'-4"	20'-10"	
4.411		26'-1"	24'-3"	23'-2"	21'-10"	26'-8"	24'-11"	23'-9"	22'-4"	
14"	NI-70	26'-6"	24'-7"	23'-5"	22'-2"	27'-1"	25'-3"	24'-1"	22'-9"	
	NI-80	26 - 6	25'-4"	24'-1"	22'-9"	27'-9"	25'-11"	24'-8"	23'-4"	
	NI-90x	27'-3"	25'-5"	24'-2"	22'-10"	28'-0"	26'-2"	24'-9"	23'-1"	
	NI-60	27 <i>-</i> 3 28'-8"	25 -5 26'-8"	24 -2 25'-4"	23'-11"	29'-3"	27'-4"	26'-1"	24'-8"	
16"	NI-70		26 -6 27'-0"	25'-9"	24'-4"	29'-8"	27'-9"	26'-5"	25'-0"	
10	NI-80	29'-1"	27 -0 27'-10"	25 -9 26'-6"	25'-0"	30'-6"	28'-5"	27'-2"	25'-8"	
	NI-90x	29'-11"	27-10"	20 -6	45 <b>-</b> U	30-0	20-3	21 -2	43 -0	

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

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

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

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

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

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



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







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

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

- 1. Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- 2. Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.

  3. Minimum bearing length shall be 1-3/4 inches for the end bearings.
- 4. Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required for hangers.
- 5. This span chart is based on uniform loads. For applications with other than uniformly distributed loads, an engineering analysis may be required based on the use of the design properties. Tables are based on Limit States Design per CSA 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







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

Depth	Series	Mid-Span Blocking On Centre Spacing				Mid-Span Blocking and 1/2" Gypsum Ceiling			
						On Centre Spacing			
•		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	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"
	NI-60	18'-1"	16'-5"	15'-5"	14'-3"	18'-1"	16'-5"	15'-5"	14'-3"
	NI-70	19'-10"	17'-11"	16'-9"	15'-6"	19'-10"	17'-11"	16'-9"	15'-6"
	NI-80	20'-2"	18'-3"	17'-1"	15'-10"	20'-2"	18'-3"	17'-1"	15'-10"
	NI-20	18'-10"	17'-1"	16'-0"	14'-10"	18'-10"	17'-1"	16'-0"	14'-10"
	NI-40x	21'-3"	19'-3"	17'-9"	15'-10"	21'-3"	19'-3"	17'-9"	15'-10"
44.7/00	NI-60	21'-9"	19'-8"	18'-5"	17'-1"	21'-9"	19'-8"	18'-5"	17'-1"
11-7/8"	NJ-70	23'-4"	21'-5"	20'-1"	18'-6"	23'-8"	21'-5"	20'-1"	18'-6"
	NI-80	23'-7"	21'-10"	20'-5"	18'-11"	24'-1"	21'-10"	20'-5"	18'-11"
	NI-90x	24'-3"	22'-6"	21'-3"	19'-7"	24'-8"	22'-7"	21'-3"	19'-7"
	NI-40x	24'-2"	21'-5"	19'-6"	17'-5"	24'-2"	21'-5"	19'-6"	17'-5"
14"	NI-60	24'-9"	22'-5"	21'-0"	19'-6"	24'-9"	22'-5"	21'-0"	19'-6"
	N1-70	26'-1"	24'-3"	22'-9"	21'-0"	26'-8"	24'-3"	22'-9"	21'-0"
	NI-80	26'-6"	24'-7"	23'-3"	21'-6"	27'-1"	24'-10"	23'-3"	21'-6"
	NI-90x	27'-3"	25'-4"	24'-1"	22'-4"	27'-9"	25'-10"	24'-3"	22'-4"
16"	NI-60	27'-3"	24'-11"	23'-5"	21'-7"	27'-6"	24'-11"	23'-5"	21'-7"
	NI-70	28'-8"	26'-8"	25'-3"	23'-4"	29'-3"	26'-11"	25'-3"	23'-4"
	NI-80	29'-1"	27'-0"	25'-9"	23'-10"	29'-8"	27'-6"	25'-10"	23'-10"
	NI-90x	29'-11"	27'-10"	26'-6"	24'-10"	30'-6"	28'-5"	26'-11"	24'-10"

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

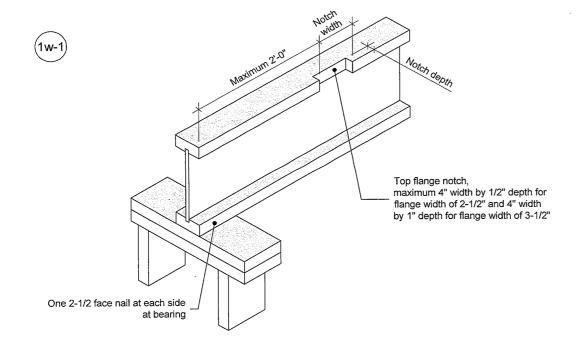
<sup>2.</sup> Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping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

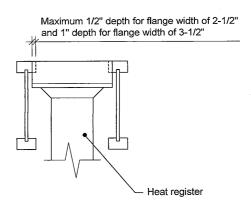
3. Minimum bearing length shall be 1-3/4 inches for the end bearings.

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

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

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





- 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.

NORDIC **STRUCTURES** 

T 514-871-8526 1 866 817-3418 nordic.ca

Notch in I-joist for Heat Register

I-joist - Typical Floor Framing and Construction Details

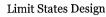
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#### **Construction Detail**



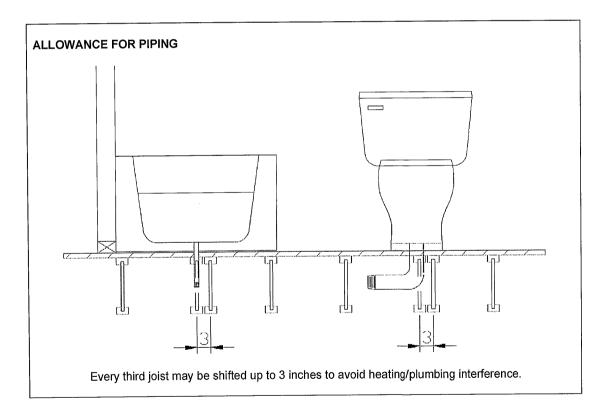


# Allowance for Piping (Installation Notes)

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