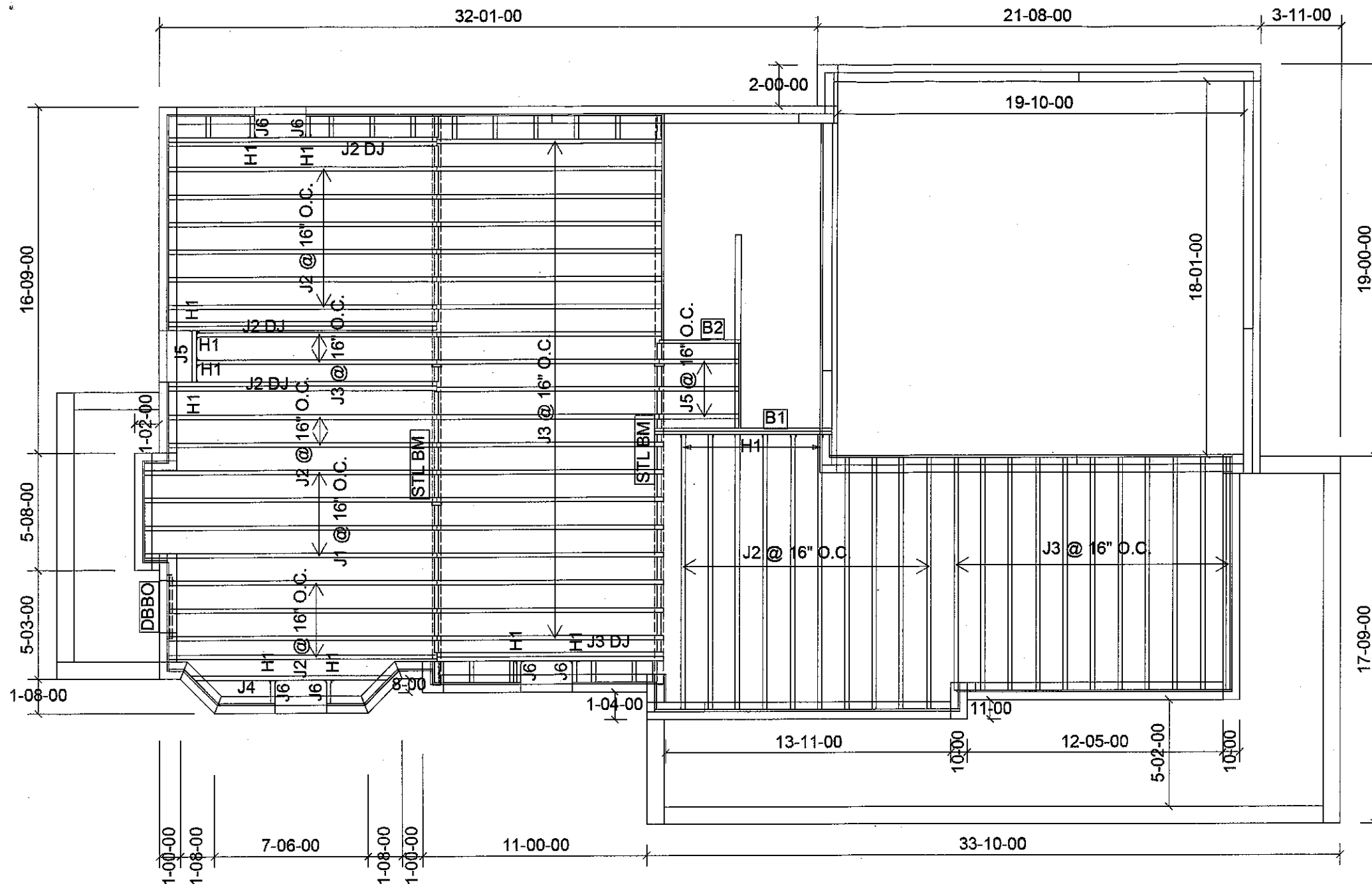


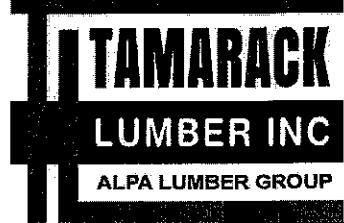


Products				
PlotID	Length	Product	Plies	Net Qty
J1	16'-00"-00	9 1/2" NI-40x	1	4
J2	14'-00"-00	9 1/2" NI-40x	1	22
J2 DJ	14'-00"-00	9 1/2" NI-40x	2	6
J3	12'-00"-00	9 1/2" NI-40x	1	32
J3 DJ	12'-00"-00	9 1/2" NI-40x	2	2
J4	10'-00"-00	9 1/2" NI-40x	1	1
J5	4'-00"-00	9 1/2" NI-40x	1	4
J6	2'-00"-00	9 1/2" NI-40x	1	6
B1	10'-00"-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	2	2
B2	4'-00"-00	1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP	1	1

Connector Summary		
Qty	Manuf	Product
6	H1	IUS2.56/9.5
6	H1	IUS2.56/9.5
4	H1	IUS2.56/9.5

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AUG 28 2019
TOWN OF CALEDON
BUILDING SECTION
FILE NO.

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THE ONTARIO BUILDING CODE

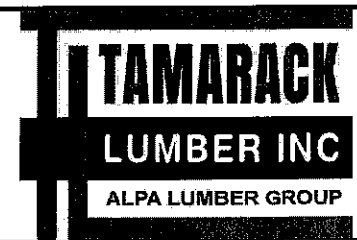


FROM PLAN DATED: JUNE 2019
BUILDER: GREENPARK HOMES
SITE: LAMBERTS LANE
MODEL: PRESTON 11A
ELEVATION: 1
LOT: 38
CITY: CALEDON
SALESMAN: MARIO DICIANO
DESIGNER: PL
REVISION: lbv
NOTES:
REFER TO THE NORDIC INSTALLATION
GUIDE FOR PROPER STORAGE AND
INSTALLATION.
SQUASH BLOCKS OF 2x4, 2x6, 2x8 #2 S.P.F
REQ'D UNDER INTERIOR UNIFORM LOAD
BEARING WALLS. MULTIPLE SQUASH
BLOCKS REQ'D UNDER CONCENTRATED
LOADS. SEE FIGURE 1. CANTILEVERED
JOISTS INCLUDING CANT' OVER BRICK REQ.
I-JOIST BLOCKING ALONG BEARING AND
RIMBOARD CLOSURE AT ENDS. SEE
FIGURES 4 & 5 FOR REINFORCEMENT
REQUIREMENTS. FOR HOLES INCLUDING
DUCT CHASE AND FIELD CUT OPENINGS
SEE FIGURE 7, TABLES 1 & 2. CERAMIC TILE
APPLICATION AS PER O.B.C 9.30.6.

LOADING:
DESIGN LOADS: L/480.000
LIVE LOAD: 40.0 lb/ft²
DEAD LOAD: 15.0 lb/ft²
TILED AREAS: 20 lb/ft²
SUBFLOOR: 3/4" GLUED AND NAILED

DATE: 2019-07-13

1st FLOOR



FROM PLAN DATED: JUNE 2019

BUILDER: GREENPARK HOMES

SITE: LAMBERTS LANE

MODEL: PRESTON 11A

ELEVATION: 1

LOT: 38

CITY: CALEDON

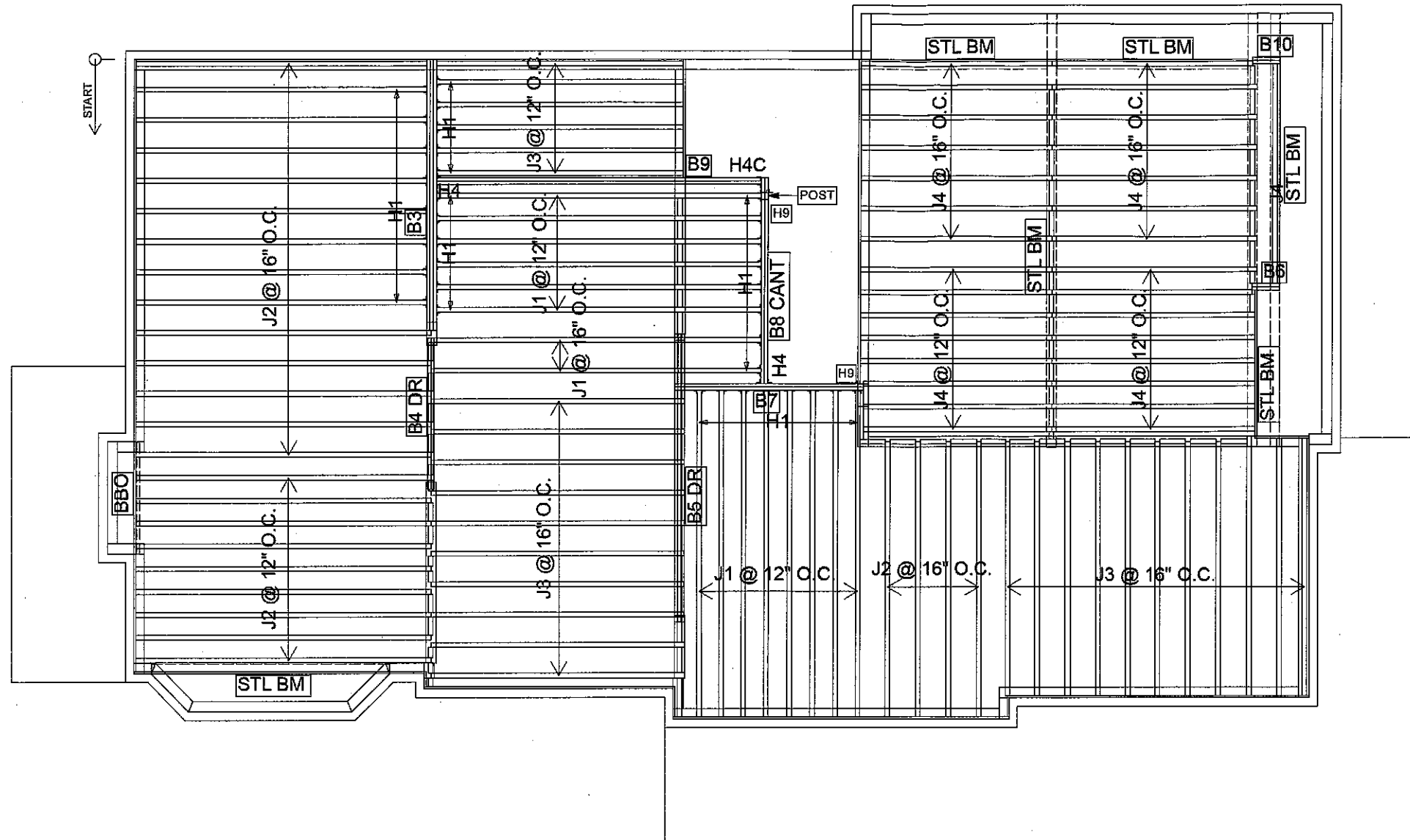
SALESMAN: MARIO DICIANO

DESIGNER: PL

REVISION: lbv

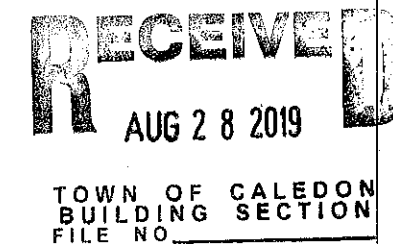
NOTES:

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



Products				
PlotID	Length	Product	Plies	Net Qty
J1	16-00-00	9 1/2" NI-40x	1	16
J2	14-00-00	9 1/2" NI-40x	1	27
J3	12-00-00	9 1/2" NI-40x	1	27
J4	10-00-00	9 1/2" NI-40x	1	31
B9	16-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B5 DR	14-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	3	3
B3	12-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	3	3
B7	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B8 CANT	10-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B4 DR	8-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B10	2-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2
B6	2-00-00	1-3/4" x 9-1/2" VERSA-LAM@ 2.0 3100 SP	2	2

Connector Summary		
Qty	Manuf	Product
16	H1	IUS2.56/9.5
19	H1	IUS2.56/9.5
2	N/A	H2.5A
1	H4C	HUC410
1	H4	HGUS410
1	H4	HGUS410
2	H9	H2.5A*



**THIS STRUCTURE MUST BE
CONSTRUCTED TO MEET OR
EXCEED THE PROVISIONS OF
THE ONTARIO BUILDING CODE**

LOADING:

DESIGN LOADS: L/480.000

LIVE LOAD: 40.0 lb/ft²

DEAD LOAD: 15.0 lb/ft²

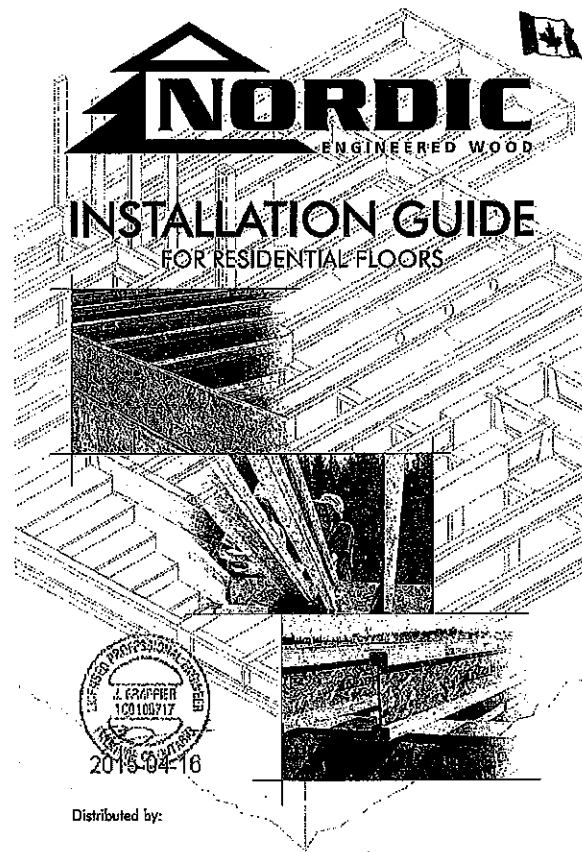
TILED AREAS: 20 lb/ft²

SUBFLOOR: 5/8" GLUED AND NAILED

DATE: 2019-07-13

2nd FLOOR

STANDARD



NC301 / November 2014

SAFETY AND CONSTRUCTION PRECAUTIONS



WARNING

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

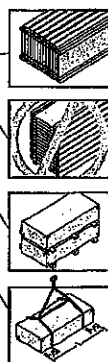
Avoid Accidents by Following these Important Guidelines:

1. Broke 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 continuously over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the 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.
3. Temporary bracing or struts must be 1x4 inch minimum, at least 6 feet long and spaced no more than 8 feet on center, and must be secured with a minimum of two 2-1/2" nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.
4. Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
5. For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
6. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
7. Never install a damaged I-joist.

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

STORAGE AND HANDLING GUIDELINES

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



MAXIMUM FLOOR SPANS

1. Maximum clear spans applicable to simple-span or multiple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration and a live load deflection limit of L/480. For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
2. Spans are based on a composite floor with glued-nailed exterior sheathing (OSB) sheathing with a minimum thickness of 5/8 inch for a joist spacing of 19.2 inches or less, or 3/4 inch for joist spacing of 24 inches. Adhesive shall meet the requirements given in C085-71.26 Standard. No concrete topping or bridging element was assumed. Increased spans may be achieved with the use of gypsum and/or a new blocking at mid-span.
3. Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate 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 uniform loads, an engineering analysis may be required based on the use of the design properties.
6. Tables are based on Limit States Design per CAN/CSA C084-09 Standard, and NBC 2010.
7. SI units conversion: 1 inch = 25.4 mm, 1 foot = 0.305 m

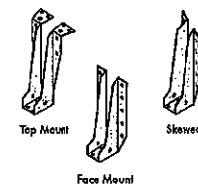
MAXIMUM FLOOR SPANS FOR NORDIC I-JOISTS

Joist Depth	Joist Series	Simple spans				Multiple spans			
		On center spacing				On center spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NL-20	12'1"	14'2"	15'5"	17'5"	12'1"	14'10"	15'5"	17'5"
	NL-40x	16'1"	18'2"	19'5"	21'5"	16'1"	18'10"	19'5"	21'5"
	NL-60	18'1"	20'2"	21'5"	23'5"	18'1"	20'10"	21'5"	23'5"
	NL-80	20'1"	22'2"	23'5"	25'5"	20'1"	22'10"	23'5"	25'5"
11-7/8"	NL-20	16'1"	18'2"	19'5"	21'5"	16'1"	18'10"	19'5"	21'5"
	NL-40x	18'1"	20'2"	21'5"	23'5"	18'1"	20'10"	21'5"	23'5"
	NL-60	20'1"	22'2"	23'5"	25'5"	20'1"	22'10"	23'5"	25'5"
	NL-80	22'1"	24'2"	25'5"	27'5"	22'1"	24'10"	25'5"	27'5"
14"	NL-20	20'1"	22'2"	23'5"	25'5"	20'1"	22'10"	23'5"	25'5"
	NL-40x	22'1"	24'2"	25'5"	27'5"	22'1"	24'10"	25'5"	27'5"
	NL-60	24'1"	26'2"	27'5"	29'5"	24'1"	26'10"	27'5"	29'5"
	NL-80	26'1"	28'2"	29'5"	31'5"	26'1"	28'10"	29'5"	31'5"
16"	NL-20	22'1"	24'2"	25'5"	27'5"	22'1"	24'10"	25'5"	27'5"
	NL-40x	24'1"	26'2"	27'5"	29'5"	24'1"	26'10"	27'5"	29'5"
	NL-60	26'1"	28'2"	29'5"	31'5"	26'1"	28'10"	29'5"	31'5"
	NL-80	28'1"	30'2"	31'5"	33'5"	28'1"	30'10"	31'5"	33'5"

CCMC EVALUATION REPORT 13032-R

I-JOIST HANGERS

1. Hangers shown illustrate the three most commonly used metal hangers to support I-joists.
2. All nailing must meet the hanger manufacturer's recommendations.
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 flanges of the I-joist.

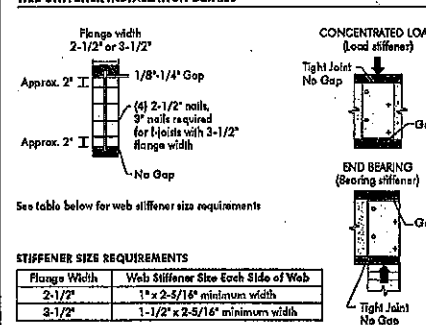


WEB STIFFENERS

RECOMMENDATIONS:

- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found in the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at the top.
- A bearing stiffener is required when the I-joist is supported in a hanger and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and the flange is at the top.
- A load stiffener is required at locations where a factored concentrated load greater than 2,870 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the cantilever tip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

FIGURE 2 WEB STIFFENER INSTALLATION DETAILS



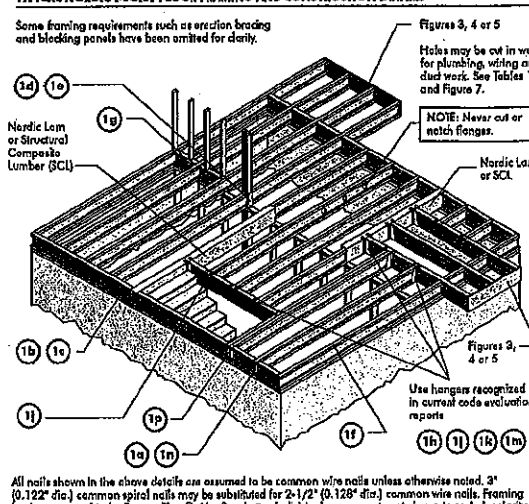
See table below for web stiffener size requirements

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

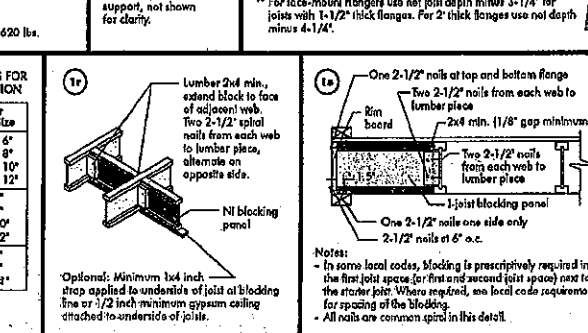
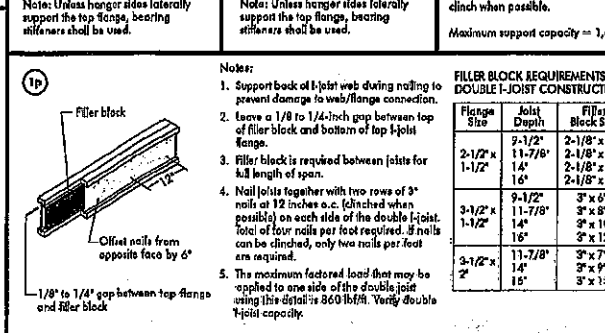
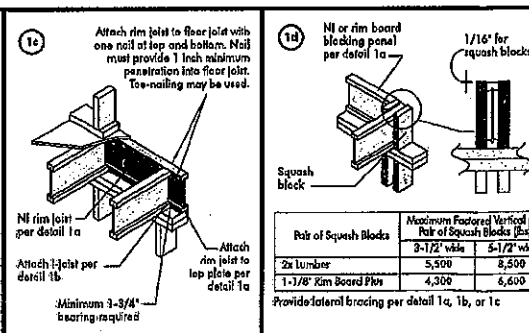
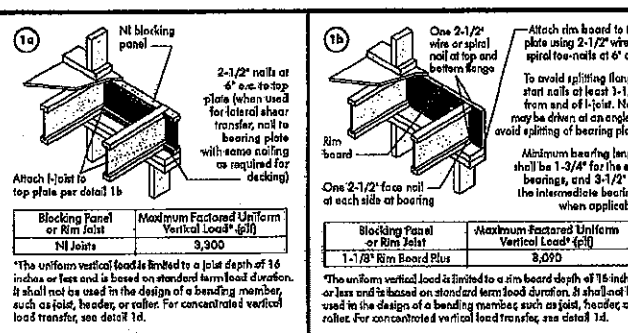
INSTALLING NORDIC I-JOISTS

1. Before laying out floor system components, verify that I-joist flange widths match hanger widths. If not, consult your supplier.
2. Except for cutting to length, I-joist flanges should never be cut, drilled, or notched.
3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
4. I-joists must be anchored securely to supports before floor sheathing is attached, and supports for multiple-span joists must be level.
5. Minimum bearing lengths: 1-3/4 inches for end bearings and 3-1/2 inches for intermediate bearings.
6. When using hangers, seal I-joists firmly in hanger bottoms to minimize settlement.
7. Leave a 1/16-inch gap between the I-joist end and a header.
8. Concentrated loads greater than those that can normally be expected in residential construction should only be applied to the top surface of the top flange. Normal concentrated loads include track lighting fixtures, audio equipment and security cameras. Never suspend unusual or heavy loads from the I-joist's bottom flange. Whenever possible, suspend all concentrated loads from the top of the I-joist. Or, attach the load to blocking that has been securely fastened to the I-joist webs.
9. Never install I-joists where they will be permanently exposed to weather, or where they will remain in direct contact with concrete or masonry.
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 squish blocks (triple members) to transfer gravity loads through the floor system to the wall or foundation below.
12. Due to shrinkage, common framing lumber set on edge may never be used as blocking or rim boards. I-joist blocking panels or other engineered wood products—such as rim board—must be cut to fit between the I-joists, and an I-joist-compatible depth selected.
13. Provide permanent lateral support of the bottom flange of all I-joists at interior supports of multiple-span joists. 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 squeaks. Blocking is not required under structural finish flooring, such as wood strip flooring, or if a separate underlayment layer is installed.
15. Nail spacing: Space nails installed to the flange's top face in accordance with the applicable building code requirements or approved building plans.

FIGURE 1 TYPICAL NORDIC I-JOIST FLOOR FRAMING AND CONSTRUCTION DETAILS



All nails shown in the above details are assumed to be common wire nails unless otherwise noted. 3" (3.125" dia.) common spiral nails may be substituted for 2-1/2" (3.125" dia.) common wire nails. Framing lumber assumed to be Species-Size-Grade No. 2 or better. Individual components not shown to scale for clarity.



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AUG 28 2019
TOWN OF SALEDON
BUILDING DEPARTMENT
FILE NO.



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

PASSED

BC CALC® Member Report
Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

Dry | 1 span | No cant.

November 6, 2018 13:46:06

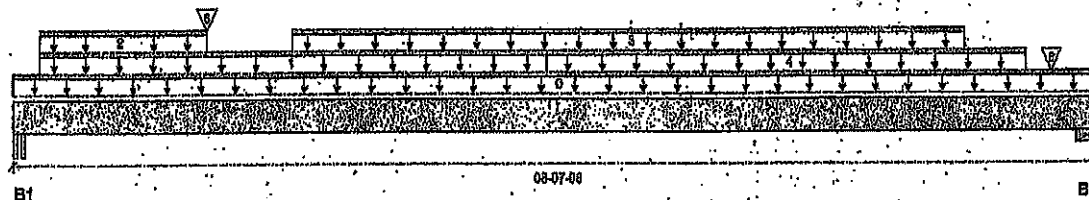
File name: PRESTON 11A

Description: 1ST FLOOR FRAMING\Flush Beams\B1\12237

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 08-07-08

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5"	1,282 / 0	675 / 0		
B2, 3-1/2"	2,064 / 0	1,129 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-07-08	Top	100	0.65	1.00	1.16	00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-08	04-02-08	Top	9	5			n/a
2	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-08	01-08-08	Top	35	18			n/a
3	Smoothed Load	Unf. Lin. (lb/ft)	L	02-02-08	07-08-08	Top	289	136			n/a
4	STAIRS	Unf. Lin. (lb/ft)	L	04-02-08	08-00-08	Top	240	120			n/a
5	J2(2190)	Conc. Pt. (lbs)	L	01-06-08	01-06-08	Top	336	168			n/a
6		Conc. Pt. (lbs)	L	08-03-00	08-03-00	Top	525	319			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	7,105 ft-lbs	23,220 ft-lbs	30.6%	1	04-08-08
End Shear	3,436 lbs	11,671 lbs	29.7%	1	07-08-08
Total Load Deflection	L/999 (0.116")	n/a	n/a	4	04-05-08
Live Load Deflection	L/999 (0.075")	n/a	n/a	5	04-05-08
Max Defl.	0.116"	n/a	n/a	4	04-05-08
Span / Depth	10.2				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	5" x 3-1/2"	2,787 lbs	29.3%	12.8%	Unspecified
B2 Wall/Plate	3-1/2" x 3-1/2"	4,508 lbs	68.9%	30.2%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

CONFORMS TO UBC 2012



RECEIVED
AUG 28 2019

TOWN OF CALEDON
BUILDING SECTION
FILE NO

040 NO. TAM3380-19H
STRUCTURAL
COMPONENT ONLY P612

T-1903KOP

THIS STRUCTURE MUST BE
CONSTRUCTED TO MEET OR
EXCEED THE PROVISIONS OF
THE ONTARIO BUILDING CODE



Boise Cascade



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

PASSED

1ST FLOOR FRAMING (Flush Beams) B1 (12237)

Dry | 1 span | No cant.

November 8, 2018 13:48:06

BC QALCO Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMQ 12472-R

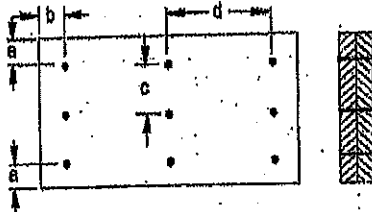
File name: PRESTON 11A

Description: 1ST FLOOR FRAMING (Flush Beams) B1 (12237)

Specifier:

Designer: PL

Company:

Connection Diagram: Full Length of Member

a minimum = 2"

b minimum = 3"

c = 2-3/4"

d = 2-3/4"

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

Connectors are: 1 Nails

3/4" ARDOX SPIRAL

**Disclosure**

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current installation guide and applicable building codes. To obtain installation guide or ask questions, please call (800)232-0768 before installation.

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

DWG NO. YAW 9390-18H
STRUCTURAL
COMPONENT ONLY

T-1903K460



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

PASSED

BC CALC® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: GCMC 12472-R

Dry | 1 span | No cant.

November 8, 2018 13:48:08

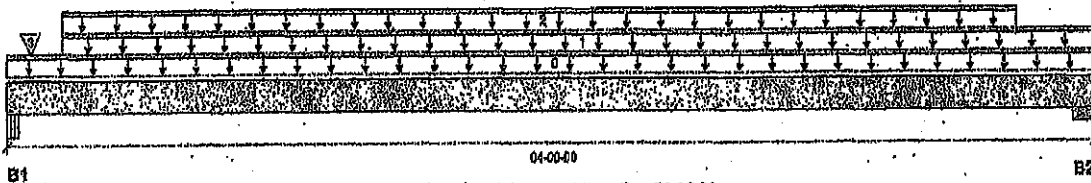
File name: PRESTON 11A

Description: 1ST FLOOR FRAMING\Flush Beams\B2\12355

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 04-00-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-1/2"	618 / 0	279 / 0		
B2, 3-1/2"	472 / 0	246 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.68	Snow 1.00	Wind 1.16	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	04-00-00	Top		5			00-00-00
1	FC1 Floor Material	Unf. Lin. (lb/ft)	L	00-02-08	04-00-00	Top	26	13			n/a
2	STAIRS	Unf. Lin. (lb/ft)	L	00-02-08	03-08-08	Top	240	120			n/a
3	7(1449)	Conc. Pt. (lbs)	L	00-01-00	00-01-00	Top	51	37			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	936 ft-lbs	11,610 ft-lbs	8.1%	1	01-11-08
End Shear	547 lbs	5,786 lbs	9.4%	1	01-00-00
Total Load Deflection	L/999 (0.006")	n/a	n/a	4	01-11-08
Live Load Deflection	L/999 (0.004")	n/a	n/a	5	01-11-08
Max Defl.	0.006"	n/a	n/a	4	01-11-08
Span / Depth	4.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 2-1/2" x 1-3/4"	1,122 lbs	48.0%	21.0%	Unspecified
B2	Wall/Plate 3-1/2" x 1-3/4"	1,018 lbs	31.1%	13.6%	Unspecified

Notes

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

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

Calculations assume member is fully braced.

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 DDC 2012

Disclosure

Use of the Boles 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 ensure 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 Boles 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®, AJST™, ALLJOISTS®, BC RIM BOARD™, BCJO®, BOISE GLULAM™, BC FloorValue®, VERSA-LAM®, VERSA-RIM PLUS®,

BOLENS, TAM 3391-18H
STRUCTURAL
COMPONENT ONLY

T. L. KAT



Bala Gacendo



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLOOR FRAMING (Flush Beams) B9 CANT (12465)

PASSED

November 8, 2018 13:48:08

BC CALC® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

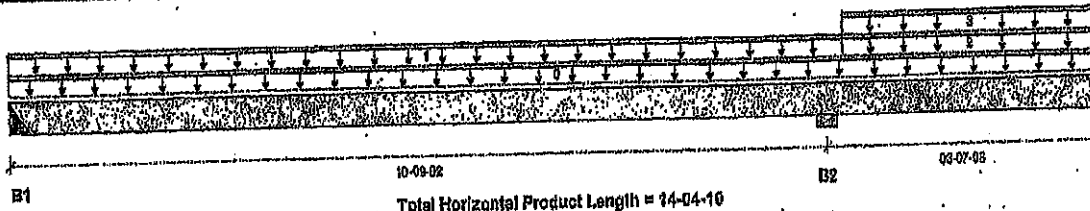
File name: PRESTON 11A

Description: 2ND FLOOR FRAMING (Flush Beams) B9 CANT (12465)

Specifier:

Designer: PL

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 4"	667/158	270		
B2, 6-1/2"	1,068/0	624/0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	14-04-10	Top	10	8			n/a
1	FC2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	10-11-14	Top	240	120			n/a
2	STAIRS	Unf. Lin. (lb/ft)	L	10-11-14	14-04-10	Top	8	5			n/a
3	FC2 Floor Material	Unf. Lin. (lb/ft)	L	10-11-14	14-04-10	Top					

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	128 ft-lbs	23,220 ft-lbs	0.6%	5	03-01-12
Neg. Moment	-3,546 ft-lbs	-23,220 ft-lbs	15.3%	1	10-09-02
End Shear	225 lbs	11,571 lbs	1.9%	6	01-01-08
Cont. Shear	1,411 lbs	11,571 lbs	12.2%	1	11-09-08
Total Load Deflection	2xL/673 (0.128")	n/a	35.8%	10	14-04-10
Live Load Deflection	2xL/1,998 (0.09")	n/a	n/a	13	14-04-10
Total Neg. Defl.	L/999 (-0.053")	n/a	n/a	10	08-08-02
Max Defl.	-0.053"	n/a	n/a	10	08-08-02
Span / Depth	19.2				



Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 4" x 8-1/2"	99 lbs	n/a	0.6%	HGUS410
B1	Uplift	232 lbs			
B2	Wall/Plate 6-1/2" x 8-1/2"	2,880 lbs	23.2%	10.1%	Unspecified

Cautions

Uplift of 232 lbs found at span 1 - Left.
 Hanger B1 cannot handle uplift of 232 lbs. *(SIMPSON H605410 E.C. B1)*
 Header for the hanger HGUS410 at B1 is a Triple 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF.
 Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

DATE NO. YAM 3396-18H
 STRUCTURAL
 COMPONENT ONLY
 96 16

T. JAMESO



Boise Cascade



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP 2ND FLOOR FRAMING (Flush Beams) B9 CANT (12465)

PASSED

November 6, 2018 13:46:06

BC CALC® Member Report

Build 6473

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

File name: PRESTON 11A

Description: 2ND FLOOR FRAMING (Flush Beams) B9 CANT (12465)

Specifier:

Designer: PL

Company:

Notes

Design meets User specified (2xL/240) Total load deflection criteria.

Design meets User specified (2xL/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

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

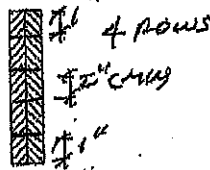
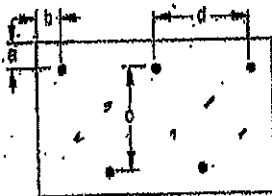
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

Member has no side loads.

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 7-1/2"

d = 12"

Member has no side loads.

Connectors are: 1 Nails

3 1/2" ARDOX SPIRAL



**THIS STRUCTURE MUST BE
CONSTRUCTED TO MEET OR
EXCEED THE PROVISIONS OF
THE ONTARIO BUILDING CODE**

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 ensure 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.

DATE: NOV 14 2018 11:18 AM
STRUCTURAL
COMPONENT ONLY

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

port

T-19045061



B.C. CASARDO



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B3(12462)

Dry | 1 span | No cant.

November 6, 2018 13:46:08

BC CALC® Member Report

Build 8475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports:

CCMC 12472-R

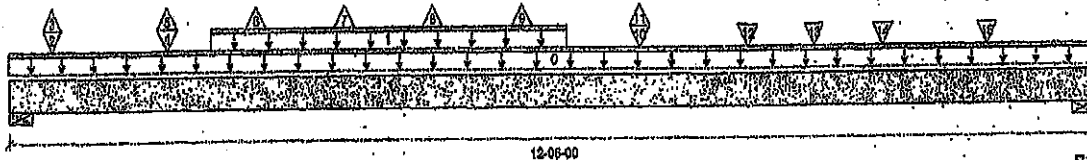
File name: PRESTON 11A

Description: 2ND FLOOR FRAMING\Flush Beams\B3(12462)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 12-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6-1/2"	3,102 / 211	1,556 / 0		
B2, 6-1/2"	2,613 / 133	1,355 / 0		

Load Summary

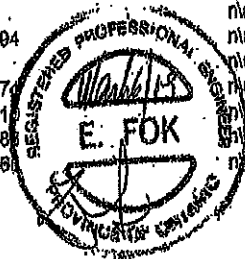
Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-05-00	Top		14			00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	02-03-15	08-03-15	Top	481	226			n/a
2		Conc. Pl. (lbs)	L	00-08-00	00-08-00	Top	644	303			n/a
3		Conc. Pl. (lbs)	L	00-08-00	00-08-00	Top	-38				n/a
4		Conc. Pl. (lbs)	L	01-10-00	01-10-00	Top	607	287			n/a
5		Conc. Pl. (lbs)	L	01-10-00	01-10-00	Top	-33				n/a
6	J1(12565)	Conc. Pl. (lbs)	L	02-09-15	02-09-15	Top	-28				n/a
7	J1(12563)	Conc. Pl. (lbs)	L	03-09-15	03-09-15	Top	-28				n/a
8	J1(12568)	Conc. Pl. (lbs)	L	04-09-15	04-09-15	Top	-28				n/a
9	J1(12561)	Conc. Pl. (lbs)	L	05-09-15	05-09-15	Top	-27				n/a
10		Conc. Pl. (lbs)	L	07-01-15	07-01-15	Top	672	204			n/a
11		Conc. Pl. (lbs)	L	07-01-15	07-01-15	Top	-182				n/a
12		Conc. Pl. (lbs)	L	08-04-08	08-04-08	Top	548	270			n/a
13	J3(12564)	Conc. Pl. (lbs)	L	09-02-00	09-02-00	Top	221	11			n/a
14		Conc. Pl. (lbs)	L	09-11-09	09-11-09	Top	587	288			n/a
15		Conc. Pl. (lbs)	L	11-02-00	11-02-00	Top	531	281			n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	17,088 ft-lbs	36,222 ft-lbs	47.1%	1	05-09-15
End Shear	5,591 lbs	17,356 lbs	32.2%	1	11-02-00
Total Load Deflection	L/360 (0.385")	n/a	86.6%	6	06-03-07
Live Load Deflection	L/542 (0.255")	n/a	66.4%	8	06-03-07
Max Defl.	0.385"	n/a	n/a	6	06-03-07
Span/Depth	14.6				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 6-1/2" x 6-1/4"	6,598 lbs	36.2%	15.9%	Unspecified
B2	Wall/Plate 6-1/2" x 6-1/4"	5,613 lbs	36.4%	15.9%	Unspecified



BWH NO. 3393-18H
STRUCTURAL
COMPONENT ONLY
1612

T-190347



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B3(12482)

Dry | 1 span | No cant,

November 8, 2018 13:48:06

BC CALC® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: OCMC 12472-R

File name: PRESTON 11A

Description: 2ND FLOOR FRAMING\Flush Beams\B3(12482)

Specifier:

Designer: PL

Company:

Notes

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

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

Calculations assume member is fully braced.

CONFORMS TO NBC 2012

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

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

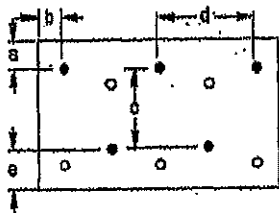
Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

Nailing schedule applies to both sides of the member.

Connection Diagram: Full Length of Member



4 ROWS

a minimum = 1/2"

c = 6 1/2"

b minimum = 3"

d = 6"

e minimum = 2"

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

Nailing schedule applies to both sides of the member.

Connectors are: 1 Nails

3/4" ARDUX SPIRAL



Disclosure

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AUG 28 2019

TOWN OF CALEDON
BUILDING DEPARTMENT
FILE NO. 2018-0393-184
STRUCTURAL
COMPONENT ONLY

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

T. L. 12/11/18



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

PASSED

2ND FLOOR FRAMING/Dropped Beams/B6 DR(2360)

Dry | 1 span | No cant.

November 6, 2018 13:46:06

BC CALCO® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

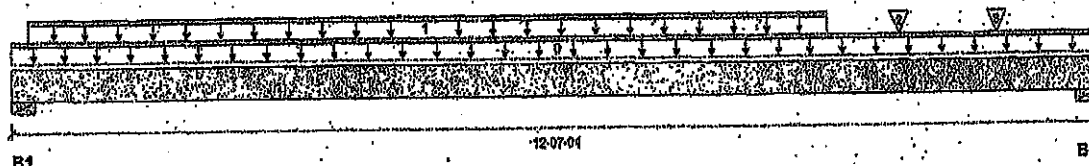
File name: PRESTON 11A

Description: 2ND FLOOR FRAMING/Dropped Beams/B6 DR(2360)

Specifier:

Designer: PL

Company:



Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/2"	1,662 / 0	936 / 0		
B2, 3-1/2"	2,457 / 0	1,370 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	12-07-04	Top	100	0.65	1.00	1.15	00-00-00
1	Smoothed Load	Unf. Lin. (lb/ft)	L	00-02-04	09-05-00	Top	222	111			n/a
2		Conc. Pl. (lbs)	L	10-03-02	10-03-02	Top	1,280	689			n/a
3	J1(2015)	Conc. Pl. (lbs)	L	11-05-00	11-05-00	Top	616	308			n/a

Controls Summary

Pos. Moment	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	12,369 ft-lbs	36,222 ft-lbs	34.1%	1	07-05-00
End Shear	5,378 lbs	17,366 lbs	31.0%	1	11-05-04
Total Load Deflection	L/483 (0.315")	n/a	61.9%	4	06-09-00
Live Load Deflection	L/722 (0.202")	n/a	49.9%	5	06-09-00
Max Defl.	0.315"	n/a	n/a	4	06-09-00
Span / Depth	18.3				



Bearing Supports

Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/2" x 5-1/4"	3,862 lbs	24.6%	16.3%	Unspecified
B2	Wall/Plate 3-1/2" x 5-1/4"	5,398 lbs	36.2%	24.1%	Unspecified

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Design meets Code minimum (L/360) Live load deflection criteria.
 Calculations assume unbraced length of Top: 00-06-13; Bottom: 00-06-13.
 Resistance Factor phi has been applied to all presented results per CSA 088. **CONFORMS TO CBC 2012**
 BC CALCO analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 088.
 Design based on Dry Service Condition.
 Importance Factor: Normal Part code: Part 9
 Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
 Nailing schedule applies to both sides of the member.
 Member has no side loads.

DWG NO. FAN 3392-18H
 STRUCTURAL
 COMPONENT ONLY PG 12

T. Gormley



Triple 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING/Dropped Beams/B5 DR(2380)
Dry | 1 span | No cant.

PASSED

November 6, 2015 13:48:06

BC CALO® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: OCMC 12472-R

File name: PRESTON 11A

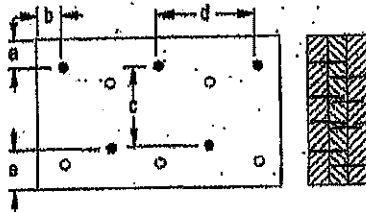
Description: 2ND FLOOR FRAMING/Dro...ed Beams/B5 DR(2380)

Specifier:

Designer: PL

Company:

Connection Diagram: Full Length of Member



4 rows

a minimum = 1"
b minimum = 3"

c = 6 1/2"
d = 8"
e minimum = 2"

Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
Nailing schedule applies to both sides of the member.
Member has no side loads.

Connectors are: Nails

3/4" ARDOX SPIRAL



Disclosure

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DRWING, FAW 339218
STRUCTURAL
COMPONENT ONLY

BO CALO®, BO FRAMER®, AJS™,
ALLJOIST®, BO RIM BOARD™, BOI®,
BOISE GLULAM™, BO FloorValue®,
VERSA-LAM®, VERSA-RIM PLUS®,

T. 19034660



Balse Cascardi



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

PASSED

2ND FLOOR FRAMING(Flush Beams)B7(12403)

Dry | 1 span | No cant.

November 6, 2018 13:48:08

BC CALCO Member Report

Build 6475

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

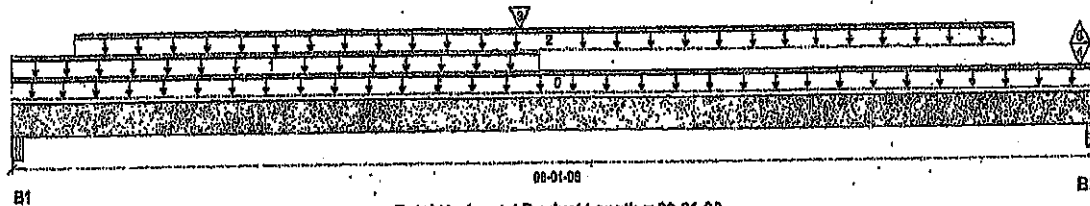
File name: PRESTON 11A

Description: 2ND FLOOR FRAMING(Flush Beams)B7(12403)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 08-01-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2-5/8"	1,064 / 0	602 / 0		
B2, 3"	1,315 / 0	710 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	08-01-08	Top	10				00-00-00
1	FO2 Floor Material	Unf. Lin. (lb/ft)	L	00-00-00	08-11-00	Top	22	11			n/a
2	Smoothed Load	Unf. Lin. (lb/ft)	L	00-08-00	07-08-00	Top	288	144			n/a
3	B8 CANT (12414)	Conc. Pl. (lbs)	L	08-08-04	08-08-04	Top		39			n/a
4	J1(12423)	Conc. Pl. (lbs)	L	08-00-00	08-00-00	Top	287	139			n/a
5	J1(12423)	Conc. Pl. (lbs)	L	08-00-00	08-00-00	Top	-9				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	5,031 ft-lbs	23,220 ft-lbs	21.7%	1	04-00-00
End Shear	2,310 lbs	11,571 lbs	20.0%	1	01-00-02
Total Load Deflection	1/899 (0.077")	n/a	n/a	6	04-00-00
Live Load Deflection	1/899 (0.049")	n/a	n/a	8	04-00-00
Max Defl.	0.077"	n/a	n/a	6	04-00-00
Span / Depth	9.8				



Bearing Supports

	Phys. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1 Beam	2-5/8" x 3-1/2"	2,378 lbs	23.8%	21.2%	Unspecified
B2 Column	3" x 3-1/2"	2,880 lbs	33.5%	22.3%	Unspecified

Notes

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

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

Calculations assume unbraced length of Top: 00-00-04, Bottom: 00-00-04.

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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

DRS H. TAN 3374 18H
STRUCTURAL 16/11
COMPONENT ONLY

T-1903068



Boise Cascade



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

2ND FLOOR FRAMING\Flush Beams\B7(12403)

Dry | 1 span | No cent.

PASSED

November 6, 2016 13:46:06

BC CALC® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

File name: PRESTON 11A

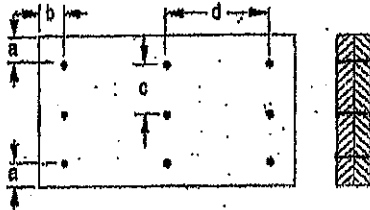
Description: 2ND FLOOR FRAMING\Flush Beams\B7(12403)

Specifier:

Designer: PL

Company:

Connection Diagram: Full Length of Member



a minimum = 2"

b minimum = 3"

c = 2-3/4"

d = 2" @ 1"

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

Connectors are: 1 Nails

3/4" ARDOX SPIRAL



Disclosure

Use of the Boise Cascade Software is subject to the terms of the End User License Agreement (EULA). Completeness and accuracy of input must be reviewed and verified by a qualified engineer or other appropriate expert to assure its adequacy, prior to anyone relying on such output as evidence of suitability for a particular application. The output here is based on building code-accepted design properties and analysis methods. Installation of Boise Cascade engineered wood products must be in accordance with current Installation Guide and applicable building codes. To obtain Installation Guide or ask questions, please call (800)232-0768 before installation.

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

DWG NO. YAW 3394-18H
STRUCTURAL
COMPONENT ONLY

T. L. Gosses



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

PASSED

2ND FLOOR FRAMING/Flush Beams/BB CANT (I2414)

Dry | 2 spans | R cant.

November 6, 2018 13:46:08

BC CALCO Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports:

CCMC 12472-R

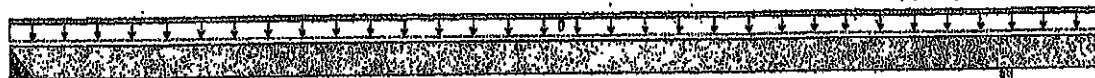
File name: PRESTON 11A

Description: 2ND FLOOR FRAMING/Flush Beams/BB CANT (I2414)

Specifier:

Designer: PL

Company:



B1

Total Horizontal Product Length = 09-00-04

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 2"		40 / 0		
B2, 3-1/2"		47 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unif. Lin. (lb/ft)	L	00-00-00	09-00-04	Top	1.00	0.66	1.00	1.16	00-00-00

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	108 ft-lbs	15,093 ft-lbs	0.7%	0	04-01-08
Neg. Moment	-4 ft-lbs	-15,093 ft-lbs	n/a	0	08-02-08
End Shear	43 lbs	7,521 lbs	0.6%	0	00-11-08
Cont. Shear	43 lbs	7,521 lbs	0.6%	0	07-03-04
Total Load Deflection	L/998 (0.002")	n/a	n/a	1	04-01-08
Total Neg. Defl.	2xL/1 998 (-0.001")	n/a	n/a	1	09-00-04
Max Defl.	0.002"	n/a	n/a	1	04-01-08
Span / Depth	10.2				

Bearing Supports

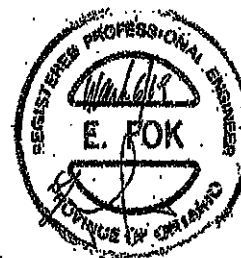
	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Hanger 2" x 3-1/2"	55 lbs	n/a	1.0%	HGUS410
B2	Column 3-1/2" x 3-1/2"	68 lbs	1.0%	0.7%	Unspecified

Cautions

Header for the hanger HGUS410 at B1 is a Double 1-3/4" x 9-1/2" VERSA-LAM® 1.7 2400 DF. Hanger model HGUS410 and seat length were input by the user. Hanger has not been analyzed for adequate capacity.

Notes

Design meets Code minimum (L/240) Total load deflection criteria.
 Calculations assume member is fully braced.
 Hanger Manufacturer: Unassigned
 Resistance Factor phi has been applied to all presented results per CSA 088. **CONFIRMS TO OBC 2012**
 BC CALCO analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA 088.
 Design based on Dry Service Condition.
 Importance Factor: Normal Part code: Part 0
 Cantilevers require sheathed bottom flanges, blocking at cantilever support and closure at ends.
 Member has no side loads.



RECEIVED
AUG 28 2019

TOWN OF CALEDON
BUILDING SECTION
FILE NO.

OWN NO. TAM 3395-18H
STRUCTURAL
COMPONENT ONLY
P616

T-19031409



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING (Flush Beams) B8 CANT (I2414)

PASSED

November 8, 2018 13:46:06

BC CALC® Member Report

Build 6476

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: OCMC 12472-R

File name: PRESTON 11A

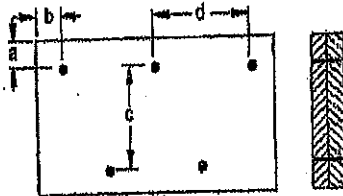
Description: 2ND FLOOR FRAMING (Flush Beams) B8 CANT (I2414)

Specifier:

Designer: PL

Company:

Connection Diagram: Full Length of Member

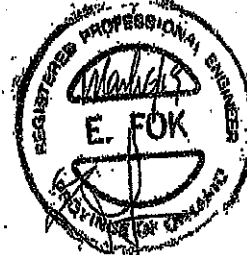


a minimum = 2"
b minimum = 3"
c = 5-1/2"
d = 6"

Member has no side loads.

Connectors are: 7 Nails

3/4" ARDOX SPIRAL



Disclosure

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STRUCTURAL COMPONENT ONLY

T. Gromkowski



Rules Cascade



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

2ND FLOOR FRAMING/Dropped Beams/B4 DR(14769)

Dry | 1 span | No cant.

PASSED

February 28, 2019 07:45:14

BCALCO Member Report

Build 8788

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports:

CCMC 12472-R

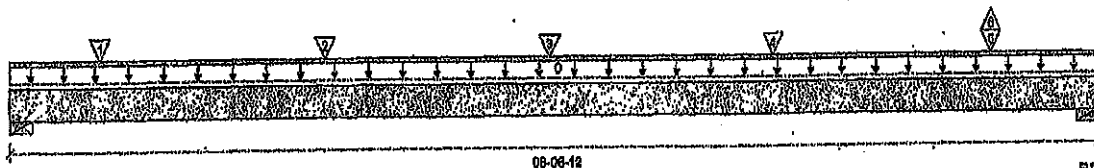
File name: PRESTON 11A

Description: 2ND FLOOR FRAMING/Dropped Beams/B4 DR(14769)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 06-08-12

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 3-1/4"	1,581 / 2	811 / 0		
B2, 3-1/2"	1,593 / 32	813 / 0		

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
							1.00	0.85	1.00	1.15	
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	06-08-12	Top		10			00-00-00
1	-	Conc. Pt. (lbs)	L	00-08-12	00-08-12	Top	606	303			n/a
2	-	Conc. Pt. (lbs)	L	01-10-12	01-10-12	Top	636	318			n/a
3	-	Conc. Pt. (lbs)	L	03-02-12	03-02-12	Top	636	318			n/a
4	-	Conc. Pt. (lbs)	L	04-06-12	04-06-12	Top	636	289			n/a
5	-	Conc. Pt. (lbs)	L	05-10-12	05-10-12	Top	739	353			n/a
6	-	Conc. Pt. (lbs)	L	05-10-12	05-10-12	Top	-34				n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	4,844 ft-lbs	23,220 ft-lbs	20.9%	1	03-02-12
End Shear	2,677 lbs	11,671 lbs	22.9%	1	05-05-12
Total Load Deflection	1/999 (0.046")	n/a	n/a	6	03-02-12
Live Load Deflection	1/999 (0.03")	n/a	n/a	8	03-02-12
Max Def.	0.046"	n/a	n/a	6	03-02-12
Span / Depth	7.7				



Bearing Supports	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Wall/Plate 3-1/4" x 3-1/2"	3,366 lbs	38.3%	24.2%	Unspecified
B2	Wall/Plate 3-1/2" x 3-1/2"	3,408 lbs	34.2%	22.8%	Unspecified

Notes

Design meets Code minimum (1/240) Total load deflection criteria.
 Design meets Code minimum (1/360) Live load deflection criteria.
 Calculations assume unbraced length of Top: 00-02-09, Bottom: 00-02-09.
 Resistance Factor phi has been applied to all presented results per CSA O86. **CONFORMS TO CBC 2012**
 BCALCO analysis is based on Canadian Limit States Design, as per NBCC 2015 and CSA O86.
 Design based on Dry Service Condition.
 Importance Factor: Normal Part code: Part 9
 Connection design assumes point load is top-loaded. For connection design of side-loaded point loads, please consult a technical representative or professional of Record.
 Member has no side loads.

OWNED, TAM 319818H
 STRUCTURAL
 COMPONENT ONLY

T. G. 2019



Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP
2ND FLOOR FRAMING/Dropped Beams/B4 DR(14769)

PASSED

February 28, 2019 07:46:14

BC CALC® Member Report

Build 6766

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports:

CCMC 12472-R

File name: PRESTON 11A

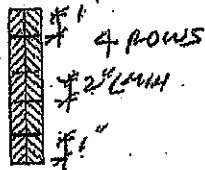
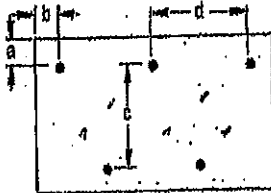
Description: 2ND FLOOR FRAMING/Dropped Beams/B4 DR(14769)

Specifier:

Designer: PL

Company:

Connection Diagram: Full Length of Member



a minimum = 1/2"

c = 1-1/2"

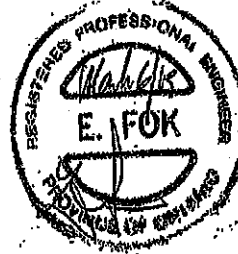
b minimum = 3"

d = 6"

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

Connectors are:

3/4" ARDOX SPIRAL



Disclosure

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OWNED BY 9998-1811
STRUCTURAL
COMPONENT ONLY

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TOWN OF CALEDON
BUILDING SECTION
FILE NO.

W. 9000000



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

2ND FLOOR FRAMING\Flush Beams\B10(14533)

Dry | 1 span | No cant.

February 28, 2019 07:48:14

BCALCO Member Report

Bulld 6768

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports:

CCMC 12472-R

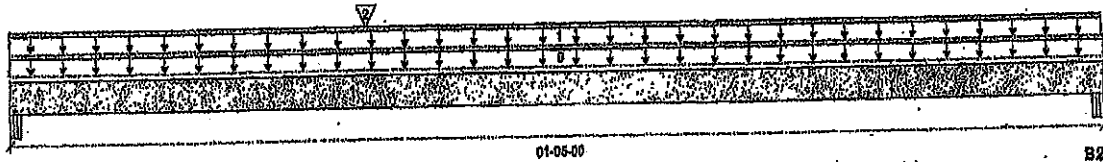
File name: PRESTON 11A

Description: 2ND FLOOR FRAMING\Flush Beams\B10(14533)

Specifier:

Designer: PL

Company:



Total Horizontal Product Length = 01-05-00

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 6"	160 / 0	180 / 0	180 / 0	
B2, 5"	37 / 0	118 / 0	131 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live 1.00	Dead 0.85	Snow 1.00	Wind 1.15	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-05-00	Top		10			00-00-00
1	E24(12035)	Unf. Lin. (lb/ft)	L	00-00-00	01-04-15	Top	83	155	185		n/a
2	J8(14582)	Conc. Pl. (lbs)	L	00-05-08	00-05-08	Top	112	63	48		n/a

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	34 ft-lbs	28,220 ft-lbs	0.1%	13	00-08-08
End Shear	166 lbs	11,571 lbs	1.4%	13	00-05-00
Span / Depth	0.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 6" x 3-1/2"	644 lbs	8.9%	3.0%	Unspecified
B2	Beam 5" x 3-1/2"	376 lbs	4.0%	1.8%	Unspecified

Notes

Calculations assume member is fully braced.

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

CONFORMS TO QBC 2012

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

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

Design based on Dry Service Condition.

Importance Factor : Normal Part code : Part 9

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



DOWN. TAW 3359-18H
STRUCTURAL
COMPONENT ONLY

T-1903153



2ND FLOOR FRAMING\Flush Beams\B10(14533)

February 28, 2019 07:45:14

Company:



OWN OF CALEDON
BUILDING SECTION

1901536



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

PASSED

2ND FLOOR FRAMING\Flush Beams\B6(14525)

Dry | 1 span | No cant.

February 28, 2019 07:46:14

BC CALC® Member Report

Build 6766

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: COMC 12472-R

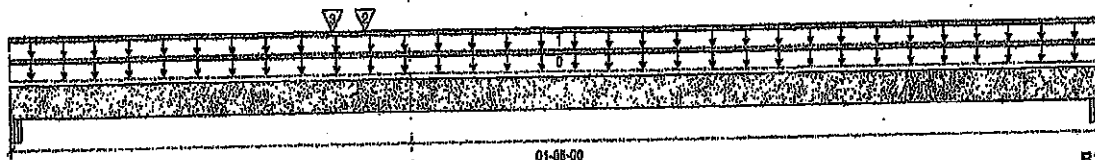
File name: PRESTON 11A

Description: 2ND FLOOR FRAMING\Flush Beams\B6(14525)

Specifier:

Designer: PL

Company:



B1

Total Horizontal Product Length = 01-05-00

B2

Reaction Summary (Down / Uplift) (lbs)

Bearing	Live	Dead	Snow	Wind
B1, 5"	155 / 0	164 / 0	192 / 0	
B2, 5"	38 / 0	117 / 0	131 / 0	

Load Summary

Tag	Description	Load Type	Ref.	Start	End	Loc.	Live	Dead	Snow	Wind	Tributary
0	Self-Weight	Unf. Lin. (lb/ft)	L	00-00-00	01-05-00	Top	1.00	0.65	1.00	1.15	00-00-00
1	E25(2036)	Unf. Lin. (lb/ft)	L	00-00-00	01-05-00	Top	63	155	185		na
2		Conc. Pl. (lbs)	L	00-05-08	00-05-08	Top	110	69	38		na
3	LOW ROOF	Conc. Pl. (lbs)	L	00-05-00	00-05-00	Top	8	7	23		na

Controls Summary

	Factored Demand	Factored Resistance	Demand/Resistance	Case	Location
Pos. Moment	34 ft-lbs	23,220 ft-lbs	0.1%	13	00-05-08
End Shear	156 lbs	11,571 lbs	1.4%	13	00-05-00
Span / Depth	0.9				

Bearing Supports

	Dim. (LxW)	Demand	Demand/Resistance Support	Demand/Resistance Member	Material
B1	Beam 6" x 3-1/2"	673 lbs	7.2%	3.2%	Unspecified
B2	Beam 6" x 3-1/2"	380 lbs	4.1%	1.8%	Unspecified

Notes

Calculations assume member is fully braced.

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

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

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

Design based on Dry Service Condition.

Importance Factor: Normal Part code: Part 9

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



RECEIVED
AUG 28 2019

TOWN OF CALEDON
BUILDING SECTION
FILE NO.

DWNG. TAB 3400-18H
STRUCTURAL
COMPONENT ONLY 1612

6903154



Boise Cascade

**Double 1-3/4" x 9-1/2" VERSA-LAM® 2.0 3100 SP****2ND FLOOR FRAMING\Flush Beams\B6(14625)**

Dry | 1 span | No cent.

PASSED

February 28, 2019 07:45:14

BC CALCO Member Report

Build 6766

Job name:

Address:

City, Province, Postal Code: CALEDON

Customer:

Code reports: CCMC 12472-R

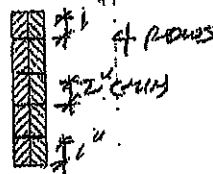
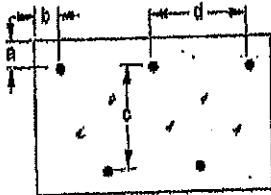
File name: PRESTON 11A

Description: 2ND FLOOR FRAMING\Flush Beams\B6(14625)

Specifier:

Designer: PL

Company:

Connection Diagram: Full Length of Member

a minimum = 1/2"

b minimum = 3"

c = 7-1/2"

d = 2"

Calculated Side Load = 193.2 lb/ft

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

Connectors are: 1 Nails

3/4" ARDOX SPIRAL

**Disclosure**

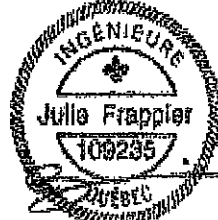
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C-1903154(1)

TOWN OF CALEDON
BUILDING SECTION
FILE NO



Maximum Floor Spans

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

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

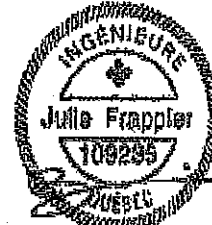
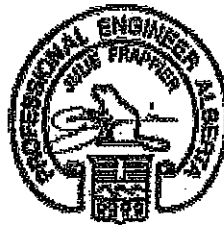
- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 30 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- 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 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 QRC 2012.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



Maximum Spans - A3
Ultimate States Design (CAN)

Maximum Floor Spans

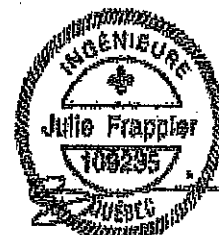
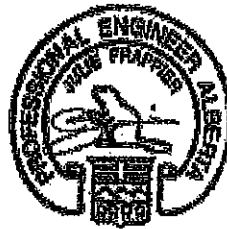
Live Load = 40 psf, Dead Load = 15 psf
Simple Spans, L/480 Deflection Limit
3/4" OSB G&N Sheathing



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

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of 1.50L + 1.25D. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of L/480 and a total load deflection limit of L/240.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 3/4 inch for a joist spacing of 24 inches or less. The composite floor may include 1/2 inch gypsum ceiling and/or one row of blocking at mid-span with strapping. Strapping shall be minimum 1x4 inch strap applied to underside of joists at blocking line or 1/2 inch gypsum ceiling attached to joists.
- Minimum bearing length shall be 1-3/4 inches for the end bearings.
- 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 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.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic Joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



Maximum Floor Spans

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

Depth	Series	Bare				1/2" Gypsum Ceiling			
		On Centre Spacing				On Centre Spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	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
	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
11-7/8"	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
	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
14"	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
	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
16"	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
	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

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

- Maximum clear span applicable to simple-span residential floor construction with a design live load of 40 psf and dead load of 15 psf. The ultimate limit states are based on the factored loads of $1.50L + 1.25D$. The serviceability limit states include the consideration for floor vibration, a live load deflection limit of $L/480$ and a total load deflection limit of $L/240$.
- Spans are based on a composite floor with glued-nailed oriented strand board (OSB) sheathing with a minimum thickness of 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.
- Minimum bearing length shall be 1-3/4 inches for the end 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 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.
- Joists shall be laterally supported at supports and continuously along the compression edge. Refer to technical documentation for installation guidelines and construction details. Nordic I-joists are listed in CCMC evaluation report 13032-R and APA Product Report PR-L274C.



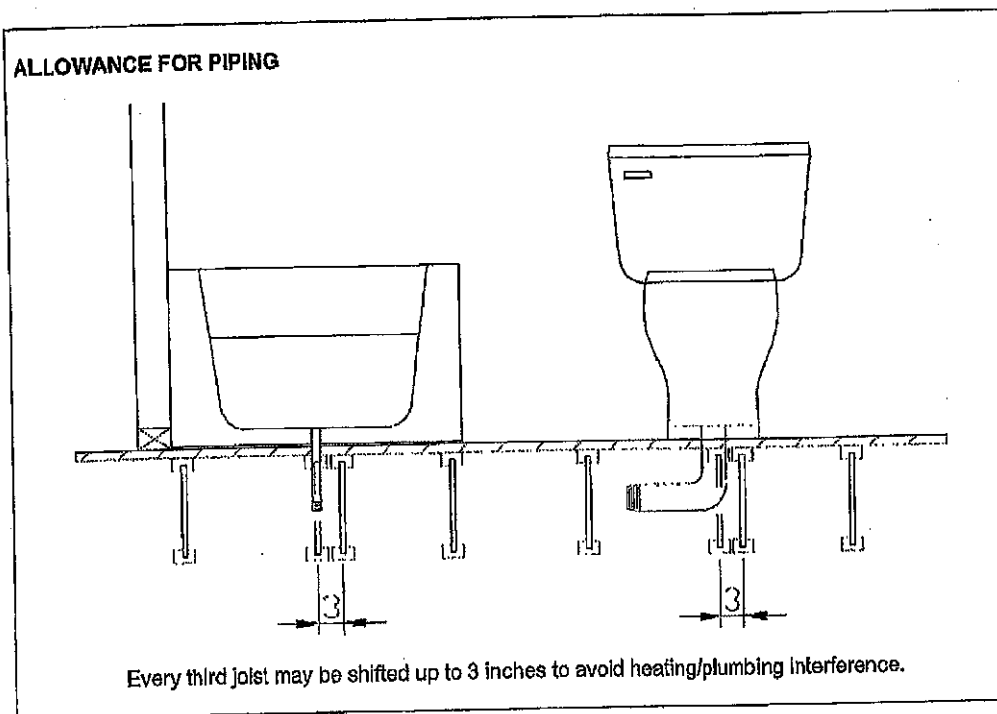
Construction Detail Limit States Design

Allowance for Piping (Installation Notes)

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

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

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



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